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Wire & Cable Management • Cable Protection Systems
Power Connection & Control • Safety Technology

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Safety Technology

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For over 100 years, Thomas & Betts has successfully applied innovative design and manufacturing techniques to meet the changing needs of the marketplace. Today, we offer more than 100,000 electrical components and systems to terminate, connect, fasten, protect and identify wires, components and raceway. Our vast offering makes us one of the largest and best sources of electrical components in North America.

At T&B, we're committed to:

- Products which provide solutions to your electrical needs
- Convenience of single-order, single-shipment to your site for thousands of stocking items
- Expert local point of contact for clear, consistent information regarding training, codes and standards
- Quality brands that have proven themselves over time
- Inventive design and manufacture of problem-solving products
- Offering a best-of-class warranty and returns policy
- Uniform carton labeling with additional bar-coding for convenient inventory management
- Nationwide network of stocking electrical distributors
- Outstanding customer service capability
- Supplying you with the right products, convenient packaging, on-time delivery and competitive pricing

We deliver the solutions that make your job easier and offer the power to bring it all together in one package. Call us today and let us help you profit from sourcing your electrical products from the leader, Thomas & Betts.

Healthcare

Wastewater Treatment

Food and Beverage

Oil and Gas

Safety Technology

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Other Thomas & Betts Catalogs...

Wire and Cable Management — CAT1

- Boxes & Covers
- Metal Framing & Cable Tray
- Fastening Systems
- Identification & Supplies

Cable Protection Systems — CAT2

- Industrial Conduit & Fittings
- Flexible Conduit & Fittings
- PVC-Coated Conduit & Fittings
- Commercial Conduit & Fittings

Power Connection and Control — CAT3

- Connectors & Grounding
- Wire Termination
- Power & High Voltage
- Power Quality

Contents

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Vertical Market Solutions

Single- and Multi-Family Housing

At Thomas & Betts, residential construction goes beyond the simple house on the corner. From a single-family home to a multi-story apartment complex or high-rise condominium, we understand the dynamic challenges faced in the residential market and are committed to providing innovative electrical solutions that promote sustainability, reduce overall project costs and provide a safe working and living environment.

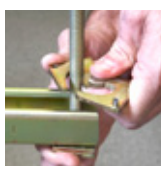
Technology and regulatory evolution is driving change throughout our living areas, and Thomas & Betts is focused on providing solutions that not only solve current real-world problems, but offer the flexibility to accommodate future demands.

For more information, request the Thomas & Betts Electrical Solutions for Single- and Multi-Family Housing brochure, GM-8330.

Commercial and Institutional Facilities

Thomas & Betts understands the challenges faced in commercial and institutional projects and is committed to providing innovative electrical solutions that not only reduce overall project costs, but also increase safety, promote sustainability and even improve cash flow. Whether it's labor-saving rough-in components, custom-designed electrical prefabrication systems, online cloud-based design tools or even our world-class logistics, Thomas & Betts can help bring commercial and institutional projects in on time, within budget and profitably.

For more information, request the Thomas & Betts Electrical Solutions for Commercial and Institutional Facilities brochure, GM-8333.



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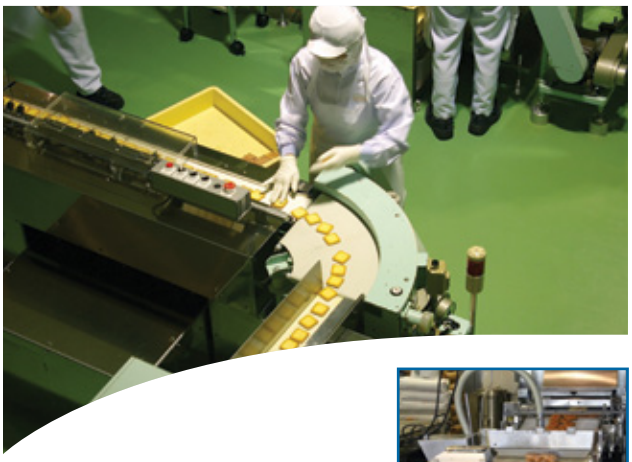
Vertical Market Solutions

Food and Beverage Processing Industry



At Thomas & Betts, we understand the challenges you face in the food and beverage processing industry today. We're focused on providing electrical solutions that address the critical issues in every area of your operation, so you can focus on plant sustainability, cost, quality, flexibility, food and personnel safety and regulatory challenges across the production cycle. Our family of electrical solutions matches specific application criteria from start to finish inside food processing areas, assuring the quality and reliability of your electrical system throughout your facility, from incoming raw materials through shipping of finished goods. And with the industry's most efficient distribution system, we're prepared to meet your ongoing MRO, OEM and construction needs down the road.

For more information, request the Thomas & Betts Electrical Solutions for Food and Beverage Processing Facilities brochure, GM-8306.

Metals and Mining Industry

Thomas & Betts' long-term presence in the utility and industrial markets continues to drive the development of innovative electrical products that meet the stringent application requirements of metals and mining operations and perform over extended lifecycles. Our solutions are tailored to help you optimize operating costs and improve return on capital investments while protecting the environment and ensuring safety to workers and production assets. Our global network and fast logistics are in place to support your MRO, OEM and construction activities around the world.

For more information, request the Thomas & Betts Electrical Solutions for the Metals and Mining Industry brochure, GM-8332.

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Vertical Market Solutions

Pulp and Paper Processing Industry

At Thomas & Betts, we understand the challenges you face in the pulp and paper processing industry today. We're focused on providing electrical solutions that address the critical issues in every area of your operation, so you can focus on plant sustainability, personnel safety, cost, quality, flexibility and regulatory challenges across the production cycle. Our family of electrical solutions matches specific application criteria from start to finish inside processing areas, assuring the quality and reliability of your electrical system throughout your facility, from incoming raw materials through shipping of finished goods. And with the industry's most efficient distribution system, we're prepared to meet your ongoing MRO, OEM and construction needs today.

For more information, request the Thomas & Betts Electrical Solutions for Pulp and Paper Processing Facilities brochure, GM-8335.

Chemical Industry

Thomas & Betts designs, manufactures and supplies solutions for electrical systems. In order to be profitable running special batches or continuous commodity compounds, you need reliable, robust and cost-effective equipment. Your systems need to operate at peak performance. That's why we invest considerable resources towards R&D, training and channel management. Our products solve real-world problems. Thomas & Betts offers the industry's most advanced materials distribution system, and our commitment shows in our unmatched products, unequaled service and loyalty from end-users, OEMs and contractors.

For more information, request the Thomas & Betts Electrical Solutions for the Chemical Industry brochure, GM-8336.

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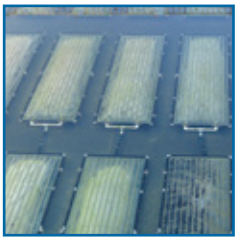
Vertical Market Solutions

Oil and Gas Industry

Thomas & Betts designs, manufactures and supplies technically advanced products for electrical systems. Profitable drilling, extracting, processing, transporting and dispensing operations require reliable, robust and cost-effective equipment. That's why we invest extensive amounts on R&D, training and channel management. Our solutions solve real-world problems. Thomas & Betts offers the industry's most advanced materials distribution system, and our commitment shows in our unmatched products, unequaled service and loyalty from end-users and OEMs.

For more information, request the Thomas & Betts Electrical Solutions for the Oil and Gas Industry brochure, GM-8329.

Water/Wastewater Treatment



At Thomas & Betts, we're focused on providing products that address the issues in every area of your wastewater treatment facility, so you can focus on cost, quality, flexibility and regulatory challenges. Our family of products matches specific application criteria from start to finish, assuring the quality and reliability of your electrical system throughout your facility, from power substation to administration buildings. With the industry's most efficient distribution system, we're also prepared to meet your ongoing MRO needs down the road.

For more information, request the Thomas & Betts Electrical Solutions for Wastewater Treatment Facilities brochure, GM-8291.

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Civil Infrastructure

At Thomas & Betts, we understand the challenges faced in civil infrastructure. We're focused on providing electrical solutions that address the critical issues in every transportation sector, so you can focus on sustainability, cost, quality, flexibility, safety and regulatory compliance. Our family of quality electrical solutions matches specific application criteria, ensuring the continued reliability of infrastructure. And with the industry's most efficient distribution system, we're prepared to meet your ongoing operation and maintenance needs as well as serve new OEM and construction investments.

For more information, request the Thomas & Betts Electrical Solutions for Civil Infrastructure brochure, GM-8331.

Renewable Energy

The demand for natural, clean and sustainable energy resources has brought solar and wind power generation into the spotlight. Investments and incentives by public and private entities are speeding green development and proliferation, yet the promise is not fully realized. Thomas & Betts is committed to seeing the industry succeed — and thrive. We design integrated solutions with higher quality materials, fewer parts and ease of installation coupled with maintenance in mind in order to reduce product lifecycle costs. We provide the information and training necessary to correctly install and maintain critical structural systems for safe and reliable operation. With solutions from Thomas & Betts, you will meet your cost, quality, performance and regulatory challenges.

For more information, request the Thomas & Betts Electrical Solutions for Renewable Energy brochure, GM-8334.

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Power Generation

The power generation industry, which has performed solidly for decades, is undergoing a transformation brought on by government regulations, consumer demand and evolving industry standards. New and emerging technological developments support cleaner and more efficient energy generation and higher availability for plants young and old. Thomas & Betts is leading the way with high-quality, innovative electrical systems and devices that perform optimally with minimal product lifecycle costs. Integrated engineering design solution sets simplify product selection. Fewer, snap-together parts ease installation and maintenance. Training and support services ensure ongoing safe and reliable operation, while warranties instill confidence that our products will perform as required and meet your performance and output demands.

For more information, request the Thomas & Betts Electrical Solutions for Power Generation brochure, GM-8337.

Power Transmission and Distribution

From transmission lines and local distribution networks that crisscross the landscape to the customer premises, you'll find Thomas & Betts products to help you manage and control the constant flow of power. We understand that your customers depend on you to deliver a continuous, uninterrupted power flow, and that you rely on us to provide solutions that enable optimal reliability and efficiency. We also recognize your need to reduce the maintenance, repair and operations costs in your electric power transmission and distribution systems. Whether your systems are overhead or underground, we are your partner in power delivery. Our broad family of electrical solutions enables us to support your design, construction, operations and maintenance requirements economically, with fewer and shorter outages.

For more information, request the Thomas & Betts Electrical Solutions for Power Transmission and Distribution brochure, GM-8338.

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Over 170 Years of Industry Experience

Meeting and exceeding our customers' expectations is a fundamental goal of Thomas & Betts. Call our Technical Services Department and talk LIVE to an expert who'll answer questions and concerns regarding all aspects of our products and services. Our experienced and knowledgeable staff is second to none in the industry!

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Trust T&B's dedicated Tool Services Department to answer all questions regarding tool applications, repair, warranties, sales/lease/rental and technical information. Ask about our specialized services, including customer/sales training, demos and calibration/certification of tools.

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U.S. contractors and specifiers have made our web catalog their number one stop. Users can search for technical information by catalog number, UPC code, competitor number, keyword search, product category and/or brand. Having found the item(s) they are searching for, they can then use our ***Where To Buy*** function to locate a T&B local distributor and/or other support services.

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The T&B CAD Library is an on-line source of 2D and 3D CAD models, available FREE to customers who register. Users can download these files to their desktops for import into their working drawings. Drawings are offered in 90 of the most popular native file formats. This is a valuable tool for CAD designers, OEMs and engineering firms, as it will allow them to quickly locate and download T&B drawings into their projects. Over 4,000 drawings of T&B® Fittings, PMA® Cable Protection, Kindorf®, Red•Dot® and Superstrut® products and Steel City® and Carlon® Floor Boxes are currently available.

BIM Library

Now available to you through Autodesk® Seek (**seek.autodesk.com**), our BIM (Building Information Modeling) objects can easily be imported to your Revit® models. These BIM objects are fully standards compliant, Revit® Certified and completely configurable.

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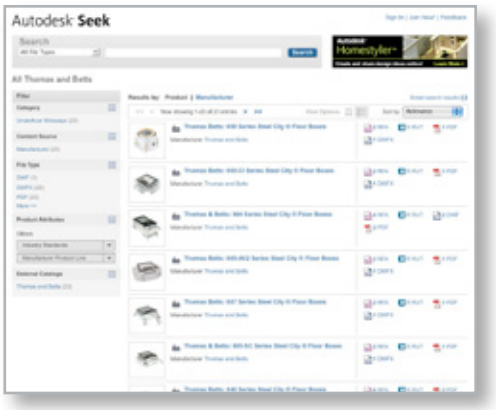

Hazlux®

Hazlux® Hazardous Location Lighting

In this section...

Hazlux® Hazardous Location Lighting

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Overview

Hazardous Locations

Hazardous Location — An area where the possibility of explosion and fire is created by the presence of flammable gases, vapors, dust, fibers or flyings.

Class I — Gas

Class I — NEC® 500.5(B) — Class I locations are those in which flammable gases, flammable liquid-produced vapors or combustible liquid-produced vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.

Typical Class I Locations:

- Petroleum refineries and gasoline storage and dispensing areas
- Industrial firms that use flammable liquids in dip tanks for parts cleaning or other operations
- Petrochemical companies that manufacture chemicals from gas and oil
- Dry cleaning plants where vapors from cleaning fluids can be present
- Companies that have spraying areas where they coat products with paint or plastics
- Aircraft hangars and fuel serving areas
- Utility gas plants and operations involving storage and handling of liquified petroleum gas or natural gas

Class II — Dust

Class II — NEC® 500.5(C) — Class II locations are those that are hazardous because of the presence of combustible dust.

Typical Class II Locations:

- Grain elevators, flour and feed mills
- Plants that manufacture, use or store magnesium or aluminum powders
- Plants that have chemical or metallurgical processes: producers of plastics, medicines and fireworks, etc.
- Producers of starch or candies
- Spice-grinding plants, sugar plants and cocoa plants
- Coal preparation plants and other carbon handling or processing areas

Class III — Fibers

Class III — NEC® 500.5(D) — Class III locations are those that are hazardous because of the presence of easily ignitable fibers or where materials producing combustible flyings are handled, manufactured or used, but in which such fibers/flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures.

Typical Class III Locations:

- Textile mills, cotton gins, cotton seed mills and flax processing plants
- Any plant that shapes, pulverizes or cuts wood and creates sawdust or flyings

***Note**: Fibers and flyings are not likely to be suspended in the air but can collect around machinery or on lighting fixtures and where heat, a spark or hot metal can ignite them.*

Division 1 — Normally Hazardous

Division 1 — Hazardous gases or dusts are present under normal operation conditions or during frequent repair and maintenance activity.

Groups A, B, C, D

Groups A, B, C and D (NEC® 500.6 (A)) — The gases and vapors of Class I locations are broken into four groups by the code A, B, C and D. These materials are grouped according to the ignition temperature of the substance, its explosion pressure and other flammable characteristics.

Groups E, F, G

Groups E, F, G (NEC® 500.6 (B)) — Class II dust locations groups E, F and G are classified according to the ignition temperature and the conductivity of the hazardous substance.

Division 2 — Not Normally Hazardous

Division 2 — Hazardous gases or dusts are not present under normal operating conditions.

Articles 500 through 505 (2011 NEC®) — Explains in detail the requirements for the installation of wiring or electrical equipment in hazardous locations. These articles along with other applicable regulations, local governing inspection authorities, insurance representatives and qualified engineering/technical assistance should be your guides to the installation of wiring or electrical equipment in any hazardous or potentially hazardous location.

***Note**: These are simplified definitions — complete data is in the referenced 2011 NEC®.*

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Overview

Four-Step Method for Selecting Lighting Fixtures for Hazardous Locations

1. Select a fixture that meets your Class, Division and Group requirements.

Examples: Class I, Division 2, Group D
Class II, Division 1, Group G

2. Determine the T-Number for your selected fixture. Be sure it is for the specific wattage, ballast housing, optical assembly and ambient temperature.

- Use the published information in this catalog or in Hazlux® product brochures

3. Determine the Maximum Allowable Temperature for the hazardous materials involved.

- Class I Gas: Ignition Temperature for the Specific Gas (from pp. I-4–I-6 of this catalog or from NFPA497M)
- Class II Dust:
  - Group E.....200° C
  - Group F.....200° C
  - Group G.....165° C
  - Or ignition temperature of dust if lower
  - Above from NEC® Table 500-3(F)

4. Compare T-Number (from Step 2) to Maximum Allowable Temperature (from Step 3).

- If T-Number is cooler than the Maximum Allowable Temperature, the selected fixture is suitable.
- If T-Number is hotter than the Maximum Allowable Temperature, the selected fixture is not suitable.

T-Number Table

CLASS I, II, DIV. 1, 2 T-NUMBER	MAX. TEMP. (IN °C)
T1	450
T2	300
T2A	280
T2B	260
T2C	230
T2D	215
T3	200
T3A	180
T3B	165
T3C	160
T4	135
T4A	120
T5	100
T6	85

Ignition Temperatures and Group Classifications for Flammable Gases and Vapors

MATERIAL	GROUP	AUTOIGNITION TEMPERATURE DEGREES F	AUTOIGNITION TEMPERATURE DEGREES C
Acetaldehyde	C	347	175
Acetic Acid	D	867	464
Acetic Anhydride	D	600	316
Acetone	D	869	465
Acetone Cyanohydrin	D	1270	688
Acetonitrile	D	975	524
Acetylene	A	581	305
Acrolein (Inhibited)	B (C)	455	285
Acrylic Acid	D	820	438
Acrylonitrile	D	898	481
Allyl Alcohol	C	713	378
Allyl Chloride	D	905	485
Alpha-Methyl Styrene	D	1066	574
Ammonia	D	928	498
n-Amyl Acetate	D	680	360
Aniline	D	1139	615
Benzene	D	928	498
Benzyl Chloride	D	1085	585
1.3-Butadiene	B (D)	788	420
Butane	D	550	288
1-Butanol	D	650	343
2-Butanol	D	761	405
n-Butyl Acetate	D	790	421
n-Butyl Acrylate (Inhibited)	D	559	293
Butylamine	D	594	312
Butylene	D	725	385
n-Butyraldehyde	C	425	218
n-Butyric Acid	D	830	443
Carbon Disulfide	*	194	90
Carbon Monoxide	C	1128	609
Chlorobenzene	D	1099	593
Cresol	D	1038–1110	559–599
Crotonaldehyde	C	450	232
Cumene	D	795	424
Cyclohexane	D	473	245
Cyclohexanol	D	572	300
Cyclohexanone	D	473	245
Cyclohexene	D	471	244
Cyclopropane	D	938	503
p-Cymene	D	817	436
n-Decanol	D	550	288
Decene	D	455	235
Di-Isobutyl Ketone	D	745	396
Di-Isobutylene	D	736	391
Di-N-Propylamine	C	570	299
Diacetone Alcohol	D	1118	603
o-Dichlorobenzene	D	1198	647
1.1-Dichloroethane	D	820	438
1.2-Dichloroethylene	D	860	460
Dicylopentadiene	C	937	503
Diethyl Benzene	D	743–842	395–450
Diethyl Ether	C	320	160
Diethylamine	C	594	312
Diethylene Glycol Monobutyl Ether	C	442	228
Diethylene Glycol Monomethyl Ether	C	465	241
n-n-Dimethyl Aniline	C	700	371
Dimethyl Formamide	D	833	455
Dimethyl Sulfate	D	370	188
Dimethylamine	C	752	400
1,4-Dioxane	C	356	180
Dipentene	D	458	237
Dodecene	D	491	255
Du-Isopropylamine	C	600	316
Epichlorohydrin	C	772	411
Ethane	D	882	472
Ethanol	D	685	363
Ethyl Acetate	D	800	427
Ethyl Acetate (Inhibited)	D	702	372
Ethyl Benzene	D	810	432
Ethyl Chloride	D	966	519
Ethyl Formate	D	851	455
2-Ethyl Hexanol	D	448	231
2-Ethyl Hexyl Acrylate	D	485	252
Ethyl Mercaptan	C	572	300
Ethylamine	D	725	385
Ethylene	C	842	450
Ethylene Chlorohydrin	D	797	425
Ethylene Dichloride	D	775	413
Ethylene Glycol Monobutyl Ether	C	460	238
Ethylene Glycol Monobutyl Ether Acetate	C	645	340
Ethylene Glycol Monoethyl Ether	C	455	235
Ethylene Glycol Monoethyl Ether Acetate	C	715	379
Ethylene Glycol Monomethyl Ether	D	545	285
Etheylene Oxide	B (C)	804	429
Ethylenediamine	D	725	385
Ethylenimine	C	608	320
2-Ethylehexaldehyde	C	375	191
Formaldehyde (Gas)	B	795	429
Formic Acid (90%)	D	813	434
Fuel Oils	D	410–765	210–407
Furfural	C	600	316
Furfuryl Alcohol	C	915	490
Gasoline	D	536–880	280–471
Heptane	D	399	204
Heptene	D	500	260
Hexane	D	437	225

** Carbon Disulfide has characteristics which require safeguards beyond those required for any of the above groups.*

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Overview

MATERIAL	GROUP	AUTOIGNITION TEMPERATURE	
		DEGREES F	DEGREES C
2-Hexanone	D	795	424
Hexenes	D	473	245
Hydrazine	C	74–518	23–270
Hydrogen	B	968	520
Hydrogen Cyanide	C	1000	538
Hydrogen Sulfide	C	500	260
Iso-Butyl Acetate	D	790	421
Iso-Octyl Aldehyde	C	387	197
Isoamyl Acetate	D	680	360
Isoamyl Alcohol	D	662	350
Isobutyl Acrylate	D	800	427
Isobutyraldehyde	C	385	196
Isophorone	D	860	460
Isoprene	D	428	220
Isopropyl Acetate	D	860	460
Isopropyl Ether	D	830	443
Isopropylamine	D	756	402
Kerosene	D	410	210
Liquified Petroleum Gas	D	761–842	405–450
Mesityl Oxide	D	652	344
Methane	D	999	537
Methanol	D	725	385
Methyl Acetate	D	850	454
Methyl Acrylate	D	875	468
Methyl Ether	C	662	350
Methyl Ethyl Ketone	D	759	404
Methyl Formal	C	460	238
Methyl Formate	D	840	449
Methyl Isobutyl Ketone	D	840	449
Methyl Isocyanate	D	994	534
Methyl Methacrylate	D	792	422
Methyl N-Amyl Ketone	D	740	393
2-Methyl-1-Propanol	D	780	416
2-Methyl-2-Propanol	D	892	478
Methylamine	D	806	430
Methylcyclohexane	D	482	250
Methylcyclohexanol	D	565	296
Monoethanolamine	D	770	410
Monoisopropanolamine	D	705	374
Monomethyl Aniline	C	900	482
Monomethyl Hydrazine	C	382	194
Morpholine	C	590	310
Naphtha (Coal Tar)	D	531	277
Naphtha (Petroleum)	D	550	288
Nitrobenzene	D	900	482
Nitroethane	C	778	414
Nitromethane	C	785	418
2-Nitropropane	C	802	428

MATERIAL	GROUP	AUTOIGNITION TEMPERATURE	
		DEGREES F	DEGREES C
1-Nitropropane	C	789	421
Nonane	D	401	205
Octane	D	403	206
Octene	D	446	230
Pentane	D	470	243
1-Pentanol	D	572	300
2-Pentanone	D	846	452
1-Pentene	D	527	275
Propane	D	842	450
2-Propanol	D	750	399
1-Propanol	D	775	413
Propionaldehyde	C	405	207
Proprionic Acid	D	870	466
Proprionic Anhydride	D	545	285
N-Propyl Acetate	D	842	450
N-Propyl Ether	C	419	215
Propyl Nitrate	B	347	175
Propylene	D	851	455
Propylene Dichloride	D	1035	537
Propylene Oxide	B (C)	840	449
Pyridine	D	900	482
Styrene	D	914	490
Tetrahydrofuran	C	610	321
Tetrahydronapthalene	D	725	385
Toluene	D	896	480
Turpentine	D	488	253
Unsymmetrical Dimethyl Hydrazine (Udmh)	C	480	249
Valeraldehyde	C	432	222
Vinyl Acetate	D	756	402
Vinyl Chloride	D	882	472
Vinyl Toluene	D	921	494
Vinylidene Chloride	D	1058	570
Xylenes	D	867–984	464–529

Overview

Hazlux® Applications

Hose Down

Vibration

High Ambient

Dust

Corrosion

Marine

Ice

Wind

From an offshore oil rig in the Atlantic Ocean to the factory floor, there's a Hazlux® lighting fixture to stand up to virtually every hazardous location.

Here are some of the places you'll find Hazlux® fixtures:

- Chemical manufacturing and processing plants
- Oil refineries
- Oil drilling rigs
- Offshore platforms
- Pipeline pumping stations
- Pulp and paper plants
- Aluminum and copper smelting
- Steel mills and foundries
- Mining operations
- Grain handling facilities
- Flour, sugar and starch processing
- Food processing plants
- Paint and rubber manufacturing facilities
- Marine and coastal facilities
- Shipyards and shipbuilding plants
- Power generation plants
- Waste treatment facilities
- Paint, chemical and plastic mixing/storage areas
- Bulk truck terminals
- Solvent/cleaning areas

Hazlux® lighting fixtures are built to withstand the harsh environmental conditions that exist in real settings.

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Technical Services
Tel: 888.862.3289

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Hazlux® Applications

Hose-Down and Wet Locations

- Certified for wet locations — NEMA 4X, IP66 (indoor and outdoor); UL1598A (marine) and CSA Listed
- Superior gasketing system — both tank and globe gasketing systems withstand hose-down pressures
- Uninterrupted globe thread — assures positive seal
- Baked-on, dry epoxy coating — not paint but 100% dry solids
- Globes, refractors and finish designed to withstand thermal shock during hose down

High-Ambient Temperature Areas

- All standard fixtures are tested and listed for at least 40° C ambient — even under heavy dust blanket and no air flow
- Exclusive heat sink design results in a cool operating fixture, extended ballast/lamp life and lower maintenance costs
- Unmatched selection of high-ambient, temperature rated fixtures — contact factory for fixtures certified for 55° C and 65° C applications
- Steam spray and thermal shock resistant

Corrosion and Abrasion

- Baked-on, dry epoxy coating — not paint but 100% dry solids
- Stainless steel external hardware
- Sand-blast resistant finish
- Superior silicone gasketing system on both tank and globe. Other gasketing systems available for special corrosive applications such as phosphates
- Aluminum components contain less than 0.4% copper — maximum corrosion resistance
- Special HazCote® corrosion fighter finish available for extremely corrosive areas; consult Thomas & Betts for details

Ice and Arctic Conditions

- Gasketing system and finish allow for expansion and contraction through wide temperature variations
- Metal halide ballasts start at -29° C; high-pressure sodium ballasts start as low as -51° C (consult Thomas & Betts for details)
- High-strength mechanical mountings withstand extra ice loading
- Tempered glassware available for extra thermal shock safety margin

Vibration, Seismic Shock and Vandalism

- Vibration tested by UL and CSA
- Vibration-resistant hardware throughout fixture
- Screw retainers on guard ensure retention even if screws are not completely tightened
- Vibration-resistant globe thread and sealing system
- Optional refractors, high-strength tempered glass and Tuff-Skin® globes for protection from vandalism

Dust Blanket

- Tested and listed by UL and CSA
- Thermal performance is at 40° C ambient; optional thermal performance to 55° C and 65° C ambient available (consult factory)
- Cone pendant mount available (45° sloped sides) for areas where dust or other residue buildup is a problem
- Exclusive heat sink design — results in a cool operating fixture, extended ballast/lamp life and lower maintenance costs

Marine-Duty Option

- UL1598A Marine listed
- This feature is supplied as standard on most Hazlux® 3 fixtures; consult Thomas & Betts for details
- Designed for abuse — hose down, arctic, hurricane, vibration and shock, high temperature, corrosion and other environmental conditions typical of adverse marine locations
- Exclusive combination of marine and hazardous location approvals on the same fixture line

Wind

- Wind-tunnel tested at McDonnell Douglas Corporation at air flow speeds in excess of 198 mph (320 km/h)
- Guard specially designed to secure reflector during high wind loading
- All fasteners are stainless steel
- High-strength mechanical mountings withstand strong wind loads

***Note**: Tuff-Skin is a registered trademark of Thomas Manufacturing Corp.*

Area Lighting — Hazlux® 3 Class I, Div 2

Designed, Tested and Certified for Use in Hazardous Locations and Adverse Environments

New Labor-Saving Features for Hazlux® 3 Fixtures

Induction Lighting

Long life for reduced maintenance

Hazlux® 3 induction lighting provides a 100,000+ hour lamp life, drastically reducing expensive maintenance costs of industrial lighting in hazardous locations. For complete details, see **pages I-25–I-26**.

HazVertor® Adapter Ring

Replace other brand fixtures without removing the top hat

The HazVertor® adapter ring gives you the freedom to replace Crouse-Hinds Champ® series lighting fixtures (VMV, DMV or LMV types) with Hazlux® 3 lighting fixtures without removing the Crouse-Hinds top hat from the conduit system, eliminating the need to replace conduit and wiring.

Save time and increase efficiency. The HazVertor® can be ordered as a separate item or as part of a Hazlux® 3 fixture assembly. Look for the HV1 mounting style options and switch to increased efficiency, wider suitability for hazardous locations, improved light distribution and improved T-numbers.

Hazlux® UNIPAK® Packaging

- UNIPAK® is the Hazlux customized packaging system that is designed to save money for all concerned
- UNIPAK® fixtures are normally assembled and can include globes, guards, reflectors, lamps, fuses and other options
- Outlet boxes are normally shipped separately; consult factory regarding outlet boxes to be assembled to UNIPAK® fixtures
- Assembled UNIPAK® fixtures are shipped in one carton with the fixture foam packed in place
- Refer to the “Catalog Numbering System” for each individual Hazlux® fixture series for ordering information

- UNIPAK® saves seven ways:
  - Fewer cartons to receive, count, move, open and dispose
  - Fewer storage problems
  - Reduces inventory expense
  - Eliminates lost or back-ordered parts
  - Eliminates mismatched fixtures or lamps
  - Significantly reduces labor costs
  - Reduces total installed cost per fixture

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Area Lighting — Hazlux® 3 Class I, Div 2

Fixtures for Class I, Division 2; Class II; Wet and Marine Locations

Applications

- Chemical Plants
- Oil Refineries
- Paint, Rubber Manufacturing
- Offshore Platforms
- Oil Drilling Rigs
- Oil, Gas Transmission
- Waste Treatment Facilities
- Airplane, Aerospace Facilities
- Electronics Manufacturing
- Pharmaceutical Plants
- Aircraft Manufacturing
- Vehicle Maintenance Facilities
- Grain Handling, Food Processing
- Coal Handling and Processing
- Flour, Sugar, Starch Processing
- Ammunition Manufacturing
- Coal, Gold and Copper Mining
- Pulp and Paper Manufacturing
- Copper, Aluminum Smelting
- Breweries, Malt Plants
- Shipyards, Shipbuilding Facilities
- Automobile Manufacturing
- Marine and Coastal Facilities
- Utility Power Plants
- Steel Mills, Foundries
- General Manufacturing Plants

Area Lighting — Hazlux® 3 Class I, Div 2

Fixtures for Class I, Division 2; Class II; Wet and Marine Locations

Features

- Modular fixture components enable hundreds of easy-to-assemble combinations
- Cast copper-free aluminum housings and mounting covers are lightweight and resist corrosion
- Electrostatically applied powder-coat finish for added corrosion resistance
- Thermal shock-resistant glass globes and refractors protect lamps in wet, marine and outdoor applications
- All glass globes and refractors are fully threaded and provide a dust-tight, watertight seal with silicone rubber gaskets
- Standard globe guards are made from rugged polycarbonate plastic or cast aluminum with keyhole slots for ease of installation and do not interfere with globe threads
- All exposed hardware is stainless steel for corrosion resistance and screws are slotted, hex-head style to further ease installation
- Comprehensive UL Listings for Class I, Division 2; Class I, Zone 2; and Class II
- Available for use with high-pressure sodium and metal halide lamps up to 400 watts
- Eight different mounting styles — rigid pendant, flexible pendant, cone pendant, ceiling, wall, 25° angle stanchion, straight stanchion and HazVertor® Adapter Ring
- Three ballast housing choices — standard tank, R-tank and large tank
- Heat sinks in ballast housings enable ballasts to operate cooler, provide longer life and improve temperature performance
- Bright white FRP (fiberglass-reinforced polyester) angle or dome reflectors resist corrosion while maximizing lighting effectiveness
- Many optical choices — standard globes, threaded refractor globes, 7¾" globes, 12" refractors, enclosed high-bay reflectors and more
- All mounting covers provided with dual-lead ground wire for connection to field and fixture grounds
- Optional HazCote® coating for extremely corrosive applications
- Optional stainless steel inserts for guard screws and ballast tank closure screw for enhanced corrosion resistance
- Optional Tuff-Skin® silicone coating on glass optics contains fragments if glass is broken (for food processing)
- Optional instant restrike starter for HPS lamps up to 150 watts restarts hot HPS lamp after momentary power failure

Materials and Finishes

- Ballast Housings — Copper-free aluminum, powder finish
- Mounting Covers — Copper-free aluminum, powder finish
- Guards — Polycarbonate, copper-free aluminum or steel
- Globes — Tempered glass or borosilicate glass
- Refractor Globes — Borosilicate glass
- Refractors (12") — Borosilicate glass
- Hardware — Stainless steel
- Reflectors — Fiberglass-reinforced polyester (standard dome, angle); anodized aluminum (deep dome, high bay enclosed)
- Gaskets — High-temperature silicone rubber

Certifications/Compliances

- UL® Listed (UL844) for:
  - Class I, Division 2, Groups A, B, C, D*
  - Class I, Zone 2, Groups IIA, IIB, IIC
  - Class II, Divisions 1 & 2, Groups E, F, G
  - Class III†
  - Wet locations
- UL® Listed (UL1598A) for:
  - Marine Locations
  - NEMA 4X, IP66
  - CSA Certified (Contact Hazlux)

* See **page I-3** for T-Code Rating.

† See **pages I-11–I-12** for ratings on specific wattages.

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Hazlux® 3 Certification Guide (40° C Ambient) Standard Ballast Housing, 5½" Thread

LAMP TYPE	WATTS	AMBIENT TEMP (DEG. C)	CLASS I, DIVISION 2 GROUPS A, B, C, D TEMPERATURE CODE		CLASS II DIVISION 1 & 2 GROUPS		UL 1598A MARINE	NEMA 4X*	SUPPLY WIRE TEMP. RATING (DEG. C)
			VGT/VGL22 5½" GLOBE, GUARD & REFLECTOR	VRF22C5 12" DIA. REFRACTOR	VGT/VGL22 5½" GLOBE, GUARD & REFLECTOR	VRF22C5 12" DIA. REFRACTOR			
High-Pressure Sodium	50	40	T3C	T4	EFG	EFG	Yes	Yes	90
	70	40	T3A	T3C	EFG	EFG	Yes	Yes	90
	100	40	T2C	T2D	EFG	EFG	Yes	Yes	90
	150	40	T2A	T2B	—	EFG	Yes	Yes	90
Metal Halide	70	40	T3C	T2C	EFG	EFG	Yes	Yes	90
	100	40	T3A	T2C	EFG	EFG	Yes	Yes	90
	175	40	T2A	T2C	—	EFG	Yes	Yes	90
	250	40	T2	T2	—	EFG	—	Yes	125

Notes: *1. Simultaneous presence applications: Some Hazlux® 3 fixtures are UL Listed for simultaneous presence of gas and dust. Contact Hazlux® for specific information.*

2. Tuff-Skin® Coated Optics: Many Hazlux® 3 fixtures are UL Listed with Tuff-Skin® (silicone) coating on glass optics. Contact Hazlux® for specific information.

3. For UL® and CSA Certification Information on other ambient temperatures and fixture configurations, consult the factory or refer to the Hazlux® Application Guide (Order Number: H7027).

Hazlux® 3 Certification Guide (40° C Ambient) R-Tank Ballast Housing, 7¾" Thread

LAMP TYPE	WATTS	AMBIENT TEMP (DEG. C)	CLASS I, DIVISION 2 GROUPS A, B, C, D TEMPERATURE CODE		CLASS II DIVISION 1 & 2 GROUPS		UL 1598A MARINE	NEMA 4X*	SUPPLY WIRE TEMP. RATING (DEG. C)
			VGT31S 7¾" GLOBE, GUARD & REFLECTOR	VGL31R5 7¾" DIA. REFRACTOR GLOBE	VGT31S 7¾" GLOBE, GUARD & REFLECTOR	VGL31R5 7¾" DIA. REFRACTOR GLOBE			
High-Pressure Sodium	50	40	T3C	T3C	EFG	EFG	Yes	Yes	90
	70	40	T3A	T3A	EFG	EFG	Yes	Yes	90
	100	40	T2D	T3	EFG	EFG	Yes	Yes	90
	150	40	T2B	T2B	EFG	EFG	Yes	Yes	90
Metal Halide	70	40	T3	T3	EFG	EFG	Yes	Yes	90
	100	40	T3	T3	EFG	EFG	Yes	Yes	90
	175	40	T2B	T2B	EFG	EFG	Yes	Yes	90
	250	25	T2	T2	EF	EFG	—	Yes	90

Notes: *1. Simultaneous presence applications: Many Hazlux® 3 fixtures are UL® Listed for simultaneous presence of gas and dust. Contact Hazlux® for specific information.*

2. Tuff-Skin® Coated Optics: Many Hazlux® 3 fixtures are UL® Listed with Tuff-Skin® (silicone) coating on glass optics. Contact Hazlux® for specific information.

3. For UL® and CSA Certification Information on other ambient temperatures and fixture configurations, consult the factory or refer to the Hazlux® Application Guide (Order Number: H7027).

** All Hazlux® fixture assemblies shown in this Buyers Guide as UL® Listed or CSA Certified for marine applications are suitable for hosedown when fixture is off and glass has been allowed to cool. Tempered glass globes and refractors have better thermal-resistance properties than non-tempered globes and refractors and should be considered whenever fixtures are subject to being splashed with significantly cooler liquids while illuminated (hot). Consult factory for more information.*

Hazlux® 3 Certification Guide (40° C Ambient) Large Ballast Housing, 7¾" Thread

LAMP TYPE	WATTS	AMBIENT TEMP (DEG. C)	CLASS I, DIVISION 2 GROUPS A, B, C, D TEMPERATURE CODE			CLASS II DIVISION 1 & 2 GROUPS			UL 1598A MARINE	NEMA 4X*	SUPPLY WIRE TEMP. RATING (DEG. C)
			VGT31 GLOBE WITH GUARD & REFLECTOR	VRF31C5 12" DIA. REFRACTOR	REFLECTOR WITH LENS	VGT31 GLOBE WITH GUARD & REFLECTOR	VRF31C5 12" DIA. REFRACTOR	REFLECTOR WITH LENS			
High-Pressure Sodium	200	40	T2	T2A	T2A	EF	EFG	EFG	Yes	Yes	90
	250	40	325° C	325° C	325° C	EF	EFG	EFG	Yes	Yes	90
	400	40	T2A	T2B	T2B	—	EFG	EF	—	Yes	110
Metal Halide	250	40	T2	T2A	T2A	—	EFG	EFG	—	Yes	90
	400	40	350° C	325° C	325° C	—	EFG	EF	—	Yes	110

Notes: *1. 400-Watt HPS T-numbers based on BT/E/ED 37 diffuse coated lamp. Contact Hazlux® for certification information when using other lamps.*

2. Simultaneous presence applications: Some Hazlux® 3 fixtures are UL® Listed for simultaneous presence of gas and dust. Contact Hazlux® for specific information.

3. Tuff-Skin® Coated Optics: Many Hazlux® 3 fixtures are UL® Listed with Tuff-Skin®(silicone) coating on glass optics. Contact Hazlux® for specific information.

4. For UL® and CSA Certification Information on other ambient temperatures and fixture configurations, consult the factory or refer to the Hazlux® Application Guide (Order Number: H7027).

Hazlite® M3 Certification Guide (40° C Ambient)

The data listed in the table below is for UL844/1598A listing at 40° C ambient.

FIXTURE TYPE	WATTS	SERIES	CLASS 1, DIVISION 2 GROUPS A, B, C, D TEMPERATURE CODE		CLASS II DIVISION 1 & 2 GROUPS		CLASS III DIVISION 1 & 2		NEMA 4X (SUITABLE FOR HOSEDOWN)*	MARINE LISTED (UL 1598A)*
			GLOBE & GUARD WITH OR WITHOUT REFLECTOR	8" REFRACTOR	GLOBE & GUARD WITH OR WITHOUT REFLECTOR	8" REFRACTOR	GLOBE & GUARD WITH OR WITHOUT REFLECTOR	8" REFRACTOR		
High-Pressure Sodium	35	DSM	T3A	T3A	EF&G	EF&G	Yes	Yes	Yes	Yes
	50	DSM	T3	T3	EF&G	EF&G	Yes	Yes	Yes	Yes
	70	DSM	T2B	T2B	EF&G	EF&G	Yes	Yes	Yes	Yes
	100	DSM	T2A	T2A	E&F	EF&G	—	Yes	Yes	Yes
	150	DSM	325° C	325° C	E&F	EF&G	—	Yes	Yes	—
Fluorescent	9	DFB	T3C	T3C	EF&G	EF&G	Yes	Yes	Yes	Yes
	13	DFB	T3C	T3C	EF&G	EF&G	Yes	Yes	Yes	Yes
	18	DFB	T3C	T3C	EF&G	EF&G	Yes	Yes	Yes	Yes
	26	DFB	T3	T3	EF&G	EF&G	Yes	Yes	Yes	Yes
Incandescent	60	DIM	T3	T3	E&F	EF&G	—	Yes	Yes	Yes
	100	DIM	T3	T3	E&F	EF&G	—	Yes	Yes	Yes
	150	DIM	T2B	T2B	—	EF&G	—	Yes	Yes	Yes

** All Hazlux® fixture assemblies shown in this Buyers Guide as UL® Listed or CSA Certified for marine applications are suitable for hosedown when fixture is off and glass has been allowed to cool. Tempered glass globes and refractors have better thermal-resistance properties than non-tempered globes and refractors and should be considered whenever fixtures are subject to being splashed with significantly cooler liquids while illuminated (hot). Consult factory for more information.*

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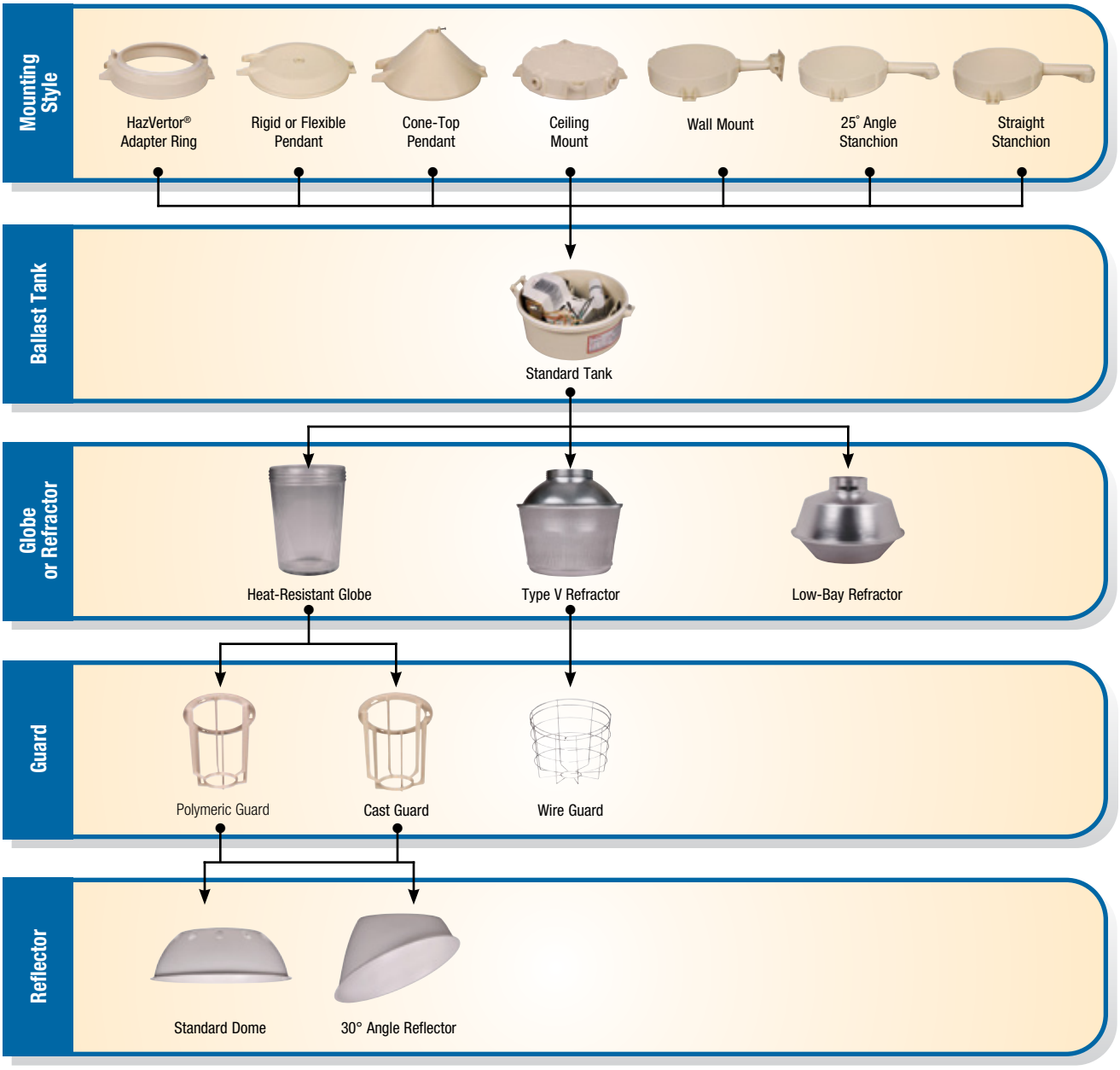
Hazlux® 3 Standard Housing Fixture Assembly Guide



Hazlux® 3 Standard Housing Fixture Catalog Numbering System

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III
- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

D	S	Ø	15	H	04	0	-	TGL	-	P2	E1	F
1	2	3	4	5	6	7		8		9	11	12

1 Fixture Series
- **D =** Hazlux® 3 Fixture

2 Lamp Type
- **S =** High-Pressure Sodium
- **H =** Metal Halide
- **C =** 150-Watt HPS 100V Only

3 Starter Circuit/Quartz Options
- **Ø =** Standard Fixture (Without Options)
- **P =** Pulse Start (MH Only)
- **Q =** Quartz Auxiliary Option (Not Hazardous Rated)
- **R =** Instant Restart
- **J =** Auto Shutoff Starter (HPS Only)
- **Y =** Auto Shutoff Starter with Quartz Restrike (HPS only, non-UL)

4 Lamp Wattage
- **05 =** 50 Watts
- **07 =** 70 Watts
- **10 =** 100 Watts
- **15 =** 150 Watts
- **17 =** 175 Watts
- **20 =** 200 Watts
- **25 =** 250 Watts

5 Ballast Circuit
- **H =** High Reactance
- **C =** Constant Wattage Autotransformer (CWA)
- **I =** CWI
- **P =** Reactor

(All ballasts high power factor)

6 Voltage/Frequency
- **03 =** 120/277V, 60 Hz
- **04 =** 120/208/240/277V, 60 Hz
- **09 =** 120/277/347V, 60 Hz (CSA)
- **12 =** 120V, 60 Hz
- **24 =** 240V, 60 Hz
- **27 =** 277V, 60 Hz
- **28 =** 208V, 60 Hz
- **34 =** 347V, 60 Hz
- **48 =** 480V, 60 Hz
- **225 =** 220V, 50 Hz
- **245 =** 240V, 50 Hz

7 Ballast Housing Style
- **Ø =** Standard Housing (150W HPS, 250W MH)
- **S =** Standard Housing with Stainless Steel Inserts

8 Optical Assembly Options
- **TG =** Thermal Shock-Resistant Globe
- **TGL =** Thermal Shock-Resistant Globe with Polymeric Guard
- **SG =** Tuff-Skin® Coated Globe
- **SGL =** Tuff-Skin® Coated Globe with Polymeric Guard
- **R5 =** 12-in. Glass Refractor, Type V
- **R5G =** 12-in. Glass Refractor, Type V with Wire Guard
- **TGC =** Thermal Shock-Resistant Globe with Cast Guard
- **SGC =** Tuff-Skin® Coated Globe with Cast Guard
- **CBDL =** Closed Bottom Refractor with Polycarbonate Lens (Non-UL)

9 Mounting Style
- **A2 =** ¾" Cone-Top Pendant
- **A3 =** 1" Cone-Top Pendant
- **B2 =** ¾" Wall Mount
- **B3 =** 1" Wall Mount
- **C2 =** ¾" Ceiling Mount
- **C3 =** 1" Ceiling Mount
- **F2 =** ¾" Flexible Pendant
- **F3 =** 1" Flexible Pendant
- **HV1 =** HazVertor® Ring — Class I, Div. 2, Zone 2
- **L4 =** 1¼" Straight Stanchion
- **L5 =** 1½" Straight Stanchion
- **P2 =** ¾" Rigid Pendant
- **P3 =** 1" Rigid Pendant
- **S4 =** 1¼" 25° Angle Stanchion
- **S5 =** 1½" 25° Angle Stanchion

10 Special Options
- **T =** HazCote® Custom Corrosion Coating (Consult Factory)
- **G =** Gray Color Option

11 UNIPAK® Options
- **E =** UNIPAK® with Clear Lamp
- **E1 =** UNIPAK®, Clear Lamp, Dome Reflector
- **E2 =** UNIPAK®, Clear Lamp, Angle Reflector
- **D =** UNIPAK® with Dual Arc Lamp
- **D1 =** UNIPAK®, Dual-Arc Lamp, Dome Reflector
- **D2 =** UNIPAK®, Dual-Arc Lamp, Angle Reflector
- **U =** UNIPAK®, No Lamp

12 Fusing Options
- **F =** Fuse Block(s) with Fuse(s)

13 CSA Certification
- **C =** CSA Nameplate

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Area Lighting — Hazlux® 3 Class I, Div 2

Mounting Options


Rigid Pendant


Wall Mount


Wall Mount for High Vibration Applications


Cone-Top Pendant


25° Angle Stanchion


Flexible Pendant


25° Angle Stanchion for High Vibration Applications


Ceiling Mount


Straight Stanchion


HazVertor® Adapter Ring


Straight Stanchion for High Vibration Applications

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE
VP2	Rigid Pendant	¾"
VP3		1"
VA2	Cone-Top Pendant	¾"
VA3		1"
VF2	Flexible Pendant	¾"
VF3		1"
VC2	Ceiling Mount	¾"
VC3		1"
VB2	Wall Mount	¾"
VB3		1"
VB2-VIB	Wall Mount for High Vibration Applications	¾"
VB3-VIB		1"
VS4	25° Angle Stanchion	1¼"
VS5		1½"
VS4-VIB	25° Angle Stanchion for High Vibration Applications	1¼"
VS5-VIB		1½"
VL4	Straight Stanchion	1¼"
VL5		1½"
VL4-VIB	Straight Stanchion for High Vibration Applications	1¼"
VL5-VIB		1½"
HV1	HazVertor Adapter Ring	N/A

Globes or Refractors


Heat-Resistant Globe


Type V Refractor


Low-Bay Refractor

CAT. NO.	DESCRIPTION
VGT22	5½"-dia. Heat-Resistant Globe (250W max.)
VGT22TS	5½"-dia. Heat-Resistant Globe (250W max.) Coated with Tuff-Skin®
VRF22C5	12"-dia. IES Type V Refractor, 5½" thread
VR22CBDL	Low-Bay Refractor with Plastic Lens (Non-UL)

Reflectors or Exit Sign


30° Angle Reflector

Three-Sided Exit Sign


Standard Dome

CAT. NO.	DESCRIPTION
VR22P	Standard Dome, Fiberglass-Reinforced Polyester
VRA22P	30° Angle Reflector, Fiberglass-Reinforced Polyester
VRE22	Three-Sided Exit Sign

Guards


Polymeric Guard


Cast Guard

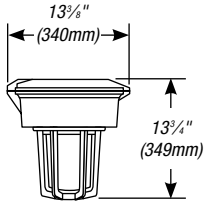

Wire Guard

CAT. NO.	DESCRIPTION
VGU22P	Polymeric Guard for VGT22 Series Globe
VGU22	Cast Guard for VGT22 Series Globe
VGR48	Steel Wire Guard for All VRF Series 12" Refractors

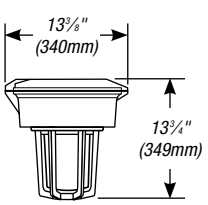
Tuff-Skin is a registered trademark of Thomas Manufacturing Corp.

Area Lighting — Hazlux® 3 Class I, Div 2

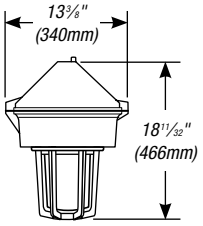
Dimensions — Standard Ballast Housing with Globe and Guard



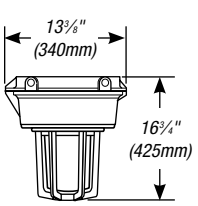
Rigid Pendant



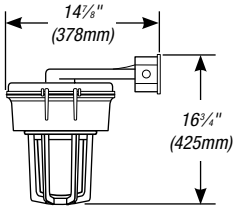
Flexible Pendant



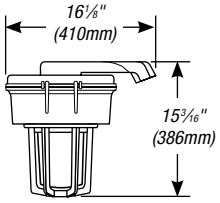
Cone-Top Pendant



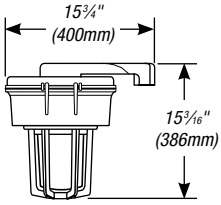
Ceiling Mount



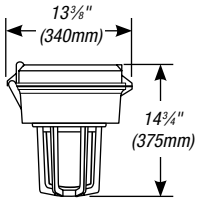
Wall Mount



25° Angle Stanchion Mount

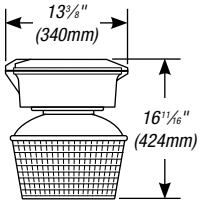


Straight Stanchion

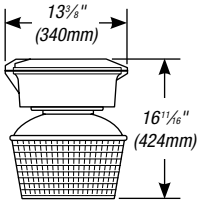


HazVertor® Ring

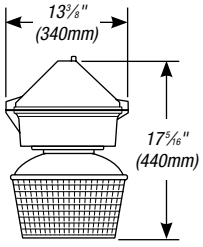
Dimensions — Standard Ballast Housing with 12" Refractor and Guard



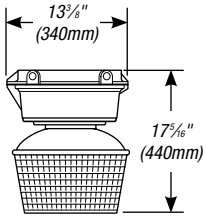
Rigid Pendant



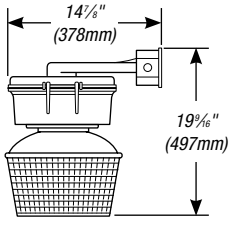
Flexible Pendant



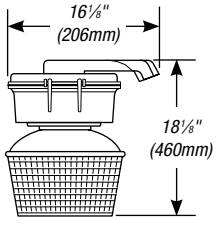
Cone-Top Pendant



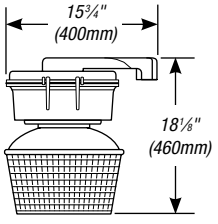
Ceiling Mount



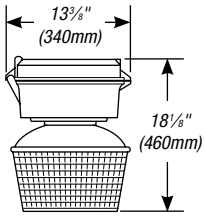
Wall Mount



25° Angle Stanchion Mount



Straight Stanchion



HazVertor® Ring

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III

- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

Thomas&Betts

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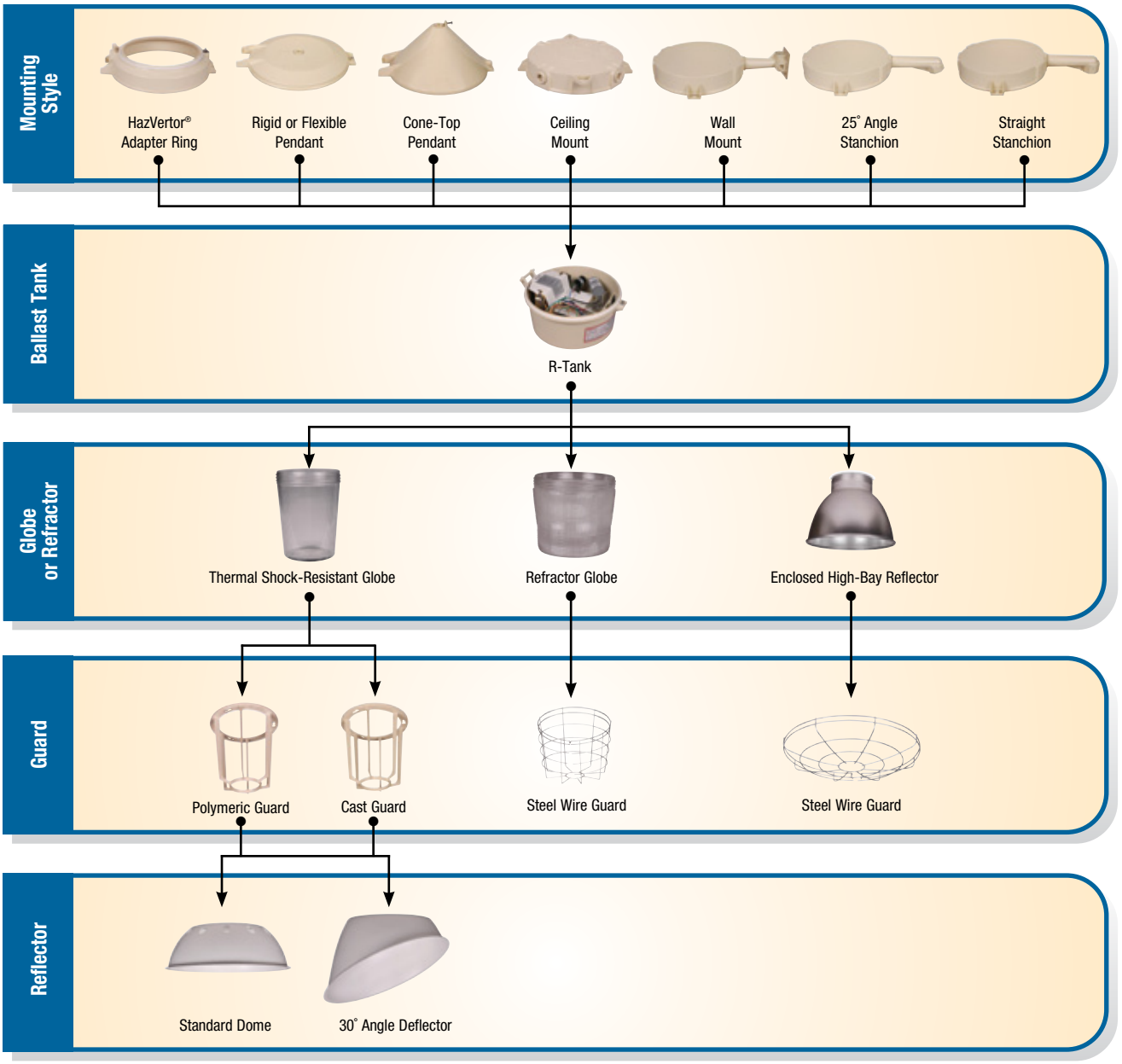
800.816.7809
Fax: 901.252.1354

Technical Services
Tel: 888.862.3289

www.tnb.com

Hazlux® 3 Refractor Globe Housing Fixture Assembly Guide



Area Lighting — Hazlux 3® Class I, Div 2

Hazlux® 3 Refractor Globe Housing Fixture Catalog Numbering System

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III

- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

D	S	Ø	15	H	04	R	-	TGP	-	P2	E1	F
1	2	3	4	5	6	7		8		9	11	12

1 Fixture Series
- **D =** Hazlux® 3 Fixture

2 Lamp Type
- **S =** High-Pressure Sodium
- **H =** Metal Halide
- **C =** 150-Watt HPS 100V Only

3 Starter Circuit/Quartz Options
- **Ø =** Standard Fixture (Without Options)
- **P =** Pulse Start (MH Only)
- **Q =** Quartz Auxiliary Option (Not Hazardous Rated)
- **R =** Instant Restart
- **J =** Auto Shutoff Starter (HPS Only)
- **Y =** Auto Shutoff Starter with Quartz Restrike (HPS only, non-UL)

4 Lamp Wattage
- **05 =** 50 Watts
- **07 =** 70 Watts
- **10 =** 100 Watts
- **15 =** 150 Watts
- **17 =** 175 Watts
- **25 =** 250 Watts

5 Ballast Circuit
- **H =** High Reactance
- **C =** Constant Wattage Autotransformer (CWA)
- **I =** CWI
- **P =** Reactor (All ballasts high power factor)

6 Voltage/Frequency
- **03 =** 120/277V, 60 Hz
- **04 =** 120/208/240/277V, 60 Hz
- **09 =** 120/277/347V, 60 Hz (CSA)
- **12 =** 120V, 60 Hz
- **24 =** 240V, 60 Hz
- **27 =** 277V, 60 Hz
- **28 =** 208V, 60 Hz
- **34 =** 347V, 60 Hz
- **48 =** 480V, 60 Hz
- **225 =** 220V, 50 Hz
- **245 =** 240V, 50 Hz

7 Ballast Housing Style
- **R =** Refractor Globe Housing
- **I =** Refractor Globe Housing with Stainless Steel Inserts

8 Optical Assembly Options
- **R1 =** 7¾" Refractor Globe, Type I
- **R3 =** 7¾" Refractor Globe, Type III
- **R5 =** 7¾" Refractor Globe, Type V
- **R1P =** R1 with Polymeric Guard
- **R3P =** R3 with Polymeric Guard
- **R5P =** R5 with Polymeric Guard
- **R1G =** R1 with Cast Guard
- **R3G =** R3 with Cast Guard
- **R5G =** R5 with Cast Guard
- **TG =** 7¾" Thermal Shock-Resistant CBDL Globe
- **TGP =** TG with Polymeric Guard
- **TGC =** TG with Cast Guard
- **RCB =** Enclosed High-Bay Reflector
- **RCG =** RCB with Steel Wire Guard

9 Mounting Style
- **A2 =** ¾" Cone-Top Pendant
- **A3 =** 1" Cone-Top Pendant
- **B2 =** ¾" Wall Mount
- **B3 =** 1" Wall Mount
- **C2 =** ¾" Ceiling Mount
- **C3 =** 1" Ceiling Mount
- **F2 =** ¾" Flexible Pendant
- **F3 =** 1" Flexible Pendant
- **L4 =** 1¼" Straight Stanchion
- **L5 =** 1½" Straight Stanchion
- **P2 =** ¾" Rigid Pendant
- **P3 =** 1" Rigid Pendant
- **S4 =** 1¼" 25° Angle Stanchion
- **S5 =** 1½" 25° Angle Stanchion
- **HV1 =** HazVertor® Ring — Class I, Div. 2, Zone 2

10 Special Options
- **T =** HazCote® Custom Corrosion Coating (Consult Factory)
- **G =** Gray Color Option

11 UNIPAK® Options
- **E =** UNIPAK® with Clear Lamp
- **E1 =** UNIPAK®, Clear Lamp, Dome Reflector
- **E2 =** UNIPAK®, Clear Lamp, Angle Reflector
- **D =** UNIPAK® with Dual Arc Lamp
- **D1 =** UNIPAK®, Dual-Arc Lamp, Dome Reflector
- **D2 =** UNIPAK®, Dual-Arc Lamp, Angle Reflector
- **U =** UNIPAK®, No Lamp

12 Fusing Options
- **F =** Fuse Block(s) with Fuse(s)

13 CSA Certification
- **C =** CSA Nameplate

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Area Lighting — Hazlux® 3 Class I, Div 2

Mounting Options


Rigid Pendant


Wall Mount


Wall Mount for High Vibration Applications


Cone-Top Pendant


25° Angle Stanchion


Flexible Pendant


25° Angle Stanchion for High Vibration Applications


Ceiling Mount


Straight Stanchion


HazVertor® Adapter Ring


Straight Stanchion for High Vibration Applications

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE
VP2	Rigid Pendant	¾"
VP3		1"
VA2	Cone-Top Pendant	¾"
VA3		1"
VF2	Flexible Pendant	¾"
VF3		1"
VC2	Ceiling Mount	¾"
VC3		1"
VB2	Wall Mount	¾"
VB3		1"
VB2-VIB	Wall Mount for High	¾"
VB3-VIB	Vibration Applications	1"
VS4	25° Angle Stanchion	1¼"
VS5		1½"
VS4-VIB	25° Angle Stanchion for High	1¼"
VS5-VIB	Vibration Applications	1½"
VL4	Straight Stanchion	1¼"
VL5		1½"
VL4-VIB	Straight Stanchion for High	1¼"
VL5-VIB	Vibration Applications	1½"
HV1	HazVertor® Adapter Ring	N/A

Globes or Refractors


Heat-Resistant Globe


Type I, III or V Refractor Globe


Type V Refractor

CAT. NO.	DESCRIPTION
VGT31S	7¾" dia. Heat-Resistant Globe (250W max.)
VGT31STS	7¾" dia. Heat-Resistant Globe (250W max.) coated with Tuff-Skin®
VGL31R1	7¾" dia. IES Type I Refractor Globe (250W max.)
VGL31R3	7¾" dia. IES Type III Refractor Globe (250W max.)
VGL31R5	7¾" dia. IES Type V Refractor Globe (250W max.)
VRF31C5	12" dia. IES Type V Refractor, 7¾" thread

Reflectors


Standard Dome


Deep Dome


Enclosed High-Bay Reflector


30° Angle Reflector

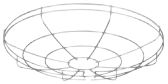
CAT. NO.	DESCRIPTION
VR31P	Standard Dome, Fiberglass-Reinforced Polyester
VRD31	Deep Dome, Anodized Aluminum
VR31CB	Enclosed High-Bay, Anodized Aluminum with Lens
VRA31P	30° Angle Reflector, Fiberglass-Reinforced Polyester

Guards


Polymeric Guard


Cast Guard


VGR48 Wire Guard

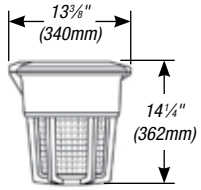

VGR64 Wire Guard

CAT. NO.	DESCRIPTION
VGU31RP	Polymeric Guard for VGT31S Globe and VGL31R Series Refractor Globes
VGU31R	Cast Aluminum Guard for VGT31S Globe and VGL31R Series Refractor Globes
VGR48	Steel Wire Guard for All VRF Series 12" Refractors
VGR64	Steel Wire Guard for VR31CB Enclosed High Bay Reflector

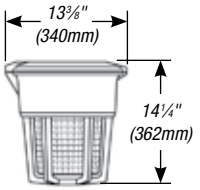
Tuff-Skin is a registered trademark of Thomas Manufacturing Corp.

Area Lighting — Hazlux® 3 Class I, Div 2

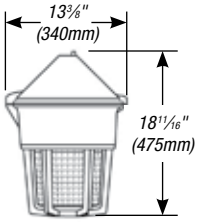
Dimensions — R-Tank Housing with 7¾" Refractor and Guard



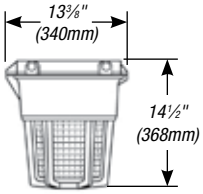
Rigid Pendant



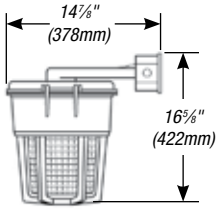
Flexible Pendant



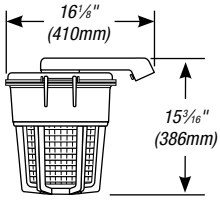
Cone-Top Pendant



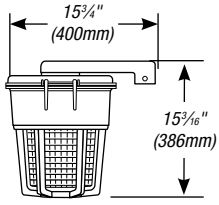
Ceiling Mount



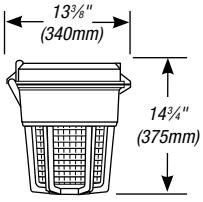
Wall Mount



25° Stanchion Mount

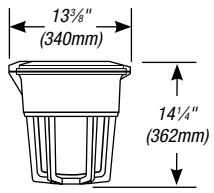


Straight Stanchion

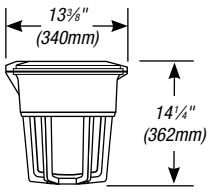


HazVertor® Ring

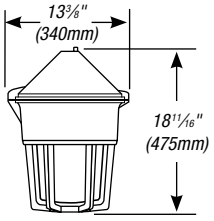
Dimensions — R-Tank Housing with 7¾" Globe and Guard



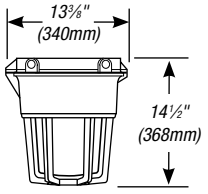
Rigid Pendant



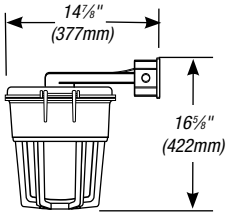
Flexible Pendant



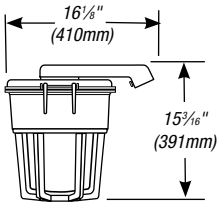
Cone-Top Pendant



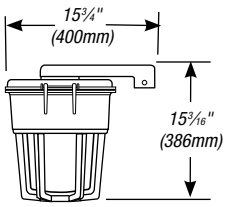
Ceiling Mount



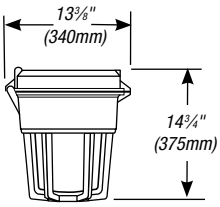
Wall Mount



25° Stanchion Mount



Straight Stanchion



HazVertor® Ring

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III
- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

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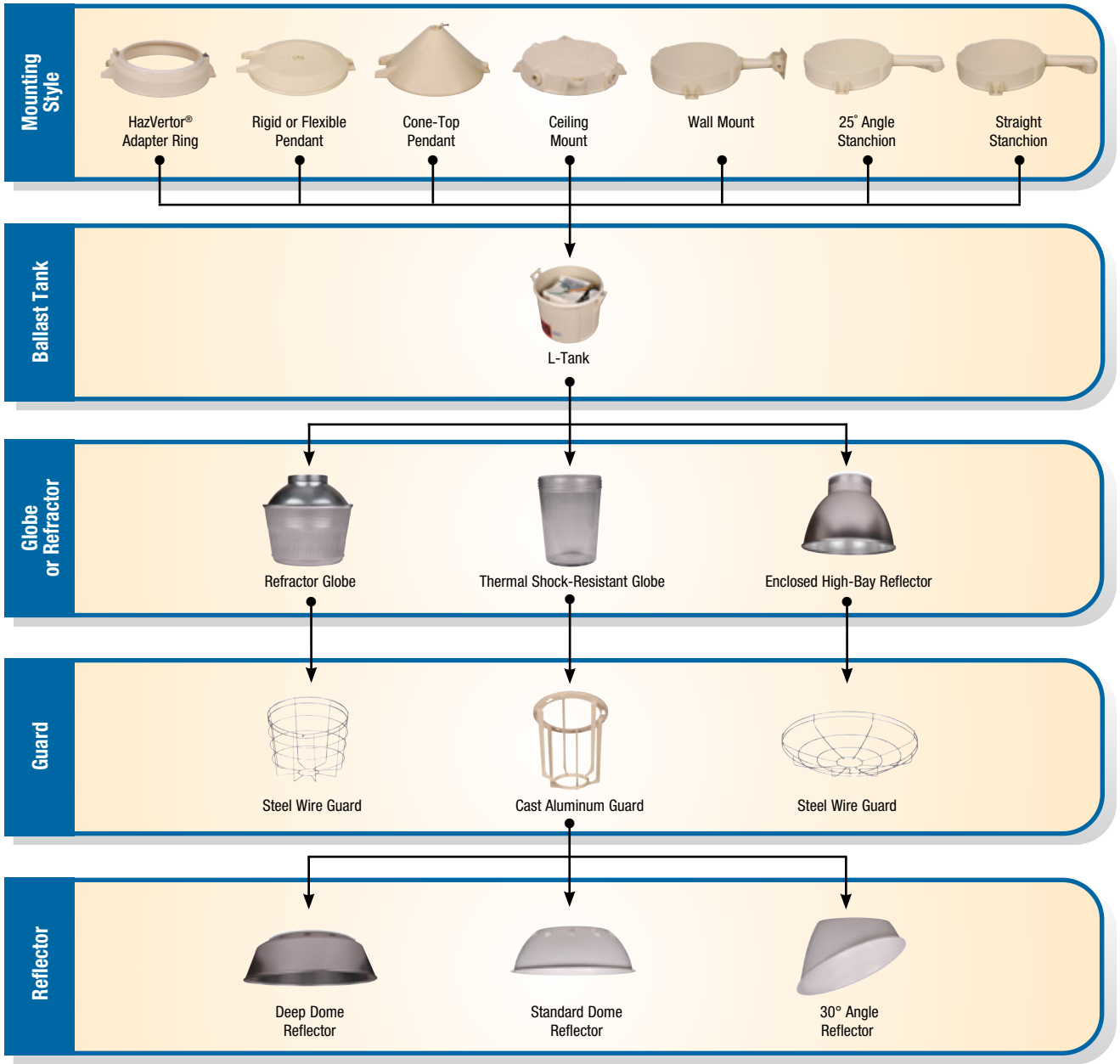
Hazlux® 3 Large Housing Fixture Assembly Guide



Hazlux® 3 Large Housing Fixture Catalog Numbering System

D	S	Ø	25	H	04	L	-	TGC	-	P2	E1	F
1	2	3	4	5	6	7		8		9	11	12

1 Fixture Series
- **D =** Hazlux® 3 Fixture

2 Lamp Type
- **S =** High-Pressure Sodium
- **H =** Metal Halide

3 Starter Circuit/Quartz Options
- **Ø =** Standard Fixture (Without Options)
- **P =** Pulse Start (MH Only)
- **Q =** Quartz Auxiliary Option (Not Hazardous Rated)
- **J =** Auto Shutoff Starter (HPS Only)
- **Y =** Auto Shutoff Starter with Quartz Restrike (HPS only, non-UL)

4 Lamp Wattage
- **20 =** 200 Watts
- **25 =** 250 Watts (HPS only)
- **32 =** 320 Watts (Metal Halide only)
- **35 =** 350 Watts (Metal Halide only)
- **40 =** 400 Watts

5 Ballast Circuit
- **H =** High Reactance
- **C =** Constant Wattage Autotransformer
- **I =** CWI
- **P =** Reactor (All ballast high power factor)

6 Voltage/Frequency
- **03 =** 120/277V, 60 Hz
- **04 =** 120/208/240/277V, 60 Hz
- **09 =** 120/277/347V, 60 Hz (CSA)
- **12 =** 120V, 60 Hz
- **27 =** 277V, 60 Hz
- **28 =** 208V, 60 Hz
- **34 =** 347V, 60 Hz
- **48 =** 480V, 60 Hz
- **225 =** 220V, 50 Hz
- **245 =** 240V, 50 Hz

7 Ballast Housing Style
- **L =** Large Housing
- **M =** Large Housing with Stainless Steel Inserts

8 Optics and Guards
- **R5 =** 7¾" Refractor Globe, Type V
- **R5G =** R5 with Steel Wire Guard

Tuff-Skin® is a trademark of Thomas Manufacturing Corp.

8 Optics and Guards *(continued)*
- **RCB =** Enclosed High-Bay Reflector
- **RCG =** RCB with Steel Wire Guard
- **TG =** 7¾" Thermal Shock-Resistant CBDL Globe
- **TGC =** TG with Cast Aluminum Guard
- **SG =** Tuff-Skin® Coated Globe
- **SGC =** SG with Cast Aluminum Guard

9 Mounting Style
- **A2 =** ¾" Cone-Top Pendant
- **A3 =** 1" Cone-Top Pendant
- **B2 =** ¾" Wall Mount
- **B3 =** 1" Wall Mount
- **C2 =** ¾" Ceiling Mount
- **C3 =** 1" Ceiling Mount
- **F2 =** ¾" Flexible Pendant
- **F3 =** 1" Flexible Pendant
- **L4 =** 1¼" Straight Stanchion
- **L5 =** 1½" Straight Stanchion
- **P2 =** ¾" Rigid Pendant
- **P3 =** 1" Rigid Pendant
- **S4 =** 1¼" 25° Angle Stanchion
- **S5 =** 1½" 25° Angle Stanchion
- **HV1 =** HazVertor® Ring — Class I, Div. 2, Zone 2

10 Special Options
- **T =** HazCote® Custom Corrosion Coating (Consult Factory)
- **G =** Gray Color Option

11 UNIPAK® Options
- **E =** UNIPAK® with Clear Lamp
- **E1 =** UNIPAK®, Clear Lamp, Dome Reflector
- **E2 =** UNIPAK®, Clear Lamp, Angle Reflector
- **D =** UNIPAK® with Dual Arc Lamp
- **D1 =** UNIPAK®, Dual-Arc Lamp, Dome Reflector
- **D2 =** UNIPAK®, Dual-Arc Lamp, Angle Reflector
- **U =** UNIPAK®, No Lamp

12 Fusing Options
- **F =** Fuse Blocks with Fuses

13 CSA Certification
- **C =** CSA Nameplate

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III
- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

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Technical Services
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Area Lighting — Hazlux® 3 Class I, Div 2

Mounting Options


Rigid Pendant


Wall Mount


Wall Mount for High Vibration Applications


Cone-Top Pendant


25° Angle Stanchion


Flexible Pendant


25° Angle Stanchion for High Vibration Applications


Ceiling Mount


Straight Stanchion


HazVertor® Adapter Ring


Straight Stanchion for High Vibration Applications

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE
VP2	Rigid Pendant	¾"
VP3		1"
VA2	Cone-Top Pendant	¾"
VA3		1"
VF2	Flexible Pendant	¾"
VF3		1"
VC2	Ceiling Mount	¾"
VC3		1"
VB2	Wall Mount	¾"
VB3		1"
VB2-VIB	Wall Mount for High	¾"
VB3-VIB	Vibration Applications	1"
VS4	25° Angle Stanchion	1¼"
VS5		1½"
VS4-VIB	25° Angle Stanchion for High	1¼"
VS5-VIB	Vibration Applications	1½"
VL4	Straight Stanchion	1¼"
VL5		1½"
VL4-VIB	Straight Stanchion for High	1¼"
VL5-VIB	Vibration Applications	1½"
HV1	HazVertor® Adapter Ring	N/A

Globes or Refractors


Heat-Resistant Globe


Type V Refractor

CAT. NO.	DESCRIPTION
VGT31	7¾" dia. Heat-Resistant Globe (400W max.)
VGT31TS	7¾" dia. Heat-Resistant Globe (400W max.) coated with Tuff-Skin®
VRF31C5	12" dia. IES Type V Refractor, 7¾" Thread

Reflectors


Standard Dome


Deep Dome


Enclosed High-Bay Reflector

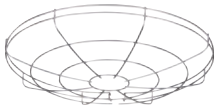

30° Angle Reflector

CAT. NO.	DESCRIPTION
VR31P	Standard Dome, Fiberglass-Reinforced Polyester
VRD31	Deep Dome, Anodized Aluminum
VR31CB	Enclosed High-Bay, Anodized Aluminum with Lens
VRA31P	30° Angle Reflector, Fiberglass-Reinforced Polyester

Guards


Cast Guard

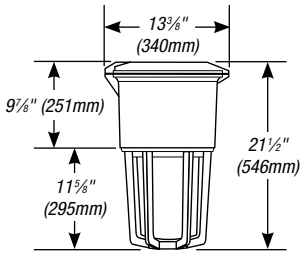

Wire Guard


Wire Guard for High-Bay Reflector

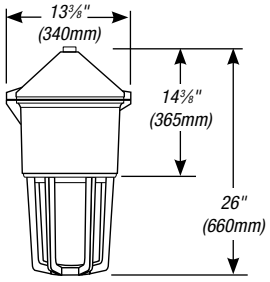
CAT. NO.	DESCRIPTION
VGU31	Cast Aluminum Guard for VGT31 Globe
VGR48	Steel Wire Guard for All VRF Series 12" Refractors
VGR64	Steel Wire Guard for VR31CB Enclosed High Bay Reflector

Area Lighting — Hazlux® 3 Class I, Div 2

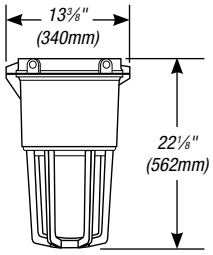
Dimensions — Large Ballast Housing with Globe and Guard



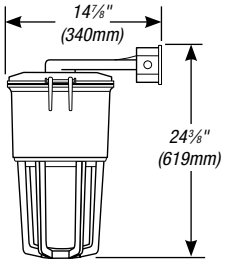
Rigid Pendant



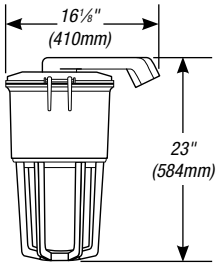
Cone-Top Pendant



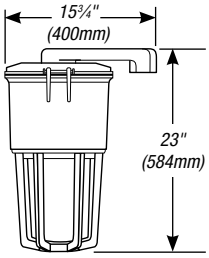
Ceiling Mount



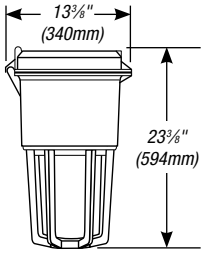
Wall Mount



25° Angle Stanchion Mount

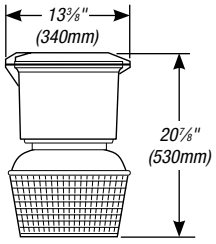


Straight Stanchion

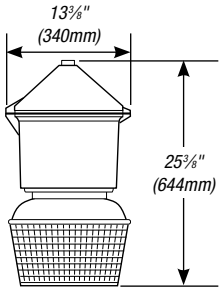


HazVertor® Ring

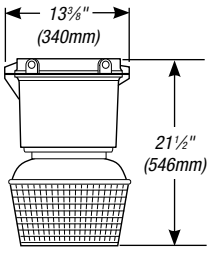
Dimensions — Large Ballast Housing with 12" Refractor and Guard



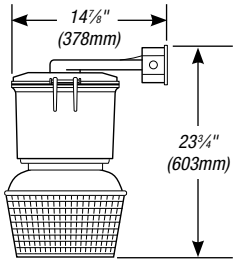
Flexible Pendant



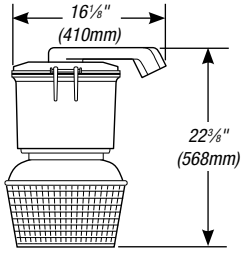
Cone-Top Pendant



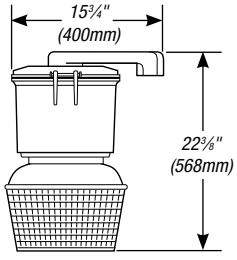
Ceiling Mount



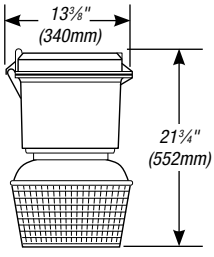
Wall Mount



25° Angle Stanchion Mount



Straight Stanchion



HazVertor® Ring

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III

- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

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Area Lighting — Hazlux® 3 Class I, Div 2

Now You Can Use the Longest-Life Lamp Available on the Market.

In the typical process industry plant, reliable lighting is often required in hazardous, hard-to-reach places. Lamp replacement not only places employees at risk, but often requires the rental of expensive equipment such as scissors lifts.

With the introduction of Hazlux Induction Lighting Fixtures for hazardous areas (Class 1, Div. 2 Groups A, B, C, D) and non-hazardous areas, you can benefit from the longest lamp life available on the market. Hazlux® 3 HID lights are equipped with Philips® QL Induction lamps for the longest lamp life ever.

Features include:

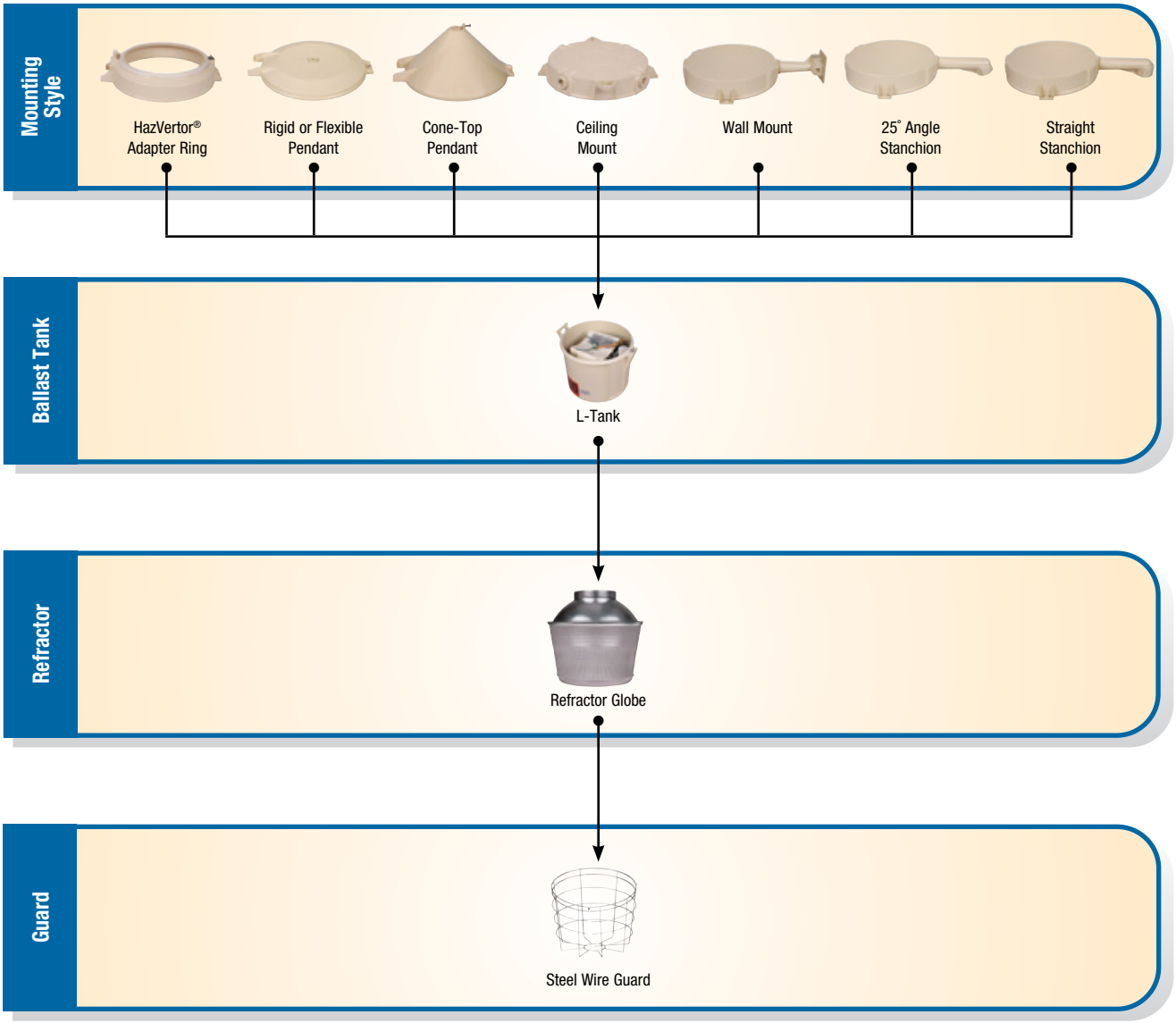
- 100,000+ hour lamp life
- Reduced maintenance/re-lamp operations
- Instant On/Instant Restrike
- Automatic switch-off in case of failure
- Warm white light
- Exceptional energy efficiency
- -40° C to 40° C ambient operating range
- Retrofits into existing Hazlux® 3 applications
- Acceptable for use with infrared remote control equipment operating at 36 kHz
- RFI-approved for environments up to 1,000 MHz (FCC part 18 reference luminaire)

Hazlux® Induction Lighting reduces the cost of expensive maintenance of industrial lighting in hazardous locations.

Here's how you save maintenance costs with Hazlux® Induction Lighting:

- Eliminates the need for expensive HID options such as Quartz Auxiliary Lamps or Instant Restrike
- Reduces risks to installers performing maintenance in hard-to-reach places
- Increases efficiency by decreasing machine shutdown time
- Reduces number of times necessary to de-energize entire circuit of lights for maintenance in hazardous locations
- Lowers cost of expensive rental of scissor lifts or bucket trucks

Hazlux® 3 Induction Lighting Fixture Assembly Guide



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Hazlux® 3 Induction Lighting Fixtures Catalog Numbering System

D	I	0	16	E	12	L	-	R5G	-	P2	T	E
1	2	3	4	5	6	7		8		9	11	12

1 Hazlux 3 HID Fixture
- **D =** Class I, Div. 2, Groups A, B, C and D
- **D =** Class I, Zone 2, Groups IIA, IIB, IIC
- **D =** Class II, Div. 1 & 2, Groups E, F and G
- **D =** Class III
  UL 595 Marine Locations,
  Wet Locations, NEMA 4X

2 Lamp Type
- **I =** Induction Lighting

3 Starter Circuit/Quartz Options
- **0 =** Standard Fixture

4 Lamp Wattage
- **16 =** 165 Watt Induction System

5 Ballast Circuit
- **E =** Electronic Ballast (Induction Fixture)

6 Voltage
- **12 =** 120V, 60 Hz
- **06 =** 208/240/277V 50 or 60 Hz
- **34 =** 347V 60 Hz (CSA)

7 Tank
- **L =** Large Tank
- **M =** Large Tank with Stainless Steel Inserts

8 Refractor
- **R5G =** Type V Refractor with Wire Guard
- **R5 =** Type V Refractor

9 Mounting Style
- **A2 =** ¾" Cone-Top Pendant
- **A3 =** 1" Cone-Top Pendant Mount
- **B2 =** ¾" Wall Mount
- **B3 =** 1" Wall Mount
- **C2 =** ¾" Ceiling Mount
- **C3 =** 1" Ceiling Mount
- **F2 =** ¾" Flexible Pendant
- **F3 =** 1" Flexible Pendant
- **HV1 =** HazVertor® Ring — Class I, Division 2
- **HV2 =** HazVertor® Ring — Class II, Division 1
- **L4 =** 1¼" Straight Stanchion
- **L5 =** 1½" Straight Stanchion
- **P2 =** ¾" Rigid Pendant
- **P3 =** 1" Rigid Pendant
- **S4 =** 1¼" 25° Angle Stanchion
- **S5 =** 1½" 25° Angle Stanchion

10 Coating
- **T =** HazCote® Custom Corrosion Coating
- **G =** Gray Color Option

11 UNIPAK® Options
- **E =** UNIPAK® with Induction Lamp

12 Fusing Options
- **F =** Fuse Block(s) with Fuse(s)

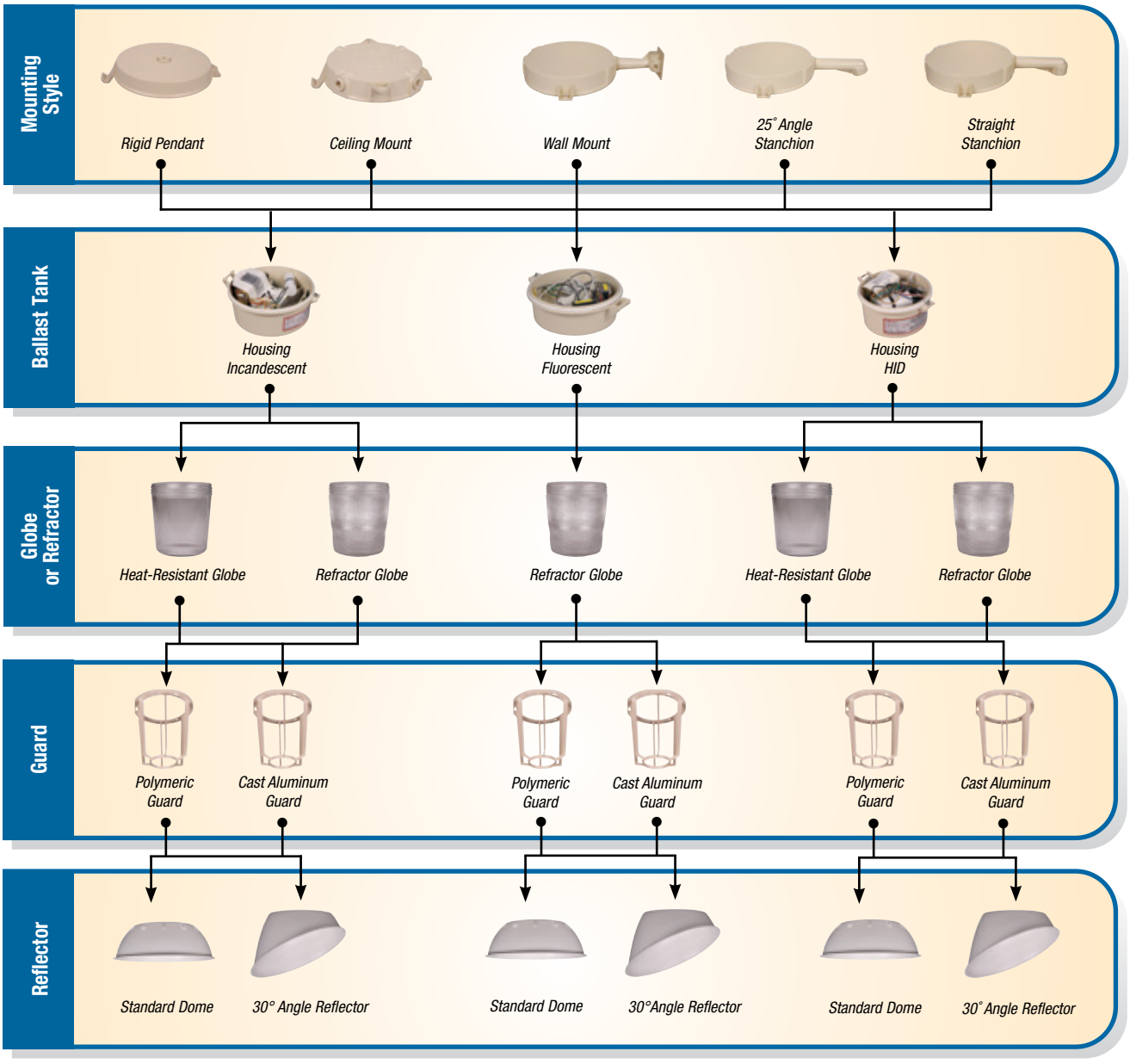
13 CSA Certification
- **C =** CSA Nameplate

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III
- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify clasification.

Area Lighting — Hazlite® M3 Class I, Div 2

Hazlite® M3 Fixture Assembly Guide



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Hazlite® M3 Fixtures Catalog Numbering System

HID

D	S	M	07	P	12	-	R5P	-	C2	-	E
1	2	3	4	5	6		7		8		10

Incandescent Only

D	I	M	10	0	12	-	TGL	-	C2	-	C
1	2	3	4	5	6		7		8		10

Fluorescent Only

D	F	B	18	0	12	-	TGL	-	C2	-	D
1	2	3	4	5	6		7		8		10

1 Fixture Series
- **D =** Hazlite® M3 Fixture

2 Lamp Type
- **S =** High-Pressure Sodium
- **H =** Metal Halide
- **F =** Fluorescent
- **I =** Incandescent

3 Lampholder
- **M =** Medium-Base Lampholder
- **B =** Bi-Pin Type (Fluorescent)

4 Lamp Wattage
- **09 =** 9 Watts
- **13 =** 13 Watts
- **18 =** 18 Watts
- **26 =** 26 Watts
- **03 =** 35 Watts
- **05 =** 50 Watts
- **07 =** 70 Watts
- **75 =** 75 Watts
- **10 =** 100 Watts
- **15 =** 150 Watts (HPS Only)

5 Ballast Circuit
- **C =** Constant Wattage Autotransformer (CWA)
- **P =** Reactor Type
- **0 =** Incandescent and Fluorescent Lamp — No Ballast Circuit

6 Voltage
- **12 =** 120 Volt

7 Optical Assembly Options
- **TG =** Tempered Globe Only
- **TGL =** Tempered Globe and Polymeric Guard
- **TGC =** Tempered Globe and Cast Guard
- **R1 =** Type I (Long and Narrow) Glass Refractor
- **R3 =** Type III (Asymmetric) Glass Refractor
- **R5 =** Type V (Symmetric) Glass Refractor
- **R1P =** R1 with Polymeric Guard
- **R3P =** R3 with Polymeric Guard

7 Optical Assembly Options *(continued)*
- **R5P =** R5 with Polymeric Guard
- **R1C =** R1 with Cast Guard
- **R3C =** R3 with Cast Guard
- **R5C =** R5 with Cast Guard
- **R5A =** 8" Glass Refractor (Type V)

8 Mounting Style
- **P2 =** ¾" Rigid Pendant
- **P3 =** 1" Rigid Pendant
- **B2 =** ¾" Wall Mount
- **B3 =** 1" Wall Mount
- **C2 =** ¾" Ceiling Mount
- **C3 =** 1" Ceiling Mount
- **L4 =** 1¼" Straight Stanchion
- **L5 =** 1½" Straight Stanchion
- **S4 =** 1¼" 25° Angle Stanchion
- **S5 =** 1½" 25° Angle Stanchion

9 Special Options
- **T =** HazCote® Custom Corrosion Coating on All Aluminum Parts (Consult Factory)
- **G =** Gray Color Option

10 UNIPAK® Options
- **D =** UNIPAK® with Diffused Coated Lamp
- **E =** UNIPAK® with Clear Lamp

11 CSA Certification
- **C =** CSA Nameplate

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III
- UL® Listed (UL1598A) for Marine Locations
- UL844
- NERA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

For photometric information, visit www.tnb.com

Area Lighting — Hazlite® M3 Class I, Div 2

Mounting Options

Rigid Pendant

Ceiling Mount

Wall Mount

Straight Stanchion

25° Angle Stanchion

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE
VMP2	Rigid Pendant	¾"
VMP3		1"
VMC2	Celing Mount	¾"
VMC3		1"
VMB2	Wall Mount	¾"
VMB3		1"
VMS4	25° Angle Stanchion	1¼"
VMS5		1½"
VML4	Straight Stanchion	1¼"
VML5		1½"

Globes or Refractors

IES Type V Refractor Globe

Heat-Resistant Prismatic Glass Globe

Low-Bay Refractor

CAT. NO.	DESCRIPTION
VGT15	Heat-Resistant Prismatic Glass Globe
VGL15P	Polycarbonate Plastic Globe
VGL15R1	IES Type I Refractor Globe
VGL15R3	IES Type III Refractor Globe
VGL15R5	IES Type V Refractor Globe
VRF22C5A	8" IES Type V Refractor Globe
VR22CBDL	Low-Bay Refractor with Plastic Lens

Reflectors or Exit Sign

Standard Dome

30° Angle Reflector

Three-Sided Exit Sign

CAT. NO.	DESCRIPTION
VR15P	Standard Dome, Fiberglass-Reinforced Polyester
VRA15P	30° Angle Reflector, Fiberglass-Reinforced Polyester
VRE22	Three-Sided Exit Sign

Guards

Cast Aluminum Guard

Polymeric Guard

CAT. NO.	DESCRIPTION
VGU15	Cast Aluminum for Use with Glass Globes or Refractors
VGU15P	Polymeric for Use with Glass Globes or Refractors

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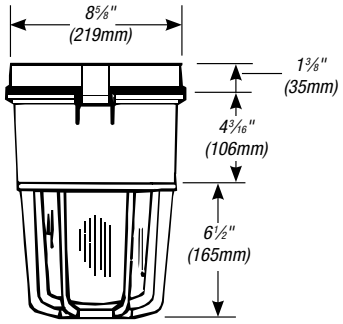
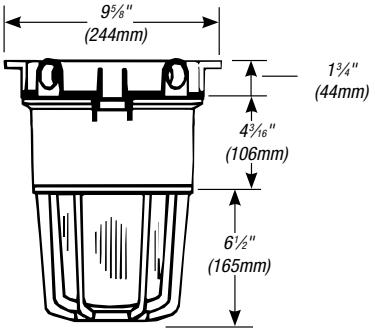
Dimensions — Hazlite® M3 Fixtures

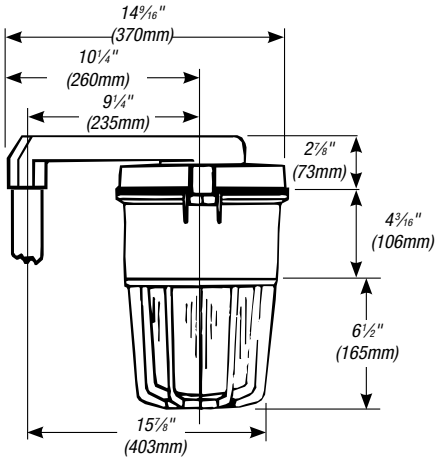
Rigid Pendant



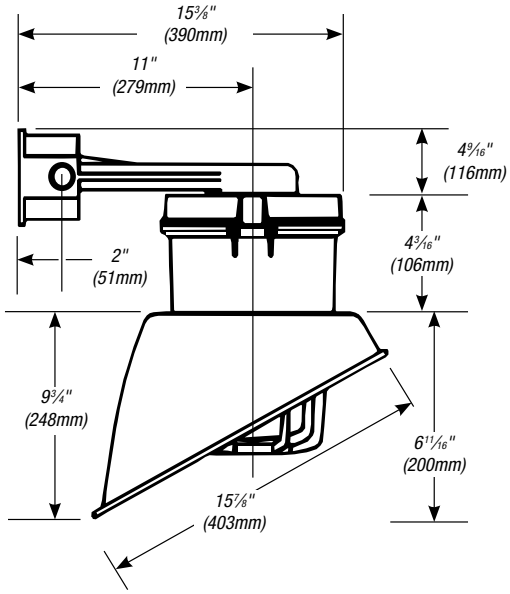
Ceiling Mount



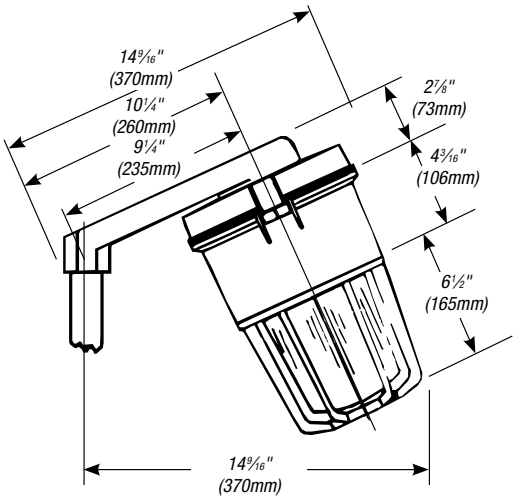
Straight Stanchion Mount



Wall Mount



25° Angle Stanchion Mount



Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III

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- UL844
- NEMA 4X, IP66

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Area Lighting — Hazlux® 1 (Polymeric) Class I, Div 2

Hazlux® 1 Certification Guide (40° C Ambient)

LAMP TYPE	WATTS	AMBIENT TEMP (DEG. C)	CLASS I, DIVISION 2 TEMPERATURE CODE		MARINE*	NEMA 4X (SUITABLE FOR HOSEDOWN)*	WET LOCATIONS	SUPPLY WIRE TEMP. RATING °C
			GLOBE/GUARD & REFLECTOR	REFRACTOR/ GUARD*				
High-Pressure Sodium	50	40	T3	T3	Yes	Yes	Yes	90
	70	40	T3	T3	Yes	Yes	Yes	90
	100	40	T3	T3	Yes	Yes	Yes	90
	150	40	T2C	T2C	Yes	Yes	Yes	90
Metal Halide	70	40	T3C	T3C	Yes	Yes	Yes	90
	100	40	T3	T3	Yes	Yes	Yes	90
	175	40	T2B	T2A	Yes	Yes	Yes	90

Hazlite® M1 Certification Guide

LAMP TYPE	AMBIENT (DEG. C)	MARINE	ORDINARY	CLASS I, DIVISION 2 GLOBES — "TR" REFRACTOR WITH/ WITHOUT REFLECTORS		NEMA 4X (SUITABLE FOR HOSEDOWN)*	SUPPLY WIRE SUITABLE °C	VOLTS
				TEMP. °C	TEMP. CODE			
35-Watt HPS Type S76	40	Yes	Yes	180	T3A	Yes	75	120
	55	Yes	Yes	200	T3	Yes	90	120
50-Watt HPS Type S68	40	Yes	Yes	215	T2D	Yes	75	120
	55	Yes	Yes	215	T2D	Yes	90	120
70-Watt HPS Type S62	40	Yes	Yes	260	T2B	Yes	75	120
	55	Yes	Yes	260	T2B	Yes	90	120
70-Watt HPS Type S62	40	Yes	Yes	260	T2B	Yes	75	120
	55	Yes	Yes	260	T2B	Yes	90	120
100-Watt HPS Type S54	40	No	Yes	280	T2A	Yes	125	120
9-Watt Fluorescent	40	Yes	Yes	160	T3C	Yes	90	120
13-Watt Fluorescent	40	Yes	Yes	160	T3C	Yes	90	120
18-Watt Fluorescent	40	Yes	Yes	160	T3C	Yes	90	120
26-Watt Fluorescent	40	Yes	Yes	200	T3	Yes	90	120

** All Hazlux fixture assemblies shown in this Buyers Guide as UL Listed or CSA Certified for Marine applications are suitable for hosedown when fixture is off and glass has been allowed to cool. Tempered glass globes and refractors have better thermal shock resistance properties than non-tempered globes and refractors and should be considered whenever fixtures are subject to being splashed with significantly cooler liquids while illuminated (hot). Consult factory for more information.*

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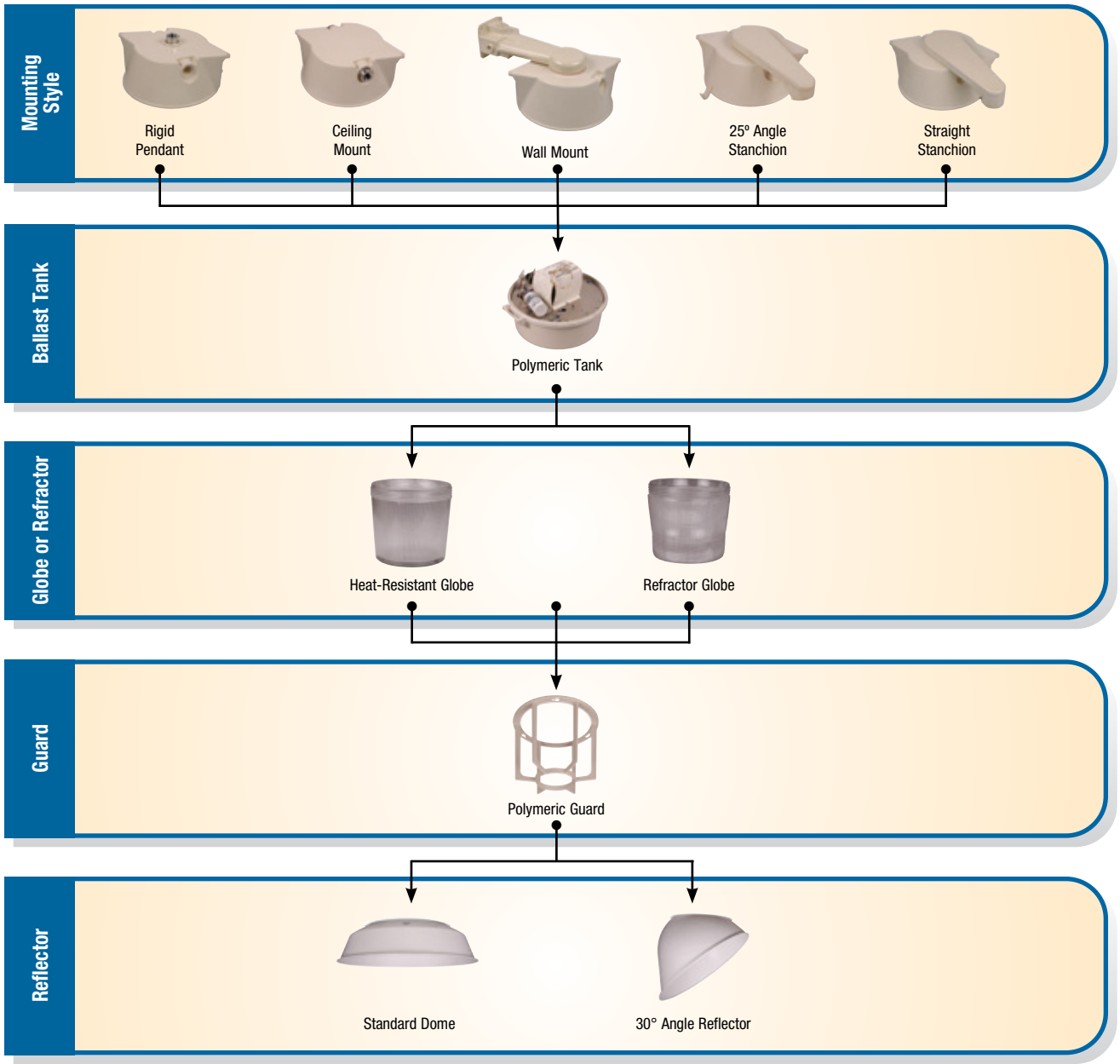
Hazlux® 1 Fixture for Corrosive Environments Assembly Guide



Hazlux® 1 Fixture for Corrosive Environments Catalog Numbering System

P	S	Ø	07	H	04	0	-	R5P	-	C2	E	4	F
1	2	3	4	5	6	7		8		9	10	11	12

1 Fixture Series
- **P =** Hazlux® 1 Fixture

2 Lamp Type
- **H =** Metal Halide
- **S =** High-Pressure Sodium

3 Starter Options
- **Ø =** Standard Fixture
- **J =** Auto-Shutoff
- **P =** Pulse Start (Metal Halide only)

4 Lamp Wattage
- **05 =** 50 Watts
- **07 =** 70 Watts
- **10 =** 100 Watts
- **15 =** 150 Watts*
- **17 =** 175 Watts (Metal Halide Only)*

5 Ballast Circuit
- **C =** Constant Wattage Auto Transformer
- **H =** High Reactance
- **P =** Reactor Type
- **I =** CWI

6 Voltage/Frequency
- **03 =** 120/277 Volt
- **04 =** 120/208/240/277 Volt
- **12 =** 120 Volt
- **27 =** 277 Volt
- **28 =** 208 Volt
- **34 =** 347 Volt
- **48 =** 480 Volt

7 Tank
- **0 =** Standard Housing

8 Optical Assembly Options
- **TG =** Tempered Globe Only
- **TGP =** Tempered Glass Globe with Polymeric Guard
- **RI =** Glass Refractor (IES Type I) without Guard
- **R3 =** Glass Refractor (IES Type III) without Guard
- **R5 =** Glass Refractor (IES Type V) without Guard
- **R1P =** Glass Refractor (IES Type I) with Polymeric Guard
- **R3P =** Glass Refractor (IES Type III) with Polymeric Guard
- **R5P =** Glass Refractor (IES Type V) with Polymeric Guard

9 Mounting Style
- **P2 =** ¾" Pendant Mount*
- **B2 =** ¾" Wall Mount
- **C2 =** ¾" Ceiling Mount
- **S5 =** 1½" 25° Angle Stanchion
- **L5 =** 1½" Straight Stanchion

10 UNIPAK® Options
- **E =** UNIPAK® with Clear Lamp
- **D =** UNIPAK® with Diffused Coated Lamp
- **U =** UNIPAK® without Lamp

11 Reflector Options
- **4 =** Dome Reflector
- **5 =** Angle Reflector

12 Fusing Options
- **F =** Fuse Block(s) with Fuse(s)

13 CSA Certification
- **C =** CSA Nameplate

** 150-Watt Metal Halide and 175-Watt Metal Halide not available with Pendant Mount.*

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
Class III
- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

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Area Lighting — Hazlux® 1 (Polymeric) Class I, Div 2

Mounting Options

Rigid Pendant

Ceiling Mount

Wall Mount with Metallic Arm

25° Angle Stanchion

Straight Stanchion

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE	STD. PKG.
VNP2	Rigid Pendant	¾"	1
VNC2	Ceiling Mount	¾"	1
VNB2	Wall Mount with Metallic Arm	¾"	1
VNS5	25° Angle Stanchion	1½"	1
VNL5	Straight Stanchion	1½"	1

Designed for all Hazlux® 1 Ballast Housings.

Globes or Refractors

Heat-Resistant Glass Globe

IES Type I Refractor Globe

CAT. NO.	DESCRIPTION
VGT31S	Heat-Resistant Glass Globe (7¾" dia.) 250 Watt Max.
VGT31STS	Heat-Resistant Glass Globe (7¾" dia.) Coated with Tuff-Skin®, 250 Watt Max.
VGL31R1	IES Type I Light Distribution (Long and Narrow) Threaded Glass Globe Refractor 7¾" dia.
VGL31R3	IES Type III Light Distribution (Asymmetric) Threaded Glass Globe Refractor 7¾" dia.
VGL31R5	IES Type V Light Distribution (Symmetric) Threaded Glass Globe Refractor 7¾" dia.

Reflectors

Standard Dome

30° Angle Reflector

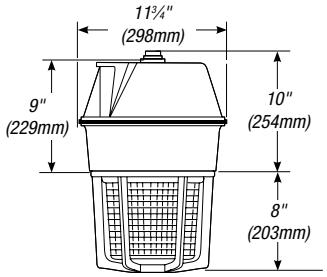
CAT. NO.	DESCRIPTION
VR31P	Standard Dome, Fiberglass-Reinforced Polyester, for Use with 7¾"-dia. Globes
VRA31P	30° Angle Reflector, Fiberglass-Reinforced Polyester, for Use with 7¾"-dia. Globes

Guard

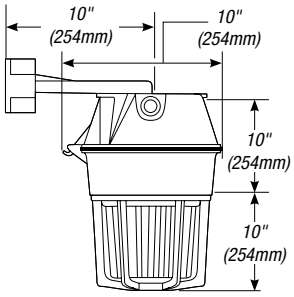
Polymeric Guard

CAT. NO.	DESCRIPTION
VGU31RP	Polymeric Guard for Use with Threaded Glass Globes and Refractors (7¾" dia.)

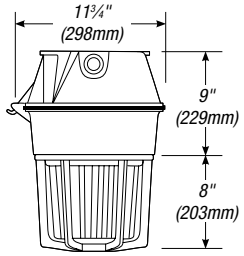
Hazlux® 1 Fixture for Corrosive Environments Dimensions



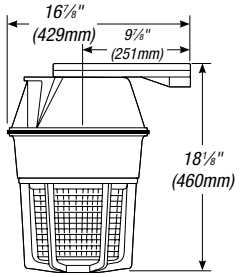
Pendant Mount with Refractor and Guard



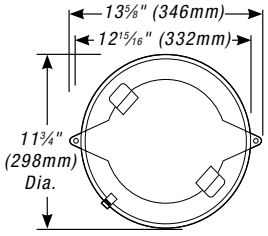
Wall Arm Mount with Globe and Guard



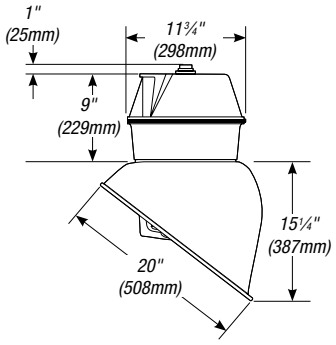
Ceiling Mount with Globe and Guard



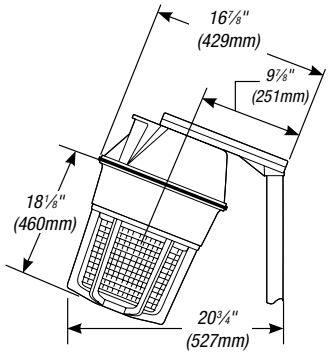
Straight Stanchion Mount



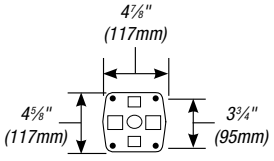
Ceiling Mount Top View



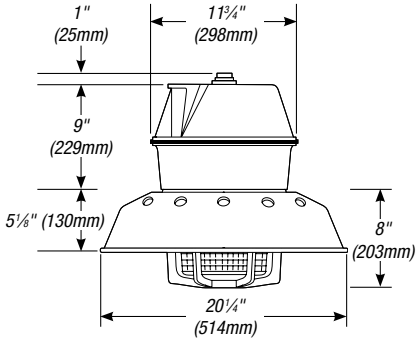
Angle Reflector with Globe and Guard



25° Angle Stanchion Mount



Wall-Mount Flange Template



Dome Reflector with Refractor and Guard

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D

- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

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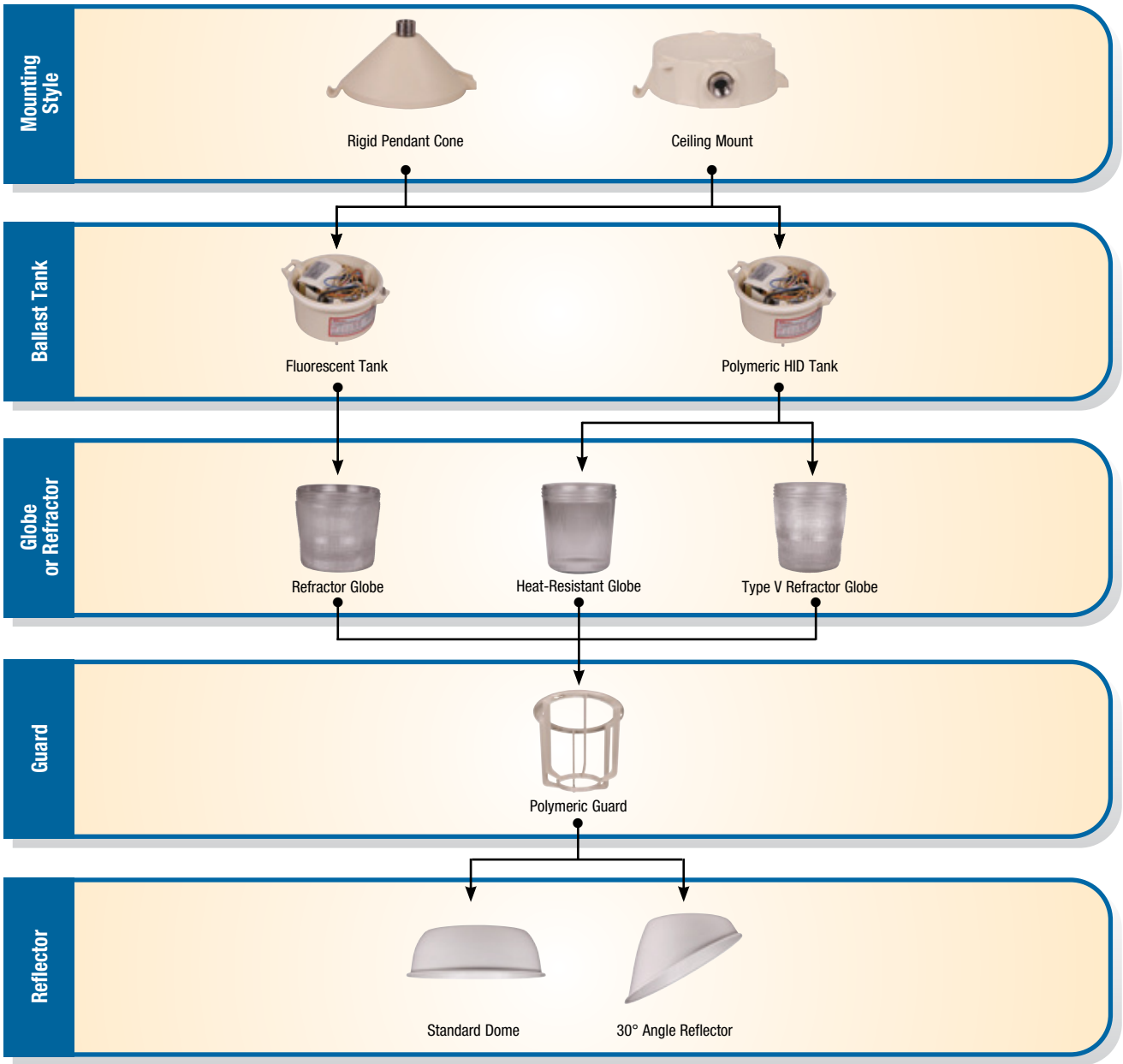
Hazlite® M1 Fixture for Highly Corrosive Environments Assembly Guide



Hazlite® M1 Fixture for Highly Corrosive Environments Catalog Numbering System

High-Pressure Sodium/ Metal Halide	PD	S	M	05	P	12	0	TGL	C2	E	1	F
	1	2	3	4	5	6	7	8	9	10	11	12
Fluorescent Only	PD	F	B	13	P	12	0	TGL	C2	E		
	1	2	3	4	5	6	7	8	9	10		

1 Fixture Series
- **PD =** Hazlite® M1 Fixture

2 Lamp Type
- **H =** Metal Halide
- **S =** High Pressure Sodium
- **F =** Fluorescent

3 Lampholder
- **M =** Medium Base Lampholder
- **B =** Bi-Pin Type (Fluorescent)

4 Lamp Wattage
- **09 =** 9 Watts (Fluorescent)
- **13 =** 13 Watts (Fluorescent)
- **18 =** 18 Watts (Fluorescent)
- **26 =** 26 Watts (Fluorescent)
- **03 =** 35 Watts
- **05 =** 50 Watts
- **07 =** 70 Watts
- **10 =** 100 Watts

5 Ballast Circuit
- **P =** Reactor Type, Fluorescent
- **H =** High Reactance

6 Voltage
- **04 =** 120/208/240/277 Volt
- **12 =** 120 Volt
- **27 =** 277 Volt (Fluorescent)

7 Tank
- **0 =** Standard Housing

8 Optical Assembly Options
- **TG =** Tempered Globe Only
- **TGL =** Tempered Globe and Polymeric Guard
- **R1 =** Glass Refractor (IES Type I) without Guard
- **R3 =** Glass Refractor (IES Type III) without Guard
- **R5 =** Glass Refractor (IES Type V) without Guard
- **R1P =** Glass Refractor (IES Type I) with Polymeric Guard
- **R3P =** Glass Refractor (IES Type III) with Polymeric Guard
- **R5P =** Glass Refractor (IES Type V) with Polymeric Guard

9 Mounting Style
- **P2 =** ¾" Cone Pendant
- **C2 =** ¾" Ceiling, 1 Hub
- **C22 =** ¾" Ceiling, 2 Hubs

10 UNIPAK® Options
- **E =** UNIPAK® with Clear Lamp
- **U =** UNIPAK® without Lamp

11 Reflector Option
- **1 =** Dome Reflector
- **2 =** Angle Reflector

12 Special Options
- **F =** Fuse Kit (for HID Only)

13 CSA Certification
- **C =** CSA Nameplate

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

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Area Lighting — Hazlite® M1 (Polymeric) Class I, Div 2

Mounting Options

Rigid Pendant Cone

Ceiling Mount

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE	STD. PKG.
VPA2	Rigid Pendant Cone	¾	5
VPC2	Ceiling Mount	¾	5
VPC22 *(feed-through)*			

Exit Sign

Three-Sided Exit Sign

CAT. NO.	DESCRIPTION	STD. PKG.	COLOR
VRE22	Three-Sided Exit Sign	1	Red

Globes or Refractors

IES Type V Refractor Globe

Heat-Resistant Prismatic Glass Globe

CAT. NO.	DESCRIPTION
VGT15	Heat-Resistant Prismatic Glass Globe
VGL15P	Polycarbonate Plastic Globe
VGL15R1	IES Type I Refractor Globe
VGL15R3	IES Type III Refractor Globe
VGL15R5	IES Type V Refractor Globe

Guards

Polymeric Guard

CAT. NO.	DESCRIPTION
VGU15P	Polymeric — for Use with Glass Globes or Refractors

Reflectors

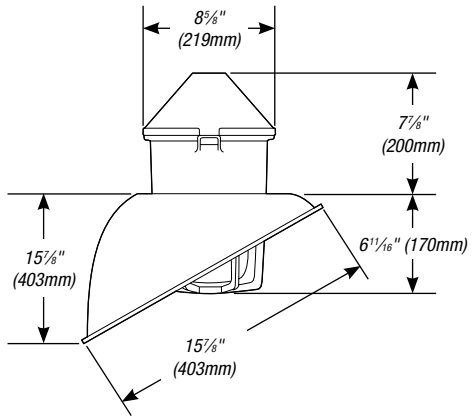
Standard Dome

30° Angle Reflector

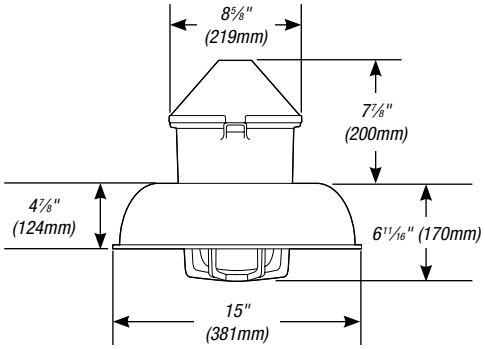
CAT. NO.	DESCRIPTION
VR15P	Standard Dome Fiber Glass Reinforced Polyester
VRA15P	30° Angle Reflector Fiber Glass Reinforced Polyester

Area Lighting — Hazlite® M1 (Polymeric) Class I, Div 2

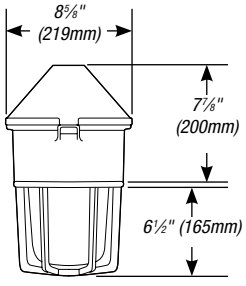
Dimensions — Cone Pendant Mount



with Angled Reflector

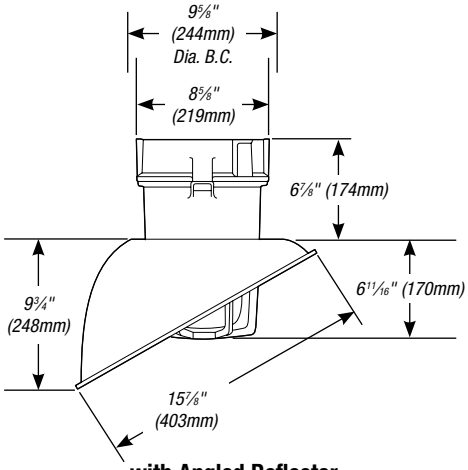


with Dome Reflector

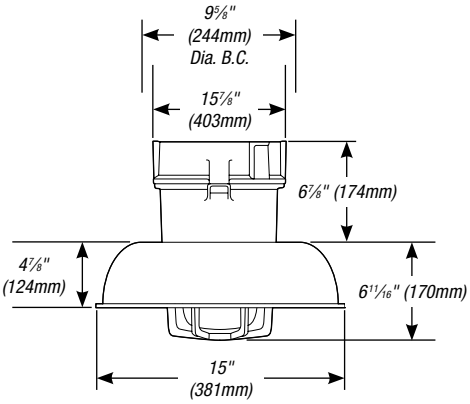


No Reflector

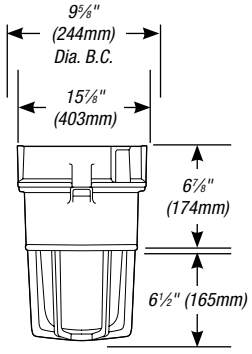
Dimensions — Ceiling Mount



with Angled Reflector



with Dome Reflector



No Reflector

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D

- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

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Hazlux® 5 HID Lighting Fixtures for Class I, Division 1, Groups C and D Hazardous Locations

Features

- UL® Listed for Class I, Division 1 for safe, explosion-proof application in a variety of hazardous areas
- Factory-sealed assembly meets code requirements without the need for external sealing fittings
- Dual-pitch Acme threads make assembly easy and faster than designs with standard V-cut threads, greatly reducing the risk of cross threading
- Factory-wired connection block means ballast is pre-wired to lower half of electrical connection block, allowing wireless connection of ballast housing to mounting module
- Five mounting styles — pendant, ceiling, wall, angle stanchion and bulkhead — provide versatility for installation
- Thermal shock-resistant glass globes are factory assembled and pre-tested to ensure the highest quality and safety
- Die-cast aluminum guards are epoxy powder coated for corrosion resistance and have keyhole slots for easy attachment to stainless steel screws
- Choice of high-pressure sodium and metal halide light sources in wattages from 50 to 400 watts
- Polymeric reflectors are available in standard dome and 30° angle versions
- UL® Listed for Marine and Wet Locations, making Hazlux® 5 fixtures ideal for use in many outdoor, offshore, hosedown and coastal locations
- UL® Paint Spray Listed in wattages up to 100 watts

Applications

- Chemical Plants
- Oil Refineries
- Offshore Platforms
- Waste Treatment Facilities
- Automotive Manufacturing Plants
- Paint Manufacturing Facilities
- Paint Spray Locations
- Chemical and Plastic Mixing and Storage Areas
- Pipeline Pumping Stations
- Oil and Gas Terminals
- Defense and Government Facilities

Wattages and Voltages

- High-Pressure Sodium: 50–400 Watts
- Metal Halide: 70–400 Watts
- All Luminaires: Multi-Tap standard (120, 208, 240, 277V), wired 120V

Other voltages, frequencies available; contact Thomas & Betts.

Materials and Finishes

- Ballast Housing: Copper-free aluminum, powder finish
- Mounting Modules: Copper-free aluminum, powder finish
- Hardware: Stainless steel
- Globes: Tempered glass
- Guard: Copper-free aluminum, powder finish
- Reflectors: Fiberglass-reinforced

Certifications

- UL844 Class I, Division 1, Groups C, D
- UL844 Paint Spray (100W max.)
- UL844 Class II, Division 1, Groups E, F, G
- Outdoor Wet Locations
- UL1598A Marine Locations
- Temperature Range: -30° C to 40° C

Hazlux® 5 Certification Guide (40° C Ambient)

LAMP TYPE		WATTS	CLASS I, DIVISION 1 GROUPS C AND D		CLASS II, DIVISION 1 AND 2		CLASS III, DIVISION 1 AND 2	NEMA 4X (SUITABLE FOR HOSEDOWN)*	MARINE LISTED (UL 1598A)
			RATED TEMP °C	"T" NO.	RATED TEMP °C	GROUPS			
High-Pressure Sodium	With or without Instant Restart	50**	85	T6	100	EFG	Yes	Yes	Yes
		70**	85	T6	120	EFG	Yes	Yes	Yes
		100**	100	T5	135	EFG	Yes	Yes	Yes
		150(S55)	120	T4A	160	EFG	Yes	Yes	Yes
		150(S56)	120	T4A	160	EFG	Yes	Yes	Yes
		250	120	T4A	—	—	—	Yes	Yes
		400	160	T3C	—	—	—	Yes	Yes
	With Auxiliary Quartz	50	120	T4A	160	EFG	Yes	Yes	Yes
		70	120	T4A	160	EFG	Yes	Yes	Yes
		100	160	T3C	200	EF	—	Yes	Yes
		150(S55)	160	T3C	200	EF	—	Yes	Yes
		150(S56)	160†	T3C†	—	—	—	Yes	Yes
Metal Halide		100†	100†	T5					
		175	120	T4A	180	EF	—	Yes	Yes
		250	160	T3C	200	EF	—	Yes	Yes
		400	165	T3B	—	—	—	Yes	Yes
	With Auxiliary Quartz	175	160†	T3C†	—	—	—	Yes	Yes
		250	180†	T3A†	—	—	—	Yes	Yes

** All Hazlux® fixture assemblies shown in this Buyers Guide as UL Listed or CSA Certified for Marine applications are suitable for hosedown when fixture is off and glass has been allowed to cool. Tempered glass globes and refractors have better thermal shock resistance properties than non-tempered globes and refractors and should be considered whenever fixtures are subject to being splashed with significantly cooler liquids while illuminated (hot). Consult factory for more information.*

*** For fixtures suitable (UL® Listed) for use in paint spray areas, add suffix "PS" to the number.*

† 100W MH is UL® Listed for paint spray.

Hazlite® M5 Certification Guide (40° C Ambient)

LAMP TYPE	WATTS	CLASS I, DIVISION 1, GROUPS C AND D CLASS I, DIVISION 2, GROUPS A,B,C AND D		CLASS II, DIVISION 1 AND 2		CLASS III, DIVISION 1 AND 2	NEMA 4X*	MARINE LISTED (UL 1598A)
		RATED TEMP °C	"T" NO.	RATED TEMP °C	GROUPS			
High-Pressure Sodium	35**	85	T6	100	EFG	Yes	Yes	Yes
	50**	85	T6	120	EFG	Yes	Yes	Yes
	70**	100	T5	135	EFG	Yes	Yes	Yes
	100	120	T4A	160	EFG	Yes	Yes	Yes
	150†	135	T4	—	—	—	Yes	Yes
Incandescent	100	100	T5	160	EFG	Yes	Yes	Yes
	150	120	T4A	200	EF	—	Yes	Yes
Fluorescent	18†**	85	T6	85	EFG	Yes	Yes	Yes
	26†**	58	T6	85	EFG	Yes	Yes	Yes

** All Hazlux® fixture assemblies shown in this Buyers Guide as UL Listed or CSA Certified for Marine applications are suitable for hosedown when fixture is off and glass has been allowed to cool. Tempered glass globes and refractors have better thermal shock resistance properties than non-tempered globes and refractors and should be considered whenever fixtures are subject to being splashed with significantly cooler liquids while illuminated (hot). Consult factory for more information.*

*** For fixtures suitable (UL® Listed) for use in paint spray areas, add suffix "PS" to the catalog number. Fluorescents T-Code will be T4A.*

† UL® Listed at 25° C.

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Hazlux® 5 Fixture Assembly Guide

Mounting Style


Pendant Mount


Stanchion Mount


Ceiling Mount


Wall Mount


Bulkhead Mount

Tank

Globe


50–175 Watts

Globe Assembly


250–400 Watts

Guards and Special Application Floodlight


50–175 Watts

Cast Guard


250–400 Watts


Trunnion
(See Accessories page for details)

Reflector


Standard Dome


30° Angle Reflector

Hazlux® 5 Fixture Catalog Numbering System

X	S	Q	07	H	04	0	G	-	C2	-	E	4	F
1	2	3	4	5	6	7	8		9		11	12	13

1 Fixture Series
- **X =** Hazlux® 5 Fixture

2 Lamp Type
- **S =** High-Pressure Sodium
- **H =** Metal Halide

3 Starter Circuit/Quartz Options
- **0 =** Standard Fixture (Without Options)
- **P =** Pulse Start (Metal Halide Only)
- **Q =** Quartz Auxiliary Option
- **R =** Fixture with Instant Restart Option (70, 100 and 150 HPS Only)

4 Lamp Wattage
- **05 =** 50 Watts
- **07 =** 70 Watts
- **10 =** 100 Watts
- **15 =** 150 Watts
- **17 =** 175 Watts
- **25 =** 250 Watts
- **40 =** 400 Watts

5 Ballast Circuit
- **C =** Constant Wattage Autotransformer (CWA)
- **I =** Constant Wattage Insulated Transformer (CWI)
- **H =** High Reactance or Reactor (All Ballasts High Power Factor)

6 Ballast Voltage
- **04 =** Multi-Tap 120/208/240/277 Volt
- **12 =** 120 Volt
- **24 =** 240 Volt
- **28 =** 208 Volt
- **34 =** 347 Volt
- **48 =** 480 Volt

7 Housing
- **0 =** Standard Housing
- **S =** Standard Housing with Stainless Steel Inserts

***Note**: Verify hazardous location certification with your requirements on Hazlux® 5 Certification Guide on **page I-42**.*

8 Guard
- **G =** Cast Guard (Omit "G" if Guard Not Required)

9 Mounting Style
- **P2 =** ¾" Pendant
- **P3 =** ½" Pendant
- **C2 =** ¾" Ceiling
- **C3 =** 1" Ceiling
- **B2 =** ¾" Wall
- **B3 =** 1" Wall
- **J2 =** ¾" Bulkhead
- **J3 =** 1" Bulkhead
- **S4 =** 25° 1¼" Stanchion
- **S5 =** 25° 1½" Stanchion

10 Special Options
- **T =** HazCote® Custom Corrosion Coating on all Aluminum Parts (Consult Factory)
- **G =** Gray Color Option
- **PS =** Paint Spray Label (100W max.)

11 UNIPAK® Options
- **D =** UNIPAK® with Diffuse Coated Lamp
- **E =** UNIPAK® with Clear Lamp

12 Reflector Options
- **4 =** Dome Reflector
- **5 =** Angle Reflector
- **6 =** Deep Dome Reflector

13 Fusing Options
- **F =** Fuse Block(s) with Fuse(s)

14 CSA Certification
- **C =** CSA Nameplate

Class I — Division 1, Groups C and D
— Zone 2, Groups IIC, IIB and IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G
- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

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Area Lighting — Hazlux® 5 Class I, Div 1

Mounting Options

Pendant Mount

Stanchion Mount

Ceiling Mount

Wall Mount

Bulkhead Mount

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE	STD. PKG.
XP2	Pendant Mount	¾	1
XP3		1	
XS4	Stanchion Mount	1¼	1
XS5		1½	
XC2	Ceiling Mount	¾	1
XC3		1	
XB2	Wall Mount	¾	1
XB3		1	
XJ2	Bulkhead Mount	¾	1
XJ3		1	

Outlet Boxes include female electrical connectors and appropriate close-up plugs.

Guards

XGU44 Cast Aluminum Guard

VGU31 Cast Aluminum Guard

CAT. NO.	DESCRIPTION
XGU44	Cast Aluminum Guard for 50–175 Watt Fixtures
VGU31	Cast Aluminum Guard for 250–400 Watt Fixtures

Replacement Globe Assemblies

XGSA44 Replacement Globe Assembly

XGSA44A Replacement Globe Assembly

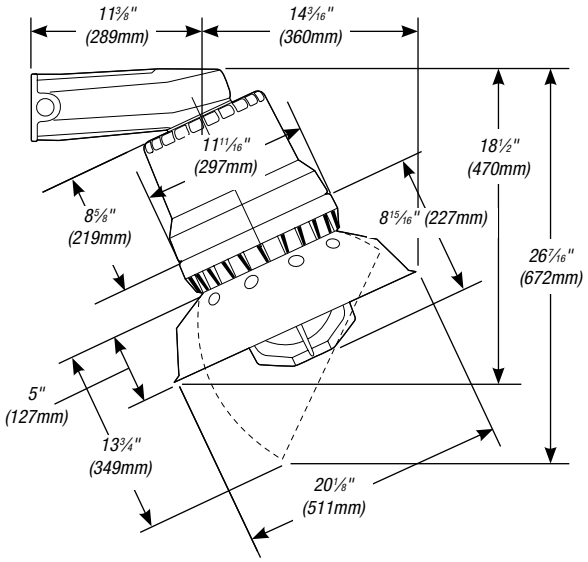
CAT. NO.	DESCRIPTION
XGSA44	Hazlux 5 Replacement Globe Assembly — 50–175 Watts
XGSA44A	Hazlux 5 Replacement Globe Assembly — 250–400 Watts

Hazlux® 5 Floodlight (Trunnion Mount) and Accessories

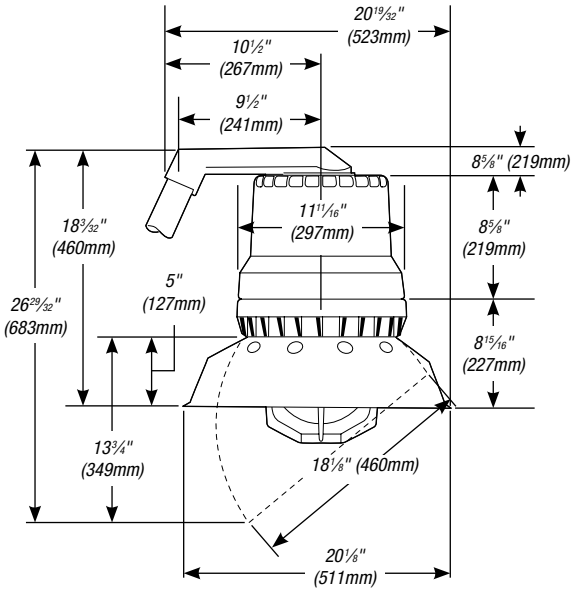
CAT. NO.	DESCRIPTION
Hazlux® 5 Floodlight (Trunnion Mount) Class I, Division 1 Explosion-Proof	
XS005H030-P2-TR	50-Watt High-Pressure Sodium
XS007H040-P2-TR	70-Watt High-Pressure Sodium
XS010H040-P2-TR	100-Watt High-Pressure Sodium
XS015H040-P2-TR	150-Watt High-Pressure Sodium
XS025C040-P2-TR	250-Watt High-Pressure Sodium
XS040C040-P2-TR	400-Watt High-Pressure Sodium
XS017C040-P2-TR	175-Watt Metal Halide
XS025C040-P2-TR	250-Watt Metal Halide
XS040C040-P2-TR	400-Watt Metal Halide
Hazlux® 5 Flood Light Accessories	
VRA31	Angle Reflector
VR31P	Dome Reflector
VRD31	Deep Dome Reflector
XGU44	Cast Aluminum Guard for 50–175-Watt Fixtures
VGU31	Cast Aluminum Guard for 250–400-Watt Fixtures

Hazlux® 5 Fixture Dimensions

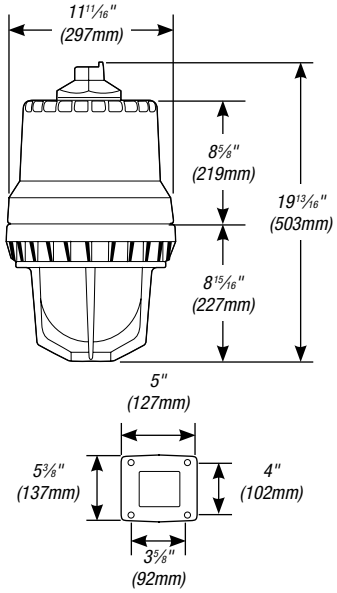
Bulkhead Mount with Globe, Guard and Reflector



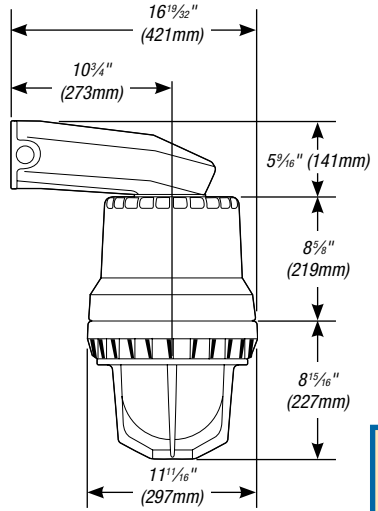
Stanchion Mount with Globe, Guard and Reflector



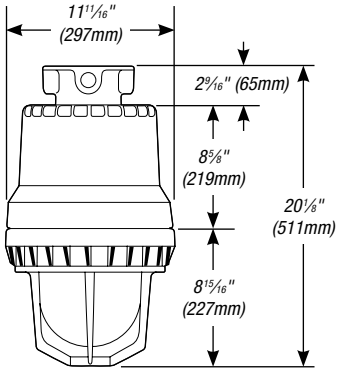
Pendant Mount with Globe and Guard



Wall Mount with Globe and Guard



Ceiling Mount with Globe and Guard



Class I — Division 1, Groups C and D
— Zone 2, Groups IIC, IIB and IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G

- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

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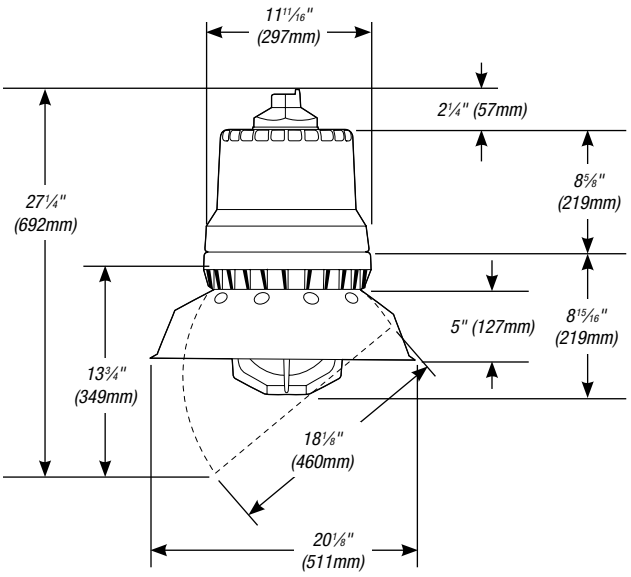
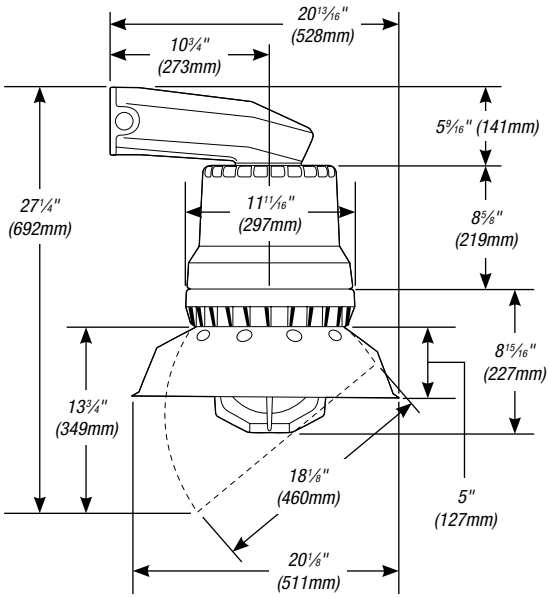
Area Lighting — Hazlux® 5 Class I, Div 1

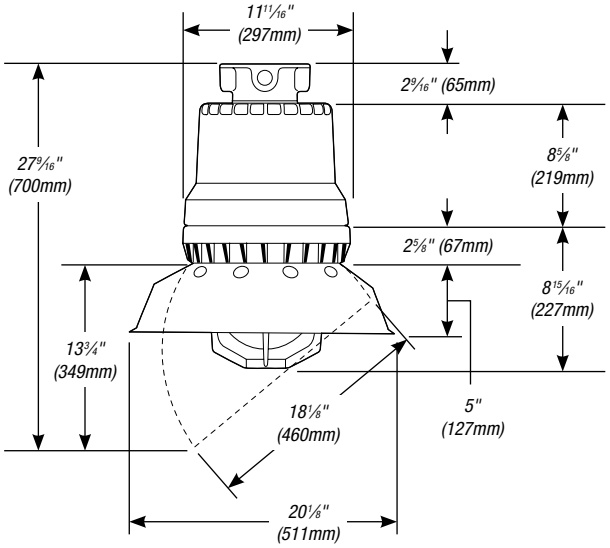
Pendant Mount with Globe, Guard and Reflector



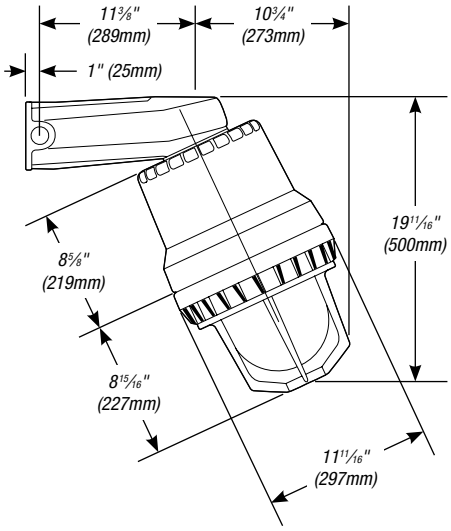
Wall Mount with Globe, Guard and Reflector



Ceiling Mount with Globe, Guard and Reflector

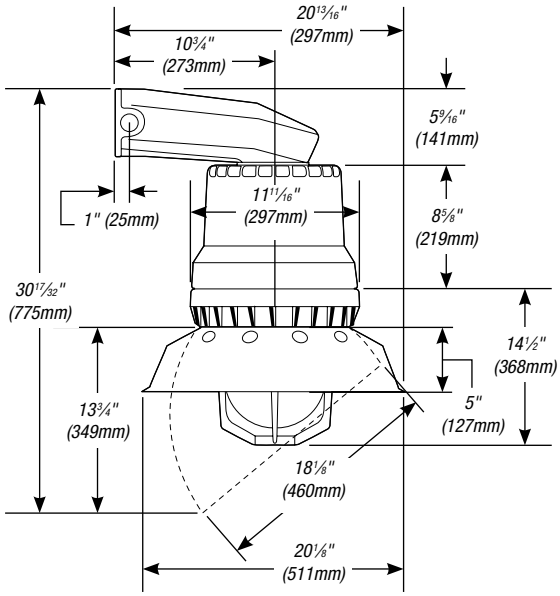


Bulkhead Mount with Globe and Guard

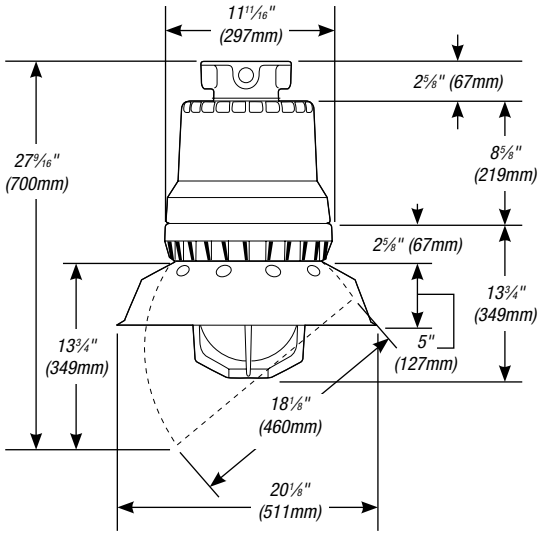


Hazlux® 5 Fixture (400 Series) Dimensions

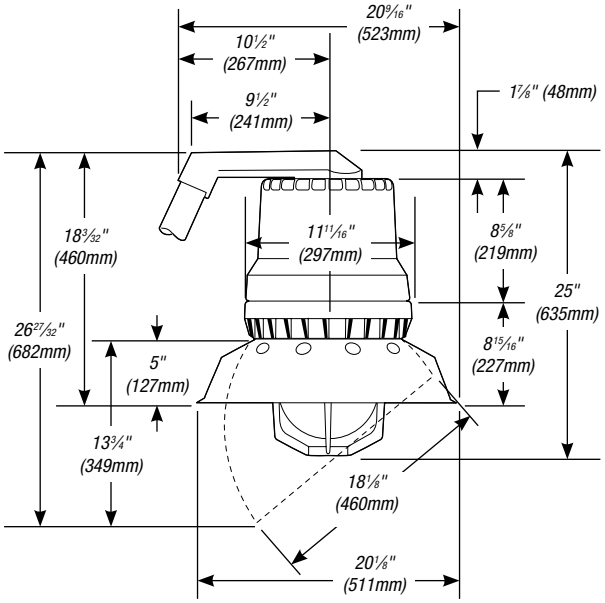
Wall Mount with Globe, Guard and Reflector



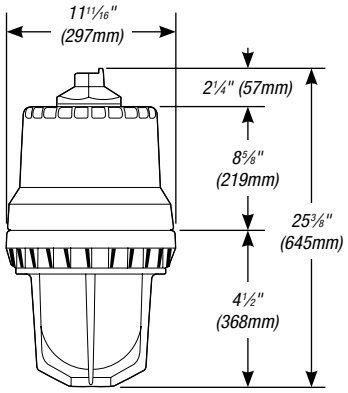
Ceiling Mount with Globe, Guard and Reflector



Stanchion Mount with Globe, Guard and Reflector



Pendant Mount with Globe and Guard



Class I — Division 1, Groups C and D
— Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1 and 2, Groups E, F and G

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- UL844
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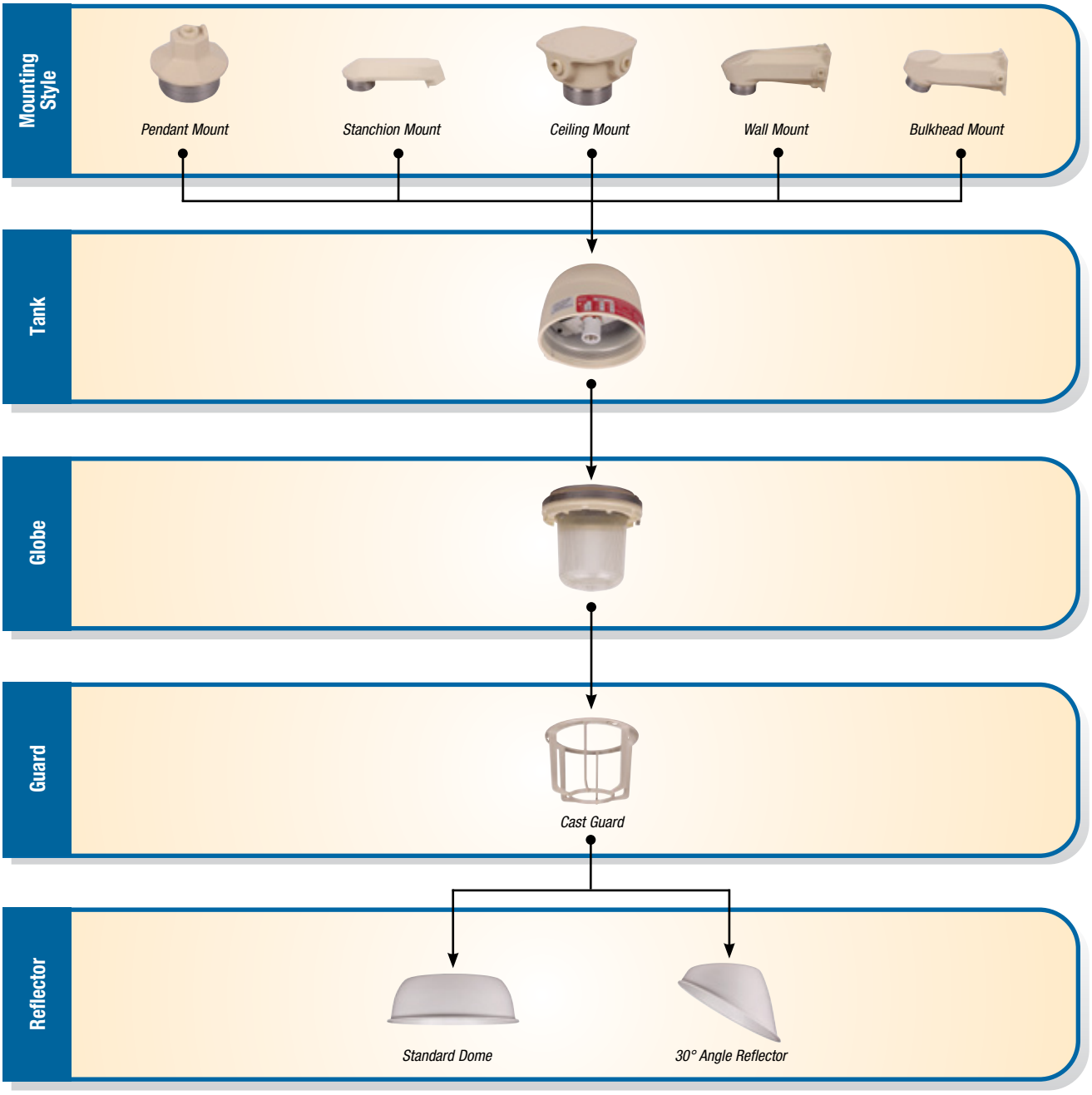
Hazlite® M5
Fixture Assembly Guide



Hazlite® M5 Fixture Catalog Numbering System

Class I — Division 1, Groups C and D
— Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups E, F and G
Class II — Division 1 and 2, Groups E, F and G

- UL Listed (UL1598A) for Marine Locations
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High-Pressure Sodium

X	S	M	35	P	12	-	0	-	G	-	C2	-	E		4
1	2	3	4	5	6		7		8		9		11		12

Incandescent

X	I	M	15	12	0	G	-	C2	-	E		4
1	2	3	4	6	7	8		9		11		12

Fluorescent

X	F	M	18	P	12	0	-	G	-	C2	E		4
1	2	3	4	5	6	7		8		9	11		12

1 Fixture Series
- **X =** Hazlite® M5 Fixture

2 Lamp Type
- **S =** High-Pressure Sodium
- **F =** Fluorescent
- **I =** Incandescent

3 Lampholder Type
- **M =** Standard Fixture (Without Options)

4 Lamp Wattage
- **09 =** 9 Watt (Fluorescent)
- **13 =** 13 Watt (Fluorescent)
- **18 =** 18 Watt (Fluorescent)
- **26 =** 26 Watt (Fluorescent)
- **03 =** 35 Watt (HPS)
- **05 =** 50 Watt (HPS)
- **07 =** 70 Watt (HPS)
- **10 =** 100 Watt (HPS/Incandescent)
- **15 =** 150 Watt (HPS/Incandescent)

5 Ballast Circuit
- **P =** Reactor Type (HPS and Fluorescent)

6 Voltage/Frequency
- **12 =** 120 Volt

7 Tank
- **0 =** Standard Housing (150W HPS, 250W MH)
- **S =** Standard Housing with Stainless Steel Inserts

8 Optics and Guards
- **G =** Cast Guard (Omit "G" if Guard is Not Required)

9 Mounting Style
- **P2 =** ¾" Rigid Pendant
- **P3 =** 1" Rigid Pendant
- **C2 =** ¾" Ceiling
- **C3 =** 1" Ceiling
- **B2 =** ¾" Wall
- **B3 =** 1" Wall
- **J2 =** ¾" Bulkhead
- **J3 =** 1" Bulkhead
- **S4 =** 25° Angle 1¼" Stanchion
- **S5 =** 25° Angle 1½" Stanchion

10 Special Options
- **T =** HazCote® Custom Corrosion Coating on All Aluminum Parts (Consult Factory)
- **PS =** Paint Spray Label

11 UNIPAK® Options
- **D =** UNIPAK® with Diffused Coated Lamp
- **E =** UNIPAK® with Clear Lamp

12 Reflector Options
- **4 =** Dome Reflector
- **5 =** Angle Reflector

13 CSA Certification
- **C =** CSA Nameplate

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Area Lighting — Hazlite® M5 Class I, Div 1

Mounting Options

Pendant Mount

Stanchion Mount

Ceiling Mount

Wall Mount

Bulkhead Mount

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE	STD. PKG.
XP2	Pendant Mount	¾"	1
XP3		1"	1
XS4	Stanchion Mount	1¼"	1
XS5		1½"	1

Outlet Boxes include female electrical connectors and appropriate close-up plugs.

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE	STD. PKG.
XC2	Ceiling Mount	¾"	1
XC3		1"	1
XB2	Wall Mount	¾"	1
XB3		1"	1
XJ2	Bulkhead Mount	¾"	1
XJ3		1"	1

Guards

CAT. NO.	DESCRIPTION
XGU15	Cast Aluminum, Powder Finish

Replacement Globe Assemblies

CAT. NO.	DESCRIPTION
XGSA15	Replacement Globe Assembly, 35–150 Watts

Reflectors

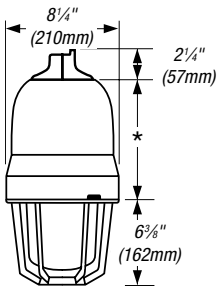
Standard Dome

30° Angle Reflector

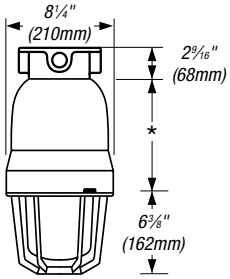
CAT. NO.	DESCRIPTION
VR15P	Standard Dome Fiberglass-Reinforced Polyester
VRA15P	30° Angle Reflector Fiberglass-Reinforced Polyester

Hazlite® M5 Fixture Dimensions

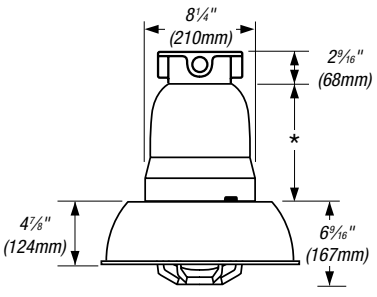
Rigid Pendant Globe/Guard

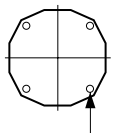


Ceiling Mount Globe/Guard



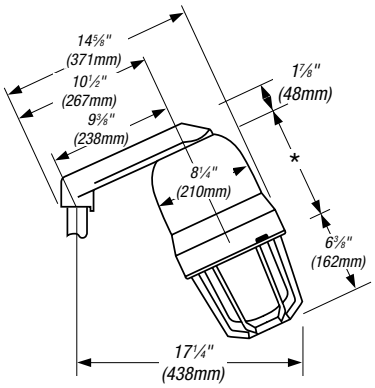
Ceiling Mount Globe/Guard with Dome Reflector



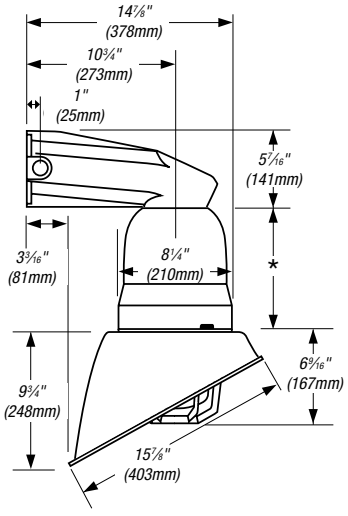


Four ⅜" (9.5mm) diameter holes on a 6" (152mm) diameter B.C.

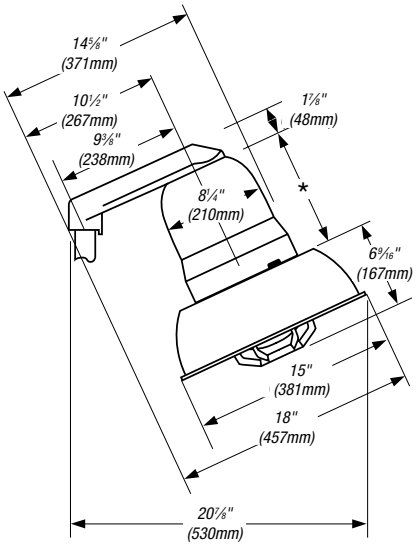
Stanchion Mount Globe/Guard



Wall Mount Globe/Guard with 30° Angle Reflector



Stanchion Mount Globe/Guard with 30° Angle Reflector



** Tank Dimension: HPS 9"/229mm; Incandescent and Fluorescent 5¹¹⁄₁₆"/144mm.*

Class I — Division 1, Groups C and D
— Zone 2, Groups IIC, IIB, IIA,
— Division 2, Groups A, B, C and D

Class II — Division 1 and 2, Groups E, F and G

- UL® Listed (UL1598A) for Marine Locations
- UL844
- NEMA 4X, IP66

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Hazardous Location Fixtures for Class I, Division 2; Class II; and Wet and Marine Locations.

Hazlite® M4 Fixtures

Hazlite® M4 lighting fixtures have a compact, low-profile design that is ideally suited for areas where space or fixture weight is restricted. While it is available for use with both incandescent and fluorescent lamps, the Hazlite® M4 fixture with fluorescent lamps is particularly energy efficient.

- Easy-to-assemble, modular construction
- Fully threaded glass globes, refractors and silicone rubber gaskets seal out dirt, dust and moisture
- Bright white FRP material reflectors optimize light output and resist corrosion and abuse
- Clear glass globes are standard; tempered globes, coloredglass globes and plastic globes are also available
- 1¾"-deep boxes are standard on ceiling and wall mount fixtures; 3"-deep boxes available for added wiring room
- Four mounting styles — pendant, ceiling, wall, angle stanchion — to meet all mounting needs
- Polycarbonate guards are corrosion and impact resistant and do not interfere with globe seal
- Incandescent
  - Two basic sizes cover all popular wattages up to 300 watts
- Fluorescent
  - Factory-wired integral ballasts for easy installation
  - 10,000-hour rated lamp life — extremely energy efficient
  - One or two 13-, 22- and 28-watt lamps provide up to 44 watts of fluorescent light
  - 22-, 28- and 44-watt fixtures start and operate reliably in coldtemperature applications (-29° C)

Hazlite® M4 Incandescent Lighting Fixture Certification Guide

Temperature Ratings

MAXIMUM LAMP WATTS	WITHOUT REFLECTOR	WITH REFLECTOR
150	T2A	T2
300	T1	T1

Class I — Division 2, Groups A, B, C and D
Class II — Division 2, Groups E, F, and G‡
- Enclosed and Gasketed for Wet Locations
- UL® Listed (UL1598A) for Marine Locations
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.
‡ Pendant mount only, 100 watts max.

Hazlite® M4 Compact Fluorescent Lighting Fixture Certification Guide

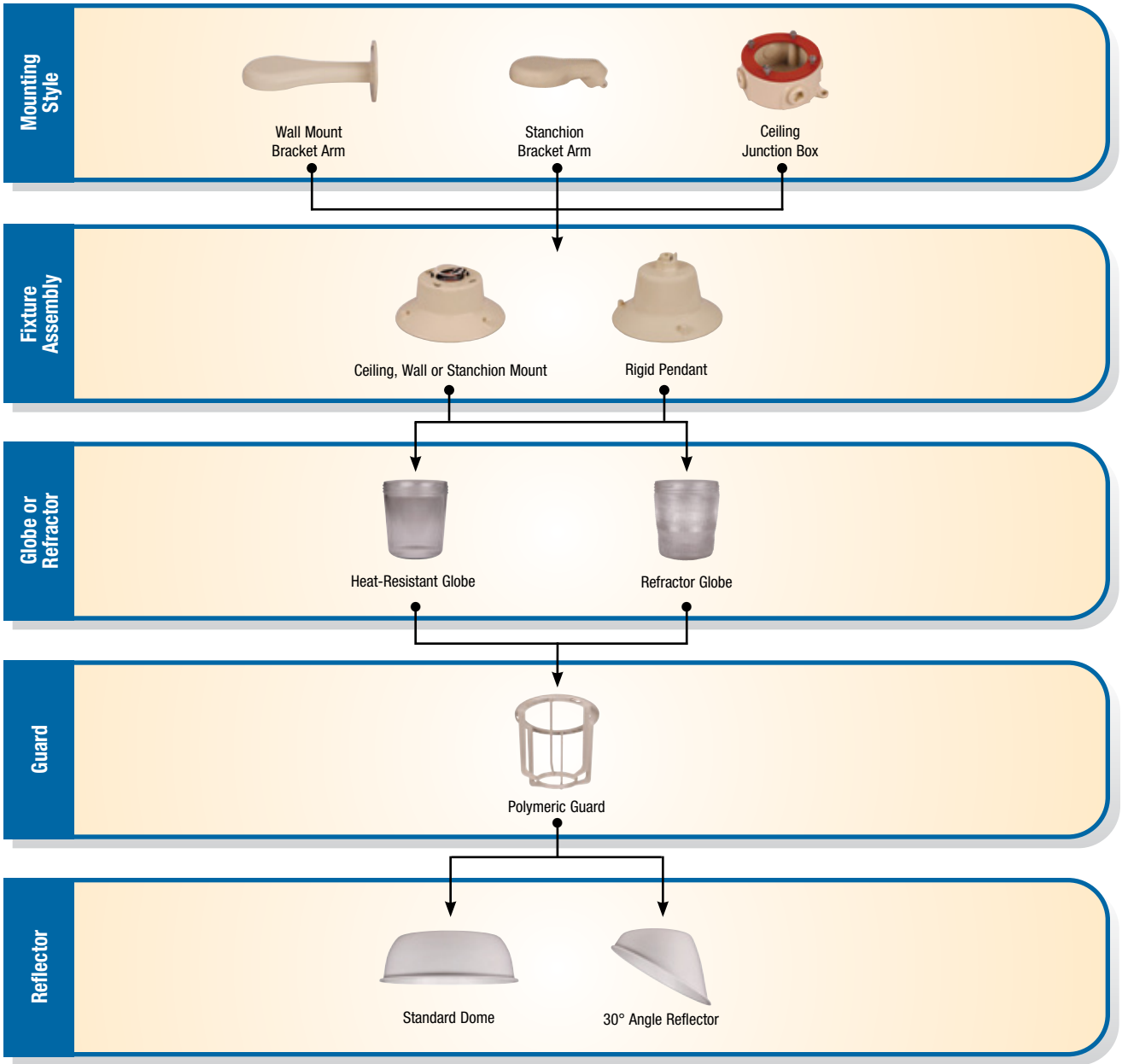
Class I — Division 2, Groups A, B, C and D
Class II — Division 2, Groups E, F, and G‡
- UL844
- Enclosed and Gasketed for Wet Locations
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.
‡ Pendant mount only

Hazlite® M4 Temperature Information Chart

FIXTURE WATTAGE	AMBIENT TEMPERATURE MINIMUM	AMBIENT TEMPERATURE MAXIMUM	SUPPLY WIRE TEMPERATURE	CLASS I, DIVISION 2 T-NUMBER GLOBE, GUARD	CLASS I, DIVISION 2 T-NUMBER GLOBE, GUARD & REFLECTOR
13 Watt	0° C (32° F)	40° C (104° F)	110° C	T3	T3
22 Watt	-29° C (-20° F)	40° C (104° F)	110° C	T3	T3
26 Watt	0° C (32° F)	40° C (104° F)	110° C	T3	T3
28 Watt	-29° C (-20° F)	40° C (104° F)	110° C	T3	T3
44 Watt	-29° C (-20° F)	40° C (104° F)	110° C	T3	T3

Hazlite® M4 Incandescent Fixture Assembly Guide



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Hazlite® M4 Incandescent Fixture Catalog Numbering System

VDA	2	5	GP	RD
1	2	3	4	5

1 Fixture Series and Mounting Style

- **VDA =** M4 Incandescent Pendant Mount Fixture
- **VXH =** M4 Incandescent Fixture Body for Ceiling, Wall or Stanchion Mount
- **VXHA =** M4 Incandescent Stanchion Mount Fixture
- **VXHB =** M4 Incandescent Wall Mount Fixture (No Box)
- **VXHBF =** Wall Mount Fixture with Box
- **VXHF =** Ceiling Mount with Box

2 Hub Size

- **2 =** ¾" in. NPT Hub
- **4 =** 1¼" in. NPT Hub

3 Lamp Wattage

- **5 =** 150 Watt Maximum
- **2 =** 200 to 300 Watt

4 Optics and Guards

- **GP =** Clear Globe and Polymeric Guard
- **TG =** Tempered Glass Globe
- **TGP =** Tempered Glass Globe and Polymeric Guard
- **ACG =** Amber Glass Globe
- **BCG =** Blue Glass Globe
- **GCG =** Green Glass Globe
- **RCG =** Red Glass Globe
- **ACGP =** Amber Glass Globe and Polymeric Guard
- **BCGP =** Blue Glass Globe and Polymeric Guard
- **GCGP =** Green Glass Globe and Polymeric Guard
- **RCGP =** Red Glass Globe and Polymeric Guard
- **R1 =** Type I Threaded Glass Refractor*
- **R3 =** Type III Threaded Glass Refractor*
- **R5 =** Type V Threaded Glass Refractor*

**150 Watt maximum*

5 Reflector Options

- **RD =** Dome Reflector
- **RA =** Angle Reflector

Class I — Division 2, Groups A, B, C and D
Class II — Division 2, Groups E, F, and G‡

- Enclosed and Gasketed for Wet Locations
- UL® Listed (UL1598A) for Marine Locations
- NEMA 4X, IP66

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‡ Pendant mount only, 100 watts max.

Area Lighting — Hazlite® M4 Class I, Div 2

Mounting Options

VXB Wall Mount Bracket Arm

VXA4 Stanchion Bracket Arm

CAT. NO.	CONDUIT HUB SIZE
VXB	N/A
VXA4	1¼"

Fixture Assembly

VDA Pendant Mount

VXH Ceiling, Wall or Stanchion Mount

CAT. NO.	WATT MAX. LAMP SIZE	CONDUIT HUB SIZE
Pendant Mount		
VDA15	150W	½"
VDA25	150W	¾"
VDA12	200–300W	½"
VDA22	200–300W	¾"
Ceiling, Wall or Stanchion Mount		
VXH15	150W	N/A
VXH12	200–300W	N/A

Junction Box for Wall or Ceiling

1¾" Inside Depth

CAT. NO. 4 HUBS	CAT. NO. 5 HUBS	CONDUIT HUB SIZE
VXF10	VXFT10	½"
VXF20	VXFT20	¾"

Covers and Gaskets

Cover

Gasket

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE
VHC2	Fixture Hanger Hub Cover for VXF and VXFD Boxes	¾"
GASK643	Gasket for Hub Covers, Flat Covers and Bracket Arms	N/A

Glass Globes

Clear, Heat Resistant

Red

Green

Blue

Amber

CAT. NO. 150W MAX. LAMP SIZE	CAT. NO. 200–300W MAX. LAMP SIZE	DESCRIPTION
VGT15	VGT22	Clear, Heat Resistant
VGT15R	VGT22R	Red
VG15G	VGT22G	Green
VGT15B	VGT22B	Blue
VGT15A	VGT22A	Amber

Reflectors

Standard Dome

30° Angle Reflector

CAT. NO. 150W MAX. LAMP SIZE	CAT. NO. 200–300W MAX. LAMP SIZE	DESCRIPTION
VR15P	VR22P	Dome
VRA15P	VRA22P	Angled

Guards

Polymeric Guard

CAT. NO. 150W MAX. LAMP SIZE	CAT. NO. 200–300W MAX. LAMP SIZE	DESCRIPTION
VGU15P	VGU22P	Polymeric Guard

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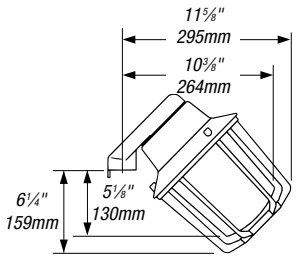
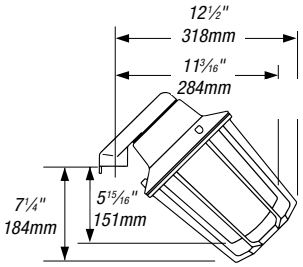
www.tnb.com

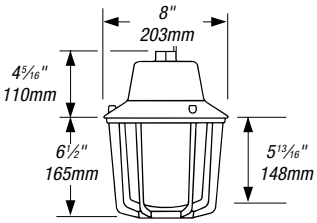
Hazlite® M4 Incandescent Fixture Dimensions



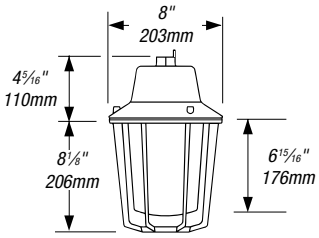
Angle Stanchion Mount
150 Watts Maximum



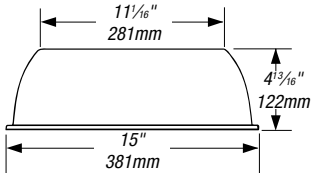
Angle Stanchion Mount
300 Watts Maximum
and Fluorescent



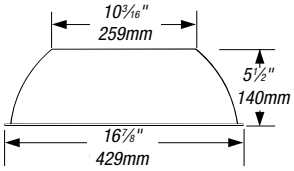
Pendant Mount
150 Watts Maximum



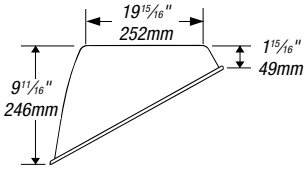
Pendant Mount
300 Watts Maximum
and Fluorescent



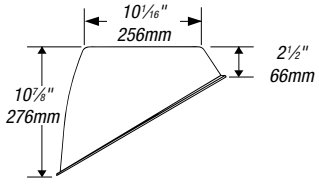
Dome Reflector
150 Watts Maximum



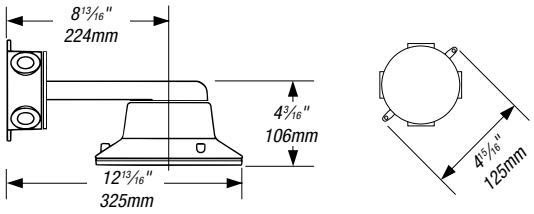
Dome Reflector
300 Watts Maximum
and Fluorescent



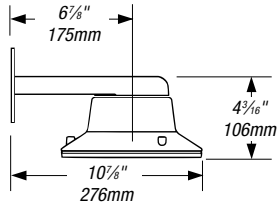
Angle Dome
150 Watts Maximum

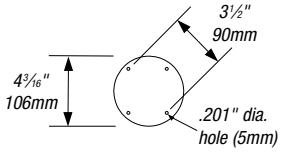


Angle Reflector
300 Watts Maximum
and Fluorescent

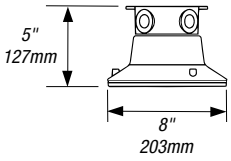


Wall Mount with Box

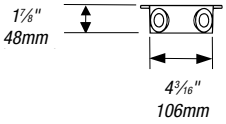


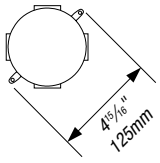


Wall Mount without Box



Ceiling Mount





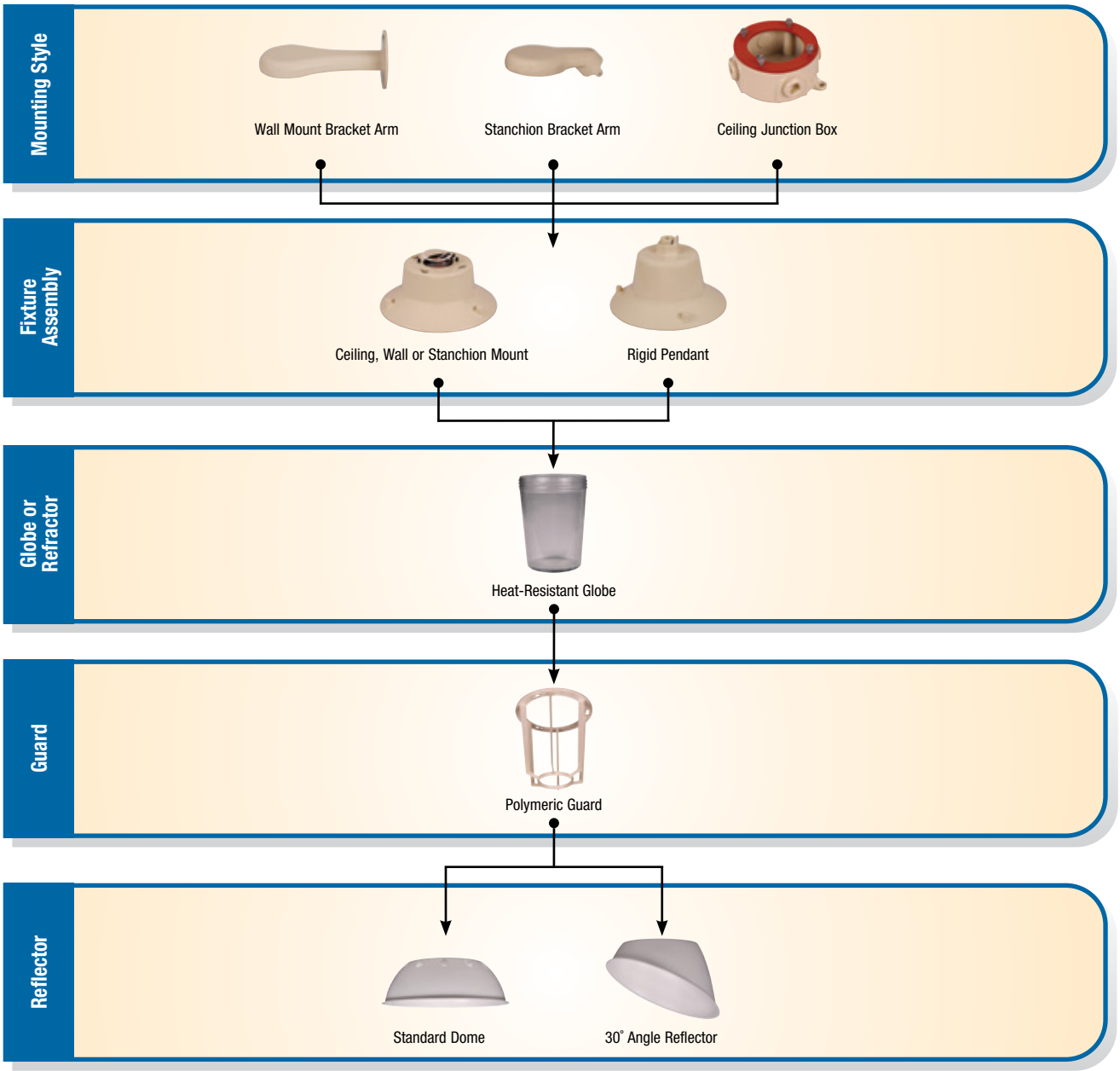
Junction Box for Wall or Ceiling Mount

Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1, Groups E, F and G

- Enclosed and Gasketed for Wet Locations
- UL® Listed (UL1598A) for Marine Locations
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

Hazlite® M4 Fluorescent Fixture Assembly Guide



Thomas&Betts

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Fax: 901.252.1354

Technical Services
Tel: 888.862.3289

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Hazlite® M4 Fluorescent Fixture Catalog Numbering System

VFHA	2	44	12	-	GP	RD	D
1	2	3	4		5	6	7

1 Fixture Series and Mounting Style

- **VFA =** M4 Fluorescent Pendant Mount
- **VFH =** M4 Fluorescent Body for Ceiling, Wall or Stanchion Mount (No Box)
- **VFHA =** M4 Fluorescent Stanchion Mount
- **VFHB =** M4 Fluorescent Wall Mount (No Box)
- **VFHBF =** M4 Fluorescent Wall Mount (Std. Box)
- **VFHF =** M4 Fluorescent Ceiling Mount (Std. Box)

2 Hub Size

- **1 =** ½" NPT Hub (Except VFH and VFHB)
- **2 =** ¾" NPT Hub
- **4 =** 1¼" NPT Hub

3 Lamp Wattage

- **13 =** 13 Watt (One 13W Lamp)
- **22 =** 22 Watt (One 22W Lamp)
- **26 =** 26 Watt (Two 13W Lamps)
- **28 =** 28 Watt (One 28W Lamp)
- **44 =** 44 Watt (Two 22W Lamps)

4 Voltage

- **12 =** 120VAC

5 Optics and Guards

- **GP =** Clear Globe and Polymeric Guard
- **TG =** Tempered Glass Globe
- **TGP =** Tempered Glass Globe and Polymeric Guard
- **ACG =** Amber Glass Globe*
- **BCG =** Blue Glass Globe*
- **GCG =** Green Glass Globe*
- **RCG =** Red Glass Globe*
- **ACGP =** Amber Glass Globe and Polymeric Guard*
- **BCGP =** Blue Glass Globe and Polymeric Guard*
- **GCGP =** Green Glass Globe and Polymeric Guard*
- **RCGP =** Red Glass Globe and Polymeric Guard*

UL® Listing pending on colored globes.

6 Reflector Options

- **RD =** Dome Reflector
- **RA =** Angle Reflector

7 Packaging Options

- **D =** UNIPAK® Packaging (Completely Assembled with Lamps in One Carton)
- **P =** PROJECPAK® Packaging (All Components, Including Lamp(s), in One Carton, Unassembled)

***Note**: If no packaging code is specified, fixture components will be shipped in separate cartons. All fixtures and fixture housings include lamps.*

Class I — Zone 2, Groups IIC, IIB, IIA,
— Division 2, Groups A, B, C and D
Class II — Division 1, Groups E, F and G

- Enclosed and Gasketed for Wet Locations
- UL844
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

Area Lighting — Hazlite® M4 Class I, Div 2

Mounting Options

VXB Wall Mount Bracket Arm

VXA4 Stanchion Bracket Arm

CAT. NO.	CONDUIT HUB SIZE
VXB	N/A
VXA4	1¼"

Fixture Assembly

VFH Ceiling, Wall or Stanchion Mount

VFA Pendant Mount

CAT. NO.	CONDUIT HUB SIZE
VFH	N/A
VFA	½"

Junction Box for Wall or Ceiling

1¾" Inside Depth

CAT. NO. 4 HUBS	CAT. NO. 5 HUBS	CONDUIT HUB SIZE
VXF10	VXFT10	½"
VXF20	VXFT20	¾"

Covers and Gaskets

Fixture Hanger

Gasket

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE
VHC1	Fixture Hanger	½"
VHC2	Hub Cover for VXF Boxes	¾"
GASK643	Gasket for Hub Covers, Flat Covers and Bracket Arms	N/A

Glass Globes and Exit Sign

Three-Sided Exit Sign

Heat-Resistant Clear Glass Globe

CAT. NO. 150W MAX. LAMP SIZE	CAT. NO. 200–300W MAX. LAMP SIZE	DESCRIPTION
VGT15	VGT22	Clear, Heat Resistant
VGT15R	VGT22R	Red
VG15G	VGT22G	Green
VGT15B	VGT22B	Blue
VGT15A	VGT22A	Amber
VRE22	VRE22	Three-Sided Exit Sign

Reflectors

Standard Dome

30° Angle Reflector

CAT. NO. 150W MAX. LAMP SIZE	CAT. NO. 200–300W MAX. LAMP SIZE	DESCRIPTION
—	VR22P	Dome
—	VRA22P	Angled

Guards

Polymeric Guard

CAT. NO. 150W MAX. LAMP SIZE	CAT. NO. 200–300W MAX. LAMP SIZE	DESCRIPTION
—	VGU22P	Polymeric Guard

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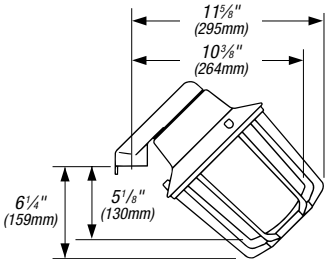
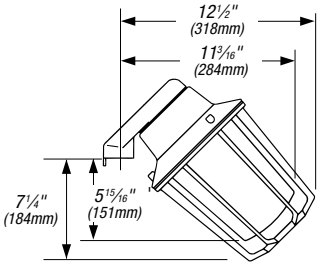
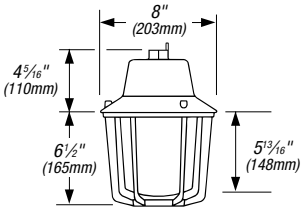
Hazlite® M4 Fluorescent Fixture Dimensions



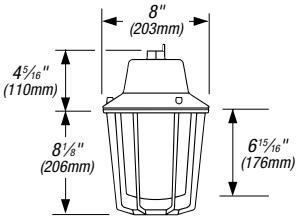
Angle Stanchion Mount
150 Watts Maximum



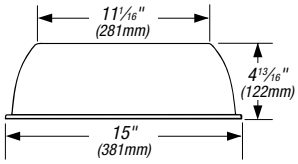
Angle Stanchion Mount
300 Watts Maximum
and Fluorescent



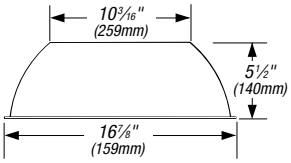
Pendant Mount
150 Watts Maximum



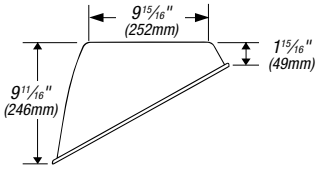
Pendant Mount
300 Watts Maximum
and Fluorescent



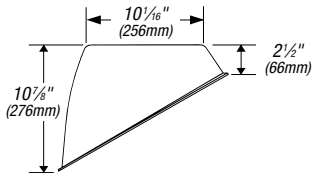
Dome Reflector
150 Watts Maximum



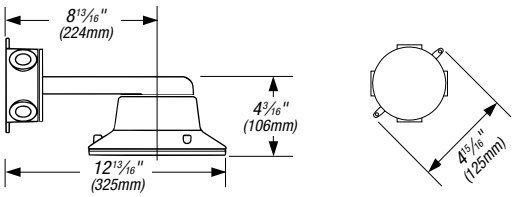
Dome Reflector
300 Watts Maximum
and Fluorescent



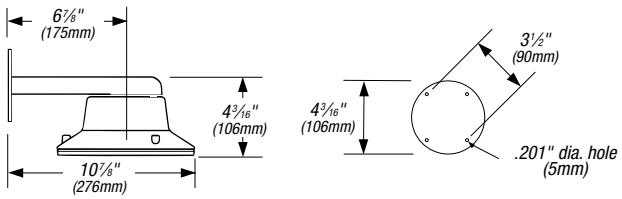
Angle Dome
150 Watts Maximum



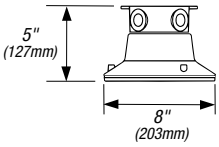
Angle Reflector
300 Watts Maximum
and Fluorescent



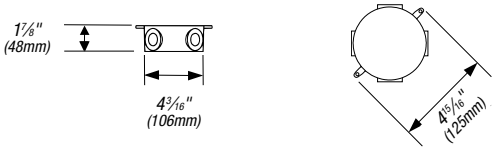
Wall Mount with Box



Wall Mount without Box



Ceiling Mount



Junction Box for Wall or Ceiling Mount

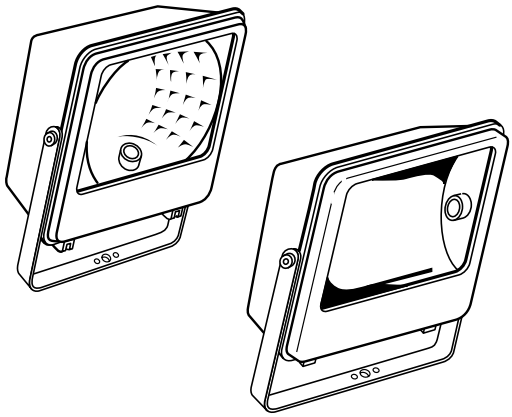
Class I — Zone 2, Groups IIC, IIB, IIA
— Division 2, Groups A, B, C and D
Class II — Division 1, Groups E, F and G

- Enclosed and Gasketed for Wet Locations
- UL844
- NEMA 4X, IP66

Contact your Thomas & Betts sales representative to verify classification.

Class I, Division 2/Marine-Duty Floodlights

Hazlux® 3 UltraFlood® Floodlights



Applications

- Chemical plants
- Oil refineries
- Offshore platforms
- Waste treatment facilities
- Food processing plants
- Steel mills, foundries
- Power plants
- Pulp and paper facilities
- General manufacturing plants
- Shipyards and shipbuilding facilities
- Airplane manufacturing plants
- Defense and government facilities

Features and Benefits

- **Computer-Designed Reflectors —** for optimal light distribution and efficiency
- **Die-Cast Aluminum —** housings and covers for excellent strength, light weight, and corrosion resistance; Marine-duty floodlights are copper-free aluminum alloy
- **Polyester Powder Finish —** provides superior corrosion resistance and attractive appearance
- **Fully Pivoting Steel Yoke —** is standard for ease of aiming and mounting flexibility
- **Tempered Glass Lens —** resists thermal shock and is fully sealed and mechanically retained
- **Hinged Door —** swings down for easy lamp replacement; is easily removable for maintenance
- **Aiming Sight —** is standard on all Hazlux® UltraFlood® floodlights — makes installation faster and easier
- **Lighting Layout Assistance —** at no charge

Wattages, Voltages

• High-Pressure Sodium:	70–1000 watts
• Metal Halide:	175–1000 watts
• All Floodlights:	120, 277, 480 or Multi-tap voltages available

Materials, Finishes

• Housings, Covers:	Powder-coated aluminum
• Hardware:	Corrosion-resistant steel
• Lens:	Tempered glass

Certifications

- Class I, Division 2, Groups A, B, C, D — All (UL844)
- Outdoor Wet Locations — All
- Marine Locations (UL1598A) — FDM Series
- Temperature Range: 70W–400W (All) -30° C to 40° C
  1000W HPS -30° C to 40° C
  1000W MH -30° C to 25° C

Thomas&Betts

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Fax: 901.252.1354

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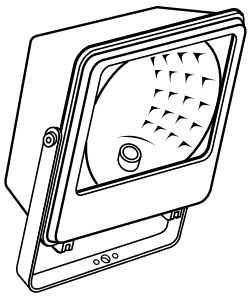
Hazlux® 3 UltraFlood® Floodlight Catalog Numbering System



FD	S	0	40	C	48	0	-	Y	W	E	-	FF
1	2	3	4	5	6	7		8	9	10		11

1 Fixture Series
- **FD =** Class I, Division 2, Groups A, B, C, D
- **FDM =** Class I, Division 2, Groups A, B, C, D and Marine Locations*

2 Lamp Type
- **S =** High-Pressure Sodium
- **H =** Metal Halide

3 Starter Type
- **0 =** Standard Starter (HPS)
- **P =** Pulse Start (Metal Halide Only)
- **R =** Instant Restart (HPS)

4 Lamp Wattage
- **10 =** 100 Watts
- **15 =** 150 Watts
- **17 =** 175 Watts
- **20 =** 200 Watts
- **25 =** 250 Watts
- **40 =** 400 Watts
- **00 =** 1000 Watts

5 Ballast Circuit
- **P =** Reactor
- **H =** High Reactance
- **C =** Constant Wattage Autotransformer

6 Voltage
- **04 =** 120/208/277/240VAC (wired to 120VAC)
- **12 =** 120VAC
- **20 =** 208VAC
- **24 =** 240VAC
- **27 =** 277VAC
- **48 =** 480VAC

Contact the factory for other available voltages

7 Housing Size
- **0 =** Standard Housing (400W max.)
- **L =** Large Housing (1000W)

8 Mounting Style
- **Y =** Yoke (Trunnion) Mount

9 Beam Type
- **W =** Wide Beam
- **D =** Narrow Beam (400W max.)

10 Packaging
- **E =** UNIPAK® with Clear Lamp
- **D =** UNIPAK® with Diffuse Lamp

11 Options
- **OF =** Single Fuse
- **FF =** Double Fuse
- **PW =** Pre-Wired with 3½" Cord
- **BRZ =** Bronze Color
- **BLK =** Black Color

Note: *Standard color is gray.*

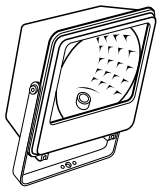
** Minimum order quantity applies; consult customer service for details.*

Class I — Division 2, Groups A, B, C and D
- UL844
- UL1598A for Marine Locations
- NEMA 4X (FDM Series)
- NEMA 3R

Contact your Thomas & Betts sales representative to verify classification.

Floodlights — Hazlux® 3 Class I, Div 2

Hazlux® 3 UltraFlood® Class I, Div. 2 HID Floodlights for Wet Locations



LAMP TYPE	LAMP WATTS	VOLTAGE	YOKE (TRUNNION) MOUNT CAT. NO.	BEAM TYPE†
High-Pressure Sodium	70	120 MT	**FDS007P120-YW** **FDS007H040-YW**	Wide
	100	120 MT	**FDS010P120-YW** **FDS010H040-YW**	Wide
	150	120 MT	**FDS015P120-YW** **FDS015H040-YW**	Wide
	250	120 MT	**FDS025C120-YW** **FDS025C040-YW**	Wide
	400	120 MT	**FDS040C120-YW** **FDS040C040-YW**	Wide
	1000	120 MT	**FDS000C120-YW** **FDS000C040-YW**	Wide
Metal Halide	175	120 MT	**FDHP17C120-YW** **FDHP17C040-YW**	Wide
	250	120 MT	**FDHP25C120-YW** **FDHP25C040-YW**	Wide
	400	120 MT	**FDHP40C120-YW** **FDHP40C040-YW**	Wide
	1000	120 MT	**FDHP00C12L-YW** **FDHP00C04L-YW**	Wide

† *For narrow-beam floodlights, replace "W" at end of catalog number with "N." Example: FDS040C040-YN.*

Ordering Notes:
- *MT indicates multi-tap ballast — 120, 208, 240, 277 volt.*
- *To order 480-volt floodlights, replace "04" in multi-tap catalog number with "48." Example: FDS040C480-YN.*
- *See **below** for other mounting brackets and accessories.*
- *All floodlights for use with mogul base lamps.*

Class I — Division 2, Groups A, B, C, D
- UL844, UL595
- Marine Locations
- Outdoor Wet Locations
- NEMA 3R, NEMA 4X

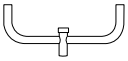
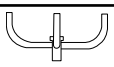
Yoke-Mount Floodlights — Mounting Brackets

	CAT. NO.	DESCRIPTION
	**9901H-TB**	Steel Cross-Arm Mounting Bracket
	**9902H-TB**	Pole-Top Mounting Bracket
	**9920H-TB**	Universal Wall Mounting Bracket

Accessories

CAT. NO.	DESCRIPTION
75-8-TB	Polycarbonate Vandal Shield
75-V-TB	Glare Control Shield

Integral Slipfitter Floodlights — Mounting Brackets

	CAT. NO.	DESCRIPTION
	**9605**	Wall Mount Pipe Bracket (2") with Flange (Prime Coated)
	9605-G	Wall Mount Pipe Bracket (2") with Flange (Galvanized)
	**9352-H-TB**	Two-Arm Pole-Top Bracket ("Bullhorn")
	**9333-TB**	Three-Arm Pole-Top Bracket ("Bullhorn")

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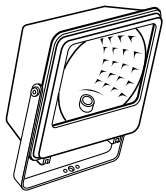
Hazlux® 3 UltraFlood® Class I, Div. 2 HID Floodlights for Marine Locations

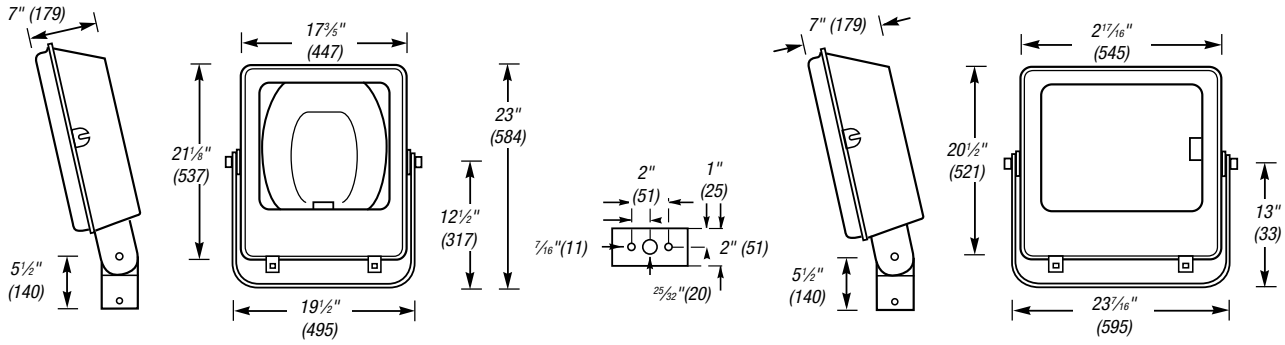


LAMP TYPE	LAMP WATTS	VOLTAGE	YOKE (TRUNNION) MOUNT CAT. NO.	BEAM TYPE†
High-Pressure Sodium	70	120 MT	**FDMS007P120-YW** **FDMS007H040-YW**	Wide
	100	120 MT	**FDMS010P120-YW** **FDMS010H040-YW**	Wide
	150	120 MT	**FDMS015P120-YW** **FDMS015H040-YW**	Wide
	250	120 MT	**FDMS025C120-YW** **FDMS025C040-YW**	Wide
	400	120 MT	**FDMS040C120-YW** **FDMS040C040-YW**	Wide
	1000	120 MT	**FDMS000C120-YW** **FDMS000C040-YW**	Wide
Metal Halide	175	120 MT	**FDMHP17C120-YW** **FDMHP17C040-YW**	Wide
	250	120 MT	**FDMHP25C120-YW** **FDMHP25C040-YW**	Wide
	400	120 MT	**FDMHP40C120-YW** **FDMHP40C040-YW**	Wide
	1000	120 MT	**FDMHP00C12L-YW** **FDMHP00C04L-YW**	Wide

† *For narrow-beam floodlights, replace "W" at end of catalog number with "N." Example: FDMS040C040-YN.*

Ordering Notes:
- *MT indicates multi-tap ballast — 120, 208, 240, 277 volt.*
- *To order 480-volt floodlights, replace "04" in multi-tap catalog number with "48." Example: FDMS040C480-YN.*
- *See **previous page** for other mounting brackets and accessories.*
- *All floodlights for use with mogul base lamps.*

Class I — Division 2, Groups A, B, C, D
- UL844, UL595
- Marine Locations
- Outdoor Wet Locations
- NEMA 3R, NEMA 4X



Emergency Lighting — HazBatt® H3 Class I, Div 2

Designed for use in Class I, Division 2 and Class II locations.

HazBatt® H3 Fluorescent Emergency Lighting Systems for Adverse Industrial Locations

Features and Benefits

- **Self Contained —** Lamps, batteries, electronics and AC ballasts are safely enclosed in rugged die-cast aluminum fixture housing
- **Life Safety Code® and OSHA Compliant —** Both lamps operate for at least 90 minutes on emergency battery power
- **UL® Listings —** Broad range of UL924 Listed hazardous-location fluorescent emergency systems
- **Choice of Six Mounting Styles —** Pendant, cone pendant, ceiling, wall, angle stanchion and straight stanchion
- **Continuous or Emergency-Only Operation —** Both lamps operate continuously (on AC, then DC) or only during a power failure — your choice
- **Sealed, Maintenance-Free Ni-Cad Batteries —** Rated for 7–10 years of reliable operation
- **Glass Globe and Polycarbonate Guard —** Provide excellent mechanical and environmental protection for lamps
- **Bright Red Epoxy Finish —** Enables HazBatt® systems to be recognized quickly for maintenance and testing

Typical Applications

- Chemical Plants
- Oil Refineries
- Offshore Platforms
- Waste Treatment Facilities
- Food Processing Plants
- Steel Mills and Foundries
- Power Plants
- Pulp and Paper Facilities
- General Manufacturing Plants
- Shipyards and Shipbuilding Facilities
- Aircraft Manufacturing Plants
- Defense and Government Facilities

Life Safety Code is a trademark of the National Fire Protection Association, Inc.

Electrical Ratings

• Lamps/Wattages:	(2) 13-watt fluorescent
• Standard Voltages:	120V (continuous — all) 120/277V (emergency — all)
• Optional Voltages:	208V, 240V (contact your Thomas & Betts representative)

Certifications

- Class I, Division 2, Groups A, B, C, D (UL844)
- Class II, Division 1, Groups F, G (UL844)
- Emergency Lighting Systems (UL924)
- Marine — Inside Drip-Proof (UL1598A)
- Enclosed and Gasketed, Wet Locations
- Temperature Range: 0° C to 40° C

Materials, Finishes

• Ballast Housings:	Red epoxy-coated aluminum
• Mounting Covers:	Red epoxy-coated aluminum
• Hardware:	Stainless steel
• Guard:	Polycarbonate plastic
• Reflectors:	Fiberglass-reinforced polyester

Certification Guide

HAZARDOUS AREA CLASSIFICATION	CONTINUOUS OPERATION T-NUMBER: AC OPERATION	CONTINUOUS OPERATION T-NUMBER: DC OPERATION	EMERGENCY OPERATION T-NUMBER
Class I, Division 2 T-Number	T2D	T4A	T4A
Class II, Groups F, G T-Number	T6	T6	T6

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HazBatt® H3 Fixture Catalog Numbering System

DFE	26	PB	12	V	-	TGL	-	A2	D	-	Z
1	2	3	4	5		6		7	8		9

1 HazBatt® Type/Suitability
- **DFE =** HazBatt® H3 Emergency Lighting System

2 Total Lamp Watts
- **26 =** Two 13-Watt Fluorescent Lamps

3 Battery Ballast Circuit
- **B =** Emergency Operation HazBatt®: Two Emergency Ballasts Only
- **PB =** Continuous Operation HazBatt®: Two Emergency Ballasts plus Two AC Ballasts (120 volt only)

4 Voltage
- **03 =** 120/277 VAC Dual Primary (Emergency Operation Only)
- **12 =** 120 VAC Primary (Emergency or Continuous Operation)
- **27 =** 277 VAC Primary (Emergency Operation Only)

5 Specific Hazardous Suitability
- **V =** Class I, Division 2, Groups A, B, C, D
- **D =** Class II, Division 1, Groups F, G, Class III

6 Optical Assembly Option
- **TGL =** Tempered Glass Globe and Polymeric Guard

7 Mounting Style
- **A2 =** ¾" Cone Pendant
- **B2 =** ¾" Wall
- **B3 =** 1" Wall
- **C2 =** ¾" Ceiling
- **C3 =** 1" Ceiling
- **L4 =** 1¼" 90° Stanchion
- **L5 =** 1½" 90° Stanchion
- **P2 =** ¾" Rigid Pendant
- **P3 =** 1" Rigid Pendant
- **S4 =** 1¼" 25° Stanchion
- **S5 =** 1½" 25° Stanchion

8 UNIPAK® Options
- **D =** UNIPAK® Packaging with Lamps (Standard)

9 Options
- **Z =** Shipped with Explosion-Proof Test Switch Station (Single Button)
- **7 =** Shipped with VRE22 Exit Sign (Not UL® Listed)*

Contact the factory for other available voltages.

** Cannot be used with guard option.*

Class I — Division 2, Groups A, B, C and D
Class II — Division 1, Groups F and G
- UL844, UL1598
- Enclosed and Gasketed, Wet Locations
- Marine — Inside Drip Proof

Contact your Thomas & Betts sales representative to verify classification.

HazBatt® H3 Fluorescent Emergency Lighting Systems

Fixtures for Class I, Division 2, Groups A, B, C, D

	MOUNTING STYLE	SIZE IN	HAZBATT® H3 WITH GLOBE, GUARD		HAZBATT® H3 WITH EXIT SIGN	
			CONTINUOUS OPERATION (120 VAC)‡	EMERGENCY USE ONLY (120/277 VAC)	CONTINUOUS OPERATION (120 VAC)‡	EMERGENCY USE ONLY (120/277 VAC)
	Rigid Pendant	1	DFE26PB12V-TGL-P3D	DFE26B03V-TGL-P3D	DFE26PB12V-TGL-P3D7	DFE26B03V-TGL-P3D7
	Cone Pendant	¾	DFE26PB12V-TGL-A2D	DFE26B03V-TGL-A2D	DFE26PB12V-TGL-A2D7	DFE26B03V-TGL-A2D7
		1	DFE26PB12V-TGL-A3D	DFE26B03V-TGL-A3D	DFE26PB12V-TGL-A3D7	DFE26B03V-TGL-A3D7
	Ceiling	¾	DFE26PB12V-TGL-C2D	DFE26B03V-TGL-C2D	DFE26PB12V-TGL-C2D7	DFE26B03V-TGL-C2D7
		1	DFE26PB12V-TGL-C3D	DFE26B03V-TGL-C3D	DFE26PB12V-TGL-C3D7	DFE26B03V-TGL-C3D7
	Wall	¾	DFE26PB12V-TGL-B2D	DFE26B03V-TGL-B2D	DFE26PB12V-TGL-B2D7	DFE26B03V-TGL-B2D7
		1	DFE26PB12V-TGL-B3D	DFE26B03V-TGL-B3D	DFE26BP12V-TGL-B307	DFE26B03V-TGL-B3D7
	25° Angle Stanchion	1¼	DFE26PB12V-TGL-S4D	DFE26B03V-TGL-S4D	DFE26PB12V-TGL-S4D7	DFE26B03V-TGL-S4D7
		1½	DFE26PB12V-TGL-S5D	DFE26B03V-TGL-S5D	DFE26PB12V-TGL-S5D7	DFE26B03V-TGL-S5D7
	90° Stanchion	1¼	DFE26PB12V-TGL-L4D	DFE26B03V-TGL-L4D	DFE26PB12V-TGL-L4D7	DFE26B03V-TGL-L4D7
		1½	DFE26PB12V-TGL-L5D	DFE26B03V-TGL-L5D	DFE26PB12V-TGL-L5D7	DFE26B03V-TGL-L5D7

***Notes**: To specify HazBatt® H3 to be shipped with test switch station suitable for use in Class I, Division 2 location, add "Z" to the end of the catalog number. Example: DFE26PB12V-TGL-B2DZ*

All HazBatt® H3 fixtures include lamps.

‡ Contact the factory for other voltages.

All HazBatt® fixtures include globe and guard.

R576124176
Explosion-Proof Test Switch Station

Class I — Division 2, Groups A, B, C, D
Class II — Division 1, Groups F, G
- UL844, UL1598
- Enclosed and Gasketed, Wet Locations
- Marine — Inside Drip Proof

Contact your Thomas & Betts sales representative to verify classification.

Fixtures for Class II, Division 1, Groups F, G, Class III

	MOUNTING STYLE	SIZE IN	HAZBATT® H3 WITH GLOBE, GUARD		HAZBATT® H3 WITH EXIT SIGN	
			CONTINUOUS OPERATION (120 VAC)‡	EMERGENCY USE ONLY (120/277 VAC)	CONTINUOUS OPERATION (120 VAC)‡	EMERGENCY USE ONLY (120/277 VAC)
	Rigid Pendant	¾	DFE26PB12D-TGL-P2D	DFE26B03D-TGL-P2D	DFE26PB12D-TGL-P2D7	DFE26B03D-TGL-P2D7
		1	DFE26PB12D-TGL-P3D	DFE26B03D-TGL-P3D	DFE26PB12D-TGL-P3D7	DFE26B03D-TGL-P3D7
	Cone Pendant	¾	DFE26PB12D-TGL-A2D	DFE26B03D-TGL-A2D	DFE26PB12D-TGL-A2D7	DFE26B03D-TGL-A2D7
		1	DFE26PB12D-TGL-A3D	DFE26B03D-TGL-A3D	DFE26PB12D-TGL-A3D7	DFE26B03D-TGL-A3D7
	Ceiling	¾	DFE26PB12D-TGL-C2D	DFE26B03D-TGL-C2D	DFE26PB12D-TGL-C2D7	DFE26B03D-TGL-C2D7
		1	DFE26PB12D-TGL-C3D	DFE26B03D-TGL-C3D	DFE26PB12D-TGL-C3D7	DFE26B03D-TGL-C3D7
	Wall	¾	DFE26PB12D-TGL-B2D	DFE26B03D-TGL-B2D	DFE26PB12D-TGL-B2D7	DFE26B03D-TGL-B2D7
		1	DFE26PB12D-TGL-B3D	DFE26B03D-TGL-B3D	DFE26BP12D-TGL-B3D7	DFE26B03D-TGL-B3D7
	25° Angle Stanchion	1¼	DFE26PB12D-TGL-S4D	DFE26B03D-TGL-S4D	DFE26PB12D-TGL-S4D7	DFE26B03D-TGL-S4D7
		1½	DFE26PB12D-TGL-S5D	DFE26B03D-TGL-S5D	DFE26PB12D-TGL-S5D7	DFE26B03D-TGL-S5D7
	90° Stanchion	1¼	DFE26PB12D-TGL-L4D	DFE26B03D-TGL-L4D	DFE26PB12D-TGL-L4D7	DFE26B03D-TGL-L4D7
		1½	DFE26PB12D-TGL-L5D	DFE26B03D-TGL-L5D	DFE26PB12D-TGL-L5D7	DFE26B03D-TGL-L5D7

***Notes**: To specify HazBatt® H3 to be shipped with test switch station suitable for use in Class I, Division 2 location, add "Z" to the end of the catalog number. Example: DFE26PB12V-TGL-B2DZ*

All HazBatt® H3 fixtures include lamps.

‡ Contact the factory for other voltages.

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Emergency Lighting — HazBatt® H3 Class I, Div 2

Mounting Options


Wall Mount


HazVertor® Ring


Flexible Pendant


25° Angle Stanchion


Rigid Pendant


Ceiling Mount


Straight Stanchion


Cone Pendant

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE
VP2-RED VP3-RED	Rigid Pendant	¾" 1"
VA2-RED VA3-RED	Cone Pendant	¾" 1"
VF2-RED VF3-RED	Flexible Pendant	¾" 1"
VC2-RED VC3-RED	Ceiling Mount	¾" 1"
VB2-RED VB3-RED	Wall Mount	¾" 1"
VS4-RED VS5-RED	25° Angle Stanchion	¾" 1"
VL4-RED VL5-RED	Straight Stanchion	¾" 1"
HV1	HazVertor® Ring for Class I, Div. 2 Requirements	—
HV2	HazVertor® Ring for Class II Requirements	—

Glass Globe and Exit Sign


Heat-Resistant Globe

CAT. NO.	DESCRIPTION
VGT22	5½" dia. Clear, Heat-Resistant
VRE22	Three-Sided Exit Sign

Three-Sided Exit Sign

Reflectors


Standard Dome


30° Angle Reflector

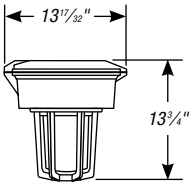
CAT. NO.	DESCRIPTION
VR22P	Dome Reflector
VRA22P	30° Angle Reflector

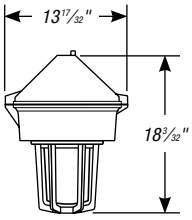
Guard

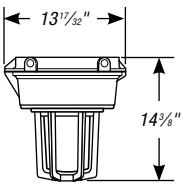

Polymeric Guard

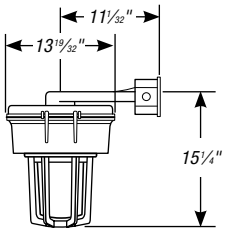
CAT. NO.	DESCRIPTION
VGU22P-RED	Polymeric Guard

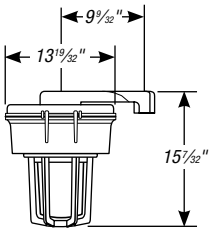
Dimensions











HazBatt® M5 Fixture Catalog Numbering System

XFE	26	PB	12	-	0	G	-	C2	D	Z
1	2	3	4		5	6		7	8	9

1 HazBatt® Type/Suitability
- **XFE =** Class I, Division 1, Groups C, D HazBatt® Emergency Lighting System

2 Total Lamp Watts
- **26 =** Two 13-Watt Fluorescent Lamps

3 Battery Ballast Circuit
- **B =** Emergency Operation HazBatt®: Two Emergency Ballasts Only
- **PB =** Continuous Operation HazBatt®: Two Emergency Ballasts plus Two AC Ballasts (120 volt only)

4 Voltage
- **12 =** 120 VAC Primary (Emergency or Continuous Operation)
- **27 =** 277 VAC Primary (Emergency Operation Only)

5 Housing
- **0 =** Standard Housing

6 Guards
- **G =** Guard

7 Mounting Style
- **B2 =** ¾" Wall
- **B3 =** 1" Wall
- **C2 =** ¾" Ceiling
- **C3 =** 1" Ceiling
- **J2 =** ¾" Bulkhead
- **J3 =** 1" Bulkhead
- **P2 =** ¾" Rigid Pendant
- **P3 =** 1" Rigid Pendant
- **S4 =** 1¼" Angle Stanchion
- **S5 =** 1½" Angle Stanchion

8 Packaging Options
- **D =** UNIPAK® Packaging (Completely Assembled with Lamps in One Carton)

9 Options
- **Z =** Shipped with Explosion-Proof Test Switch Station (Single Button)
- **7 =** Shipped with VRE22 Exit Sign (Not UL® Listed)

Class I — Division 1, Groups C, D
- UL844, UL924, UL1598
- Enclosed and Gasketed, Wet Locations
- Marine — Inside Drip Proof

Contact your Thomas & Betts sales representative to verify classification.

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HazBatt® M5 Fluorescent Emergency Lighting Systems — Class I, Division 1

XFE26B12 Tank

XFE26B12 Fixture and Globe

	MOUNTING STYLE	SIZE IN	120 VAC EMERGENCY USE	120 VAC CONTINUOUS OPERATION	277 VAC EMERGENCY USE
	Pendant	¾ 1	XFE26B12-O-P2D XFE26B12-O-P3D	XFE26PB12-O-P2D XFE26PB12-O-P3D	XFE26B27-O-P2D XFE26B27-O-P3D
	Ceiling	¾ 1	XFE26B12-O-C2D XFE26B12-O-C3D	XFE26PB12-O-C2D XFE26PB12-O-C3D	XFE26B27-O-C2D XFE26B27-O-C3D
	Wall	¾ 1	XFE26B12-O-B2D XFE26B12-O-B3D	XFE26PB12-O-B2D XFE26PB12-O-B3D	XFE26B27-O-B2D XFE26B27-O-B3D
	Stanchion	1¼ 1½	XFE26B12-O-S4D XFE26B12-O-S5D	XFE26PB12-O-S4D XFE26PB12-O-S5D	XFE26B27-O-S4D XFE26B27-O-S5D
	Bulkhead	¾ 1	XFE26B12-O-J2D XFE26B12-O-J3D	XFE26PB12-O-J2D XFE26PB12-O-J3D	XFE26B27-O-J2D XFE26B27-O-J3D

HazBatt® M5 Fluorescent Emergency Lighting Systems — Class I, Division 1 with Exit Sign

	MOUNTING STYLE	SIZE IN	120 VAC EMERGENCY USE	120 VAC CONTINUOUS OPERATION	277 VAC EMERGENCY USE
	Pendant	¾ 1	XFE26B12-G-P27 XFE26B12-G-P37	XFE26PB12-G-P27 XFE26BP12-G-P37	XFE26B27-G-P27 XFE26B27-G-P37
	Ceiling	¾ 1	XFE26B12-G-C27 XFE26B12-G-C37	XFE26PB12-G-C27 XFE26PB12-G-C37	XFE26B27-G-C27 XFE26B27-G-C37
	Wall	¾ 1	XFE26B12-G-B27 XFE26B12-G-B37	XFE26PB12-G-B27 XFE26PB12-G-B37	XFE26B27-G-B27 XFE26B27-G-B37
	Stanchion	1¼ 1½	XFE26B12-G-S47 XFE26B12-G-S57	XFE26PB12-G-S47 XFE26PB12-G-S57	XFE26B27-G-S47 XFE26B27-G-S57
	Bulkhead	¾ 1	XFE26B12-G-J27 XFE26B12-G-J37	XFE26PB12-G-J27 XFE26PB12-G-J37	XFE26B27-G-J27 XFE26B27-G-J37

Class I — Division 1, Groups C, D
- UL844, UL924, UL1598
- Enclosed and Gasketed, Wet Locations
- Marine — Inside Drip Proof

Contact your Thomas & Betts sales representative to verify classification.

Emergency Lighting — HazBatt® M5 Class I, Div 1

Mounting Options

Pendant Mount

Ceiling Mount

Wall Mount

Stanchion Mount

Bulkhead Mount

CAT. NO.	DESCRIPTION	CONDUIT HUB SIZE
XP2-RED	Pendant Mount	¾"
XP3-RED		1"
XC2-RED	Ceiling Mount	¾"
XC3-RED		1"
XB2-RED	Wall Mount	¾"
XB3-RED		1"
XJ2-RED	Bulkhead Mount	¾"
XJ3-RED		1"
XS4-RED	Stanchion Mount	¾"
XS5-RED		1"

Replacement Globe Assembly

Globe Assembly

CAT. NO.	DESCRIPTION
XFE26B12	HazBatt® M5 Replacement Globe Assembly

Reflectors

Standard Dome

30° Angle Reflector

CAT. NO.	DESCRIPTION
VR15P	Dome Reflector, Fiberglass-Reinforced Polyester
VRA15P	30° Angle Reflector, Fiberglass-Reinforced Polyester

Guard

Cast Guard

CAT. NO.	DESCRIPTION
XGU15P-RED	Cast Aluminum Guard, Powder Finish

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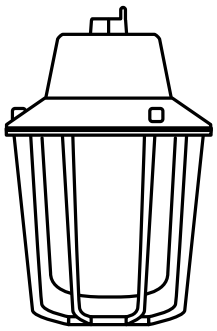
HazFlash® M4 DXS Series Fixture Catalog Numbering System



DXS	6	1	R	TG	-	P2	SR
1	2	3	4	5		6	7

1 Strobe Series and Suitability
- **DXS =** HazFlash® M4 Xenon Strobe
  Class I, Division 2, Groups A, B, C, D
  Class II, Division 1, Groups E, F, G†
  †Class II: Pendant-Mount Strobes Only

2 Flash Rate
- **6 =** 60 Flashes per Minute

3 Voltage
- **1 =** 120 Volts AC, 50/60 Hz (Standard)
- **2 =** 240 Volts AC, 50/60 Hz
- **8 =** 10–30 Volts DC
- **9 =** 90–130 Volts DC

4 Lens Color
- **R =** Red
- **B =** Blue
- **C =** Clear
- **G =** Green
- **A =** Amber

5 Optical Assembly Options
- **TG =** Tempered Glass Globe
- **TGP =** Tempered Globe and Polymeric Guard

6 Mounting Style
- **P2 =** ¾" Pendant Mount
- **C2 =** ¾" Ceiling Mount
- **B2 =** ¾" Wall Mount with Box
- **S4 =** 1¼" Angle Stanchion Mount

7 Options
- **SR =** Sealing Ring Kit for Inverted Mounting (Maintains Marine Listing in Globe-Up Position)

‡ Sealing Ring Option required when mounting in globe-up position.

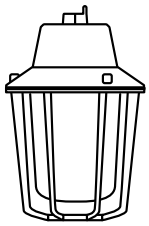
† Pendant Mount only.

Class I — Division 2, Groups A, B, C, D
Class II — Division 1, Groups E, F, G†
- CSA — NRTL/C
- Outdoor Wet Locations, NEMA 3R
- Outdoor Marine‡, NEMA 4X‡

Contact your Thomas & Betts sales representative to verify classification.

Emergency Lighting — HazFlash® M4 (Strobe) Class I, Div 2

HazFlash® M4 DXS Series Hazardous Area Strobe Lights



MOUNTING STYLE	CONDUIT SIZE	120 VAC, 50/60 HZ CAT. NO.	240 VAC, 50/60 HZ CAT. NO.	10–30 VDC CAT. NO.	90–130 VDC CAT. NO.
RED Lens HazFlash® M4 DXS Strobe Lights					
Pendant	¾"	**DXS61R-TGP-P2**	**DSX62R-TGP-P2**	**DXS68R-TGP-P2**	**DXS69R-TGP-P2**
Ceiling	¾"	**DXS61R-TGP-C2**	**DXS62R-TGP-C2**	**DXS68R-TGP-C2**	**DXS69R-TGP-C2**
Wall	¾"	**DXS61R-TGP-B2**	**DXS62R-TGP-B2**	**DXS68R-TGP-B2**	**DXS69R-TGP-B2**
Stanchion	1¼"	**DXS61R-TGP-S4**	**DXS62R-TGP-S4**	**DXS68R-TGP-S4**	**DXS69R-TGP-S4**
BLUE Lens HazFlash® M4 DXS Strobe Lights					
Pendant	¾"	**DXS61B-TGP-P2**	**DSX62B-TGP-P2**	**DXS68B-TGP-P2**	**DXS69B-TGP-P2**
Ceiling	¾"	**DXS61B-TGP-C2**	**DXS62B-TGP-C2**	**DXS68B-TGP-C2**	**DXS69B-TGP-C2**
Wall	¾"	**DXS61B-TGP-B2**	**DXS62B-TGP-B2**	**DXS68B-TGP-B2**	**DXS69B-TGP-B2**
Stanchion	1¼"	**DXS61B-TGP-S4**	**DXS62B-TGP-S4**	**DXS68B-TGP-S4**	**DXS69B-TGP-S4**
CLEAR Lens HazFlash® M4 DXS Strobe Lights					
Pendant	¾"	**DXS61C-TGP-P2**	**DSX62C-TGP-P2**	**DXS68C-TGP-P2**	**DXS69C-TGP-P2**
Ceiling	¾"	**DXS61C-TGP-C2**	**DXS62C-TGP-C2**	**DXS68C-TGP-C2**	**DXS69C-TGP-C2**
Wall	¾"	**DXS61C-TGP-B2**	**DXS62C-TGP-B2**	**DXS68C-TGP-B2**	**DXS69C-TGP-B2**
Stanchion	1¼"	**DXS61C-TGP-S4**	**DXS62C-TGP-S4**	**DXS68C-TGP-S4**	**DXS69C-TGP-S4**
GREEN Lens HazFlash® M4 DXS Strobe Lights					
Pendant	¾"	**DXS61G-TGP-P2**	**DSX62G-TGP-P2**	**DXS68G-TGP-P2**	**DXS69G-TGP-P2**
Ceiling	¾"	**DXS61G-TGP-C2**	**DXS62G-TGP-C2**	**DXS68G-TGP-C2**	**DXS69G-TGP-C2**
Wall	¾"	**DXS61G-TGP-B2**	**DXS62G-TGP-B2**	**DXS68G-TGP-B2**	**DXS69G-TGP-B2**
Stanchion	1¼"	**DXS61G-TGP-S4**	**DXS62G-TGP-S4**	**DXS68G-TGP-S4**	**DXS69G-TGP-S4**
AMBER Lens HazFlash® M4 DXS Strobe Lights					
Pendant	¾"	**DXS61A-TGP-P2**	**DSX62A-TGP-P2**	**DXS68A-TGP-P2**	**DXS69A-TGP-P2**
Ceiling	¾"	**DXS61A-TGP-C2**	**DXS62A-TGP-C2**	**DXS68A-TGP-C2**	**DXS69A-TGP-C2**
Wall	¾"	**DXS61A-TGP-B2**	**DXS62A-TGP-B2**	**DXS68A-TGP-B2**	**DXS69A-TGP-B2**
Stanchion	1¼"	**DXS61A-TGP-S4**	**DXS62A-TGP-S4**	**DXS68A-TGP-S4**	**DXS69A-TGP-S4**

Notes:

† Use pendant mount strobes only for Class II locations.

‡ Use sealing ring kit (below) to maintain Outdoor Marine and NEMA 4X ratings when installing in the inverted position.

To order DXS strobe light with sealing ring kit for inverted mounting (globe pointing up), add suffix "-SR" to the catalog number. Example: DXS61RGP-P2-SR.

DXS Strobe Light Replacement Parts

CAT. NO.	DESCRIPTION
XSFT	Replacement Flash Tube
XSFL-R	Replacement Fresnel Lens — Red
XSFL-B	Replacement Fresnel Lens — Blue
XSFL-C	Replacement Fresnel Lens — Clear
XSFL-G	Replacement Fresnel Lens — Green
XSFL-A	Replacement Fresnel Lens — Amber
VGU22P	Replacement Polycarbonate Guard
VGL22	Clear Glass Globe
VGT22	Tempered Glass Globe
SRKIT-1	Sealing Ring Kit — includes sealing ring and gasket

Class I — Division 2, Groups A, B, C, D
Class II — Division 1, Groups E, F, G†

- CSA — NRTL
- Outdoor Wet Locations, NEMA 3R
- Outdoor Marine‡, NEMA 4X‡

Contact your Thomas & Betts sales representative to verify classification.

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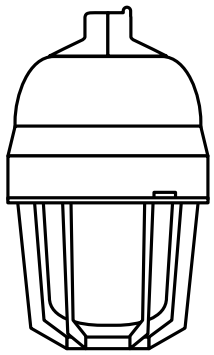
HazFlash® M5 XXS Series Fixture Catalog Numbering System



XXS	6	1	R	-	G	-	P2	SR
1	2	3	4		5		6	7

1 Strobe Series and Suitability
- **XXS =** HazFlash® M5 Xenon Strobe
  Class I, Division 1, Groups C, D
  Class II, Division 1, Groups E, F, G

2 Flash Rate
- **6 =** 60 Flashes per Minute
- **4 =** 40 Flashes per Minute (Standard)
- **8 =** 80 Flashes per Minute

3 Electrical Ratings
- **1 =** 120 Volts AC, 50/60 Hz (Standard)
- **2 =** 240 Volts AC, 50/60 Hz
- **8 =** 10–30 Volts DC
- **9 =** 90–130 Volts DC

4 Lens Color
- **R =** Red
- **B =** Blue
- **C =** Clear
- **G =** Green
- **A =** Amber

5 Guard
- **G =** Cast Guard
  (Omit "G" if guard is not required.)

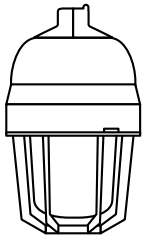
6 Mounting Style
- **P2 =** ¾" Pendant Mount
- **P3 =** 1" Pendant Mount
- **C2 =** ¾" Ceiling Mount
- **C3 =** 1" Ceiling Mount
- **B2 =** ¾" Wall Mount with Box
- **B3 =** 1" Wall Mount with Box
- **J2 =** ¾" Bulkhead Mount
- **J3 =** 1" Bulkhead Mount
- **S4 =** 1¼" Angle Stanchion Mount
- **S5 =** 1½" Angle Stanchion Mount

Class I — Class I, Division 1, Groups C, D
Class II — Class II, Division 1, Groups E, F, G
- Outdoor Wet Locations‡, NEMA 4X
- UL864, UL1598, UL844

Contact your Thomas & Betts sales representative to verify classification.
‡ Pendant mount only

Emergency Lighting — HazFlash® M5 (Strobe) Class I, Div 1

HazFlash® M5 XXS Series Explosion-Proof Strobe Lights



MOUNTING STYLE	CONDUIT SIZE	120 VAC, 50/60 HZ CAT. NO.	240 VAC, 50/60 HZ CAT. NO.	10–30 VDC CAT. NO.	90–130 VDC CAT. NO.
RED Lens HazFlash® M5 XXS Strobe Lights					
Pendant	¾"	**XXS61R-G-P2**	**XSX62R-G-P2**	**XXS68R-G-P2**	**XXS69R-G-P2**
Ceiling	¾"	**XXS61R-G-C2**	**XXS62R-G-C2**	**XXS68R-G-C2**	**XXS69R-G-C2**
Wall	¾"	**XXS61R-G-B2**	**XXS62R-G-B2**	**XXS68R-G-B2**	**XXS69R-G-B2**
Stanchion	1¼"	**XXS61R-G-S4**	**XXS62R-G-S4**	**XXS68R-G-S4**	**XXS69R-G-S4**
BLUE Lens HazFlash® M5 XXS Strobe Lights					
Pendant	¾"	**XXS61B-G-P2**	**XSX62B-G-P2**	**XXS68B-G-P2**	**XXS69B-G-P2**
Ceiling	¾"	**XXS61B-G-C2**	**XXS62B-G-C2**	**XXS68B-G-C2**	**XXS69B-G-C2**
Wall	¾"	**XXS61B-G-B2**	**XXS62B-G-B2**	**XXS68B-G-B2**	**XXS69B-G-B2**
Stanchion	1¼"	**XXS61B-G-S4**	**XXS62B-G-S4**	**XXS68B-G-S4**	**XXS69B-G-S4**
CLEAR Lens HazFlash® M5 XXS Strobe Lights					
Pendant	¾"	**DXS61C-G-P2**	**DSX62C-G-P2**	**DXS68C-G-P2**	**DXS69C-G-P2**
Ceiling	¾"	**DXS61C-G-C2**	**DXS62C-G-C2**	**DXS68C-G-C2**	**DXS69C-G-C2**
Wall	¾"	**DXS61C-G-B2**	**DXS62C-G-B2**	**DXS68C-G-B2**	**DXS69C-G-B2**
Stanchion	1¼"	**DXS61C-G-S4**	**DXS62C-G-S4**	**DXS68C-G-S4**	**DXS69C-G-S4**
GREEN Lens HazFlash® M5 XXS Strobe Lights					
Pendant	¾"	**XXS61G-G-P2**	**XSX62G-G-P2**	**XXS68G-G-P2**	**XXS69G-G-P2**
Ceiling	¾"	**XXS61G-G-C2**	**XXS62G-G-C2**	**XXS68G-G-C2**	**XXS69G-G-C2**
Wall	¾"	**XXS61G-G-B2**	**XXS62G-G-B2**	**XXS68G-G-B2**	**XXS69G-G-B2**
Stanchion	1¼"	**XXS61G-G-S4**	**XXS62G-G-S4**	**XXS68G-G-S4**	**XXS69G-G-S4**
AMBER Lens HazFlash® M5 XXS Strobe Lights					
Pendant	¾"	**XXS61A-G-P2**	**XSX62A-G-P2**	**XXS68A-G-P2**	**XXS69A-G-P2**
Ceiling	¾"	**XXS61A-G-C2**	**XXS62A-G-C2**	**XXS68A-G-C2**	**XXS69A-G-C2**
Wall	¾"	**XXS61A-G-B2**	**XXS62A-G-B2**	**XXS68A-G-B2**	**XXS69A-G-B2**
Stanchion	1¼"	**XXS61A-G-S4**	**XXS62A-G-S4**	**XXS68A-G-S4**	**XXS69A-G-S4**

Note:

To order XXS strobe light with sealing ring kit for inverted mounting (globe pointing up), add suffix "-SR" to the catalog number. Example: XXS61RGP-P2-SR.

XXS Strobe Light Replacement Parts

CAT. NO.	DESCRIPTION
XSFT	Replacement Flash Tube
XSFL-R	Replacement Fresnel Lens — Red
XSFL-B	Replacement Fresnel Lens — Blue
XSFL-C	Replacement Fresnel Lens — Clear
XSFL-G	Replacement Fresnel Lens — Green
XSFL-A	Replacement Fresnel Lens — Amber
XGU15	Replacement Guard
XGSA15	Replacement Globe Assembly

Class I — Division 2, Groups C, D
Class II — Division 1, Groups E, F, G

- CSA — NRTL
- Outdoor Wet Locations, NEMA 3R
- UL864, UL1598, UL844

Contact your Thomas & Betts sales representative to verify classification.

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Lightalarms®

Lightalarms® Emergency Lighting

In this section...

Lightalarms® Emergency Lighting

Thomas&Betts

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Overview

Lighting the Way to Safety Since 1953

Since the introduction of our first product manufactured in 1953 for the specific code-driven New York City market place, Lightalarms has evolved into a leading designer and manufacturer of emergency lighting systems that are specified and installed throughout the United States.

With over fifty years of experience successfully meeting the demands and rigid code compliances of New York City, the Lightalarms product line is driven by stringent quality control standards, and innovative lamp and board designs. In addition to state-of-the-art design and manufacturing, our newly renovated North American production facility offers the fastest product delivery available in the industry today.

A member of the Thomas & Betts family of companies since November 1998, our ongoing commitment is to provide products of the highest quality at competitive prices.

New Products

Severe Series — Class I Division 2

see pages I-122–I-124 and I-126

Mini-Phantom Series

see pages I-84–I-85

Simplicity Economizer Series

see page I-130

Grande Series

see page I-139

MC Series

see page I-98

MA Series

see page I-99

Quickie II Series QLX-MRS

see page I-142

Quickie II Series LCA-2MRS

see page I-95

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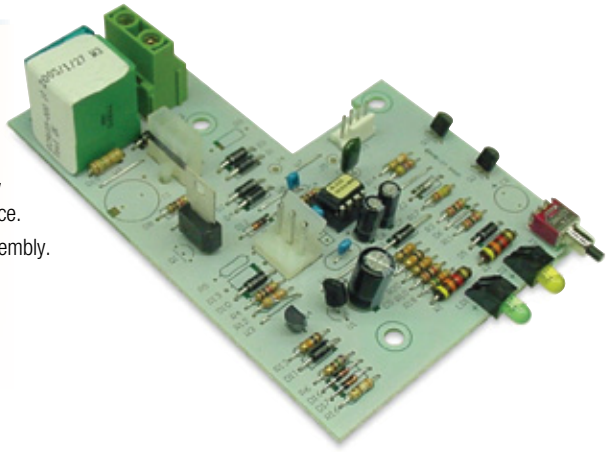
Overview

PulseType Circuitry

Lightalarms® PulseType circuitry uses the latest solid-state design to provide a technically advanced charger combined with features and functions that promote long, reliable battery life and excellent unit performance.

The design of the PulseType circuit takes into account the long periods of inactivity typical of standby emergency equipment. Batteries are kept at full capacity by a pulse charge that allows the battery to cycle continuously. This greatly reduces the problem of grid corrosion and dramatically increases battery performance.

Lightalarms® computer-tests all active components on the circuit boards during assembly. Critical functions such as brownout, low-voltage disconnect, and charge voltage are individually monitored and adjusted at the factory.



120/277 Volt Input

Capability to operate with 120 volt or 277 volt input.

Fused Output Circuit for Units with Remote Capacity

Emergency units up to 54 watts have a single fused output circuit. Units over 54 watts have two fused output circuits supplied standard.

Dual Diagnostic Indicator Lights

Dual indicators, red and amber continuously monitor the condition of the battery, charge circuit and presence of AC.

Temperature Compensation

At high ambient temperatures, batteries need less charge voltage to recharge. At cold temperatures, batteries require a higher charge to maintain full capacity. The PulseType charger automatically adjusts the charge voltage to precisely what the batteries require at a given temperature.

Sealed Relay

Sealed relay protects against environmental contaminants.

Low Voltage Battery Disconnect

The lighting load is disconnected from the battery at 87.5% of nominal battery voltage. This prevents deep discharge damage to the battery.

Brownout Protection

Emergency lamps energized when AC voltage falls to approximately 80% of nominal voltage, the level at which most fluorescent and HID fixtures extinguish.

Battery Lockout

This labor-saving feature prevents the battery from discharging when the unit is installed to a non-energized circuit. The battery is electronically locked out until the unit is energized with AC power. Contractors do not have to return to a job site to connect batteries when the building's main power is turned on. They can install the unit and connect the battery in one convenient operation.

Reverse Polarity Protection

A polarized plug is used to connect the battery to the circuit board, thus preventing damage from occurring to the system.

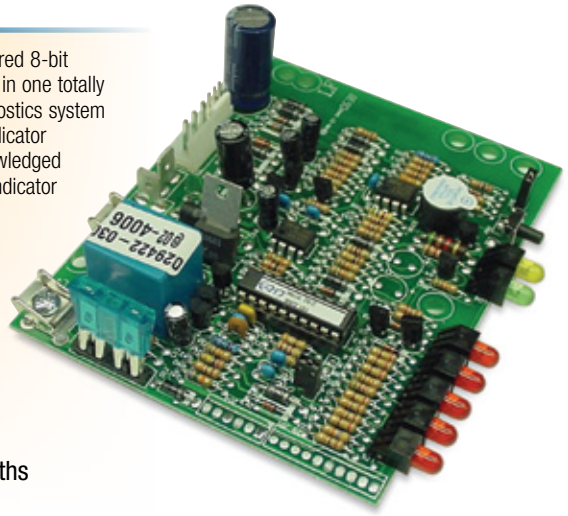
Current-Limited Output

Extends battery life by preventing overheating and battery gassing during recharge.

Overview

Improved Diagnostics

By incorporating our most popular standard diagnostic features with a high-powered 8-bit microcontroller, our Improved Diagnostics system ensures unsurpassed reliability in one totally contained system. In the event of an equipment malfunction, the Improved Diagnostics system produces an audible warning in the form of an intermittent beep, and the LED indicator associated with the fault will illuminate continuously. When the problem is acknowledged by depressing the alarm/silence/test button, the alarm is silenced, and the LED indicator changes to a flashing mode until the problem is corrected.



- Continually monitors system parameters
- Incorporates state-of-the-art microcontroller technology
- ID includes audio and visual service alarms
- IDNA non-audible version for visual service alarms only
- Self-testing in accordance with NFPA101, Life Safety Code minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually

Battery Failure

(Red) Illuminates if the battery is shorted or battery voltage drops below preset value. Will also detect incorrect battery (ie. 6VDC vs. 12VDC).

Battery Disconnect

(Red) Illuminates if the battery circuit is open.

Charger Failure

(Red) Illuminates when charger is not functioning properly by monitoring the charger current.

Lamp Failure

(Red) Illuminates when one or more emergency lamps fail. Also monitors remote lamps.

Service Alarm

(Red) Illuminates when a fault is detected that requires a qualified service technician.

AC-On

(Green) Lit when line voltage is present.

Charger On

(Amber) Illuminates when charger is recharging the battery.

Alarm Silence / Manual Test Switch

Button is used to acknowledge and silence audible alarms.
Also functions as a manual test switch to simulate a power failure.

Self Testing

Unit tests itself every 30 days for a minimum 30 seconds, 30 minutes on the sixth month and 90 minutes annually.

To Order for Compatible Unit

Add Suffix: -ID (for audible circuit) to model number
Add Suffix: -IDNA (for non-audible circuit) to model number

Improved diagnostics (ID or IDNA) includes a Time Delay function, if needed it can be enabled/disabled in the field (15 min) or it can be preset at the factory by including the suffix ID-TD* or IDNA-TD* (*5 min., or *10 min., or *15 min.).

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Popular Options

Lightalarms® life safety equipment is available with a range of options that can be added to enhance performance, simplify testing or adapt equipment for use in specific environments. Please refer to individual product pages to verify availability of individual options on specific equipment.

Voltmeter

Option provides a visual indication, in the test mode, of the unit's battery voltage. The good/check meter face allows maintenance personnel to recognize charger and battery function.

Add Suffix: -V

Ammeter

Option provides an indication of charge current when the unit is in the equalize mode.This verifies charger capability and the current acceptance of the battery.

Add Suffix: -A

Dual Circuit (Exit Signs)

Option provides two AC input circuits to permit 2 separate AC sources to energize the sign.

Add Suffix: -2

Tamper Proof/Vandal Resistant Screws

Tamper-proof screws may be used on certain units to avoid unauthorized entry to circuitry or vandalism.

Add Suffix: -VR

Lamp-Disconnect Switch

Option will disconnect lamp load when area is not in use during prolonged power failure. The switch may also be used to reactivate emergency power to remote or built-in heads.

Add Suffix: -DS

Photocell Test Switch

Test battery unit by pointing a flashlight at a photocell mounted on the bottom of a battery unit.

Add Suffix: -PTS

Time Delay

Option is designed to be used in areas where HID-type lamps are used for normal lighting. As these lamps require several minutes to re-strike and to produce their nominal lighting output, it is necessary to also hold the emergency lighting on for this period, even after the AC utility has been restored. A time-delay unit can be helpful in areas where it is difficult to directly access an emergency lighting unit's test switch. The power to the unit can be briefly switched off and on at the breaker panel, and the maintenance person can then return to the unit and observe a timed emergency operation.

Add Suffix: -TD* (*5 minutes or *10 minutes or *15 minutes)

Damp Location

Option for environments that are subject to moderate amounts of moisture (humidity), and a temperature range between 10° C (50° F) and 40° C (104° F).

Example: Partially protected exterior areas such as canopies, stairwells, etc.

Add Suffix: -DL

Thermal Jacket (Temperature Control Heater)

Option to be used in areas where temperature may drop below 0° C (32° F). The thermostat will activate the heating pad at 0° C and will cut off at 16° C (61° F). The heating pad is rated at 50 watts. Contact customer service for temperature limitations.

Add Suffix: -H1 (120V) -H2 (277V)

Self-Test/Diagnostic Feature (for exit signs)

Option is designed to continuously monitor the charger assembly, battery and LED assembly current. If a fault is indicated, the external service required indicator will illuminate. The diagnostic/self test will self test for minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually. Meets NFPA 101 Life Safety Code requirements for periodic testing.

Add Suffix: -D

Self-Test/Diagnostic Feature (for Battery Units), see previous page

Improved Diagnostic (Audible) **Add Suffix:** -ID
Improved Diagnostic (Non-Audible) **Add Suffix:** -IDNA

Decorative Series

The unseen solution — virtually invisible emergency lighting.

Phantom Series

NEW and Improved Design!

The Phantom Series is architecturally designed for unobtrusive use in walls with cavities (drywalls with 4" studs) or uninsulated ceilings with horizontal beams or T-bar structures. In normal conditions (stand-by), the unit is completely concealed in the wall or ceiling. In case of power failure, the door of the unit rotates open 180° and exposes the emergency lights (two high-efficiency MR16 lamps) to illuminate the path of egress.

Once AC power returns or at the end of discharge period, the lights turn off and the door rotates closed automatically, driven by an energy storage circuit. If needed, the backbox can be shipped separately.

For remote head, please refer to **page I-157**.

Reliability

Each unit is fully computer-tested and aligned mechanically for optimum operation. The electrical parts (motor, electronic circuitry) carry a five-year warranty.

Unit Data

The normally exposed parts of the unit (flat door and frame) are covered with a high-quality, powder-coated textured off-white finish, which integrates well with most wall and ceiling paints. The surface finish can also be customized onsite with paint, wallpaper or other coverings. The self-powered battery unit is contained in a heavy-duty galvanized steel back-box, concealed in the wall or ceiling, and includes a combined test switch and pilot light, accessible through the frame. Special bar hangers for installation in sheet rock or T-bar ceilings are included in the package. The module includes the electrical junction box and is installed on the wall stud or ceiling beam with the help of a simple, U-shape bracket. Each unit comes standard with two MR-16 halogen lamps, of specified power ranging from 12W to 50W each.

PulsePlus Battery Charger

The charger circuitry offers a 120/277VAC, 60 Hz, .25/.12 amp automatic charger, built around a micro-controller integrated circuit. Circuit standard features: current limiting, temperature-compensated cut-off voltage, brown-out transfer, low-voltage battery disconnect and battery lockout (Prevents activation in the DC mode until initial AC activation).

Power Requirements

120/277VAC, 60 Hz, .25/.12 amp

Improved Diagnostics (Optional)

This micro-controller circuitry is optional on all self-powered battery units. This circuitry is programmed to ensure the equipment readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, the pilot light located on the front of the unit will change color from solid green to a flashing red light, indicating a fault. A detailed diagnostic legend is available on the door back side and provides fault identification (battery, charger circuitry, lamps) for the maintenance personnel. The self-test feature will simulate a power loss for minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually.

Power Consumption

	MAXIMUM		STAND-BY*	
AC INPUT	INPUT CURRENT	INPUT POWER	INPUT CURRENT	INPUT POWER
120VAC	.25A	30W	.1A	11W
277VAC	.12A	30W	.05A	11W

** Stand-by power consumption is 50% lower for lead-calcium batteries.*

Unit Ratings

	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
MODEL NO.	1½ HRS.	2 HRS.	4 HRS.	8 HRS.
PHM40, PHN40	40	30	24	—
PHM70, PHN70	70	50	40	24
PHM100, PHN100	100	70	50	40

** National Electrical Code specification.*

Options

(Add Suffix to Model No.) ..... **Suffix**

Damp Location Listing (available on all models except PHN100) ..... **DL**

Improved Diagnostic (audible) ..... **ID**

Improved Diagnostic (non-audible) ..... **IDNA**

Time Delay (T1 = 5, T2 = 10 or T3 = 15 minutes) ..... **T_***

***(ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-T_ or IDNA-T_.*

Accessories (order as a separate item)

Remote test switch (Metal Faceplate): ..... **PSW**

Remote test switch (Plastic Faceplate): **PSW-1**

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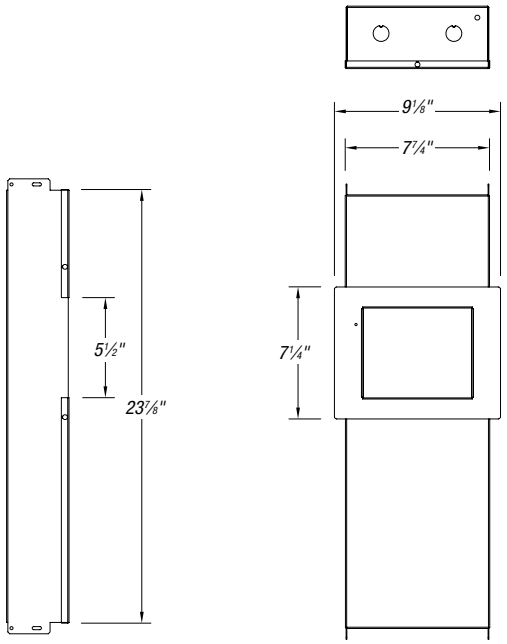
Decorative Series

Dimensions

Dimensions are approximate and subject to change.

Charger and Battery Compartment:

For use in walls or ceilings with a cavity; not for use in block walls or solid ceilings.



Catalog Numbering System

Battery Unit

PH	M	100	-	2(20)	DL

Series
PH

Battery Type
M *= Lead-Calcium*
N *= Nickel-Cadmium*

Unit Capacity
40 *= 12V, 40W*
70 *= 12V, 70W*
100 *= 12V, 100W*

Lamp Wattage
-2(12) *= 12W, MR16 Each Head*
-2(20) *= 20W, MR16 Each Head*
-2(35) *= 35W, MR16 Each Head*
-2(50) *= 50W, MR16 Each Head*
-2 (20H) *= 20W, MR16 High Lumen Output*
-2 (35H) *= 35W, MR16 High Lumen Output*
-2 (50H) *= 50W, MR16 High Lumen Output*

Options
ID *= Improved Diagnostic, Audible*
IDNA *= Improved Diagnostic, Non-Audible*
T1 *= Time Delay 5 Minutes*
T2 *= Time Delay 10 Minutes*
T3 *= Time Delay 15 Minutes*
DL *= Damp Location**
X *= Backbox Shipped Separate*
** DL Damp Location option is available on all models except PHN100.*

Generator Unit

PHG	1	-	2	(20)

Series
PHG

Input Voltage
1 *= 120VAC, 60 Hz*
2 *= 277VAC, 60 Hz*

# of Lamp
-2 *= Two Lamps*

Lamp Wattage
(12) *= 12W, Each Head*
(20) *= 20W, Each Head*
(35) *= 35W, Each Head*
(50) *= 50W, Each Head*
(20H) *= 20W, MR16 High Lumen Output*
(35H) *= 35W, MR16 High Lumen Output*
(50H) *= 50W, MR16 High Lumen Output*

Decorative Series

The next generation of concealed emergency lighting: smaller size, full retrofit, impressive illumination of the egress.

Mini-Phantom Series

Evaluated to the UL® 924 standard, the Mini-Phantom Series is the next generation of concealed emergency lighting equipment, specially designed for retrofitting in finished walls with a cavity (drywalls with 4" studs). In normal conditions (stand-by) the unit is completely concealed in the wall.

Reliability

Each unit is fully computer-tested and aligned mechanically for optimum operation. The electrical parts (motor, electronic circuitry) carry a five-year warranty.

Unit Data

The normally exposed parts of the unit (flat door and frame) are covered with a high-quality, powder-coated textured off-white finish, which integrates well with most wall and ceiling paints. The surface finish can also be customized on site with paint, wallpaper or other coverings. The self-powered battery unit is contained in a heavy-duty galvanized steel back-box, concealed in the wall or ceiling, and includes a combined test switch and pilot light, accessible through the frame. The module includes the electrical junction box and is installed on the wall stud or ceiling beam with the help of a simple, U-shape bracket. Each unit comes standard with two MR-16 halogen lamps.

PulsePlus Battery Charger

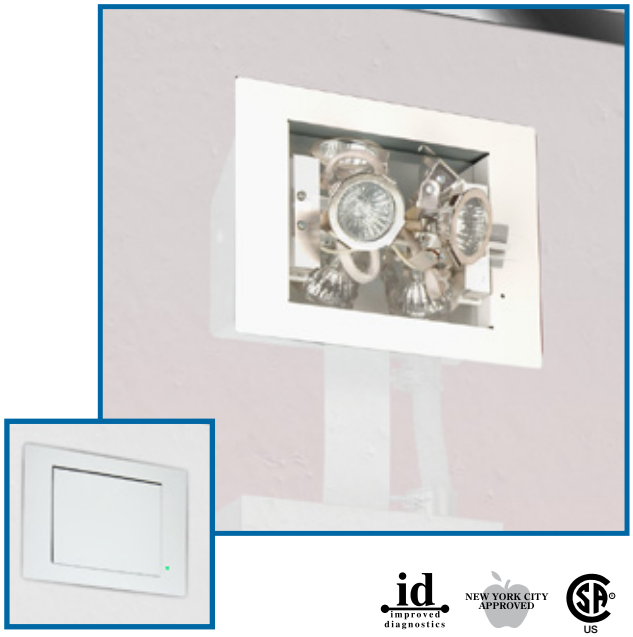
The charger circuitry offers a 120/277VAC, 60 Hz, 0.25/0.12 amp automatic charger, built around a micro-controller integrated circuit. Circuit standard features: current limiting, temperature-compensated cut-off voltage, brown-out transfer, low-voltage battery disconnect and battery lockout (prevents activation in the DC mode until initial AC activation).

Power Requirements

120/277VAC, 60 Hz, 0.25/0.12 amp

Improved Diagnostics (Optional)

This micro-controller circuitry ensures the equipment readiness and reliability by continuously monitoring every critical function of the unit. If a component failure occurs, the pilot light located on the front of the unit will change color from green to red and will flash, indicating a fault. A detailed diagnostic legend on the back side of the door provides fault identification (battery, charger circuitry, lamps) for maintenance personnel. The self-test will simulate a power loss for minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually.



id improved diagnostics · NEW YORK CITY APPROVED · CSA US

Power Consumption

MODEL NO.	AC INPUT	MAXIMUM INPUT CURRENT	MAXIMUM INPUT POWER	STAND-BY (NI-CAD, NIMH)* INPUT CURRENT	STAND-BY (NI-CAD, NIMH)* INPUT POWER
MPH_40	120VAC	.25A	30W	.1A	11W
	277VAC	.12A	30W	.05A	11W
MPHG	120VAC	.95A	110W**	—	—
	277VAC	.45A	110W**	—	—

** Stand-by power consumption is 50% lower for lead-calcium batteries.*

*** Maximum power when equipped with 2 x 50W lamps (generator unit).*

Unit Ratings

MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	4 HRS.	8 HRS.
MPH_40	40	30	24	—

** National Electrical Code specification.*

Options

(Add Suffix to Model No.) ..... **Suffix**

Damp Location Listing (available on all models except PHN100) ..... **DL**

Improved Diagnostic (audible) ..... **ID**

Improved Diagnostic (non-audible) ..... **IDNA**

Time Delay (T1 = 5, T2 = 10 or T3 = 15 minutes) ..... **T_***

***(ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-T_ or IDNA-T_.*

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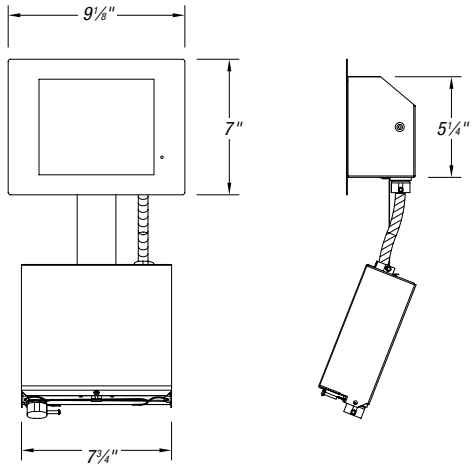
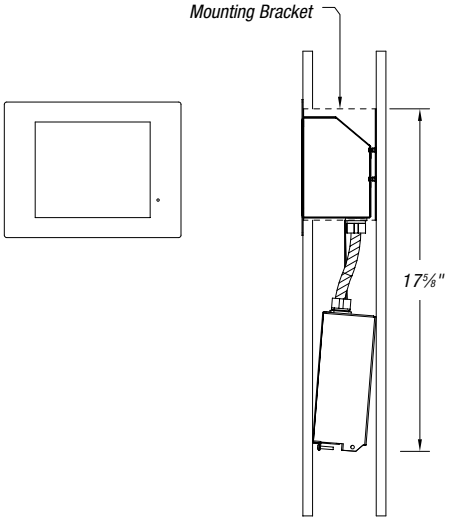
Decorative Series

Dimensions

Dimensions are approximate and subject to change.



Complete Unit



Installed Unit

Catalog Numbering System

Battery Unit

MPH	M	40	-	2(20)	DL

Series
MPH

Battery Type
M *= Lead-Calcium*
N *= Nickel-Cadmium*
H *= Nickel-Metal Hydride*

Unit Capacity
40 *= 12V, 40W*

Lamp Wattage (12V MR16)
-2(12) *= 12W Each Head*
-2(20) *= 20W Each Head*
-2(20H) *= 20W, High Lumen Output*

Options
ID *= Improved Diagnostic, Audible*
IDNA *= Improved Diagnostic, Non-Audible*
T1 *= Time Delay 5 Minutes*
T2 *= Time Delay 10 Minutes*
T3 *= Time Delay 15 Minutes*
DL *= Damp Location (Only MPHN40, MPHH40)*

Generator Unit

MPH	G		1	-	2(20)	DL

Series
MPH

Battery Type
G *= Remote AC Generator*

Unit Capacity
Blank *= Max. 100W*

AC Input
1 *= 120VAC*
2 *= 277VAC*

Lamp Wattage (12V MR16)
-2(12) *= 12W Each Head*
-2(20) *= 20W Each Head*
-2 (35) *= 35W Each Head*
-2 (50) *= 50W Each Head*
-2 (20H) *= 20W, High Lumen Output*
-2 (35H) *= 35W, High Lumen Output*
-2 (50H) *= 50W, High Lumen Output*

Options
DL *= Damp Location*

Decorative Series

A combination of style and performance.
Camray Series

The Camray Series combines photometrical performance with a visually appealing design.

An efficient reflector combined with two Xenon lamps delivers an incredible center-to-center spacing.

The die-cast aluminum housing is offered in a wide range of colors to complement any interior. It will blend with the most sophisticated decor.

With its fully gasket housing, the Camray Series is also ideal for extreme outdoor environments.

Designed to meet the needs of architects and designers without sacrificing safety, this fixture is available in a wide range of colors to complement any interior.

Reliability

The Camray Series comes complete with a three-year full warranty (excluding lamps and fuses).

Unit Data

The Camray units are made of durable cast-aluminum housing, finished with textured polyester powder-coat paint. Four colors are available: off-white, black, platinum gray and dark bronze. The vacuum-plated die-cast reflector will last over time. The lens is made of an impact- and UV-resistant polycarbonate.

Units can be installed on various J-boxes with the universal mounting pattern. It can also be surface mount using the rigid conduit entry provision on the top of the unit.

Lamp Information

Camray units are furnished with two high-output Xenon lamps. These lamps, combined with a special reflector, deliver an incredible center-to-center spacing. The reflector has been designed to provide an evenly distributed illumination pattern for corridors up to 6 ft. wide.

Charger

All self-powered battery units come with a 120/277VAC 60Hz dual-input voltage. Chargers also include low-voltage disconnect to prevent deep discharge, battery lockout to prevent battery drain prior to energizing the utility power, brownout protection, which will automatically switch unit into emergency mode if the utility power sags below 80% of nominal, and battery reverse-polarity protection.

Lead-Calcium Models are equipped with the Pulse Plus circuitry that will promote long reliable battery life and excellent performance. This current limiting charger will minimize energy consumption.

Nickel Metal Hydride Models are equipped with the non-audible version of the Improved Diagnostics circuit. It will also monitor and indicate any of the following failures: battery disconnect, battery, charger and lamp failures. The unit will perform a periodical self-test, of minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually.

Controls or Electrical

- Lead-Calcium Models: Green LED indicates AC power is on.
- Nickel Metal Hydride Models: Bi-color LED indicates battery state of charge, test activation and four-state diagnostic status.
- Test switch allows for quick operational check of the entire system.

Power Requirements

120/277VAC, 60 Hz, 0.11/0.05 amp

Options

The Camray Series is offered in five different configurations. It can be used in a wide range of applications and environments:

- CAM Remote head: UL® Listed for damp, wet and cold locations. Operating temperature: -40° C to 60° C (-40° F to 140° F) **See page I-157**.
- CAML Regular interior package: Cost-efficient solution equipped with Lead-Calcium battery.
- CAMN Exterior Package: Designed for a wide range of temperatures. UL Listed for wet and cold locations. Equipped with NiMH battery. Operating temperature: -20° C to 40° C (-4° F to 104° F).
- CAMN2 High Output Package: Ideal for interior applications where the photometrical performance of 10W Xenon lamps is required. Equipped with NiMH battery. UL® Listed for operating temperature: 20° C to 30° C (68° F to 86° F).

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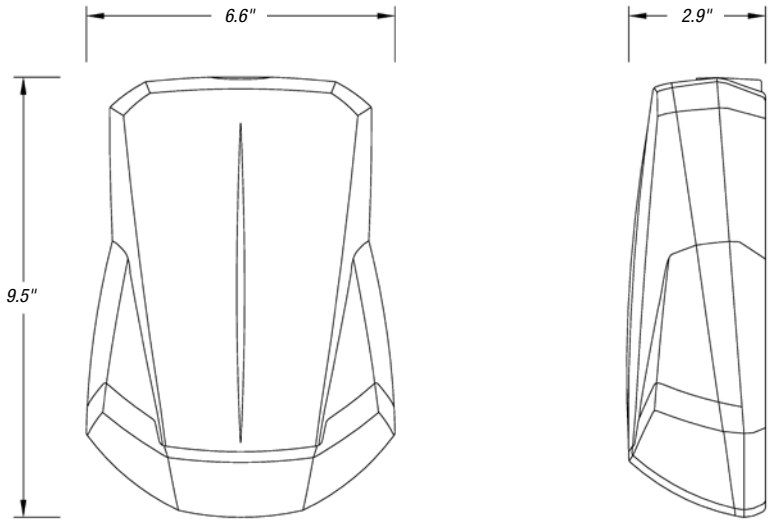
Decorative Series

Dimensions

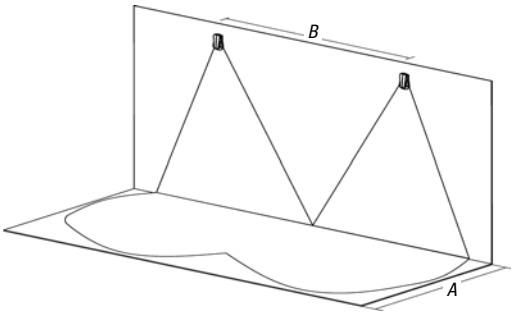
Dimensions are approximate and subject to change.



Front View **Side View**

ISO Curve

LAMP TYPE	MOUNTING HEIGHT	CENTER-TO-CENTER A = 3'	CENTER-TO-CENTER A = 6'
2 X 6W	7.5'	B = 28'	B = 19'
	8.5'	B = 25'	B = 18'
2 X 10W	7.5'	B = 30'	B = 28'
	8.5'	B = 34'	B = 30'



Note: *Photometric results shown are based on a simulation using the AGI32 software with a 1 foot-candle average and 0.1 foot-candle minimum with a 40:1 maximum ratio. Thomas & Betts assumes no responsibility for local requirements or specific project variable. This is a guideline to be used as a design aid, not guarantee of any code compliance.*

Catalog Numbering System

CAML / LXG - OW T1

Series
CAML *= 6V 12W, Lead Calcium (20° C to 30° C)*
Standard Charger
CAMN *= 6V 12W, NiMH (-20° C to 40° C)*
Comes Standard with IDNA
CAMN2 *= 6V 20W, NiMH (20° C to 30° C)*
Comes Standard with IDNA

Lamp Wattage*
/LX6 *= 12W Each Head*
/LX10 *= 20W Each Head*
** Xenon wedge base T3-1/4.*

Color
-OW *= Off White*
-B *= Black*
-DB *= Dark Bronze*
-PG *= Platinum Gray*
Contact Customer Service for available colors.

Options
-T1 *= 5 Minutes*
-T2 *= 10 Minutes*
-T3 *= 15 Minutes*
Note: *Time-delay available only with IDNA CAMN and CAMN2 units.*
Limited Warranty
LD-CA battery — 3 years
NiMH battery — 5 years

Decorative Series

6- or 12-volt decorative-style T-bar unit — maintenance-free lead-calcium or nickel-cadmium battery.

TBR Series

TBR Series battery units are designed for T-bar ceiling grid installation. This slim-line, unobtrusive unit is ideally suited for any commercial location where there is limited wall space and where the greater directional flexibility of ceiling-mounted heads is needed to provide greater distribution.

Reliability
The TBR Series has a three-year full warranty (excluding lamps and fuses).

Unit Data
The TBR Cabinet is constructed of rugged steel with corrosion-resistant undercoating. Fixtures, cabinet and mounting brackets are available in mist white and black. Battery and charger are concealed above the ceiling level in the unit cabinet. The back box has a removable panel, allowing easy access to battery and circuitry. Units mount quickly and easily in standard T-bar grids without additional hardware. The TBR unit has provisions for mounting up to three lamp heads.

Lamp
Standard with two ELF645 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 6- or 12-volt 9-watt high-intensity wedge base incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** **Note**: For optional lamp types and wattages, refer to the lamp data chart on **pages I-166–I-167**.*

PulseType Charger
- Automatic, temperature compensated, PulseType charger.
- High capacity, automatic, dust-tight instantaneous transfer relay.
- Low-voltage disconnect prevents overdischarge of battery. Automatic brownout protection is provided.
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit.
- Fused output circuit.

Controls
- Red charger monitor LED indicates the state of charge of the battery.
- Amber AC-ON LED indicates AC power is on.
- Momentary test switch allows quick operational check of entire system.

Power Requirements
120/277VAC, 60 Hz, 0.3/0.15 amp

Options

(Add Suffix to Model No.)	Suffix
Black Housing and Heads	-B
Ammeter or Voltmeter (choose only one)	-A* or -V*
Improved Diagnostics (audible)	-ID
Improved Diagnostics (non-audible)	-IDNA
Time Delay (specify 5, 10 or 15 minutes)	-TD**
Nickel-Cadmium Battery	-N

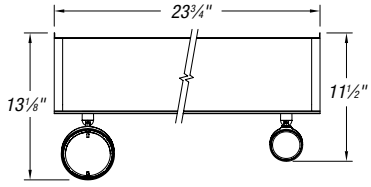
Not available with diagnostic option.

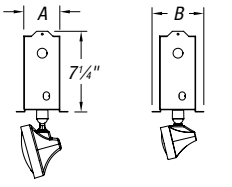
***(ID or IDNA) includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

Head and Lamp Options

No Heads	0
Double Contact Bayonet Base, Bi-Pin Halogen, Wedge Base, Sealed Beam Lamps	/ELF 645
Bi-Pin Halogen Lamps	/ELF 2
MR16 Lamps up to 20 Watts	/ELF 3
MR16 Lamps	/DR1130

Dimensions
Dimensions are approximate and subject to change.





ELF645 *ELF2 / ELF3*

CABINET	A	B
S	3¼"	4⅝"
L	5⅝"	7⅛"

Unit Ratings

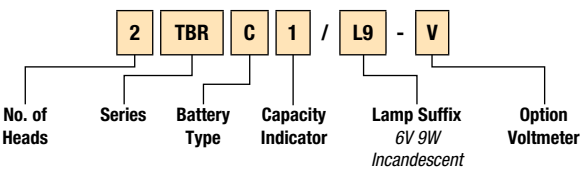
VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	WATTS/ HEAD	CABINET SIZE
6	2TBRC1/L9	27	20	14	10	9	S
	2TBRC2/L9	54	36	25	18	9	S
	2TBRC3/L9	81	48	33	24	9	L
12	2T12BRC2/L9	54	36	25	18	9	S

** National Electrical Code specification.*

Accessories
(Order as a separate item)

Remote Test Switch (metal faceplate)	PSW
Remote Test Switch (plastic faceplate)	PSW1

Catalog Numbering System



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Decorative Series

6- or 12-volt decorative-style T-bar unit — maintenance-free lead-calcium or nickel-cadmium battery.

RD Series

RD Series battery units are designed for fully recessed installation in walls or ceilings. Models are available with two ELF645 heads standard, or two ELF2, ELF3 or DR1130 heads optional, to accent any décor.

Reliability

The RD Series has a three-year fully warranty (excluding lamps).

Unit Data

The RD Series Cabinet is constructed of 20-gauge steel with an off-white baked enamel finish. Fixtures, cabinet and mounting brackets are available in mist white and black. Mounting brackets are included for installation in grid-type suspended ceilings. Adjustable bar hangers are included, although this unit can be framed into sheet rock ceilings, studs or joints as well.

Lamp

Standard with two ELF645 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 6- or 12-volt 9-watt high-intensity wedge base incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** **Note**: For optional lamp types and wattages refer to the lamp data chart on **pages I-166–I-167**.*

PulseType Charger

- Automatic, temperature compensated, PulseType charger.
- High capacity, automatic, dust-tight instantaneous transfer relay.
- Low-voltage disconnect prevents overdischarge of battery. Automatic brownout protection is provided.
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit.
- Fused output circuit.

Controls

- Red charger monitor LED indicates state of charge of the battery.
- Amber AC-ON LED indicates AC power is on.
- Momentary test switch allows quick operational check of entire system.

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp

Options

(Add Suffix to Model No.)	Suffix
Black	-B
Ammeter or Voltmeter (choose only one)	-A* or -V*
Improved Diagnostics (audible)	-ID
Improved Diagnostics (non-audible)	-IDNA
Time Delay (specify 5, 10 or 15 minutes)	-TD**
Non-Standard Input Voltage	Specify

Not available with diagnostic option.

***(ID or IDNA) includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

Head and Lamp Options

No Heads	0
Double Contact Bayonet Base, Bi-Pin Halogen, Wedge Base, Sealed Beam Lamps	/ELF 645
Bi-Pin Halogen Lamps	/ELF 2
MR16 Lamps up to 20 watts	/ELF 3
MR16 Lamps	/DR1130

Accessories (Order as a separate item)

Wire Guard (DR1130, ELF2, ELF3 or ELF645 heads)	WG6-L
Remote Test Switch (metal faceplate)	PSW
Remote Test Switch (plastic faceplate)	PSW1

Shown with ELF2 heads

ELF645 heads

Unit Ratings

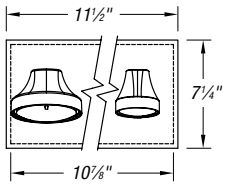
SEALED MAINTENANCE-FREE BATTERY TYPES	D.C. VOLTAGE	MODEL NO. ELF-645 LAMPS HEADS	MODEL NO. ELF-2 LAMP HEADS	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — NO REMOTE Capability							
Nickel-Cadmium Δ	6	2RD6C1	2RD6C1/ELF2	18	12	10	-
Long-Life Lead Δ	6	2RD6E1	2RD6E1/ELF2	18	11	8	-
Lead-Calcium Δ	6	2RD6M1	2RD6M1/ELF2	18	12	9	-
Unit Equipment WITH REMOTE Capability							
Nickel-Cadmium Δ	6	2RD6C2	2RD6C2/ELF2	25	18	12	9
Δ	12	2RD12C3	2RD12C3/ELF2	36	21	15	12
Δ	6	2RD6E2	2RD6E2/ELF2	27	19	14	10
Long-Life Lead Δ	6	2RD6E3	2RD6E3/ELF2	36	24	17	13
Δ	12	2RD12E3	2RD12E3/ELF2	36	24	17	13
Δ	6	2RD6M2	2RD6M2/ELF2	27	18	14	10
Lead-Calcium Δ	6	2RD6M3	2RD6M3/ELF2	36	25	20	14
Δ	12	2RD12M3	2RD12M3/ELF2	36	25	20	14

Standard lamp is 6- or 12-volt 9-watt wedge base.

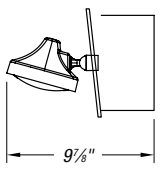
** National Electrical Code specification. Δ = Improved Diagnostics available.*

Dimensions

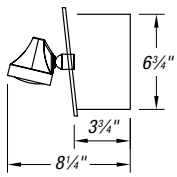
Dimensions are approximate and subject to change.



Back Box



ELF645



ELF2 / ELF3

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.

2	RD	12	C	1	/	L9	-	TD
No. of Heads	Series	DC Battery Backup	Battery Type *Ni-Cad*	Capacity Indicator		Lamp Suffix* *12V 9W Incandescent*		Option *Time Delay*

*Includes standard lamp. * See lamp data sheet for other lamp wattages.*

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Decorative Series

6-volt decorative recessed gimbal with lead-calcium, long-life lead or nickel-cadmium battery.

605P1 Series

The 605P1 Series, a classic top-hat style unit with gimbal mounted lamp, fully recesses into ceiling with only the lens and trim visible. Ideal for low ceilings and blends inconspicuously with existing recessed lighting schemes.

Reliability

The 605P1 Series has a three-year full warranty (excluding lamps).

Unit Data

All components are contained in drawn steel box. The upper side of the recessed steel housing contains the battery and charger. The lower portion of the housing will contain an 8-watt halogen lamp with a horizontal rotation of 358° and vertical angle adjustable to ±42°. Standard finish of trim is mist-white plastic. NYC-approved version will include a metal trim and gimbal assembly, also finished in mist-white. The LED pilot light and test switch are located on the side of the lamp ring.

The 605P1 Series comes standard with a slide-out chassis and two quick-connect plugs to make installation and servicing easy. Adjustable hanger bars are supplied with each unit.

Lamp

Furnished with one 6-volt, 10-watt high-intensity halogen lamp.

PulseType Charger

- Automatic, temperature-compensated, PulseType charger.
- High capacity, automatic, dust-tight instantaneous transfer relay.
- Low-voltage disconnect prevents overdischarge of battery. Automatic brownout protection is provided.
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit.
- Fused output circuit.

Controls

- Combination AC-ON/charge monitor LED
- Momentary test switch allows for quick operational check of entire system.

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp

Options

(Add Suffix to Model No.) ..... **Suffix**

Black Housing and Gimbal ..... **-B**

NYC Approved Version ..... **-M***

**Includes metal trim and gimbal assembly.*

Accessories

(Order as a separate item)

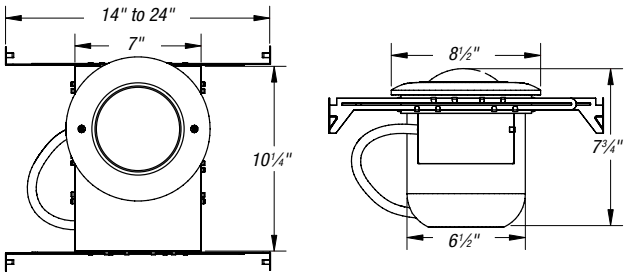
Remote Test Switch (metal faceplate) ..... **PSW**

Remote Test Switch (plastic faceplate **PSW1**

UL NEW YORK CITY APPROVED

Dimensions

Dimensions are approximate and subject to change.

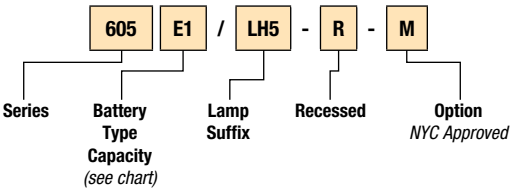


Unit Ratings

VOLTS	MODEL NO.	BATTERY TYPE	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
No Remote Capability						
6	**LS605P1-HB**	Lead-Calcium	10	—	—	—
6	**605E1/LH5-R**	Long-Life Lead	9	—	—	—
With Remote Capability						
6	**605C1/LH5-R**	Nickel-Calcium	18	12	9	—
6	**605E2/LH5-R**	Long-Life Lead	18	11	8	—

** National Electrical Code specification.*

Catalog Numbering System



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Decorative Series

6-volt self-powered recessed down light with long-life nickel-cadmium battery evaluated to UL® 924 standard.

RSTH Decorative Series

The RSTH Decorative Series integrates contemporary design elements with the latest in high-tech emergency lighting capabilities. This self-powered down light brings architects, designers and engineers a sleek, refreshing new take on emergency lighting solutions. Designed with clean, classic lines and available in a range of colors and tones to complement any commercial or high-end interior where taste is a factor.

Reliability

The RSTH Decorative Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

This internally self-powered recessed down light is constructed of a durable powder-coated, die-cast aluminum and uses a MR16 lamp source powered by a sealed Nickel-Cadmium battery. The RSTH is furnished with a metal, fully recessed back box to house the electronics, battery and wiring. The duration of operation provided by the Nickel-Cadmium battery is 90 minutes minimum, as required by NFPA101 Life Safety Code. Standard finish is white, but also available in black, brushed nickel, chrome and polished brass. Adjustable hanger bars are supplied with each unit.

Lamp

Furnished with one 6-volt, 6-watt MR16 halogen lamp. The light source is fully adjustable by rotating the gimbal through 359° in azimuth and or positioning the lamp through 90° in pitch.

Charger

Dust-tight relay automatically and instantly energizes lamp load upon failure of AC supply. Battery protection circuit automatically shuts down lamp load when battery reaches 87.5% of its rated voltage. Charger is 100% solid state, includes auto-equalize, temperature compensation and is controlled by a 1% Zener reference

Power Requirements

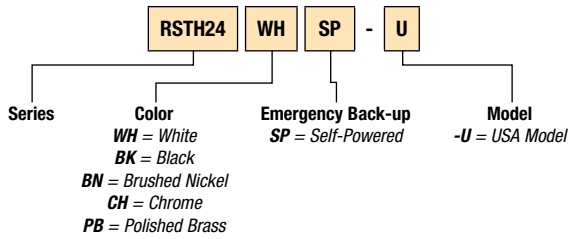
- 120V, 60 Hz, 0.046A, 4.17W
- 277V, 60 Hz, 0.024A, 4.76W

Accessories
(Order as a separate item)

Remote Test Switch (metal faceplate) ..... **PSW**

Remote Test Switch (plastic faceplate) **PSW1**

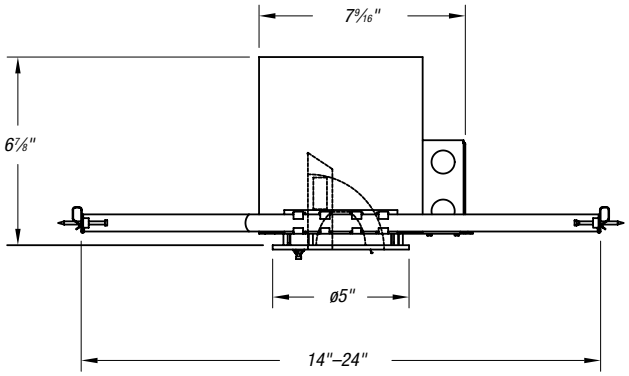
Catalog Numbering System

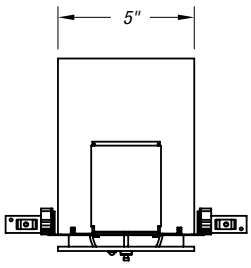


Replacement lamp number: 580.0074-L 6V 6W

Dimensions

Dimensions are approximate and subject to change.





RSTH Decorative Series including back box

Decorative Series

6-volt decorative-style equipment — sealed maintenance-free lead-calcium or nickel-cadmium battery.

Square-Lite SQ, SQ-D Series

The SQ, SQ-D Series was designed for institutional and commercial environments where overall style of décor is essential, but directional lighting is not critical. The standard Square-Lite is available as surface mount, but semi-recessed and fully recessed mounting options are also available.

Reliability

The Square-Lite SQ Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The Square-Lite unit is constructed of impact-resistant, flame-retardant, lightweight thermoplastic material in mist-white color with a black back. A metal back box is provided where recessed installation is required. The all-metal fully recessed version is constructed of 20-gauge steel with a white baked-enamel surface trim. All models are furnished with a specially designed reflector and prismatic lens. An SQR conversion kit is available for semi-recessing into ceiling, and an FSQR conversion kit is available for fully recessed fixtures. Bar hangers are supplied with a recessed kit. To order a fully recessed metal fixture, please refer to Options.

Lamp

Furnished standard with one high-efficiency tungsten halogen lamp (6 volt, 6, 8 or 10 watts). Provides a non-directional, even light distribution with beam spread of more than 170°. The two-lamp option is available by specifying "-2" suffix (see Options).

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents overdischarge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates the state of charge of the battery
- Momentary test switch allows quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp

Options

(Add Prefix to Model No.)	**Prefix**
Fully Recessed Metal	**R-***

** Bar hangers included*

(Add Suffix to Model No.)	**Suffix**
Improved Diagnostics (audible)	**-ID**
Improved Diagnostics (non-audible)	**-IDNA**
Ammeter or Voltmeter (choose only one)	**-A* or -V***
Two Lamps	**-2**
Polycarbonate Lens	**-PL**
Time Delay (specify 5, 10 or 15 minutes)	**-TD_ ****

** Not available with diagnostic options.*

*** (ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

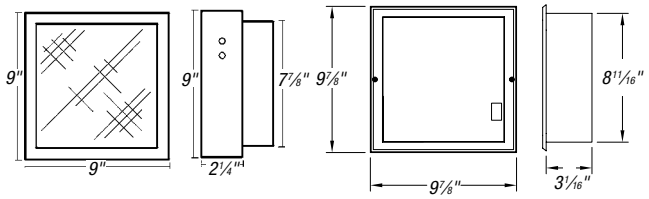
Accessories (Order as a separate item)

Wire Guard (for Semi-Recessed)	**WG1-L**
Wire Guard (for Fully Recessed)	**WG11-L**
Semi-Recessed Conversion Kit	**SQR**
Fully Recessed Conversion Kit	**FSQR**

Matching style remote fixture, Model ELF644, available. See Remote Fixtures Section.

Dimensions

Dimensions are approximate and subject to change.

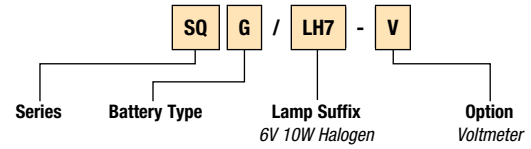


Unit Ratings

VOLTS	MODEL NO.	BATTERY TYPE	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.
No Remote Capability				
6	**SQG/LH7**	Sealed Lead-Calcium	10	—
6	**SQN/LH7**	Nickel-Cadmium	10	—
With Remote Capability				
6	**SQG-D/LH5**	Sealed Lead-Calcium	24	18
6	**SQN-D/LH5**	Nickel-Cadmium	30	18

** National Electrical Code® specification.*

Catalog Numbering System



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Commercial Battery Units

6-volt ultra-slim emergency unit — sealed maintenance-free lead-calcium battery — damp location listed.

IC-2 Series

The IC-2 Series is an aesthetically attractive, economical unit ideal for commercial or institutional facilities. This unit offers reliable performance in a low-profile, contemporary design.

Reliability

The IC-2 Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The compact, ultra-slim housing and prismatic lenses are constructed of an injection-molded, tough thermoplastic body that will not scratch or corrode. It has a lightly textured mist-white finish that blends well with any decor. All units come with a pre-wired AC to save time and installation costs. Simply wire the mounting plate to the building AC and secure. Then, using the AC quick-connect plug, snap the housing onto the mounting plate, and the unit is ready to be powered. Attractive and versatile, the IC-2 Series battery units can be mounted in any orientation on walls and ceilings.

Lamps

Standard with two 6-watt, high-intensity, wedge base incandescent lamps.

Charger

- Automatic, temperature-compensated charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Momentary test switch allows for quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.08/0.04 amp

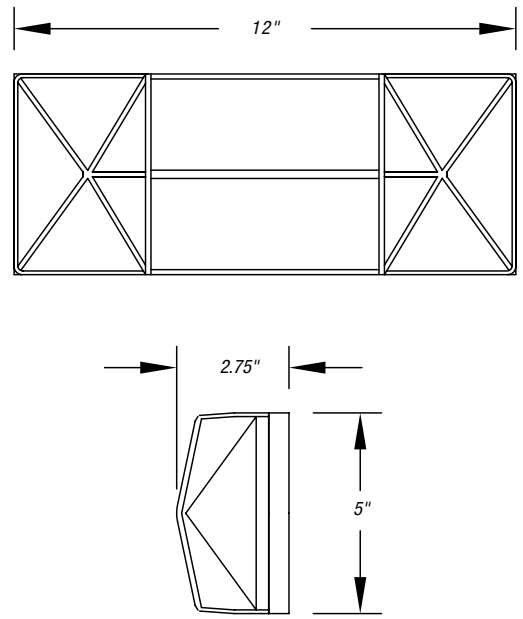
Accessories

(Order as a separate item)

Wire Guard..... **WG13-L**

Dimensions

Dimensions are approximate and subject to change.

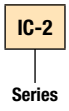


Unit Ratings

VOLTS	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.
6	IC-2	12	8

** National Electrical Code® specification.*

Catalog Numbering System



Commercial Battery Units

6-volt thermoplastic battery unit — damp location listing is standard on all models — sealed maintenance-free lead-calcium battery.

LCA-2SQ Series

The LCA-2SQ Series, an extremely versatile unit, can be wall or ceiling mounted. With the option of 11 watts remote capacity and standard damp location listing, this emergency lighting unit with adjustable heads is your solution for emergency lighting.

Reliability

The LCA-2SQ Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

Constructed of an injection-molded, UV-stabilized, UL® 94, 5VA flame-rated thermoplastic housing and back plate. The sealed maintenance-free lead-calcium battery is designed to power 11 watts remote load or extend unit run time, if necessary (refer to options "R" to order). LCA-2SQ can be wall or ceiling mounted. Unit has universal knock-out pattern on the back plate that allows for junction box mounting. An innovative snap-together design allows for fast and easy installation.

Lamps

Furnished standard with two 6-volt, 6-watt DC T5 wedge base lamps for emergency mode.

Charger

- 120/277VAC, 60 Hz, 0.08/0.04 amp
- LED indicator light and push button test switch
- Remote capacity — may power additional remote heads (up to 6V 11W)
- Low-voltage battery disconnect
- All models are damp location listed

Options

(Add Suffix to Model No.)	**Suffix**
Remote Capacity (11 watts)	**-R***

** Do not exceed rated unit capacity.*

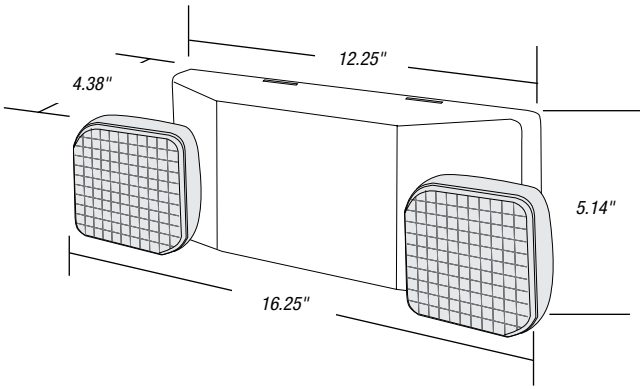
Accessories

(Order as a separate item)

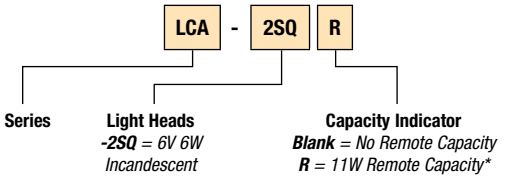
Replacement Battery	**860.0018-L**
Replacement Lamp (standard)	**570.0012-L**
Wire Guard	**WG10-L**
Vandal Shield	**CPS**
Vandal Shield (NEMA 4X)	**CPS-4X**

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System



** Do not exceed rated unit capacity.*

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Commercial Battery Units

6-volt thermoplastic battery unit — damp location listing is standard on all models — sealed maintenance-free lead-calcium battery.

LCA-2MRS Series

The LCA-2MRS Series is the perfect battery unit for use where style and design are required in an economical package.

Reliability

The LCA-2MRS Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The unit is completely self-contained and the housing is constructed of high-impact, UL® 94, 5VA thermoplastic. The compact design will allow for space restrictions often encountered. The snap-together housing facilitates mounting in any orientation.

Lamps

Furnished with two 6-volt, MR16 glare-free halogen lamp heads.

Charger

- Automatic, temperature-compensated charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided.
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit.

Options

(Add Suffix to Model No.)	**Suffix**
Black	**-B**

Accessories

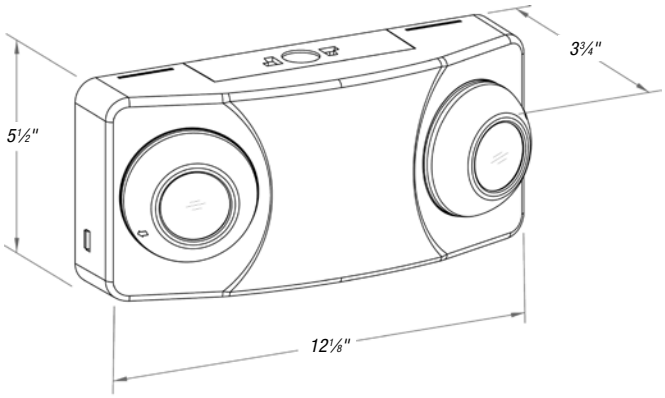
(Order as a separate item)

Replacement Battery	**860.0018-L**
Replacement Lamp (standard)	**570.0012-L**
Wire Guard	**WG10-L**
Vandal Shield	**CPS**
Vandal Shield (NEMA 4X)	**CPS-4X**

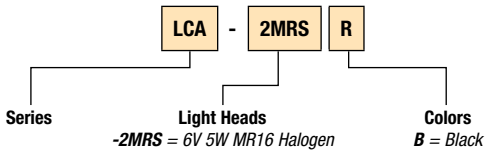
NEW Improved Look!

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System



Commercial Battery Units

6-volt decorative-style equipment — maintenance-free sealed lead-calcium or nickel-cadmium battery (optional).

Cavalier II (CA-2) Series

The Cavalier II (CA-2) Series is an aesthetically attractive, economical unit in a compact, contemporary design. It is ideal for commercial and institutional facilities.

Reliability
The Cavalier II (CA-2) Series has a three-year full warranty (excluding lamps and fuses).

Unit Data
The housing is injection molded from high-impact, scratch- and corrosion-resistant thermoplastic and is available in an architecturally attractive mist-white color. Optional black housing is also available. The Cavalier II Series easily mounts to wall or ceiling with an independent, universal mounting plate. AC and battery quick-connect plugs simplify wiring for quick and easy installation. This unit is also suitable for damp locations.

Lamps
Furnished standard with two fully adjustable PAR36 size lamp heads with high-intensity incandescent lamps or optional halogen lamps.

CA-2 is available with an optional 6 watts halogen lamp.

CA-3 is available with an optional 6, 8 or 10 watts halogen lamp.

PulseType Charger
- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents overdischarge of battery; automatic brownout protection is provided.
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls
Combination test switch/charge monitor LED indicates battery is on charge and allows for periodic testing of the unit.

Power Requirements
Maximum 10 watts at 120/277VAC.

Options

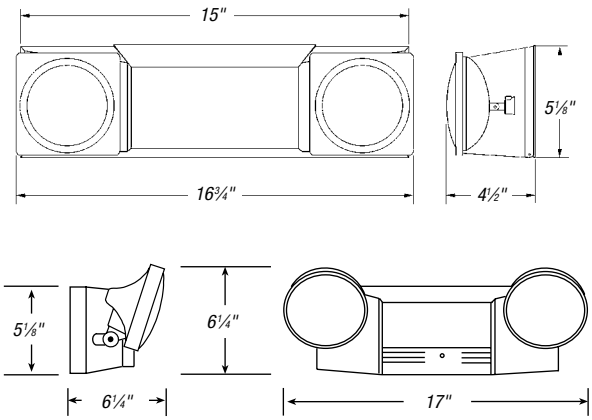
(Add Suffix to Model No.)	Suffix
Black	-B
Self Diagnostics	-SD
Voltmeter (not available with diagnostics)	-V
3-Wire Cord and Plug (120V)	-3CP*
3-Wire Cord and Plug (277V)	-3CP-277*
6W Halogen Lamp	/LH4
8W Halogen Lamp	/LH5
10W Halogen Lamp	/LH7
Nickel-Cadmium Battery	-N
Damp Location Listed	-DL

** Standard cord length is 3 ft. Custom lengths available.*

Accessories
(Order as a separate item)

Wire Guard (CA-2, CA-3)	WG16-L
Polycarbonate Shield	CPS
Polycarbonate Weatherproof Shield	CPS-4X

Dimensions
Dimensions are approximate and subject to change.



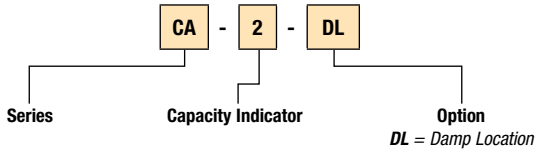
Cavalier II with halogen lamps (CA-3).

Unit Ratings

VOLTS	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.
6	CA-2	12	8
	CA-3	20	15

** National Electrical Code® specification.*

Catalog Numbering System



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Commercial Battery Units

6- or 12-volt thermoplastic emergency unit — sealed maintenance-free lead-calcium battery.

DM/DS Series

The DM/DS Series is an excellent combination of economy and quality — the best offered in the industry. This unit is compact, lightweight and corrosion resistant.

Reliability

The DM/DS Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

Construction consists of a compact, lightweight, corrosion-resistant thermoplastic cabinet with a mist-white finish. Meets UL® 94, 5VA flame classification. Both cabinets (small and large) are designed with rear keyhole mounting slots on the back plates and mount directly to any standard 4" octagonal electric box. The 6-volt small cabinet (DS3, DS6, DS7) is programmable for either top or side mounting of lamp heads. A ⅞" conduit entry is provided on the left side of the cabinet. The large cabinet (DS8, DS9 and D12S9) has a removable front panel and provisions for mounting to up to three heads.

Lamps

Thermoplastic heads can be top or side mounted (on DM or DS3, 6 and 7 only) and easily moved to either location by contractor without rewiring.

DM Models: PAR18 size heads (ELF2 head type). 2DM3 has 6W high-intensity incandescent lamps. 2DM6, 7, 8, 9, 12 have 9W high-intensity incandescent lamps.

DS Models: PAR36 size heads (EFL645 head type). 2DS3 has 6W high-intensity incandescent lamps. 2DS6, 7, 8, 9, 12 have 9W high-intensity incandescent lamps.

***Note**: Tungsten halogen lamps optional.*

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

Options

(Add Suffix to Model No.)	Suffix
Black Housing and Heads (small cabinet only)	-B
Ammeter or Voltmeter (choose only one)	-A or -V
Time Delay (specify 5, 10 or 15 minutes)	-TD_
3-Wire Cord and Plug	-3CP*
3-Wire Cord and Plug (277V)	-3CP-277*

** Standard cord length is 3 ft. Custom lengths available.*

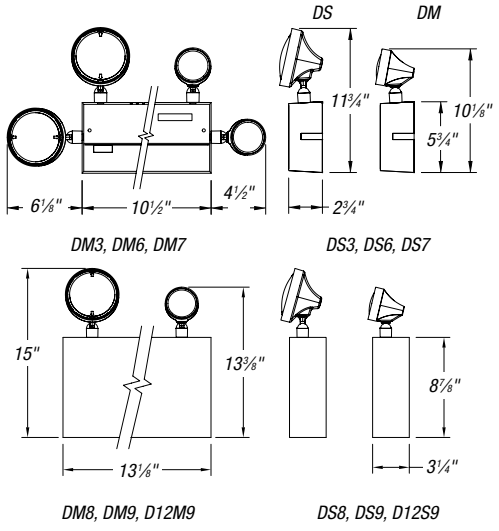
Accessories (Order as a separate item)

Wire Guard (top mounted heads)	WG1-L
Wire Guard (top mounted PAR18 heads)	WG10-L
Wire Guard (top mounted PAR36 heads)	WG4-L
Vandal-Resistant Cover	CPS*
Vandal-Resistant NEMA 4X Cover	CPS-4X*

** Small cabinet only.*

Dimensions

Dimensions are approximate and subject to change.

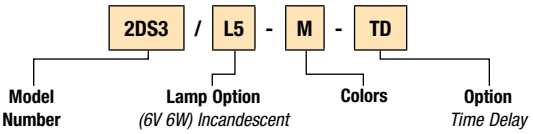


Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.
6	2DS3/L5-M	12	8
	2DS6/L9-M	18	12
	2DS7/L9-M	27	21
	2DS8/L9-M**	36	24
	2DS9/L9-M**	54	41
12	2D12S9/L9-M**	54	41

** National Electrical Code® specification. ** Utilize large "A" cabinet.*
Use "M" instead of "S" for Mini Heads (ELF2 PAR18 size heads).

Catalog Numbering System



For standard units without options, only order Model No.
Options are added to units by listing suffix at end of Model No.

Commercial Battery Units

6- or 12-volt emergency unit — sealed maintenance-free lead-calcium or nickel-cadmium battery.

MC Series

nexus® id improved diagnostics UL

The Lightalarms® MC Series emergency battery unit incorporates performance and labor-saving features, normally found only in higher capacity units, in an economical compact housing design.

The MC Series is ideally suited for commercial applications where space, performance and ease of installation are required.

Reliability

The MC Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

Compact steel cabinet with corrosion-resistant undercoating. Standard color is mist-white; black available as an option. The MC Series has rear keyhole mounting slots and is designed to mount directly to any standard 4" junction box.

Lamps

Standard unit furnished with two PAR18 size heads constructed of impact-resistant, flame-retardant thermoplastic heads complete with 6-watt MR16 halogen lamps. Also available up to 20W (MH20) high-output illumination.

Solid-State Charger

- Automatic, temperature-compensated type charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit
- Optional Improved Diagnostics comes with microcontroller-based PulseType charges

Power Requirements

120/277VAC 60 Hz, 0.3/0.15 amp.

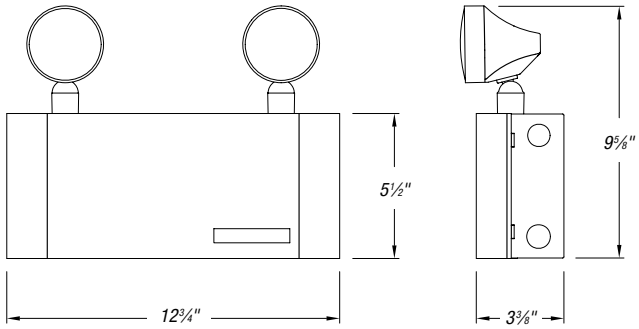
Unit Ratings

BATTERY TYPE	VOLTS	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
			1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	MCG	18	12	10	—
		MCG1	20	15	12	—
		MCG2	27	18	15	9
		MCG3	30	20	18	10
		MCG4	36	27	20	12
		MCG5	40	30	24	15
	12	MC12G1	36	27	20	12
		MC12G2	40	30	24	15
Nickel-Cadmium	6	MCN1	20	18	12	—
	12	MC12N1	36	24	15	12
		MC12N2	50	36	24	18

** National Electrical Code® specification.*

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

2 MCG4 / ELF3 - M6 - M - ID

Number of Heads
0 *= No Heads*
2 *= Two Heads*

Head Style
Elf3 *= Mini Plastic Mr16*

Series/DC Voltage/Capacity
MCG *= 6V 18W, Lead-Calcium*
MCG1 *= 6V 20W, Lead-Calcium*
MCG2 *= 6V 27W, Lead-Calcium*
MCG3 *= 6V 30W, Lead-Calcium*
MCG4 *= 6V 36W, Lead-Calcium*
MCG5 *= 6V 40W, Lead-Calcium**
MC12G1 *= 12V 36W, Lead-Calcium*
MC12G2 *= 12V 40W, Lead-Calcium*
MCN1 *= 6V 20W, Ni-Cad*
MC12N1 *= 12V 36W, Ni-Cad*
MC12N2 *= 12V 50W, Ni-Cad*
** Not available with ID/IDNA option.*

Lamp Type
M5 *= MR16 6V 5W*
M6 *= MR16 6V 6W*
M10 *= MR16 6V 10W*
M12 *= MR16 12V 12W*
M20 *= MR16 12V 20W*
MH20 *= 12V 20W High Output*

Color
M *= Mist-White Enamel Finish*
B *= Black Enamel Finish*

Options
ID *= Improved Diagnostics*
IDNA *= Improved Diagnostics Non-Audible*
NEX *= Nexus® Wired**
NEXRF *= Nexus® Wireless**

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Commercial Battery Units

6- and 12-volt steel emergency unit — sealed maintenance-free lead-calcium or nickel-cadmium battery.

MA Series

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The Lightalarms® MC Series emergency battery unit incorporates performance and labor-saving features, normally found only in higher capacity units, in an economical compact housing design.

The MC Series is ideally suited for commercial applications where space, performance and ease of installation are required.

Reliability

The MA Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The Lightalarms MA Series features a steel cabinet with anti-corrosion undercoating and a lower compartment containing two emergency heads with adjustable swivels and long-life MR16 halogen lamps.

Lamps

The emergency heads are installed at the bottom of the unit, providing an illumination in any downwards direction and require no tool for adjusting or aiming. The emergency heads are protected by a shock-absorbent, transparent polycarbonate cover. The cover is fixed on the equipment cabinet with two vertical screws. The standard lamp is a 6V or 12V MR16 halogen lamp. Also available up to 20W (MH20) high-output illumination.

Solid-State Charger

- Automatic, temperature-compensated type charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit
- Optional Improved Diagnostics comes with microcontroller-based PulseType charges

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

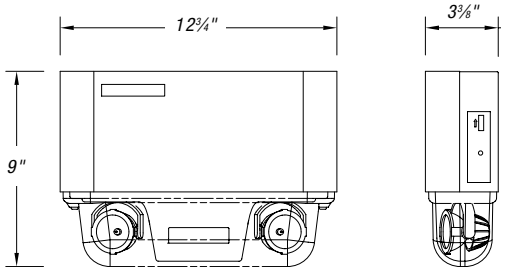
Unit Ratings

BATTERY TYPE	VOLTS	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	MAG	18	12	10	—
		MAG1	20	15	12	—
		MAG2	27	18	15	9
		MAG3	30	20	18	10
		MAG4	36	27	20	12
		MAG5	40	30	24	15
	12	MA12G1	36	27	20	12
		MA12G2	40	30	24	15
Nickel-Cadmium	6	MAN1	20	18	12	—
	12	MA12N1	36	24	15	12
		MA12N2	50	36	24	18

** National Electrical Code® specification.*

Dimensions

Dimensions are approximate and subject to change.



Power Consumption

	AC INPUT	MAXIMUM INPUT CURRENT	MAXIMUM INPUT POWER
MA	120VAC	0.20A	24W
	277VAC	0.08A	24W
MA12	120VAC	0.24A	30W
	277VAC	0.12A	30W

Catalog Numbering System

2 | MCG4 - M6 - M - ID

Number of Heads
2 *= Two Heads*

Series/DC Voltage/Capacity
MAG1 *= 6V 20W, Lead-Calcium*
MAG3 *= 6V 30W, Lead-Calcium*
MAG5 *= 6V 40W, Lead-Calcium**
MA12G2 *= 12V 40W, Lead-Calcium*
MAN1 *= 6V 20W, Ni-Cad*
MA12N1 *= 12V 36W, Ni-Cad*
MA12N2 *= 12V 50W, Ni-Cad*
** Not available with ID or IDNA options.*

Lamp Type
M5 *= MR16 6V 5W*
M6 *= MR16 6V 6W*
M10 *= MR16 6V 10W*
M12 *= MR16 12V 12W*
M20 *= MR16 12V 20W*
MH20 *= 12V 20W High Output*

Color
M *= Mist-White Enamel Finish*
B *= Black Enamel Finish*

Options
ID *= Improved Diagnostics*
IDNA *= Improved Diagnostics Non-Audible*
NEX *= Nexus® Wired**
NEXRF *= Nexus® Wireless**

Commercial Battery Units

6- or 12-volt steel emergency unit — sealed maintenance-free lead-calcium or nickel-cadmium battery.

MG/MN Series

The MG/MN Series battery unit incorporates a complete range of high-performance and labor-saving features normally found only in higher voltage units. The compact housing design meets most requirements for moderate loads. The MG/MN Series is a reliable, economical unit for all public areas.

Reliability

The MG/MN Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

Compact steel cabinet with corrosion-resistant undercoating. Standard color is mist-white; black is available as an option. The hinged front panel provides access to the battery and charger for ease of installation and maintenance. The MG/MN Series has rear keyhole mounting slots and is designed to mount directly to any standard 4" junction box.

Lamps

Standard with two ELF645 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 6- or 12-volt 9-watt high-intensity wedge base incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on **pages I-166–I-167**.*

PulseType Charger

- Automatic, temperature-compensated PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

Options

(Add Suffix to Model No.)	Suffix
Black Housing and Heads (replace -M with -B)	-B
Ammeter and/or Voltmeter	-A* or -V*
Lamp Disconnect Switch	-DS**
Improved Diagnostics (audible)	-ID
Improved Diagnostics (non-audible)	-IDNA
Time Delay (specify 5, 10 or 15 minutes)	-TD_**
Vandal-Resistant Screws	-VR
Front Mounted Heads (for low ceilings)	-FM
3-Wire Cord and Plug	-3CP***
3-Wire Cord and Plug (277V)	-3CP-277***
PAR18 Size Lamp Heads	/ELF2
DR1130 Decorative Heads (white)	-D1130
Nexus® Wired	-NEX
Nexus® Wireless	-NEXRF

** Not available with diagnostic option.*
*** (ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*
**** Standard cord length is 3 ft. Custom lengths available.*

Shown with ELF645 heads

ELF-2 heads

Front Mounted heads

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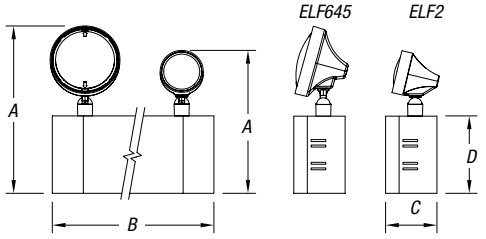
Accessories (Order as a separate item)

Mounting Platform	MP-PQA
Wire Guard (S cabinet)	WG1-L
Wire Guard (L cabinet)	WG2-L
Wire Guard (front mounted heads)	WG10-L

Dimensions

Dimensions are approximate and subject to change.



CABINET	DIMENSIONS A	B	C	D
S	11⅜" / 9¾"	11"	3½"	5¼"
L	12⅜" / 10¾"	12½"	4"	6¼"

Unit Ratings

	VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	CABINET SIZE
Lead-Calcium	6	2MG1/L9-M	27	18	14	—	S
	6	2MG2/L9-M**	54	37	28	21	L
	12	2M12G1/L9-M	36	25	20	14	S
	12	2M12G2/L9-M**	54	37	28	21	L
Nickel-Cadmium	6	2MN1/L9-M	25	18	12	—	S
	12	2M12N1/L9-M	36	21	15	12	S
	12	2M12N2/L9-M	50	36	25	18	S

** National Electrical Code® specification.* *** Do not exceed unit rating in voltage or capacity.*

Catalog Numbering System

2	MG	1	/	L9	-	M	-	ID

- **2** — No. of Heads
- **MG** — Series
- **1** — Capacity Indicator
- **L9** — Lamp Suffix *6V 9W Incandescent*
- **M** — Finish *Mist-White*
- **ID** — Option

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Commercial Battery Units

6- or 12-volt steel emergency unit — sealed maintenance-free lead-calcium battery.

PG/P12G Series

PG/P12G Series battery units combine reliability, versatility, performance and cost-efficiency in an aesthetically pleasing design. It is ideally suited for a range of commercial applications.

Reliability

The PG Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

Constructed of rugged steel with a corrosion-resistant undercoating, the PG Series cabinet has a removable front panel, providing easy access and allowing the unit to be mounted at ceiling height. Standard unit color is mist-white, but black housing and heads are also optional. All cabinets come standard with ⅞" conduit knockouts, rear keyhole mounting slots and provisions for mounting up to three heads on the cabinet.

Lamps

Standard with two ELF645 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 6- or 12-volt 9-watt high-intensity wedge base incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167****.*

PulseType Charger

- Automatic, temperature-compensated PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.25/0.12 amp, 30 watts (max.).

Head and Lamp Type Options

No Heads	**0**
Three Heads	**3**
Double Contact Bayonet Base, Bi-Pin Halogen, Wedge Base, Sealed Beam Lamps	**/ELF 645**
Bi-Pin Halogen Lamps	**/ELF 2**
MR16 Lamps up to 20 Watts	**/ELF 3**
MR16 Lamps	**/DR1130**

Options

(Add Suffix to Model No.)	**Suffix**
Black Housing and Heads	**-B**
Ammeter or Voltmeter (choose only one)	**-A* or -V***
Improved Diagnostics (audible)	**-ID**
Improved Diagnostics (non-audible)	**-IDNA**
Time Delay (specify 5, 10 or 15 minutes)	**-TD_****
Nickel-Cadmium Battery	**-N**
Nexus® Wired	**-NEX**
Nexus® Wireless	**-NEXRF**

** Not available with diagnostic option.*

*** (ID or IDNA) includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

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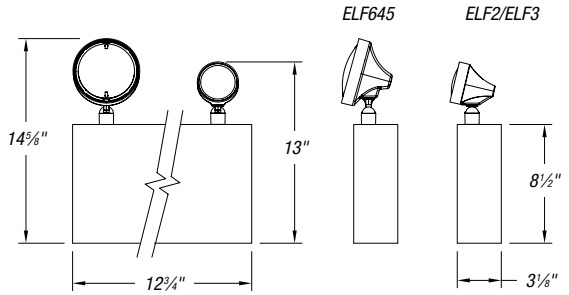
Accessories

(Order as a separate item)

Wire Guard	**WG2-L**
Mounting Platform	**MP-PQA**

Dimensions

Dimensions are approximate and subject to change.



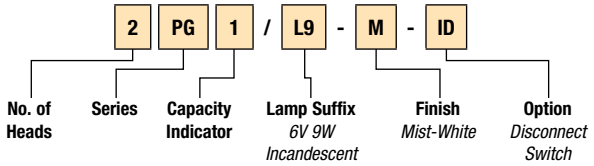
Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
		1½ HRS.	2 HRS.	3 HRS.	4 HRS.
6	**2PG1/L9-M**	18	15	—	—
	2PG2/L9-M	54	36	27	18
12	**2P12G1/L9-M**	54	36	27	18

Each unit furnished with two 9W high-intensity incandescent lamps.

** National Electrical Code® specification.*

Catalog Numbering System



Commercial Battery Units

6- or 12-volt steel emergency unit — sealed maintenance-free nickel-cadmium battery.

PN/P12N Series

The UL® Listed PN/P12N Series battery unit is a traditionally styled, high-performance unit, designed for environments where lighting units may be exposed to fluctuations in temperature.

Reliability

The PN Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

Constructed of rugged steel with a corrosion-resistant undercoating, the PN Series cabinet has a removable front panel, providing easy access and allowing the unit to be mounted at ceiling height. Standard unit color is mist-white, but black housing and heads are also optional. All cabinets come standard with ⅞" conduit knockouts, rear keyhole mounting slots and provisions for mounting up to three heads on the cabinet. P12N complies with requirements of Federal Specifications W-L-305D Type 1, Class I, Style D.

Lamps

Standard with two ELF645 PAR36 high-impact, mar-resistant thermoplastic heads. Furnished with two 6- or 12-volt 9-watt high-intensity wedge base incandescent lamps*. Other lighting head styles are also available (see options.) Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167.***

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.30/0.15 amp.

Options

(Add Suffix to Model No.)	Suffix
Black Housing and Heads	-B
Ammeter or Voltmeter (choose only one)	-A* or -V*
Improved Diagnostics (audible)	-ID
Improved Diagnostics (non-audible)	-IDNA
Time Delay (specify 5, 10 or 15 minutes)	-TD_**
Nickel-Cadmium Battery	-N
Nexus® Wired	-NEX
Nexus® Wireless	-NEXRF

** Not available with diagnostic option.*

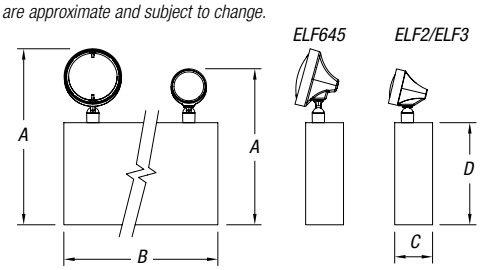
*** (ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field, or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

Head and Lamp Options

No Heads	0
Three Heads	3
Double Contact Bayonet Base, Bi-Pin Halogen,Wedge Base, Sealed Beam Lamps	/ELF 645
Bi-Pin Halogen Lamps	/ELF 2
MR16 Lamps up to 20 Watts	/ELF 3
MR16 Lamps	/DR1130

Dimensions

Dimensions are approximate and subject to change.



CABINET	DIMENSIONS A	B	C	D
A	14⅝" / 13"	12¾"	3⅛"	8½"
B	16⅜" / 14¾"	16⅛"	5⁷⁄₁₆"	10¼"

Unit Ratings

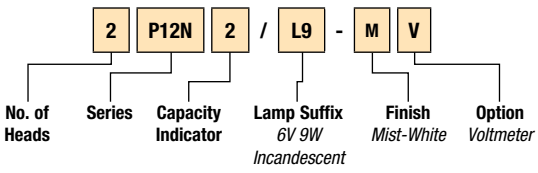
VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	CABINET SIZE
6	2PN1/L9-M	25	20	14	10	A
12	2P12N1/L9-M	50	36	25	18	A
	2P12N2/L9-M	72	60	50	38	B

** National Electrical Code® specification.*
Each unit furnished with two 9W high-intensity incandescent lamps.

Accessories (Order as a separate item)

Wire Guard (A cabinet)	WG2-L
Wire Guard (B cabinet)	WG3-L
Mounting Platform	MP-PQA

Catalog Numbering System



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Commercial Battery Units

6- or 12-volt steel emergency unit — sealed maintenance-free lead-calcium battery.

PQ/P12Q Series

The UL® Listed PQ/P12Q Series battery unit is an effective, functional unit designed with high-capacity maintenance-free batteries for commercial, institutional or industrial environments requiring remote capability or extended emergency lighting time.

Reliability

The PQ Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

Constructed of rugged steel with a corrosion-resistant undercoating, the PQ Series cabinet has a removable front panel, providing easy access and allowing the unit to be mounted at various heights. Standard unit color is mist-white, but black housing and heads are also optional. All cabinets come standard with ⅞" conduit knockouts, rear keyhole mounting slots and provisions for mounting up to three heads on the cabinet. Model 2PQ2 complies with requirements of Federal Specifications W-L-305D Type 1, Class I, Style E.

Lamps

Standard with two ELF645 PAR36 high-impact, mar-resistant thermoplastic heads. Furnished with two 6- or 12-volt 25-watt high intensity sealed beam incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167.***

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.30/0.15 amp.

Options

(Add Suffix to Model No.)	Suffix
Black Housing and Heads (replace -M with -B)	-B
Improved Diagnostics (audible)	-ID
Improved Diagnostics (non-audible)	-IDNA
Ammeter or Voltmeter (choose only one)	-A* or -V*
Lamp-Disconnect Switch	-DS**
Time Delay (specify 5, 10 or 15 minutes)	-TD_**
Vandal-Resistant Screws	-VR
3-Wire Cord and Plug	-3CP***
3-Wire Cord and Plug (277V)	-3CP-277***

** Voltmeter and ammeter not available with the diagnostic option.*

*** (ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

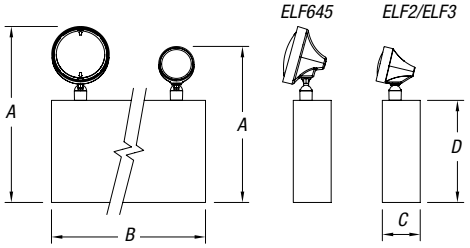
**** Standard cord length is 3 ft. Custom lengths available.*

Head and Lamp Options

No Heads	0
Three Heads	3
Double Contact Bayonet Base, Bi-Pin Halogen, Wedge Base, Sealed Beam Lamps	/ELF 645
Bi-Pin Halogen Lamps	/ELF 2
MR16 Lamps up to 20 Watts	/ELF 3
MR16 Lamps	/DR1130

Dimensions

Dimensions are approximate and subject to change.



CABINET	DIMENSIONS A	B	C	D
B	16⅜" / 14¾"	16⅛"	5⁷⁄₁₆"	10¼"
C	18⅜" / 16¾"	16½"	7¼"	12¼"

Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	CABINET SIZE
6	2PQ1/L25-M	50	36	24	18	B
	2PQ2/L25-M	100	75	50	36	B
	2PQ3/L25-M	200	175	100	72	C
12	2P12Q1/L25-M	100	75	50	36	B
	2P12Q2/L25-M	200	150	100	72	C

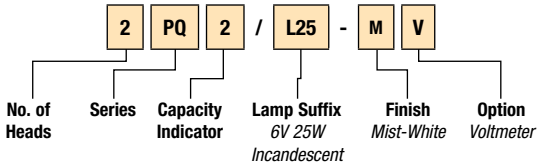
** National Electrical Code® specification.*
Each unit furnished with two 9W high-intensity incandescent lamps.

Accessories (Order as a separate item)

Wire Guard	WG3-L
Mounting Platform (C cabinet)	MP-PQB
Mounting Platform (B cabinet)	MP-PQA

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



NEMA Enclosure Definitions

Type 1

Enclosures constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment and to provide a degree of protection against falling dirt.

Type 2

Enclosures constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment, to provide a degree of protection against falling dirt and to provide a degree of protection against dripping and light splashing of liquids.

Type 3

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow and windblown dust; and that will be undamaged by the external formation of ice on the enclosure.

Type 3R

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet and snow; and that will be undamaged by the external formation of ice on the enclosure.

Type 3S

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow and windblown dust; and in which the external mechanism(s) remain operable when ice laden.

Type 4

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water and hose-directed water; and that will be undamaged by the external formation of ice on the enclosure.

Type 4X

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water and hose-directed water; and corrosion; and that will be undamaged by the external formation of ice on the enclosure.

Type 5

Enclosures constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, against settling airborne dust, lint, fibers and flyings; and to provide a degree of protection against dripping and light splashing of liquids.

Type 6

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, against hose-directed water and the entry of water during occasional temporary submersion at a limited depth; and that will be undamaged by the external formation of ice on the enclosure.

Type 6P

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, against hose-directed water and the entry of water during prolonged submersion at a limited depth; and that will be undamaged by the external formation of ice on the enclosure.

Type 12

Enclosures constructed (without knockouts) for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, against circulating dust, lint, fibers and flyings; and against dripping and light splashing of liquids.

Type 12K

Enclosures constructed (with knockouts) for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, against circulating dust, lint, fibers and flyings; and against dripping and light splashing of liquids.

Type 13

Enclosures constructed for indoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, against circulating dust, lint, fibers and flyings; and against the spraying, splashing and seepage of water, oil and noncorrosive coolants.

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Industrial and Harsh Environment Battery Units

12-volt commercial/industrial emergency unit — sealed maintenance-free lead-calcium battery.

S12E Series

The S12E Series battery unit is best suited for applications requiring high-capacity maintenance-free batteries, multiple remote capabilities or extended operating times. The 12-volt battery allows for longer remote wiring runs.

Reliability

The S12E Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The battery and all components are housed in a heavy-duty steel cabinet with a removable front access panel for ease of installation and maintenance. The standard cabinet finish will be gray enamel, but mist-white is also available (see options). All cabinets come standard with ⅞" conduit knockouts, rear keyhole mounting slots and provisions for mounting up to three heads on the cabinet. Mounting brackets and platforms are also available (see accessories).

Lamps

Standard with two ELF645 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 12-volt 25-watt high-intensity incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167.***

PulseType Charger

- Automatic, temperature compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.30/0.15 amp.

Options

(Add Suffix to Model No.)	Suffix
Voltmeter (not available with diagnostics)	-V
Ammeter (not available with diagnostics)	-A
Lamp Disconnect Switch	-DS**
Time Delay (specify 5, 10 or 15 minutes)	-TD_**
Improved Diagnostics (audible)	-ID*
Improved Diagnostics (non-audible)	-IDNA*
3-Wire Cord and Plug	-3CP***
3-Wire Cord and Plug (277V)	-3CP-277***
Mist White Color (replace -G with -M)	-M
Nexus® Wired	-NEX
Nexus® Wireless	-NEXRF

** S12E4, S12E5 and S12E6:*

*** (ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field, or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

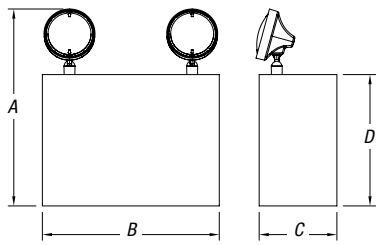
**** Standard cord length is 3 ft. Custom lengths available.*

Head and Lamp Options

No Heads	0
Three Heads	3
Double Contact Bayonet Base, Bi-Pin Halogen, Wedge Base, Sealed Beam Lamps	/ELF 645
Bi-Pin Halogen Lamps	/ELF 2
MR16 Lamps up to 20 Watts	/ELF 3
MR16 Lamps	/DR1130

Dimensions

Dimensions are approximate and subject to change.



CABINET	DIMENSIONS A	B	C	D
C	18⅜"	16½"	7¼"	12¼"
D	18⅜"	27"	7¼"	12¼"

Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	CABINET SIZE
12	2S12E4/L25-G	200	150	107	85	C
	2S12E5/L25-G	300	225	165	127	D
	2S12E6/L25-G	400	300	214	170	D

** National Electrical Code® specification.*

Accessories (Order as a separate item)

Wire Guard (S12E4)	WG3-L
Wire Guard (S12E5/S12E6)	WG4-L
Mounting Platform (S12E4)	MP-A
Mounting Platform (S12E5/S12E6)	MP12
Mounting Bracket (S12E4)	MB-A

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.

2	S12E	4	/	L25	-	G	V	M
No. of Heads	Series	Capacity Indicator		Lamp Suffix *6V 25W Incandescent*		Finish Mist-White	Option Voltmeter	Option Ammeter

Industrial and Harsh Environment Battery Units

12-volt commercial/industrial emergency unit — sealed maintenance-free lead-calcium battery.
S12E Series

The UL® Listed S24E Series battery unit is best suited for applications requiring high-capacity maintenance-free batteries, multiple remote capabilities or extended operating times. The 24-volt battery allows for longer remote wiring runs.

Reliability
The S24E Series has a three-year full warranty (excluding lamps and fuses).

Unit Data
The battery and all components are housed in a heavy-duty steel cabinet, with a removable front access panel for ease of installation and maintenance. The standard cabinet finish will be gray enamel, but mist-white is also available (see options). All cabinets come standard with ⅞" conduit knockouts, rear keyhole mounting slots and provisions for mounting up to three heads on the cabinet. Mounting brackets and platforms are also available (see accessories).

Lamps
Standard with two ELF645 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 24-volt 25-watt high-intensity incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167.***

PulseType Charger
- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls
- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Power Requirements
120/277VAC, 60 Hz, 0.3/0.15 amp.

Options

(Add Suffix to Model No.)	Suffix
Voltmeter (not available with diagnostics)	-V
Ammeter (not available with diagnostics)	-A
Lamp Disconnect Switch	-DS*
Time Delay (specify 5, 10 or 15 minutes)	-TD_**
Improved Diagnostics (audible)	-ID
Improved Diagnostics (non-audible)	-IDNA
Mist-White Color (replace -G with -M)	-M
3-Wire Cord and Plug	-3CP**
3-Wire Cord and Plug (277V)	-3CP-277**

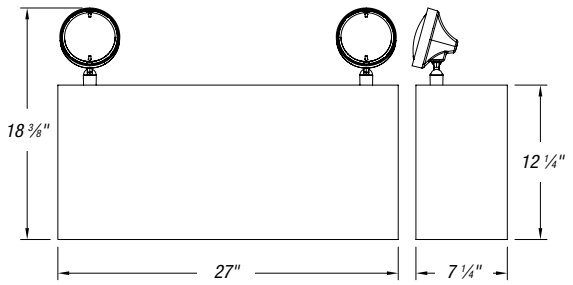
** Not required with ID option.*

*** (ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

Head and Lamp Options

No Heads	0
Three Heads	3
Double Contact Bayonet Base, Bi-Pin Halogen, Wedge Base, Sealed Beam Lamps	/ELF 645
MR16 Lamps up to 20 Watts	/ELF 3
MR16 Lamps	/DR1130

Dimensions
Dimensions are approximate and subject to change.



Unit Ratings

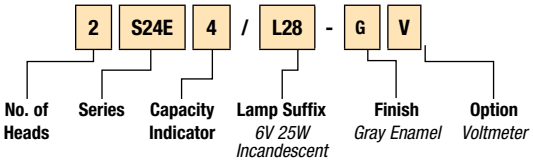
VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
		1½ HRS.	2 HRS.	3 HRS.	4 HRS.
24	S24E4/L28-G	400	300	120	60

** National Electrical Code® specification.*

Accessories (Order as a separate item)

Wire Guard	WG4-L
Mounting Bracket	MB-A
Mounting Platform	MP-12

Catalog Numbering System
For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



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Industrial and Harsh Environment Battery Units

6-volt emergency unit with remote capability — long-life, wet-refillable nickel-cadmium battery.

SN Series

The UL® Listed SN Series battery unit was designed for industrial locations requiring long-lasting emergency light units. Unit is available in a wide range of capacities and offers the special advantages of the nickel-cadmium battery, including excellent recharging capabilities.

Reliability

The SN Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The battery and all components are housed in a heavy-duty steel cabinet, with a removable front panel for ease of installation and servicing. The front panel includes a view port for visual inspection of the battery. The 6-volt, five-cell pocket-plate nickel-cadmium battery is housed in translucent plastic cell containers. The standard cabinet finish will be gray enamel, but mist-white is also available (see options). All cabinets come standard with ⅞" conduit knockouts, rear keyhole mounting slots and provisions for mounting up to three heads on the cabinet. Mounting brackets and platforms are also available (see accessories).

Lamps

Standard with two ELF645 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 6-volt 25-watt high-intensity incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167.***

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents overdischarge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates sate of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allow for quick operational check of entire systems

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

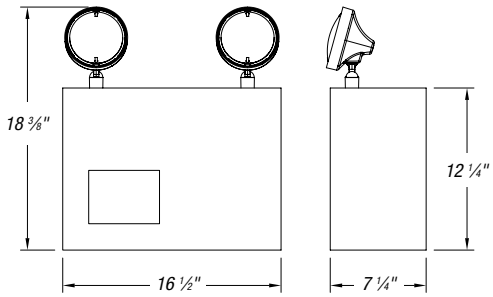
Options

(Add Suffix to Model No.)	Suffix
Mist-White Color (replace -G with -M)	-M
Voltmeter	-V
Ammeter	-A
Lamp Disconnect Switch	-DS
Time Delay (specify 5, 10 or 15 minutes)	-TD_
3-Wire Cord and Plug	-3CP*
3-Wire Cord and Plug (277V)	-3CP-277*

** Standard cord length is 3 ft. Custom lengths available.*

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
		1½ HRS.	2 HRS.	3 HRS.	4 HRS.
6	2SN2/L25-G	50	45	25	18
	2SN3/L25-G	70	60	35	25
	2SN4/L25-G	100	80	50	35
	2SN6/L25-G	130	105	70	50
	2SN7/L25-G	160	130	80	60

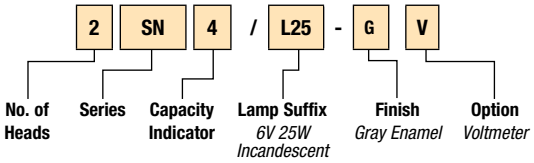
** National Electrical Code® specification.*

Accessories (Order as a separate item)

Wire Guard	WG3-L
Mounting Bracket	MB-A
Mounting Platform	MP-A

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



Industrial and Harsh Environment Battery Units

12-volt emergency unit with remote capability — long-life wet-refillable nickel-cadmium battery.

S12N Series

The S12N Series battery units are excellent high-capacity units — ideal where extended run times may be required or remote fixtures/exits will be connected. This unit will provide excellent performance over extended temperature ranges.

Reliability

The S12N Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

Battery and all components are housed in a heavy-duty steel cabinet with a removable front panel for ease of installation and servicing. The front panel includes a view port for visual inspection of the battery, which is encased in a clean, smooth container of transparent high-impact material. Gray enamel is the standard cabinet finish. All cabinets come standard with ⅞" conduit knockouts, rear keyhole mounting slots and provisions for mounting up to three heads on the cabinet. Mounting platform is also available (see accessories).

Lamps

Standard with two ELF645 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 12-volt 25-watt high-intensity incandescent lamps*. Other lighting head styles are also available (see options). Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167.***

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

Options

(Add Suffix to Model No.)	Suffix
Voltmeter	-V
Ammeter	-A
Lamp Disconnect Switch	-DS
Time Delay (specify 5, 10 or 15 minutes)	-TD_
Mist-White Color (replace -G with -M)	-M
3-Wire Cord and Plug	-3CP*
3-Wire Cord and Plug (277V)	-3CP-277*

** Standard cord length is 3 ft. Custom lengths available.*

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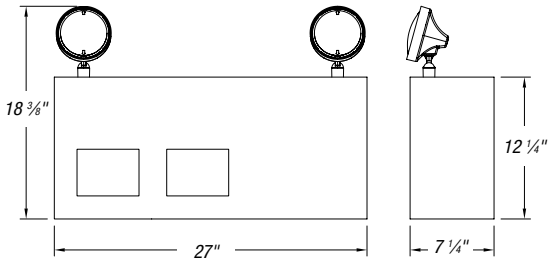
Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
		1½ HRS	2 HRS	3 HRS	4 HRS
12	2S12N2/L25-G	100	90	50	35
	2S12N3/L25-G	140	120	70	50
	2S12N4/L25-G	200	160	100	70
	2S12N6/L25-G	260	210	150	100
	2S12N7/L25-G	320	260	170	120

** National Electrical Code® specification.*

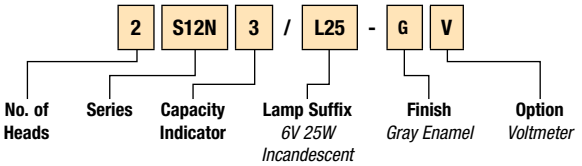
Accessories (Order as a separate item)

Wire Guard **WG4-L**

Mounting Platform **MP12**

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



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Industrial and Harsh Environment Battery Units

24-volt commercial/industrial emergency unit — long-life wet-refillable nickel-cadmium battery.

S24N Series

The S24N Series battery unit is best suited for applications where extended run times are required and/or remote fixtures or exits will be connected. Unit offers excellent recharging capabilities and superior performance over extended temperature ranges.

Reliability

The S24N Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The battery and all components are housed in a heavy-duty steel cabinet with a removable front access panel for ease of installation and maintenance. The standard cabinet finish will be gray enamel, but mist-white is also available (see options). All cabinets come standard with ⅞" conduit knockouts, rear keyhole mounting slots and provisions for mounting up to three heads on the cabinet. Mounting platform is also available (see accessories).

Lamps

Standard S24N Series units are furnished with two PAR36 high-impact mar-resistant thermoplastic heads with 25-watt high-intensity incandescent lamps. The heads are fully adjustable horizontally and vertically. Optional lamps are available.

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents overdischarge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allow for quick operational check of entire systems

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

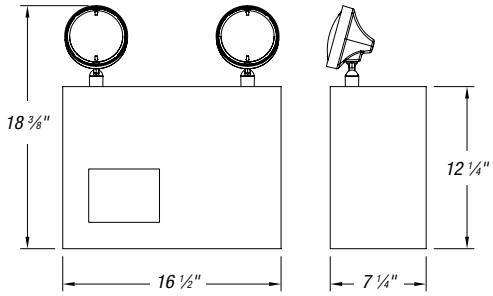
Options

(Add Suffix to Model No.)	Suffix
Mist-White Color (replace -G with -M)	-M
Voltmeter	-V
Ammeter	-A
Lamp Disconnect Switch	-DS
Time Delay (specify 5, 10 or 15 minutes)	-TD_
3-Wire Cord and Plug	-3CP*
3-Wire Cord and Plug (277V)	-3CP-277*

** Standard cord length is 3 ft. Custom lengths available.*

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
		1½ HRS	2 HRS	3 HRS	4 HRS
24	**2S24N4/L28-G**	400	300	120	60

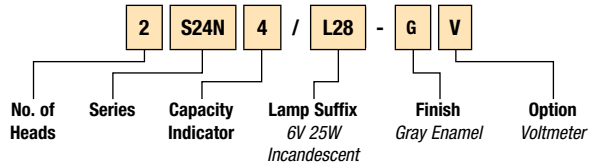
** National Electrical Code® specification.*

Accessories (Order as a separate item)

Wire Guard	**WG4-L**
Mounting Platform	**MP-12**

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



Industrial and Harsh Environment Battery Units

6- or 12-volt weatherproof emergency unit — maintenance-free lead-calcium or wet-refillable nickel-cadmium battery.

WP Series

The WP Series battery unit is designed with a special enclosure for applications where a weatherproof unit is required.

Reliability

The WP Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The housing is constructed of heavy-duty steel with front access to the battery and all components. The housing has a galvanized undercoating and baked gray enamel finish. Knockout and controls are concealed at bottom of housing. Welded mounting brackets are provided on top of case.

Lamps

Standard with two ELF647 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 6- or 12-volt 25-watt high intensity incandescent lamps*. Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167.***

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allows quick operational check of entire system

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

Options

(Add Suffix to Model No.)	**Suffix**
Voltmeter	**-V**
Ammeter	**-A**
Thermal Jacket (120V heater)	**-H1**
Thermal Jacket (277V heater)	**-H2**
Time Delay (specify 5, 10 or 15 minutes)	**-TD_**
Lamp Disconnect Switch	**-DS**
3-Wire Cord and Plug Kit	**-WP-3CP***
3-Wire Cord and Plug (277V) Kit	**-WP-3CP-277***

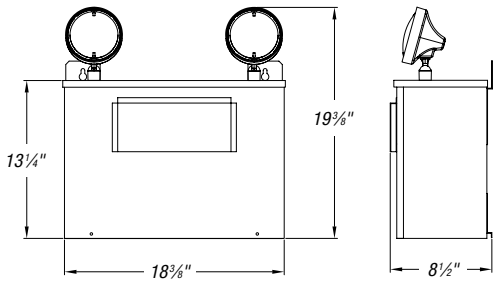
** Standard cord length is 3 ft. Custom lengths available.*

Accessories (Order as a separate item)

Wire Guard	**WG4-L**

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

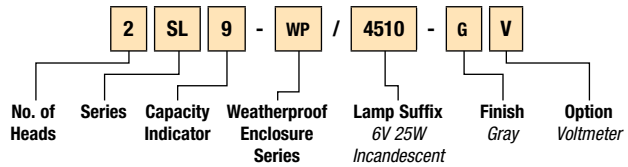
VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	BATTERY TYPE	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
6	**2SN2-WP/4510**	Nickel-Cadmium	50	45	25	18
	2SN3-WP/4510		70	60	35	25
	2SN4-WP/4510		100	80	50	35
	2SN6-WP/4510		130	105	70	50
	2SN7-WP/4510		160	130	80	60
12	**2S12E4-WP/4446**	Sealed Lead-Calcium	200	150	100	75
	2S12E5-WP/4446		300	225	110	110
	2S12E6-WP/4446		400	300	150	150

** National Electrical Code® specification.*

***Note**: Above capacity ratings are subject to an ambient of 50 to 85 degrees. Extremes of temperatures beyond this range will have a detrimental effect on the specified ratings. For extreme cold, use of a thermal jacket is recommended.*

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



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Industrial and Harsh Environment Battery Units

6-, 12- or 24-volt weather and corrosion-resistant emergency unit — sealed maintenance-free lead calcium or nickel-cadmium battery.

FG/F12G Series

The FG Series battery unit was designed for industrial applications, especially for installations in a corrosive atmosphere. This enclosure is fully gasketed and is furnished with stainless steel hardware.

Reliability

The FG Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The housing is a molded gray high-impact thermoplastic case, featuring oil-, water- and dust-tight construction, stainless steel hardware, single-piece neoprene gasket and a vented battery compartment. External mounting feet are provided. Conduit entry can be made with a punch, drill or hole saw.

Lamps

Standard with two ELF647 PAR36 high-impact mar-resistant thermoplastic heads. Furnished with two 6- or 12-volt 25-watt high intensity incandescent lamps*. Do not exceed unit battery capacity.

** For optional lamp types and wattages, refer to the lamp data chart on* ***pages I-166–I-167.***

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents overdischarge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allow for quick operational check of entire systems

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

Options

(Add Suffix to Model No.)	Suffix
Ammeter or Voltmeter (choose only one)	-A* or -V*
Improved Diagnostics (audible)	-ID
Improved Diagnostics (non-audible)	-IDNA
Time Delay (specify 5, 10 or 15 minutes)	-TD_**
Thermal Jacket (120V heater)	-H1
Thermal Jacket (277V heater)	-H2
Lamp Disconnect Switch	-DS**
Phototest Switch	-PTS
3-Wire Cord and Plug (120V)	-3CP***
3-Wire Cord and Plug (277V)	-3CP-277***
Nexus® Wired	-NEX
Nexus® Wireless	-NEXRF

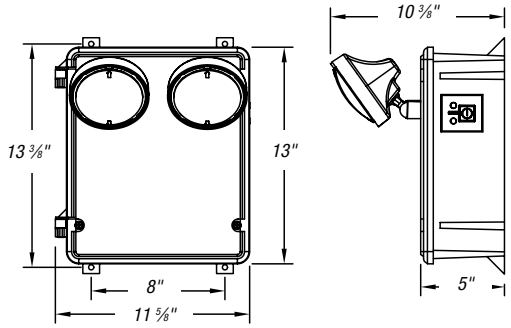
** Not available with diagnostic option.*

*** (ID or IDNA) Includes a Time Delay function. If needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix ID-TD_ or IDNA-TD_.*

**** Standard cord length is 3 ft. Custom lengths available.*

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	BATTERY TYPE	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.
6	2FG1/4510	Sealed Maintenance-Free Lead-Calcium	50	36	25
	2FG2/4510		100	75	50
12	2F12G1/4446		50	36	25
	2F12G2/4446		100	75	50
12	2F12N1/4446	Nickel-Cadmium	50	36	18
	F12N2 - 12V 100W		100	75	50
24	2F24N2/L28		100	73	37

** National Electrical Code® specification.*

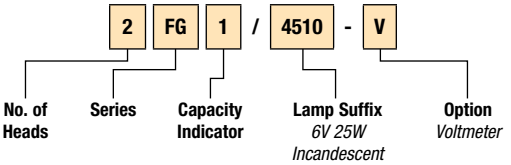
Each unit furnished with two 25W high-intensity incandescent lamps.

Accessories (Order as a separate item)

Wire Guard **WG3-L**

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



Industrial and Harsh Environment Battery Units

6- or 12-volt NEMA 4X emergency battery unit — sealed maintenance-free lead-calcium, nickel-cadmium or nickel-metal hydride battery.

Severe V Series

nexus® NSF UL

UL® Listed for wet and damp locations
Ni-Cad battery; (10° C to 40° C/50° F to 104° F)
UL® Listed for cold weather
(-40° C to 40° C/-40° F to 104° F) — see options below

The Severe V Series was designed for use in commercial as well as industrial heavy-duty environments, such as hosedown areas, food-processing facilities and parking garages as well as harsh environments. This battery unit will deliver unsurpassed pathway illumination.

Reliability

The Severe V Series battery unit has a three-year full warranty (excluding lamps and fuses).

Unit Data

The equipment is constructed of a fully gasketed die-cast aluminum back plate and an equipment frame of industrial-grade thermoplastic with a gasket around the lens and canopy, specifically designed for harsh environments. The front of the unit is protected by clear, heavy-duty, vandal-resistant UV-stabilized polycarbonate, fixed with tamper-proof screws. Each battery unit comes standard with a non-audible improved diagnostic charger board, 15-minute time delay and lamp disconnect as well as tamper-proof screws and bit. The housings are available in three colors, mist-white, black or gray. The standard unit can be wall mounted on a 4" junction box, although a universal bracket is available as an accessory for mounting on poles, beams or strut metal framing. Units with nickel-cadmium or nickel-metal hydride batteries are listed for damp and wet locations (10° C to 40° C/50° F to 104° F). For remote fixture, refer to Severe ELF650 Series in the Remote Fixtures section.

Light Source

Fully field-adjustable lamp head assembly offers the choice of MR16 halogen lamps up to 12V, 20W-IR or high-efficiency, 4-watt, MR16 LED lamps. The unit supplies 90 minutes of emergency operation.

Charger

The Severe V Series Emergency Battery Unit is equipped with fully automatic Improved Diagnostic micro controller based-circuitry.* The micro controller tests, detects and indicates any malfunction or failure of the battery, charger circuitry or lamps. An external LED signals a general service alarm, while four internal diagnostic LEDs indicate the nature of failure. The board is factory preset to non-audible diagnostics and a 15-minute time delay. These functions can be enabled or disabled during installation. The equipment comes standard with a dual voltage input of 120/277VAC.

** The unit will perform a periodic self-test a minimum of 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually.*

Options

(Add Suffix to Model No.)	Suffix
Cold Weather Location (-40° C to 40° C/-40° F to 104° F)	-CW4*
Nexus® Wired	-NEX
Nexus® Wireless	-NEXRF

** Available on 2V12G1 (24W) and 2V12G2 (36W) lead-calcium battery unit only.*

Power Consumption Chart

AC SPECIFICATION			
UNIT TYPE	VOLTAGE	CURRENT (MAX.)	EFFECTIVE POWER
Standard	120/277VAC, 60 Hz	0.2/0.11A	Less than 20W
Cold Weather (option)	120/277VAC, 60 Hz	0.7/0.40A	Less than 100W

Unit Ratings

UNIT EQUIPMENT WITH REMOTE CAPABILITY				
SEALED MAINTENANCE-FREE BATTERY TYPES	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
	1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	18	12	—	—
	24	16	12	—
	36	24	20	14
	54	36	27	20
Nickel-Cadmium**	24	18	12	—
	40	30	20	15
Nickel-Metal Hydride**	60	45	30	20

** National Electrical Code® specification.*

*** Listed for wet and damp locations*

Furnished standard with MR16 lamps.

Accessories (Order as a separate item)

Additional Special Bit for Tamper-Proof Screws	TPB
Universal Bracket for Mounting on Poles, I-Beams or Superstrut® Structures	PMK-L

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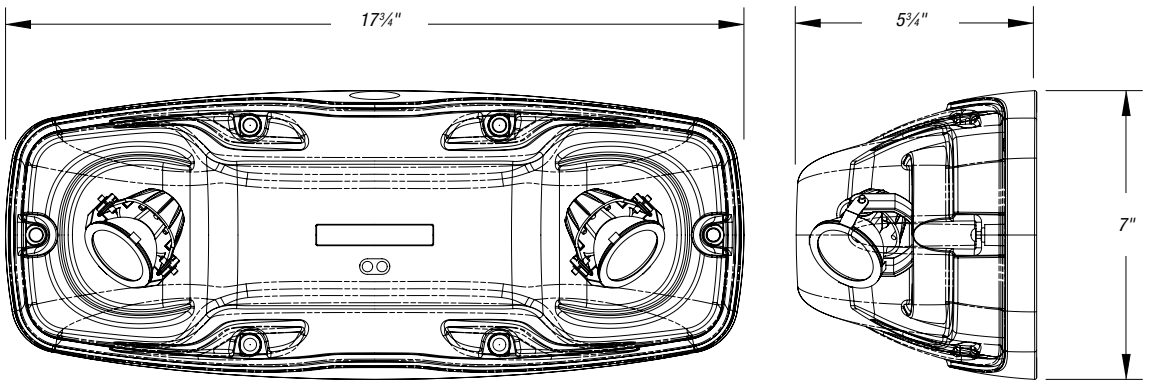
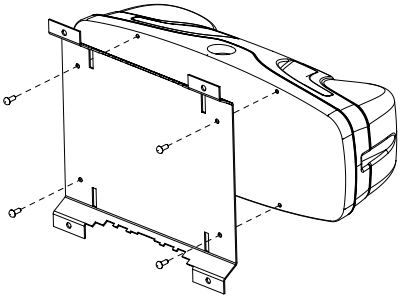
Dimensions

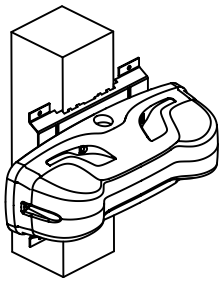
Dimensions are approximate and subject to change.



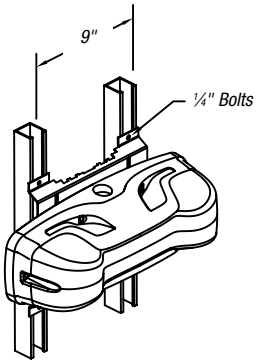
Universal Mounting Brackets



PMK KIT (screws included)



Beam Mounting



Superstrut® Mounting

Catalog Numbering System

2	V12G2	/	M12	-	B	-	D	-	

No. of Heads
2 *= 2 Heads*

Series
VG1 *= 6V 18W, Lead-Calcium*
V12G1 *= 12V 24W, Lead-Calcium*
V12G2 *= 12V 36W, Lead-Calcium*
V12G3 *= 12V 54W, Lead-Calcium*
V12N1 *= 12V 24W, Nickel-Cadmium*
V12N2 *= 12V 40W, Nickel-Cadmium*
V12H1 *= 12V 60W, NiMHR*

Lamps
L5 *= 12V 4W, LED*
M6 *= 6V 6W, MR16*
M12 *= 12V 12W, MR16*
MH20 *= 12V 20W, MR16-IR*

Color
B *= Black*
G *= Gray*
M *= White*

Charger
D *= Improved Diagnostic Non-Audible (Standard)*
DA *= Improved Diagnostic Audible*
NEX *= Nexus System Interface (CSA-US Certified)*
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*

Options
Blank *= No Options*
IDNA *= Improved Diagnostic, Non-Audible*
CW4 *= Cold Weather* (-40° C to 40° C)*
** Only available with V12G1 and V12G2.*

Industrial and Harsh Environment Battery Units

Severe Series NEMA 4X

Severe XV NEMA 4X Exit Sign

- NEMA 4X self-powered LED exit sign
- Standard with diagnostic/self-test feature
- Sealed maintenance-free nickel-cadmium battery
- Standard damp location listing (10° C to 40° C/50° F to 104° F)
- UL® Listed

The Severe XV NEMA 4X Exit Sign is housed in an industrial-grade polyvinyl chloride enclosure. This exit sign was designed specifically for harsh environments that would strain standard exit signage, such as schools, transit platforms, parking garages, wet and cold locations as well as any location prone to vandalism.

See page I-144

6- or 12-volt weather and corrosion-resistant emergency unit — maintenance-free nickel-cadmium battery.

Severe XV NEMA 4X Combination Exit Emergency Battery Unit

- UL® Listed for wet and damp locations (10° C to 40° C/50° F to 104° F)

The Severe XV Combo Unit is designed and engineered with style in mind and sets new standards for emergency lighting in today's toughest environments. The unit is suitable for industrial and commercial applications as well as all public facilities.

See page I-146

Severe ELF650 NEMA 4X Remote Fixture

The Severe ELF650 NEMA 4X Remote Fixture has a fully gasketed cast-aluminum back plate with a clear UV- and impact-resistant cover. The remote fixture delivers unsurpassed path-of-egress illumination. The ELF650 is available in single- or double-head models with the option of highly efficient MR16 lamps or the 5-watt, MR16 shape white LED. Easy lamp replacement, toolless lamp aiming and easy installation on a 4" octagonal box all make this remote fixture the perfect choice for any environment. Comes standard with tamper-proof screws and bit. NSF certified for food processing plants. Choice three colors: white, black or gray.

See page I-159

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Industrial and Harsh Environment Battery Units

6- or 12-volt NEMA industrial emergency unit — sealed maintenance-free lead-calcium or nickel-cadmium battery.

ECN/E12CN/ENN/E12NN Series

Series meets requirements for operation under NEMA 1, 2, 3, 3R, 3S, 4, 4X, 12 and 13 conditions.

This NEMA industrial emergency lighting unit series is designed for use in hostile environments where the presence of water, fibers, dirt, dust and corrosive gases can be potentially damaging to internal components.

Reliability

The ECN/ENN (6-volt), E12CN and E12NN (12-volt) Series have a three-year full warranty (excluding lamps and fuses).

Unit Data

All units are housed in water- and corrosion-resistant cabinets constructed from glass-reinforced structural foam. Cabinets are silicone sealed and/or gasketed around all entryways, the push-to-test switch is completely enclosed and a corrosion-resistant bushing is provided for field-installed conduit entry. Breather devices allow for ventilation of battery gases without admitting damaging elements. All external hardware is stainless steel. A unique door-hinging device allows for removal of door panel or retention of the hinge by means of a small field adjustment.

Lamps

Units are equipped with a choice of standard incandescent or halogen sealed-beam lamps. Lamps are housed in gray, industrial thermoplastic shells with matching swivels. Lamp housings are raintight and corrosion resistant. Wire connections are silicone sealed.

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents overdischarge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allow for quick operational check of entire systems

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

Options

(Add Suffix to Model No.)	**Suffix**
Time Delay (specify 5, 10 or 15 minutes)	**-TD_**
Voltmeter	**-V**
Ammeter	**-A**
Lamp Disconnect Switch	**-DS**
Thermal Jacket (120V heater)	**-H1**
Thermal Jacket (277V heater)	**-H2**
Cord and Plug Kit (120V)	**-WP-3CP***
Cord and Plug Kit (277V)	**-WP-3CP-277***

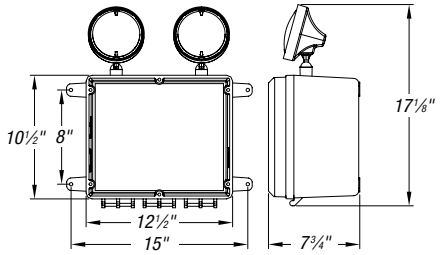
** Standard cord length is 3 ft. Custom lengths available.*

Accessories (Order as a separate item)

Wire Guard	**WG3-L**

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	BATTERY TYPE	INPUT WATTS	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
6	**2ECN25**	Sealed Lead-Calcium	18	25	20	15	12
	2ECN50		18	50	40	30	22
	2ECN100		40	100	75	50	36
	2ENN25	Sealed Nickel-Cadmium	18	25	20	15	12
	2ENN50		18	50	40	28	22
12	**2E12CN50**	Sealed Lead-Calcium	18	50	40	30	22
	2E12NN50	Sealed Nickel-Calcium	18	50	40	28	22

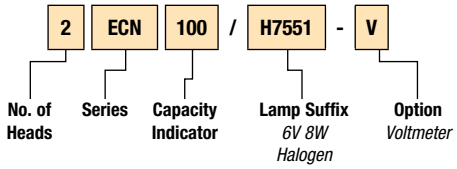
** National Electrical Code® specification.*

Lamp Selection Chart

	DC VOLTAGE	LAMP WATTAGE	LUMEN OUTPUT	LAMP TYPE	LAMP SUFFIX (ADD TO UNIT MODEL NO.)
Use with 6-Volt ECN, ENN Series	6	8	180	Halogen	**H7551**
		18	220	Incand.	**4014**
		25	350	Incand.	**4510**
Use with 12-Volt E12CN, E12NN Series	12	8	180	Halogen	**H7555**
		18	220	Incand.	**4414**
		25	350	Incand.	**4446**

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



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Industrial Explosion-Proof Battery Units

Hazardous Locations Definitions

Hazardous areas are those in which a potential for explosion or fire exists, due to the presence of certain gases, liquid vapors, combustible dusts or fiber particles suspended in the air. The National Electrical Code®, NEMA, OSHA, UL® and NFPA Life Safety Standards, as well as state and local codes, prescribe the use of emergency lighting equipment. This equipment itself must not contribute to the ignition of flammable or explosive substances present in the location. The Thomas & Betts Lightalarms™ brand offers a complete line of emergency lighting equipment for use in hazardous locations.

Typical Class I Locations

- Petroleum refineries and gasoline storage and dispensing areas
- Industrial firms that use flammable liquids in dip tanks for cleaning parts or other operations
- Petrochemical companies that manufacture chemicals from gas and oil
- Dry cleaning plants where vapors from cleaning fluids can be present
- Companies that have areas dedicated for spraying products with paint or plastics
- Aircraft hangars and fuel servicing areas
- Utility gas plants and operations involving storage and handling of liquified petroleum gas or natural gas

Typical Class II Locations

- Grain elevators, flour and feed mills
- Plants that manufacture, use or store magnesium or aluminum powders
- Plants that have chemical or metallurgical processes; producers of plastics, medicines, fireworks, etc.
- Producers of starch or candies
- Spice grinding plants, sugar plants and cocoa plants
- Coal preparation plants and other carbon handling or processing areas

Typical Class III Locations

- Textile mills, cotton gins, cotton seed mills and flax processing plants
- Clothing manufacturing plants
- Any plant that shapes, pulverizes or cuts wood and creates saw dust or shavings

For more information, consult the NEC®.

NEC and National Electrical Code are registered trademarks of the National Fire Protection Association, Inc.

Hazardous Location Classifications

Class I (NEC-500-5)

Areas in which flammable gases or vapors may be present in sufficient quantities to be explosive or ignitable.

Class II (NEC-500-6)

Areas with risk of presence of combustible dust.

Class III (NEC-500-7)

Areas in which there are easily ignitable fibers or flyings present, due to the type of material being handled, stored or processed, but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures.

Division 1 (NEC-500-5, 6 & 7)

Normal Situation: A hazard is present in the everyday normal production operation or during frequent repair and/or maintenance activity.

Division 2 (NEC-500-5, 6 & 7)

Abnormal Situation: Potentially hazardous material is expected to be safely confined within closed containers or closed systems, and will be present in the atmosphere only through accidental rupture, breakage or abnormal operation.

Group A, B, C & D (NEC-500-3)

Gases and vapors in Class I locations are classified into four groups, by the codes A, B, C and D. These materials are grouped according to the ignition temperature of the substance, its explosion force and other flammability characteristics.

Groups E, F & G (NEC-500-3)

Combustible dust in Class II locations are classified according to ignition temperature and the conductivity of the hazardous substance.

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Industrial Explosion-Proof Battery Units

6- or 12-volt emergency lighting unit — for operation in hazardous areas. Sealed maintenance-free lead-calcium or nickel-cadmium battery.

EC/E12C/EN/E12N Series

Class I	Division 2, Groups C & D
Class II	Division 2, Groups E & F

Series meets requirements for operation under NEMA 1, 2, 3, 3R, 3S, 12 and 13 conditions.

This series of emergency lighting units is designed to meet the specific requirements of Division 2 Hazardous areas. Typical applications include any location where flammable materials are stored, handled or pumped, as well as adjacent areas where separation could break down under abnormal conditions.

Reliability

The EC, E12C, EN and E12N Series have a three-year full warranty (excluding lamps and fuses).

Unit Data

All units are housed in water- and corrosion-resistant cabinets constructed from glass-reinforced structural foam. Cabinets are fully sealed and gasketed, and all external hardware is stainless steel. Door covers are hinged in such a way to permit either retention of the hinge when opened or a complete removal of the door. All external electrical components, including the test switch and indicator light, are explosion proof in design and exceed requirements for Division 2 areas. The battery compartment is vented by a one-way breather device to permit exhaust of battery gases and relief of internal pressure without admitting external moisture or corrosives.

Lamps

Units are equipped with a choice of standard incandescent or halogen sealed-beam lamps. Lamps are housed in gray, industrial thermoplastic shells with matching swivels. Lamp housings are raintight and corrosion resistant. Wire connections are silicone sealed.

PulseType Charger

- Automatic, temperature-compensated, PulseType charger
- High-capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents overdischarge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red charger monitor LED indicates state of charge of the battery
- Amber AC-ON LED indicates AC power is on
- Momentary test switch allow for quick operational check of entire systems

Power Requirements

120/277VAC, 60 Hz, 0.3/0.15 amp.

Options

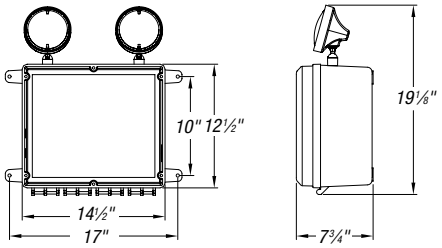
(Add Suffix to Model No.)	Suffix
Time Delay (specify 5, 10 or 15 minutes)	-TD_
Shatter-Resistant Lamp Coating	-FP

Accessories (Order as a separate item)

Wire Guard	WG3-L

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	BATTERY TYPE	INPUT WATTS	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
6	2EC50	Sealed Lead-Calcium	18	50	40	30	22
	2EC100		60	100	75	50	36
	2EN25		40	25	20	13	9
	2EN50	Sealed Ni-Cad	40	50	40	25	19
	2E12C50		18	50	40	30	22
12	2E12C100	Sealed Lead-Calcium	60	100	75	50	36
	2E12N50		60	50	40	28	20
	2E12NN50	Sealed Ni-Cad	18	50	40	28	22

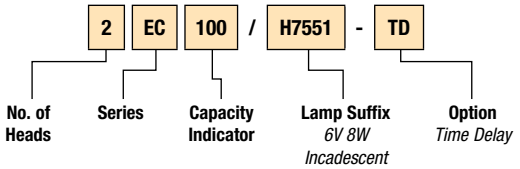
** National Electrical Code® specification.*

Lamp Selection Chart

	DC VOLTAGE	LAMP WATTAGE	LUMEN OUTPUT	LAMP TYPE	LAMP SUFFIX (ADD TO UNIT MODEL NO.)
Use with 6-Volt ECN, ENN Series	6	8	180	Halogen	H7551
		18	220	Incand.	4014
		25	350	Incand.	4510
Use with 12-Volt E12CN, E12NN Series	12	8	180	Halogen	H7555
		18	220	Incand.	4414
		25	350	Incand.	4446

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



Industrial Explosion-Proof Battery Units

6- or 12-volt hazardous location emergency unit — sealed maintenance-free nickel-cadmium battery for operation in hazardous areas.

EXP6N/EXP12N Series

Class I	Division 1 & 2, Groups C & D
Class II	Division 1 & 2, Groups E, F & G

Lighting fixture and battery housing comply with NEC®, OSHA and NEMA specifications for all above Classes and Groups

The EXP Series explosion-proof lighting systems are completely self-contained and designed to allow safe operation of the battery and electronics in the classified areas specified above.

Reliability

The EXP Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

EXP systems consist of a power unit and any combination of lighting fixture and/or exit sign. The entire system can be located within the hazardous area. Manufactured in accordance with UL® 844, 1203 and 924, EXP systems feature an explosion-proof cabinet and spin-off gasketed cover. Each piece is constructed of one-piece, heavy-gauge, corrosion-resistant, copper-free cast aluminum to prevent propagation of internally generated arcs into the hazardous atmosphere. A silicone conformal coating on the circuit board helps to protect the electronics against humidity. The EXP series features a sealed maintenance-free nickel-cadmium battery with a long life, minimal gassing and superior resistance to temperature extremes.

Lamps

Series EXP systems are designed so that one or two explosion-proof fixtures can be mounted on the cabinet, in various configurations, i.e., one lamp and one exit fixture, two lamp fixtures, two exit fixtures, etc. Fixtures mounted on the cabinet are ordered as part of the system by catalog number. See see the catalog numbering system. Lightalarms® lamp fixtures are heavy cast aluminum with Pyrex® lenses. A medium screw base is standard; double contact bayonet base and halogen lamps are optional. For complete information, refer to the Series EPF401 spec sheets. Lightalarms® exit signs are rectangular, heavy-duty steel boxes with exit lettering on single face (X402) or double face (2X402). Exit signs are for DC or AC operation. For complete information, refer to the X402 Series.

Charger

Completely automatic, the charger features a solid-state transfer and is capable of recharging the batteries in accordance with UL® 924. The charger will provide a high charge rate immediately upon restoration of AC power and a trickle rate to maintain the battery charged. The charger is a constant-current type.

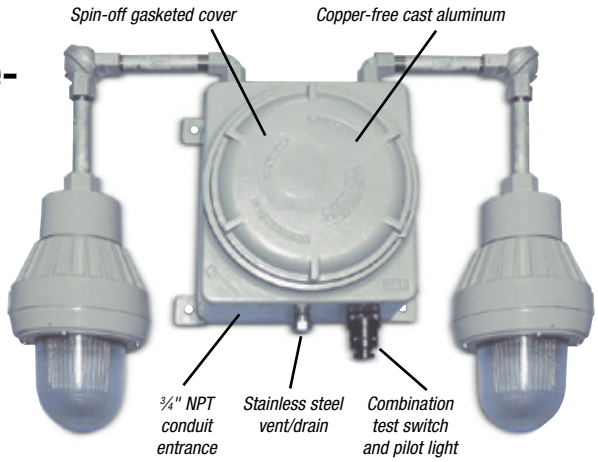
Controls

- Combination momentary test switch and AC-ON pilot light

Power Requirements

Dual-input voltage transformer, 120/277VAC, 60 Hz, 0.3/0.15 amp (other voltages available on request).

Pyrex® is a registered trademark of Corning Glass.



Unit Ratings

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	INPUT WATTS	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	8 HRS.
6	EXP6N18	18	18	12	—	—	—
	EXP6N25	25	25	18	9	9	—
	EXP6N36	36	36	21	12	12	6
	EXP6N50	50	50	36	18	18	10
12	EXP12N36	36	36	21	12	12	6
	EXP12N50	50	50	36	18	18	10
	EXP12N72	72	72	42	24	24	12

** National Electrical Code® specification.*

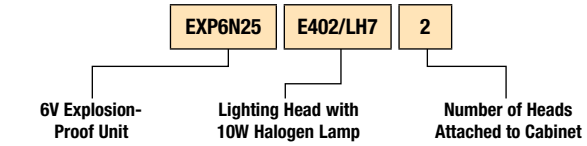
Options

(Add Suffix to Model No.)	Suffix
Time Delay (specify 5, 10 or 15 minutes)	-TD_
Transfer Switch	-TS

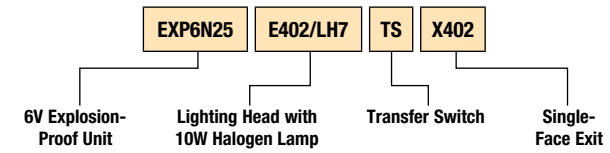
Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.

Example 1: System with two lamp fixtures only



Example 2: System with one lamp fixture and one exit sign



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Industrial Explosion-Proof Battery Units

Lamp Selection

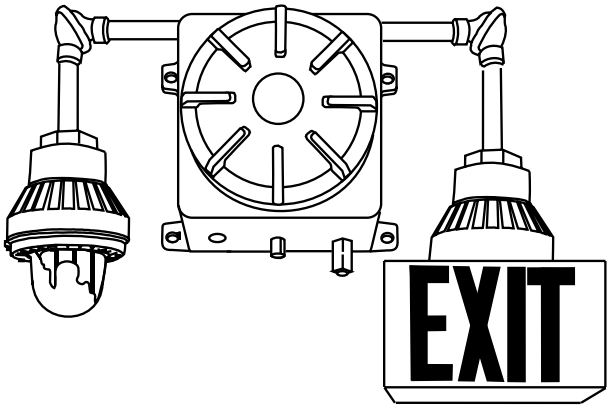
LAMP TYPE	VOLTAGE	LAMP WATTAGE	REPLACEMENT PART NO.	LAMP SUFFIX (ADD TO UNIT MODEL NO.)
High-Intensity Tungsten (HIT)	6V	9W	135	L9
	6V	18W	136	L18
	12V	9W	138	L9
	12V	18W	139	L18
	12V	25W	140	L25
Bi-Pin Halogen	6V	6W	784	LH4
	6V	8W	785	LH5
	6V	10W	787	LH7
	6V	12W	786	LH6
	6V	15W	JC6V-15W	LH1
	12V	8W	774	LH8
	12V	12W	783	LH3

Note: *Units are supplied standard with appropriate wattage (HIT) high-intensity tungsten lamps (unless otherwise specified). Alternate wattage lamps or halogen lamps may be substituted as required. For run times other than 90 minutes, refer to Unit Ratings chart.*

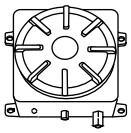
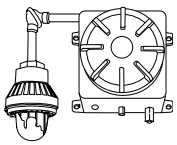
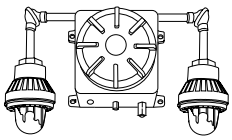
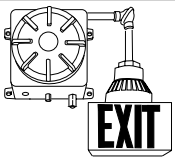
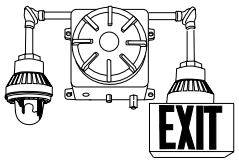
Dimensions

Dimensions are approximate and subject to change.

Housing: 12" x 12" x 9½".
Mounting Lugs: 10" and 13½" on center
Overall Dimensions (including fixtures): 38" x 38" x 10"



Standard Configurations for EXP Series

UNIT	CAT. NO.	DESCRIPTION
 *(Remote capability)*	**EXP12N50**	12V self-contained hazardous area emergency lighting power unit complete with battery and charger.
	EXP12N50-TS	12V self-contained hazardous area emergency lighting power unit complete with battery charger and transfer switch.
	**EXP6N50E402/LH1**	Single-head unit with 6V, 15W bi-pin halogen lamp.
	EXP6N50E402/LH1-TS	Single-head unit with 6V lamp with transfer switch option.
	**EXP6N50E402/L9-2**	6V self-contained hazardous area emergency lighting power units complete with battery and charger and two heads. Each fixture supplied with one 9W HIT lamp.
	EXP6N50E402/L9-TS-2	6V self-contained hazardous area emergency lighting. Power unit complete with battery, charger, two heads and transfer switch. Each fixture supplied with one 9W HIT lamp.
	**EXP6N25TSX402R**	Self-contained unit with integral low-voltage transfer panel (TS) to operate the 15W exit lamp in both normal and emergency modes. Suggested catalog number shown indicates single-face exit with red stencil faceplate. For green, substitute G for R. For double face, substitute 2X402 for X402.
	**EXP6N50E402LH1TSX402R**	In addition to the 15W exit lamp which operates in both normal and emergency modes, greater emergency lighting can be achieved with one additional emergency lighting head. Each fixture supplied with one 6V, 15W (LH1) bi-pin halogen lamp.

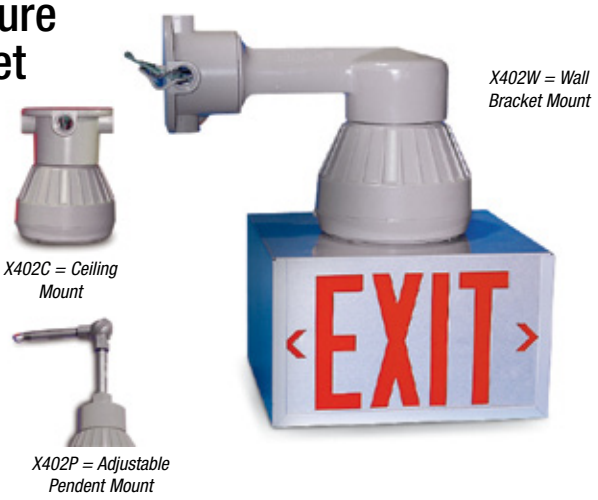
Note: *Above units are supplied with appropriate wattage high-intensity tungsten (HIT) lamps (unless otherwise specified). Alternate wattages, lamps or halogen lamps may be substituted as required. Exit sign provided with 25W lamps only.*

Industrial Explosion-Proof Battery Units

Explosion-proof remote exit sign fixture for operation in hazardous and/or wet locations — AC or DC operation.

X402 Series

Class II — Divisions 1 and 2, Groups E, F & G (60W max.)
Class III — Division 1 and 2 (150W max.)
Lighting fixture complies with NEC®, OSHA and NEMA specifications for all above Classes and Groups and is UL® Listed for use in paint spray areas (75W max.).



These remote emergency exit signs are designed for mounting in locations that are remote from their power source.

Reliability

The X402 Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

X402 fixtures are manufactured of heavy cast aluminum with Pyrex® lenses. All attached hardware is designed for explosion-proof applications. The exit housing is a heavy-duty steel box with a gray baked-enamel finish. Stenciled exit lettering is available on one or two faces. The legend is available in red or green lettering and meets UL® 924 with respect to brush stroke and width. All X402 Series exit signs have extra-large downlight openings. They can be wall, ceiling or pendant mounted. The X402 Series exit signs are designed for mounting in locations that are remote from their power source*. They are offered with 6-, 12- and 24-volt lamps for DC operation.

** If power source is installed outside hazardous areas, the length of connection wires should be carefully considered to ensure that voltage of emergency power unit and wire size of connecting circuit are adequate to offset voltage drop in circuit.*
Pyrex is a registered trademark of Corning Glass.

Transfer Circuit (not designed for hazardous areas)

TS panels are required for remote explosion-proof fixtures that are NORMALLY ON as constant operation fixtures. Panels are available for 25, 50, 75 or 100 watt. Maximum load (6V max. 50W, 12V max. 100W, 24V max. 200W).

Model TS Ordering

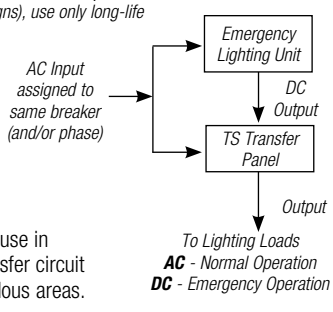
To make the proper TS selection, the following information is required:

1) DC output voltage of emergency lighting system MUST be matched to DC input of TS panel load.
2) Number of fixtures to be connected to TS panel.
3) Total wattage of fixtures to be connected to TS panel.

Note: *For normally on applications (e.g. exit signs), use only long-life lamp (XX) Series.*

How to Order Transfer Panel

120 / 12 - TS - 50
AC DC Model Watts
Input Output
(For multi-phase monitoring, contact factory.)



Mounting

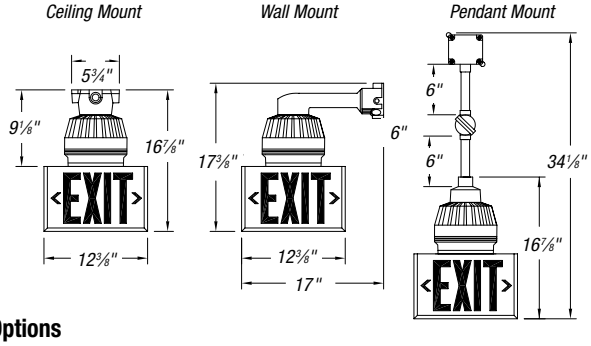
The transfer circuit is not designed for use in hazardous or explosive areas. The transfer circuit is to be mounted remotely from hazardous areas.

Electrical Specifications for Transfer Panel

Input Voltage: From AC: 120V, 60 Hz, 1-phase (other voltages available);
From DC: 6, 12, 24 or 120V (select)
Output Voltage: Must be identical to DC Input Voltage
Wattage: Panel oversized 10–20% greater than total connected load

Dimensions

Dimensions are approximate and subject to change.



Options

(Add Suffix to Model No.) ..... **Suffix**
Open-Face Panels with Special Symbols or Legends ..... **Contact Factory**
3-Sided Exit Face Triangle ..... **-3F**
(Unbreakable 3-sided white acrylic triangle with easy mounting to regular explosion-proof lighting fixture. Open design permits full air circulation for cool operation and provides excellent down light. 6" high EXIT letters with red ¼" stroke on white background meet all safety specifications. Directional arrows included.)

Single-Face Exit = X402W or X402C or X402P
Double-Face Exit = 2X402W or 2X402C or 2X402P

Lamp Selection

LAMP TYPE	VOLTAGE	LAMP WATTAGE	LAMP TYPE	AVERAGE LIFE (HOURS)	SUFFIX	REPLACEMENT PART NO.
Quartz Bi-Pin	6V	15W	JC-6V15W	2,000	6	580.0086
Medium Base	12V	25W	25A-12	1,000	12	570.0071
	24V		143A	1,000	24	570.0118
	120V		A19	2,500	120	570.0136

Catalog Numbering System

2	X402	C	6	-	R

- **No. of Faces:** *Blank = 1*, *2 = Double*
- **Series:** X402
- **Mounting:** *C = Ceiling*, *P = Pendant*, *W = Wall*
- **Lamp Type:** *6 = 6V 15W*, *12 = 12V 25W*, *24 = 24V 25W*, *120 = 120V 25W*
- **Letter Color:** *R = Red*, *G = Green*

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Industrial Explosion-Proof Battery Units

Explosion-proof remote lighting fixture for operation in hazardous and/or wet locations — AC or DC operation.

EPF401 Series

EPF401 fixtures are designed for mounting in locations that are remote from their power source.* They are offered with 6-, 12- and 24-volt lamps for DC operation. They also comply with NEC®, OSHA and NEMA specifications for all above Classes and Groups and are UL® Listed for use in paint spray areas (75W max.).

Reliability

The EPF401 Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

The EPF401 Series fixtures are manufactured of heavy cast aluminum with Pyrex® lenses. All attached hardware is designed for explosion-proof applications. Single and double pendant mount fixtures include elbows, swivels, a conduit extension pipe (6" increments) and a combination explosion-proof junction box/mounting plate. They can be wall, ceiling or pendant mounted. The EPF401 Series is designed for mounting in locations that are remote from their power source.* They are offered with 6-, 12- and 24-volt lamps for DC operation.

** If power source is installed outside hazardous areas, the length of connection wires should be carefully considered to ensure that voltage of emergency power unit and wire size of connecting circuit are adequate to offset voltage drop in circuit.*
Pyrex is a registered trademark of Corning Glass.

Options

(Add Suffix to Model No.) ..... **Suffix**

Angle Reflector — Highly reflective white finish inside and out. Attaches to globe holder ring with four screws ..... **-AG**

Dome Reflector — Highly reflective white finish inside and out. Attaches to globe holder ring with four screws ..... **-DM**

Guard — One-piece aluminum casting construction. Attaches to globe holder ring with four screws ..... **-GD**

Lamp Selection

LAMP TYPE	DC VOLTAGE	LAMP WATTAGE	REPLACEMENT PART NO.	LAMP SUFFIX (ADD TO UNIT MODEL NO.)
High-Intensity Tungsten (HIT)	6V	9W	135	L9
	6V	18W	136	L18
	12V	9W	138	L9
	12V	18W	139	L18
	12V	25W	140	L25
Bi-Pin Halogen	6V	6W	784	LH4
	6V	8W	785	LH5
	6V	10W	787	LH7
	6V	12W	786	LH6
	6V	15W	JC6V-15W	LH1
	12V	8W	774	LH8
	12V	12W	783	LH3

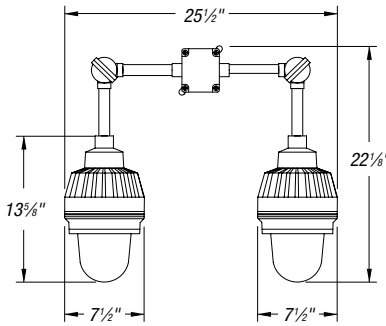
Note: *Units are supplied standard with appropriate wattage high-intensity tungsten (HIT) lamps (unless otherwise specified). Alternate wattage lamps or halogen lamps may be substituted as required. For run times other than 90 minutes, refer to unit ratings.*

For AC or DC operation

Dimensions

Dimensions are approximate and subject to change.

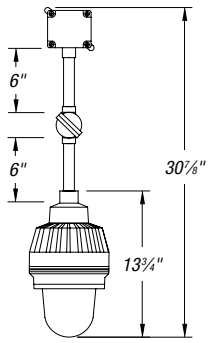
Double Pendant Mount



EPF401
(12 lbs.)

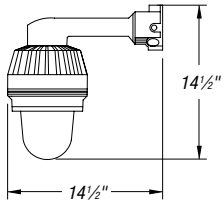
EPF401D
(21 lbs.)

Pendant Mount



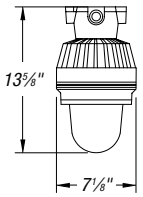
EPF401P
(14 lbs.)

Wall Mount



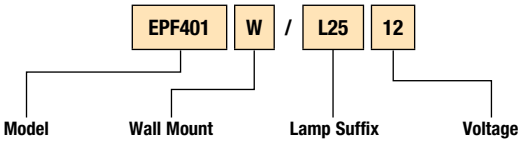
EPF401W
(14 lbs.)

Ceiling Mount



EPF401C
(14 lbs.)

Catalog Numbering System



Industrial Explosion-Proof Battery Units

Hazardous location exit sign — Class I Division 2 compliant.

Severe XVHZ

The XVHZ Series of exit signs has been designed specifically for installation in hazardous locations and other high-abuse industrial conditions, including weather exposure, high impacts, vibrations and variations in temperature. The XVHZ Series of exit signs is ideally suited for areas where the presence of flammable gases, vapors or liquids is able to create an explosive gas atmosphere.

Sealed Maintenance-Free Batteries — Nickel-Cadmium

- CSA US listed for hazardous locations
- Evaluated to UL® 844 standard for Class I Division 2, Groups A, B, C and D
- Evaluated to UL 924 and UL 1598 standards
- Temperature Code: T6 (maximum 85° C/185° F)
- Suitable for cold-weather: -20° C (self-powered with “CW” option) and -40° C (AC only)
- 120 to 277VAC 2-wire universal AC input
- Single-face heavy-duty ⅛" thick aluminum back plate
- Energy efficient: consumes less 2.5 watts in any configuration
- Sealed faceplate constructed of heavy-duty, vandal-resistant polycarbonate
- Polyvinyl chloride frame with built-in gasket to prevent water infiltration
- Exit sign module illuminated by long-life, energy-efficient LEDs
- Tamper-resistant, hermetically sealed magnetic test switch
- Self-test/self-diagnostic circuitry is standard on self-powered models
- Comes standard with industrial-grade, die-cast aluminum junction box
- ½" electrical conduit entry on both sides and at the top
- Each unit comes standard with one tamper-proof driver bit

Reliability

The XVHZ Series has a five-year full warranty.

Unit Data

Will not dent, peel, rust or corrode. The sealed faceplate is constructed of heavy-duty, vandal-resistant polycarbonate and features an evenly illuminated legend. The fully gasketed faceplate is fastened with stainless steel tamper-resistant screws. Magnetically operated test switch. Models can be wall or ceiling mounted. Legend and chevron complies with UL® and CSA requirements. Severe XVHZ Series signs are unaffected by the vibrations, ambient temperature swings and typical power surges detrimental to standard exit light sources.

High-Performance Circuitry

- Self contained — batteries and circuitry located inside the exit housing
- Battery-operated units come standard with self-testing and diagnostic circuitry
- Fully automatic charger is solid state
- AC, AC/DC and self-powered models have universal, 2-wire input 120V to 277VAC, 50/60 Hz
- Sealed, maintenance-free nickel-cadmium battery provides 90 minutes of emergency operation
- Batteries recharge per UL® 924 requirements

nexus® id improved diagnostics SP US

Diagnostic/Self-Test Feature (Standard)

Diagnostic/self-test circuitry is standard on all self-powered models. This circuitry is programmed to ensure the exit sign’s readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single “Service Required” indicator illuminates immediately. A detailed diagnostic display is located on the inside of the exit sign, out of sight from the general public. The detailed diagnostic display inside the exit sign will further indicate the nature of the fault. The self test will test the unit for the minimum 30 seconds each month, 30 minutes every 60 days and 90 minutes annually.

Options

Description	Suffix
Cold Weather (-20°C/-4°F) (self-powered)	**-CW**
Nexus® Wired	**-NEX**

Accessories (Order as a separate item)

Tamper-Proof Bit (extra)	**TBP**
Convert Single to Double Face, Red*	**DFKR**
Convert Single Face to Double Face, Green	**DFKG**

** In the field.*

Accessories (Order as a separate item)

Tamper-Proof Bit	**690.0454-L**

Applications

- Manufacturing Plants
- Chemical Plants, Food Processing Areas
- Paint Shops
- Moisture, Dirt or Dust Concerns
- Oil Refineries
- Wet or Corrosive Conditions
- Gas Stations

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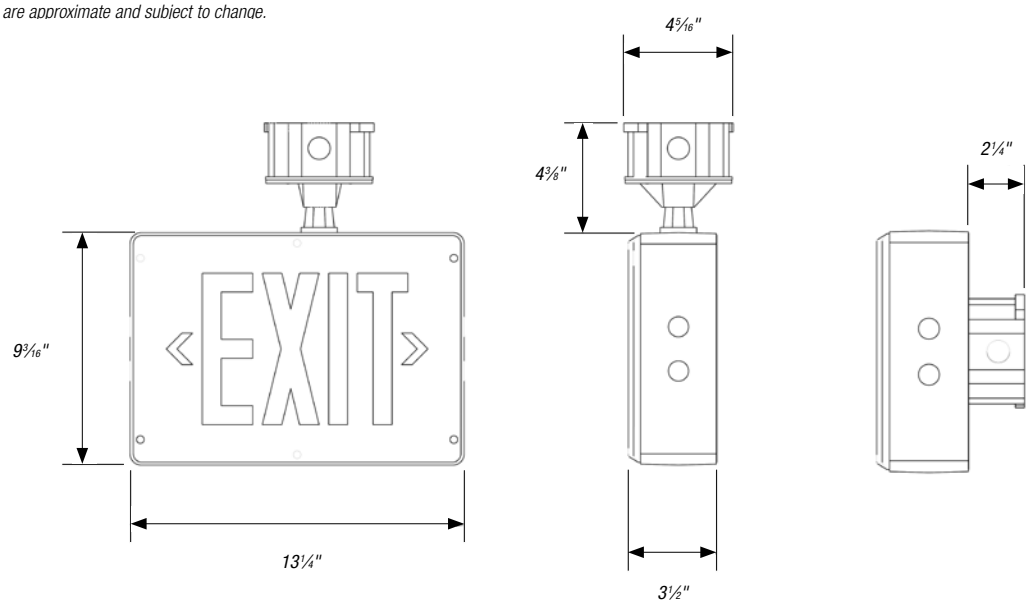
Industrial Explosion-Proof Battery Units

Dimensions

Dimensions are approximate and subject to change.



Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only Red	120 to 277VAC	Less than 2W	—	—
AC-Only Green	120 to 277VAC	Less than 1.5W	—	—
Self-Powered Red	120 to 277VAC	Less than 2W	Ni-Cad battery	Min. 90 minutes
Self-Powered Green	120 to 277VAC	Less than 2.5W	Ni-Cad battery	Min. 90 minutes

Catalog Numbering System

GG | XVEHZ | - | 2 | - | R | - | D | - | 4X | CW

Color of Body/Face
GG *= Gray/Gray*

Series
XVHZ *= AC Only*
XVEHZ *= Self-Powered (Ni-Cad)*

Face(s)
1 *= Single (Ceiling/ Wall Mount)*
2 *= Double (Ceiling Mount Only)*

Legend
R *= Red*
G *= Green*

Diagnostic
D *= Improved Diagnostic**
NEX *= Nexus Interface**
NEX *= Nexus® Wired*
** Self-powered only.*

Housing
4X *= Suitable for Wet Locations*

Options
CW *= Red*
-20° C for self-powered,
-40° C for AC/DC.

Industrial Explosion-Proof Battery Units

Hazardous location combination exit emergency battery unit — Class I Division 2 compliant exit sign.

Severe XVH

The Severe XVH Series is designed specifically for installation in hazardous locations and other high-abuse industrial conditions, including weather exposure, high impacts, vibrations and variations in temperature. The XVH Series is ideally suited for areas where the presence of flammable gases, vapors or liquids is able to create an explosive gas atmosphere.

Sealed Maintenance-Free Batteries — Nickel-Cadmium, Nickel-Metal Hydride

- CSA US listed for hazardous locations
- Evaluated to UL® 844 standard for Class I Division 2, Groups A, B, C and D
- Evaluated to UL® 924 and UL® 1598 standards
- Polyvinyl chloride frame, with built-in gasket to prevent water infiltration
- Designed for wall-mount installation only
- Heavy-duty ⅛"-thick aluminum back plate with key-holes for secure wall-mount installation
- Comes standard with industrial-grade, die-cast aluminum junction box
- Sealed faceplate constructed of heavy-duty, vandal-resistant polycarbonate
- Exit sign module illuminated by long-life, energy-efficient LEDs
- Two MR16 halogen lamps, shielded by a cast aluminum housing and a polycarbonate cover
- Sealed, maintenance-free nickel-cadmium or nickel-metal hydride batteries
- Comes standard with self-test/self-diagnostic functions
- ½" electrical conduit entry on both sides and at the top

Reliability

The Severe XVH Series has a five-year full warranty (excluding lamps and fuses).

Unit Data

The rugged PVC body will not dent, peel, rust or corrode. The sealed faceplate is constructed with a heavy-duty, vandal-resistant polycarbonate cover and fastened with stainless steel tamper-resistant screws. The test switch is magnetically operated. Models are only wall mounted. The innovative, fully field-adjustable lamp head assembly comes standard with a selection of MR16 lamps for optimum illumination over the path of egress.

Temperature Codes

LAMP RATING	TEMPERATURE CODE	MAX. TEMPERATURE	REPLACEMENT PART NO.
6V 10W	T3C	160° C	**580.0079**
12V 12W	T3A	180° C	**580.0080**
12V 20W	T2D	215° C	**580.0068**

***Note**: Use qualified replacement lamps to avoid risk of over-heating*

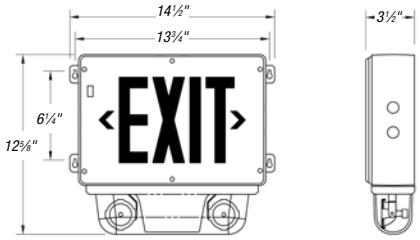
Power Consumption

MODEL	AC INPUT (VAC)	MAXIMUM CURRENT (A)	MAXIMUM POWER (W)	STAND-BY CURRENT (A)	STAND-BY POWER (W)	UNIT POWER* 1.5	2 HRS	3 HRS	4 HRS
XVH	120/277	0.15/0.07	16	0.09/0.03	8	20	15	—	—
XVH12N	120/277	0.30/0.08	29	0.13/0.05	10	24	18	12	—
XVH12H	120/277	0.30/0.08	29	0.13/0.05	10	40	30	20	12

** National Electrical Code® specification.*

Dimensions

Dimensions are approximate and subject to change.



Charger

Fully automatic pulse charger offers 120/277VAC, 60-Hz, current-limiting, temperature-compensated, short-circuit proof, low-voltage battery disconnect, brownout protection and standard solid-state transfer features.

Diagnostic/Self-Test Feature

Diagnostic/self-test circuitry is standard on all self-powered models. This circuitry is programmed to ensure the exit sign's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single "Service Required" indicator illuminates immediately. A detailed diagnostic display is located on the inside of the exit sign, out of sight from the general public. The detailed diagnostic display inside the exit sign will further indicate the nature of the fault. The unit will automatically self test for a minimum of 30 seconds every 30 days, 30 minutes in the sixth month and 90 minutes annually.

Options

Description	Suffix
Nexus® Interface	**-NEX**
Improved Diagnostics (non-audible)	**-D**
Improved Diagnostics (audible)	**-DA**

Accessories (Order as a separate item)

Tamper-Proof Bit (extra)	**TBP**

Applications

- Manufacturing Plants
- Chemical Plants, Food Processing Areas
- Paint Shops
- Moisture, Dirt or Dust Concerns
- Oil Refineries
- Wet or Corrosive Conditions
- Gas Stations

Catalog Numbering System

GG XVH R D / 2 M10

Housing/Face Color
***GG** = Gray/Gray*

Series
***XVH** = 6V 20W, Ni-Cad*
***XVH12N** = 12V 24W, Ni-Cad*
***XVH12H** = 12V 40W, Ni-MH*

Legend Color
***R** = Red legend*
***G** = Green legend*

Diagnostic
***D** = Improved Diagnostics (non-audible)*
***DA** = Improved Diagnostics (audible)*
***NEX** = Nexus system interface*
***NEX** = Nexus® wired*
***NEXRF** = Nexus® wireless*

No. of Heads
***0** = 0 head**
***2** = Two heads*
** A remote load must be attached.*

Lamp/Wattage
***M10** = 6V 10W MR16*
***M12** = 12V 12W MR16*
***MH20** = 12V 20W MR16 High output*

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Industrial Explosion-Proof Battery Units

6- or 12-volt, Class I Division 2 emergency unit — sealed maintenance-free lead-calcium battery.

EL/E12L Series

This series of self-contained emergency lighting units is designed to meet the specific requirements of Class I Division 2 hazardous areas, Groups A, B, C and D.

Typical Applications: Manufacturing or chemical plants, paint shops, wet or corrosive areas and food processing areas*.

** Shatter-resistant Teflon® lamp coating optional.*

Reliability

The EL/E12L Series has a three-year full warranty (excluding lamps and fuses).

Unit Data

All units are housed in water- and corrosion-resistant cabinets constructed from glass-reinforced structural foam and are fully sealed and gasketed. External electrical components, including text switch and indicator light, are explosion proof in design and exceed requirements for Class I Division 2, Group A, B, C and D. The battery compartment is vented by a one-way breather device to permit exhaust of battery gases and relief of internal pressure without admitting external moisture or corrosives. Temperature code: T4A (max. 120° C).

Lamps

Units are equipped with a choice of standard incandescent or halogen sealed-beam lamps. Lamps are housed in gray, industrial thermoplastic shells with matching swivels. Lamp housings are raintight and corrosion resistant. Wire connections are silicone sealed.

PulseType Charger

- Micro-controller-based, temperature-compensated, PulseType charger
- High capacity, automatic, dust-tight instantaneous transfer relay
- Low-voltage disconnect prevents over discharge of battery; automatic brownout protection is provided
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit

Controls

- Red AC-ON LED indicates AC power is on
- Momentary test switch allows for quick operational check of entire system

Power Requirements

- 120/277VAC, 60 Hz, 0.3/0.15 amp
- Diagnostic feature: Red pilot light will flash in case of battery or lamp failure

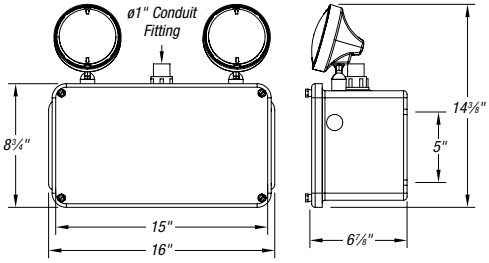
Options

(Add Suffix to Model No.)	Suffix
Time Delay (specify 5, 10 or 15 minutes)	-TD_
Thermal Jacket (120-volt heater)	-H1
Thermal Jacket (277-volt heater)	-H2
Shatter-Resistant Teflon® Coated Lens	-FP*

Teflon is a registered trademark of E.I. DuPont de Nemours and Company.

Dimensions

Dimensions are approximate and subject to change.



Accessories (Order as a separate item)

Wire Guard **WG3-L**

Lamp Selection

	DC VOLTAGE	LAMP WATTAGE	LUMEN OUTPUT	LAMP TYPE	LAMP SUFFIX (ADD TO UNIT MODEL NO.)
Use with 6-Volt	8	8	180	Halogen	**H7551**
2EL24 Series	9	9	220	Incand.	**7613**
Use with 12-Volt	8	8	350	Halogen	**H7555**
2E12L56 Series	12	12	180	Incand.	**4044**

Unit Selection

VOLTS	MODEL NO. (UNIT/LAMP SUFFIX)	BATTERY TYPE	INPUT WATTS	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
6	**2EL24**	Lead-Calcium	24	24	18	10	6
12	**2E12L56**			56	37	21	12

** National Electrical Code® specification.*

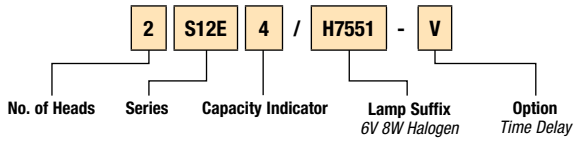
Standard Feature (all models)

Radius of Protection: 2 ft.
Normal Life Span: 1 yr.

VC2-1 Vapor Capsule

Stahlin Vapor Capsules contain a unique vapor phase inhibitor designed to protect metallic surfaces within an enclosure against airborne corrosion. By simply placing these self-contained capsules inside an enclosure, the vapors readily permeate every point, passivating all metallic surfaces. When the capsule is removed from its sealed package, it begins to emit an invisible, non-toxic vapor which is diffused throughout the surrounding atmosphere until the air is saturated. The vapor then passivates the metal surfaces against atmospheric corrosion by reducing the electro-chemical activity on the metal surfaces.

Catalog Numbering System



Industrial Explosion-Proof Battery Units

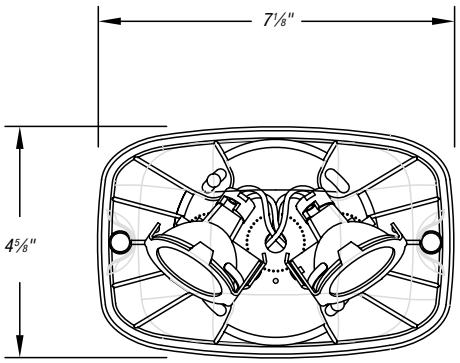
Class I, Division 2 compliant remote fixtures for hazardous locations.

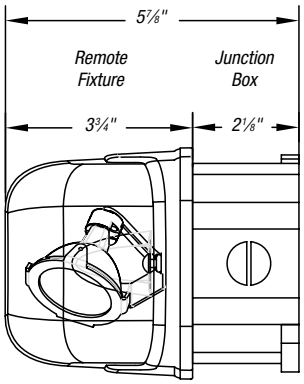
Severe ELF651 Series

The Severe ELF651 Series of Remote Fixtures has been designed specifically for installation in hazardous locations and other high-abuse industrial environments subject to weather exposure, high impacts, vibrations and variations in temperature. The Severe ELF651 Series of Remote Fixtures is ideally suited for areas where there is a risk of the presence of flammable gases, vapors or liquids able to create an explosive gas atmosphere.

Dimensions

Dimensions are approximate and subject to change.





Power and Temperature Ratings

LAMP TYPE	INPUT VOLTAGE	POWER (EACH OF 2 LAMPS)	TEMPERATURE CODE
MR16	6 Volts	10 Watts	T3B (max. 165° C)
MR16	12, 24 Volts	12 Watts	T3B (max. 165° C)
MR16	12, 24, 120 Volts	20 Watts	T2C (max. 230° C)

Note: *Use qualified replacement lamps to avoid risk of overheating.*

Catalog Numbering System

ELF651 / **M10** - **G** **6**

Series
ELF651 *= Single*
ELF651D *= Double*

Lamp Type/Wattage
M10 *= MR16 10W (6V only)*
M12 *= MR16 12W (12V, 24V)*
M20 *= MR16 20W (12V, 24V, 120V)*
MH20 *= MR16-IR 20W (12V only)*

Color
G *= Gray*

Voltage
6 *= 6V*
12 *= 12V*
24 *= 24V*
120 *= 120VAC/VDC*

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Industrial Explosion-Proof Battery Units

Severe ELF647C Series

The Severe ELF647C Series is a Class I Division 2, Group A, B, C and D single lighting head with fully adjustable swivel, gasketed aluminum canopy and junction box.

Finish:
Standard gray (blank) or black (-B)

Volts:
6 or 12 volt

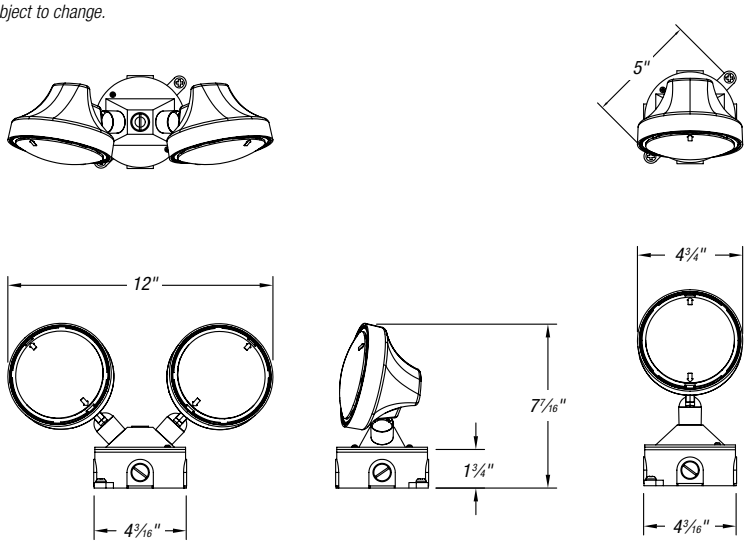
Mounting:
Standard with round plate for mounting directly to 4" outlet box

Maximum Watts:
12 watts per head

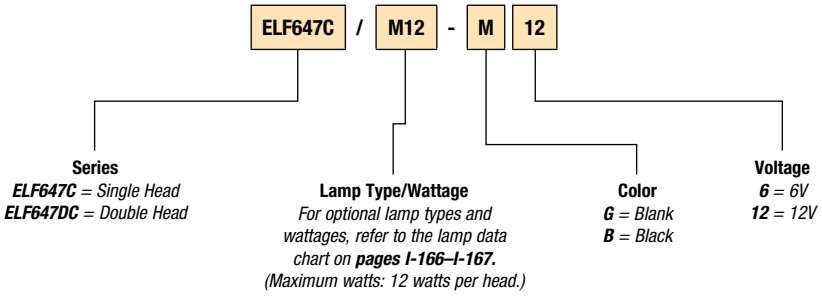
Lamps:
- Wedge base incandescent
- Bi-Pin halogen
- PAR36 sealed beam

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System



Exit Signs

Universal-mount 6" or 8" die-cast aluminum edge-lit LED exit sign. Evaluated to UL® 924 standard.

Simplicity Series

The Simplicity Series combines a clean, modular design with state-of-the-art technology and ease of installation. Elegantly discreet, this designer series of exit signs will complement the most prestigious interiors while providing mounting versatility and energy efficiency.

Reliability

The Simplicity Series has a five-year full warranty.

Unit Data

The Simplicity Series is constructed of die-cast aluminum, making it lightweight yet rugged. A modular design and a universal back box allow for easy installation for all mounting applications.

The aesthetically pleasing trim plate design in your choice of either flat, dome or pyramid shape accents any décor perfectly. The die-cast aluminum trim ring used for recessed applications ensures a proper seal and will eliminate light leaks. Bar hangers are included with all edge-lit signs. Our LED edge-lit acrylic face panels are the pinnacle of the industry. State-of-the-art technology allows us to extrude the acrylic panels, resulting in maximum clarity and illumination proven superior to molded panels. Furthermore, our precision-etched red or green letters, available in 6" or 8" heights, enhance clarity and illumination. The LED strip design allows for rotation for either ceiling or wall mounting. The LED strip light source offers unequaled energy efficiency with long-life legend illumination. A nickel-cadmium battery illuminates the sign for a minimum of 90 minutes in emergency mode. AC-only signs come wired as AC/DC signs, which operate off a remote DC power source when AC power fails. DC input is a 2-wire, 6–48VDC universal input.

Circuitry

Fully integrated circuitry includes a 2-wire 120–277VAC voltage input regulator, as well as an automatic, constant-current battery charger with solid-state transfer and AC LED monitor and test switch.

Power Requirements

120/277Vac, 50/60 Hz. Energy consumption: AC-only signs use less than 2W; self-powered signs use 2.5W for single- and double-face signs.

Diagnostic/Self-Test (optional)

The diagnostic/self-test feature continuously monitors the charger assembly, battery and LED assembly current. If a fault is indicated, the external service-required indicator will illuminate. The internal fault indicators will then state the nature of the fault. The diagnostic/self-test will self test for a minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually. Meets NFPA 101 Life Safety Code® requirements for periodic testing (Self-Powered unit only).

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Options

(Add Suffix to Model No.)	Suffix
Self-Test Diagnostics (self-powered only)	-D
Flasher/Buzzer (self-powered only)	-FB
Fire Alarm Activated Flasher (self-powered only)	-FAF
Dual Circuit (AC models only)	-Y
Self-Test Diagnostics (self-powered only)	-D
Less Back Box	-X
Less Panel	-LP
Nexus® Wired	-NEX
Nexus® Wireless	-NEXRF

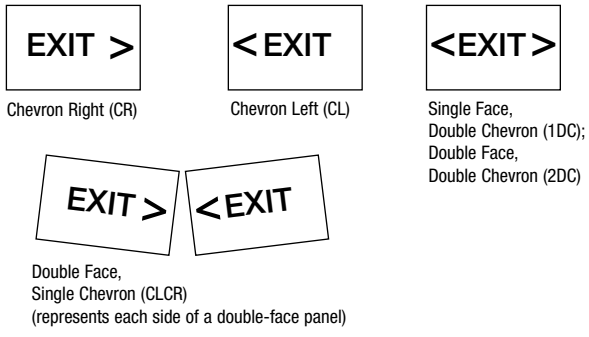
For special wording, contact factory.

Accessories (Order as a separate item)

Pendant, White	PW-*
Pendant, Black	PB-*

** For custom pendant length (12", 24", 36", etc.) for dome and pyramid trims, contact your Thomas & Betts sales representative.*

Arrow (Chevron) designation



** Wording and chevrons not to scale. For illustration purposes only.*

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	2W	—	—
AC/DC	120 to 277VAC	2W	6 to 48VDC	Less than 2W
Self-Powered	120 to 277VAC	2.5W	Ni-Cad Battery	Min. 90 Minutes

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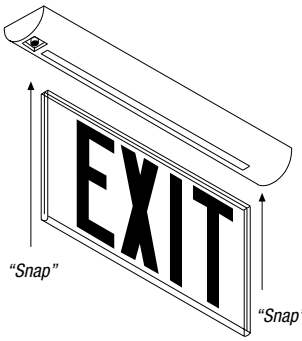
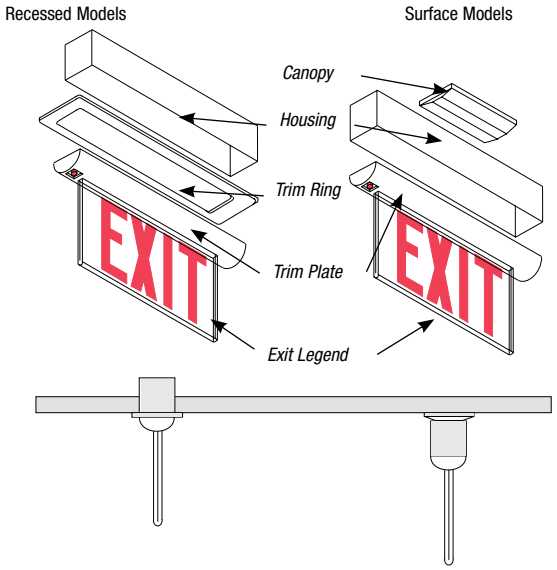
Exit Signs

Easy installation

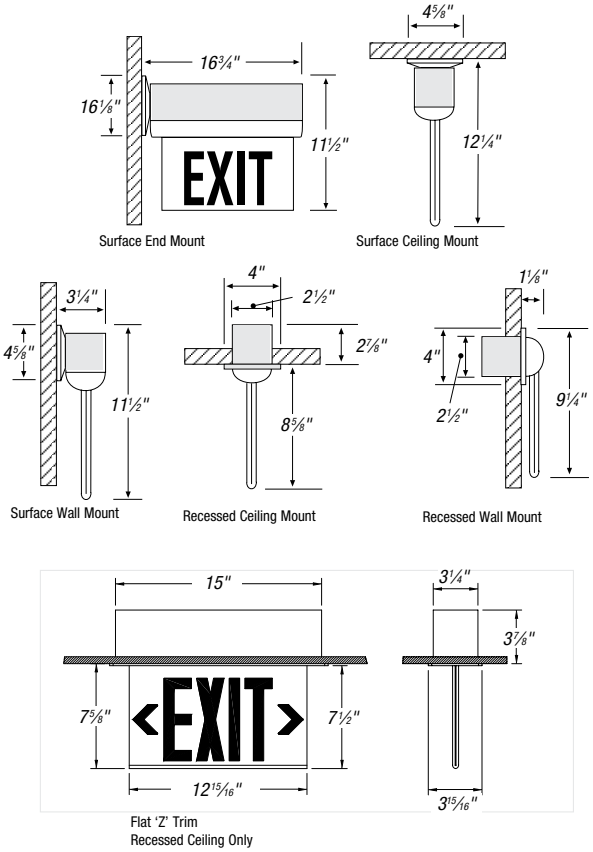


- A quick-connect plug is used to wire the LED strip to the charger and power supply
- Torsion springs on the trim plate slide into the back box to provide a tight seal between both
- The modular design results in easy snap in of face panel



Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

	SPLED	-	W	-	RW	-	D	-	CR	-	FB

Panel Size
Blank *= 6" Letters*
8 *= 8" Letters*

Series
SLED *= AC Only*
SPLED *= Self-Powered*

Unit Color*
W *= White*
A *= Brushed Aluminum*
B *= Black*
** Custom finish available.*

Panel Type
RC* *= Red/Clear*
RM *= Red/Mirror*
RW *= Red/White*
GC* *= Green/Clear*
GM *= Green/Mirror*
GW *= Green/White*
** Not available as double face.*

Trim
D *= Dome*
P *= Pyramid*
Z *= Flat Trim Recessed ceiling only.*

Directional Chevron
Blank *= Single Face, No Chevron*
2 *= Double Face, No Chevron*
CR *= Chevron Right*
CL *= Chevron Left*
CLCR *= Double Face, Single Chevron*
1DC *= Single Face, Double Chevron*
2DC *= Double Face, Double Chevron*

Options*
FB *= Flasher/Buzzer*
** For special wording, contact factory.*

Exit Signs

Slim-profile surface-mounted LED edge-lit exit sign — available in extruded aluminum or off-white finishes.

Simplicity Economizer Series

The Lightalarms® Simplicity Economizer Series combines a slim, modular design with state-of-the-art technology and ease of installation, including field-installed directional arrows. Elegant and economical, these exit signs complement any interior design while providing mounting versatility and energy efficiency.

- Slim-profile extruded-aluminum housing
- Slim-profile die-cast aluminum canopy
- Choice of finishes: textured aluminum or off-white
- Universal surface mounting: wall, ceiling or end mount
- Click-to-open housing door allows easy access to the panel and electrical wiring
- Acrylic panel with curved contour provides superior clarity and illumination
- Legend with a choice of red or green 6" letters and easy-to-add field-installed stick-on translucent directional arrows
- Choice of legend background: clear, white or mirror
- Simple, 2-wire universal AC input (120 to 277VAC, 60 Hz) prevents installation errors
- Simple, 2-wire universal DC input: 6 to 24VDC
- Long-life LED light ensures low maintenance costs and superior illumination
- Energy-efficient power consumption: less than 3W for self-powered version and less than 2W for AC-only single or double face
- Sealed nickel-cadmium batteries provide 90 minutes of emergency lighting
- UL® 924 listed

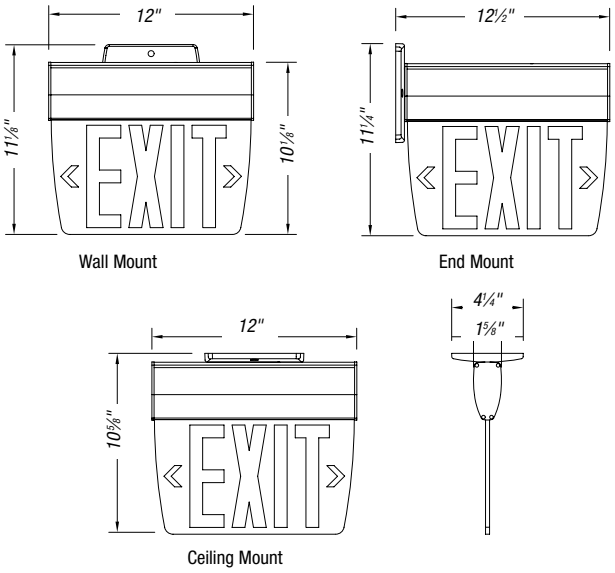
Unit Warranty*

Unit carries a three-year full warranty.

** Subject to proper installation and maintenance.*

Dimensions

Dimensions are approximate and subject to change.



** Recessed-mount option also available. Contact your Thomas & Betts sales representative.*

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	Less than 2 W	—	—
AC/DC	120 to 277VAC	Less than 2 W	6 to 24VDC	Less than 1.5W
Self-Powered	120 to 277VAC	Less than 3 W	—	—

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.

SE **TA** **R** **1**

Series
SE *= AC Only*
SES *= AC/DC*
SEN *= Self-Powered*

Housing Color
TA *= Textured Aluminum*
OW *= Off White*

Panel Type
RC* *= Red/Clear*
RM *= Red/Mirror*
RW *= Red/White*
GC* *= Green/Clear*
GM *= Green/Mirror*
** Single face only.*
GW = Green/White not available.

Face
1 *= Single Face*
2 *= Double Face*

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Exit Signs

Die-cast aluminum LED exit sign — AC, AC/DC or self-powered models evaluated to UL® 924 standard.

Genesis GX/GXE Series

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The Genesis GX/GXE Series combines visual appeal, durability and energy efficiency in a compact, contemporary design. Self-diagnostics are standard on self-powered models.

Reliability

The Genesis GX/GXE Series has a five-year full warranty.

Unit Data

The Genesis Series, constructed of precision die-cast aluminum housing, features invisible, universal chevrons and mounting knockouts. A low-profile mounting canopy is included with all exit signs for universal top, end or back mount. High-intensity LEDs with diffuser disperse light and enhance brightness for a full, even illumination. LEDs draw less than 2W of electricity for either single- or double-face signs. A long-life, maintenance-free, sealed nickel-cadmium battery is included. AC-only signs come wired as AC/DC signs, which operate off a remote DC power source when AC power fails. DC input is a 2-wire, 6–48VDC universal input. Self-powered models' circuitry and batteries are contained inside the exit sign housing.

Circuitry

Fully integrated circuitry includes a 2-wire 120–277VAC AC voltage input regulator, as well as an automatic, constant-current battery charger with solid-state transfer and AC LED monitor and test switch.

Diagnostic/Self-Test

Diagnostic/self-test circuitry is standard on all self-powered models. This circuitry is programmed to ensure the exit sign's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single "Service Required" indicator illuminates immediately. A detailed diagnostic display is located on the inside of the exit sign, out of sight from the general public. The detailed diagnostic display inside the exit sign will further indicate the nature of the fault. The self test will test the unit for a minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

Options

(Add Prefix to Model No.)	**Prefix**
8" EXIT Legend for NYC Code	**8-**
(Add Suffix to Model No.)	**Suffix**
Dual Circuit (AC only)	**-2**
Open Face/Special Wording	**-Y**
Vandal-Resistant Screws	**-VR**
Lexan® Face Shield with Vandal-Resistant Screws	**-LVR**
Fire Alarm Flasher (self-powered signs only)	**-FAF**
Flasher/Buzzer (self-powered signs only)	**-FB**
Damp Location Listing	**-DL**

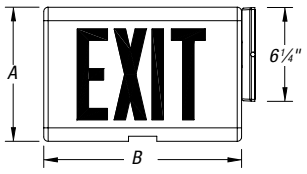
Lexan is a registered trademark of Sabic Innovative Plastics IP B.V.

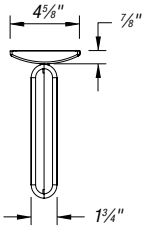
Custom color and finishes available upon request.

Nexus® Wired	**-NEX**
Nexus® Wireless	**-NEXRF**

Dimensions

Dimensions are approximate and subject to change.





LETTERS	DIMENSIONS A	B
6"	8⅞"	13⅛"
8"	10½"	15¼"

Power Consumption

6" MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	1.25W	—	—
AC/DC	120 to 277VAC	1.25W	6 to 48VDC	Less than 1.5W
Self-Powered	120 to 277VAC	1.6W	Ni-Cad Battery	Min. 90 Minutes

8" MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	2.5W	—	—
AC/DC	120 to 277VAC	2.5W	6 to 48VDC	Less than 1.6W
Self-Powered	120 to 277VAC	2.9W	Ni-Cad Battery	Min. 90 Minutes

Accessories (Order as a separate item)

Pendant Mount White	**GPW-***
Pendant Mount Black	**GPB-***
Wire Guard (wall mount, 6 in.)	**WG13-L**
Wire Guard (ceiling mount, 6 in.)	**WG14-L**
Wire Guard (end mount, 6 in.)	**WG15-L**
Vandal Shield (wall mount)	**VRC**
Vandal Shield, NEMA 4X (wall mount)	**VRC-4X**

** Specify length of pendant (12", 24", 36", etc.).*

Catalog Numbering System

2	GXE	-	B	-	R	-	A	-	VR	-	N

Letter Size
Blank *= 6" Letters*
2 *= 6" Letters/Double Face*
8 *= 8" Letters*
82 *= 8" Letters/Double Face*

Series
GX *= AC Only*
GXE *= Self-Powered*

Housing Color
B *= Black*
W *= White*
A *= Brushed Aluminum*
DB *= Dark Bronze*
PB *= Polished Brass*

Letter Color
R *= Red*
G *= Green*

Face Color
B *= Black*
W *= White*
A *= Brushed Aluminum*

Options
See Options

Standard Series Designator

Exit Signs

Master and remote proximity LED exit signs, surface or recess mounted — evaluated to UL® 924 standard.

Genesis GXEM Floor Proximity Series

The Genesis GXEM Floor Proximity Series are premium die-cast exit signs that combine style with superior performance and durability. This series can be surface or recess mounted at the floor level. Choose from AC-only, AC-dual circuit and DC-remote fixtures supplied by a master Genesis exit sign.

Reliability

The Genesis GXEM Floor Proximity Series has a five-year full warranty.

Unit Data

Genesis master units are constructed of die-cast aluminum. The floor proximity remote units' housing and stencil face, finished in white or black, are constructed of rugged steel. When the floor proximity remote unit is ordered with a brushed aluminum finish, the stencil face is aluminum. The floor proximity remote sign is available for slim-line surface mount or a recess. All connecting hardware is included. The tamper-proof screws and clear, high-impact polycarbonate shield make the sign vandal resistant. The LEDs are very reliable, providing even illumination and low maintenance costs. The red LEDs draw less than one watt.

The remote floor proximity exit signs are wired to a single-face Genesis LED master exit sign, which is mounted above the door. The remote floor proximity unit can be mounted up to 10 feet away from the master sign. This master sign will power and control both signs in AC and emergency mode (both signs are 120/277V for master/floor proximity operation).

Circuitry

Fully integrated circuitry includes an automatic, constant-current battery charger with solid-state transfer and AC LED monitor and test switch. An improved diagnostic/self-test feature is standard.

Power Requirements

120/277VAC.

Diagnostic/Self-Test Feature (standard)

The diagnostic/self-test feature continuously monitors the charger assembly, battery and LED assembly current. If a fault is indicated, the external "Service Required" indicator will illuminate. The internal fault indicators will then indicate the nature of the fault. The diagnostic/self-test will self test for a minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually. Meets NFPA 101 Life Safety Code requirements for periodic testing (self-powered master exit sign only).

Options

(Add Suffix to Model No.) ..... **Suffix**
Vandal-Resistant Screws ..... **-VR**
Vandal-Resistant Screws and Shield ..... **-LVR**

Custom colors and finishes are available upon request.

Power Consumption

	MODELS	AC SPECS		DC SPECS	
RED	AC-Only	120 to 277VAC	1.2W	—	—
	AC-2 Circuit	120/277 and 277/277VAC	2.6W	—	—
	Self-Powered	120 to 277VAC	3.8W	Ni-Cad Battery	Min. 90 Minutes
GREEN	AC-Only	120 to 277VAC	.9W	—	—
	AC-2 Circuit	120/277 and 277/277VAC	3.3W	—	—
	Self-Powered	120 to 277VAC	5W	Ni-Cad Battery	Min. 90 Minutes

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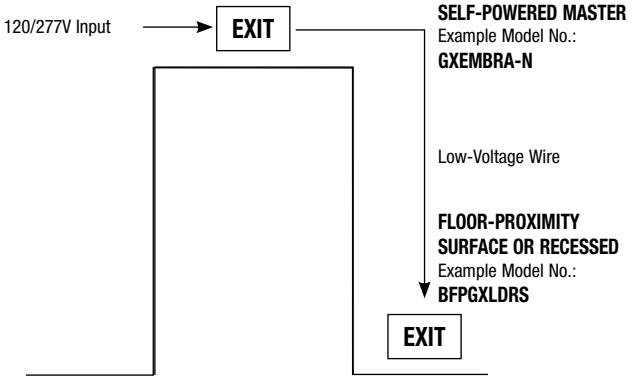
How to Order Typical Applications

Self-Powered Master with Floor-Proximity Unit



Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.

Self-Powered Master (Unit for above door)

GXEM	B	R	A	-	N
Series	Housing Color ***B*** *= Textured Aluminum* ***W*** *= Off White* ***A*** *= Brushed Aluminum*	Letter Color ***R*** *= Red* ***G*** *= Green*	Face Color ***B*** *= Black* ***W*** *= Off White* ***A*** *= Brushed Aluminum*		Standard Series Designator

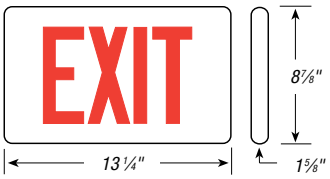
Floor Proximity Unit (Unit on side of door)

B	FPGXLD	R	S	-	LVR
Housing Color ***B*** *= Black* ***W*** *= White* ***A*** *= Brushed Aluminum*	Series	Letter Color ***R*** *= Red* ***G*** *= Green*	Mounting ***R*** *= Recessed* ***S*** *= Surface*		Options

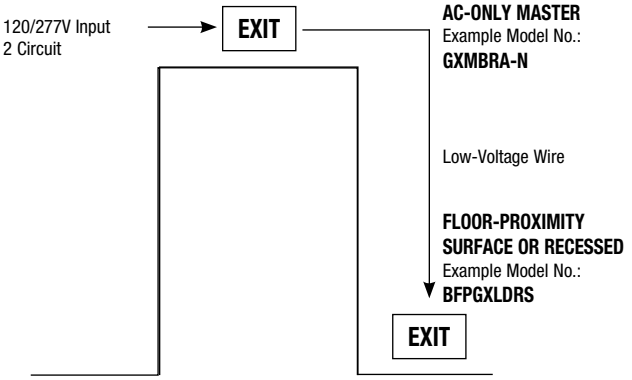
Dimensions

Dimensions are approximate and subject to change.

Self-Powered/AC-Only Master:
GXEMBRA-N (Self-Powered)
GXMBRA-N (AC-Only)



AC-Only Master with Floor-Proximity Unit 2-Circuit Application



Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.

AC-Only Master (Unit for above door)

GXM	B	R	A	-	N
Series	Housing Color ***B*** *= Black* ***W*** *= White* ***A*** *= Brushed Aluminum*	Letter Color ***R*** *= Red* ***G*** *= Green*	Face Color ***B*** *= Black* ***W*** *= Off White* ***A*** *= Brushed Aluminum*		Standard Series Designator

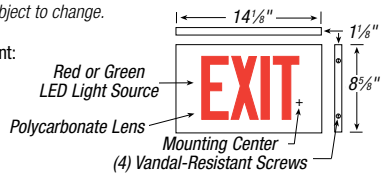
Floor Proximity Unit (Unit on side of door)

B	FPGXLD	R	S	-	LVR
Housing Color ***B*** *= Black* ***W*** *= White* ***A*** *= Brushed Aluminum*	Series	Letter Color ***R*** *= Red* ***G*** *= Green*	Mounting ***R*** *= Recessed* ***S*** *= Surface*		Options

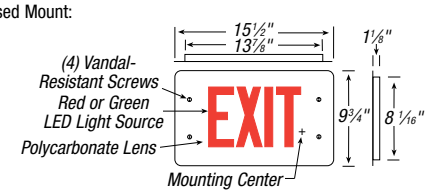
Dimensions

Dimensions are approximate and subject to change.

Floor Proximity Slave Surface Mount:
FP-GXLDGS-LVR
FP-GXLDRS-LVR



Floor Proximity Slave Recessed Mount:
FP-GXLDGR-LVR
FP-GXLDRR-LVR



Exit Signs

Universal mount LED die-cast aluminum exit signs — AC, AC/DC or self-powered.

Galaxy XLD/XLED Series

Galaxy XLD/XLED Series exit signs save energy while providing excellent visual performance. This series offers universal mounting capabilities as well as long-lasting LED performance.

Reliability

The Galaxy XLD/XLED Series has a five-year full warranty.

Unit Data

The Galaxy XLD/XLED Series housing is constructed of die-cast aluminum and features invisible, universal chevron and mounting knockouts. All self-powered models are self contained; all circuitry and batteries are contained inside the sign. All AC-only signs come wired as AC/DC signs, which operate off a remote DC power source when AC power fails. They offer long-life, high performance, low power consumption and provide an even illumination in normal and emergency modes. A low-profile mounting canopy is included with all exit signs for universal top, end or back mount.

Choice of Models

AC-Only Models: 120 through 277VAC, 50/60 Hz universal input. Include a slimline canopy for top and end mounting.

AC/DC Models: 120 through 277VAC, 50/60 Hz universal input with a 6 to 24VDC wire harness. Include a slimline canopy for top and end mounting.

Self-Powered Models are self contained, and batteries and circuitry are located inside the exit sign housing: 120 through 277VAC, 50/60 Hz universal input. Sealed maintenance-free nickel-cadmium battery provides 90 minutes of emergency illumination. Include a slimline canopy for top and end mounting.

Diagnostic/Self-Test (standard)

Diagnostic/self-test circuitry is standard on all self-powered models. This circuitry is programmed to ensure the sign's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single "Service Required" indicator illuminates immediately. A detailed diagnostic display is located on the inside of the exit sign, out of sight from the general public. The detailed diagnostic display inside the exit sign will further indicate the nature of the fault. The self test will test the unit for minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

Options

(Add Prefix to Model No.)	**Prefix**
Fully Recessed	**R-**
(Add Suffix to Model No.)	**Suffix**
Dual Circuit (AC only)	**-2**
Vandal-Resistant Screws	**-VR**
Lexan® Face Shield with Vandal-Resistant Screws	**-LVR**
Fire Alarm Activated Flasher*	**-FAF**
Buzzer and Flasher*	**-FB**
Damp Location	**-DL**
Open Face/Special Wording	**-Y**

Custom colors and finishes are available upon request.

** Not available with AC/DC.*

Accessories (Order as a separate item)

Pendant, White	**PW-***
Pendant, Black	**PB-***

** Specify length of pendant (12", 24", 36", etc.).*

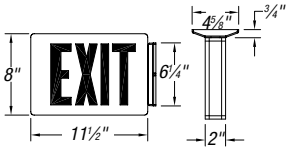
Lexan is a registered trademark of Sabic Innovative Plastics IP B.V.

idEXIT improved diagnostics

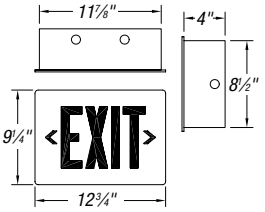
Dimensions

Dimensions are approximate and subject to change.

Surface Mount



Fully Recessed Mount



Unit Ratings

SERIES		HOUSING COLORS		LETTER/STENCIL COLORS		STANDARD SERIES DESIGNATOR
DESCRIPTION	SYM.	DESCRIPTION	SYM.	DESCRIPTION	SYM.	
AC Only						
Single Face	XLD	Black	B	Red/Black	RB	N
				Green/Black	GB	
		White	W	Red/White	RW	
				Green/White	GW	
Double Face	2XLD	Brushed Aluminum	A	Red/Brushed Aluminum	RA	
				Green/Brushed Aluminum	GA	
Self-Powered						
Single Face	XLED	Black	B	Red/Black	RB	N
				Green/Black	GB	
		White	W	Red/White	RW	
				Green/White	GW	
Double Face	2XLED	Brushed Aluminum	A	Red/Brushed Aluminum	RA	
				Green/Brushed Aluminum	GA	

Power Consumption

MODEL (6")	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	1.4W	—	—
AC/DC	120 to 277VAC	1.4W	6 to 24VDC	Less than 1.5W
Self-Powered	120 to 277VAC	1.7W	Ni-Cad Battery	Min. 90 Minutes

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.

2XLED	A	R	A	-	VR	N*
Series *Double-Face Self-Powered Exit Sign*	**Housing Color** *Brushed Aluminum*	**Letter Color** *Red*	**Stencil Color** *Brushed Aluminum*		**Option** *Time Delay*	**Standard Series Designator***

** The "-N" designator features self-powered units with improved diagnostics and AC units with DC remote input (6–24VDC).*

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Exit Signs

Die-cast self-powered exit signs with sealed lead-calcium or nickel-metal hydride battery.

Galaxy XL Series

Galaxy XL Series are self-powered LED exit signs with excess battery capacity designated to power remote emergency lights and exit signs.

Reliability
The Galaxy XL Series has a five-year full warranty.

Unit Data
The Galaxy XL series has a housing constructed of die-cast aluminum. Each unit comes standard with a power canopy that houses the battery, input transformer and printed circuit board. The standard Galaxy exit sign comes with a black frame and a brushed aluminum face; optional colors are available. The Galaxy series may be ceiling, end or back mounted (single-face exit only) to the power canopy. The power canopy surface mounts directly to a junction box. They offer long life, high performance, low-power consumption and provide an even illumination in normal and emergency modes. AC-only signs come wired as AC/DC signs, which operate off a remote DC power source when AC power fails. DC input is a 2-wire, 6–48VDC universal input.

Circuitry
Fully integrated circuitry includes an automatic, constant-current battery charger with solid-state transfer and AC LED monitor and test switch.

Power Requirements
Input: 120/277VAC, 60 Hz, 0.06/0.03 amp max.
Output: 6VDC, 9W, 12W and 24W.

Diagnostic/Self-Test (optional)
The diagnostic/self-test feature continuously monitors the charger assembly, battery and LED assembly current. If a fault is indicated, the external "Service Required" indicator will illuminate. The internal fault indicators will then indicate the nature of the fault. The diagnostic/self-test will self test for minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually. Meets NFPA 101 Life Safety Code® requirements for periodic testing.

Options

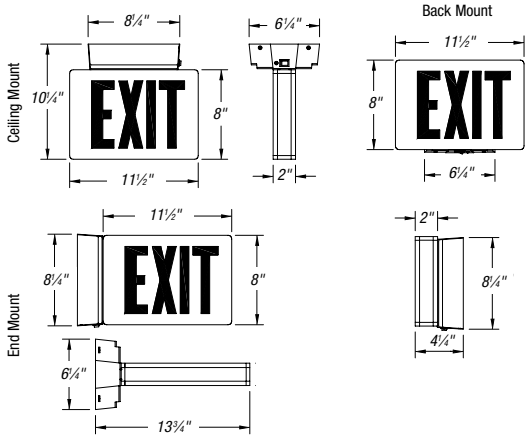
(Add Suffix to Model No.)	Suffix
Improved Diagnostics, Audible (lead-calcium only)	-ID
Improved Diagnostics, Non-Audible (lead-calcium or nickel-metal hydride)	-IDNA
Time Delay	-TD
Flasher/Buzzer	-FB
Fire-Alarm Activated Flasher	-FAF
Vandal-Resistant Screws	-VR
Vandal-Resistant Face Shield and Screws	-LVR

Application Flexibility
Lead-Calcium Models (PCL): Sealed, maintenance-free lead-calcium batteries power the exit sign for an estimated period of 20+ hours minimum with no remote load or 90 minutes run time with 9W remote load.

Nickel-Metal Hydride Models (PCN): Sealed, maintenance-free nickel-metal hydride batteries power the exit sign for an estimated period of 20+ hours minimum with no remote load or 90 minutes run time with 12W remote load.

Nickel-Metal Hydride Models (PCX): Sealed, maintenance-free nickel metal hydride batteries power the exit sign for an estimated period of 40+ hours minimum with no remote load or 90 minutes run time with 24W remote head.

Dimensions
Dimensions are approximate and subject to change.



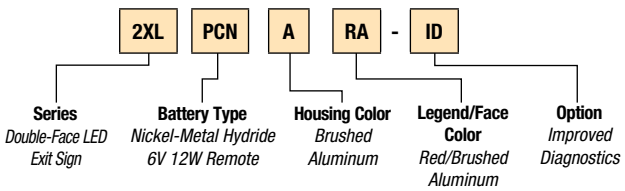
Unit Ratings

SERIES		BATTERY TYPE		HOUSING COLORS		LETTER/STENCIL COLORS	
DESCRIPTION	SYM.	DESCRIPTION	SYM.	DESCRIPTION	SYM.	DESCRIPTION	SYM.
Single Face	XL	Lead-Calcium *(6V 9W Remote Capacity)*	PCL	Black White Brushed Aluminum	B	Red/Black	RB
						Green/Black	GB
		Nickel-Metal Hydride *(6V 12W Remote Capacity)*	PCN		W	Red/White	RW
						Green/White	GW
Double Face	2XL	Nickel-Metal Hydride *(6V 24W Remote Capacity)*	PCX		A	Red/Brushed Aluminum	RA
						Green/Brushed Aluminum	GA

Power Consumption

MODEL (6")	AC SPECS		DC SPECS	
Self-Powered	120 to 277VAC	3.7W	Ni-Cad Battery	Min. 90 Minutes

Catalog Numbering System
For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



Exit Signs

Steel incandescent exit signs and combination units — AC-only, battery and combo units available.
X4 Incandescent Series

The X4 Incandescent Series exit signs and power pack combination units offer a complete package of features to make installation fast and easy.

Reliability
The X4 Series has a three-year full warranty (excluding lamps and fuses). AC-only signs are UL® Listed for use in damp locations.

Unit Data
The X4 Series is constructed of a rugged steel housing with programmable directional chevrons. All exit signs are universal and come standard with canopy kit, extra stencil and diffuser to permit any mounting either as single or double face. A completely self-contained power pack provides a minimum of 90 minutes of emergency lighting.

Circuitry
Automatic, constant-current battery charger with solid-state transfer and AC LED monitor and test switch.

Choice of Models
Exit Sign

AC Input (AC-only and AC/DC models): 120VAC or 277VAC
DC Input (AC/DC models): 6, 12 or 24VDC
Self-Powered: 120/277VAC; lead-calcium or nickel-cadmium battery

Combination Units

Remote Capacity: Lead-calcium models (X4E)
No Heads: 10W remote capacity

Lamps
12W (two per sign) AC
3.7W (three per sign) DC

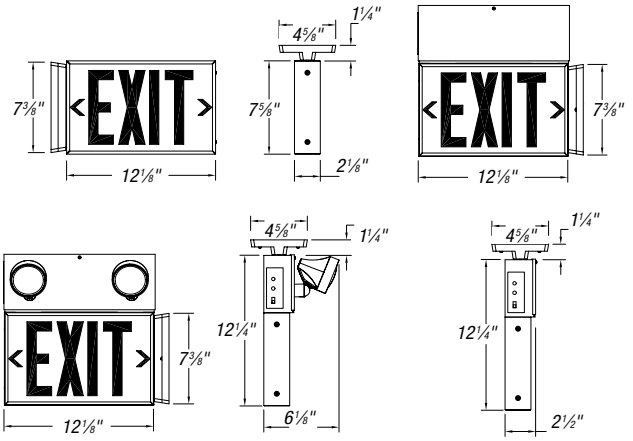
Power Requirements
Dual voltage 120/277VAC, 60 Hz, 0.3/0.15 amp

Options
(Add Suffix to Model No.)	Suffix
AC/DC Remote (6–24VDC)	-DC
Dual Circuit (AC units only)	-2
Flasher/Buzzer (power pack only)	-FB
Open Face/Special Wording	-Y

Accessories (Order as a separate item)
277V Conversion Kit, Black	CTXB-277
277V Conversion Kit, White	CTXW-277
White Pendant	PW-*
Black Pendant	PB-*
Wire Guard (ceiling or end mount)	WG5-L
Wire Guard (wall mount)	WG12-L
Wire Guard (combination unit)	WG6-L

** Specify length of pendant (12", 24", 36", etc.).*

Dimensions
Dimensions are approximate and subject to change.



Power Consumption (Incandescent Exit Sign)

MODEL		AC SPECS		DC SPECS	
EXIT SIGN (INCAND.)	AC-ONLY	120VAC or 277VAC	Less than 24W	—	—
	SELF-POWERED	120 to 277VAC	Less than 30W	Lead-Calcium Nickel-Cadmium	Min. 90 Minutes
MINI-SYSTEMS		120 to 277VAC	Less than 30W	See Unit Ratings Chart	

Unit Ratings (Combination Unit)

BATTERY TYPE	DC VOLTAGE	CAT. NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
			1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	X4E	22	22	9	6
Nickel-Cadmium		X4EN	16	16	6	—

** National Electrical Code® specification.*

Catalog Numbering System

U	X4	-	E	-	B	-	R	-	B		/	2M	-	FAF

Style
U *= Universal 2 Faces & Canopy*

Model
X4 Series

Type
Blank *= AC Only*
E *= Self-Powered Lead-Calcium with Power Pack*
EN *= Self-Powered Ni-Cad with Power Pack*
N *= Self-Powered (self-contained, no additional power pack needed) (Exit Sign only)*

Color
W *= White*
B *= Black*

Letter Color
R *= Red*
G *= Green*

Stencil
W *= White*
B *= Black*
A *= Aluminum*

Voltage*
Blank *= 120 Volt*
-277 *= 277 Volt*
** AC only.*

Combo Unit
0 *= 0 Heads, Power Use for Remote Fixtures*
1L *= 1 Large Head*
1M *= 1 Mini Head*
2L *= 2 Large Heads*
2M *= 2 Mini Heads*

Options
FAF *= Fire Alarm Flasher*

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Exit Signs

Steel LED exit signs and combination units — AC-only, battery and combo units available.
X4 LED Series

X4 LED Series exit signs and power pack combination units offer a complete package of features to make installation fast and easy.

Reliability

The X4 LED Series has a three-year full warranty (excluding lamps and fuses). AC-only signs are UL® Listed for use in damp locations.

Unit Data

The X4 Series is constructed of a rugged steel housing with programmable directional chevrons. All exit signs are universal and come standard with canopy kit, extra stencil and diffuser to permit any mounting either as single or double face. They employ a long-life, energy-efficient red LED light source, and a completely self-contained power pack provides a minimum of 90 minutes of emergency lighting.

Choice of Models

Exit Sign

Fully integrated circuitry includes a 2-wire 120–277VAC voltage input regulator, as well as an automatic, constant-current battery charger with solid-state transfer and AC LED monitor and test switch.

Combination Units

Remote Capacity: Lead-calcium battery (X4E)
No Heads: 26W remote capacity
Two 6W ELF2 Mounted Heads: 12W remote capacity
Remote Capacity: Nickel-cadmium battery (X4EN)
No Heads: 20W remote capacity
Two 6W ELF2 Mounted Heads: 8W remote capacity

Power Requirements

Dual voltage 120/277VAC, 60 Hz, 0.3/0.15 amp

Options

(Add Suffix to Model No.)	Suffix
AC/DC Remote (6–24VDC)	-DC
Fire Alarm Flasher (power pack only)	-FAF
Dual Circuit (AC units only)	-2
Flasher/Buzzer (power pack only)	-FB
Open Face/Special Wording	-Y
Nexus® Wired	-NEX
Nexus® Wireless	-NEXRF

Accessories (Order as a separate item)

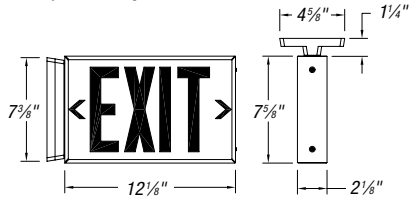
White Pendant	PW-*
Black Pendant	PB-*
Wire Guard (ceiling or end mount)	WG5-L
Wire Guard (wall mount)	WG12-L
Wire Guard (combination unit)	WG6-L

** Specify length of pendant (12", 24", 36", etc.).*

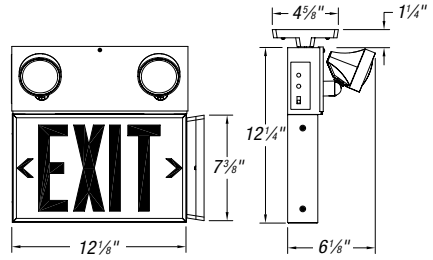
Dimensions

Dimensions are approximate and subject to change.

X4 AC-Only
X4N Self-Powered



X4E Self-Powered
X4EN Self-Powered



Power Consumption (LED Exit Sign)

MODEL		AC SPECS		DC SPECS	
EXIT SIGN (INCAND.)	AC-ONLY	120VAC or 277VAC	Less than 1.5W	—	—
	SELF-POWERED	120 to 277VAC	Less than 3W	Lead-Calcium Nickel-Cadmium	Min. 90 Minutes
MINI-SYSTEMS		120 to 277VAC	Less than 5W	See Unit Ratings Chart	

Unit Ratings (Combination Unit)

BATTERY TYPE	DC VOLTAGE	CAT. NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
			1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	X4E	30	20	14	10
Nickel-Cadmium		X4EN	24	18	12	9

** National Electrical Code® specification.*

Catalog Numbering System

U **X4** - **E** - **W** - **R** - **W** **LED** / **2M** - **FAF**

- **Style**: ***U*** = *Universal 2 Faces & Canopy*
- **Model**: ***X4 Series***
- **Type**: ***Blank*** = *AC Only*; ***E*** = *Self-Powered Lead-Calcium with Power Pack*; ***EN*** = *Self-Powered Ni-Cad with Power Pack*; ***N*** = *Self-Powered (self-contained, no additional power pack needed) (Exit Sign only)*
- **Color**: ***W*** = *White*; ***B*** = *Black*
- **Letter Color**: ***R*** = *Red*; ***G*** = *Green*
- **Stencil**: ***W*** = *White*; ***B*** = *Black*; ***A*** = *Aluminum*
- **Light**: ***LED*** = *LED*
- **Combo Unit**: ***0*** = *0 Heads, Power Use for Remote Fixtures*; ***1L*** = *1 Large Head*; ***1M*** = *1 Mini Head*; ***2L*** = *2 Large Heads*; ***2M*** = *2 Mini Heads*
- **Options**: ***DC*** = *AC/DC Remote*

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Exit Signs

Extruded aluminum LED exit signs and combination units — AC-only, AC/DC, battery and combo units available.

X3 Series

X3 Series exit signs and power packs combine versatility, energy efficiency and performance in a moderately priced package.

Reliability

The X3 Series has a three-year full warranty (excluding lamps and fuses). AC-only signs are UL® Listed for use in damp locations.

Unit Data

The X3 Series housing is constructed of extruded aluminum and features universal chevrons and a bottom aperture that provides a down-light effect. Universal exit signs are supplied with canopy kit, extra stencil and diffuser set to permit any mounting either as single or double face. A long-life, energy-efficient, LED light source reduces maintenance and energy costs. LED combination units have additional 13–19W remote capacity with two 6W mounted heads, depending on the model.

Light Source

The unit comes standard with two 6V, 6W high-intensity wedge base incandescent lamps. Other lamp options are available.

Choice of Models

Exit Sign

AC Input: Universal 2-wire 120 to 277VAC, 50/60 Hz
AC/DC Models: Universal 2-wire 6 to 24VDC
Self-Powered Models: Long-life, sealed nickel-cadmium battery

Combination Units

Remote Capacity: Lead-calcium battery (UX3E)
No Heads: 26W remote capacity
Two 6W ELF2 Mounted Heads: 12W remote capacity
Remote Capacity: Nickel-cadmium battery (EN)
No Heads: 20W remote capacity
Two 6W ELF2 Mounted Heads: 8W remote capacity

Power Requirements

Dual voltage 120/277VAC, 60 Hz, 0.3/0.15 amp

Options

(Add Suffix to Model No.)	Suffix
AC/DC Remote (6–24VDC)	-DC
Flasher/Buzzer Combo (power pack)	-FB

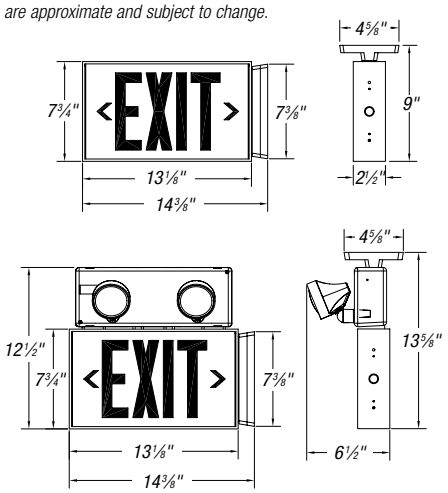
Accessories (Order as a separate item)

277V Conversion Kit, Black	CTXB-277
277V Conversion Kit, White	CTXW-277
White Pendant	PW-*
Black Pendant	PB-*

** Specify length of pendant (12", 24", 36", etc.).*

Dimensions

Dimensions are approximate and subject to change.



Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-ONLY	120 or 277VAC	Less than 2.5W	—	—
AC/DC	120 to 277VAC	Less than 1.5W	6 to 24VDC	Less than 1.5W
SELF-POWERED	120 to 277VAC	Less than 3W	Nickel-Cadmium	Min. 90 Minutes

Unit Ratings (Combination Unit)

BATTERY TYPE	DC VOLTAGE	CAT. NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
			1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	UX3E	30	20	15	10
Nickel-Cadmium		UX3EN	24	18	12	9

** National Electrical Code® specification.*
Total DC power available for local and remote emergency lights.

Catalog Numbering System

U **X3** - **EN** - **B** - **R** - **A** **LED** / **2M** - **FB**

- **Style** — ***U*** = *Universal 2 Faces & Canopy*
- **Model** — ***X3 Series***
- **Type** — ***Blank*** = *AC Only*; ***E*** = *Self-Powered Lead-Calcium with Power Pack*; ***EN*** = *Self-Powered Ni-Cad with Power Pack*; ***N*** = *Self-Powered (self-contained Ni-Cad) (Exit Sign only)*
- **Color** — ***W*** = *White*; ***B*** = *Black*
- **Letter Color** — ***R*** = *Red*; ***G*** = *Green*
- **Stencil** — ***W*** = *White*; ***B*** = *Black*; ***A*** = *Aluminum*
- **Light Source** — ***LED*** = *120 Volt*
- **Combo Unit** — ***0*** = *0 Heads, Power Use for Remote Fixtures*; ***1L*** = *1 Large Head*; ***1M*** = *1 Mini Head*; ***2L*** = *2 Large Heads*; ***2M*** = *2 Mini Heads*
- **Options** — ***FB*** = *Flasher/Buzzer*

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Exit Signs

Specification-grade, universal-mount LED exit sign with thermoplastic housing and snap-fit design.

Grande Series

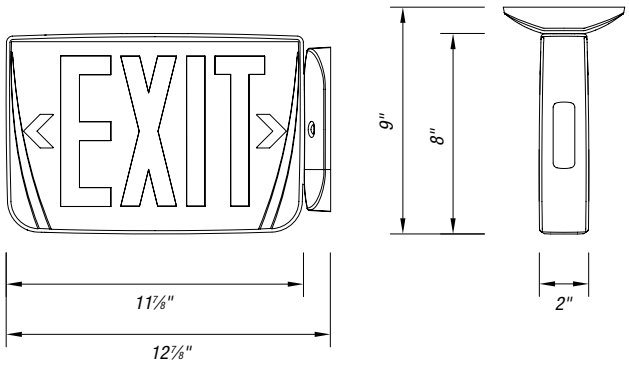
nexus® id improved diagnostics UL

Lightalarms® Grande Series is a compact exit sign with an all-in-one, snap-fit design. Easy to install and affordable, the Grande Series exit sign is ideally suited for commercial and spec-grade applications.

- Durable, injection-molded, thermoplastic housing
- Supplied with two faceplates, backplate for wall mount and easy-install canopy for end and ceiling mounting
- Universal, field-selectable snap-in/-out chevrons
- Indirect refractive technology provides bright, even illumination
- Long-life LED light source ensures low maintenance costs and superior illumination
- Energy-efficient power consumption: less than 3.5 watts for self-powered version and less than 3 watts for AC-only single or double face
- Dual-voltage input: 120/277VAC
- UL® 924 Listed
- All models are UL Listed for damp location
- Optional Improved Diagnostic circuitry, flasher/buzzer and fire alarm-activated flasher
- Optional vandal-resistant shield with tamper-proof screws

Dimensions

Dimensions are approximate and subject to change.



Unit Warranty*

Five years of full warranty.

** Subject to proper installation and maintenance.*

Accessories (Order as a separate item)

Wire Guard (wall mount)..... **WG1-L**
Wire Guard (ceiling mount and end mount) **WG5-L**

Catalog Numbering System

GRAN **AC** - **R** - **W**

Series
GRAN *= LED Plastic Sign*

Unit Type Standard Models
AC *= AC Only (120/277V)*
DC *= 120/277VAC & 6 to 48VDC*
N *= Self-Powered Ni-Cad*

Legend Color/No. of Face
R *= Red Universal*
R1 *= Red Single Face**
R2 *= Red Double Face**
G *= Green Universal*
G1 *= Green Single Face**
G2 *= Green Double Face**
Open Face
RW *= Red on White*
GW *= Green on White*
** Open face required with special wording legends.*

Housing Color
W *= White*
B *= Black*

Options
BA *= Brushed Aluminum Exit Stencil*
FB *= Flasher Buzzer (ND model only)*
FL *= Flasher (ND model only)*
FAF *= Fire Alarm Activated Flasher (AC, DC, 21, 22 or ND models only)*
FBF *= Flasher Buzzer + Fire Alarm-Activated Flasher (ND model only)*
VR* *= Tamper-Proof Screws*
LVR1* *= Polycarbonate Shield with Tamper-Proof Screws*
-NEX *= Nexus® Wired*
-NEXRF *= Nexus® Wireless*
** Please specify single or double face, red or green.*

Exit Signs

Thermoplastic LED exit sign and combination unit — sealed maintenance-free lead-calcium or nickel-cadmium battery.

X2 Squire Series

The X2 Squire Series is compact, easy to install and affordable.
This series is ideally suited for commercial and institutional applications.

Reliability
The X2 Squire Series has three-year full warranty (excluding fuses and lamps).

Unit Data
The housing is constructed of a durable thermoplastic, available in mist-white or black. Units come standard with two stencil plates, red diffusing lens and backplate for universal wall, end or ceiling mount. Stencil and open face signs have programmable directional chevrons. The light source of the exit sign is red LED technology, which provides a uniform illumination on the legend. Batteries provide 90 minutes of emergency operation.

Lamps
Standard emergency illumination is provided by two, 6W incandescent, PAR18 or PAR36 size lamps assemblies. These heads are molded of high-impact thermo-polymer material. Heads are mounted directly to the front of the power pack or can be remotely mounted. MR16 and quartz bi-pin halogen lamps are also available (Mini Heads only).

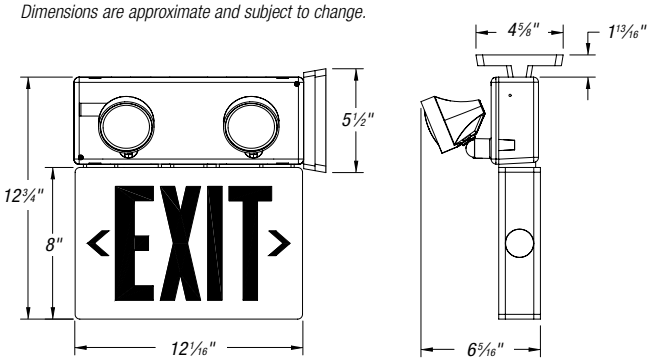
Circuitry
Fully integrated circuitry includes an automatic battery charger and AC LED monitor and test switch.

Choice of Models
Combination Units
Remote-Capacity Lead-Calcium Models (E):
No Heads: 26W remote capacity
Two 6W ELF2 Heads: 12W remote capacity
Remote Capacity Nickel-Cadmium Models (EN):
No Heads: 20W remote capacity
Two 6W ELF2 Heads: 8W remote capacity

Power Requirements
120/277VAC, 60 Hz, 0.3/0.15 amp

Options
(Add Suffix to Model No.) ..... **Suffix**
Improved Diagnostics (audible) ..... **-ID**
Flasher/Buzzer ..... **-FB**
Vandal-Resistant Screws ..... **-VR**
Fire Alarm Flasher ..... **-FAF**

Dimensions
Dimensions are approximate and subject to change.



Accessories (Order as a separate item)
Black Pendant ..... **PB-***
White Pendant ..... **PW-***
Wire Guard (wall mount) **WG6-L**
** Specify length of pendant (12", 24", 36", etc.).*

Unit Ratings (Combination Unit)

BATTERY TYPE	DC VOLTAGE	CAT. NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	**UX2E**	30	20	15	10
Nickel-Cadmium		**UX2EN**	24	18	12	9

** National Electrical Code® specification.*
Total DC power available for local and remote emergency lights.

Catalog Numbering System

U **X2** - **EN** - **B** - **R** - **A** **LED** / **2M** - **FB**

- **Style** — ***U*** = *Universal 2 Faces & Canopy*
- **Model** — ***X2 Series***
- **Type** — ***Blank*** = *AC Only*; ***E*** = *Self-Powered Lead-Calcium with Power Pack*; ***EN*** = *Self-Powered Ni-Cad with Power Pack*; ***N*** = *Self-Powered (self-contained Ni-Cad) (Exit Sign only)*
- **Color** — ***W*** = *White*; ***B*** = *Black*
- **Letter Color** — ***R*** = *Red*; ***G*** = *Green*
- **Stencil** — ***W*** = *White*; ***B*** = *Black*; ***A*** = *Aluminum*
- **Light Source** — ***LED*** = *120 Volt*
- **Combo Unit** — ***0*** = *0 Heads, Power Use for Remote Fixtures*; ***1L*** = *1 Large Head*; ***1M*** = *1 Mini Head*; ***2L*** = *2 Large Heads*; ***2M*** = *2 Mini Heads*
- **Options** — ***FB*** = *Flasher/Buzzer*

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Exit Signs

Thermoplastic LED exit signs — AC-only and battery units available.

Quickie II Series

The Quickie II Series is a compact, all-in-one snap-together design. Easy to install and affordable, the Quickie II Series is ideally suited for any commercial application, especially those in which large numbers of exit signs are required.

Reliability

The Quickie II Series has a three-year full warranty. All models are UL® Listed for use in damp locations.

Unit Data

The housing is constructed of thermoplastic material, available in mist-white. The design incorporates a snap-in canopy for top or end mount for virtually tool-free installation. Universal mounting comes complete with two face plates, one backplate and canopy.

The light source of the exit sign is red LED technology, which provides uniform illumination on the legend. Batteries provide 90 minutes of emergency operation.

- Replaceable, sealed nickel-cadmium battery
- Provides a minimum 90 minutes of continuous emergency illumination
- Batteries recharge per UL® 924 specifications
- All models consume less than 2.5 watts

Power Requirements

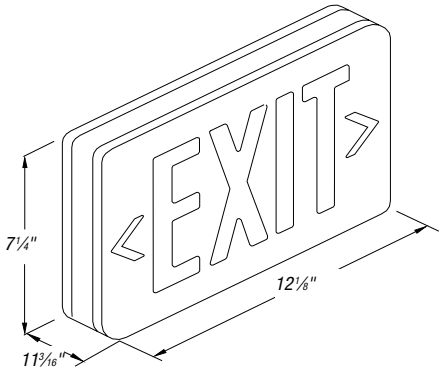
120/277VAC, 50/60 Hz

Accessories (Order as a separate item)

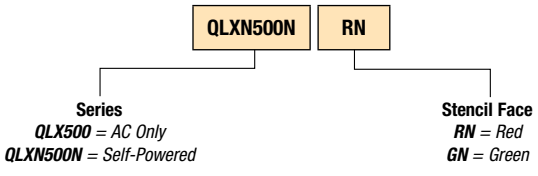
Wire Guard (wall mount)..... **WG1-L**
Wire Guard (ceiling mount and end mount) **WG5-L**

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System



Exit Signs

Thermoplastic LED exit signs with a sealed maintenance-free lead-calcium battery.

Quickie II QLX-MRS Series

The Quickie II QLX-MRS Series features a compact, all-in-one, snap-together design. Easy to install and affordable, the QLX-MRS Series is ideally suited for any commercial application, especially those in which large numbers of exit signs are required.

Reliability

The Quickie II QLX-MRS Series has a three-year full warranty (excluding lamps and fuses). All models are UL® Listed for use in damp locations.

Unit Data

The housing is constructed of thermoplastic material, available in mist-white. The design incorporates a snap-in canopy for top or end mount for virtually tool-free installation. Universal mounting comes complete with two face plates, one backplate and canopy.

The light source of the exit sign is red LED technology, which provides uniform illumination on the legend. Batteries provide 90 minutes of emergency operation.

- 6V, sealed, maintenance-free lead-calcium battery
- Fully adjustable, glare-free, 6V 5W MR16 lamps

Lamps

The QLX-MRS comes complete with two glare-free MR16 lamps with front glass cover and directional heads. It will remain illuminated in emergency mode for a period of 90 minutes. This unit is not capable of powering remote heads.

Circuitry

Fully integrated circuitry includes a 120/277VAC input voltage, as well as an automatic battery charger and AC LED monitor and test switch.

Power Requirements

120/277VAC, 60 Hz

Options

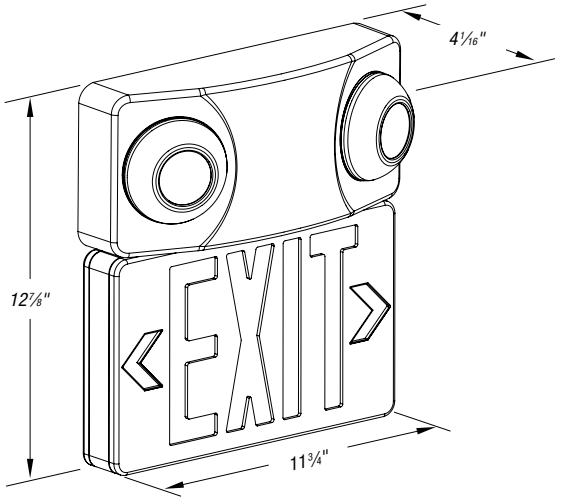
(Add Suffix to Model No.)	**Suffix**
Black	**-B**

Accessories (Order as a separate item)

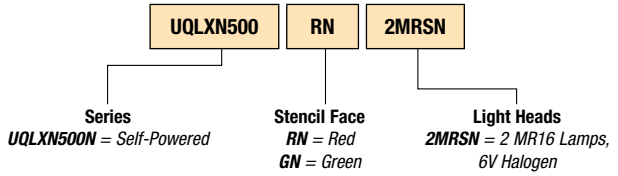
Replacement MR16 Lamp, 6V 5W	**580.0072-L**
Wire Guard (wall mount)	**WG6-L**

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System



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Exit Signs

Thermoplastic LED combination units with a sealed maintenance-free lead-calcium battery. Damp location listing is standard on all models.

Quickie II QLXN500-SQ Series

The Quickie II QLXN500-SQ Series is a combo unit with field-adjustable heads to accommodate job-site mounting requirements.

Reliability

The Quickie II QLXN500-SQ Series has a three-year full warranty (excluding lamps and fuses). All models are UL® Listed for use in damp locations.

Unit Data

The housing, faceplates and canopy are constructed of a durable high-impact thermoplastic material (UL® 94, 5VA Flame rating) available only in mist-white. The Quickie II is suitable for wall or ceiling mounting and comes standard with two faceplates, a backplate and a snap-fit canopy that requires no hardware to secure to the unit.

The two 6V, 6W wedge base, glare-free emergency lighting heads can be positioned as top mount or side mount without disassembly or rewiring of the unit.

The light source of the exit sign is red LED technology, which provides uniform illumination on the legend. LED lamps are operated in normal (AC input) and emergency (DC input) modes.

The unit is powered in the emergency mode by a sealed, maintenance-free lead-calcium battery that is pre-wired to accommodate an additional battery should a remote load be required. The remote capacity option enables the unit to power additional remote heads (up to 6V, 12W) with an additional battery.

Lamps

The unit comes standard with two fully adjustable, glare-free, 6V, 6W wedge base lamps.

Power Requirements

Universal voltage, 2-wire input 120/277VAC, 60 Hz

Options

(Add Suffix to Model No.)	Suffix
Remote Capacity (12W)*	R

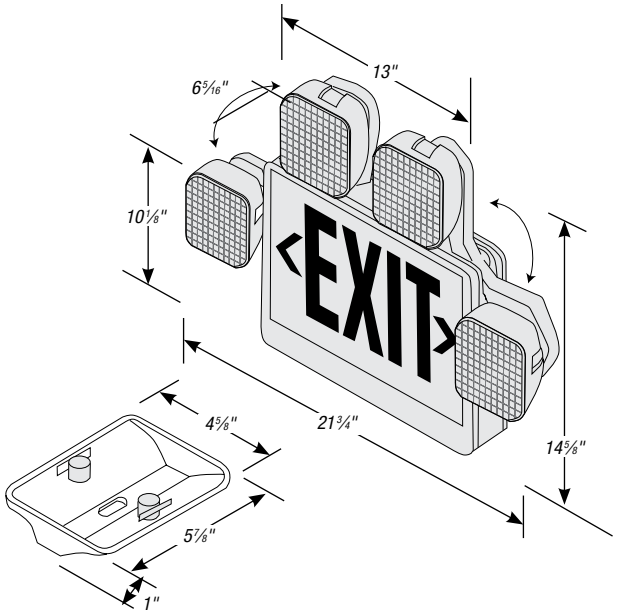
** Do not exceed rated unit capacity.*

Accessories (Order as a separate item)

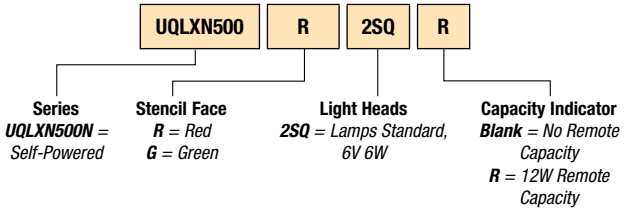
Wire Guard (heads in any position)	WG10-L
Replacement Battery	860.0004-L
Replacement Lamp (standard)	570.0012-L

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System



Exit Signs

NEMA 4X rated self-powered LED exit sign with diagnostic/self-test feature and sealed maintenance-free nickel-cadmium battery.

Severe XV Series

nexus® id improved diagnostics NSF UL

The Severe XV Series exit sign is housed in an industrial-grade polyvinyl chloride enclosure. This sign was designed specifically for harsh environments that would strain standard exit signage, such as schools, transit platforms, parking garages, wet and cold locations as well as any location prone to vandalism.

Reliability

The Severe XV Series exit has a five-year full warranty.

Unit Data

The housing is fabricated of a polyvinyl chloride enclosure, which is fully gasketed around the lens and canopy to prevent water infiltration. The sealed faceplate is constructed of a heavy-duty, vandal-resistant polycarbonate and features an evenly illuminated legend. This faceplate is fastened with stainless steel tamper-resistant screws, and the Severe XV Series comes standard with a magnetically operated test switch. Diagnostic/self-test circuitry is standard on all self-powered models.

The light source of the exit sign is red LED technology, which provides uniform illumination on the legend. Models can be wall, end or ceiling mounted. Legend and chevron complies with UL® requirements. Sealed, maintenance-free nickel-cadmium batteries offer superior performance, long life and 90 minutes of emergency operation. AC-only signs come wired as AC/DC signs, which operate off a remote DC power source when AC power fails. DC input is a 2-wire, 6–48VDC universal input.

Applications

- High-abuse areas
- Vandal-prone areas
- Damp and wet locations
- Hosedown areas
- Cold temperatures and temperatures from 50° F to 104° F (10° C to 40° C)
- Food processing/preparation

High-Performance Circuitry

- Self-contained batteries and circuitry located inside the housing
- Continuous self-diagnostic monitoring and monthly self testing
- Fully automatic charger is solid state
- Sealed, maintenance-free nickel-cadmium batteries provide 90 minutes of emergency operation
- Batteries recharge per UL 924 requirements

Power Requirements

Universal, 2-wire input, 120–277VAC, 50/60 Hz

Diagnostic/Self-Test Feature

Diagnostic/Self-test circuitry is standard on all self-powered models. This circuitry is programmed to ensure the sign's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single Service Required indicator illuminates immediately. A detailed diagnostic display is located on the inside of the exit sign, out of sight from the general public. The detailed diagnostic display inside the exit sign will further indicate the nature of the fault. The self test will test the unit for a minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

Options

(Add Suffix to Model No.)	Suffix
Dual AC Circuit Operation	-2*
Fire Alarm-Activated Flasher	-FAF
Flasher/Buzzer (self-powered only)	-FB
Flasher	-1
AC/DC Remote (6 to 24VDC)	-DC
Cold weather unit: -40° C/-40° F AC, -4° F to 20° C AC/DC (self-powered only)	-CW
Nexus® Wired	-NEX
Nexus® Wireless	-NEXRF
Open Face/Special Wording	-Y

** AC only units.*

Accessories (Order as a separate item)

Convert Single Face To Double Face, Red (in the field)	DFKR-*
Convert Single Face To Double Face, Green (in the field)	DFKG-*
Canopy Pendant Mount	CM
Tamper-Proof Bit (extra)	690.0454-L

** Specify white (WT) or black (BK) housing.*

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-ONLY	120 to 277VAC	1.2W	—	—
AC/DC	120 to 277VAC	1.2W	6 to 48VDC	Less than 1.5W
SELF-POWERED	120 to 277VAC	3.7W	Nickel-Cadmium	Min. 90 Minutes

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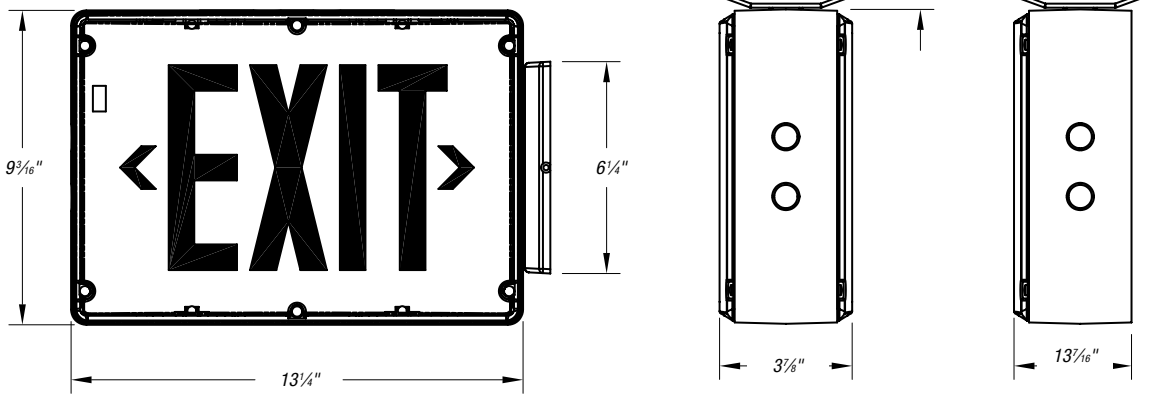
Exit Signs

Dimensions

Dimensions are approximate and subject to change.



Double Face

Single Face

Catalog Numbering System

BA	XV	-	1	-	R	-	D	-	4X	-	2

Color Option Housing/Face
Blank *= Black/Black*
BW *= Black/White*
BA *= Black/Aluminum*
GB *= Gray/Black*
GW *= Gray/White*
GA *= Gray/Aluminum*
WB *= White/Black*
WW = White/White
WA *= White/Aluminum*

Series
XV *= AC Only*
XVE *= Self-Powered Nickel-Cadmium Battery*

Faces
1 *= Single Face*
2 *= Double Face*

Legend Color
R *= Red*
G *= Green*

Diagnostics
Blank *= AC-Only Models*
D *= Standard on All Self-Powered Models*
NEX *= Nexus® Interface*

Housing
4X *= Standard NEMA 4X Housing*

Options
Blank *= AC-Only*
2* *= Dual Circuit (AC only)*
CW *= Cold Weather Self-Powered -20° C*
1* *= Flasher Only DC*= 6 to 48VDC*
DC* *= 6 to 48VDC*
F* *= Fire Alarm Activated Flasher*
FB* *= Flasher/Buzzer (self-powered only)*
Y *= Open Face/Special Wording*
** Not available with Nexus option.*

Severe NEMA 4X Rated Family

The Severe XV Series exit sign is a part of the Severe family of NEMA 4X rated emergency lighting products. A complete emergency lighting solution for commercial and industrial environments where humidity, dust, water infiltration and the risk of vandalism are specification criteria, these products deliver state-of-the-art illumination in a visually appealing package.

Severe XV Combo Series
page I-146

Severe V Series Battery Unit
pages I-112–I-113

Severe ELF650 Remote Series
page I-159

Exit Signs

6- or 12-volt weather and corrosion-resistant emergency unit with maintenance-free nickel-cadmium battery.

Severe XV Combo Series

The Severe XV Combo Series sets new standards for emergency lighting in today's toughest environments. It is suitable for industrial and commercial applications as well as all public facilities.

Reliability
The Severe XV Combo Series has a five-year full warranty (excluding lamps and fuses).

Unit Data
The Severe XV Series combo NEMA 4X-rated housing can withstand moisture, dust and corrosion. The faceplates are molded of heavy-duty, vandal-resistant polycarbonate, and the rugged UV-stabilized thermoplastic body will not dent, peel or corrode. The combo unit is equipped with stainless steel tamper-proof screws. A special bit is provided with every unit. The unit comes in a choice of three colors: mist-white, black or gray. The Severe XV combo comes standard with a universal-mount canopy kit, allowing the unit to be end, ceiling or wall mounted.

Light Source
An innovative, fully field-adjustable lamp head assembly offers the choice of MR16 halogen lamps up to 12V, 12W or high-efficiency, 4W, MR16 LED lamps. A long-life, energy-efficient illuminated red LED EXIT legend is ENERGY STAR® compliant.

Charger
The Severe XV Series Combo unit is equipped with the fully automatic Lightalarms® Improved Diagnostic micro controller board. The micro controller tests, detects and indicates battery, charger circuitry, lamps or LED strip failures. An external LED signals a general service alarm while an internal diagnostic LED display indicates the nature of failure. The unit performs periodic self-tests a minimum 30 seconds every 30 days, 30 minutes every six months and 90 minutes annually. The board is factory preset to non-audible diagnostic and a 15-minute time delay. These functions can be enabled or disabled during installation. The equipment comes standard with a dual-voltage input of 120/277VAC.

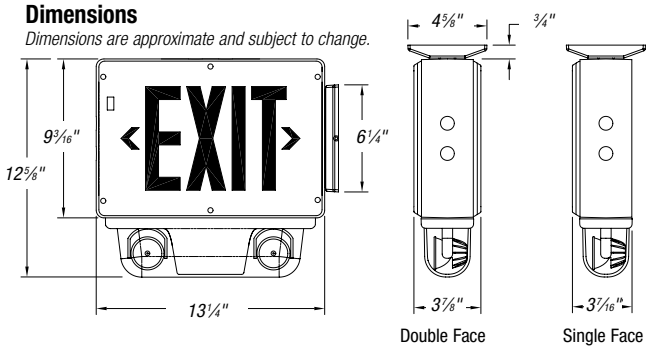
Options

(Add Suffix to Model No.)	**Suffix**
Cold Weather Location -40° C to 25° C/-40° F to 77° F	**-CW4***
Fire Alarm-Activated Flasher	**-FAF**
Flasher/Buzzer (AC power failure)	**-FB****
Flasher (AC power failure)	**-FL**
Canopy Pendant Mount	**-CM**
Nexus® Wired	**-NEX**
Nexus® Wireless	**-NEXRF**

** Available in 12E1 version only ** Not available with "DA" Audible Diagnostics.*

UL® Listed standard wet and damp locations (10° C to 40° C/50° F to 104° F)
UL® Listed for cold weather (-40° C to 25° C/-40° F to 77°F) — see options below

Dimensions
Dimensions are approximate and subject to change.



Accessories (Order as a separate item)
Additional Special Bit for Tamper-Proof Screw ..... **TPB**

Power Consumption

MODEL	AC SPECS		
XV12E	120 to 277VAC, 60 Hz	0.12/0.06A	Less than 13W
XV24E	120 to 277VAC, 60 Hz	0.18/0.08A	Less than 20W
COLD WEATHER OPTION	120 to 277VAC, 60 Hz	0.20/0.09A	Less than 24W

Unit Ratings

SEALED MAINTENANCE-FREE BATTERY TYPE	INPUT POWER	OUTPUT VOLTAGE	TOTAL OUTPUT POWER FOR EMERGENCY HEADS
Nickel-Cadmium	120/277V, 60 Hz, 0.12/0.06A, 13/13W	6VDC	12W
	120/277V, 60 Hz, 0.17/0.08A, 19/19W	12VDC	24W

Catalog Numbering System

WW	XV	12E	1	R	D	4X	/	2	M6	CW4

Color Option Housing/Face
Blank *= Black/Black*
BW *= Black/White*
BA *= Black/Aluminum*
GB *= Gray/Black*
GW *= Gray/White*
GA *= Gray/Aluminum*
WB *= White/Black*
WW *= White/White*
WA *= White/Aluminum*

Series
XV

Capacity
12E *= 6V 12W*
24E *= 12V 24W*

Faces
1 *= Single Face*
2 *= Double Face*

Letter Colors
R *= Red*
G *= Green*

Diagnostics
D *= Standard on All Self-Powered Models*
DA* *= Improved Diagnostics Audible*
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*
** Must specify.*

Housing
4X *= NEMA 4X*

No. of Heads
0 *= 0 Heads**
2 *= 2 Heads*
** Remote lamp(s) must be connected.*

Lamp/Wattage
MR6 *= MR16, 6V 6W*
M12 *= MR16, 12V 12W*
L5 *= LED, 12V 4W*

Options
Blank *= No Options*
CW4* *= Cold Weather*
** Available in 12E1 version only.*

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Exit Signs

Non-electric self-luminous exit sign — no wiring or energy required.

XT Series

XT Series signs are not dependent upon the use of electrical power, either internally or externally.

Reliability

XT Series exit signs are spark free and suitable for use in humid, corrosive or explosive environments. Thomas & Betts will replace, free of charge, any product in which the luminosity is found to be defective during its specified luminous life or which falls below specified luminous life.

Unit Data

The XT Series self-luminous exit sign frame, backplate and canopy are constructed of ABS molding in a tamper-proof assembly with no removable fasteners. Frame finishes are white or black. The signs can be mounted flush to wall or ceiling without a canopy. The faceplate is constructed of acrylic (optional polycarbonate) 0.13" thick. The legend is constructed of non-glare polycarbonate, 0.015"-thick, open letters, field-programmable arrows and background colors include red or green. Contrast ratio for both conditions exceeds 0.5 and meets requirements of UL® 924 and NFPA. These exit signs do not require batteries, lamps or electricity for illumination. Electrical wiring, power, lamp replacement and maintenance are not required.

Illumination is provided by phosphor-coated borosilicate tubes filled with tritium gas. Tritium gas energizes the phosphor-coated tubes in the sign. The low-energy beta emission of tritium striking the phosphor coating inside the Pyrex® glass tubes causes illumination to be generated.

Harsh and/or Hazardous Environments

- Mines
- Refineries
- Paper Mills
- Food Processing Plants
- Spray Booth Areas
- Offshore Rigs
- Chemical Plants
- Grain Elevators

Licenses and Codes

- UL – Underwriters Laboratories
- OSHA – Occupational Safety and Health Administration
- BOCA, ICBO, SBCCI – American Building Officials
- MSHA – Mine Safety and Health Administration
- NRC – Nuclear Regulatory Commission
- Uniform, Basic and Standard Building Codes

Meets full test specifications of ANSI (American National Standards Institute) for use in harsh or dangerous environments. Meets requirements of National Electrical Code®, Class I and II.

Options

(Add Suffix to Model No.)	Suffix
Aluminum Frame	-AF
Fully Recessed Frame	-FR
Aluminum Frame and Polycarbonate Shield	-AFPC

Accessories (Order as a separate item)

White Pendant	PW-*
Black Pendant	PB-*

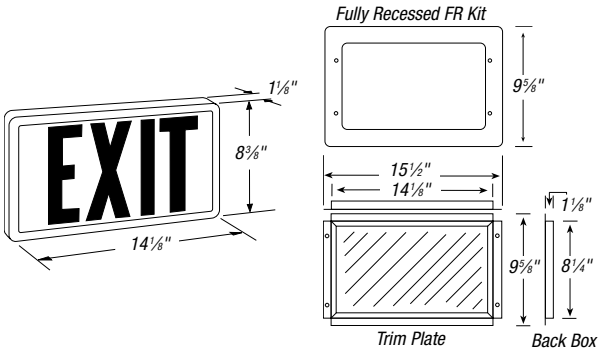
** Specify length of pendant (12", 24", 36", etc.).*

Pyrex is a registered trademark of Corning Incorporated.

National Electrical Code is a registered trademark of the National Fire Protection Association, Inc.

Dimensions

Dimensions are approximate and subject to change.



Mounting

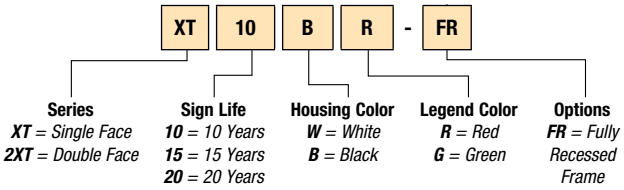
Single Face Signs

Wall Mount (flush wall or end) | *Ceiling Mount (flush ceiling)* | *Pendant Mount*

Double Face Signs

Wall Mount (flush end) | *Ceiling Mount (flush ceiling)* | *Pendant Mount*

Catalog Numbering System



Exit Signs

A wide range of sign body options and color choices are available to suit any application.

Special Wording

- Custom wording — any style of lettering, any language, any alphabet, any special characters
- The same sturdy construction and electrical design used in Lightalarms® exit signs is used with this signage
- Choose from steel, extruded and die-cast aluminum, weatherproof, flame-retardant polycarbonate, high-impact thermoplastic and recessed housing sign bodies
- Combination units also available
- Graphics include logos, standard symbols, custom art
- Color choices for sign bodies, message, faceplate panel
- LED and other light sources available for illumination
- Contact Customer Service to discuss your specific requirements

More panel designs are available.
Contact customer service for the complete list.

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Exit Signs

Triad LED Replacement Lamps LED Retrofit Kit

- Convert high-consumption incandescent and fluorescent lamps to energy-efficient LED lamps
- Reduce energy consumption by up to 90%
- Improve visibility and reliability
- Reduce maintenance costs

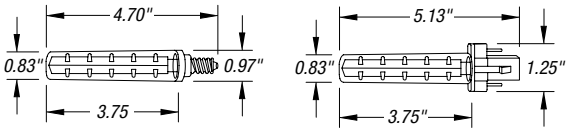
Features

- Quick and easy to install
- Available with wide range of lamp bases for quick lamp-to-lamp replacement
- Available in ultra-high brightness red LEDs
- 120VAC only

Red Illumination only

Dimensions

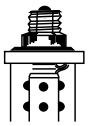
Dimensions are approximate and subject to change.



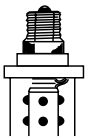
Power Consumption

MODEL	AC SPECS	
LRB	120VAC	0.90W
LRB-F	120VAC	1.6W

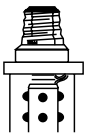
LRB-C
Candelabra Base



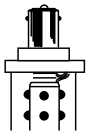
LRB-I
Intermediate Screw Base



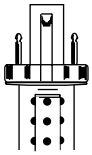
LRB-M
Medium Screw Base



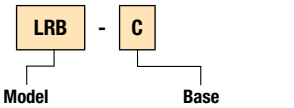
LRB-B
D.C. Bayonet Base



LRB-F
PL 5-, 7- or 9-Watt Base



Catalog Numbering System



Model
LRB

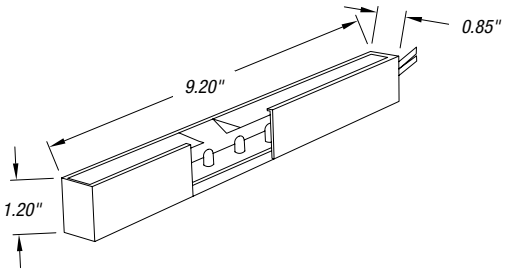
Base
C *= Candelabra*
I *= Intermediate*
M *= Medium*
B *= Bayonet*
F *= Compact Fluorescent*

LED Retrofit Kit

- Easiest to install in its class
- Compact size makes it ideal for virtually all exit signs
- Can be retrofitted directly on fluorescent ballast
- Long-life, energy-efficient red (only) LED technology
- Available with AC adapter for various types of lamp sockets
- 120VAC only

Dimensions

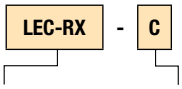
Dimensions are approximate and subject to change.



Power Consumption

MODEL	AC SPECS	
LEC-RX	120VAC	1.70W

Catalog Numbering System



Model
LRB

Base
C *= Candelabra*
I *= Intermediate*
M *= Medium*
B *= Bayonet*
F *= Compact Fluorescent*

Fluorescent Emergency Lighting Ballasts

Ballast Reference

MODEL NO.	AM7	AM11	AM12	AM18	AM20	AM23	AM28	AM30	AM32	AM80-D	AM54	AM540
LUMENS	700	650	1300	650	650	1400	500	3000	500	1300	825	1300
Linear Lamps												
Lamp Type (No. of Lamps)												
2'-4' RAPID, INSTANT, ENERGY SAVING, T8 THRU T12 (1)	✔		✔				✔	✔	✔	✔	✔	✔
2'-4' RAPID, INSTANT, ENERGY SAVING, T8 THRU T12, HO & VHO (2)	✔		✔			✔		✔		✔		
2'-8'W RAPID, INSTANT, ENERGY SAVING, T8 THRU T12, HO & VHO (1)	✔		✔					✔		✔		
F17 T8 (1)	✔		✔				✔		✔	✔	✔	✔
F17 T8 (2)	✔		✔			✔				✷		
F25 T8 (1)			✔				✔	✔		✔	✔	✔
F25 T8 (2)			✔					✔		✔		
F32 T8 (1)	✔		✔				✔	✔	✔	✔	✔	✔
F32 T8 (2)	✔		✔			✔		✔		✔		
F40 T8 (1)											✔	✔
F096 T8 (1)	✔		✔					✔		✔		
14W T5 (1)			✔				✔				✔	✔
21W T5 (1)			✔				✔				✔	✔
24W T5 (1)			✔				✔				✔	✔
28W T5 (1)			✔				✔	✔	✔	✔	✔	✔
39W T5 (1)			✔							✔	✔	✔
54W T5 HO (1)			✔					✔		✔	✔	✔
F20 T12 (1)	✔		✔						✔	✔		
F20 T12 (2)	✔					✔						
F40 T12 (1)	✔		✔					✔	✔	✔		
F40 T12 (2)	✔					✔		✔				
F48 T12 (1)			✔							✔		
F96 T12 (1)	✔		✔					✔		✔		
Compact Lamps												
18W LONG COMPACT (1)												
24W LONG COMPACT (1)					✔							
36W LONG COMPACT (1)			✔		✔	✔				✔	✔	✔
40W LONG COMPACT (1)	✔		✔		✔	✔		✔	✔	✔	✔	✔
40W LONG COMPACT (2)								✔				
50W LONG COMPACT (1)	✔		✔			✔		✔		✔	✔	✔
55W LONG COMPACT (1)	✔		✔			✔		✔		✔	✔	✔
5W PL CF 2-PIN (1)		✔										
7W PL CF 2-PIN (1)		✔										
9W PL CF 2-PIN (1)		✔										
13W PL CF 2-PIN (1)		✔										
18W PL CF 2-PIN (1)				✔								
26W PL CF 2-PIN (1)				✔								
10W PL CF 4-PIN (1 OR 2)								✔				
13W PL CF 4-PIN (1 OR 2)					✔			✔				
18W PL CF 4-PIN (1 OR 2)								✔				
26W PL CF 4-PIN (1 OR 2)								✔				
32W PL CF 4-PIN (1 OR 2)								✔				
42W PL CF 4-PIN (1)								✔				
42W PL CF 4-PIN (2)								✔				
57W PL CF 4-PIN (1)			✔					✔		✔		
57W PL CF 4-PIN (2)								✔				
70W PL CF 4-PIN (1)			✔					✔		✔		
20W CIRCLINE (1)	✔		✔					✔	✔	✔	✔	✔
20W CIRCLINE (2)	✔		✔					✔		✔		
40W CIRCLINE (1)	✔		✔					✔	✔	✔	✔	✔
40W CIRCLINE (2)	✔		✔					✔		✔		
55W CIRCLINE T5 (1)	✔							✔				

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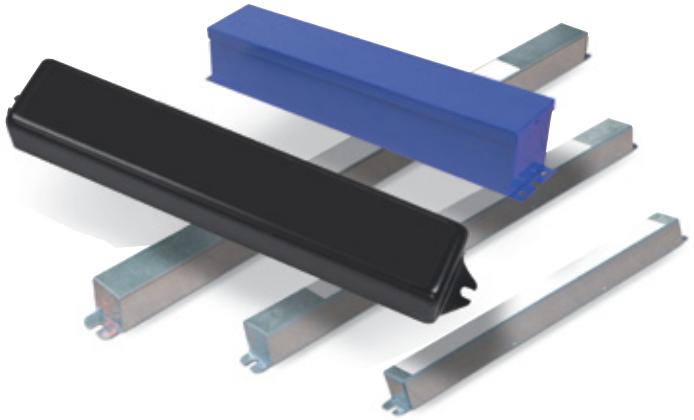
Fluorescent Emergency Lighting Ballasts

Fluorescent power packs with sealed maintenance-free nickel-cadmium battery.

AM Series



AM Series fluorescent power packs are cost-efficient solutions for conversion of new or existing fluorescent fixtures into emergency lighting units. This series is ideally suited for commercial applications.

Reliability

The AM Series has a three- to five-year full warranty. (Please see chart below.)

Unit Data

The AM Series components are housed in a compact ballast-size case. Installation is simple and cost efficient. The unit mounts easily inside or on top of a fixture using wire end caps (if necessary). It can be wired to operate with switched, unswitched or normally off fixtures without affecting normal operation. Use with Circline, U-shaped and energy-saving lamps. For VHO, SHO and Power Groove® lamps, use the AM7 or AM12 models. Compatible with standard, energy-saving, dimming and electronic AC ballasts.

Charger

- Fully automatic solid-state charger
- Automatic transfer relay energizes lamp instantaneously upon failure of normal AC supply
- Low-voltage disconnect prevents overdischarge of battery
- External test switch and pilot light

Power Requirements

Dual Voltage 120/277VAC, 60 Hz, 0.3/0.15A

Options

(Add Suffix to Model No.) ..... **Suffix**

Damp Location Listing ..... **-D**

Accessories (Order as a separate item)

Remote Test Switch (metal faceplate) ..... **PSW**

Remote Test Switch (plastic faceplate) **PSW1**

Wire End Caps for AM32 ..... **EC6**

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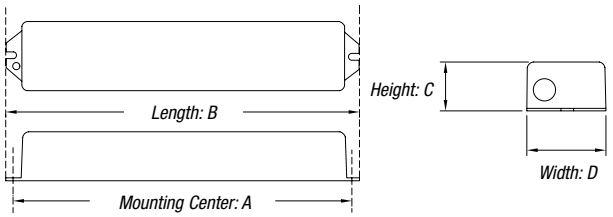
Dimensions

Dimensions are approximate and subject to change.



MODEL NO.	DIMENSIONS A	B	C	D
AM7	9"	9⅝"	1½"	2⅜"
AM11	8⅞"	9½"	1½"	2⅜"
AM12	12½"	13⅛"	1½"	2¼"
AM18	11½"	12"	1½"	2¾"
AM20	9"	9½"	1½"	2⅜"
AM23	12¾"	13⅛"	1½"	2⅜"
AM32-L	9"	9⅝"	1½"	2⅜"
AM80-D	12¾"	13⅛"	1½"	2⅜"
AM540	21"	21½"	1³⁄₁₆"	1³⁄₁₆"

Unit Selection

MODEL NO.	LAMP OPERATED IN EMERGENCY MODE (SEE NEW BALLAST REFERENCE CHART, PAGE I-156)	EMERGENCY ILLUMINATION TIME	LUMENS	WIRE END CAPS	WARRANTY
AM7	1 lamp 2'–8' (20W–215W) or 2 lamps 2'–4' (20W–40W)	90 Min.	700	Included	3-Year Full
AM11	1 Compact Fluorescent Lamp (7, 9 or 13W)	90 Min.	650	Not Required	3-Year Full
AM12	1 Lamp 2'–8' (20W–215W) or 2 lamps 2'–4' (20W–40W)	90 Min.	1300	Included	5-Year Full
AM18	1 Compact Fluorescent Lamp (18W & 26W)	90 Min.	650	Not Required	3-Year Full
AM20	1 Compact Fluorescent Lamp or 2 Compact Fluorescent Lamps (10W–42W)	90 Min.	650	Not Required	3-Year Full
AM23	2 Lamps 2'–4'	90 Min.	1400	Included	3-Year Full
AM32-L	1 Lamp 2'–4' (20W–40W)	90 Min.	550	Optional Order #EC6	3-Year Full
AM80-D	Most 2'–8' Single, Bi-Pin T8 + T12, Long Compact, HO + HVO Fluorescent Lamps	90 Min.	1300	Not Required	5-Year Full
AM540	1 Lamp 2'–4' (40W–50W), Most 2'–4' T5 or T8 and 4-Pin Compact Fluorescent Lamps (40–55W)	90 Min.	1300	Optional Order #EC54	3-Year Full

** Power Groove is a registered trademark of General Electric.*

Fluorescent Emergency Lighting Ballasts

Emergency power packs for T8 or T12 fluorescent lamps with sealed maintenance-free nickel-cadmium battery.

AM30 Series

The AM30 Series units are designed for use with most T8 or T12 fluorescent lamps. They are ideal for use in linear lighting fixtures where ballast space is limited.

Reliability

The AM Series has a three- to five-year full warranty. (Please see chart below.)

Unit Data

The housing of the AM30 consists of a single, sealed housing compartment containing the battery, battery charger, transfer circuit and high-frequency inverter. A pilot light and test switch are included. The AM30 comes standard with a 24" flex conduit on one end of the housing. The AM30 can cold start and operate most 2'–8', single bi-pin T8 and T12 HO lamps or VHO linear, 42-watt 4-pin lamps and long compact lamps. Emergency capabilities of the AM30 are one 2'–8' lamp or two 2'–4' lamps for a minimum of 90 minutes. Only one long compact fluorescent lamp may be operated in the emergency mode.

The AM30 is designated for installation on top of the fixture or can be remote from the fixture.

Charger

- Fully automatic solid-state charger
- Automatic transfer relay energizes lamp instantaneously upon failure of normal AC supply
- Low-voltage disconnect prevents overdischarge of battery
- External test switch and pilot light

Power Requirements

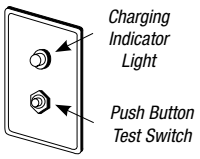
Dual-Voltage 120/277VAC, 60 Hz, 3.5W

Accessories (Order as a separate item)

Remote Test Switch (metal faceplate).....**PSW**

Remote Test Switch (plastic faceplate).....**PSW1**

Recommended for inaccessible locations. Test switch and charging indicator on a single chrome mounting plate.

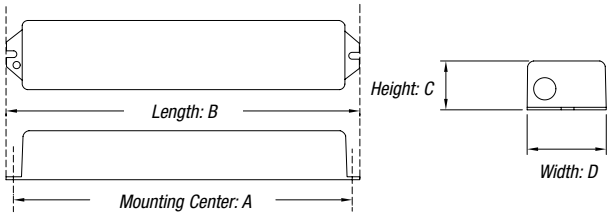


Unit Selection

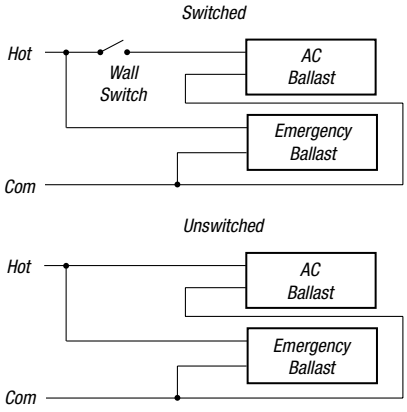
LUMEN OUTPUT	LAMPS OPERATED	EMERGENCY OPERATION
(1) Lamp — 3000 Lumens	Most 2'–8' Single, Bi-Pin, T8 & T12, HO or VHO Linear, 42W 4-Pin and Long Compact Fluorescent Lamps	90 Minutes
(2) Lamps — 1500 Lumens per Lamp		(1) 2'–8' or (2) 2'–4'

Dimensions

Dimensions are approximate and subject to change.



	DIMENSIONS			
MODEL NO.	A	B	C	D
AM30	15⅞"	16⅜"	3"	3"



Primary circuit only. Lamp leads not shown.

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Fluorescent Emergency Lighting Ballasts

Emergency power packs with sealed maintenance-free nickel-cadmium battery — ideal for factory installation or retrofit applications.

AM28 and AM54 Series

The AM28 and AM54 are self-contained emergency ballasts designed for use with most T5 or T8 fluorescent lamps. They are ideal for use in linear lighting fixtures where ballast space is limited.

Reliability

The AM28 and AM54 Series have a five-year full warranty. They are also UL® Listed for use in damp locations.

Unit Data

The housing of the AM28 and AM54 consists of a single, sealed housing compartment containing the battery, battery charger, transfer circuit and high-frequency inverter. A pilot light and test switch are included.

The AM28 can cold start and operate most 2'-4', 28-watt T5 and T8 fluorescent lamps.

The AM54 can cold start and operate most 2'–4', 54-watt T5 and T8 fluorescent lamps, including HO and 40–55-watt 4-pin, long compact fluorescent lamps. Emergency operation is for a minimum of 90 minutes.

Charger

- Fully automatic solid-state charger
- Automatic transfer relay energizes lamp instantaneously upon failure of normal AC supply
- Low-voltage disconnect prevents overdischarge of battery

Power Requirements

Dual-Voltage 120/277VAC, 60 Hz, 3.5W

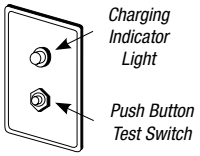
Options

(Add Suffix to Model No.) ..... **Suffix**
Damp Location Listing ..... **-DL**

Accessories (Order as a separate item)

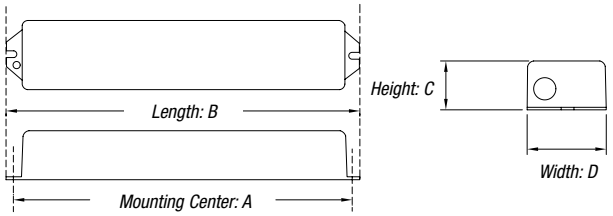
Remote Test Switch (metal faceplate).....**PSW**
Remote Test Switch (plastic faceplate).....**PSW1**

Recommended for inaccessible locations. Test switch and charging indicator on a single chrome mounting plate.



Dimensions

Dimensions are approximate and subject to change.

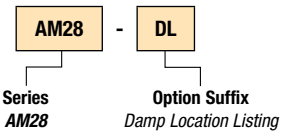


	DIMENSIONS			
MODEL NO.	A	B	C	D
AM28	13¾"	14¼"	1 13/16"	1 13/16"

Unit Selection

MODEL NO.	LAMPS OPERATED IN EMERGENCY MODE	EMERGENCY	LUMENS	WIRE END CAPS	WARRANTY
AM28	1 Lamp 2'–4'	90 Min.	500	Optional Order #EC54	3-Year Full
AM54	1 Lamp 2'–4'	90 Min.	825		

Catalog Numbering System



Fluorescent Emergency Lighting Ballasts

Self-powered fluorescent fixture with sealed maintenance-free nickel-cadmium battery is tamper proof and vandal proof.

FF-AM Series

The FF-AM Series is a tamper- and vandal-resistant fluorescent fixture that combines the functions of normal area lighting and emergency lighting in one fixture.

Reliability
The FF-AM Series has a three-year full warranty (excluding lamps and pilot lights).

Unit Data
The housing of the FF-Am Series is constructed of steel and secured with tamper-proof screws. A tamper-proof screw driver bit is furnished standard with each unit. This series is completely self-contained and maintenance-free. The diffuser consists of an injection molded .125" UV-stabilized, unbreakable polycarbonate lens. The lens features a prismatic pattern on the bottom and linear refractive sides for brightness control and 180° uniform light distribution.

The FF-AM unit is for surface mounting only.

Lamp
Available with sockets for one 20-watt, one 34-watt, two 20-watt or two 34-watt T12 lamps, or one or two 32-watt T8 lamps supplied by other manufacturers.

Charger
- Fully automatic solid-state charger
- Low-voltage disconnect prevents overdischarge of battery

Controls
- Pilot light and test switch

Power Requirements
Dual-voltage 120/277VAC, 60 Hz, 3.5W

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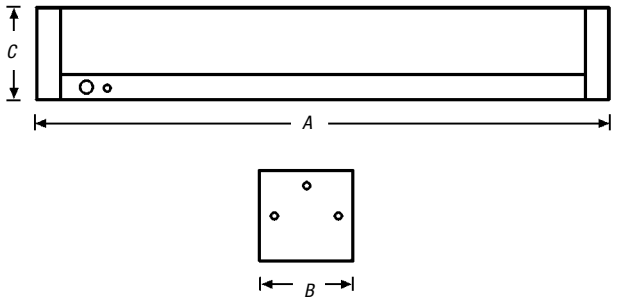
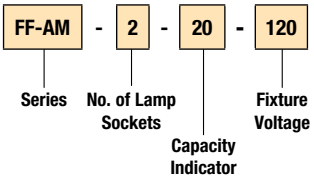
Dimensions
Dimensions are approximate and subject to change.



Unit Ratings

CAT. NO.	A	B	C	LAMP TYPE
FF-AM-1-20-120 FF-AM-1-20-277 FF-AM-2-20-120 FF-AM-2-20-277	24¼"	4½"	4⅜"	F20T12
FF-AM-1-34-120 FF-AM-1-34-277 FF-AM-2-34-120 FF-AM-2-34-277	48¼"	4½"	4⅜"	F34T12
FF-AM-1-32-120 FF-AM-1-32-277 FF-AM-2-32-120 FF-AM-2-32-277	48¼"	4½"	4⅜"	F32T8

Catalog Numbering System
For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.



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Fluorescent Emergency Lighting Ballasts

Fluorescent T-bar power pack with sealed maintenance-free nickel-cadmium battery.

AM-L/AM-L-2 Series

The AM-L and AM-L-2 Series Fluorescent T-Bar power packs are cost-efficient solutions for conversion of new or existing fluorescent fixtures into emergency lighting units. This series is ideally suited for commercial applications.

Reliability

The AM-L and AM-L-2 Series have a three-year full warranty.

Unit Data

This Series consists of an AM7 fluorescent pack secured to the upper surface (interior) of a metal panel. AM-L units will light one lamp in any 2-, 4-, 6- or 8-ft. fluorescent fixture. The AM-L-2 units will light two lamps in any four-lamp 2-, 4-, 6-, or 8-ft. fluorescent fixture. The panel is installed into a dropped ceiling, adjoining fluorescent fixture. Location of the fluorescent pack outside of a fixture eliminates heat problems and the need to fit the pack into fixture channel. Test switch and pilot light are located on the lower surface (exterior) of the panel for easy access. Units can be easily wired to the fluorescent fixture according to the wiring diagrams.

PulseType Charger

The inverter circuit is of solid-state design of the ferroresonant type. It operates all standard 2-, 4-, 6- or 8-ft. lamps.

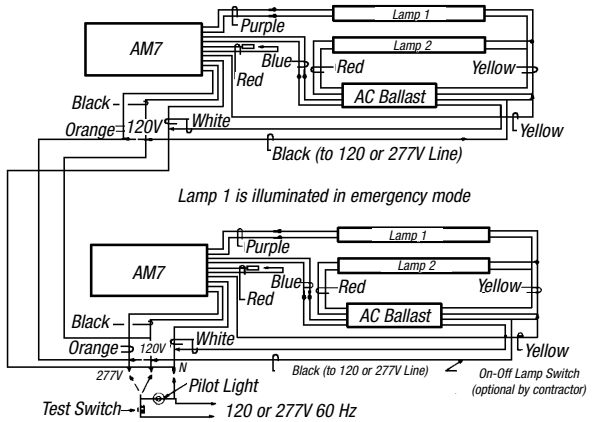
Charging is fully automatic by a solid-state constant-potential type charger. It is temperature compensated to ensure optimum battery life.

The transfer circuit connects the lamp to the battery when there is a failure of the normal power supply and returns it to the utility source when normal power returns. A solid-state line-latched low-voltage disconnect circuit disconnects the lamp from the battery when the battery voltage drops to about 80% of nominal to protect the battery from a deep discharge.

Power Requirements

Input requirement 120/277VAC, 60 Hz: 10W for inverter-charger (wattage of lamp to be added to this)

AM-L-2 Wiring Diagram

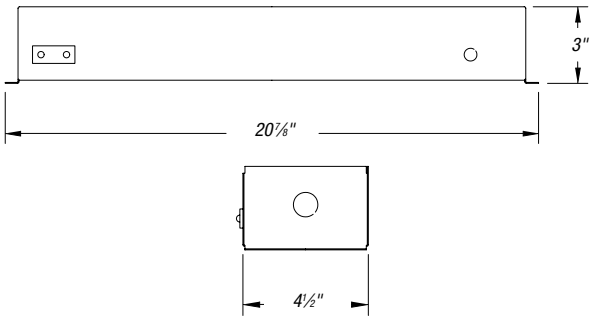


Typical wiring diagram for rapid-start lamp

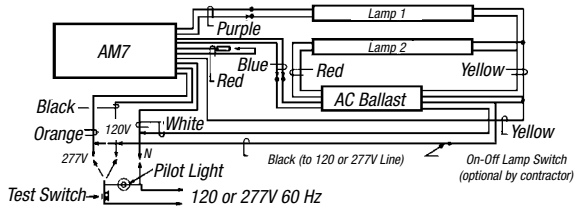
Dimensions

Dimensions are approximate and subject to change.

Remote (FPS-R)



AM-L Wiring Diagram



Lamp 1 is illuminated in emergency mode

Typical wiring diagram for rapid-start lamp

Catalog Numbering System

For standard units without options, only order Heads, Series, Battery, Capacity and Lamps.

AM-L

Series

Central Systems

Lightalarms® central systems are battery-based power systems designed to operate loads in the event of a utility failure or brownout condition. All systems are self-contained and fully automatic.

AC Central Systems

Batteries offered with central systems:

- Sealed, maintenance-free lead-calcium (AC and DC systems)
- Refillable nickel-cadmium (AC systems)

Single-Phase Fast Transfer IPS

Single-phase power systems for incandescent and fluorescent emergency lighting systems.

- 98% efficient — 2mS transfer time
- PWM/IGBT technology
- Microprocessor control
- User programmable with password protection
- Tested to UL® 924
- Automatic event and alarm log
- RS-232 communications port
- Input circuit breaker
- Modular design
- Low audible noise
- Normally off output
- From 1.25kVA to 6.25kVA

Single-Phase UPS

Single-phase power systems for HID, incandescent and fluorescent emergency lighting systems.

- 98% efficient — 2mS transfer time
- PWM/IGBT technology
- Microprocessor control
- User programmable with password protection
- Tested to UL® 924
- Automatic event and alarm log
- RS-232 communications port
- Input circuit breaker
- Modular design
- Low audible noise
- Normally on output
- From 1.25kVA to 6.25kVA

Three-Phase UPS

On-line AC power systems for HID, incandescent and fluorescent emergency lighting systems.

- 98% efficient — 2mS transfer time
- PWM/IGBT technology
- Microprocessor control
- User programmable with password protection
- Tested to UL® 924
- Automatic event and alarm log
- RS-232 communications port
- Input circuit breaker
- Modular design
- Low audible noise
- Internal battery circuit breaker/fuse
- From 1.25kVA to 6.25kVA

For more information on Lightalarms® Central Systems, please contact your Thomas & Betts representative.

All information and specifications contained on this page are subject to change without notice.

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Remote Fixtures

Camray Remote Series

The Camray Series combines photometrical performance with a visually appealing design. An efficient reflector combined with two Xenon lamps delivers an incredible center-to-center spacing. The die-cast aluminum housing is offered in a wide range of colors to complement any interior. With its fully gasketed housing, the Camray Series is also ideal for extreme outdoor environments. Designed to meet aesthetic needs without sacrificing safety, this fixture is available in a wide range of colors to complement any interior.

CAM Remote Head: UL® Listed for damp, wet and cold locations.
Operating Temperature: -40° C to 60° C (-40° F to 140° F)

Catalog Numbering System

CAM / LX6 - OW [ ]

Series
CAM *= Remote Fixture (-40° C to 60° C)*

Lamp Wattage
LX6 *= 6W, Xenon Lamps*
LX10 *= 10W, Xenon Lamps*

Color*
OW *= Off White*
B *= Black*
DB *= Dark Bronze*
PG *= Platinum Gray*
** Other colors available.*

Options
6 *= 6V*
12 *= 12V*

Phantom Remote Series

The new Phantom Series goes virtually undetected, blending into any environment. When AC power fails and lights go out, that is when the Phantom emerges to illuminate the path to safety. This new unit is architecturally designed for unobtrusive use in walls with cavity or T-bar structures. In normal conditions (stand-by), the unit is completely concealed in the wall or ceiling. In case of power failure, the door of the unit rotates open 180° and exposes the emergency lights (two high-efficiency MR16 lamps) to illuminate the path of egress. Once AC power returns or the discharge period ends, the lights turn off and the door rotates closed automatically, driven by an energy-storage circuit.

The DC remote unit comes as a compact, one-piece module and does not require the large galvanized steel back box.

NEW YORK CITY APPROVED

Catalog Numbering System

12 / PHR2 - 50 [ ]

Remote Voltage
12 *= 12VDC*
24 *= 12VDC*

Series
PHR2 *= Remote Fixture*

Lamp Wattage
12 *= 12W MR16*
20 *= 20W MR16*
35 *= 35W MR16*
50 *= 50W MR16*
20H *= 20W MR16, High Lumen Output*
35H *= 35W MR16, High Lumen Output*
50H *= 50W MR16, High Lumen Output*
Note: *High lumen output available with 12V only.*

Options
DL *= Damp Location*

Remote Fixtures

Saf-T-Ray Series

Housing

The premium die-cast aluminum housing is designed to withstand extreme weather conditions and offer aesthetically pleasing looks with a compact footprint. Ideal for damp, wet and cold location specifications, Saf-T-Ray provides a fully gasketed cover with the option of vandal-resistant screws. This unique wall sconce is available in three textured powder-coat paint finishes; white, black and dark gray (optional finishes available for custom projects — consult Customer Service).

Diffuser

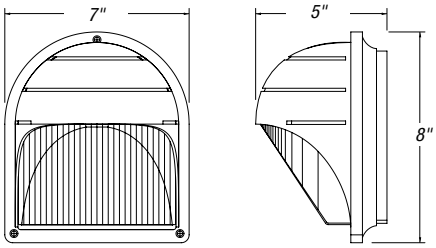
This specially manufactured polycarbonate diffuser maximizes light output and completes the wall sconce decorative lines. Saf-T-Ray's robust polycarbonate lens is the ideal choice for applications where impact- and tamper-resistant emergency lighting is specified.

Lamps

Precise beam control is provided with two fully adjustable MR16 halogen lamps secured in an attractive molded swivel assembly for maximum light output. Saf-T-Ray will provide an average of one-foot candle along the path of egress. Saf-T-Ray can also be used with the premium option of the high-efficiency 4-watt MR16 white LED lamp. IES photometric data files are available on request.

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

SAF	-	2	/	M6	-	M	6	-	

Series
SAF = *Exterior Remote*

No. of Lamps
2 = *2 Lamps Standard*

Lamp Type/Wattage
L5 = *LED, 4W (12V only)*
M6 = *MR16, 6W (6V only)*
M10 = *MR16, 10W (6V only)*
M12 = *MR16, 12W (12V or 24V only)*
M20 = *MR16, 20W (12V or 24V only)*

Color
M = *White*
B = *Black*
DG = *Dark Gray*
DB = *Dark Bronze*

Voltage
6 = *6V*
12 = *12V*
24 = *24V*

Options
VR = *Vandal-Resistant Screws*
C = *Clear Lens*

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Remote Fixtures

Severe ELF650 Series

NEMA 4X-rated remote fixtures have a fully gasketed cast-aluminum back plate with a clear UV- and impact-resistant cover. The unit delivers unsurpassed path of egress illumination. It is available in single- or double-head models with the option of highly efficient MR16 lamps or the 4-watt MR16 white LED. Easy lamp replacement, tool-less lamp aiming and easy installation on a 4" octagonal box all make this remote fixture the perfect choice for any environment. It comes standard with tamper-proof screws and bit and is NSF Certified for food processing plants. Choose from three colors: white, black or gray. Also available as a battery unit; refer to Severe V Series.

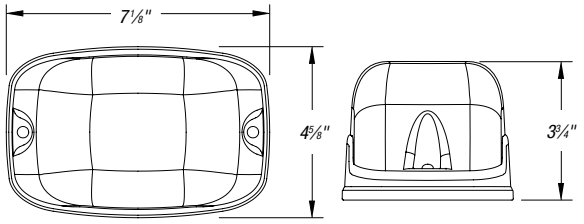
Catalog Numbering System

ELF650 / M12 - M 12

Series	Lamp Type/Wattage	Color	Voltage
ELF650 = Single NEMA 4X ***EF650D*** = Double NEMA 4X	***L5*** = LED, 4W (12V only) ***M6*** = MR16, 6W (6V only) ***M10*** = MR16, 10W (6V only) ***M12*** = MR16, 12W (12V or 24V only) ***M20*** = MR16, 20W (12V or 24V only)	***M*** = White ***B*** = Black ***G*** = Gray	***6*** = 6V ***12*** = 12V ***24*** = 24V

Dimensions

Dimensions are approximate and subject to change.



Class I, Division 2 compliant remote fixtures for hazardous locations.

Severe ELF651 Series

The ELF651 Series of remote fixtures has been designed specifically for installation in hazardous locations and other high-abuse industrial environments. It can withstand weather, impacts, vibrations and temperature variations. The ELF651 Series is ideally suited for areas with the possible presence of flammable gases, vapors or liquids that can create an explosive gas atmosphere.

Power and Temperature Ratings

LAMP TYPE	INPUT VOLTAGE	POWER (EACH OF 2 LAMPS)	TEMPERATURE CODE
MR16	6V	10W	T3B (max. 165° C)
MR16	12V, 24V	12W	T3B (max. 165° C)
MR16	12V, 24V, 120V	20W	T2C (max. 230° C)

NOTE: Use qualified replacement lamps to avoid risk of overheating.

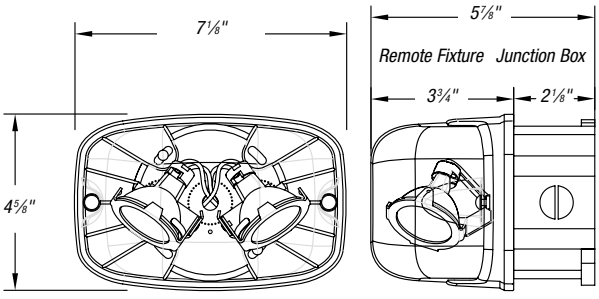
Catalog Numbering System

ELF651 / M12 - M 12

Series	Lamp Type/Wattage	Color	Voltage
ELF651 = Single ***EF651D*** = Double	***L5*** = LED, 4W (12V only) ***M6*** = MR16, 6W (6V only) ***M10*** = MR16, 10W (6V only) ***M12*** = MR16, 12W (12V or 24V only) ***M20*** = MR16, 20W (12V or 24V only)	***G*** = Gray	***6*** = 6V ***12*** = 12V ***24*** = 24V ***120*** = 120VAC/VDC

Dimensions

Dimensions are approximate and subject to change.



Remote Fixtures

Decorative Surface Remote Series

Decorative Surface Remote Series emergency fixtures have been specially built to meet the needs of contemporary decor professionals. Constructed of a highly resistant powder-coated die-cast aluminum, these fixtures are available in 1-, 2- and 3-head configurations, as well as a complete selection of attractive styles and shades. Safety and security have never looked so good.

DR1130

Single compact adjustable decorative lighting head

Dimensions: 5" diameter base, 4⅛" height

DR2130

Double compact adjustable decorative lighting heads

Dimensions: 5" diameter base, 4⅛" height

DR3130

Triple compact adjustable decorative lighting heads

Dimensions: 9⅝" diameter base, 4" height

DR1130

DR3130

DR2130

Catalog Numbering System

DR1130 / **M6** - **WH** **6**

Series	Lamp Type/Wattage	Color	Voltage
DR1130	***L5*** *= LED, 4W (12V only)*	***M*** *= White*	***6*** *= 6V*
	M6 *= MR16, 6W (6V only)*	***B*** *= Black*	***12*** *= 12V*
	M10 *= MR16, 10W (6V only)*	***DG*** *= Dark Gray*	***24*** *= 24V*
	M12 *= MR16, 12W (12V or 24V only)*	***DB*** *= Dark Bronze*	
	M20 *= MR16, 20W (12V or 24V only)*		

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Decorative Recessed Remote Series

The Decorative Recessed Remote Series will create an entirely new design vocabulary of emergency lighting function and form. Constructed of a highly resistant, powder-coated die cast aluminum, these fixtures are available in a selection of attractive styles and finishes. The contemporary, enduring designs along with the ultra energy-efficient and light-intensive MR16 quartz halogen lamps make this remote collection a sleek, refreshing new take on emergency lighting solutions.

RSTH24

Decorative lighting head

Dimensions: 4.0" diameter base

Color Suffix: -WH = White,
-BK = Black,
-CH = Chrome,
-PB = Polished Brass,
-BN = Brushed Nickel

RSTH18

Decorative lighting head

Dimensions: 4.0" diameter base

Color Suffix: -WH = White or
-BN = Brushed Nickel

RSTH18R

Decorative lighting head

Dimensions: 4.0" diameter base

Color Suffix: -WH = White or
-BN = Brushed Nickel

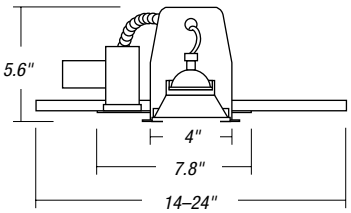
RSTH19

Decorative lighting head

Dimensions: 4.0" diameter base

Color Suffix: -WH = White

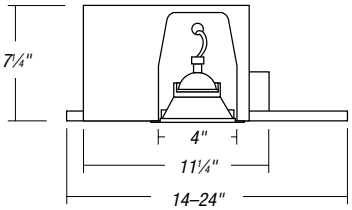
Recessed Type*



LU-GRHR03

New construction housing

Dimensions: 5.6" x 14.24"



LU-GRHR06

Insulated ceilings housing

Dimensions: 7.25" x 14.24"

Catalog Numbering System

RSHT18	/	M6	-	WH	6

Series
RSHT18

Lamp Type/Wattage
M6 *= 6W (6V only)*
M10 *= 10W (6V only)*
M12 *= 12W (12V or 24V)*
M20 *= 20W (12V or 24V)*
M35 *= 35W (12V or 24V)*
M50 *= 50W (12V or 24V)*

Color
WH *= White*
BK *= Black*
CH *= Chrome*
BN *= Brushed Nickel*
PB *= Polished Brass*

Voltage
6 *= 6V*
12 *= 12V*
24 *= 24V*

Remote Fixtures

Surface-Mounted Remote Series

ELF2/ELF2D

Description: Single or double PAR18 size indoor lighting heads with fully adjustable swivel; all thermoplastic construction

Finish: Mist-White (-M), Black (-B)

Mounting: Surface (wall or ceiling) direct 4" octagonal or single-gang box

Dimensions: 5" diameter base, 5⁹⁄₁₆" height (single head)

Lamps: Wedge base incandescent, bi-pin halogen

Volts: 6, 12 or 24 volts

Maximum Watts: 18 watts

ELF2	/		-		
Remote Fixture Model No. Single Head		Lamp Suffix		Color	Voltage

ELF2

ELF2D	/		-		
Remote Fixture Model No. Double Head		Lamp Suffix		Color	Voltage

ELF2D

Wattage doubles for "D" 2-lamp version.

ELF3/ELF3D

Description: Single or double MR16 size indoor lighting heads with fully adjustable swivel; all thermoplastic construction

Finish: Mist White (-M), Black (-B)

Mounting: Direct to 4" octagonal electrical box

Dimensions: 5" diameter base, 5⅛" height (single head)

Lamps: MR16

Volts: 6 or 12 volts

Maximum Watts: 20 watts

ELF3	/		-		
Remote Fixture Model No. Single Head		Lamp Suffix		Color	Voltage

ELF3D	/		-		
Remote Fixture Model No. Double Head		Lamp Suffix		Color	Voltage

ELF3 *ELF3D*

Wattage doubles for "D" 2-lamp version.

ELF603

Description: Surface rectangular fixture with diffusion lens and welded steel housing

Finish: White baked enamel

Mounting: Surface (wall or ceiling); knockouts provided on two sides and back

Dimensions: Trim ring: 8¼" x 4½" x 3"; Back box: 6½" x 3" x 2⅝"

Lamps: Double contact bayonet base

Volts: 6, 12, 24, 36 or 120 volts

Maximum Watts: 18 watts

ELF603	/		-	
Remote Fixture Model No. Single Head		Lamp Suffix		Voltage

ELF603

ELF622/ELF622D

Description: Single or double PAR36 size indoor lighting heads with fully adjustable swivel to 358°; all aluminum construction.

Finish: Satin Aluminum (Blank), Mist-White (-M), Black (-B) or Chrome (-CH)

Mounting: Direct to 4" octagonal electrical box

Dimensions: Single head: 5⅛" diameter base, 8½" height; Double head: 5" diameter base, 6½" height; ELF622: 2½" x 4¼" mounting plate; ELF622D: 6⁷⁄₁₆" x 4½" mounting plate

Lamps: Double contact bayonet base, wedge base incandescent, bi-pin halogen, PAR36 sealed beam

Volts: 6, 12, 24, 36 or 120 volts

Maximum Watts: 25 watts (10 watts for 120V)

ELF622	/		-		
Remote Fixture Model No. Single Head		Lamp Suffix		Color	Voltage

ELF622

ELF622D	/		-		
Remote Fixture Model No. Double Head		Lamp Suffix		Color	Voltage

ELF622D

Wattage doubles for "D" 2-lamp version.

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Remote Fixtures

ELF623/ELF623D

Description: Single adjustable decorative lighting head; all thermoplastic construction

Finish: Mist-White (-M), Black (-B)

Mounting: Direct to 4" octagonal or single-gang box round mounting canopy standard

Lamps: Wedge base incandescent, bi-pin halogen

Volts: 6 or 12 volts

Maximum Watts: 18 watts per head

ELF623	/		-		
Remote Fixture Model No. Single Head		Lamp Suffix		Color	Voltage

ELF623

ELF623D	/		-		
Remote Fixture Model No. Double Head		Lamp Suffix		Color	Voltage

ELF623D

Wattage doubles for "D" 2-lamp version.

ELF644/ELF644D

Description: Remote SQ SQUARE-LITE to match SQ, SQ-D Series shown on **page I-92**; constructed from high-impact, mar-resistant thermoplastic with plated steel reflector and prismatic acrylic lens

Finish: Back box: Black satin; Front case: White

Mounting: Available for surface, semi-recessed (order SQR kit) or fully recessed (order FSQR kit) mounting; fully recesses into T-bar or exposed Z-spline ceilings; supporting bars or rods supplied by others

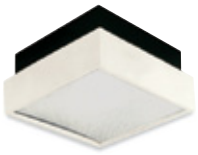
Dimensions: 9" x 9" x 4"

Lamps: Wedge base incandescent, bi-pin halogen

Volts: 6 or 12 volts

Maximum Watts: 14 watts per lamp

ELF644	/		-	
Remote Fixture Model No. Single Head		Lamp Suffix		Voltage



ELF644

ELF644D	/		-	
Remote Fixture Model No. Double Head		Lamp Suffix		Voltage

ELF644D

Wattage doubles for "D" 2-lamp version.

ELF645/ELF645D/ELF645T

Description: Single, double or triple PAR36 size lighting heads with fully adjustable swivel all thermoplastic construction

Finish: Mist-White (-M), Gray (-G) or Black (-B)

Mounting: Standard with round plate for mounting directly to 4" outlet box (4-gang plate for ELF645D optional)

Lamps: Double contact bayonet base, wedge base incandescent, bi-pin halogen, PAR36 sealed beam

Volts: 6, 12, 24, 36 or 120 volts

Maximum Watts: 25 watts per head

ELF645	/		-	
Remote Fixture Model No. Single Head		Lamp Suffix		Voltage

ELF645

ELF645D	/		-	
Remote Fixture Model No. Double Head		Lamp Suffix		Voltage

ELF645D

ELF645T	/		-	
Remote Fixture Model No. Triple Head		Lamp Suffix		Voltage

Wattage doubles for "D" 2-lamp version and triples for "T" 3-lamp version.

ELF648/ELF648D

Description: Single or double miniature cylinder with satin aluminum housing and mounting plate and fully adjustable chrome swivel; mirror finished reflector with prismatic lens ensures a wide-beam with even light distribution

Finish: White (-M), Black (-B)

Mounting: Direct to 4" octagonal electrical box

Lamps: Bi-pin halogen

Volts: 6 or 12 volts

Maximum Watts: 20 watts per head

ELF648	/		-		
Remote Fixture Model No. Single Head		Lamp Suffix		Color	Voltage

ELF648

ELF648D	/		-		
Remote Fixture Model No. Double Head		Lamp Suffix		Color	Voltage

ELF648D

Wattage doubles for "D" 2-lamp version.

Remote Fixtures

Recessed Mounted Remote Series

ELF603

Description: Recessed rectangular fixture with diffusion lens and welded steel housing

Finish: White baked enamel

Mounting: Recessed (wall or ceiling); knockouts provided on two sides and back; adjustable mounting clips provided

Dimensions: Trim ring: 8¼" x 4½";
Back box: 6½" x 3" x 2⅝"

Lamps: Double contact bayonet base

Volts: 6, 12, 24, 32 or 120 volts

ELF604

ELF604	/		-	
Remote Fixture Model No. Single Head		Lamp Suffix		Voltage

ELF605M/ELF605P

Description: Recessed round gimbal fixture with welded steel housing and plastic (ELF605P) or metal (ELF605M) trim; lamp has a horizontal rotation of 358° and vertical angle adjustable to 42°

Finish: Metal Trim: White (standard), Chrome (-CH) or Black (-B);
Plastic Trim: White (standard)

Mounting: Recessed (wall or ceiling); plaster frame and standard 4" outlet box provided

Dimensions: Trim ring: 8" diameter; Back box: 5¼" x 4½";
Plaster ring: 9" square (furnished standard)

Lamps: Wedge base incandescent, bi-pin halogen, PAR36 sealed beam

Volts: 6, 12, 24 or 120 volts

Maximum Watts: 25 watts; 6 watts (120V) low voltage

ELF605P

ELF605M

ELF605P	/		-		
Remote Fixture Model No. Metal Trim		Lamp Suffix		Color	Voltage

ELF605M	/		-		
Remote Fixture Model No. Plastic Trim		Lamp Suffix		Color	Voltage

ELF644-FR/ELF644D-FR

Description: Fully recessed metal decorator square with prismatic diffusing lens and metal reflector

Finish: Off-white baked enamel

Mounting: Recessed (wall or ceiling)

Dimensions: Trim plate: 10⅝" x 10⅝";
Back Box: 8¾" x 8¾" x 3¼"

Lamps: Wedge base incandescent, bi-pin halogen

Volts: 6 or 12 volts

Maximum Watts: 6 volts = 10 watts;
12 volts = 8 watts

ELF644-FR, ELF644D-FR
Wattage doubles for "D" 2-lamp version.

ELF644D-FR	/		-	
Remote Fixture Model No. Double Lamp		Lamp Suffix	Color	Voltage

ELF644-FR	/		-	
Remote Fixture Model No. Single Lamp		Lamp Suffix	Color	Voltage

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Remote Fixtures

Weatherproof and Class 1 Division 2 Remote Series

Weatherproof

ELF647/ELF647D

ELF647

ELF647D

Description: NEMA classified single or double PAR36 size lighting heads with fully adjustable swivel, all thermoplastic construction and stainless steel screws; standard with round aluminum plate for mounting directly to 4" outlet box; fixtures are rain and dust-tight as well as corrosion resistant

Finish: Mist-White (-M), Gray (-G), Black (-B)

Mounting: Standard with round plate for mounting directly to 4" outlet box

Dimensions: Trim ring: 8" diameter; Back box: 5¼" x 4½"; Plaster ring: 9" square (furnished standard)

Lamps: Double contact bayonet base, wedge base incandescent, bi-pin halogen, PAR36 sealed beam

Volts: 6 or 12 volts DC

Maximum Watts: 25 watts per head

ELF647	/		-			ELF647D	/		-		
Remote Fixture Model No. Single Lamp		Lamp Suffix		Color	Voltage	Remote Fixture Model No. Double Lamp		Lamp Suffix		Color	Voltage

Class I Division 2, Groups A, B, C and D

ELF644-FR/ELF644D-FR

ELF647C

ELF647DC

Description: Single or double lighting heads with fully adjustable swivel, with gasketed aluminum canopy and junction box.

Finish: Black (-B), Gray (standard)

Mounting: Standard with round plate for mounting directly to 4" outlet box

Lamps: Wedge base incandescent, bi-pin halogen, PAR36 sealed beam

Volts: 6 or 12 volts

Maximum Watts: 12 watts per head

ELF647C	/		-			ELF647CD	/		-		
Remote Fixture Model No. Single Lamp		Lamp Suffix		Color	Voltage	Remote Fixture Model No. Double Lamp		Lamp Suffix		Color	Voltage

Accessories

Lamp Data

How to use this chart

Use it when ordering remote lighting fixtures, non-standard lamps or replacement lamps. When ordering non-standard lamps or lamps for remote fixtures, select lamps from those listed under the battery voltage of the unit or system powering the lamp.

Example:

For a remote fixture powered by a 12-volt unit, only those lamps listed under 12 volts in the lamp chart may be used.

BE SURE TOTAL LOAD DOES NOT EXCEED THE 90-MINUTE WATTAGE CAPACITY OF THE BATTERY.

For unit equipment

Replace standard lamp suffix with non-standard lamp suffix.

Example:

Model 2SN2/L25 comes standard with 6-volt, 25-watt incandescent lamps. To order with 6-volt, 20-watt halogen lamps, the appropriate model number would be 2SN2/LH8.

For replacement lamps

Order by replacement number.

For remote fixtures

Include complete lamp suffix as suffix to model number.

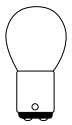
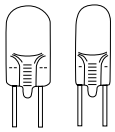
Example:

ELF645 / **L9 6**

Remote Fixture Model No. — **Lamp Suffix**

Complete Lamp Suffix must be stated *(which includes voltage designation).*

Incandescent and Halogen Lamps

LAMP TYPE	VOLTAGE	WATTS	LAMP SUFFIX FOR UNITS	LAMP SUFFIX ADD VOLTS FOR REMOTE FIXTURE	REPLACEMENT NO.	LAMP NO.	BULB TYPE	LUMEN RATING	CENTER-BEAM CANDLE POWER (CBCP)
Double Contact Bayonet Base Incandescent  S-8	6	13	L13	6	**570.0020**	**88**	S-8	188	15
	12	6	L6	12	**570.0068**	**90**	S-8	75	6
		9	L9		**570.0011**	**138**		126	10
		13	L13		**570.0022**	**94**		188	15
		25	L25		**570.0031**	**1076**		402	32
	24	12	L14	24	**570.0059**	**306**	S-8	189	15
		25	L28		**570.0061**	**1638**		402	32
	32	6	L6	32	**570.0069**	**1224**	C-6	48	4
		23.7	L25		**570.0084**	**1054**	C-DCB	403	32
	120	6	L6	120	**570.0062**	**6S6**	S-6	41	3
		10	L10		**570.0063**	**10C7**	C-7	40	3
Bi-Pin Halogen Lamps  T-2¾" T-2¼"	6	6	LH4	6	**580.0012**	**784**	T-2¼	113	9
		8	LH5		**580.0013**	**785**		163	13
		10	LH7		**580.0017**	**787**		201	16
		12	LH6		**580.0011**	**786**		239	19
		20	LH8		**580.0022**	**788**		402	32
	12	8	LH8	12	**580.0014**	**774**	T-2¼	163	13
		12	LH3		**580.0015**	**783**		276	22
		14	LH9		**580.0016**	**789**	T-2¾	302	24
		20	LH2		**580.0027**	**782**		314	25
Wedge Base Incandescent  T-5	6	5.4	L5	6	**570.0012**	**939**	T-5	68	5.4
		7.2	L7		**570.0026**	**927**		100	8
		9	L9		**570.0016**	**908**		150	12
	12	9	L9	12	**570.0025**	**915**	T-5	138	11
		12	L12		**570.0028**	**912**		150	12
		18	L18		**570.0029**	**921**		264	21
	24	9	L9	24	**570.0045**	**EMS2209W**	T-5	113	9
		18	L18		**570.0046**	**EMS2218W**		239	19

Exit Lamps

LAMP TYPE	VOLTAGE	WATTS	LAMP SUFFIX	REPLACEMENT NO.	LAMP NO.	BULB TYPE	LUMEN RATING	CENTER-BEAM CANDLE POWER (CBCP)
Incandescent Lamps for Exit Signs (hazardous location applications)	6	15	XX6	**580.0086**	**JC6V-15W2KG4**	Bi-Pin G4	210	17
	12	25	XX12	**570.0071**	**13769**	A19	375	30
	24	25	XX24	**570.0118**	**24227-1**	A19	345	27
	120	25	AC	**570.0136**	**97478**	A19	215	17

LAMP TYPE	VOLTAGE	WATTS	REPLACEMENT NO.	LAMP NO.	BASE TYPE	LUMEN RATING	CENTER-BEAM CANDLE POWER (CBCP)
Exit Signs, 120VAC Incandescent	145	15	**570.0013**	**15T6145**	Candelabra Screw Base	150	12
Exit Signs, 120VAC Incandescent	120	20	**570.0024**	**20T61/2**	Intermediate Screw Base	90	7
Exit Signs, 120VAC Incandescent	145	15	**570.0035**	**15T6**	Intermediate Screw E17	150	12
Exit Signs, 120VAC Fluorescent	120	7	**595.0010**	**PL7-T4**	G23	330	26

Lumen rating and candle power values are only for general reference. The data was obtained from the manufacturer's catalogs, calculations or third-party laboratory measurements. Actual performance in the field may vary.

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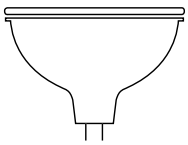
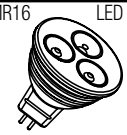
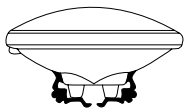
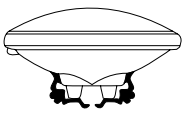
Accessories

MR16 Lamps

LAMP TYPE	VOLTAGE	WATTS	LAMP SUFFIX FOR UNITS	LAMP SUFFIX ADD VOLT FOR REMOTE FIXTURE	REPLACEMENT NO.	BULB TYPE	LUMEN RATING	CENTER-BEAM CANDLE POWER (CBCP)	BEAM ANGLE (DEGREES)
MR16 Halogen Lamps 	6	5	M 5		**580.0072**		34	60	36
		6	M 6	6	**580.0074**	MR16	40	140	24
		10	M 10		**580.0079**		74	160	36
	12	10	M10		**580.0099**		84	190	36
		12	M 12		**580.0080**		80	300	36
		20	M 20		**580.0064**		150	600	36
		20-A	M 20		**580.0075**		225	800	24
		20-H	MH 20		**580.0068**		400	1000	36
		35	M 35	12	**580.0083**	MR16	430	3700	24
		35-H	MH 35		**580.0090**		830	2200	36
		37-H	MH31		**580.0088**		900	2000	40
		50	M 50		**580.0076**		700	1300	38
		50-H	MH 50		**580.0089**		1460	2600	40
	24	12	M 12		**580.0070**		82	550	36
		20	M 20		**580.0077**		240	700	24
		20-A	MH20	24	**580.0094**	MR16	220	600	28
		35	M 35		**580.0084**		235	1100	24
		50	M 50		**580.0078**		670	1400	38
	120	20	M20		**580.0065**		100	230	36
		35	M35	120	**580.0066**	MR16	230	500	36
		50	M50		**580.0067**		460	1000	36
MR16 LED Lamps 	12	5	L5	12	**580.0063***	MR16	42	260	24
		4	L4		**580.0093**	MR16	173	380	36

** Discontinued; replaced by 580.0093.*

PAR36 Sealed Beam Lamps

LAMP TYPE	VOLTAGE	WATTS	LAMP SUFFIX	REPLACEMENT NO.	LAMP NO.	BULB TYPE	LUMEN RATING	CENTER-BEAM CANDLE POWER (CBCP)
Sealed Beam Halogen  PAR36	6	6	H7556	**550.0022**	**H7556**	PAR36	107	400
		8	H7551	**550.0036**	**H7551**	PAR36	155	550
		10	H7552	**550.0037**	**H7552**	PAR36	190	650
		12	H7553	**550.0019**	**H7553**	PAR36	225	850
		20	H7554	**550.0021**	**H7554**	PAR36	380	1,400
	12	8	H7555	**550.0024**	**H7555**	PAR36	160	550
		12	H7557	**550.0025**	**H7557**	PAR36	230	850
		37	H7616	**550.0047**	**H7616**	PAR36	700	70,000
		50	H7614	**550.0012**	**H7614**	PAR36	950	2,000
Sealed Beam Incandescent  PAR36	6	8	7613	**550.0018**	**7613**	PAR36	130	400
		12	4042	**550.0030**	**4042**	PAR36	170	1,100
		18	4014	**550.0016**	**4014**	PAR36	250	1,500
		25	4510	**550.0017**	**4510**	PAR36	350	800
		30	4515	**550.0035**	**4515**	PAR36	420	5,500
	12	12	4044	**550.0026**	**4044**	PAR36	190	1,110
		18	4414	**550.0027**	**4414**	PAR36	210	1,500
		25	4446	**550.0023**	**4446**	PAR36	395	400
		30	4416	**550.0034**	**4416**	PAR36	430	35,000
		25	25 WFL	**550.0028**	**25WFL**	PAR36	360	360
		25	25 VWFL	**550.0050**	**25VWFL**	PAR36	160	160
		50	50 NSP	**550.0043**	**50NSP**	PAR36	11,000	11,000
		50	50 WFL	**550.0029**	**50WFL**	PAR36	900	900

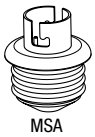
MSA Incandescent Lamp Adapter

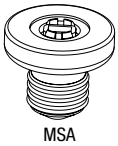
for HIT, DCBB or bi-pin halogen lamps

DC lamp plus adapter for medium Edison screw base socket. This device converts any incandescent fixture into an emergency fixture.

Note: *Lumen figures based on information supplied by lamp manufacturers, Lamp drawings shown are for shape comparison only, not actual size.*


MSA Bi-Pin


MSA Double Contact


MSA Wedge Base

Catalog Numbering System

MSA	-	LH5
Product Code		Lamp Symbol

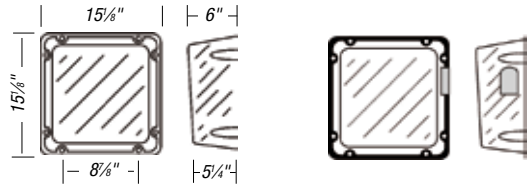
Accessories

Unit Accessories

Catalog Number VRC or VRC-4X (NEMA 4X)

Application

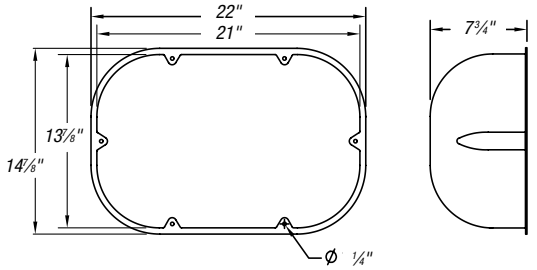
- DM3, DM6, DM7 Series with top-mounted heads
- SQ, SQ-D Series, all mountings
- X4, X2 or X3 Series LED, incandescent (wall mounted) AC and AC/DC or self-powered exit signs with no mounted heads
- XQ Series LED (wall mounted) AC and AC/DC or self-powered
- XLD, XLED Series LED (wall mounted)



Catalog Number CPS or CPS-4X (NEMA 4X)

Application

- MG Series (small cabinet) top- or front-mounted heads
- LCA-2MRS, LCA-2SQ, CA-2
- DM3, DM6, DM7 Series with top- or side-mounted heads



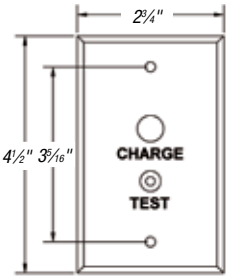
Remote Test Switch

Make testing your ceiling-mounted equipment easier with the remote test switch. Compatible with 120 or 277VAC circuits, the remote test switch will interrupt the line voltage to your equipment by means of a momentary push-button switch. AC On/Charge status indicator lamp ensures that power is going to your emergency lighting.

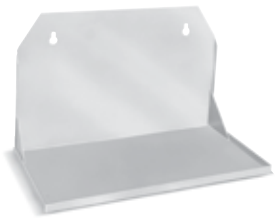
How To Order

Remote Test Switch (chrome).....**PSW**

Remote Test Switch (plastic).....**PSW1**



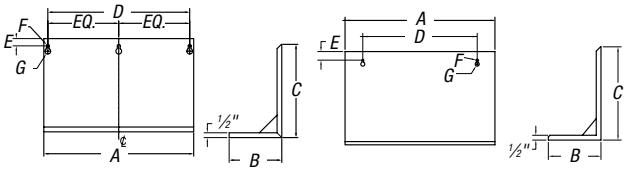
Mounting Platforms



- 14-gauge steel
- Corrosion-resistant undercoat
- Oven-baked finish
- ½" retaining lip on three sides
- Keyhole slots for easy mounting

MODEL	DIMENSIONS (INCHES)						
	A	B	C	D	E	F	G
MP-PQB (MIST)	17	7¾	12¼	16	¾	5⁄16	⅝
MP-A (GRAY)	17	7¾	12¼	16	¾	5⁄16	⅝
MP-PQA (MIST)	16⅜	5¾	10¼	12½	⅞	3⁄16	7⁄16
MP12	27½	7¾	12¼	16	1⅝	5⁄32	5⁄16

Dimensions are approximate and subject to change.



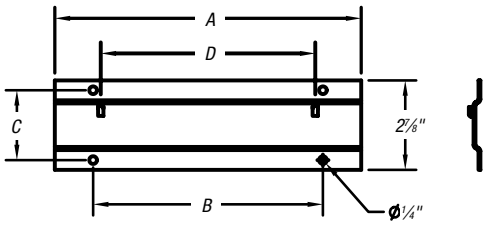
MP-PQB MP-A MP-PQA MP12

Mounting Brackets

- 16-gauge steel
- Corrosion-resistant undercoat
- Oven-baked finish
- Supplied with rubber stand-offs for unit and machine screws to secure unit to bracket

MODEL	DIMENSIONS (INCHES)			
	A	B	C	D
MB-A	10	7¾	2³⁄₁₆	7
MB-B	14¼	11¾	2³⁄₁₆	12⅝

Dimensions are approximate and subject to change.



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Mounting Plate Series

Specify mounting plate designation as a suffix to fixture-type model number.
Plates ordered separately; specify plate designation and fixture type.

230.1238 and 230.1239

- Single, double or triple round
- Thermoplastic construction
- Mounting plates shipped with two hole plugs
- Mist-white or black finish only
- Mounts directly to 4" octagonal box

Dimensions: 5" diameter, slotted mounting holes;
3 to 3 3/16" mounting center

*Mist-White — **230.1238***
*Mist-White Hole Plug — **230.1204***

*Black — **230.1239***
*Black Hole Plug — **230.1205***

430.0765 and 430.0766

- Single or double round
- Aluminum construction
- Mist-white or off-white finish
- Black finish optional
- Mounts directly to 4" octagonal box

Dimensions: 5 1/4", diameter 3 7/16" mounting center

Standard: ELF648, ELF648D

*Mist-White Single — **430.0765***

*Off-White Double — **430.0766***

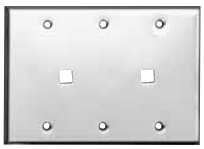
450.0129, 450.0397, 450.0398 and 450.0398

- Single, double or triple rectangular
- Single-, triple or 4-gang steel construction
- Chrome-plated finish only
- Mounts directly to standard outlet box

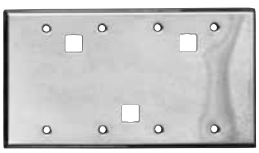
Dimensions: Single: 2 3/4" x 4 1/2" (for 1 fixtures)
3-gang: 6 7/16" x 4 1/2" (for 2 fixtures)
4-gang: 8 3/8" x 4 1/2" (for 2 or 3 fixtures)
3 5/16" mounting centers, all types

Standard: ELF622, ELF622D, ELF622T, ELF645T

***450.0129** — No Square Hole*
***450.1151** — 7/16" Square Hole*
***450.0194** — 1/2" Square Hole*



***450.0397** — No Square Hole*
***450.1152** — 7/16" Square Hole*
***450.1153** — 1/2" Square Hole*



***450.0398** — No Square Hole*
***450.1154** — 7/16" Square Hole*
***450.1155** — 1/2" Square Hole*

330.7583, 33.7577, 330.7584 and 330.7578

- Single or double round
- Die-cast aluminum construction
- Gasketed weatherproof
- Mist-white or black
- Satin enamel finish
- Mounts directly to 4" octagonal box

Dimensions: 4 1/8" diameter, 3 9/16" mounting center

Standard: ELF647, ELF647D

*Off-White Single — **330.7583***

*Black Single — **330.7577***

*Off-White Double — **330.7584***

*Black Double — **330.7578***

*Gasket — **245.0100***

12804

- Single rectangular
- Die-cast aluminum construction
- Gasketed weatherproof
- Silver gray enamel finish only
- Mounts directly to standard outlet box

Dimensions: 4 5/8" x 2 7/8", 3 1/4" mounting center

12804

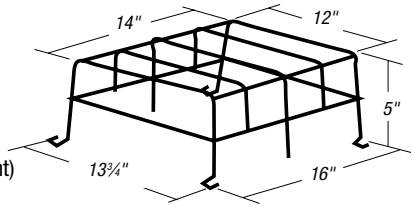
Accessories

Wire Guards

Catalog Number WG1-L

Application

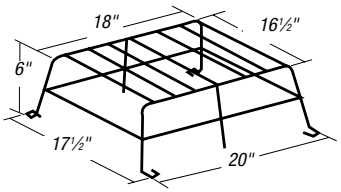
- Series DM and DS (top-mounted heads), SQ and SQ-D (semi recessed) and ELF644 (surface mount)
- MG Series



Catalog Number WG2-L

Application

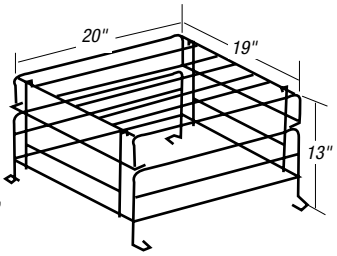
- Series PG and P12G, PN and P12N (A cabinet), MG, X2 and X3 (wall mount, self-powered, no mounted head) and XLD (wall mount)



Catalog Number WG3-L

Application

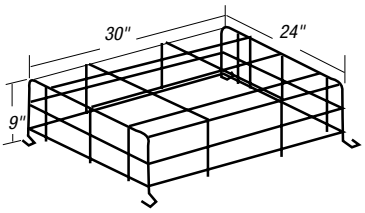
- Series PQ, P12Q, P12N2 (B cabinet)
- Series SL, SN, S12E4 (C cabinet)
- Series EL, E12L, ECN, E12CN, ENN and E12NN
- Series FG and F12G



Catalog Number WG4-L

Application

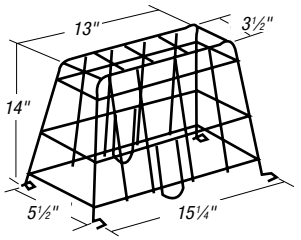
- Series DM and DS (side-mounted heads PAR36)
- Series S12E5, S12E6, S12L, S12N, S24E and S24N
- Series WP



Catalog Number WG5-L

Application

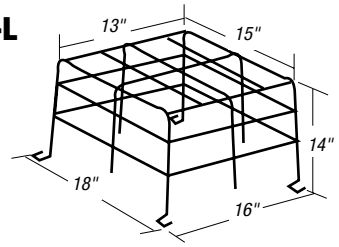
- Series XLD (AC-only ceiling and end mount)
- Series XQ (ceiling mount), X2, X3 (ceiling and end-mount) XT (ceiling mount) and X4 (ceiling or end mount)
- Series QLXN500 (exit only-ceiling or end mount)
- Series GRAN (ceiling mount) and GX (ceiling mount)



Catalog Number WG6-L

Application

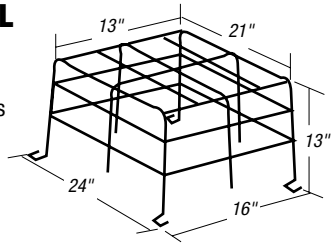
- Series X2 and X3 (wall mount, self powered with front-mounted heads)
- Series QLXN500R-2MR (combo wall mount)



Catalog Number WG7-L

Application

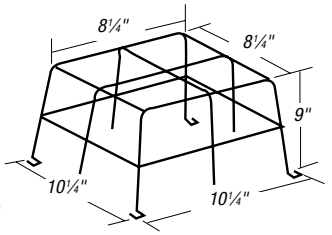
- Series ELF648D Remote Fixtures (double heads only)



Catalog Number WG8-L

Application

- Series ELF2, 2D and 2T (single head)
- Series ELF606, 622, 622D and 622T
- Series 645, 645D, 645T, 647, 647D and 648 (single head only)



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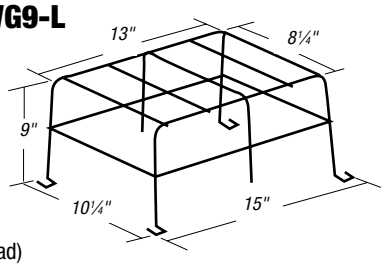
Accessories

Catalog Number WG9-L

Application

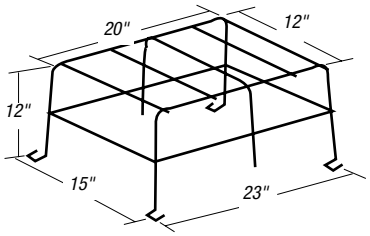
- Series ELF2 and 2D (double head)
- Series ELF622, 622D and 622T
- Series 645, 645D, 645T, 648 and 648D (double head)



Catalog Number WG10-L

Application

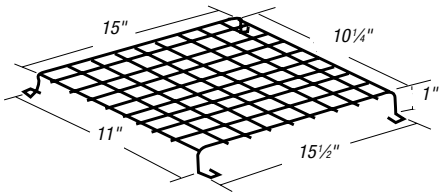
- Series DM and DS (side-mounted heads, PAR18)
- Series LCA-SQ, MG and QLXN500R-SQ (heads in any position)



Catalog Number WG11-L

Application

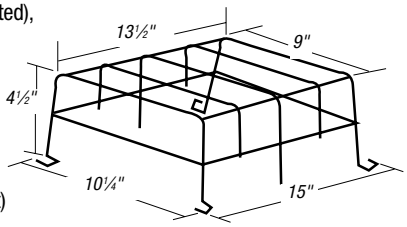
- Series 605P1
- Series SQ and SQ-D (fully recessed)
- Series ELF605 and ELF644FR



Catalog Number WG12-L

Application

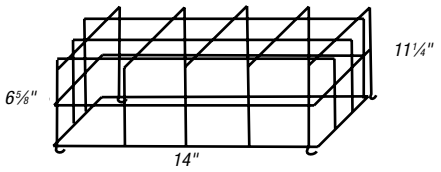
- Series XLD (AC only, wall mounted), XQ (wall mounted), X2, X3 (AC only, wall mount), XT (wall mount), X4 (LED or incandescent wall mount)
- Series ELF604, ELF603
- Series GRAN (wall mount)
- Series GX (wall mount)
- Series QLX500 (wall mount)



Catalog Number WG13-L

Application

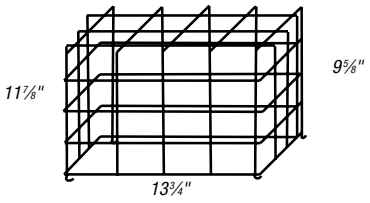
- Series IC-2, ICR-2 (remote)
- Series XLD (self powered, wall mount)
- Series LCA-2MR



Catalog Number WG14-L

Application

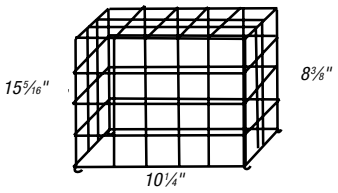
- Series XLD (self powered, ceiling mount)



Catalog Number WG15-L

Application

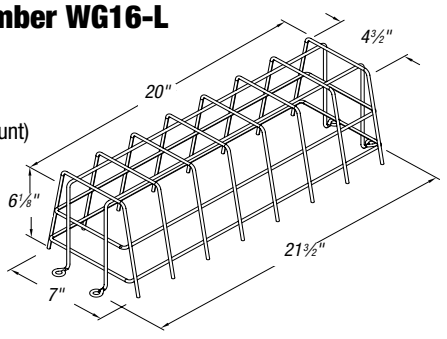
- Series XT (end mount), XLD (self-powered, end mount), XQ (end mount)
- Series GRAN (end mount)
- Series GX (end mount)
- Series QLX500 (end mount)



Catalog Number WG16-L

Application

- Series Cavalier (CA-2, CA-3 mount)



Wire Size Guide

Determining Wire Size

The following information is provided to assist in designing proper emergency lighting systems effectively and economically by using the smallest permissible wire size for load circuits. When remote lighting fixtures and/or exit signs are connected to emergency lighting units, circuit runs must be of sufficient size to maintain a proper operating voltage to all lamps. The National Electrical Code® limits voltage to drop to a maximum of 5% of nominal. The table below gives the maximum length or wire run based onsystem voltage, wire gauge and total wattage on the run. To determine the maximum length of a wire run not listed, divide the value of the load in watts into the constant listed at the bottom of each row. Example, the maximum wire run for #10 wire on a 12-volt system, with a 54-watt load, is 3397 ÷ 54, or 62 feet.

Conversely, to determine the maximum load on a run of known length, divide the length into the constant.

Example, a 36-foot run of #12 wire on a 6-volt system can be loaded to 534 ÷ 36, or 14 watts; on #10 wire, 23 watts.

Wiring Distance in Feet (Maximum Voltage Drop 5%)

TOTAL WATTS ON WIRE RUN	6-VOLT WIRE SIZE				12-VOLT WIRE SIZE					24-VOLT WIRE SIZE			
	#12	#10	#8	#6	#12	#10	#8	#6	#4	#12	#10	#8	#6
6	89	141	225	357	356	566	900	1431	+	1425	+	+	+
8	66	106	168	268	267	424	675	1073	1707	1068	1698	+	+
9	59	94	150	238	237	377	600	954	1517	949	1509	+	+
10	53	84	135	214	213	339	540	859	1366	854	1358	+	+
12	44	70	112	178	178	283	450	715	1138	712	1132	1801	+
16	33	53	84	134	133	212	337	536	853	534	849	1350	+
18	29	47	75	119	118	188	300	477	758	474	754	1200	1909
24	22	35	56	89	89	141	225	357	569	356	566	900	1431
25	21	33	54	85	85	135	216	343	546	341	543	864	1374
27	19	31	50	79	79	125	200	318	505	316	503	800	1272
30	17	28	45	71	71	113	180	286	455	284	452	720	1145
36	14	23	37	59	59	94	150	238	379	237	377	600	954
42	12	20	32	51	50	80	128	204	325	203	323	514	818
45	11	18	30	47	47	75	120	190	303	189	301	480	763
48	11	17	28	44	44	70	112	178	284	178	283	450	715
50	10	16	27	42	42	67	108	171	273	170	271	432	687
75	7	11	18	28	28	45	72	114	182	113	181	288	458
100	5	8	13	21	21	33	54	85	136	85	135	216	343
150	-	5	9	14	14	22	36	57	91	56	90	144	229
200	-	-	6	10	10	16	27	42	68	42	67	108	171
250	-	-	5	8	8	13	21	34	54	34	54	86	137
300	-	-	-	7	7	11	18	28	45	28	45	72	114
400	-	-	-	5	5	8	13	21	34	21	33	54	85
500	-	-	-	-	-	6	10	17	27	17	27	43	68
Constant	534	849	1350	2148	2137	3397	5403	8590	13,660	8548	13,588	21,613	34,363

Longer Wire Runs

The wiring distances give the maximum length of a battery circuit, assuming that the entire load is concentrated at the end of the circuit. If loads are uniformly spaced along the circuit path (equal watts, equal distances), the lengths in the table may be increased, based on number of fixtures on a given circuit, by means of the chart and formula below.

NUMBER OF FIXTURES	2	3	4	5	6	N
MULTIPLY BY FEET	1.33	1.5	1.6	1.67	1.71	2N/(N+1)

For example, a 36-foot long, 6-volt circuit has (three) 9-watt heads spaced 12 feet apart. According to the wire run table, #8 wire must be used (at 50 feet for a 5% voltage drop) but, by multiplying the 31 feet for #10 wire by 1.5, a 46½ foot wire run is acceptable, so #10 wire may be used and still meet the 5% voltage drop limitation.

Note: *According to the National Electrical Code®, Article 720-Y, the smallest permissible wire size for systems under 50 volts is the #12AWG wire gauge.*

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Article 700 — Emergency Systems

A. General

700-1. Scope. The provisions of this article apply to the electrical safety of the installation, operation and maintenance of emergency systems consisting of circuits and equipment intended to supply, distribute and control electricity for illumination or power, or both, to required facilities when the normal electrical supply or system is interrupted. Emergency systems are those systems legally required and classed as emergency by municipal, state, federal or other codes, or by any governmental agency having jurisdiction. These systems are intended to automatically supply illumination or power, or both, to designated areas and equipment in the event of failure of the normal supply or in the event of accident to elements of a system intended to supply, distribute and control power and illumination essential for safety to human life.
(FPN No. 1): For further information regarding wiring and installation of emergency systems in health care facilities, see Article 517.
(FPN No. 2): For further information regarding performance and maintenance of emergency systems in health care facilities, see Standard for Health Care Facilities, NFPA 99-2005.
(FPN No. 3): Emergency systems are generally installed in places of assembly where artificial illumination is required for safe exiting and for panic control in buildings subject to occupancy by large numbers of persons, such as hotels, theaters, sports arenas, health care facilities and similar institutions. Emergency systems may also provide power for such functions as ventilation where essential to maintain life, fire detection and alarm systems, elevators, fire pumps, public safety communications systems, industrial processes where current interruption would produce serious life safety or health hazards and similar functions.
(FPN No. 4): For specification of locations where emergency lighting is considered essential to life safety, see Life Safety Code, NFPA 101®-2006.
(FPN No. 5): For further information regarding performance of emergency and standby power systems, see Standard for Emergency and Standby Power Systems, NFPA 110-2005.

700-2. Application of Other Articles. Except as modified by this article, all applicable articles of this Code shall apply.

700-3. Equipment Approval. All equipment shall be approved for use on emergency systems.

700-4. Tests and Maintenance.

(a) Conduct or Witness Test. The authority having jurisdiction shall conduct or witness a test of the complete system upon installation and periodically afterward.

(b) Tested Periodically. Systems shall be tested periodically on a schedule acceptable to the authority having jurisdiction to ensure the systems are maintained in proper operating condition.

(c) Battery Systems Maintenance. Where battery systems or unit equipment are involved, including batteries used for starting, control or ignition in auxiliary engines, the authority having jurisdiction shall require periodic maintenance.

(d) Written Record. A written record shall be kept of such tests and maintenance.

(e) Testing under Load. Means for testing all emergency lighting and power systems during maximum anticipated load conditions shall be provided. FPN: For testing and maintenance procedures of emergency power supply systems (EPSSs), see NFPA 110-2005, Standard for Emergency and Standby Power Systems.

700-5. Capacity.

(a) Capacity and Rating. An emergency system shall have adequate capacity and rating for all loads to be operated simultaneously. The emergency system equipment shall be suitable for the maximum available fault current at its terminals.

(b) Selective Load Pickup, Load Shedding and Peak Load Shaving. The alternate power source shall be permitted to supply emergency, legally required standby and optional standby system loads where the source has adequate capacity or where automatic selective load pickup and load shedding is provided as needed to ensure adequate power to (1) the emergency circuits; (2) the legally required standby circuits; and (3) the optional standby circuits, in that order of priority. The alternate power source shall be permitted to be used for peak load shaving, provided the above conditions are met. Peak load-shaving operation shall be permitted for satisfying the test requirement of Section 700-4(b), provided all other conditions of Section 700-4 are met. A portable or temporary alternate source shall be available whenever the emergency generator is out of service for major maintenance or repair.

700-6. Transfer Equipment.

(a) General. Transfer equipment, including automatic transfer switches, shall be automatic and identified for emergency use and approved by the authority having jurisdiction. Transfer equipment shall be designed and installed to prevent the inadvertent interconnection of normal and emergency sources of supply in any operation of the transfer equipment. Transfer equipment and electric power production systems installed to permit operation in parallel with the normal source shall meet the requirements of Article 705.

(b) Bypass Isolation Switches. Means shall be permitted to bypass and isolate the transfer equipment. Where bypass isolation switches are used, inadvertent parallel operation shall be avoided.

(c) Automatic Transfer Switches shall be electrically operated and mechanically held. Automatic transfer switches, rated 600VAC and below, shall be listed for emergency system use.

(d) Use. Transfer equipment shall supply only emergency loads.

700-7. Signals.

Audible and visual signal devices shall be provided, where practicable, for the following purposes described in 700.7(A) through (D).

(a) Derangement. To indicate derangement of the emergency source.

(b) Carrying Load. To indicate that the battery is carrying load.

(c) Not Functioning. To indicate that the battery charger is not functioning.

(d) Ground Fault. To indicate a ground fault in solidly grounded wye emergency systems of more than 150 volts to ground and circuit protective devices rated 1000 amperes or more.

National Electrical Code® *(continued)*

The sensor for the ground-fault signal devices shall be located at, or ahead of, the main system disconnecting means for the emergency source, and the maximum setting of the signal devices shall be for a ground-fault current of 1200 amperes. Instructions on the course of action to be taken in event of indicated ground fault shall be located at or near the sensor location.

(FPN): For signals for generator sets, see Standard for Emergency and Standby Power Systems, NFPA 110-2005.

700-8. Signs.

(a) Emergency Sources. A sign shall be placed at the service entrance equipment indicating type and location of on-site emergency power sources. Exception: A sign shall not be required for individual unit equipment as specified in Section 700-12(f).

(b) Grounding. Where the grounded circuit conductor connected to the emergency source is connected to a grounding electrode conductor at a location remote from the emergency source, there shall be a sign at the grounding location that shall identify all emergency and normal sources connected at that location.

B. Circuit Wiring

700-9. Wiring, Emergency System.

(a) Identification. All boxes and enclosures (including transfer switches, generators, and power panels) for emergency circuits shall be permanently marked so they will be readily identified as a component of an emergency circuit or system.

(b) Wiring. Unless otherwise permitted in (1) through (5), wiring from emergency source or emergency source distribution overcurrent protection to emergency loads shall be kept entirely independent of all other wiring and equipment. Wiring of two or more emergency circuits supplied from the same source shall be permitted in the same raceway, cable, box or cabinet.

(1) Wiring from the normal power source located in transfer equipment enclosures.

(2) Wiring supplied from two sources in exit or emergency luminaires

(3) Wiring from two sources in a common junction box, attached to exit or emergency luminaires.

(4) Wiring within a common junction box attached to unit equipment, containing only the branch circuit supplying the unit equipment and the emergency circuit supplied by the unit equipment.

(5) Wiring from an emergency source to supply any combination of emergency, legally required or optional loads in accordance with (a), (b), and (c):

(a) From separate vertical switchboard sections, with or without a common bus, or from individual disconnects mounted in separate enclosures.

(b) The common bus or separate sections of the switchboard or the individual enclosures shall be permitted to be supplied by single or multiple feeders without overcurrent protection at the source.

Exception to (5)(b): Overcurrent protection shall be permitted at the source or for the equipment, provided the overcurrent protection is selectively coordinated with the downstream overcurrent protection.

(c) Legally required and optional standby circuits shall not originate from the same vertical switchboard section, panelboard enclosure, or individual disconnect enclosure as emergency circuits.

(c) Wiring Design and Location. Emergency wiring circuits shall be designed and located to minimize the hazards that might cause failure due to flooding, fire, icing, vandalism and other adverse conditions.

(d) Fire Protection. Emergency systems shall meet the following additional requirements in 700.9 (D)(1) and (D)(2) in assembly occupancies for not less than 1000 persons or in buildings above 75 ft. (23 m) in height with any of the following occupancy classes: assembly, educational, residential, detention and correctional, business and mercantile.

(1) Feeder-circuit wiring shall meet one of the following conditions:

(1) Be installed in spaces or areas that are fully protected by an approved automatic fire-suppression system.

(2) Be a listed electrical circuit protective system with a minimum 1-hour fire rating. FPN: UL® guide information for electrical circuit protection systems (FHIT) contains information on proper installation requirements to maintain the fire rating.

(3) Be protected by a listed thermal barrier system for electrical system components.

(4) Be protected by a listed fire-rated assembly that has a minimum fire rating of 1 hour and contains only emergency wiring circuits.

(5) Be embedded in not less than 2 in. (50 mm) of concrete.

(6) Be a cable listed to maintain circuit integrity for not less than 1 hour when installed in accordance with the listing requirements.

(2) Feeder-Circuit Equipment. Equipment for feeder circuits (transfer switches, transformers, panel boards) shall be either located in spaces fully protected by approved automatic fire suppression systems (sprinklers, carbon dioxide systems, etc.) or in spaces with a 1-hour fire resistance rating. FPN: For the definition of occupancy class, see Section 6.1 of Life Safety Code, NFPA 101-2006.

(3) Generator Control Wiring. Control conductors installed between the transfer equipment and the emergency generator shall be kept entirely independent of all other wiring and shall meet the conditions of 700.9(D)(1).

C. Sources of Power

700-12. General Requirements.

Current supply shall be such that, in the event of failure of the normal supply to, or within, the building or group of buildings concerned, emergency lighting, emergency power or both shall be available within the time required for the application but not to exceed 10 seconds. The supply system for emergency purposes, in addition to the normal services to the building and meeting the general requirements of this section, shall be one or more of the types of systems described in 700.12(a) through (e) below. Unit equipment in accordance with Section 700.12(f) shall satisfy the applicable requirements of this article. In selecting an emergency source of power, consideration shall be given to the occupancy and the type of service to be rendered, whether of minimum duration, as for evacuation of a theater, or longer duration, as for supplying emergency power and lighting due to an indefinite period of current failure from trouble either inside or outside the building. Equipment shall be designed and located to minimize the hazards that might cause complete failure due to flooding, fires, icing and vandalism. Equipment for sources of power as described in Sections 700.12(a) through (e) where located within assembly occupancies for greater than 1000 persons or in buildings above 75 ft. (23 m) in height with any of the following occupancy classes: assembly, educational, residential, detention and correctional, business and mercantile, shall be installed either in spaces fully protected by approved automatic fire suppression systems (sprinklers, carbon dioxide systems and so forth), or in spaces with a 1-hour fire rating.

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FPN No. 1: For definition of occupancy class, see Section 4.1 of Life Safety Code, NFPA 101-2006.

FPN No. 2: Assignment of degree of reliability of the recognized emergency supply system depends on the careful evaluation of the variables at each particular installation.

(a) Storage Battery. Storage batteries used as source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for a period of 1.5 hours minimum, without the voltage applied to the load falling below 87.5 percent of normal. Batteries, whether of the acid or alkali type, shall be designed and constructed to meet the requirements of emergency service and shall be compatible with the charger for that particular installation. For a sealed battery, the container shall not be required to be transparent. However, for the lead acid battery that requires water additions, transparent or translucent jars shall be furnished. Automotive-type batteries shall not be used. An automatic battery charging means shall be provided.

(b) Generator Set.

(1) Prime Mover-Driven. For a generator set driven by a prime mover acceptable to the authority having jurisdiction and sized in accordance with Section 700-5. Means shall be provided for automatically starting the prime mover on failure of the normal service and for automatic transfer and operation of all required electrical circuits. A time-delay feature permitting a 15-minute setting shall be provided to avoid retransfer in case of short-time reestablishment of the normal source.

(2) Internal Combustion as Prime Movers. Where internal combustion engines are used as the prime mover, an on-site fuel supply shall be provided with an on-premise fuel supply sufficient for not less than 2 hours full-demand operation of the system. Where power is needed for the operation of the fuel transfer pumps to deliver fuel to a generator set dry tank, this pump shall be connected to the emergency power system.

(3) Dual Supplies. Prime movers shall not be solely dependent upon a public utility gas system for their fuel supply or municipal water supply for their cooling systems. Means shall be provided for automatically transferring from one fuel supply to another where dual fuel supplies are used. Exception: Where acceptable to the authority having jurisdiction, the use of other than on-site fuels shall be permitted where there is a low probability of a simultaneous failure of both the off-site fuel delivery system and power from the outside electrical utility company.

(4) Battery Power and Dampers. Where a storage battery is used for control or signal power, or as the means of starting the prime mover, it shall be suitable for the purpose and shall be equipped with an automatic charging means independent of the generator set. Where the battery charger is required for the operation of the generator set, it shall be connected to the emergency system. Where power is required for the operation of dampers used to ventilate the generator set, the dampers shall be connected to the emergency system.

(5) Auxiliary Power Supply. Generator sets that require more than 10 seconds to develop power shall be permitted as an auxiliary power supply to energize the emergency system until the generator can pick up the load.

(6) Outdoor Generator Sets. Where an outdoor housed generator set is equipped with a readily accessible disconnecting means located within sight of the building or structure supplied, an additional disconnecting means shall not be required where ungrounded conductors serve or pass through the building or structure.

(c) Uninterruptible Power Supplies. Uninterruptible power supplies used to provide power for emergency systems shall comply with the applicable provisions of Sections 700-12(a) and (b).

(d) Separate Service. Where approved by the authority having jurisdiction as suitable for use as an emergency source of power, an additional service shall be permitted. This service shall be in accordance with the applicable provisions of Article 230 and following additional requirements.
(1) Separate service drop or service lateral.
(2) Service conductors sufficiently remote electrically and physically from any other service conductors to minimize the possibility of simultaneous interruption of supply.

(e) Fuel Cell System. Fuel cell systems used as a source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for not less than 2 hours of full-demand operation. Installation of a fuel cell system shall meet the requirements of Parts II through VIII of Article 692. Where a single fuel cell system serves as the normal supply for the building or group of buildings concerned, it shall not serve as the sole source of power for the emergency standby system.

(f) Unit Equipment. Individual unit equipment for emergency illumination shall consist of (1) a rechargeable battery; (2) a battery charging means; (3) provisions for one or more lamps mounted on the equipment, or shall be permitted to have terminals for remote lamps, or both; and (4) a relaying device arranged to energize the lamps automatically upon failure of the supply to the unit equipment. The batteries shall be of suitable rating and capacity to supply and maintain at not less than 87½ percent of the nominal battery voltage for the total lamp load associated with the unit for a period of at least 1½ hours, or the unit equipment shall supply and maintain not less than 60 percent of the initial emergency illumination for a period of at least 1½ hours. Storage batteries, whether of the acid or alkali type, shall be designed and constructed to meet the requirements of emergency service. Unit equipment shall be permanently fixed in place (i.e., not portable) and shall have all wiring to each unit installed in accordance with the requirements of any of the wiring methods in Chapter 3. Flexible cord and plug connection shall be permitted, provided that the cord does not exceed 3 ft. (900mm) in length. The branch circuit feeding the unit equipment shall be the same branch circuit as that serving the normal lighting in the area and connected ahead of any local switches. The branch circuit that feeds unit equipment shall be clearly identified at the distribution panel. Emergency luminaires that obtain power from a unit equipment and are not part of the unit equipment shall be wired to the unit equipment as required by Section 700-9 and by one of the wiring methods of Chapter 3. Exception: In a separate and uninterrupted area supplied by a minimum of three normal lighting circuits, a separate branch circuit for unit equipment shall be permitted if it originates from the same panelboard as that of the normal lighting circuits and is provided with a lock-on feature.

National Electrical Code® *(continued)*

D. Emergency System Circuits for Lighting and Power

700-15. Loads on Emergency Branch Circuits. No appliances and no lamps, other than those specified as required for emergency use, shall be supplied by emergency lighting circuits.

700-16. Emergency Illumination. Emergency illumination shall include all required means of egress lighting, illuminated exit signs and all other lights specified as necessary to provide required illumination. Emergency lighting systems shall be designed and installed so that the failure of any individual lighting element, such as the burning out of a lamp, cannot leave in total darkness any space that requires emergency illumination. Where high-intensity discharge lighting such as high- and low-pressure sodium mercury vapor and metal halide is used as the sole source of normal illumination, the emergency lighting system shall be required to operate until normal illumination has been restored. Exception: Where alterative means that ensure the emergency lighting illumination level is maintained shall be permitted.

700-17. Circuits for Emergency Lighting. Branch circuits that supply emergency lighting shall be installed to provide service from a source complying with Section 700-12 when the normal supply for lighting is interrupted. Such installations shall provide either one of the following: (1) an emergency lighting supply, independent of the general lighting supply, with provisions for automatically transferring the emergency lights upon the event of failure of the general lighting system supply, or (2) two or more separate and complete systems with independent power supply, each system providing sufficient current for emergency lighting purposes. Unless both systems are used for regular lighting purposes and are both kept lighted, means shall be provided for automatically energizing either system upon failure of the other. Either or both systems shall be permitted to be a part of the general lighting system of the protected occupancy if circuits supplying lights for emergency illumination are installed in accordance with other sections of this article.

700-18. Circuits for Emergency Power. For branch circuits that supply equipment classed as emergency, there shall be an emergency supply source to which the load will be transferred automatically upon the failure of the normal supply.

E. Control—Emergency Lighting Circuits

700-20. Switch Requirements. The switch or switches installed in emergency lighting circuits shall be arranged so that only authorized persons will have control of emergency lighting. Exception No. 1: Where two or more single-throw switches are connected in parallel to control a single circuit, at least one of these switches shall be accessible only to authorized persons. Exception No. 2: Additional switches that act only to put emergency lights into operation but not disconnect them shall be permissible. Switches connected in series or 3- and 4-way switches shall not be used.

700-21. Switch Location. All manual switches for controlling emergency circuits shall be in locations convenient to authorized persons responsible for their actuation. In facilities covered by Articles 518 and 520, a switch for controlling emergency lighting systems shall be located in the lobby or at a place conveniently accessible thereto. In no case shall a control switch for emergency lighting be placed in a motion-picture projection booth or on a stage or platform. Exception: Where multiple switches are provided, one such switch shall be permitted in such locations where arranged so that it can energize the circuit only, but cannot de-energize the circuit.

700-22. Exterior Lights. Those lights on the exterior of a building that are not required for illumination when there is sufficient daylight shall be permitted to be controlled by an automatic light-actuated device.

700-23. Dimmer Systems. A dimmer system containing more than one dimmer and listed for use in emergency systems shall be permitted to be used as a control device for energizing emergency lighting circuits. Upon failure of normal power, the dimmer system shall be permitted to selectively energize only those branch circuits required to provide minimum emergency illumination. All branch circuits supplied by the dimmer system cabinet shall comply with the wiring methods of Article 700.

F. Overcurrent Protection

700-25. Accessibility. The branch-circuit overcurrent devices in emergency circuits shall be accessible to authorized persons only.

700-26. Ground-Fault Protection of Equipment. The alternate source for emergency systems shall not be required to have ground-fault protection of equipment with automatic disconnecting means. Ground-fault indication of the emergency source shall be provided per Section 700-7(d).

700-27. Coordination. Emergency system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices. Exception: Selective coordination shall not be required in (1) or (2): (1) Between transformer primary and secondary overcurrent protective devices, where only one overcurrent protective device or set of overcurrent protective device exits on the transformer secondary. (2) Between overcurrent protective device of the same size (ampere rating) in series.

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7.8 Illumination of Means of Egress.

7.8.1 General.

7.8.1.1 Illumination of means of egress shall be provided in accordance with Section 7.8 for every building and structure where required in Chapter 11 through Chapter 43. For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairs, aisles, corridors, ramps, escalators, walkways and exit passageways leading to a public way.

7.8.1.2 Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use, unless otherwise provided in 7.8.1.2.2.

7.8.1.2.1 Artificial lighting shall be employed at such locations and for such periods of time as are necessary to maintain the illumination to the minimum criteria values herein specified.

7.8.1.2.2 Automatic, motion sensor-type lighting switches shall be permitted within the means of egress. Provided that the switch controllers are equipped for fail-safe operation, the illumination timers are set for a minimum 15-minute duration, and the motion sensor is activated by any occupant movement in the area served by the lighting units.

7.8.1.3 The floors and other walking surfaces within an exit and within the portions of the exit access and exit discharge designated by 7.8.1.1 shall be illuminated as follows:
(1) During conditions of stair use, the minimum illumination for new stairs shall be at least 10 ft.-candle (108 lux), measured at the walking surfaces.
(2) The minimum illumination for floors and walking surfaces, other than new stairs during conditions of stair use, shall be to values of at least 1 ft-candle (10.8 lux), measured at the floor.
(3) In assembly occupancies, the illumination of the floors of exit access shall be at least 0.2 ft. candle (2.2 lux) during periods of performances or projections involving directed light.
(4) The minimum illumination requirements shall not apply where operations or processes require low lighting levels.

7.8.1.4 Required illumination shall be arranged so that the failure of any single lighting unit does not result in an illumination level of less than 0.2 ft-candle (2.2 lux) in any designated area.

7.8.1.5 The equipment or units installed to meet the requirements of Section 7.10 also shall be permitted to serve the function of illumination of means of egress, provided that all requirements of section 7.8 for such illumination are met.

7.8.2 Sources of Illumination.

7.8.2.1 Illumination of means of egress shall be from a source of considered reliable by the authority having jurisdiction.

7.8.2.2 Battery-operated electric lights and other types of portable lamps or lanterns shall not be used for primary illumination of means of egress. Battery-operated electric lights shall be permitted to be used as an emergency source to the extent permitted under Section 7.9.

7.9 Emergency Lighting.

7.9.1 General.

7.9.1.1 Emergency lighting facilities for means of egress shall be provided in accordance with Section 7.9 for the following:
(1) Buildings or structures where required in Chapter 11 through Chapter 43.
(2) Underground and limited access structures as addressed in Section 11.7.
(3) High-rise buildings as required by other sections of this Code.
(4) Doors equipped with delayed-egress locks.
(5) Stair shaft and vestibule of smokeproof enclosures, for which the following also apply:
(a) The stair shaft and vestibule shall be permitted to include a standby generator that is installed for the smokeproof enclosure mechanical ventilation equipment.
(b) The standby generator shall be permitted to be used for the stair shaft and vestibule emergency lighting power supply.
(c) New access-controlled egress doors in accordance with 7.2.1.6.2.

7.9.1.2 For the purposes of 7.9.1.1, exit access shall include only designated stairs, aisles, corridors, ramps, escalators and passageways leading to an exit. For the purposes of 7.9.1.1, exit discharge shall include only designated stairs, ramps, aisles, walkways and escalators leading to a public way.

7.9.1.3 Where maintenance of illumination depends on changing from one energy source to another, a delay of not more than 10 seconds shall be permitted.

7.9.2 Performance of System.

7.9.2.1* Emergency illumination shall be provided for not less than 1½ hours in the event of failure of normal lighting. Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point, not less than 0.1 ft.-candle (1.1 lux) measured along the path of egress at floor level. Illumination levels shall be permitted to decline to not less than an average of 0.6 ft.-candle (6.5 lux) and, at any point, not less than of 0.06 ft.-candle (0.65 lux) at the end of the 1½ hours. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

7.9.2.2 New emergency power systems for emergency lighting shall be at least Type 10, Class 1.5, Level 1, in accordance with NFPA 110, Standard for Emergency and Standby Power Systems.

7.9.2.3 The emergency lighting system shall be arranged to provide the required illumination automatically in the event of any of the following:
(1) Failure of public utility or other outside electrical power supply.
(2) Opening of a circuit breaker or fuse.
(3) Manual act(s), including accidental opening of a switch controlling normal lighting facilities.

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7.9.2.4 Emergency generators providing power to emergency lighting systems shall be installed, tested and maintained in accordance with NFPA 110, Standard for Emergency and Standby Power Systems. Stored electrical energy systems where required in this Code, other than battery systems for emergency luminaires in accordance with 7.9.2.5, shall be installed and tested in accordance with NFPA 111, Standard on Stored Electrical Energy Emergency and Standby Power Systems.

7.9.2.5 Unit equipment and battery systems for emergency luminaires shall be listed to ANSI/UL® 924, Standard for Emergency Lighting and Power Equipment.

7.9.2.6 Existing battery-operated emergency lights shall use only reliable types of rechargeable batteries provided with suitable facilities for maintaining them in properly charged condition. Batteries used in such lights or units shall be approved for their intended use and shall comply with NFPA 70, National Electrical Code®.

7.9.2.7 The emergency lighting system shall be either continuously in operation or shall be capable of repeated automatic operation without manual intervention.

7.9.3 Periodic Testing of Emergency Lighting Equipment.

7.9.3.1 Required emergency lighting systems shall be tested in accordance with one of the three options offered by 7.9.3.1.1, 7.9.3.1.2 or 7.9.3.1.3.

7.9.3.1.1 Testing of required emergency lighting systems shall be permitted to be conducted as follows:
(1) Functional testing shall be conducted monthly with a minimum of 3 weeks and a maximum of 5 weeks between tests, for not less than 30 seconds, except as otherwise permitted by 7.9.3.1.1(2).
(2) The test interval shall be permitted to be extended beyond 30 days with the approval of the authority having jurisdiction.
(3) Functional testing shall be conducted annually for a minimum of 1½ hours if the emergency lighting system is battery powered.
(4) The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.1 (1) and 7.9.3.1.1 (3).
(5) Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

7.9.3.1.2 Testing of required emergency lighting systems shall be permitted to be conducted as follows:
(1) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall be provided.
(2) Self-testing/self-diagnostic, battery-operated emergency lighting equipment shall automatically perform not less than once every 30 days a test for not less than 30 seconds and a diagnostic routine.
(3) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall indicate failures by a status indicator.
(4) A visual inspection shall be performed at intervals not exceeding 30 days.
(5) Functional testing shall be conducted annually for not less than 1½ hours.
(6) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall be fully operational for the duration of the 1½ hour test.
(7) Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

7.9.3.1.3 Testing of required emergency lighting systems shall be permitted to be conducted as follows:
(1) Computer-based, self-testing/self-diagnostic battery-operated emergency lighting equipment shall be provided.
(2) Not less than once every 30 days, emergency lighting equipment shall automatically perform a test with a duration of a minimum 30 seconds and a diagnostic routine.
(3) The emergency lighting equipment shall automatically perform annually a test for not less than 1½ hours.
(4) The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.3(2) and 7.9.3.1.3(3).
(5) The computer-based system shall be capable of providing a report of the history of tests and failures at all times.

7.10 Marking of Means of Egress.

7.10.1 General.

7.10.1.1 Where required. Means of egress shall be marked in accordance with section 7.10 where required in Chapter 11 through Chapter 43.

7.10.1.2 Exits.

7.10.1.2.1 Exits, other than main exterior exit doors that obviously and clearly are identifiable as exits, shall be marked by an approved sign that is readily visible from any direction of exit access.

7.10.1.2.2 Horizontal components of the egress path within an exit enclosure shall be marked by approved exit or directional exit signs where the continuation of the egress path is not obvious.

7.10.1.3 Exit Door Tactile Signage. Tactile signage shall be provided to meet the following criteria, unless otherwise provided in 7.10.1.4:
(1) Tactile signage shall be located at each exit door requiring an exit sign.
(2) Tactile signage shall read as follows: EXIT.
(3) Tactile signage shall comply with ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

7.10.1.4 Existing Exemption. The requirements of 7.10.1.3 shall not apply to existing buildings, provided that the occupancy classification does not change.

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7.10.1.5 Exit Access.

7.10.1.5.1 Access to exits shall be marked by approved, readily visible signs in all cases where the exit or way to reach the exit is not readily apparent to the occupants.

7.10.1.5.2 New sign placement shall be such that no point in an exit access corridor is in excess of the rated viewing distance or 100 ft. (30m), which ever is less, from the nearest sign.

7.10.1.6 Floor Proximity Exit Signs. Where floor proximity exit signs are required by Chapter 11 through Chapter 43, such signs shall comply with 7.10.3. 7.10.4, 7.10.5 and 7.10.6 for externally illuminated signs and 7.10.7 for internal illuminated signs. Such signs shall be located near the floor level in additions to those signs required for doors or corridors. The bottom of the sign shall be not less than 6 in. (150mm), but not more than 18 in. (455 mm), above the floor. For exit doors, the sign shall be mounted on the door or adjacent to the door, with the nearest edge of the sign within 4 in. (100mm) of the door frame.

7.10.1.7 Floor Proximity Egress Path Marking. Where floor proximity egress path marking is required in Chapter 11 through Chapter 43, an approved floor proximity egress path marking system that is internally illuminated shall be installed within 18 in. (455mm) of the floor. Floor proximity egress path marking systems shall be listed in accordance with ANSI/UL® 1994, Standard for Luminous Egress Path Marking Systems. The system shall provide a visible delineation of the path of travel along the designated exit access and shall be essentially continuous, except as interrupted by doorways, hallways, corridors or other such architectural features.The system shall operate continuously or at any time the building fire alarm system is activated. The activation, duration and continuity of operation of the system shall be in accordance with 7.9.2. The system shall be maintained in accordance with the product manufacturing listing.

7.10.1.8* Visibility. Every sign required in Section 7.10 shall be located and of such size, distinctive color and design that it is readily visible and shall provide contrast with decorations, interior finish or other signs. No decorations, furnishings or equipment that impairs visibility of a sign shall be permitted. No brightly illuminated sign (for other than exit purposes), display or object in or near the line of vision of the required exit sign that could detract attention from the exit sign shall be permitted.

7.10.1.9 Mounting Location. The bottom of new egress markings shall be located at a vertical distance of not more than 6 ft. 8 in. (2030mm) above the top edge of the egress opening intended for designation by that marking. Egress markings shall be located at a horizontal distance of not more than the required width of the egress opening, as measured from the edge of the egress opening intended for designation by that marking to the nearest edge of the marking.

7.10.2 Directional Signs.

7.10.2.1 A sign complying with 7.10.3 with a directional indicator showing the direction of travel shall be placed in every location where the direction of travel to reach the nearest exit is not apparent.

7.10.2.2 Directional exit signs shall be provided within horizontal components of the egress path within exit enclosures as required by 7.10.1.2.2.

7.10.3 Sign Legend.

7.10.3.1 Signs required by 7.10.1 and 7.10.2 shall read as follows in plainly legible letters, or other appropriate working shall be used: EXIT.

7.10.3.2 Where approved by the authority having jurisdiction, pictograms in compliance with NFPA 170, Standard for Fire Safety and Emergency Symbols, shall be permitted.

7.10.4 Power Source. Where emergency lighting facilities are required by the applicable provisions of Chapter 11 through Chapter 43 for individual occupancies, the signs, other than approved self-luminous signs and listed photoluminescent signs in accordance with 7.10.7.2, shall be illuminated by the emergency lighting facilities. The levels of illumination of the signs shall be in accordance with 7.10.6.3 or 7.10.7 for the required emergency lighting duration as specified in 7.9.2.1. However, the level of illumination shall be permitted to decline to 60 percent at the end of the emergency lighting duration.

7.10.5 Illumination of Signs.

7.10.5.1 General. Every sign required by 7.10.1.2, 7.10.1.5 or 7.10.8.1, other than where operations or processes require low lighting levels, shall be suitably illuminated by a reliable light source. Externally and internally illuminated signs shall be legible in both the normal end emergency lighting mode.

7.10.5.2 Continuous Illumination.

7.10.5.2.1 Every sign required to be illuminated by 7.10.6.3, 7.10.7 and 7.10.8.1 shall be continuously illuminated as required under the provisions of Section 7.8, unless otherwise provided in 7.10.5.2.2.

7.10.5.2.2 Illumination for signs shall be permitted to flash on and off upon activation of the fire alarms system.

7.10.6 Externally Illuminated Signs.

7.10.6.1 Size of Signs.

7.10.6.1.1 Externally illuminated signs required by 7.10.1 and 7.10.2, other than approved existing signs, unless otherwise provided in 7.10.6.1.2, shall read EXIT or shall use other appropriate wording in plainly legible letters sized as follows:

(1) For new signs, the letters shall be not less than 6 in. (150mm) high, with the principal strokes of letters not less than ¾ in. (19mm) wide.

(2) For existing signs, the required wording shall be permitted to be in plainly legible letters not less that 4 in. (100mm) high.

(3) The word EXIT shall be in letters of a width not less than 2 in. (51mm), except the letter I, and the minimum spacing between letters shall be not less than ⅜ in. (9.5mm).

(4) Sign legend elements larger than the minimum established in 7.10.6.1.1(1) through 7.10.6.1.1(3) shall use letter widths, strokes and spacing in proportion to their height.

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7.10.6.1.2 The requirements of 7.10.6.1.1 shall not apply to marking required by 7.10.1.3 and 7.10.1.6.

7.10.6.2 Size and Location of Directional Indicator.

7.10.6.2.1 Directional indicators, unless otherwise provided in 7.10.6.2.2, shall comply with the following:
(1) The directional indicator shall be located outside of the EXIT legend, not less than ⅜ in. (9.5mm) from any letter.
(2) The directional indicator shall be of a chevron type, as shown in Figure 7.10.6.2.1.
(3) The directional indicator shall be identifiable as a directional indicator at a distance of 40 ft. (12m).
(4) A directional indicator larger than the minimum established for compliance with 7.10.6.2.1(3) shall be proportionately increased in height, width and stroke.
(5) The directional indicator shall be located at the end of the sign for the direction indicated.

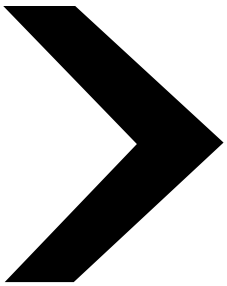

Figure 7.10.6.2.1 Chevron-Type Indicator.

7.10.6.2.2 The requirements of 7.10.6.2.1 shall not apply to approved existing signs.

7.10.6.3 Level of Illumination. Externally illuminated signs shall be illuminated by not less than 5 ft.-candles (54 lux) at the illuminated surface and shall have a contrast ratio of not less than 0.5.

7.10.7 Internally Illuminated Signs.

7.10.7.1 Listing. Internally illuminated signs shall be listed in accordance with ANSI/UL® 924, Standard for Emergency Lighting and Power Equipment, unless they meet one of the following criteria:
(1) They are approved existing signs.
(2) They are existing signs having the required wording in legible letters not less than 4 in. (100mm) high.
(3) They are signs that are in accordance with 7.10.1.3 and 7.10.1.6.

7.10.7.2* Photoluminescent Signs. The face of a photoluminescent sign shall be continually illuminated while the building is occupied. The illumination levels on the face of the photoluminescent sign shall be in accordance with its listing. The charging illumination shall be a reliable light source as determined by the authority having jurisdiction. The charging light source shall be of a type specified in the product markings.

7.10.8 Special Signs.

7.10.8.1 Sign Illumination.

7.10.8.1.1 Where required by other provisions of this Code, special signs shall be illuminated in accordance with 7.10.5, 7.10.6.3 and 7.10.7.

7.10.8.1.2 Where emergency lighting facilities are required by the applicable provisions of Chapter 12 through Chapter 42, the required illumination of special signs shall additionally be provided under emergency lighting conditions.

7.10.8.2 Characters. Special signs, where required by other provisions of this Code, shall comply with the visual character requirements of ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

7.10.8.3 No Exit.

7.10.8.3.1 Any door, passage or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified by a sign that reads as follows.

NO EXIT

7.10.8.3.2 The NO EXIT sign shall have the word NO in letters 2 in. (51mm) high, with a stroke width of ⅜ in. (9.5mm), and the word EXIT in letters 1 in. (25mm) high, with the word EXIT below the word NO, unless such sign is an approved existing sign.

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7.10.8.4 Elevator Signs. Elevators that are a part of a means of egress (see 7.2.13.1) shall have the following signs with a minimum letter height of ⅝ in. (16mm) posted in every elevator lobby:
(1) Signs that indicate that elevator can be used for egress, including any restrictions on use.
(2) Signs that indicate the operational status of elevators.

7.10.8.5 Evacuation Diagram. Where a posted floor evacuation diagram is required in Chapter 11 through Chapter 43, floor evacuation diagrams reflecting the actual floor arrangement and exit locations shall be posted and oriented in a location and manner acceptable to the authority having jurisdiction.

7.10.9 Testing and Maintenance.

7.10.9.1 Inspection. Exit signs shall be visually inspected for operation of the illumination sources at intervals not to exceed 30 days or shall be periodically monitored in accordance with 7.9.3.1.3.

7.10.9.2 Testing. Exit signs connected to or provided with a battery-operated emergency illumination source, where required in 7.10.4, shall be tested and maintained in accordance with 7.9.3.

7.11 Special Provisions for Occupancies with High Hazard Contents. See Section 6.2.

7.11.1* Where the contents are classified as high hazard, exits shall be provided and arranged to allow all occupants to escape from the building or structure, or from the hazardous area thereof, to the outside or to a place of safety with a travel distance of not more than 75 ft. (23m), measured as required in 7.6.1, unless otherwise provided in 7.11.2.

7.11.2 The requirement of 7.11.1 shall not apply to storage occupancies as otherwise provided in Chapter 42.

7.11.3 Egress capacity for high hazard contents areas shall be based on 0.7 in./person (18mm/person) for stairs or 0.4 in./person (10mm/person) for level components and ramps in accordance with 7.3.3.1.

7.11.4 Not less than two means of egress shall be provided from each building or hazardous area thereof, unless all of the following criteria are met:
(1) Rooms or spaces do not exceed 200 ft.^{2} (18.6m^2).
(2) Rooms or spaces have an occupant load not exceeding three persons.
(3) Room or spaces have a travel distance to the room door not exceeding 25 ft. (7620mm)

7.11.5 Means of egress, for rooms or spaces other than those that meet the criteria of 7.11.4(1) through (3), shall be arranged so that there are no dead ends in corridors.

7.11.6 Doors serving high hazard contents areas with occupant loads in excess of five shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with 7.2.1.7.

7.12 Mechanical Equipment Rooms, Boiler Rooms and Furnace Rooms.

7.12.1 Mechanical equipment rooms, boiler rooms, furnace rooms and similar spaces shall be arranged to limit common path of travel to a distance not exceeding 50 ft. (15m), unless otherwise permitted by the following:
(1) A common path of travel not exceeding 100 ft. (30m) shall be permitted in the following locations:
a) In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.
b) In mechanical equipment rooms with no fuel-fired equipment.
c) In existing buildings.
(2) In an existing building, a common path of travel not exceeding 150 ft (46m) shall be permitted, provided that all of the following criteria are met:
a) The building is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 9.7.
b) No fuel-fired equipment is within the space.
c) The egress path is readily indentifiable.
(3) The requirement of 7.12.1 shall not apply to rooms or spaces in existing health care occupancies complying with the arrangement of means of egress provisions of 19.2.5 and the travel distance limits of 19.2.6.

7.12.2 Stories used exclusively for mechanical equipment, furnaces or boilers shall be permitted to have a single means of egress where the travel distance to an exit on that story is not in excess of common path of travel limitations of 7.12.1.

NFPA 101® Life Safety Code® 2009 Edition

Limited Warranty

1.0 **Lightalarms®** 6-, 12- and 24-volt Emergency Lighting Unit Equipment (excluding lamps and fuses) are fully warranted to be free of defects in material and workmanship under normal use for a period of three years from date of installation (see Paragraph 2.0).

1.1 **Lightalarms®** 6-, 12- and 24-volt Unit Equipment Batteries are warranted as follows (Warrant below includes the three-year full warranty on entire unit as called out in Paragraph 1.0).

1.2 **Lightalarms®** 4-volt Emergency Lighting Unit Equipment (excluding lamps and fuses) is fully warranted to be free of defects in material and workmanship under normal use for a period of one year from date of installation (see Paragraph 2.0).

BATTERY TYPE	LIFE EXPECTANCY	SHELF LIFE*	FULL WARRANTY	PRO RATA WARRANTY
Sealed Lead-Calcium	8 years	6 months	3 years	3 years
Sealed Nickel-Cadmium	15 years	1 year	5 years	7 years
Refillable Lead-Calcium	15 years	6 months	3 years	8 years
Refillable Nickel-Cadmium	15 years	2 years	5 years	7 years
Sealed Nickel-Metal Hydride	15 years	1 year	5 years	7 years

*** Maximum storage life. Must be recharged if not placed in service or battery warranty void.**

2.0 The full warranty period begins on the date of installation or 90 days from date of shipment, whichever date is earlier.

2.1 Should a defect appear in the equipment or batteries listed in Paragraphs 1.0, 1.1 or 1.2 above within the specified full warranty period, Lightalarms will repair or replace equipment without charge (see Paragraph 3.3). Such repair or replacement shall be the purchaser's exclusive remedy.

2.2 The Pro rata Warranty Period for batteries begins on the date the full warranty period ends.

2.3 A battery determined to be defective during the Pro Rata Warranty Period shall be repaired or replaced at a cost equal to the net price in effect at the time, reduced by the percentage obtained in multiplying 10% by the number of full years remaining in the total warranty period. Such repair or replacement at this adjusted price shall be the purchaser's exclusive remedy.

3.0 All warranties are subject to proper installation and maintenance in accordance with the instructions supplied.

3.1 Any material deemed defective must be returned, freight prepaid, to the factory for evaluation (see Paragraphs 5.0–5.3). Any changes in circuitry or components by other than authorized Lightalarms personnel or its service companies will void the warranty.

3.2 All warranties are limited to the repair and/or replacement or parts or equipment, which, upon examination at our plant, are determined to be defective and in our judgment are subject to repair or replacement under warranty. Replacement of lamps and fuses is not included in the warranty.

3.3 If new replacement parts are shipped before defective goods are received for evaluation, the replacement parts will be invoiced at the net price in effect at that time. These charges will be credited if, upon receipt and evaluation of goods, a defect is determined. Only replacement parts will be shipped under these circumstances, if field replacement is possible. **Lightalarms® Factory Only Reserves The Right To Ship New Unit Equipment For Replacement Purposes.** Units returned after installation cannot be restored to 100% saleable condition.

4.0 In no event shall Lightalarms® be liable for backcharges of any kind, including, without limitation, labor charges for field repair or late penalties.

4.1 This warranty does not cover damages caused by improper maintenance of installation or damage due to installation in areas with other than normal temperatures and environmental conditions per application specifications. Lightalarms assumes no responsibility for any damage to people, property, apparatus or otherwise resulting from improper installation or maintenance of its Emergency Lighting Unit Equipment.

4.2 This warranty does not cover damages caused by abuse, fire or Act of God.

4.3 In no event shall Lightalarms be liable for incidental or consequential damages.

4.4 The foregoing warranty is in lieu of all other warranties, expressed or implied, or merchantability, fitness for a particular purpose or any other thing. Except as stated in this warranty, Lightalarms shall not be liable for any defects in, or breach of any contract relating to, the quality of performance of Lightalarms Equipment under any theory of law including, without limitation, contract, negligence, strict liability or misrepresentation.

4.5 Lightalarms® warranty coverage shall not apply to any equipment of another manufacturer used in conjunction with Lightalarms Equipment.

4.6 Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This written warranty gives you specific legal rights and you may also have other rights which vary from state to state.

5.0 No returned defective materials will be accepted without a Returned Goods Authorization issued in writing by an authorized Lightalarms employee.

5.1 Purchaser is responsible for secure packing of returned materials to provide best possible assurance against damage in shipment.

5.2 Defective batteries of any kind must not be returned to the Lightalarms factory without strict adherence to special instructions for handling and shipping. WARNING: Never ship a refillable wet battery in any type of emergency lighting equipment. Failure to adhere to this policy will void warranty.

5.3 Defective goods returned to the factory must be shipped prepaid. COLLECT RETURNED SHIPMENT WILL BE REFUSED. Freight charges to return repaired equipment or ship replacement equipment to the purchaser to be paid by Lightalarms®. Factory will return repaired goods via same shipping method as received.

Failure to comply with any of the stipulations set forth will void the warranty. Any exceptions to the forgoing warranty must be requested and accepted in writing prior to shipment. Lightalarms® equipment not listed in paragraphs 1.0, 1.1 or 1.2 is warranted as described on its individual data sheet with the stipulations as stated in paragraphs 2.0–5.3.

EMERGI-LITE®

Emergi-Lite® Emergency Lighting

In this section...

Emergi-Lite® Emergency Lighting

Thomas&Betts

www.tnb.com

Overview

Emergi-Lite® Emergency Lighting

Vertically-integrated manufacturing and production capabilities in North America give the Thomas & Betts Emergi-Lite® brand complete control over lead time, service and quality down to the smallest detail. We produce exactly what we need when we need it, without waiting for large production runs or overseas shipping. With everything under one roof, we can ensure that our stringent quality standards are met at every step in the process, from design to production to order fulfillment.

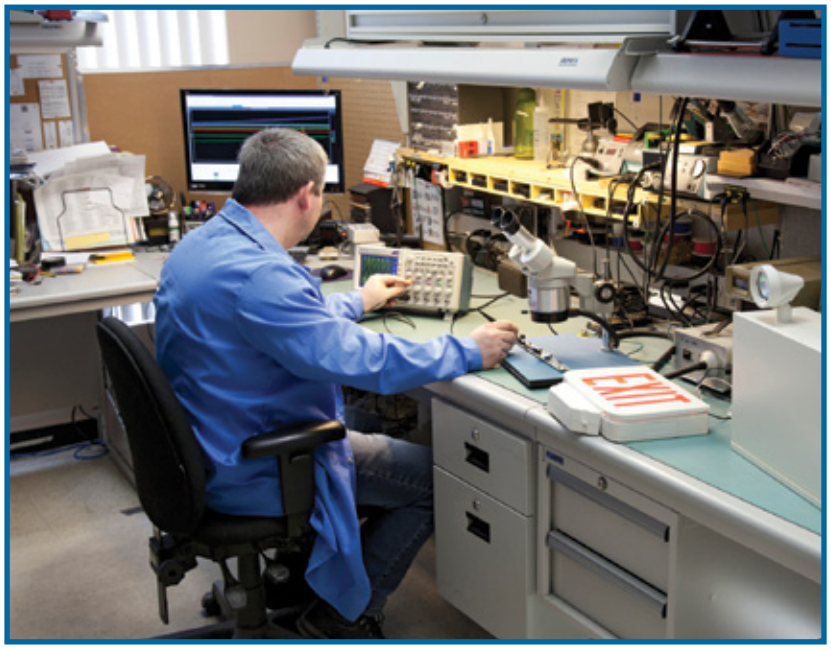
Fuelled by the creativity, innovation and commitment of every employee, the Thomas & Betts Emergi-Lite® facility is a center of excellence in emergency lighting.

Innovative

The in-house research and development team of highly skilled professional electrical and mechanical engineers, designers and technicians at Thomas & Betts includes specialists with over 25 years of experience in the emergency lighting industry. This multi-disciplinary group uses advanced technology in all specialties from mechanical design to operating system software, RF and power electronic design, lighting design and LED drivers to continuously create innovative emergency lighting solutions.

Comprehensive engineering services are provided to meet special requests from customers for unique applications.

Quality and safety are designed into each product at conception, and customized testing equipment is created to ensure that each unit meets code and conforms to internal quality control standards, including ease of installation and reliability over time.



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Overview

Frequent investments in new equipment improve lead time and enforce the high quality and reliability standards of Thomas & Betts. The new AOI (automated optical inspection) machine added to the printed circuit board operation in 2012 is one of the first of its kind in use in North America.

Reliable

Technologically advanced printed circuit board production lines at the Thomas & Betts Emergi-Lite® manufacturing facility produce thousands of circuit boards daily. Skilled production personnel are trained according to IPC standards and use board traceability and tracking software to ensure quality. Universal SMT (surface mount technology) boards and TH (through-hole) insertion boards are produced in house on multiple lines. Every station is ESD (electro-static discharge) protected to eliminate static hazards, and our RoHS-compliant wave soldering machine meets lead-free criteria. Automatic insertion equipment and automatic silicone coating application ensure high productivity and quality.

Highly efficient electro-mechanical assembly lines are optimized for low-volume, high-mix production runs with thousands of final assemblies produced each day. Customizations such as specific punching, exact wording and color matching can be completed quickly using our in-house machine shop and painting capabilities.

All orders undergo functional testing and quality inspection, with high-voltage, high-amperage power outage simulations available to test all central power systems for each customer's specific requirements. Specialized facilities include a dark room for color-contrast measurement; temperature- and humidity-controlled environments; wall, ceiling and suspended ceiling installation simulations; and cycle-testing automation.

Efficient

Large inventories are ready to ship from warehouses across the United States for fast delivery.

To reduce the carbon footprint and minimize the environmental impact of operations, a Sustainable Development policy is in effect at the Thomas & Betts Emergi-Lite® manufacturing facility. Through a series of initiatives, reductions in usage of water, water bottles, electricity and natural gas, packaging and pallets have already been realized. Forward-looking initiatives include reductions in paper, further recycling of pallets and implementation of an eco-delivery schedule.

The Thomas & Betts Emergi-Lite® manufacturing facility has been ISO 9001 compliant since 2001.

Overview

Technological Development

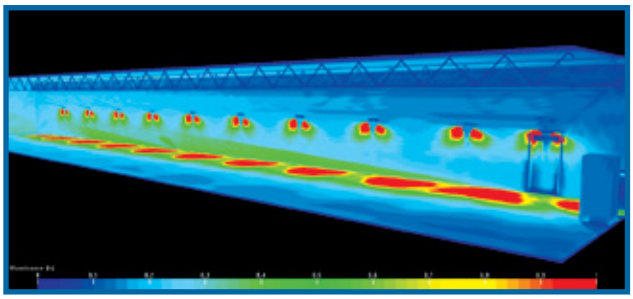
Thomas & Betts MR-16 LED now available for use in emergency lighting

Features

- UL® listed to UL1993 and UL8750 standards
- Ideal for indoor and outdoor use
- Energy-efficient 4-watt LED lamp provides equivalent lighting performance to a 16-watt halogen MR-16 lamp
- Reduces required battery capacity by 75%, providing necessary illumination with fewer remote heads and battery units for project cost savings
- Compact, small-profile, white lighting is ideal for architectural applications
- Vibration-resistant LED stands up to industrial environments

Compare

On a 150' x 9' x 9' corridor with an egress door at one end, a 7.5' unit mounting height and a 150' x 6' path of egress where the building code requires a minimum average of 1 foot-candle and a minimum of .1 foot-candle at floor level along the path of egress.

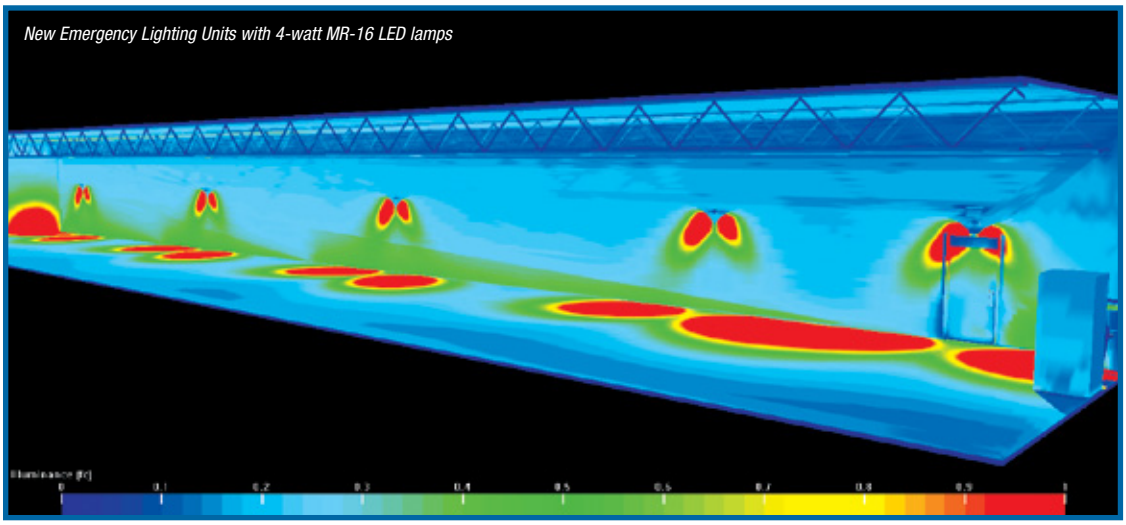


Standard Emergency Lighting Units with 9-watt wedge-base T5 incandescent lamps

Savings add up

Emergency lighting units with MR-16 LED lamps provide the same lighting at floor level using five fewer double-lamp units.

- Reduces the carbon footprint of the installation by eliminating the 24-hour power consumption of the battery charger unit
- Saves approximately 34 lbs. of material, reducing the environmental impact throughout the entire product life cycle, from raw material extraction to processing, transportation, manufacturing, assembly and use



New Emergency Lighting Units with 4-watt MR-16 LED lamps

A twin emergency light head with MR-16 LED lamps illuminates up to a 40' long path of egress, in accordance with Life Safety Code® NFPA101.

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Overview

nexus®

Emergency Lighting Management System

Are you prepared for an emergency?

In the Interest of public safety, Building & Life Safety Codes outline the obligations of building owners/ managers in relation to exit signs and emergency lighting to ensure the safe evacuation of a building to:

- Conduct a discharge test every month
- Conduct functional tests annually
- Keep a log book of maintenance information

Complying with these requirements can be very expensive and labor intensive, especially in larger buildings where testing requires many labor hours spent manually inspecting every emergency light. In addition, the disruption of the power supply during inspection can put public safety at risk.

What is Nexus®?

Nexus® is a real-time monitoring system that manages the status of your entire emergency lighting and exit sign system, runs diagnostics, performs required monthly and annual functional tests, generates maintenance logs and runs compliance reports.

All of this is carried out from a central control unit with the ability to monitor systems in one or a group of properties under the same management. Available in wired or wireless (RF) versions, most Nexus® installations will pay for themselves in less than two years in operational savings, while helping to increase system reliability and performance and eliminate the risk of failed inspections.

What Nexus® can do for you

Nexus® has been designed to enable maintenance personnel to easily maintain and monitor the emergency lighting system without having to manually check each unit, which saves countless hours of labor and disruption of power supply. Nexus® performs monthly tests and reports on the status of all emergency lights and exit signs either individually, grouped or all together.

There are many advantages to the Nexus® system. These include labor savings; maximizing system availability by testing units in groups and stages rather than setting all units in recovery mode, and the convenience of self monitoring, which indicates the location of a faulty unit and reports instantly without initiating a manual search.

How does Nexus® work?

Nexus® communicates between the emergency lights and a centrally located server, usually a computer or Area Controller, passing messages both to and from the emergency units to instruct the units to perform all mandatory testing.

Supported by a five-year warranty, Nexus® is a proven system that can contribute to LEED certification and support green building initiatives.

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Spec-Grade Architectural

Now available with white LED normally on and photo-cell activated.

Lux-Ray™ Series

NEW!

Designed to meet the needs of architects and designers without sacrificing safety and performance, the Lux-Ray™ Series has a low-profile, slim look and is offered in a range of colors to blend in with the most sophisticated interior design. With sealed die-cast aluminum housing, the unit is also designed for extreme outdoor environments.

An optional dual-mode illumination feature enables the Lux-Ray™ Series to provide lighting not only during power outages, but also in normal conditions with a dedicated 5-watt LED lamp. The normal lighting can be turned on and off from a remote switch or from an optional photo-cell included in the equipment.

Standard Features

- Die-cast aluminum housing available in four finishes: off-white, black, platinum gray and dark bronze
- Clear polycarbonate lens, shock-absorbent and UV-resistant
- Two high-output Xenon lamps installed in a vacuum-plated die-cast reflector
- Indoor/outdoor applications, suitable for wet locations
- Wall-mount installation on various junction boxes or via rigid conduit
- Integrated test button and LED pilot light with optical pipe
- Lead-calcium battery monitored by a PulsePlus charger circuitry
- Nickel-metal hydride battery with Advanced Diagnostics charger and bi-color diagnostic LED display
- Three-year full warranty (not applicable to high-output Xenon lamps)
- Five-year warranty for nickel-metal hydride models
- UL® Listed to the UL® 924 standard

Main Models

- **LUXL** — Regular interior package; cost-efficient lead-calcium battery; 68° F to 86° F (20° C to 30° C)
- **LUXN** — Exterior package; UL Listed for wet and cold location; -4° F to 104° F (-20° C to 40° C)
- **LUXN2** — High-output package; for interior applications requiring premium lighting with 10W Xenon lamps; equipped with NiMH battery, 68° F to 86° F (20° C to 30° C)

The Lux-Ray™ Series is also available as a DC-remote fixture, rated 6 or 12VDC, with two Xenon lamps of 6W or 10W each.

Controls or Electrical

- Lead-calcium models: Red LED indicates AC power is on
- Nickel-metal hydride models: Bi-color LED indicates battery state of charge, test activation and four-state diagnostic status
- Test switch allows for quick operational check of the entire system

Options

The Lux-Ray™ Series is offered in three configurations. Also available as remote. It can be used in a wide range of applications and environments with the following options:

- Time delay: 5, 10 or 15 minutes (factory set)
- Dual-mode lighting: Separate AC-input for LED-based normally on illumination; 120/277VAC, .040A, 5W
- Photo-cell (for normal lighting): Automatically activates the LED lamp only from dusk until dawn for additional energy savings; typical ambient illumination for switch: one foot-candle (turn-on) and three foot-candles (turn-off)

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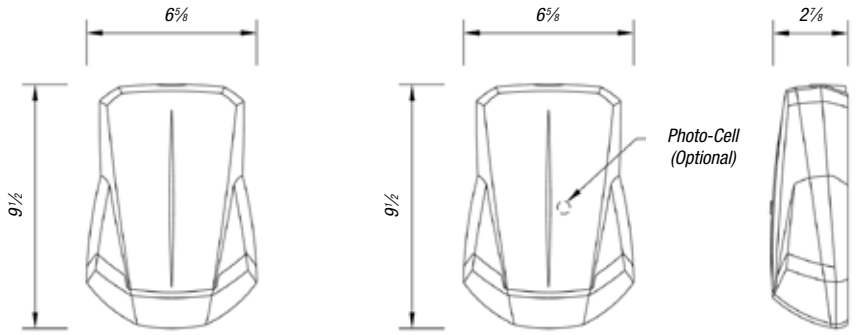
Spec-Grade Architectural

Dimensions

Dimensions are approximate and subject to change.



Front View *Front View* *Side View*

Power Consumption

MODEL NO.	AC SPECS			DC SPECS
LUXL, LUXN	120/277VAC	.11/.05A	Less than 10.5W	6V 12W Min. 90 Minutes
LUXN2	120/277VAC	.11/.05A	Less than 10.5W	6V 12W Min. 90 Minutes
LUX-2, LUX-P	120/277VAC	.04A	5W	LED Normal Lighting

Replacement Batteries

MODEL NO.	SPECIFICATIONS
840.0004-E	6V 12W Lead Calcium
850.0086-E	6V 12W, 20W NiMH

Replacement Lamps

MODEL NO.	SPECIFICATIONS
570.0213-E	ZU = 6V 6W Xenon
570.0214-E	ZV = 6V 10W Xenon
570.0215-E	ZW = 12V 6W Xenon
570.0216-E	ZX = 12V 10W Xenon

Catalog Numbering System

Battery Unit

OW | **LUXN** | **ZU** - **D1**

Color
OW *= Off-White*
BZ *= Dark Bronze*
B *= Black*
PG *= Platinum Gray*

Other colors available at a premium.
Please contact your sales representative.

Series
LUXL *= 6V 12W, Lead-Calcium (68° F to 86° F) PulsePlus Charger*
LUXN *= 6V 12W, NiMH (-4° F to 104° F) Comes with Advanced Diagnostics, Non-Audible (ADNA)*
LUXN2 *= 6V 20W, NiMH (68° F tp 86° F) Comes with Advanced Diagnostics, Non-Audible (ADNA)*

Lamp/Wattage*
ZU *= 6V 6W*
ZV *= 6V 10W***

** Xenon wedge base T3-1/4*
*** Only available in LUXN2 version*

Options
Blank *= No Option*
D1 *= 5-Min. Time Delay**
D2 *= 10-Min. Time Delay**
D3 *= 15-Min. Time Delay**
2 *= Dual-Mode Lighting*
P *= Photo-Cell*

** Time delay only available with NiMH battery.*

Remote Unit

LUX | **ZU** - **OW** - **2**

Series
LUX *= Remote Fixture (-40° F to 140° F)**
Outdoor Remote
** Optional dual-mode lighting: -40° F to 140° F*

Lamp Wattage
ZU *= 6V 6W*
ZW *= 12V 6W*
ZV *= 6V 10W*
ZX *= 12V 10W*
** Xenon wedge base T3-1/4*

Color
OW *= Off-White*
BZ *= Dark Bronze*
BK *= Black*
PG *= Platinum Gray*
Other colors available at a premium.
Please contact your sales representative.

Options
Blank *= No Option*
2 *= Dual-Mode Lighting*
P *= Photo-Cell*

Spec-Grade Architectural

6- and 12-volt square shooter.

PS Series

Surface-mount, semi-recessed mount and fully recessed mount units are available in the PS Series to harmonize with a variety of interiors for architectural unity. The square shooter has a 172 x 172 beam distribution pattern.

Standard Features

- Each unit comes standard with one halogen lamp (6V 6W or 12V 8W)
- Surface-mount, semi-recessed units and fully recessed kits are constructed of an off-white, impact-resistant, flame-retardant, polymeric material; fully recessed "FRM" option units have an all-metal back box
- Available with sealed, maintenance-free nickel-cadmium, long-life lead or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amp (other inputs available), fused output circuit(s), temperature-compensated charger, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- All models are supplied with a specular reflector and are designed to mount directly to a standard octagonal electric box
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and is approved for use in the Commonwealth of Pennsylvania
- Three-year full warranty, excluding lamps, pilot lights and fuses

Accessories (Order as a separate item)

Semi-Recessed Kit (converts a surface-mount unit to semi-recessed) ..... **PS-SRKIT***

Fully Recessed Kit (converts a surface-mount unit to fully recessed) ..... **PS-FRKIT***

Wire Guard (surface or semi-recessed) **WG1-E**

Wire Guard (fully recessed) **WG11-E**

** Bar hangers included.*

Unit Ratings

6-volt unit furnished with 6-watt halogen lamp(s).
12-volt unit furnished with 8-watt halogen lamp(s).

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — NO REMOTE Capability						
Long-Life Lead	6	**PSE9**	9	7	—	—
Lead-Calcium	6	**PSM9**	9	6	—	—
Unit Equipment — WITH REMOTE Capability						
Nickel-Cadmium	6	**PSC18**	18	12	9	6
	6	**PSC18-2****	18	12	9	6
	6	**PSC25**	25	18	12	9
	6	**PSC25-2****	25	18	12	9
	12	**12PSC36**	36	21	15	12
	12	**12PSC36-2****	36	21	15	12
Long-Life Lead	6	**PSE18**	18	11	8	6
	6	**PSE18-2****	18	11	8	6

** National Electrical Code® specification. ** -2 indicates two-lamp version.*

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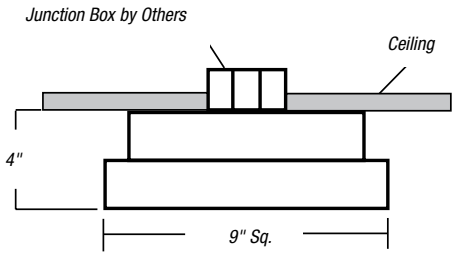
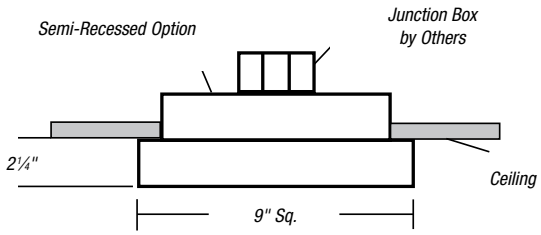
Spec-Grade Architectural

Dimensions

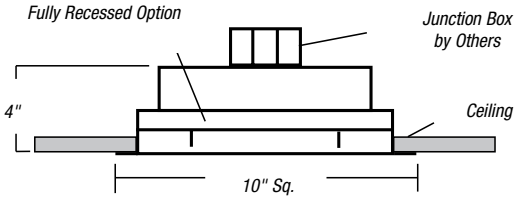
Dimensions are approximate and subject to change.



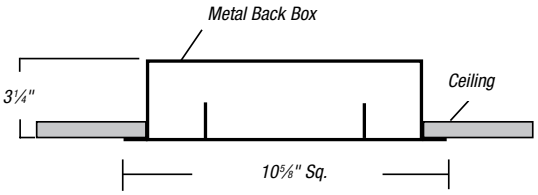
Surface-Mount Plastic Square



Semi-Recessed Plastic Square (Requires Optional Mounting Kit)



Fully Recessed Plastic Square (Requires Optional Mounting Kit)



Fully Recessed Metal Square (Optional)

Catalog Numbering System

For standard units without options, order only Model Number.
Options are added to units by listing suffix at end of Model Number.

PS	C18	-	2	HA	-	AD	-	FRM

Series
PS *= 6V Series*
12PS *= 12V Series ▼*

Battery Type/Capacity
C18 *= 6V-18W Ni-Cd*
C25 *= 6V-25W Ni-Cd*
E9 *= 6V 9W Long-Life Lead*
E18 *= 6V 18W Long-Life Lead*
M9 *= 6V 9W Lead Calcium*
C36 *= 12V-36W Ni-Cd ▼*

No. of Lamps
Blank *= One Lamp*
2 *= Two Lamps*

Lamp Type
Blank *= 6V-6W or 12V-8W Halogen Bi-Pin*
HB *= 6V 8W Halogen Bi-Pin*
HC *= 6V 10W Halogen Bi-Pin*
HD *= 6V 12W Halogen Bi-Pin*
HG *= 12V 12W Halogen Bi-Pin*

Note: See lamp data on ***pages I-311–I-312****.*

Diagnostic Option
Blank *= Standard Unit*
AD *= Advanced Diagnostic*
ADNA *= Advanced Diagnostic Non-Audible*

Options
Blank *= No Options*
A *= Ammeter*
V *= Voltmeter*
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay**
F *= Fully Recessed*
J *= Polycarbonate Lens*
FRM *= Fully Recessed All-Metal Unit*

** Not required with AD or ADNA. Time delay standard at 15 minutes.*

▼ *12PS Series must be ordered with C36 battery option. C36 battery option is only available with 12PS Series.*

Spec-Grade Architectural

6- and 12-volt decorator recessed.

RS Series

For low-profile, unobtrusive use in finished ceilings or walls, the RS Series is designed for architectural unity. Decorative EF-9 lamp heads are standard, and a variety of cylinder and decorative lamp heads are available as options to accommodate any decor.

Standard Features

- Each unit comes with two 6- or 12-volt 9-watt high-intensity incandescent EF-9 lamp heads (standard); EF-10, EF-18, EF-32 and EF-150 lamp heads are optional
- Constructed of 20-gauge steel with an off-white baked enamel finish
- Available with sealed, maintenance-free nickel-cadmium, long-life lead or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277-volt input, 60 Hz, .3/.15 amp (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature-compensated charger, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Fully recessed assembly for ceiling or wall mount, includes adjustable bar hangers for grid ceilings; can be framed into studs/joists
- UL® 924 Listed, complies with NEC®, Life Safety Code® and OSHA and is approved for use in the Commonwealth of Pennsylvania and New York City
- Three-year full warranty, excluding lamps and fuses

Options

Description	Suffix
New York City (EF-18 12-watt lamps)	-NYC

Accessories (Order as a separate item)

Wire Guard (units with EF-9, EF-10, EF-18 or EF-150 heads)	WG6
Remote Test Switch (metal face plate)	RTS
Remote Test Switch (plastic face plate)	RTS-1

Ceiling mounted with EF-150 decorative heads

Unit Ratings

Each unit is furnished standard with two 9-watt high-intensity incandescent lamps.
EF-9 lamp heads: 6- or 12-volt 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO. EF-150 DECO	MODEL NO. EF-9 LAMP HEADS	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — NO REMOTE Capability							
Nickel-Cadmium	6	**RSC18-2150**	**RSC18-2**	18	12	10	—
Long-Life Lead	6	**RSE18-2150**	**RSE18-2**	18	11	8	—
Lead-Calcium	6	**RSM18-2150**	**RSM18-2**	18	12	9	—
Unit Equipment — WITH REMOTE Capability							
Nickel-Cadmium	6	**RSC25-2150**	**RSC25-2**	25	18	12	9
	12	**12RSC36-2150**	**12RSC36-2**	36	21	15	12
	12	**12RSC50-2150**	**12RSC50-2**	50	36	25	18
Long-Life Lead	6	**RSE27-2150**	**RSE27-2**	27	19	14	10
	6	**RSE36-2150**	**RSE36-2**	36	24	17	13
	12	**12RSE36-2150**	**12RSE36-2**	36	24	17	13
Lead-Calcium	6	**RSM27-2150**	**RSM27-2**	27	18	14	10
	6	**RSM36-2150**	**RSM36-2**	36	25	20	14
	12	**12RSM36-2150**	**12RSM36-2**	36	25	20	14

** National Electrical Code® specification.* = *New York City Approved.*

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Spec-Grade Architectural

Dimensions

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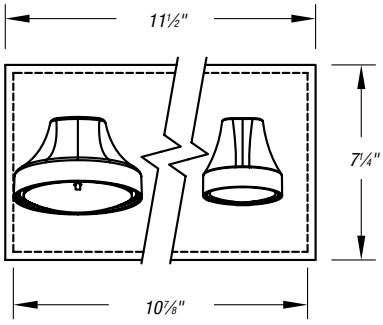
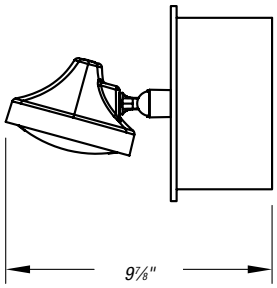
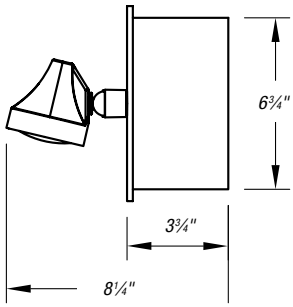


Back Box



EF-18



EF-9

Catalog Numbering System

For standard units without options, order only Series, Battery, Watts and Heads.
Options are added to units by listing suffix at end of Model Number.

B | **RSC18** - **2** | **10** | **L_** - **AD**

Color
Blank *= Factory White*
B *= Black Enclosure*

 # - Other Colors Available

Series/Battery Type
RSC18 *= 6V 18W Ni-Cd*
RSC25 *= 6V 25W Ni-Cd*
RSE18 *= 6V 18W Long-Life Lead*
RSE27 *= 6V 27W Long-Life Lead*
RSE36 *= 6V 36W Long-Life Lead*
RSM18 *= 6V 18W Lead Acid*
RSM27 *= 6V 27W Lead Acid*
RSM36 *= 6V 36W Lead Acid*
12RSC36 *= 12V 36W Ni-Cd*
12RSC50 *= 12V 50W Ni-Cd*
12RSE36 *= 12V 36W Long-Life Lead*
12RSM36 *= 12V 36W Lead Acid*

Watts
0 *= No Heads*
1 *= One Head*
2 *= Two Heads*

Heads
Blank *= EF-9 Mini PAR18 Style*
10 *= EF-10 Mini Plastic MR-16*
18 *= EF-18 (PAR36 Plastic)*
28 *= EF-28 (PAR36 Metal)*
150 *= EF-150 Deco Heads MR-16*

Lamp Type
Blank *= 6V 9W or 12V 9W Incandescent Wedge Base*
L_ *= LED MR-16**
H_ *= Halogen Bi-Pin*
I_ *= Incandescent DC Bayonet*
U_ *= Incandescent Sealed Beam***
X_ *= Halogen Sealed Beam***
Z_ *= Incandescent Wedge*
M_ *= Halogen MR-16**

Note: For the complete lamp suffix, please refer to lamp data on ***pages I-311–I-312****.*

** Available for EF-10 and EF-150 lamp head only.*
*** Available with EF-18 lamp head only.*

Option
Blank *= No Options*
A *= Ammeter*
V *= Voltmeter*
AD *= Advanced Diagnostics*
ADNA *= Advanced Diagnostics Non-Audible*
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay**

** Not required with AD or ADNA. Time delay standard at 15 minutes.*

Spec-Grade Architectural

6-, 12- and 24-volt T-bar units.

TS Series

For unobtrusive use in T-bar ceilings, the TS Series is designed for architectural unity. The off-white, fully recessed housing harmonizes with ceiling designs.

Standard Features

- Each unit comes with two off-white EF-18 lamp heads (standard) with one 9-watt wedge-based lamp per head and provision for mounting three heads
- Constructed of 20-gauge steel with an off-white baked enamel finish
- Available with sealed, maintenance-free nickel-cadmium, long-life lead or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277-volt input, 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature-compensated charger, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Fully recessed housing for unobtrusive use in T-bar ceilings; a removable cover on the back box allows for ease of installation and full access to the battery and charger
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and approved for use in the Commonwealth of Pennsylvania and New York City
- Three-year full warranty, excluding lamps, pilot lights and fuses

nexus® NYC approved ADVANCED AD DIAGNOSTICS UL®

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	CABINET SIZE
Unit Equipment — No Remote Capability							
Nickel-Cadmium	6	**TSC18-2**	18	12	9	6	S
Long-Life Lead	6	**TSE18-2**	18	11	8	6	S
Lead-Calcium	6	**TSM18-2**	18	12	10	7	S
Unit Equipment — With Remote Capability							
Nickel-Cadmium	6	**TSC25-2****	25	18	12	9	S
	12	**12TSC36-2****	36	21	15	12	S
	12	**12TSC50-2****	50	36	25	18	S
	24	**24TSC100-2**	100	73	50	37	S
Long-Life Lead	6	**TSE27-2**	27	19	14	10	S
	6	**TSE36-2**	36	24	17	13	S
	6	**TSE50-2**	50	32	22	16	S
	6	**TSE110-2**	110	74	57	43	L
	12	**12TSE36-2**	36	24	17	13	S
	12	**12TSE54-2**	54	37	28	21	S
	12	**12TSE72-2**	72	62	43	33	L
	12	**12TSE110-2**	110	74	57	43	L
	24	**24TSE72-2**	72	48	34	26	L
	24	**24TSE110-2**	110	74	57	43	L
Lead-Calcium	6	**TSM27-2**	27	18	14	10	S
	6	**TSM36-2**	36	25	20	14	S
	6	**TSM54-2**	54	37	28	21	S
	6	**TSM81-2**	81	54	42	30	L
	6	**TSM110-2**	110	72	56	40	L
	12	**12TSM36-2**	36	25	20	14	S
	12	**12TSM54-2**	54	37	28	21	S
	12	**12TSM110-2**	110	72	56	40	L
	24	**24TSM110-2**	110	72	56	40	L

** National Electrical Code® specification.* ▭ *= New York City Approved.*

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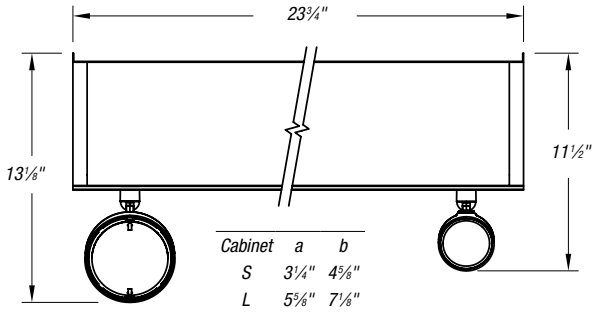
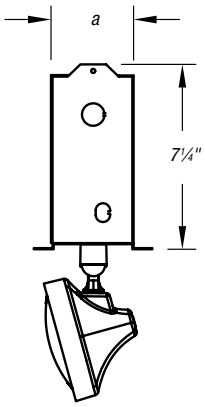
Spec-Grade Architectural

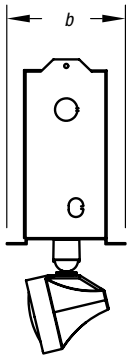
Dimensions

Dimensions are approximate and subject to change.





EF-9



EF-18

Catalog Numbering System

B	TSC18	-	2	10	L_	-	AD

Color
Blank *= Factory White*
B *= Black Enclosure*

 # - Other Colors Available

Series/Battery Type/Capacity
TSC18 *= 6V 18W Ni-Cd*
TSC25 *= 6V 25W Ni-Cd*
TSE18 *= 6V 18W Long-Life Lead*
TSE27 *= 6V 27W Long-Life Lead*
TSE36 *= 6V 36W Long-Life Lead*
TSE50 *= 6V 50W Long-Life Lead*
TSE110 *= 6V 110W Long-Life Lead*
TSM18 *= 6V 18W Lead Acid*
TSM27 *= 6V 27W Lead Acid*
TSM36 *= 6V 36W Lead Acid*
TSM54 *= 6V 54W Lead Acid*
TSM81 *= 6V 81W Lead Acid*
TSM110 *= 6V 110W Lead Acid*
12TSC36 *= 12V 36W Ni-Cd*
12TSC50 *= 12V 50W Ni-Cd*
12TSE36 *= 12V 36W Long-Life Lead*
12TSE54 *= 12V 54W Long-Life Lead*
12TSE72 *= 12V 72W Long-Life Lead*
12TSE110 *= 12V 110W Long-Life Lead*
12TSM36 *= 12V 36W Long-Life Lead*
12TSM54 *= 12V 54W Long-Life Lead*
12TSM110 *= 12V 110W Long-Life Lead*
24TSC100 *= 24V 100W Ni-Cd*
24TSE72 *= 24V 72W Long-Life Lead*
24TSE110 *= 24V 110W Long-Life Lead*
24TSM110 *= 24V 110W Lead Acid*

No. of Heads
0 *= No Heads*
1 *= One Head*
2 *= Two Heads*
3 *= Three Heads*

Head Style
Blank *= EF-18 (PAR36 Plastic)*
28 *= EF-28 (PAR36 Metal)*
9 *= EF-9 Mini Plastic*
10 *= EF-10 Mini Plastic MR-16*
150 *= EF-150 MR-16 Lamp Heads*

Lamp Type
Blank *= 6V 9W or 12V 9W Incandescent Wedge Base*
L_ *= MR-16 LED**
H_ *= Halogen Bi-Pin*
I_ *= Incandescent DC Bayonet*
U_ *= Incandescent Sealed Beam***
X_ *= Halogen Sealed Beam***
Z_ *= Incandescent Wedge*
M_ *= Halogen MR-16**

Note: For the complete lamp suffix, please refer to the lamp data on ***pages I-311–I-312****.*

** Available with EF-10 and EF-150 lamp head only.*
*** Available with EF-18 only.*

Option
A *= Ammeter*
V *= Voltmeter*
AD *= Advanced Diagnostics*
ADNA *= Advanced Diagnostic (Non-Audible)*
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay**
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*

** Not required with AD or ADNA. Time delay standard at 15 mins.*

Spec-Grade Architectural

Self-powered recessed down light.

EFR2 Distinction™ Series

Safe and simple, the EFR2 Distinction™ Series is perfect for any commercial or high-end interior application that needs both performance and style. With self-powered recessed down lights that use state-of-the-art MR-16 halogen lamps and industry-leading battery and wiring technology, the EFR2 Distinction™ Series is robust with industrial-strength qualities in a decorative, easy-to-install fixture.

Operation is completely automatic. A brownout-sensitive transfer circuit automatically connects the emergency lamp upon either complete loss of normal AC power or when the AC voltage drops down to a point where normal AC lighting will not function. The unit also monitors DC battery voltage and disconnects the lamps before the battery can go into deep discharge (in conditions of extended power failures). When the AC power is restored, the charger automatically returns the battery to full charge in 24 hours and monitors the battery to maintain full charge.

The recessed gimbal is constructed of a durable, powder-coated, die-cast aluminum and is furnished with an MR-16 lamp source powered by a sealed nickel-cadmium battery. The unit is furnished with a metal, fully recessed backbox to house the electronics, battery and all associated wiring. It is furnished standard with bar hanger kit.

The light source is adjusted by rotating the gimbal through 359° in azimuth and/or positioning the lamp through 90° in pitch.

The light source is a 6V 6W MR-16 halogen lamp. The emergency lighting fixture provides illumination in the emergency mode directly from the internally mounted nickel-cadmium battery. The duration of operation provided by the battery is no less than 90 minutes, as required by NFPA 101® Life Safety Code®.

Standard Features

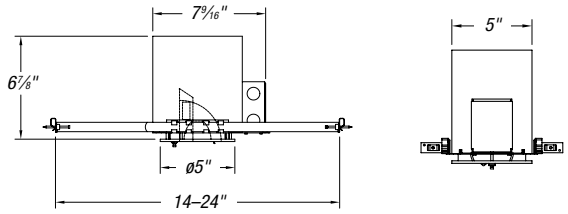
- One 6-volt, 6-watt MR-16 halogen lamp can be adjusted by rotating the gimbal through 359° in azimuth and/or positioning the lamp through 90° in pitch
- The recessed gimbal is constructed of durable, powder-coated, die-cast aluminum; a metal, fully recessed back box houses the electronics, battery and wiring
- Self-powered; sealed long-life nickel-cadmium battery for operation of at least 90 minutes as required by NFPA 101® Life Safety Code®
- Includes bar hanger kit; quick-disconnect feature allows the contractor to easily install the trim to the housing
- Easy to access for maintenance personnel
- Evaluated to UL® 924 standards

NFPA 101 and Life Safety Code are registered trademarks of the National Fire Protection Association, Inc.

US

Dimensions

Dimensions are approximate and subject to change.



EFR2 Series including back box

Charger

- Power requirements: 120V, 60 Hz, .046A, 4.17W; 277V, 60 Hz, .024A, 4.76W
- Transfer: Dust-tight relay automatically and instantly energizes lamp load upon failure of AC supply
- Battery protection circuit automatically shuts down lamp load when battery reaches 87.5% of its rated voltage
- Charger is 100% solid state, includes auto-equalize, temperature compensation and is controlled by a 1% Zener reference

Accessories (Order as a separate item)

Remote Test Switch (metal face plate) ..... **RTS**
Remote Text Switch (plastic face plate) **RTS-1**
Replacement Lamp (6V 6W) **580.0074-E**

Catalog Numbering System

EFR2 **WH** **SP** - **U**

Series
EFR2

Color
WH = *White*
BK = *Black*
BN = *Brushed Nickel*
CH = *Chrome*
PB = *Polished Brass*

Standard
SP = *Self-Powered*

Model
U = *USA Model*

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Spec-Grade Architectural

6-volt recessed down light.

GS Series

Recessed down lights combine the function of an emergency lighting fixture with stylish design.

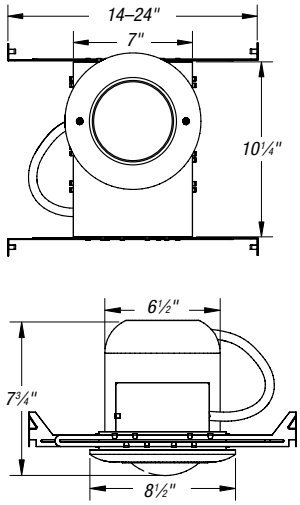
Several GS Series models and lamp choices provide flexibility in any emergency lighting layout and an aesthetically pleasing look.

Standard Features

- An adjustable gimbal directs the light from one 6-volt 10-watt wedge-base PAR36 lamp head
- The low-profile trim ring is molded in tough polycarbonate with a semi-gloss white finish to complement a variety of ceilings
- The fully recessed backbox is constructed of 20-gauge steel
- Available with sealed, maintenance-free nickel-cadmium, long-life lead or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amp, fused output circuit(s), long-life LED pilot indicator, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Inconspicuously mounted and easily accessed, the test switch and LED pilot light are located on the side of the lamp ring (standard)
- A slide-out chassis and two quick-connect plugs make installation and servicing easy, and adjustable bar hangers are included
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA
- Three-year full warranty, excluding lamps, pilot lights and fuses

Dimensions

Dimensions are approximate and subject to change.



Accessories (Order as a separate item)

Remote Test Switch (metal face plate).....**RTS**

Remote Text Switch (plastic face plate).....**RTS-1**

Unit Ratings

The GSM10 unit is furnished with one 6-volt 10-watt wedge-base lamp. Other wattages available; see Lamp Data for selection of PAR lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
			1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — No Remote Capability						
Lead-Calcium	6	**GSM10-BH**	10	8	—	—
Long-Life Lead	6	**GSE9-BH**	8	—	—	—
Unit Equipment — With Remote Capability						
Nickel-Cadmium	6	**GSC18-BH**	18	12	9	—

* *National Electrical Code® specification.* = *New York City Approved.*

NEC, National Electrical Code and Life Safety Code are registered trademarks of the National Fire Protection Association, Inc.

Catalog Numbering System

For standard units without options, only order Series, Battery and Watts. Options are added to units by listing suffix at end of the Model Number. Note: Includes standard lamp (570.0016).

B **GS** **M10** [ ] **BH** - **NYC**

Color
Blank = *White*
B = *Black*

Series
GS = *Series*

Battery/Wattage Type
M10 = *Lead Calcium 10W*
E9 = *Long-Life Lead 9W*
E18 = *Long-Life Lead 9W*
C18 = *Nickel-Cadmium*

Lamp Option
Sealed Beam Incandescent

* *Only C18 has other lamps available. See lamp data on* ***pages I-311–I-312.***

Mounting Options
BH = *Bar Hanger (standard)*

NYC*
Approved Model

* *Includes 12-watt lamp and metal trim.*

Spec-Grade Architectural

Virtually invisible emergency lighting.

Revelation™ Series

NEW and improved design — the unseen solution. Designed for unobtrusive use in walls with a cavity (drywall with 4-inch studs) or uninsulated ceilings with horizontal beams or T-bar structures, the Revelation™ Series is completely concealed in the wall or ceiling during normal conditions (on standby).

In the event of a power failure, the door of the unit rotates open 180° to expose the emergency lights (two high-efficiency MR-16 lamps) to illuminate the path of egress. Once AC power returns or at the end of the discharge period, the lights turn off and the door automatically rotates to a closed position, driven by an energy storage circuit. If needed, the back box can be shipped separately.

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Standard Features

- Each unit comes with two MR-16 halogen lamps ranging from 12 to 50 watts each or two MR-16 style LED lamps
- The self-powered unit is contained in a heavy-duty galvanized steel backbox that can be concealed in the wall or ceiling and includes a combined test switch and pilot light that is accessible through the frame
- The normally exposed parts of the unit (flat door and frame) are covered with a high-quality powder-coated textured off-white finish that integrates well with most wall and ceiling paints; the surface finish can also be customized on site with paint, wallpaper or other coverings
- Power requirements: 120/277VAC, 60 Hz, .25/.12 amp
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .25/.12 amp, automatic charger, built around a micro-controller integrated circuit; circuit standard features include current limiting, temperature-compensated cut-off voltage, brown-out transfer, low-voltage battery disconnect and battery lockout (prevents activation in DC mode until initial AC activation)
- Special bar hangers for installation in sheet rock or T-bar ceilings are included
- The included electrical junction box can be installed on a wall stud or ceiling beam with a simple U-shape bracket
- Five-year warranty on electrical parts (motor, electronic circuitry)
- Each unit is fully computer-tested and aligned mechanically for optimum operation

Accessories (Order as a separate item)

Remote Test Switch (metal faceplate) ..... **RTS**

Remote Test Switch (plastic faceplate) **RTS-1**

Diagnostic/Self-Test Feature (optional)

Diagnostic/Self-Test circuitry is optional on all self-powered models. This circuitry is programmed to ensure the equipment readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, the pilot light located on the front of the unit will change color from solid green to a flashing red light, indicating a fault. A detailed diagnostic legend is available on the door back side and provides fault identification (battery, charger circuitry, lamps) for the maintenance personnel. The self-test feature will simulate a power loss for minimum 30 seconds every 30 days, 30 minutes every 6 months and 90 minutes annually.

Power Consumption

	MAXIMUM		STANDBY*	
MODEL	INPUT CURRENT	INPUT POWER	INPUT CURRENT	INPUT POWER
120V	.25A	30W	.1A	11W
277V	.12A	30W	.05A	11W

** Standby power consumption is 50% lower for lead-calcium batteries.*

Unit Ratings

	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
MODEL NO.	1½ HRS.	2 HRS.	4 HRS.	8 HRS.
RTM40 RTN40	40	30	24	—
RTM70 RTN70	70	50	40	24
RTM100 RTN100	100	70	50	40

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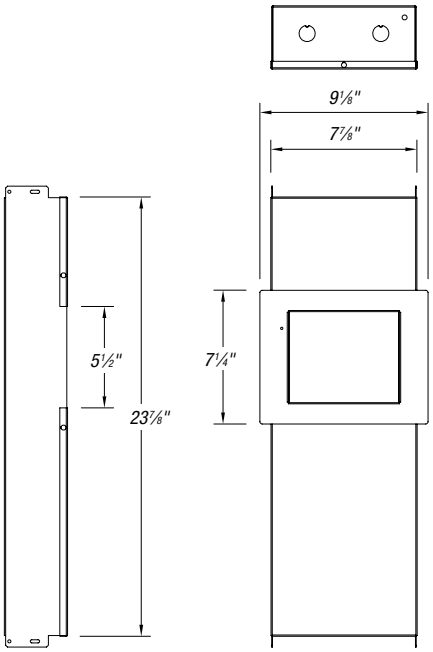
Spec-Grade Architectural

Dimensions

Dimensions are approximate and subject to change.
Unit supplied with T-bar hanger kit package.

Charger & Battery Compartment:
For use in walls or ceilings with a cavity,
not for use in block walls or solid ceilings.



Catalog Numbering System

RT | M | 100 - 2(50) - D3

Series
RT

Battery Type
M = Lead-Calcium
N = Nickel-Cadmium

Unit Capacity
40 = 12V 40W
70 = 12V 70W
100 = 12V 100W

Lamp Wattage
2(12) = 12W, MR-16 Each Head
2(20) = 20W, MR-16 Each Head
2(35) = 35W, MR-16 Each Head
2(50) = 50W, MR-16 Each Head
2(20H) = 20W, MR-16 High Lumen Output
2(35H) = 35W, MR-16 High Lumen Output
2(50H) = 50W, MR-16 High Lumen Output
2(LG) = 4W LED

Options
AD = Advanced Diagnostics, Audible
ADNA = Advanced Diagnostics, Non-Audible
D1 = Time Delay 5 Minutes
D2 = Time Delay 10 Minutes
D3 = Time Delay 15 Minutes**
DL = Damp Location*
X = Backbox Shipped Separately

** Available on all models except Ni-Cd 100W.*
*** Not required with AD or ADNA.*
Time delay standard at 15 min.

RTG | 2 - 2 | (LG) - DL

Series
RTG = Remote AC Generator

Input Voltage
1 = 120VAC, 60 Hz
2 = 277VAC, 60 Hz
3 = 347VAC, 60 Hz

Number of Lamps
2 = Two Lamps Standard

Lamp Wattage
(LG) = 4W LED
(12) = 12W Each Head
(20) = 20W Each Head
(35) = 35W Each Head
(50) = 50W Each Head
(20H) = 20W, High Lumen Output
(35H) = 35W, High Lumen Output
(50H) = 50W, High Lumen Output

Options
DL = Damp Location*
X = Backbox Shipped Separately

** Available on all models except Ni-Cd 100W.*

Spec-Grade Architectural

The unseen solution: Virtually invisible emergency lighting.

Mini Revelation™ Series

Specially designed for retrofitting in finished walls with a cavity (drywall with 4-inch studs), the Mini Revelation™ Series concealed emergency lighting equipment provides impressive illumination. In normal conditions (standby), the unit is completely concealed in the wall.

Standard Features

- Each unit comes with two MR-16 halogen lamps (standard)
- The self-powered battery unit is contained in a heavy-duty galvanized steel backbox that can be concealed in the wall or ceiling and includes a combined test switch and pilot light that is accessible through the frame
- The normally exposed parts of the unit (flat door and frame) are covered with a high-quality powder-coated textured off-white finish that integrates well with most wall and ceiling paints; the surface finish can also be customized on site with paint, wallpaper or other coverings
- Power requirements: 120/277VAC, 60 Hz, .25/.12 amp
- PulsePlus Charger automatic charger is built around a micro-controller integrated circuit that includes standard features such as current limiting, temperature-compensated cut-off voltage, brown-out transfer, low-voltage battery disconnect and battery lockout (prevents activation in DC mode until initial AC activation)
- The equipment includes the electrical junction box and can be installed on a wall stud or ceiling beam with a simple U-shape bracket
- Evaluated to UL® 924 standard
- Five-year warranty on electrical parts (motor, electronic circuitry)
- Each unit is fully computer-tested and aligned mechanically for optimum operation
- AD or ADNA includes a time-delay function; if needed, it can be enabled/disabled in the field or it can be preset at the factory by including the suffix -AD-D_ or -ADNA-D_

Power Consumption

MODEL NO.	AC INPUT	MAXIMUM INPUT CURRENT	MAXIMUM INPUT POWER	STANDBY (NI-CD, NIMH)* INPUT CURRENT	STANDBY (NI-CD, NIMH)* INPUT POWER
MRT40	120VAC	.25A	30W	.1A	11W
	277VAC	.12A	30W	.05A	11W
MRTG	120VAC	.95A	110W**	—	—
	277VAC	.45A	110W**	—	—

** Standby power consumption is 50% lower for lead-calcium batteries.*
*** Maximum power when equipped with 2 x 50W lamps (generator unit).*

Unit Ratings

MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
MRT_40	40	30	24	—

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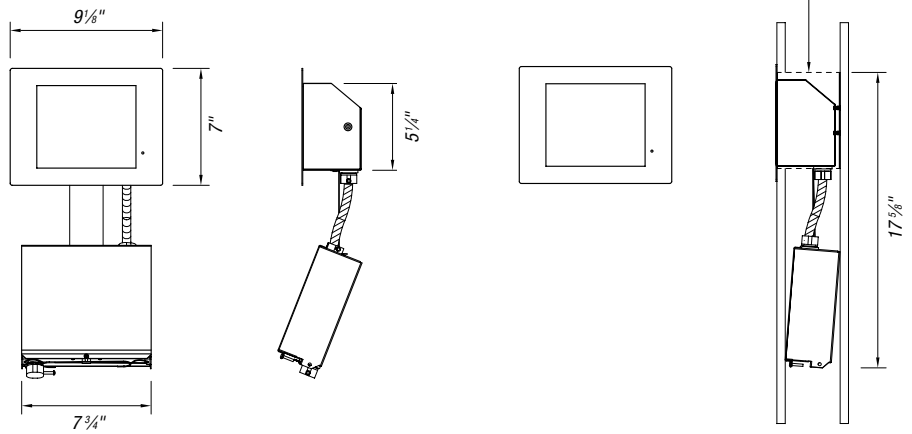
Spec-Grade Architectural

Dimensions

Dimensions are approximate and subject to change.



Complete Unit *Installed Unit*

Catalog Numbering System

Battery Unit

MRT | M | 40 | [ ] | - | 2(20) | - | ADNA

Series
MRT

Battery Type
M *= Lead-Calcium*
N *= Nickel-Cadmium*
H *= Nickel-Metal Hydride*

Unit Capacity
40 *= 12V, 40 Watts*

AC Input
Blank *= 120/277VAC*

Lamp Wattage
2(12) *= 12 Watts Each Head*
2(20) *= 20 Watts Each Head*
2(20H) *= 20 Watts, High Lumen Output*
2(LG) *= 4-Watt LED*

Options
AD *= Advanced Diagnostics*
ADNA *= Advanced Diagnostics, Non-Audible*
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay*
DL *= Damp Location (only MRTN40, MRTH40)*

Generator Unit

MRT | G | [ ] | 1 | - | 2(20) | - | DL

Series
MRT

Battery Type
G *= Remote AC Generator*

Unit Capacity
Blank *= Max. 100W*

AC Input
1 *= 120VAC*
2 *= 277VAC*

Lamp Wattage
2(12) *= 12 Watts Each Head*
2(20) *= 20 Watts Each Head*
2(35) *= 35 Watts Each Head*
2(50) *= 50 Watts Each Head*
2(20H) *= 20 Watts, High Lumen Output*
2(35H) *= 35 Watts, High Lumen Output*
2(50H) *= 50 Watts, High Lumen Output*
2(LG) *= 4-Watt LED*

Options
DL *= Damp Location*

Spec-Grade Architectural

Recessed ceiling-mount only.

Prestige™ X40 Edge-Lit Series

nexus® ADVANCED AD DIAGNOSTICS UL®

The Prestige™ X40 Edge-Lit Series is designed for recessed ceiling-mounting applications requiring a flat trim plate. For recessed wall-mounted signs, see **pages I-204–I-205**.

New Features

- Easier installation: Component-free backbox can be installed in advance, like a regular junction box
- 20–30% less power consumption: Max. 1.4W (AC-only) and max. 2.3W (self-powered)
- Bi-color LED pilot light allows visual diagnostic without the need to open the unit (self-test and diagnostic option)
- UL® Listed
- Also available with white LEDs for custom-design legends: pictograms, special wording, etc. (ask your sales representative)

Standard Features

- Designed to achieve superior visual clarity and performance with an LED light source; high-brightness red or green LEDs transmit light directly into both ends of a unique U-shaped panel; LED-sensitive inks are formulated to provide a rich color in red or green
- Virgin acrylic panel provides optimum light transmission; illumination is 100% in both AC and emergency mode
- Clear acrylic panel is silk screened and computer engraved; computer engraving is used to crisply define each letter and chevron; LED-sensitive inks are formulated to provide a rich color in red or green; choice of legend background includes: Clear (for single face), White or Mirror (for single- or double-face signs)
- Rugged cast brushed aluminum trim plate (optional colors available)
- Low-energy consumption LED lamps consume less than 2.3 watts per sign, single or double face, AC-only or self-powered; long-life LEDs eliminate the twice-a-year re-lamping typical of incandescent lamps
- Available with sealed maintenance-free nickel-cadmium batteries
- Fully automatic charger circuitry offers two-wire universal 120 to 277VAC input, temperature-compensated charger, solid-state transfer, low-voltage battery disconnect and brown-out protection
- Self-test and silent diagnostic is optional on all self-powered models; it is programmed to ensure product readiness and reliability by continuously monitoring every critical function of the unit; the unit is self-tested for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually; when a fault is detected, the pilot light changes color from green to red and flashes following a particular code, identifying the cause: battery, charger circuitry or LED lamps
- Designed to fit integrally with a 20-gauge steel backbox; each unit includes a bar hanger kit
- UL® Listed to UL® 924 Standard
- Prestige™ LED Series signs are unaffected by the vibrations, ambient temperature swings and typical power surges detrimental to standard exit light sources
- Five-year full warranty

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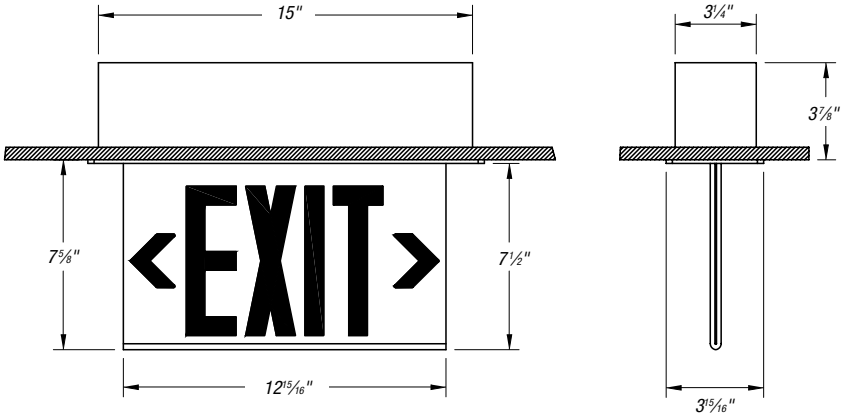
Spec-Grade Architectural

Dimensions

Dimensions are approximate and subject to change.



Options

Description

Special wording ..... **Contact your sales representative**

Accessories (Order as a separate item)

Two 27-inch adjustable bar hangers* ..... **TBH**

** Bar hangers supplied with unit, order as replacement only.*

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-only	120 to 277VAC	Less than 1.4W	—	
AC/DC-remote	120 to 277VAC	Less than 1.4W	6 to 24VDC	Less than 1.4W
Self-powered	120 to 277VAC	Less than 2.3W	Ni-Cd battery	Min. 90 minutes
Self-powered diagnostic	120 to 277VAC	Less than 2.3W	Ni-Cd battery	Min. 90 minutes

Arrow (Chevron) Designation

EXIT> *Arrow Right (R)*

<EXIT *Arrow Left (L)*

<EXIT> *Double Arrow (D)*

EXIT> <EXIT *Arrow Right & Left (RL), represents each side of a double-face panel*

** Wording and chevrons not to scale. For illustration purposes only.*

Catalog Numbering System

W	LSNX	42	N	R	W	R	-	D	-	

Housing Color
Blank *= Brushed Aluminum*
W *= White*
B *= Black*
PB *= Polished Brass*
CH *= Polished Chrome*
BR *= Bronze*

Series
LX *= AC*
LSNX *= Self-Powered*

Faces
42 *= Single-Face*
43 *= Double-Face*

Designation
N *= New Design*

Legend Color
R *= Red*
G *= Green*

Panel Background Color
C *= Clear (single face only)*
W *= White*
M *= Mirror*

Arrows
Blank *= No Arrow*
L *= Arrow Left*
R *= Arrow Right*
RL *= Right & Left (Double Face)*
D *= Double Arrow*
UA *= Universal Field-Installed Arrows*

Legend Size
Blank *= 6" EXIT Legend*
8 *= 8" EXIT Legend (red only)*
L *= 6" EXIT Low-Profile Panel*
LP *= Panel Shipped Separately*

Options
Blank *= No Option*
FA *= Fire Alarm*
D *= Self-Test and Diagnostic**
DC *= AC/DC Remote 6–24VDC*
2CKT *= Two Circuit, AC Only*
FZ *= Flasher & Buzzer*
NEX *= Nexus® Communication*

** Self-powered only.*

Spec-Grade Architectural

Die-cast aluminum edge-lit sign.

Prestige™ Edge-Lit Series

The efficiency of an LED light source combined with an elegant die-cast design adds high performance and style to your next exit sign application.

Universal Prestige™ Edge-Lit Series models include all the components for recessed or surface mounting. A choice of models and options provides specification flexibility to accommodate a variety of application requirements.

Computer engraving is used to crisply define each letter and chevron. LED-sensitive inks are formulated to provide a rich color in red or green. Choice of legend background includes Clear (for single face), White or Mirror (for single- or double-face signs).

A clean circular or angular trim plate design eliminates visible fasteners. Standard finish is brushed aluminum for the housing, trim plate, trim ring and canopy.

AC-only signs consume maximum 1.4 watts. Self-powered signs use 2.3 watts maximum while recharging batteries. Solid-state transfer automatically and instantly supplies the LED lamps from the back-up battery upon failure of AC supply. Close tolerance electronic circuit activates emergency unit when utility power dips below nominal voltage for brownout protection. Units also feature a current-limited and short-circuit proof charger, full battery recharge is made in compliance with UL® 924 specifications, and a test switch incorporates a green LED AC pilot light.

A self-test and silent diagnostic is optional on all self-powered models. It is programmed to ensure product readiness and reliability by continuously monitoring every critical function of the unit. The unit is self-tested for one minute every 30 days, 30 minutes every 60 days and 90 minutes annually. When a fault is detected, the pilot light will change color from green to red and flash following a particular code, identifying the cause: battery, charger circuitry or LED lamps.

The modular design allows for several mounting configurations. A trim ring and two 27-inch bar hangers are used for recessed mounting on walls or ceilings. A canopy allows for surface mounting on ceilings or walls as back- or end-mount. Face panels snap securely into trim plate on all mounting configurations.

Standard Features

- Designed to achieve superior visual clarity and performance with a red and green LED light source
- Virgin acrylic panel provides optimum light transmission, and illumination is 100% in both AC and emergency mode
- Self-powered models contain a sealed maintenance-free nickel-cadmium battery that provides 90 minutes of emergency illumination
- 2-wire universal 120 through 277VAC, 50/60 Hz for AC-only and self-powered models
- UL® 924 Listed
- Five-year full warranty

Accessories (Order as a separate item)

White Pendant ..... **P-WT***
Black Pendant ..... **P-BK***

** Custom pendant lengths and colors available. Specify 12", 24", 36", etc.*

nexus® ADVANCED DIAGNOSTICS

New Features

- Easier installation: component-free backbox housing and canopy can be installed in advance, like a regular junction box
- 20–30% less power consumption: max. 1.4W (AC-only models) and max. 2.3W (self-powered models)
- Bi-color LED pilot light allows visual diagnostic without the need to open the unit (self-test and diagnostic option)
- UL® Listed
- Also available with white LEDs for custom-design legends: pictograms, special wording, etc.

Electrical

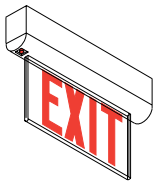
Power requirements: 120 to 277VAC, 50/60 Hz; AC-only signs use 1.4 watts max.; self-powered signs use 2.3 watts max. while recharging batteries.

Available Models

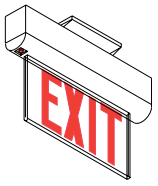
Circular trim plate models shown.
Optional angular trim plate available.

Recessed Wall Mount

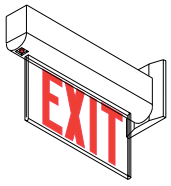
Recessed Ceiling Mount



Surface Wall Mount



Surface Ceiling Mount



Surface End Mount

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	Less than 1.4W	—	—
AC/DC-Remote	120 to 277VAC	Less than 1.4W	6 to 24VDC	Less than 1.4W
Self-Powered	120 to 277VAC	Less than 2.3W	Ni-Cd Battery	Min. 90 Minutes
Self-Powered Diagnostic	120/277VAC	Less than 2.3W	Ni-Cd Battery	Min. 90 Minutes

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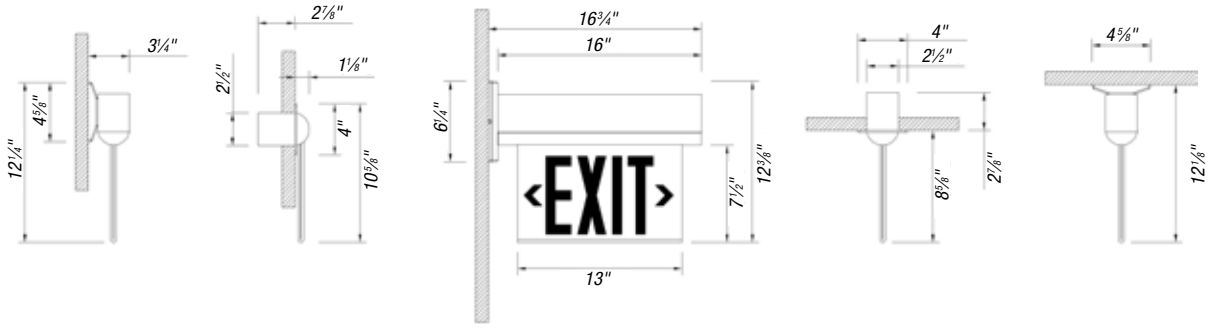
Spec-Grade Architectural

Standard
Circular Trim Plate

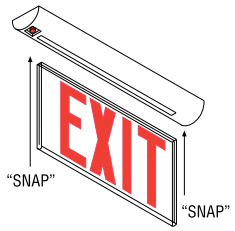
Optional
Angular Trim Plate

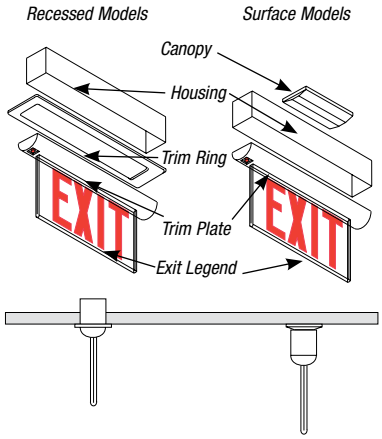
Dimensions

Dimensions are approximate and subject to change.

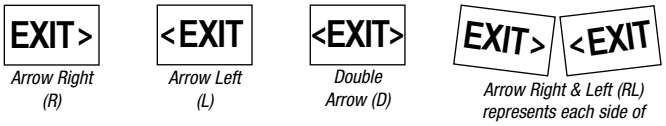


Mounting Configurations
All mounting configurations use the same basic components. Inserting a trim ring allows for recessed mounting on walls or ceilings. Applying a canopy allows for surface mounting on ceilings or walls as back or end mount.





Arrow (Chevron) Designation



Arrow Right (R) | *Arrow Left (L)* | *Double Arrow (D)* | *Arrow Right & Left (RL) represents each side of a double-face panel*

** Wording and chevrons not to scale. For illustration purposes only.*

Catalog Numbering System

W	LXN	2	N	R	W	R	-	A		-	D	-	

Housing Color
Blank *= Brushed Aluminum*
W *= White*
B *= Black*
PB *= Polished Brass*
CH *= Polished Chrome*
BR *= Bronze*

Series
LX *= AC-Only*
LXN *= Self-Powered*

Faces
1 *= Single Face*
2 *= Double Face*

Designation
N *= New Design*

Legend Color
R *= Red*
G *= Green*

Panel Background
C *= Clear (single face only)*
W *= White*
M *= Mirror*

Arrows
Blank *= No Arrow*
L *= Arrow Left*
R *= Arrow Right*
RL *= Right and Left (double face)*
D *= Double Arrow*
UA *= Universal Field-Installed Arrows*

Trim
A *= Angular*
C *= Circular*

Mounting
Blank *= Universal Mount*
S *= Surface Mount (canopy)*

Options
Blank *= No Option*
FA *= Fire Alarm*
D *= Self-Test and Diagnostic*
DC *= AC/DC Remote 6–24VDC*
2CKT *= Two Circuit, AC Only*
FZ *= Flasher and Buzzer (self-powered only)*
X *= Backbox Shipped Separately*
NEX *= Nexus® Communication*

Legend Size
Blank *= 6-in. EXIT Legend*
8 *= 8-in. EXIT Legend (red only)*
LP *= Panel Shipped Separately*

Spec-Grade Architectural

Master with remote floor proximity exit sign.

Prestige™ Floor Proximity Series

For surface or recessed mounting at the floor level, the Prestige™ LED Floor Proximity Series is available as AC-only, AC-dual circuit and as a DC-remote fixture supplied by a "master" exit sign of the Prestige™ DX Series.

The unique design of the Prestige™ LED Floor Proximity Series promises bold visual performance that will enhance safety.

The master exit sign comes standard with the self-test/diagnostic feature. Its circuitry also monitors and supplies diagnostics to the Remote Floor Proximity Exit Sign. The self-test/diagnostic feature continuously monitors the charger assembly, battery and LED assembly current. If a fault is indicated, the external service-required indicator will illuminate. The internal fault indicators will then indicate the nature of the fault. The self-test/diagnostic will self test for a minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually and meets NFPA 101® Life Safety Code® requirements for periodic testing.

Standard Features

- Low energy consumption red and green LEDs provide excellent visual performance, high reliability and low maintenance costs
- Self-powered master units have self-contained batteries and circuitry inside the housing
- Available with sealed maintenance-free nickel-cadmium batteries for superior performance and long life
- Batteries provide 90 minutes of emergency operation and remote power for proximity exit sign
- Remote Floor Proximity Exit Signs have power and diagnostics supplied from the DX/DXN Series master units only
- Standalone AC-only and self-powered units: 120/277VAC dual voltage
- Available for surface or recessed mounting at the floor level
- Evaluated to UL® 924 for floor proximity applications
- Five-year full warranty; each unit is fully tested

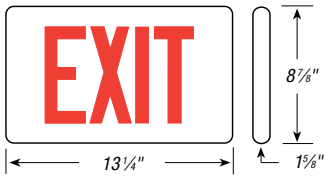
Options

Description	Suffix
Vandal-Resistant Shield and Screws	-VR1

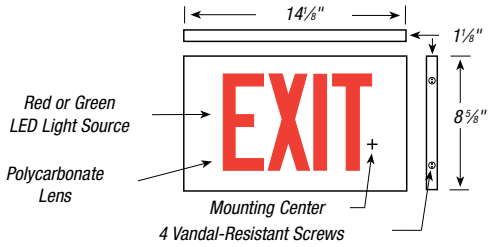
Dimensions

Dimensions are approximate and subject to change.

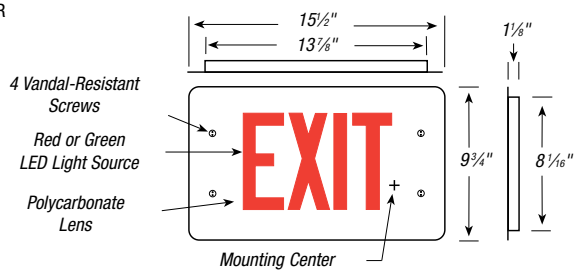
Self-Powered/AC-Only Master
DXN1G-M-N
DX1G-M-N



Floor Proximity Slave Surface Mount
LLGS
LLRS



Floor Proximity Slave Recessed Mount
LLGR
LLRR



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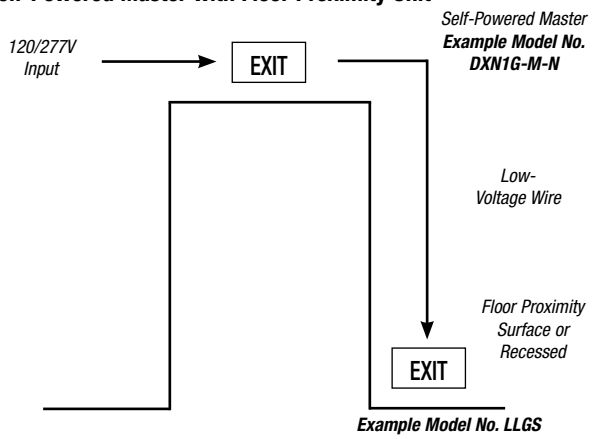
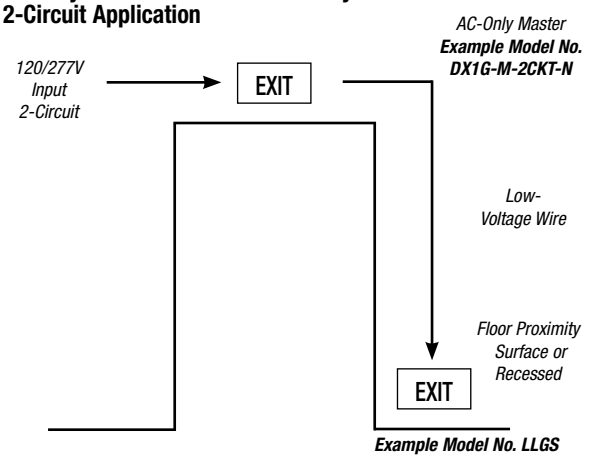
Spec-Grade Architectural

Self-Powered Master with Floor Proximity Unit



AC-Only Master with Floor Proximity Unit — 2-Circuit Application



Catalog Numbering System
Self-Powered Master (unit for above door)

	DXN	1	G	-	M	-	N
Color Option Prefix ***Blank*** = Brushed Alum. Face, Black Body ***WW*** = All White ***BB*** = All Black	**Series**	**Faces** ***1*** = Single Face ***2*** = Double Face	**Stencil Face Lamp Color** ***R*** = Red ***G*** = Green Open Face* ***RW*** = Red/White ***GW*** = Green/White		**Master Unit**		**Standard Series Designator**

Catalog Numbering System
AC-Only Master (unit for above door)

	DX	1	G	-	M	-	2CKT	-	N
Color Option Prefix ***Blank*** = Brushed Alum. Face, Black Body ***WW*** = All White ***BB*** = All Black	**Series**	**Faces** ***1*** = Single Face ***2*** = Double Face			**Stencil Face** ***R*** = Red ***G*** = Green Open Face* ***RW*** = Red/White ***GW*** = Green/White		**Master Unit**		**Standard Series Designator** **Circuit**

Catalog Numbering System
Floor Proximity Unit (unit on side of door)

	LL	G	S	-	VR1
Color Option Prefix ***Blank*** = Brushed Alum. Face, Black Body ***W*** = All White ***B*** = All Black	**Series**	**Stencil Face Lamp Color** ***R*** = Red ***G*** = Green ***RW*** = Red/White ***GW*** = Green/White	**Mounting** ***R*** = Recessed ***S*** = Surface		**Option** ***VR1*** = Vandal-Resistant Screws/ Polycarbonate Shield

* Open face required for special wording. Contact your Thomas & Betts sales representative.

Catalog Numbering System
Floor Proximity Unit (unit on side of door)

	LL	-	G	S	-	VR1
Color Option Prefix ***Blank*** = Brushed Alum. Face, Black Body ***W*** = All White ***B*** = All Black	**Series**		**Stencil Face Lamp Color** ***R*** = Red ***G*** = Green	**Mounting** ***R*** = Recessed ***S*** = Surface		**Option** ***VR1*** = Vandal-Resistant Screws/ Polycarbonate Shield

* Open face required for special wording. Contact your Thomas & Betts sales representative.

Power Consumption

COLOR	MODEL	AC SPECS		DC SPECS	
Red	AC-Only	120/277VAC	1.3W	—	—
	AC-2 Circuit	120/277 and 277/277VAC	2.6W	—	—
	Self-Powered	120/277VAC	3.8W	Ni-Cd Battery	Min. 90 Minutes
Green	AC-Only	120/277VAC	1W	—	—
	AC-2 Circuit	120/277 and 277/277VAC	3.3W	—	—
	Self-Powered	120/277VAC	5W	Ni-Cd Battery	Min. 90 Minutes

Spec-Grade Architectural

Die-cast exit series.

Prestige™ DX Series

A unique design that promises bold visual performance, the Prestige™ DX Series enhances safety while providing an elegant design to complement a variety of interiors.

The Prestige™ DX Series uses today's best technology to provide a long-lasting, high-performance exit sign. With durable powder-coated die-cast construction, a long-life LED light source and standard self-diagnostic circuitry, the Prestige™ DX Series has more to offer in an exit sign.

Diagnostic/self-test circuitry is standard on all self-powered models. This circuitry is programmed to ensure the exit's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single service-required indicator illuminates immediately. A detailed diagnostic display that will further indicate the nature of the fault is located on the inside of the exit sign, out of sight from the general public. The self test will test the unit for minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

nexus® NYC approved ADVANCED AD DIAGNOSTICS CSA US

Standard Features

- Red and green LED light source
- Constructed of die-cast aluminum, finished with a deep brushed face and black body; optional finishes available
- Self contained — batteries and circuitry are located inside the exit housing
- Available with sealed maintenance-free nickel-cadmium batteries that provide 90 minutes of emergency operation and recharge per UL® 924 requirements
- Fully automatic charger is solid state; all models are universal 2-wire, 120 through 277VAC, 50/60 Hz
- Continuous self-diagnostic monitoring and self-testing per Life Safety Code® requirements
- Can be wall, end or ceiling mounted
- Evaluated to UL® 924 Standard; AC-only signs are listed for use in damp locations
- Unaffected by the vibrations, ambient temperature swings and typical power surges detrimental to standard exit light sources
- Five-year full warranty

Accessories (Order as a separate item)

Description	Add Suffix
White Pendant	**PDW***
Black Pendant	**PDB***

** Specify pendant length (12", 24", 36", etc).*

Power Consumption

MODEL (6")	AC SPECS		DC SPECS	
AC-only	120 to 277VAC	1.25W	—	—
AC/DC	120 to 277VAC	1.25W	6 to 24VDC	Less than 1.5W
Self-powered	120 to 277VAC	1.6W	Ni-Cd battery	Min. 90 minutes
MODEL (8")	**AC SPECS**		**DC SPECS**	
AC-only	120 to 277VAC	2.5W	—	—
AC/DC	120 to 277VAC	2.5W	6 to 24VDC	1.6W
Self-powered	120 to 277VAC	2.9W	Ni-Cd battery	Min. 90 minutes

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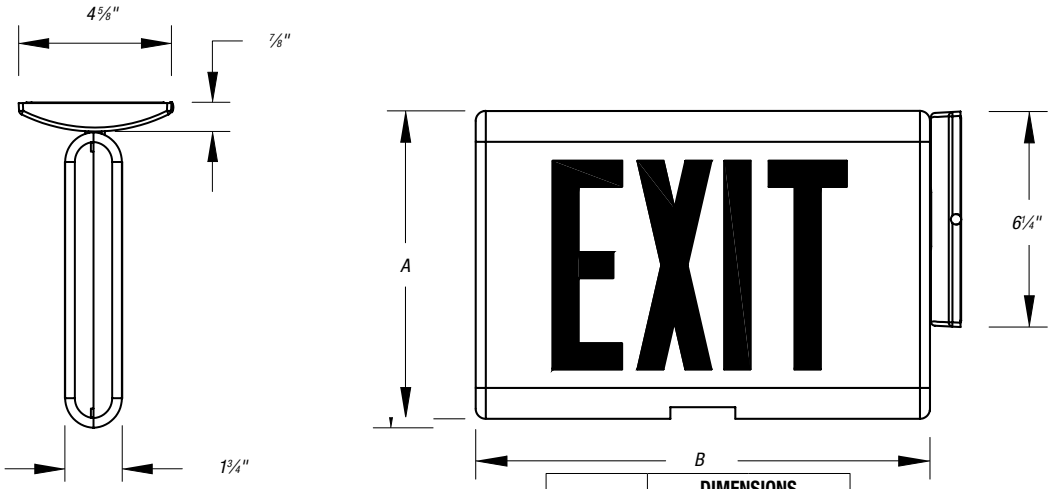
Spec-Grade Architectural

Dimensions

Dimensions are approximate and subject to change.



LETTERS	DIMENSIONS	
	DIM A	DIM B
6"	8⅞"	13 1/16"
8"	10½"	15¼"

Catalog Numbering System

WW	DXN	1	R	8	NEX	DL	-	N

Color Frame/Faceplate
Blank *= Black/Brushed Aluminum*
WW *= White/White*
WA *= White/Brushed Aluminum*
BZ *= Bronze/Bronze*
BB *= Black/Black*
AA *= All Brushed Aluminum*

Series
DXN *= Self-Powered Unit*
DX *= AC/DC**

** Not available with Nexus® option*

No. of Faces
1 *= Single-Face*
2 *= Double-Face*

Legend Color
R *= Red*
G *= Green*

Open Face
RW *= Red on White*
GW *= Green on White*

(Open face required for special wording)

Letters
Blank *= 6" Letters*
8 *= 8" Letters*

Diagnostic Options
Blank *= Standard*
NEX *= Nexus® Communication*

Options
Blank *= Standard*
DL *= Damp Location*
FA *= Fire Alarm-Activated Flasher*
FZ* *= Flasher Buzzer (self-powered only)*
VR *= Vandal Resistant with Vandal-Resistant Screws*
VR1 *= Vandal-Resistant Screws/Polycarbonate Shield*
2CKT* *= 2 Circuit (120/120 or 277/277, AC only)*

** Not available with Nexus® option*

Version
N *= New Design*

Spec-Grade Commercial

These battery units are designed with aesthetics, ease of installation and performance in mind.

Premier™ Series Thermoplastic Battery Unit

NEW!

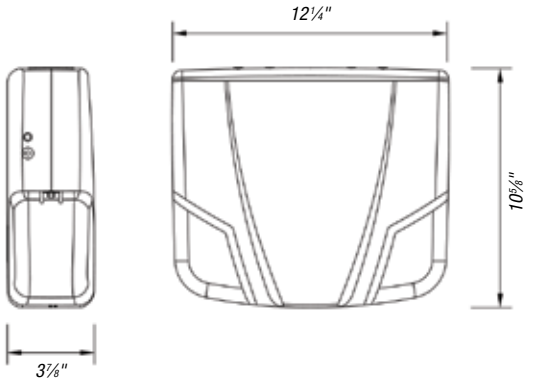
nexus® UL®

Standard Features

- Simple, compact and contemporary design
- Wall-mount or ceiling-mount installation (specify)
- Two-piece housing of injection-molded thermoplastic
- MR-16 or LED halogen lamps, shielded by clear polycarbonate covers
- Sealed, maintenance-free, lead-calcium or nickel-cadmium batteries
- Dual voltage input: 120/277VAC
- Total load capacity up to 72W
- UL® 924 Listed
- Advanced Diagnostic (audible) optional
- Certified for damp locations (optional)
- Nexus® interface (optional)

Dimensions

Dimensions are approximate and subject to change.



Wire Guard

WG1-E	Wall or Flat Ceiling Mount

Flat Ceiling Mount

Power Consumption and Unit Ratings

MODEL NO.	AC SPECS		WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HOURS	2 HOURS	3 HOURS	4 HOURS
18M	6V		18	14	9	—
30M	6V		30	20	15	10
40M	6V	120/277VAC	40	30	20	15
60M	6/12V		60	40	30	20
72M	12V		72	54	36	27
20NC	6V		20	15	10	8
40NC	12V	120/277VAC	40	30	20	15
50NC	12V		50	36	24	18

** National Electrical Code® specification.*

Catalog Numbering System

[ ] [PR18M] [2] [MI] - [ ] - [ ]

Housing Color
Blank *= White*
B *= Black*

Series/Capacity
PR18M *= 6V 18W Lead-Calcium*
PR30M *= 6V 30W Lead-Calcium*
PR60M *= 6V 60W Lead-Calcium*
12PR40M *= 12V 40W Lead-Calcium*
12PR60M *= 12V 60W Lead-Calcium*
12PR72M *=12V 72W Lead-Calcium*
PR20NC *= 6V 20W Ni-Cd*
12PR40NC *= 12V 40W Ni-Cd*
12PR50NC *= 12V 50W Ni-Cd*

Number of Heads
Blank *= 0 Heads*
2 *= Two Heads*

Lamp/Wattage
MI *= 6V 6W MR-16**
MJ *= 6V 10W MR-16**
LA *= 6V 4W LED MR-16**
LG *= 12V 4W ELD MR-16**
MO *= 12V 10W MR-16**
MK *= 12V 12W MR-16**
MG *= 12V 20W MR-16*

** Available for damp locations.*

Unit Type
Blank *= Standard*
D *= Advanced Diagnostics, Non-Audible*
DA *= Advanced Diagnostics, Audible*
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*

Options
Blank *= No Option*
D1 *= Time Delay 5 Min.*
D2 *= Time Delay 10 Min.*
D3 *= Time Delay 15 Min.*
CM *= Ceiling Mount*
DL *= Damp Location*

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Spec-Grade Commercial

Specification-grade, LED thermoplastic, universal-mount, snap-fit exit sign.

Premier™ Series Exit Sign

A compact exit sign with an all-in-one, snap-fit design, the Premier™ Series is affordable and easy to install. It's ideally suited for commercial and spec-grade applications.

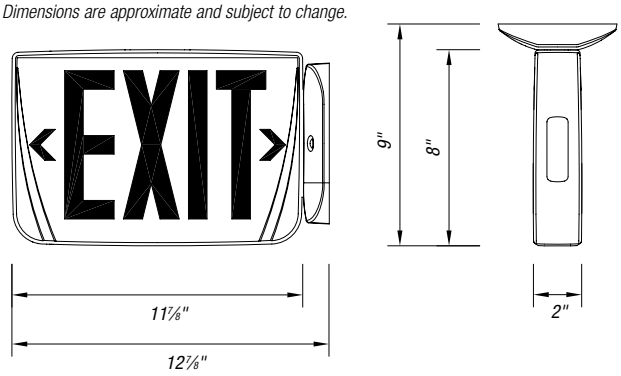
Standard Features

- Indirect reflective technology provides bright, even illumination
- Long-life LED light source assures low maintenance costs and superior illumination
- Durable, injection-molded, thermoplastic housing; optional vandal-resistant shield with tamper-proof screws
- Energy-efficient power consumption: less than 3.5 watts for self-powered version and less than 3 watts for AC-only single or double face
- Available with a sealed, maintenance-free nickel-cadmium battery
- Dual-voltage input: 120/277VAC; optional advanced diagnostic circuitry, flasher/buzzer and fire alarm-activated flasher
- Standard universal supplied with two faceplates, backplate for wall mount, easy-install canopy for end and ceiling mounting, and universal, field-selectable snap-in/out chevrons
- UL® 924 Listed; all models are UL® Listed for damp locations
- Five-year full warranty

nexus® ADVANCED AD DIAGNOSTICS UL®

Dimensions

Dimensions are approximate and subject to change.



Optional Self-Test/Self-Diagnostic

Continuous self-testing per Life Safety Code® requirements is available. This circuitry is programmed to ensure the exit sign's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single "Service Required" indicator illuminates immediately. A detailed diagnostic display that will further indicate the nature of the fault is located on the inside of the exit sign, out of sight from the general public. The self-test will test the unit for a minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

Accessories (Order as a separate item)

White Pendant ..... **PRE-P-WT***

Black Pendant ..... **PRE-P-BK***

** Specify pendant length.*

Wire Guard

WALL	CEILING	END
WG1-E	WG5-E	WG5-E

Catalog Numbering System

W	PREM	AC	R	-	

Housing Color
W *= White*
B *= Black*

Series
PREM *= LED Plastic Exit*

Unit Type
Standard Models
AC *= AC Only (120/277VAC)*
U *= 120/277VAC and 6 to 48VDC*
SNX *= Self-Powered Ni-Cd*
Optional Models
2C1 *= Dual AC Circuit (2x120 volts)*
2C2 *= Dual AC Circuit (2x277 volts)*
DN *= Self-Powered Advanced Diagnostics Circuitry*
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*

Color
R *= Red Universal*
R1 *= Red Single Face**
R2 *= Red Double Face**
G *= Green Universal*
G1 *= Green Single Face**
G2 *= Green Double Face**
Open Face
RW *= Red on White*
GW *= Green on White*

(Open face required with special wording legends)

Options
Blank *= No Option*
BA *= Brushed Aluminum Exit Stencil*
FZ *= Flasher Buzzer (DN model only)*
FL *= Flasher (DN model only)*
FA *= Fire Alarm-Activated Flasher (AC, U, 2C1, 2C2 and DN models only)*
FBF *= Flasher Buzzer + Fire Alarm-Activated Flasher (DN model only)*
VR *= Tamper-Proof Screws**
VR1 *= Polycarbonate Shield with Tamper-Proof Screws**

** Please specify single or double face, red or green.*

Spec-Grade Commercial

Thermoplastic combination battery unit and exit sign.

Premier™ Series Combo

Designed with aesthetics, ease of installation and performance in mind, the Premier™ Series Thermoplastic Combination Battery Unit and Exit Sign provides outstanding performance in a cost-competitive package. One housing combines a battery unit and exit sign in a compact and contemporary design.

nexus® UL

Standard Features

- Indirect refractive technology provides bright, even illumination
- Choice of MR-16 halogen lamps, shielded by a clear polycarbonate cover; optional MR-16 LED lamps with life expectancy of more than 50,000 hours
- Exit sign long-life LED light source assures low maintenance costs and superior illumination
- Durable injection-molded thermoplastic housing with push-to-snap design; optional vandal-resistant shield with tamper-proof screws
- Available with sealed, maintenance-free, lead-calcium or nickel-metal hydride batteries
- Dual-voltage input: 120/277VAC; optional advanced diagnostic circuitry, flasher/buzzer and fire alarm-activated flasher
- Remote load capacity up to 50 watts when supplied with no heads
- Available in single- or double-face configurations, both with means for ceiling mounting
- Easy-to-install canopy and field-selectable snap-in/out chevrons for quick and easy installation
- UL® 924 Listed
- Five-year full warranty (excluding lamps and fuses)

Accessories (Order as a separate item)

Wire Guard (wall mount) **WG2-E**
White Pendant ..... **PRE-P-WH***
Black Pendant ..... **PRE-P-B***

** Specify pendant length.*

Convert Single Face to Double Face

Red/White **005715-E**
Red/Black **005716-E**
Green/White **005717-E**
Green/Black **005718-E**

Replacement Batteries

860.0004-E	Lead-Calcium
022318-E	NiMH 6V 12W
022319-E	NiMH 12V 24W
022320-E	NiMH 12V 40W, 50W

Replacement Lamps

580.0074-E	MR-16, 6V 6W
580.0079-E	MR-16, 6V 10W
580.0097-E	MR-16, LED 6V 4W
580.0099-E	MR-16, 12V 10W
580.0080-E	MR-16, 12V 12W
580.0075-E	MR-16, LED 12V 20W
580.0093-E	MR-16, LED 12V 4W

Power Consumption and Unit Rating

MODEL NO.	AC SPECS			WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
				1½ HRS.	2 HRS.	3 HRS.	4 HRS.
EXIT SIGN MODULE	Battery Type	120/277VAC	Less than 2W	—	—	—	—
612M	Lead-Calcium	120/277VAC	.11/.05A	12	8	—	—
612H	NiMH	120/277VAC	.11/.05A	12	9	—	—
624M	Lead-Calcium	120/277VAC	.11/.05A	24	16	12	9
1224M	Lead-Calcium	120/277VAC	.22/.08A	24	16	12	9
1224H	NiMH	120/277VAC	.22/.08A	24	18	12	9
1240H	NiMH	120/277VAC	.22/.08A	40	30	20	15
1250H	NiMH	120/277VAC	.22/.08A	50	36	24	18

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Spec-Grade Commercial

Dimensions

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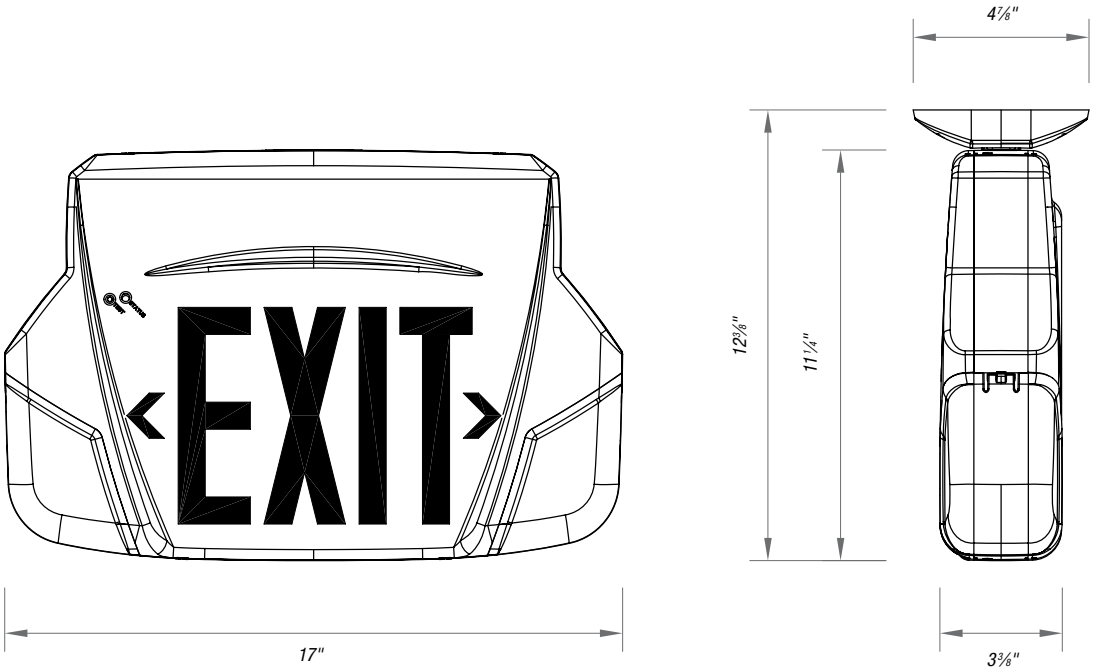


Catalog Numbering System

W	PR	612M	1	R	2	MI	-	

Housing Color
W *= White*
B *= Black*

Series
PR *= Series*

Voltage/Capacity/Battery
Lead-Calcium
612M *= 6V 12W, Lead-Calcium*
624M *= 6V 24W, Lead-Calcium*
1224M *= 12V 24W, Lead-Calcium*

Nickel-Metal Hydride
612H *= 6V 12W, NiMH, Damp Location Rated*
1224H *= 12V 24W, NiMH, Damp Location Rated*
1240H *= 12V 40W, NiMH, Damp Location Rated*
1250H *= 12V 50W, NiMH, Damp Location Rated*

Faces
1 *= Single Face (ceiling or wall mount)*
2 *= Double Face (ceiling mount)*
1N *= Single Face No Canopy (wall mount)*
4 *= Universal (2 faces, backplate and canopy)*

Legend Color
R *= Red*
G *= Green*

No. of Heads
Blank *= No Heads*
2 *= Two Heads*

Lamp/Wattage
MI *= 6V 6W, MR-16*
MJ *= 6V 10W, MR-16*
LA *= 6V 4W, LED MR-16*
MO *= 12V 10W, MR-16*
MK *= 12V 12W, MR-16*
MA *= 12V 20W, MR-16*
LG *= 12V 4W, LED MR-16*

Options
Blank*= No Option*
BA *= Brushed Aluminum Exit Stencil*
FZ *= Flasher Buzzer*
FL *= Flasher*
FA *= Fire Alarm-Activated Flasher*
FBF *= Flasher Buzzer + Fire Alarm-Activated Flasher*
ADNA *= Advanced Diagnostics, Non-Audible (not available with 1250H)*
AD *= Advanced Diagnostics (not available with 1250H)*
D3 *= 15-min. Time Delay*
VR *= Tamper-Proof Screws*
VR1 *= Polycarbonate Shield with Tamper-Proof Screws*
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*

Spec-Grade Commercial

Ideal for offices, entertainment facilities and retail locations.

Provider™ PRO-2/PRO-3 Series — 6-Volt Thermoplastic Housing

A sleek, low-profile thermoplastic body combined with a transparent polycarbonate lamp shield creates a contemporary style that's just right for today's aesthetic demands.

The proven look in emergency lighting design, the Provider™ Series has a standard white finish to complement a variety of interiors including offices, theaters, restaurants and shopping malls. With a body measuring only 11" x 5", the versatile Provider™ Series can be mounted in any orientation on a wall or ceiling.

Standard Features

- 6-volt high-intensity tungsten (HIT) lamps and mirrored reflectors supply generous amounts of emergency lighting
- Completely self-contained; thermoplastic construction with a polycarbonate shield protects the fully adjustable self-locking heads
- Available with sealed, maintenance-free lead-calcium batteries
- Integrated circuitry offers 120/277VAC, 60 Hz standard operation, LED pilot light, rocker-type test switch, temperature-compensated, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Optional Advanced Diagnostics circuitry monitors every critical function of the unit and provides an audible and visual indicator when a fault is detected (non-audible versions available)
- Universal mounting pattern keyhole slots and a conduit knockout provide alternate mounting methods
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA; UL® Listed for use in damp locations
- Three-year full warranty, excluding lamps, pilot lights and fuses

Accessories (Order as a separate item)

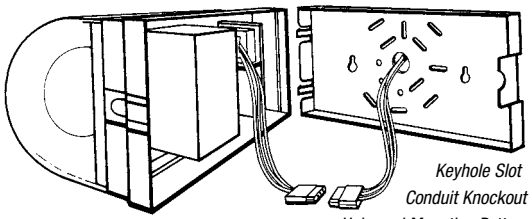
Replacement Lamps **570.0012-E**

Provider™ Remote Lighting Fixtures (Requires an external DC source)

6-Volt 10.8-Total Unit Wattage..... **6PRO-10**
12-Volt 18-Total Unit Wattage..... **12PRO-2(ZF)**
24-Volt 18-Total Unit Wattage..... **24PRO-2(ZN)**

Fast and Easy Installation

Snap-together design eliminates screws.



The Provider™ Series' quick-connect plug, battery lockout feature and snap-together design make installation fast and easy.

With the AC quick-connect plug, contractors simply make the AC connection to the plug, mount the backplate and plug in the unit.

The battery lockout feature is an AC-activated load switch that prevents the batteries from discharging until the unit is energized with AC power. This allows the contractor to install the Provider™ and connect the batteries in one convenient operation.

Universal mounting pattern keyhole slots and a conduit knockout provide alternate mounting methods.

Unit Ratings

Each unit furnished with one HIT lamp per head.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NUMBER	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
			1½ HRS.	2 HRS.	3 HRS.	4 HRS.
PROVIDER™ Battery Unit						
Lead-Calcium	6	**PRO-2**	12	9.5	—	—
	6	**PRO-3**	18	12	10	7

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Spec-Grade Commercial

Dimensions

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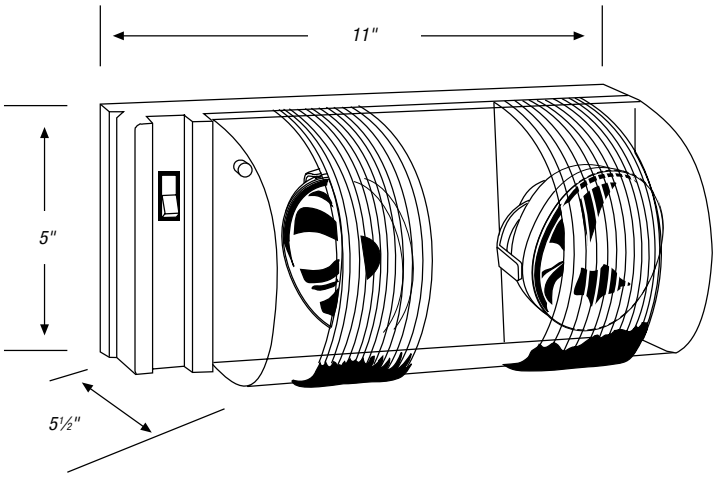


Catalog Numbering System

Battery Unit

B	PRO	-	2	-	AD

Color
Blank *= Off-White Housing*
B *= Black Housing*

Series
PRO *= Series*

Voltage/Wattage
2 *= 6V 12W*
3 *= 6V 18W*

Options
Blank *= No Options*
VR *= Vandal-Resistant Screws*
AD *= Advanced Diagnostics*
VM *= Voltmeter***
ADNA *= Advanced Diagnostics, Non-Audible*
DL *= Damp Location*
C *= 120VAC Cord & Plug**

** Standard cord is 3 ft.*
*** Not available with AD/ADNA option.*

Remote Unit

6	PRO	10	B

Voltage
6 *= 6V*
12 *= 12V*
24 *= 24V*

Series
PRO *= Series*

Lamp/Type
10 *= 2 x 6V 5.4W Incandescent Wedge*
(ZF) *= 2 x 12V 9W Incandescent Wedge*
(ZN) *= 2 x 24V 9W Incandescent Wedge*

Color
Blank *= Off-White*
B *= Black*

Spec-Grade Commercial

A contemporary family of decorative emergency light units.

EC-2/ECX-2 Series — 6-Volt Thermoplastic Unit

The universal mounting pattern, keyhole slots and conduit entry in the EC-2 and ECX-2 Series provide alternate mounting and complete flexibility in an emergency lighting unit. On the shelf and on a specification, the EC Series gives you a contemporary family of decorative emergency light units, matching exit signs and remotes to coordinate for aesthetic appeal. On the job, the modular design allows field-upgrading the basic model to a master unit for powering matching remote lighting heads or AC/DC exit signs, including the new LED models.

THE ESCORT SERIES ADVANCED AD DIAGNOSTICS UL

Standard Features

- Each self-contained unit comes with two 5.4-watt high-intensity incandescent lamps mounted in polished reflectors
- Housing and heads are constructed of high-impact UL® 94, 5VA flame classification, off-white thermoplastic that resists denting, peeling, scratching and corrosion
- Available with sealed, maintenance-free lead-calcium batteries
- Integrated circuitry offers 120/277VAC, 60 Hz, .3/.15 amp standard operation, LED pilot light, automatic charging, instantaneous transfer, temperature-compensated charger, low-voltage battery disconnect, brownout protection, lockout (automatic battery connect) and reverse-polarity protection
- Universal mounting pattern, keyhole slots and conduit entry provide alternate mounting capability, and the housing and back plate snap together for ease of installation
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA; UL® Listed for use in damp locations
- The EC-2 (12W max.) and ECX-2 (24W max.) Series have a three-year full warranty, excluding lamps and fuses

Unit Ratings

Furnished with two 5.4-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 90 MINUTES	REMOTE WATTS
Unit Equipment				
Lead-Calcium	6	**EC-2**	12	—
	6	**ECX-2**	12	12
	6	**EC-2-AD**	12	—
	6	**ECX-2-AD**	12	12
Nickel-Cadmium	6	**EC-2-AD-N**	12	—
	6	**ECX-2-AD-N**	12	12

SEALED MAINTENANCE-FREE BATTERY TYPES	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
	1½ HRS.	2 HRS.	3 HRS.	4 HRS.
ECX-2 Series Unit Equipment — With Remote Capability				
Lead-Calcium	24	15	—	—
Nickel-Cadmium**	24	18	12	—

** National Electrical Code® specification.*
*** Only available with Advanced Diagnostics.*

Flexibility in an Emergency Light Unit

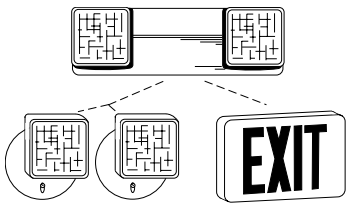
• On the specification

Its contemporary design allows you to coordinate the aesthetics of emergency specifications with matching models: an emergency unit and a remote head.

• On the job

Changes on the job are never a problem with the EC Series. Its modular design allows you to field-upgrade the basic model to a master unit for powering matching remote lighting heads or AC/DC exit signs, including the new LED illumination models.

ECX-2 – 12 Watts Remote Capacity



Remote Heads *LED Exit Signs*

• On the shelf

The modular design of the EC Series gives you a contemporary family of decorative emergency light units, matching exit signs and remotes.

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Spec-Grade Commercial

Dimensions

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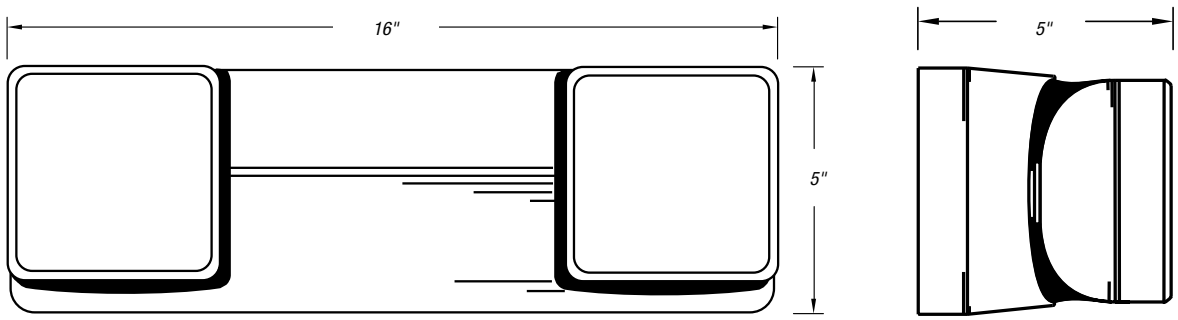

Catalog Numbering System

B	EC	-	2	-	EG	-	N

Color
Blank *= Off-White Housing*
B *= Black Housing*

Series
EC *= 6V 12W Battery Unit*
ECX *= 6V 24W Battery Unit*

Heads
2 *= Two Heads (12W remote)*

Lamps
2HA *= 6V 6W Bi-Pin Halogen*
2HB *= 6V 8W Bi-Pin Halogen*
2HC *= 6V 10W Bi-Pin Halogen*
2HD *= 6V 12W Bi-Pin Halogen*

Options
EG *= Standard Unit*
AD *= Advanced Diagnostics*
ADNA *= Advanced Diagnostics, Non-Audible*
D1 *= Time Delay 5 Min.*
D2 *= Time Delay 10 Min.*
D3 *= Time Delay 15 Min.**
DL *= Damp Location Listed (AD/ADNA units only)*

** Not required with AD or ADNA — time delay standard at 15 minutes*

Battery Option
Blank *= Lead-Calcium*
N *= Nickel-Cadmium Battery (AD/ADNA units only)*

Spec-Grade Commercial

Contemporary metal housing with decorative front-mounted heads.

ECC and ECM Series — 6- and 12-Volt Steel Units

Featuring a contemporary metal housing with decorative front-mounted heads, the ECC and ECM Series offers several design options. The ECC and ECM Series is available in 6- or 12-volt units from 18 to 54 watts with either lead-calcium or nickel-cadmium sealed maintenance-free batteries. See the entire line of matching Escort products, including a decorative thermoplastic exit sign and matching remote heads.

nexus® ADVANCED AD DIAGNOSTICS UL®

Standard Features

- Each unit comes with two front-mounted EF-23 heads with 9-watt high-intensity incandescent lamps (standard)
- Constructed of 20-gauge steel with an off-white baked enamel finish
- Available with sealed, maintenance-free nickel-cadmium or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Hinged front door
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and approved for use in the Commonwealth of Pennsylvania and New York City
- Three-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Mounting Bracket (S cabinet only) ..... **BJ**
Wire Guard..... **WG10-E**
Clear Polycarbonate Vandal-Resistant Shield ..... **VRS-BB***
Clear NEMA 4X Polycarbonate Vandal-Resistant Shield..... **VRSBB-4X***

** S cabinet only, order on separate line.*

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	CABINET SIZE
Nickel-Cadmium	6	**ECC18-2**	18	12	—	—	S
	6	**ECC25-2**	25	18	12	9	S
	12	**12ECC36-2**	36	21	15	12	S
	12	**12ECC50-2**	50	36	25	18	S
Lead-Calcium	6	**ECM18-2**	18	12	10	7	S
	6	**ECM27-2**	27	18	14	10	S
	6	**ECM36-2**	36	24	20	14	S
	6	**ECM54-2**	54	37	28	21	L
	12	**12ECM36-2**	36	25	20	14	S
	12	**12ECM54-2**	54	37	28	21	L

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Spec-Grade Commercial

Dimensions

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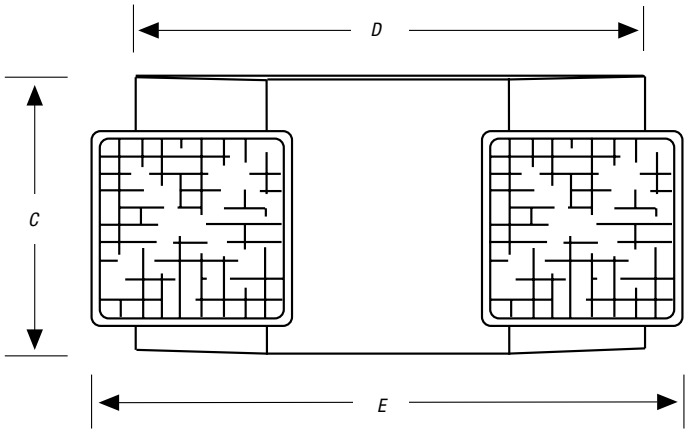
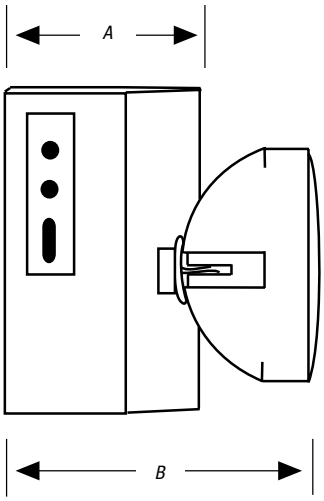




	CABINET	
	S	L
A	3½"	4"
B	6⅛"	6¾"
C	5¼"	6¼"
D	11"	12½"
E	15¼"	16½"

Catalog Numbering System

B	12	EC	C	18	-	0	H_	-	A

Color
Blank *= Off-White*
B *= Black*

DC Voltage
Blank *= 6V*
12 *= 12V*

Series
EC *= Series*

Battery Type
C *= Nickel-Cadmium*
M *= Lead-Calcium*

Wattages
18 *= 18W Nickel or Lead-Calcium*
25 *= 25W Nickel-Cadmium*
27 *= 27W Lead-Calcium*
36 *= 36W Nickel or Lead-Calcium*
50 *= 50W Nickel-Cadmium*
54 *= 54W Lead-Calcium*

Number of Heads
0 *= No Head*
1 *= One Head*
2 *= Two Heads*

Lamp Type
Blank *= 6V 12V 9W Wedge*
H_ *= Bi-Pin Halogen Lamps*
Z_ *= High-Intensity Incandescent Wedge Base*

Note: For the complete lamp suffix, please refer to the lamp data on ***pages I-311–I-312.***

Options
Blank *= No Options*
A *= Ammeter*
(S cabinet units: choose only one meter)
V *= Voltmeter*
AD *= Advanced Diagnostics*
ADNA *= Advanced Diagnostics, Non-Audible*
K *= Lamp Disconnect Switch*
D1 *= Time Delay 5 Min.*
D2 *= Time Delay 10 Min.*
D3 *= Time Delay 15 Min.**
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*

** Not required with AD or ADNA. Time delay standard at 15 minutes.*

Spec-Grade Commercial

6- or 12-volt emergency unit.

JC Series

The economical, compact housing design of the JC Series is ideally suited for commercial applications where space, performance and ease of installation are required. The JC Series emergency battery unit incorporates performance and labor-saving features normally found only in higher-capacity units.

nexus® NYC approved ADVANCED AD DIAGNOSTICS UL®

Standard Features

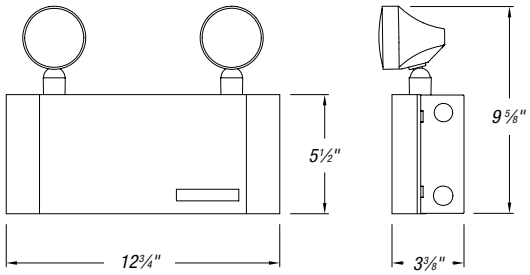
- Each unit comes with two impact-resistant, flame-retardant thermoplastic EF-10 heads with 6-watt MR-16 halogen lamps (standard); available with up to 20-watt high-output illumination
- Compact steel cabinet with corrosion-resistant undercoating
- Available with sealed, maintenance-free nickel-cadmium or lead-calcium batteries
- Power requirements: 120/277VAC, 60 Hz, .3/.15 amp
- Automatic, temperature-compensated solid-state charger with a high-capacity, automatic, dust-tight instantaneous-transfer relay
- Low-voltage disconnect prevents over discharge of battery
- Automatic brownout protection
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit
- Optional Advanced Diagnostics comes with a microcontroller-based pulse-type charger
- Rear keyhole mounting slots enable unit to mount directly to any standard 4" junction box
- UL® Listed
- Three-year full warranty, excluding lamps and fuses

Power Consumption

MODEL NO.	AC INPUT	MAXIMUM INPUT CURRENT	MAXIMUM INPUT POWER
JC	120VAC	.20A	24W
	277VAC	.08A	24W
12JC	120VAC	.24A	30W
	277VAC	.12A	30W

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

Furnished standard with two 6V 6W MR-16 lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	VOLTAGE	MODEL NUMBER	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	JCM	18	12	—	—
		JCM20	20	15	12	—
		JCM27	27	18	15	—
		JCM30	30	20	18	—
		JCM36	36	27	20	12
		JCM40	40	30	24	15
	12	12JCM36	36	27	20	12
		12JCM40	40	30	24	15
Nickel-Cadmium	6	JCC20	20	18	12	—
	12	12JCC36	36	24	15	12
		12JCC50	50	36	24	18

** National Electrical Code® specification.*

Catalog Numbering System

[ ] JCM18 - 2 10 MI - AD

Color
Blank *= Off-White*
B *= Black*

D.C. Voltage/Capacity
JCM18 *= 6V 18W, Lead-Calcium*
JCM20 *= 6V 20W, Lead-Calcium*
JCM27 *= 6V 27W, Lead-Calcium*
JCM30 *= 6V 30W, Lead-Calcium*
JCM36 *= 6V 36W, Lead-Calcium*
JCM40 *= 6V 40W, Lead-Calcium*
12JCM36 *= 12V 36W, Lead-Calcium*
12JCM40 *= 12V 40W, Lead-Calcium*
JCC20 *= 6V 20W, Ni-Cd*
12JCC36 *= 12V 36W, Ni-Cd*
12JCC50 *= 12V 50W, Ni-Cd*

Number of Heads
0 *= No Heads*
2 *= Two Heads*

Head Style
10 *= EF-10 Mini Plastic MR-16*

Lamp Type
MH *= 6V 5W*
MI *= 6V 6W*
MJ *= 6V 10W*
LA *= 6V 4W LED*
MK *= 12V 12W*
MA *= 12V 20W*
MW *= 12V 20W High Output*
LG *= 12V 4W LED*

Options
AD *= Advanced Diagnostics**
ADNA *= Advanced Diagnostics, Non-Audible**
FM *= Front-Mount Heads*
NEX *= Nexus® Wired**
NEXRF *= Nexus® Wireless**

** Not available with 6V 40W unit (JCM40).*

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Spec-Grade Commercial

6- and 12-volt steel emergency unit.

JA Series

Impressive performance in a decorative compact housing! The JA Series is designed to meet the needs of interior design professionals. Contemporary design is combined with state-of-the-art path of egress illumination in the decorative JA Series.

Standard Features

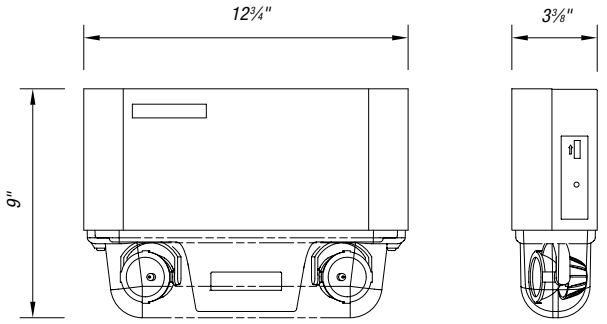
- Each unit comes with two emergency heads with adjustable swivels and long-life MR-16 halogen or LED lamps, 6V or 12V (standard), available with up to 20W high-output illumination
- Steel cabinet features anti-corrosion undercoating, and the emergency heads are protected by a shock-absorbent, transparent polycarbonate cover that is attached to the cabinet with two vertical screws
- Available with sealed, maintenance-free nickel-cadmium or lead-calcium batteries
- Power requirements: 120/277VAC, 60 Hz, .3/.15 amp
- Solid-state charger is an automatic, temperature-compensated type charger with high-capacity, automatic, dust-tight instantaneous-transfer relay and automatic brownout protection
- Low-voltage disconnect prevents over discharge of battery
- Labor-saving AC line latch prevents battery discharge during installation to a non-energized circuit
- Fused output circuit
- Optional Advanced Diagnostics comes with a microcontrolled-based pulse-type charge
- Emergency heads are installed at the bottom of the unit, providing illumination in any downward direction and do not require a tool for adjusting or aiming
- UL® Listed
- Three-year full warranty, excluding lamps and fuses

Power Consumption

MODEL NO.	AC INPUT	MAXIMUM INPUT CURRENT	MAXIMUM INPUT POWER
JA	120VAC	.20A	24W
	277VAC	.08A	24W
12JA	120VAC	.24A	30W
	277VAC	.12A	30W

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

Furnished standard with two 6V 10W MR-16 lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	JAM20	20	—	—	—
		JAM30	30	20	—	—
		JAM40	40	30	24	—
	12	12JAM40	40	30	24	—
Nickel-Cadmium	6	JAC20	20	—	—	—
	12	12JAC36	36	24	—	—
		12JAC50	50	36	24	—

** National Electrical Code® specification.*

Catalog Numbering System

[ ] **JAM20** - **2** **MI** - **AD**

Color
Blank *= Off-White*
B *= Black*

Series/DC Voltage/Capacity
JAM20 *= 6V 20W, Lead-Calcium*
JAM30 *= 6V 30W, Lead-Calcium*
JAM40 *= 6V 40W, Lead-Calcium*
12JAM40 *= 12V 40W, Lead-Calcium*
JAC20 *= 6V 20W, Ni-Cd*
12JAC36 *= 12V 36W, Ni-Cd*
12JAC50 *= 12V 50W, Ni-Cd*

Number of Heads
2 *= Two Heads*

Lamp Type
MI *= 6V 6W*
MH *= 6V 5W*
MJ *= 6V 10W*
MK *= 12V 12W*
MA *= 12V 20W*
MW *= 12V 20W IR High Output*
LG *= 12V 4W LED*

Options
AD *= Advanced Diagnostics**
ADNA *= Advanced Diagnostics, Non-Audible**
NEX *= Nexus® Wired**
NEXRF *= Nexus® Wireless**

** Not available with 6V 40W unit (JAM40).*

Spec-Grade Commercial

6- and 12-volt steel enclosure.

JS Series

Furnished with the highly reliable PulsePlus charger, the JS Series offers excellent value, quality and versatility. The compact, all-metal housing is available in a wide variety of battery options and wattages.

Standard Features

- Each unit comes with two EF-18 heads with 9-watt high-intensity incandescent lamps (standard)
- Constructed of 20-gauge steel with an off-white baked enamel finish
- Available with sealed, maintenance-free nickel-cadmium, long-life lead or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Hinged cabinet door for easy access
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and is approved for use in the Commonwealth of Pennsylvania and New York City
- Three-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Mounting Bracket (S cabinet) ..... **BJ-E**
Wire Guard (S cabinet) **WG1-E**
Wire Guard (L cabinet) **WG2-E**
Wire Guard (front-mounted heads) **WG10-E**
Polycarbonate Vandal-Resistant Shield (S cabinet) ..... **VRS-BB**
NEMA 4X Polycarbonate Vandal-Resistant Shield (S cabinet) **VRS-BB4X**

Optional Front-Mounted Heads (FM suffix) for low ceiling applications.

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	CABINET SIZE
Unit Equipment — No Remote Capability							
Nickel-Cadmium	6	**JSC18-2**	18	12	—	—	S
Long-Life Lead	6	**JSE9-1**	9	7	—	—	S
	6	**JSE18-2**	18	11	8	6	S
Lead-Calcium	6	**JSM9-1**	9	6	—	—	S
	6	**JSM18-2**	18	12	10	—	S
Unit Equipment — With Remote Capability							
Nickel-Cadmium	6	**JSC25-2**	25	18	12	9	S
	12	**12JSC36-2**	36	21	15	12	S
	12	**12JSC50-2**	50	36	25	18	S
Long-Life Lead	6	**JSE27-2**	27	16	12	10	S
	6	**JSE36-2**	36	24	17	13	S
	6	**JSE54-2**	54	37	28	21	L
	12	**12JSE36-2**	36	24	17	13	S
	12	**12JSE54-2**	54	37	28	21	L
Lead-Calcium	6	**JSM27-2**	27	18	14	10	S
	6	**JSM36-2**	36	25	20	14	S
	6	**JSM54-2**	54	37	28	21	L
	12	**12JSM36-2**	36	25	20	14	S
	12	**12JSM54-2**	54	37	28	21	L

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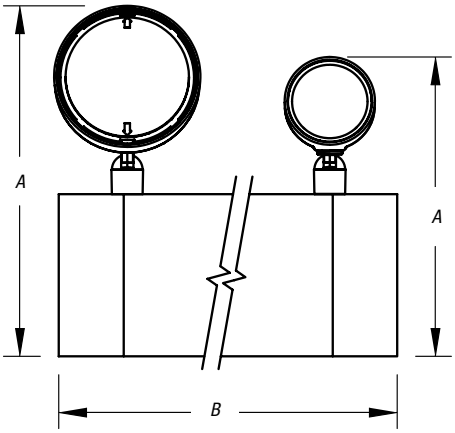
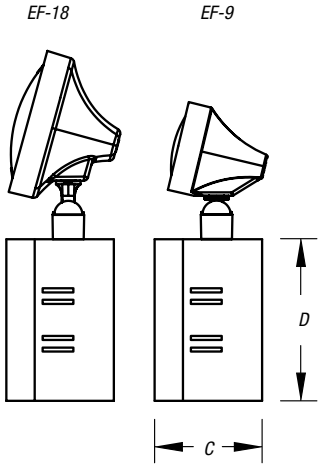
Spec-Grade Commercial

Dimensions

Dimensions are approximate and subject to change.

CABINET	A	B	C	D
S	11⅜"/9¾"	11¼"	3½"	5¼"
L	12⅜"/10¾"	12¾"	4"	6¼"





Catalog Numbering System

	JSC18	-	2	9	H	-	AD

Color
Blank *= Off-White*
B *= Black*

Series/Capacity
JSC18 *= 6V 18W, Ni-Cd*
JSC25 *= 6V 25W, Ni-Cd*
JSE9 *= 6V 9W, Long-Life Lead*
JSE18 *= 6V 18W, Long-Life Lead*
JSE27 *= 6V 27W, Long-Life Lead*
JSE36 *= 6V 36W, Long-Life Lead*
JSE54 *= 6V 54W, Long-Life Lead*
JSM9 *= 6V 9W, Lead-Calcium*
JSM18 *= 6V 18W, Lead-Calcium*
JSM27 *= 6V 27W, Lead-Calcium*
JSM36 *= 6V 36W, Lead-Calcium*
JSM54 *= 6V 54W, Lead-Calcium*
12JSC36 *= 12V 36W, Ni-Cd*
12JSC50 *= 12V 50W, Ni-Cd*
12JSE36 *= 12V 36W, Long-Life Lead*
12JSE54 *= 12V 54W, Long-Life Lead*

Number of Heads
0 *= No Head*
1 *= One Head*
2 *= Two Heads*

Head Style
Blank *= (EF-18 PAR36 Style)*
9 *= Mini Plastic*
10 *= Mini Plastic MR-16*
28 *= EF-28 Metal Lamp Heads*
150 *= EF-150 Lamp Heads*

Lamp Type
Blank_ *= 6V 9W and 12V 9W Incandescent Wedge Base*
H_ *= Halogen Bi-Pin*
I_ *= Incandescent DC Bayonet*
U_ *= Incandescent Sealed Beam*
X_ *= Halogen Sealed Beam*
Z_ *= Incandescent Wedge*
M_ *= Halogen MR-16**
L_ *= LED MR-16*

** Available with EF-10 and EF-150 lamp heads only.*

Note: For the complete lamp suffix, please refer to the lamp data on ***pages I-311–I-312.***

Options
A *= Ammeter (or voltmeter)**
V *= Voltmeter (or ammeter)**
AD *= Advanced Diagnostics*
ADNA *= Advanced Diagnostics, Non-Audible*
K *= Lamp Disconnect Switch*
D1 *= Time Delay 5 Min.*
D2 *= Time Delay 10 Min.*
D3 *= Time Delay 15 Min. ***
FM *= Front-Mounted Heads*
CP *= 120VAC Cord & Plug ****
XP *= Cord & Plug (277VAC) ****
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*

** Not available with AD or ADNA options.*

*** Not required with AD or ADNA. Time delay standard at 15 minutes.*

**** Standard cord is 3 ft. (custom lengths available).*

Spec-Grade Commercial

6- and 12-volt steel enclosure.

LSE Series

An attractive conventional emergency lighting unit, the LSE Series is available in a wide selection of battery capacities for use where many remote fixtures are required.

Standard Features

- Each unit comes with two EF-18 heads with 9-watt high-intensity incandescent lamps (standard); one or three heads available as options
- All-steel construction with an off-white baked enamel finish
- Available with sealed, maintenance-free long-life lead batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz input, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Removable front panel
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and is approved for use in the Commonwealth of Pennsylvania and New York City
- Three-year full warranty, excluding lamps and fuses

Options

Description	Suffix
Cord Set, 120V	-C*
Special-Voltage CP (TL 277V)	-E*

** Standard cord is 3 ft. Custom lengths available.*

Accessories (Order as a separate item)

Mounting Bracket (cabinet A)	B1
Mounting Bracket (cabinet B)	B2
Mounting Shelves (cabinet B)	MP3
Mounting Shelves (cabinet C)	MP6
Mounting Shelves (cabinet D)	MP12
Wire Guard (cabinet A)	WG2-E
Wire Guard (cabinets B and C)	WG3-E
Wire Guard (cabinet D)	WG4-E

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLT	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	NO. OF LOAD FUSES	CABINET SIZE
Unit Equipment — No Remote Capability								
Long-Life Lead	6	**LSE18-2**	18	11	8	6	1	A
Unit Equipment — With Remote Capability								
Long-Life Lead	6	**LSE27-2**	27	19	10	5	1	A
	6	**LSE36-2**	36	24	13	7	1	A
	6	**LSE54-2**	54	36	20	11	1	A
	6	**LSE80-2**	80	65	35	19	2	B
	6	**LSE110-2**	110	74	43	21	2	B
	12	**12LSE36-2**	36	24	13	7	1	A
	12	**12LSE54-2**	54	37	21	10	2	A
	12	**12LSE72-2**	72	48	26	14	2	B
	12	**12LSE110-2**	110	74	43	21	2	B
	12	**12LSE320-2**	320	210	120	60	2	D

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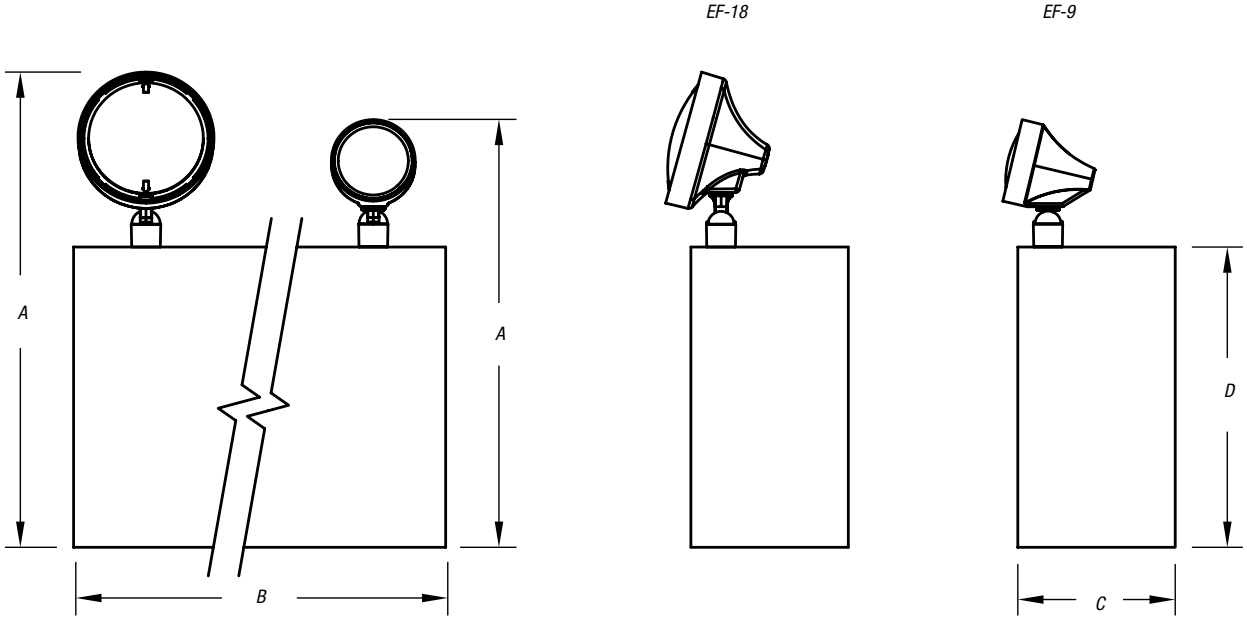
Spec-Grade Commercial

Dimensions

Dimensions are approximate and subject to change.

CABINET SIZE	DIMENSIONS A	B	C	D
A	14⅝" / 13"	13¾"	3⅛"	8½"
B	16⅜" / 14¾"	16⅛"	5 7/16"	10¼"
C	18⅜" / 16¾"	16½"	7¼"	12¼"
D	18⅜" / 16¾"	27"	7¼"	12¼"



Catalog Numbering System

B	LSE18	-	1	28	H	-	A

Color
Blank *= Off-White*
B *= Black Enclosure*

Series/Capacity
LSE18 *= 6V 18W Long-Life Lead*
LSE27 *= 6V 27W Long-Life Lead*
LSE36 *= 6V 36W Long-Life Lead*
LSE54 *= 6V 54W Long-Life Lead*
LSE80 *= 6V 80W Long-Life Lead*
LSE110 *= 6V 110W Long-Life Lead*
LSE160 *= 6V 160W Long-Life Lead*
12LSE36 *= 12V 36W Long-Life Lead*
12LSE54 *= 12V 54W Long-Life Lead*
12LSE72 *= 12V 72W Long-Life Lead*
12LSE110 *= 12V 110W Long-Life Lead*
12LSE160 *= 12V 160W Long-Life Lead*
12LSE320 *= 12V 320W Long-Life Lead*

Number of Heads
0 *= No Head*
1 *= 1 Head*
2 *= 2 Heads*
3 *= 3 Heads*

Head Style
Blank *= EF-18 (PAR36 plastic)*
28 *= EF-28 (PAR36 metal)*
9 *= EF-9 (mini plastic)*
10 *= EF-10 (small plastic MR-16)*
150 *= EF-150 (MR-16 lamp heads)*

Lamp Type
Blank *= 6V 9W and 12V 9W Incandescent Wedge Base*
H_ *= Halogen Bi-Pin*
I_ *= Incandescent DC Bayonet*
U_ *= Incandescent Sealed Beam***
X_ *= Halogen Sealed Beam***
Z_ *= Incandescent Wedge*
M_ *= Halogen MR-16**

** Available with EF-10 and EF-150 only.*
*** Available with EF-18 and EF-28 only.*

Note: See lamp data on ***pages I-311–I-312*** *for details.*

Options
Blank *= No Options*
A *= Ammeter (A cabinet units. Choose only one.)*
AD *= Advanced Diagnostics*
ADNA *= Diagnostics Non-Audible*
V *= Voltmeter (A cabinet units. Choose only one.)*
NEX *= Nexus®*
NEXRF *= Nexus® Wireless*
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay**
FM *= Front-Mounted Lampheads*
XP *= Flexible Cord with 120 or 277VAC Plug*
CP *= Cord and Plug 120V*

** Not required with AD or ADNA. Time delay standard at 15 minutes.*

Spec-Grade Commercial

6- and 12-volt steel enclosure.

LC Series

An attractive conventional emergency lighting unit, the LC Series is available in a wide selection of battery capacities for use where many remote fixtures are required.

Standard Features

- Each unit comes with two EF-18 heads with 9-watt high-intensity incandescent lamps (standard); one or three heads available as options
- All-steel construction with an off-white baked enamel finish
- Available with sealed, maintenance-free lead-calcium (immobilized electrolyte) batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz input, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Removable front panel
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and is approved for use in the Commonwealth of Pennsylvania and New York City
- Three-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Mounting Bracket (cabinet A) **B1**
Mounting Bracket (cabinet B) **B2**
Mounting Shelves (cabinet B) **MP3**
Mounting Shelves (cabinet C) **MP6**
Mounting Shelves (cabinet D) **MP12**
Wire Guard (cabinet A) **WG2-E**
Wire Guard (cabinets B and C) **WG3-E**
Wire Guard (cabinet D) **WG4-E**

nexus® NYC approved ADVANCED AD DIAGNOSTICS UL®

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLT	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	NO. OF LOAD FUSES	CABINET SIZE
Unit Equipment — With Remote Capability								
Lead-Calcium (Immobilized Electrolyte)	6	**LC87-2**	87	70	41	24	2	B
	6	**LC100-2**	100	77	47	24	2	C
	6	**LC175-2**	175	140	82	48	2	C
	6	**LC200-2**	200	168	96	48	2	C
	12	**12LC150-2**	150	120	66	36	2	C
	12	**12LC175-2**	175	140	85	48	2	C
	12	**12LC200-2**	200	168	96	48	2	C
	12	**12LC300-2**	300	240	132	72	2	D
	12	**12LC350-2**	350	280	170	96	2	D
	12	**12LC400-2**	400	336	192	95	2	D

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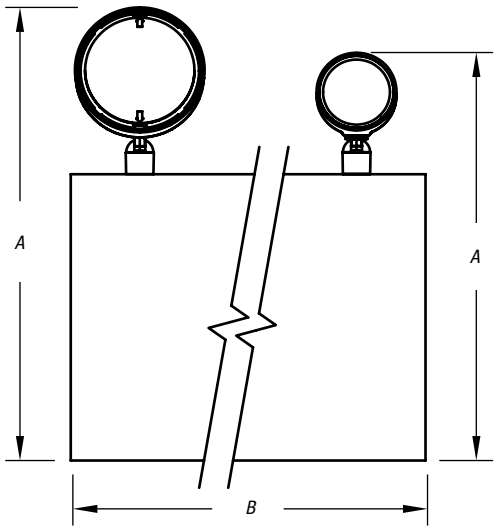
Spec-Grade Commercial

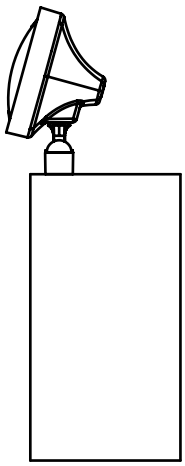
Dimensions

Dimensions are approximate and subject to change.

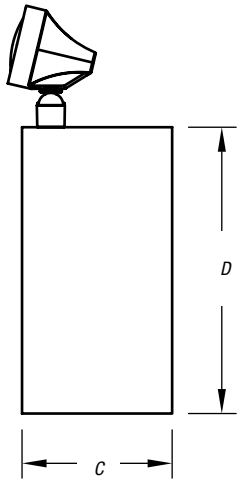
CABINET SIZE	DIMENSIONS A	B	C	D
A	14⅝" / 13"	13¾"	3⅛"	8½"
B	16⅜" / 14¾"	16⅛"	5⁷⁄₁₆"	10¼"
C	18⅜" / 16¾"	16½"	7¼"	12¼"
D	18⅜" / 16¾"	27"	7¼"	12¼"



EF-18



EF-9



Catalog Numbering System

B	LC87	-	1	28	H	-	A

Color
Blank *= Off-White*
B *= Black*

Series/Capacity
LC87 *= 6V 87W Lead-Calcium*
LC100 *= 6V 100W Lead-Calcium*
LC175 *= 6V 175W Lead-Calcium*
LC200 *= 6V 200W Lead-Calcium*
12LC150 *= 12V 150W Lead-Calcium*
12LC175 *= 12V 175W Lead-Calcium*
12LC200 *= 12V 200W Lead-Calcium*
12LC300 *= 12V 300W Lead-Calcium*
12LC350 *= 12V 350W Lead-Calcium*
12LC400 *= 12V 400W Lead-Calcium*

Number of Heads
0 *= No Head*
1 *= 1 Head*
2 *= 2 Heads*
3 *= 3 Heads*

Head Style
Blank *= EF-18 (PAR36 Plastic)*
28 *= EF-28 (PAR36 Metal)*
9 *= EF-9 (Mini Plastic)*
10 *= EF-10 (Small Plastic MR-16)*
150 *= EF-150 (MR-16 Lamp Heads)*

Lamp Type
H_ *= Halogen Bi-Pin*
I_ *= Incandescent DC Bayonet*
U_ *= Incandescent Sealed Beam***
X_ *= Halogen Sealed Beam***
Z_ *= Incandescent Wedge*
M_ *= Halogen MR-16**
L_ *= LED MR-16*

** Available with EF-10 and EF-150 only.*
*** Available with EF-18 and EF-28 only.*

Note: For the complete lamp suffix, please refer to the lamp data on ***pages I-311–I-312****.*

Options
Blank *= No Options*
A *= Ammeter*
AD *= Advanced Diagnostics*
V *= Voltmeter*
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay**
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*
CW *= Cold Weather (-4° F/20° C)*
CP *= Cord and Plug 120V***
XP *= Flexible Cord with 120 or 277VAC Plug***
K *= Lamp Disconnect Switch*

** Not required with AD or ADNA. Time delay standard at 15 minutes.*
*** Standard cord is 3 ft. (custom lengths available).*

Spec-Grade Commercial

6- and 12-volt steel enclosure.

LS Series

An attractive conventional emergency lighting unit, the LS Series is available in a wide selection of battery capacities for use where many remote fixtures are required.

Standard Features

- Each unit comes with two EF-18 heads with 9-watt high-intensity incandescent lamps (standard); one and three heads available as options
- Constructed of 20-gauge steel with an off-white baked enamel finish
- Available with sealed, maintenance-free nickel-cadmium or lead-calcium batteries
- Power requirements: 120/277VAC 60 Hz, .3/.15 amp
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Removable front panel
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and is approved for use in the Commonwealth of Pennsylvania and New York City
- Three-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Mounting Bracket (cabinet A) **B1**
Mounting Bracket (cabinet B) **B2**
Mounting Shelves (cabinet B) **MP3**
Mounting Shelves (cabinet C) **MP6**
Wire Guard (cabinets A and B) **WG2-E**
Wire Guard (cabinets B and C) **WG3-E**

nexus® NYC approved ADVANCED AD DIAGNOSTICS UL

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLT	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	NO. OF LOAD FUSES	CABINET SIZE
Unit Equipment — No Remote Capability								
Nickel-Cadmium	6	**LSC18-2**	18	12	9	6	1	A
Lead-Calcium	6	**LSM18-2**	12	12	10	7	1	A
Unit Equipment — With Remote Capability								
Nickel-Cadmium	6	**LSC25-2**	25	18	9	—	1	A
	12	**12LSC36-2**	36	21	12	6	1	A
	12	**12LSC50-2**	50	36	18	10	1	A
Lead-Calcium	6	**LSM27-2**	27	18	10	6	1	A
	6	**LSM36-2**	36	25	14	7	1	A
	6	**LSM54-2**	54	37	21	12	1	A
	6	**LSM81-2**	81	54	36	18	2	B
	6	**LSM110-2**	110	72	40	24	2	B
	6	**LSM162-2**	162	108	60	48	2	C
	6	**LSM200-2**	200	144	80	48	2	C
	12	**12LSM36-2**	36	25	14	7	1	A
	12	**12LSM54-2**	54	37	21	12	1	A
	12	**12LSM110-2**	110	72	40	24	2	B
	12	**12LSM162-2**	162	108	60	36	2	C
	12	**12LSM220-2**	220	144	80	48	2	C

** National Electrical Code® specification.* = *New York City Approved.*

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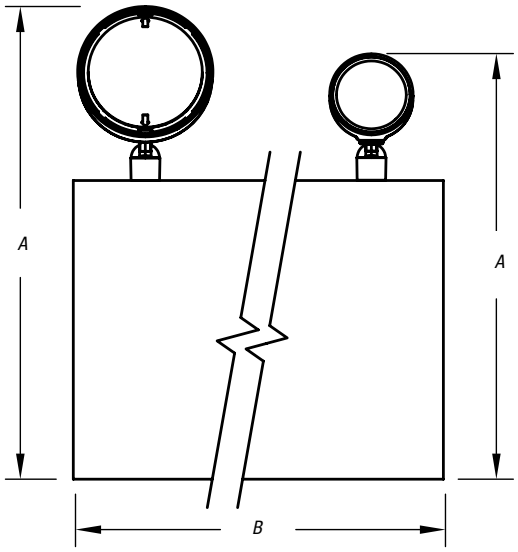
Spec-Grade Commercial

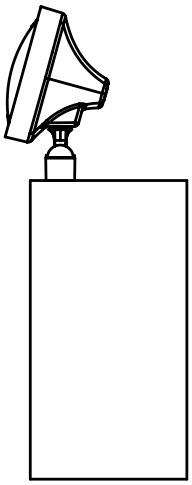
Dimensions

Dimensions are approximate and subject to change.

CABINET SIZE	DIMENSIONS A	B	C	D
A	14⅝" / 13"	12¾"	3⅛"	8½"
B	16⅜" / 14¾"	16⅛"	5⁷⁄₁₆"	10¼"
C	18⅜" / 16¾"	16½"	7¼"	12¼"



EF-18



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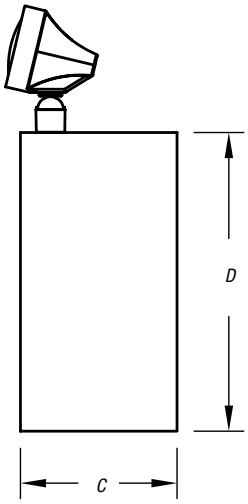

Catalog Numbering System

B | **LSC18** | **-** | **1** | **28** | **H** | **-** | **AD**

Color
Blank *= Off-White*
B *= Black Enclosure*

Series/Capacity
LSC Series
LSC18 *= 6V 18W Ni-Cd*
LSC25 *= 6V 25W Ni-Cd*
12LSC36 *= 12V 36W Ni-Cd*
12LSC50 *= 12V 50W Ni-Cd*
12LSC72 *= 12V 72W Ni-Cd*
24LSC100 *= 24V 100W Ni-Cd*

LSM Series
LSM18 *= 6V 18W Lead-Calcium*
LSM27 *= 6V 27W Lead-Calcium*
LSM36 *= 6V 36W Lead-Calcium*
LSM54 *= 6V 54W Lead-Calcium*
LSM81 *= 6V 81W Lead-Calcium*
LSM110 *= 6V 110W Lead-Calcium*
LSM162 *= 6V 162W Lead-Calcium*
LSM200 *= 6V 200W Lead-Calcium*
12LSM36 *= 12V 36W Lead-Calcium*
12LSM54 *= 12V 54W Lead-Calcium*
12LSM105 *= 12V 105W Lead-Calcium*
12LSM110 *= 12V 110W Lead-Calcium*
12LSM162 *= 12V 162W Lead-Calcium*
12LSM220 *= 12V 220W Lead-Calcium*

Number of Heads
0 *= No Head*
1 *= 1 Head*
2 *= 2 Heads*
3 *= 3 Heads*

Head Style
Blank *= EF-18 (PAR36 plastic)*
28 *= EF-28 (PAR36 metal)*
9 *= EF-9 (mini plastic)*
10 *= EF-10 (small plastic MR-16)*
150 *= EF-150 (MR-16 lamp heads)*

Lamp Type
Blank_ *= 6V 9W and 12V 9W Incandescent Wedge Base*
H_ *= Halogen Bi-Pin*
I_ *= Incandescent DC Bayonet*
U_ *= Incandescent Sealed Beam***
X_ *= Halogen Sealed Beam***
Z_ *= Incandescent Wedge*
M_ *= Halogen MR-16**
L_ *= LED MR-16*

** Available with EF-10 and EF-150 only.*
*** Available with EF-18 and EF-28 only.*

Note: For the complete lamp suffix, please refer to the lamp data on ***pages I-311–I-312****.*

Options
Blank *= No Options*
A *= Ammeter*
AD *= Advanced Diagnostics*
ADNA *= Diagnostics, Non-Audible*
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*
CP *= Cord and Plug 120V***
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay**
V *= Voltmeter*
XP *= Flexible Cord with 120 or 277VAC Plug*

** Not required with AD or ADNA. Time delay standard at 15 minutes.*

*** Standard cord is 3 ft. (custom lengths available).*

Spec-Grade Commercial

24-volt steel enclosure.

24 LS and 24 LC Series

Available in a wide selection of battery capacities for use where many remote fixtures are required, the 24 LS and 24 LC Series are ideal in areas where an attractive conventional emergency lighting unit is required.

nexus® ADVANCED AD DIAGNOSTICS UL

Standard Features

- Each unit comes with two EF-18 heads with 9-watt high-intensity incandescent lamps (standard)
- All-steel construction with an off-white baked enamel finish
- Available with sealed, maintenance-free nickel-cadmium, long-life lead, lead-calcium (immobilized electrolyte) or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Removable front panel
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and is approved for use in the Commonwealth of Pennsylvania
- Three-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Mounting Bracket (cabinet B) **B2**
Mounting Shelves (cabinet B) **MP3**
Mounting Shelves (cabinet C) **MP6**
Mounting Shelves (cabinet D) **MP12**
Wire Guard (cabinet B) **WG2-E**
Wire Guard (cabinet C) **WG3-E**
Wire Guard (cabinet D) **WG4-E**

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLT	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	NO. OF LOAD FUSES	CABINET SIZE
Unit Equipment — With Remote Capability								
Nickel-Cadmium	24	**24LSC72-2**	72	42	24	12	2	B
	24	**24LSC100-2**	100	73	37	20	2	B
Long-Life Lead	24	**24LSE72-2**	72	48	26	14	2	B
	24	**24LSE110-2**	110	74	43	21	2	B
	24	**24LSE320-2**	320	300	148	76	2	D
Lead-Calcium (Immobilized Electrolyte)	24	**24LC300-2**	300	240	132	72	2	D
	24	**24LC350-2**	350	280	168	96	2	D
	24	**24LC400-2**	400	336	192	96	2	D
Lead-Calcium	24	**24LSM110-2**	110	72	40	24	2	B
	24	**24LSM220-2**	220	144	80	48	2	C

** National Electrical Code® specification.*

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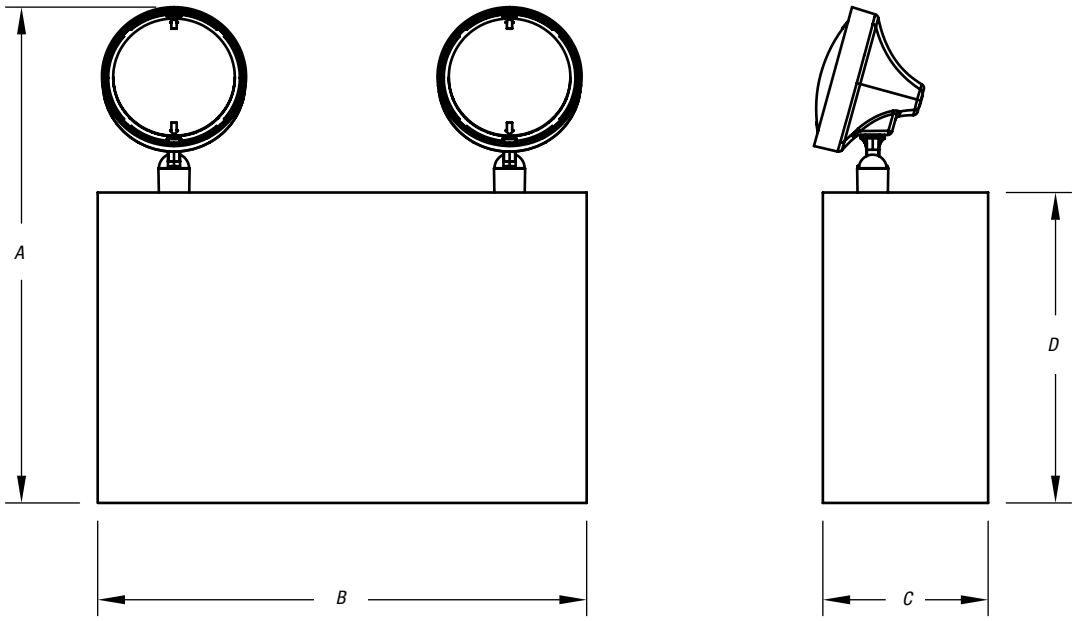
Spec-Grade Commercial

Dimensions

Dimensions are approximate and subject to change.

CABINET SIZE	DIMENSIONS			
	A	B	C	D
B	16⅜"	16⅛"	5⁷⁄₁₆"	10¼"
C	18⅜"	16½"	7¼"	12¼"
D	18⅜"	27"	7¼"	12¼"



Catalog Numbering System

B	LS	-	1	28	H	-	AD

Color
Blank *= Off-White*
B *= Black Enclosure*

Series/Capacity

LSC Series
24LSC100 *= 24V 100W Ni-Cd*

LSE Series
24LSE72 *= 24V 72W Long-Life Lead*
24LSE110 *= 24V 110W Long-Life Lead*
24LSE320 *= 24V 320W Long-Life Lead*

LSM Series
24LSM110 *= 24V 110W Lead-Calcium*
24LSM220 *= 24V 220W Lead-Calcium*

LC Series
24LC300 *= 24V 300W Lead-Calcium*
24LC350 *= 24V 350W Lead-Calcium*
24LC400 *= 24V 400W Lead-Calcium*

Number of Heads
0 *= No Head*
1 *= 1 Head*
2 *= 2 Heads*
3 *= 3 Heads*

Head Style
Blank *= EF-18 (PAR36 plastic)*
28 *= EF-28 (PAR36 metal)*
9 *= EF-9 Mini Plastic*
10 *= EF-10 Mini Plastic MR-16*
32 *= EF-32 Cylinder Lamp Heads*
150 *= EF-150 MR-16 Lamp Heads*

Lamp Type
Blank *= 6V 9W and 12V 9W Incandescent Wedge Base*
L_ *= LED MR-16*
H_ *= Halogen Bi-Pin*
I_ *= Incandescent DC Bayonet*
U_ *= Incandescent Sealed Beam***
X_ *= Halogen Sealed Beam***
Z_ *= Incandescent Wedge*
M_ *= Halogen MR-16**

** Available with EF-10 and EF-150 only.*
*** Available with EF-18 and EF-28 only.*

Note: For the complete lamp suffix, please refer to the lamp on ***pages I-311–I-312****.*

Options
Blank *= No Options*
A *= Ammeter*
AD *= Advanced Diagnostics*
ADNA *= Diagnostics, Non-Audible*
NEX *= Nexus® Wired*
NEXRF *= Nexus® Wireless*
CP *= Cord and Plug 120V***
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay**
V *= Voltmeter (A cabinet units. Choose A or V only.)*
XP *= Flexible Cord with 120 or 277VAC Plug*

** Not required with AD or ADNA. Time delay standard at 15 minutes.*
*** Standard cord is 3 ft. (custom lengths available).*

Spec-Grade Commercial

Steel LED exit sign and combination unit.

X10 LED Series

nexus® UL

A rugged steel sign designed for ease of installation, the X10 Series is a fully universal exit sign.

The removable side panel allows the exit faces to be changed as required. Made of 20-gauge steel, the X10 Series is available with an off-white or black finish.

Standard Features

- Red or green LED light sources
- Constructed of rugged 20-gauge steel with off-white or black epoxy powder finish
- Availale with sealed, maintenance-free nickel-cadmium, long-life lead or lead-calcium batteries
- PulsePlus charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amp (other inputs available), fused output circuit, pilot and charge indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Universal mounting, downlight, single or double face, stencil or open face and removable side panel are available
- UL® Listed and exceeds UL® Exit Visibility Requirement
- Three-year full warranty

Accessories (Order as a separate item)

White Pendant ..... **P-WT***
Black Pendant ..... **P-BK***
Wire Guard Ceiling Mount (exit signs only) **WG5-E**
Wire Guard End Mount (exit signs only) **WG5-E**
Wire Guard For Wall Mount (AC-only, AC/DC and self-powered exit signs) **WG12-E**
Wire Guard for Wall Mount (mini system or combo) **WG6-E**

** Specify pendant length (12", 24", 36", etc.).*

Choice of Models

Exit Signs

AC Input: Universal 2-wire, 120 to 277VAC, 50/60 Hz
AC/DC Models: Universal 2-wire, 6 to 24VDC
Self-Powered Models: Long-life, sealed nickel-cadmium battery

Mini-Systems

Remote-Capacity L-SBX Models:
No EF-9 mounted heads = 30 watts remote capacity
Two 5.4-watt EF-9 mounted heads = 19 watts remote capacity
Remote-Capacity L-SRX Models:
No EF-9 mounted heads = 20 watts remote capacity
Two 5.4-watt EF-9 mounted heads = 9 watts remote capacity
Remote-Capacity L-STX Models:
No EF-9 mounted heads = 24 watts remote capacity
Two 5.4-watt EF-9 mounted heads = 13 watts remote capacity
Remote-Capacity SRX and STX Models:
No EF-9 mounted heads = 18 watts remote capacity
Two EF-9 mounted heads = 6 watts remote capacity
LED exit lamp configuration same as self-powered models.
Remote-Capacity SRX and STX Models:
No EF-9 mounted heads = 21 watts remote capacity
Two EF-9 mounted heads = 9 watts remote capacity

Power Consumption (LED Exit Signs)

MODEL	AC SPECS		DC SPECS	
AC-Only: L-X14	120 to 277VAC	Less than 1.5W	—	—
AC/DC: DCL-X14	120 to 277VAC	Less than 1.5W	6 to 24VDC	Less than 1.5W
Self-Powered: L-SNX14	120 to 277VAC	Less than 3W	Nickel-Cadmium	Min. 90 Minutes

Power Consumption (Mini-Systems): 120/277VAC, 60 Hz, .3/.15 amp

Unit Ratings

Total DC power available for local and remote emergency lights.

BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE			
			1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	**SBX14**	30	20	15	10
Nickel-Cadmium	6	**STX14**	24	18	12	9

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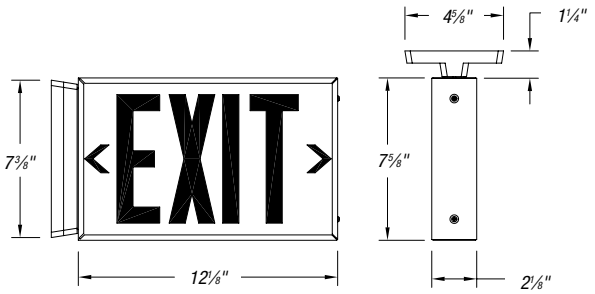
Spec-Grade Commercial

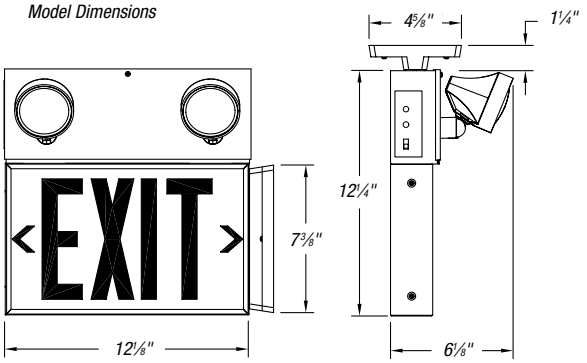
Dimensions

Dimensions are approximate and subject to change.

Exit Sign (SNX)
Model Dimensions



Mini System
Model Dimensions



Catalog Numbering System

DC	L	W	X14	R	-	1	9	L	-	VR

DC Input
Blank *= No DC Input*
DC *= 6V to 24VDC*

Series
L *= LED*

Housing Color
W *= White*
B *= Black*
A *= Aluminum*

 # - Other color

Battery Type

Exit Sign Models
X14 *= AC Only or AC/DC*

Mini System Models
SBX14 *= 6V 30W Lead-Calcium*
STX14 *= 6V 30W Nickel-Cadmium*

Legend Color
R *= Red*
G *= Green*

Open Face
RW *= Red/White*
WR *= White/Red*
GW *= Green/White*
WG *= White/Green*

(Open face required with special wording legends.)

Number of Heads
0 *= No Heads*
1 *= 1 Head*
2 *= 2 Heads*

Heads/Style

Mini Systems
Blank *= EF-18 Large Plastic*
9 *= EF-9 Mini Plastic*
10 *= EF-10 Mini Plastic MR-16*
150 *= EF-150 MR-16*

Lamp Type
L_ *= LED MR-16**
H_ *= Halogen Bi-Pin*
I_ *= Incandescent DC Bayonet*
U_ *= Incandescent Sealed Beam***
X_ *= Halogen Sealed Beam***
Z_ *= Incandescent Wedge*
M_ *= Halogen MR-16**

** Available with 10 and 150 lamp head only.*
*** Available with EF-18 only.*

Note: For the complete lamp suffix, please refer to the lamp data on ***pages I-311-I-312****.*

Options
Blank *= No Options*
VR *= Vandal-Resistant Screws*
NEX *= Nexus® Wired (combo unit)*
NEXRF *= Nexus® Wireless (combo unit)*
D1 *= Time Delay 5 Min.*
D2 *= Time Delay 10 Min.*
D3 *= Time Delay 15 Min.*
2CKT *= Dual Circuit (AC Only)*
FL *= Flasher**
FZ *= Flasher Buzzer Combination**
FA *= Fire Alarm-Activated Flasher**
L *= Brushed Aluminum Face*

** Power pack mini system only.*

Spec-Grade Commercial

Recessed ceiling-mount edge-lit exit sign.

Prestige™ Economizer Series — Recessed Ceiling Mount

The Prestige™ Economizer Recessed Series combines a modular design with state-of-the-art technology and ease of installation, including field-installed directional arrows.

Standard Features

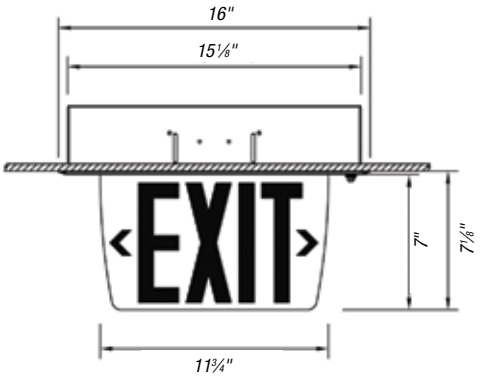
- Rugged, 20-gauge steel backbox
- Equipped with bar hanger kit for easy installation
- Formed steel flat trim plate
- Choice of finishes: textured aluminum or off-white
- Acrylic panel with curved contour provides superior clarity and illumination
- Legend with a choice of red or green letters
- Choice of legend background: clear, white (red legend only) or mirror
- Stick-on translucent directional chevrons for field installation
- Sealed nickel-cadmium batteries provide 90 minutes of emergency lighting
- Simple, 2-wire universal AC input (120 to 277VAC, 50/60 Hz) prevents installation errors
- 2-wire universal DC input: 6 to 24VDC
- Long-life LED light assures low maintenance costs and superior illumination
- Energy-efficient power consumption: less than 2.5 watts for single- or double-face legends
- UL® 924 Listed

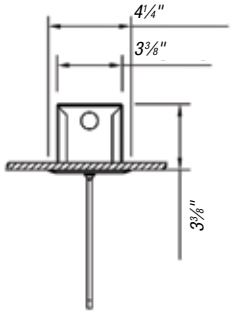
Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	Less than 1.5W	—	
AC/DC-Remote	120 to 277VAC	Less than 1.5W	6 to 24VDC	Less than 1.5W
Self-Powered	120 to 277VAC	Less than 2.5W	Ni-Cd Battery	Min. 90 Minutes

Dimensions

Dimensions are approximate and subject to change.





Catalog Numbering System

TA	PE	1	F	RC

Housing Color
TA *= Textured Aluminum*
OW *= Off-White*

Series
PE *= AC*
PES *= AC/DC*
PEN *= Self-Powered*

Face
1 *= Single Face*
2 *= Double Face*

Trim
F *= Recessed Flat Trim*

Legend Color
RC *= Red on Clear**
RW *= Red on White*
RM *= Red on Mirror*
GC *= Green on Clear**
GM *= Green on Mirror*

** Single face only.*

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Spec-Grade Commercial

Slim-profile surface-mount LED edge-lit exit sign.

Prestige™ Economizer Series — Slim-Profile Surface Mount

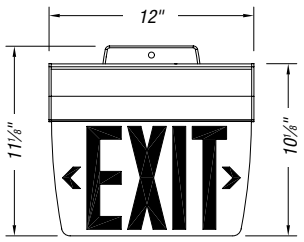
Thanks to its slim profile and easy installation, the Prestige™ Economizer Series is sure to be a favorite for both specifiers and contractors. Elegant and economical, the Prestige™ Economizer Series complements any interior design while providing mounting versatility and energy efficiency. The Prestige™ Economizer Series combines a slim, modular design with state-of-the-art technology and ease of installation, including field-installed directional arrows.

Standard Features

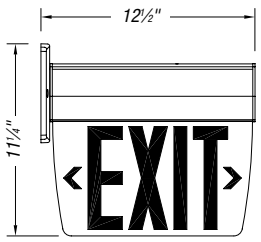
- Acrylic panel with curved contour provides superior clarity and illumination, and long-life LED light assures low maintenance costs and superior illumination
- Legend with a choice of red or green six-inch letters and easy-to-add field-installed stick-on translucent directional arrows
- Choice of legend background: clear, white or mirror
- Slim-profile extruded aluminum housing with slim-profile die-cast aluminum canopy in your choice of finishes: textured aluminum or off-white
- Energy-efficient power consumption: less than 3 watts for self-powered version and less than 2 watts for AC-only version, single or double face
- Available with sealed nickel-cadmium batteries that provide 90 minutes of emergency lighting
- Simple, 2-wire universal AC input (120V to 277VAC, 60 Hz) prevents installation errors
- Simple 2-wire universal DC input: 6 to 24VDC
- Universal surface mounting: wall, ceiling or end mount
- Click-to-open housing door allows easy access to the panel and electrical wiring
- UL® 924 Listed
- Three-year full warranty, subject to proper installation and maintenance

Dimensions

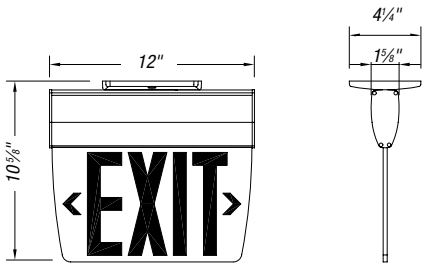
Dimensions are approximate and subject to change.



Wall Mount



End Mount



Ceiling Mount

Catalog Numbering System

TA	PE	1	RC

Housing Color
TA *= Textured Aluminum*
OW *= Off-White*

Series
PE *= AC*
PES *= AC/DC*
PEN *= Self-Powered*

Face
1 *= Single Face*
2 *= Double Face*

Legend Color
RC *= Red on Clear**
RW *= Red on White*
RM *= Red on Mirror*
GC *= Green on Clear**
GM *= Green on Mirror*

** Single face only.*

Accessories (Order as a separate item)

White Pendant ..... **PE-P-WH***
Black Pendant ..... **PE-P-BK***

** Specify pendant length.*

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	Less than 2W	—	—
AC/DC	120 to 277VAC	Less than 2W	6 to 24VDC	Less than 1.5W
Self-Powered	120 to 277VAC	Less than 3W	Ni-Cd Battery	Min. 90 Minutes

Spec-Grade Commercial

Die-cast LED exit sign.

Preceptor™ Series

Stylishly built in die-cast aluminum, the new Preceptor™ Die-Cast Series offers workmanship, versatile mounting capability and economical, long-lasting LED performance.

NEW!

ADVANCED AD DIAGNOSTICS nexus® UL

Standard Features

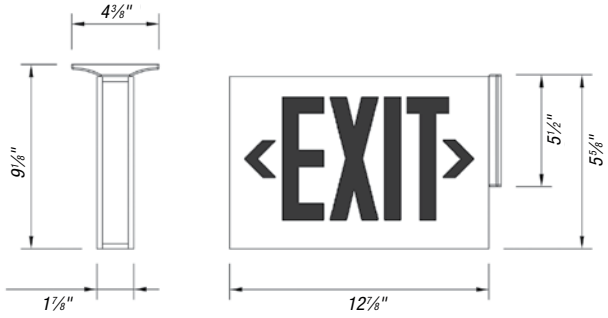
- Housing of die-cast aluminum in a variety of finishes
- Slim-line canopy for top and end mounting
- Universal mounting for wall, end or ceiling
- Universal, field-selectable knock-out chevrons
- Long-life red or green LED light source
- Dual-voltage input: 120/277VAC, 60 Hz
- Low power consumption: less than 3 watts in any configuration
- Self-powered models with sealed, maintenance-free nickel-cadmium batteries
- UL® 924 Listed
- Five-year full warranty

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only	120/277VAC	Less than 2.5W	—	
AC/DC-Remote	120/277VAC	Less than 2W	6 to 48VDC	Less than 1.5W
Self-Powered	120/277VAC	Less than 3W	Ni-Cd Battery	Min. 90 Minutes
Self-Powered with Diagnostics	120/277VAC	Less than 2.8W	Ni-Cd Battery	Min. 90 Minutes

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

BA	PU	2	R	

Housing Color
BA *= Black Body/Aluminum Face*
WW *= White Body/White Face*
WA *= White Body/Aluminum Face*
BB *= Black Body/Black Face*
AA *= Brushed Aluminum Body and Face*

Other colors available.

Models
Standard Models:
P *= AC Only (120/277VAC)*
PU *= 120/277VAC & 6 to 48VDC*
PXN *= Self-Powered Diagnostic Ni-Cd*
PDN *= Self-Powered Ni-Cd, No AD*

Optional Models:
P2C1 *= Dual AC Circuit (2 x 120V)*
P2C2 *= Dual AC Circuit (2 x 277V)*
PNEX *= Nexus® Wired*
PNEXRF *= Nexus® Wireless*

No. of Faces
1 *= Single Face*
2 *= Double Face*

Legend Color
R *= Red*
G *= Green*
RW *= Red on White (open face)*
GW *= Green on White (open face)*

Options
Blank *= No Options*
FZ *= Flasher Buzzer ***
FL *= Flasher ***
FA *= Fire Alarm-Activated Flasher (not available with PDN)*
FBF *= Flasher Buzzer + Fire Alarm Activated Flasher ***
VR *= Tamper-Proof Screws**
VR1 *= Polycarbonate Shield with Tamper-Proof Screws**
DL *= Damp Location*

** Please specify single- or double-face red or green.*
*** PXN, PNEX and PNEXFR models only.*

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Spec-Grade Commercial

Die-cast LED exit signs.

Preceptor™ Recessed Series

Save energy while providing excellent visual performance with Preceptor™ LED exit signs. Distinctively styled in die-cast aluminum, Preceptor™ LED exit signs offer blemish-free workmanship, versatile mounting capability and economical, long-lasting LED performance.

Diagnostic/self-test circuitry is standard on all self-powered models. This circuitry is programmed to ensure the exit sign's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single service-required indicator illuminates immediately. A detailed diagnostic display sign that will further indicate the nature of the fault is located on the inside of the exit sign, out of sight from the general public. The self test will test the unit for 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

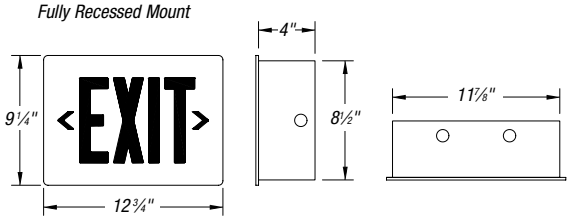
Standard Features

- Long-life LEDs eliminate the twice-a-year re-lamping typical of incandescent lamps
- Self-powered models are self contained; batteries and circuitry are located inside the exit housing
- Available with sealed maintenance-free nickel-cadmium batteries to provide 90 minutes of emergency illumination
- 2-wire universal input 120 through 277VAC, 50/60 Hz
- Unaffected by the vibrations, ambient temperature swings and typical power surges detrimental to standard exit light sources
- Five-year full warranty
- UL® Listed

Dimensions

Dimensions are approximate and subject to change.

Fully Recessed Mount



Choice of Models

AC-Only Models: 120 through 277VAC, 50/60 Hz universal input.

Self-Powered Models: Self contained, their batteries and circuitry are located inside the exit housing. 120 through 277VAC, 50/60 Hz universal input. Sealed maintenance-free nickel-cadmium battery provides 90 minutes of emergency illumination.

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	1.4W	—	—
Self-Powered	120 to 277VAC	1.7W	Ni-Cd Battery	Min. 90 Minutes

Catalog Numbering System

FR	BB	LEDP	1	R	VR1	-	N

Recessed
FR *= Fully Recessed*

Face Color
Blank *= Aluminum Face*
BB *= Black Face*
WW *= White Face*
PB *= Polished Brass Face*
CH *= Polished Chrome Face*
BZ *= Dark Bronze Face*

Other colors available.

Series
LEDP *= AC only*
LEDPXN *= Self-Powered Nickel-Cadmium*

Number of Faces
1 *= Single Face*

Legend Color
R *= Red*
G *= Green*
RW *= Red on White (open face)*
GW *= Green on White (open face)*

Options
FZ *= Flasher Buzzer (Self-Powered)**
FA *= Fire Alarm-Activated Flasher (Self-Powered)**
DL *= Damp Location*
VR *= Vandal-Resistant Screws*
VR1 *= Vandal-Resistant Shield and Screws*
2CKT *= Dual-Circuit Operation (AC models only)*

** Available with self-powered models only.*

Version
N *= New Design*

Spec-Grade Commercial

Die-cast exit signs.

Preceptor™ Remote Capacity Series

Power your required outdoor emergency lighting remote head from the remote-capable Preceptor™ Series exit sign immediately inside the egress-discharge location. The Preceptor™ Series combines visual performance, enduring construction and elegant design while satisfying code requirements.

Standard Features

- Long-life, high-performance, low-power consumption red or green LEDs provide even illumination in normal and emergency modes
- Constructed of die-cast aluminum with a power canopy that houses the battery, input transformer and printed circuit board
- Standard unit color is a black frame with brushed aluminum face; specify single or double face
- Available with sealed maintenance-free lead-calcium or nickel-metal hydride (cadmium-free, environmentally friendly) batteries
- Can be ceiling, end or back mounted to the power canopy, which surface mounts directly to the junction box (supplied by others)
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA
- Five-year full warranty

Electrical

RCL — 120/277VAC, 60 Hz, .02A max.
RCN — 120/277VAC, 60 Hz, .03A max.
RCX — 120/277VAC, 60 Hz, .03A max.

Application Flexibility

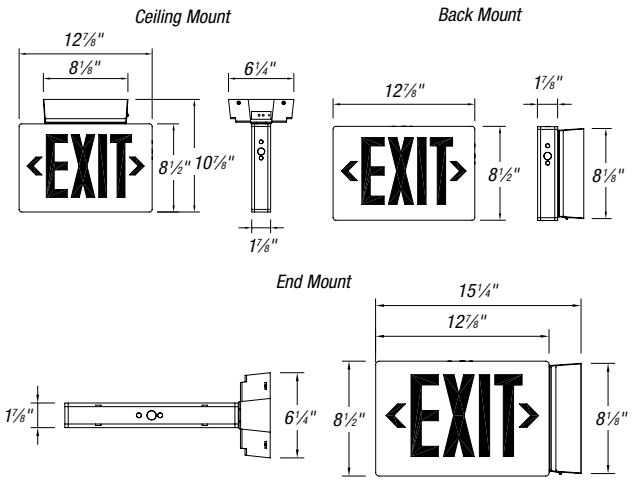
Lead-Calcium Models (RCL): Sealed, maintenance-free lead-calcium batteries power the exit sign for an estimated period of 20+ hours minimum with no remote load or 90-minutes run time with 9-watts remote load.

Nickel-Metal Hydride Models (RCN): Sealed, maintenance-free nickel-metal hydride batteries power the exit sign for an estimated period of 20+ hours minimum with no remote load or 90-minutes run time with 12-watts remote load.

Nickel-Metal Hydride Models (RCX): Sealed, maintenance-free nickel-metal hydride batteries power the exit sign for an estimated period of 40+ hours minimum with no remote load or 90-minutes run time with 24-watts remote load.

Dimensions

Dimensions are approximate and subject to change.



Unit Ratings

Total power available for emergency lights.

SEALED MAINTENANCE-FREE BATTERY TYPES	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
	1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — With Remote Capability				
Lead-Cadmium	9	—	—	—
Nickel-Metal Hydride	12	9	—	—
	24	18	12	9

** National Electrical Code® specification.*

Catalog Numbering System

BB	P	RCL	1	R	AD

Housing Color
BA *= Black Body/Aluminum Face*
BB *= Black Body/Black Face*
WW *= White Body/White Face*
WA *= White Body/Aluminum Face*
AA *= Brushed Aluminum Body and Face*

Series
P *= Preceptor*

Battery Type
RCL *= Sealed Lead-Calcium, 9 Watts Remote Capacity*
RCN *= Sealed Nickel-Metal Hydride, 12 Watts Remote Capacity*
RCX *= Sealed Nickel-Metal Hydride, 24 Watts Remote Capacity*

Number of Faces
1 *= Single Face*
2 *= Double Face*

Legend Color
R *= Red*
G *= Green*
RW *= Red on White (open face)*
GW *= Green on White (Open face)*

Options
AD *= Advanced Diagnostic*
ADNA *= Advanced Diagnostic, Non-Audible*
D1 *= Time Delay 5 Minutes*
D2 *= Time Delay 10 Minutes*
D3 *= Time Delay 15 Minutes**
FZ *= Flasher Buzzer (Self-Powered)*
FA *= Fire Alarm-Activated Flasher (Self-Powered)*
DL *= Damp Location*
VR *= Vandal-Resistant Screws*
VR1 *= Vandal-Resistant Shield and Screws*

**Not required with AD or ADNA options. Time delay standard at 15 minutes.*

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Spec-Grade Commercial

Custom-worded, illuminated signage.

Special Wording Configurations

Illuminated Signage

Custom-worded, illuminated signage is available using the same sturdy construction and electrical design as Emergi-Lite® exit signage. A wide range of sign body options and color choices are available to suit any application.

Standard Features

- Sign bodies — steel, extruded and die-cast aluminum, weatherproof, flame-retardant polycarbonate, high-impact thermoplastic, recessed housing
- Also available with combination units
- Custom wording — any style of lettering, any language, any alphabet, any special characters
- Graphics — logos, standard symbols, custom art
- Color choices — sign bodies, message, faceplate panel
- Ilumination — LED (light-emitting diodes); other light sources available
- Contact your local Thomas & Betts representative to discuss your specific requirements

Spec-Grade Industrial

Hazardous Locations

Hazardous areas are those in which a potential for explosion or fire exists due to the presence of certain gases, liquid vapors, combustible dusts or fiber particles suspended in the air. The National Electrical Code®, NEMA, OSHA, UL® and NFPA Life Safety Code® standards, as well as state and local codes, prescribe the use of emergency lighting equipment. This equipment itself must not contribute to the ignition of flammable or explosive substances present in the location. Emergi-Lite® offers a complete line of emergency lighting equipment for use in hazardous locations.

Hazardous Location Classifications

Class I (NEC-500-5)	Areas in which flammable gases or vapors may be present in sufficient quantities to be explosive or ignitable.
Class II (NEC-500-6)	Areas made hazardous by the presence of combustible dust.
Class III (NEC-500-7)	Areas in which there are easily ignitable fibers or flyings present due to the type of material being handled, stored or processed, but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures.
Division 1 (NEC-500-5, 6 & 7)	**Normal Situation:** A hazard is present in the everyday normal production operation or during frequent repair and/or maintenance activity.
Division 2 (NEC-500-5, 6 & 7)	**Abnormal Situation:** Potentially hazardous material is expected to be safely confined within closed containers or closed systems, and will be present in the atmosphere only through accidental rupture, breakage or abnormal operation.
Groups A, B, C & D (NEC-500-3)	Gases and vapors in Class I locations are classified into four groups, by the code A, B, C, and D. These materials are grouped according to the ignition temperature of the substance, its explosion pressure and other flammability characteristics.
Groups E, F & G (NEC-500-3)	Combustible dusts in Class II locations are classified according to ignition temperature and the conductivity of the hazardous substance.

Typical Class I Locations:

- Petroleum refineries and gasoline storage and dispensing areas
- Industrial firms that use flammable liquids in dip tanks for cleaning parts or other operations
- Petrochemical companies that manufacture chemicals from gas and oil
- Dry cleaning plants where vapors from cleaning fluids can be present
- Companies that have areas dedicated for spraying products with paint or plastics

- Aircraft hangars and fuel servicing areas
- Utility gas plants and operations involving storage and handling of liquified petroleum gas or natural gas

Typical Class II Locations:

- Grain elevators, flour and feed mills
- Plants that manufacture, use or store magnesium or aluminum powders
- Plants that have chemical or metallurgical processes, such as producers of plastics, medicines, fireworks, etc.
- Producers of starch or candies
- Spice grinding plants, sugar plants and cocoa plants
- Coal preparation plants and other carbon handling or processing areas

Typical Class III Locations:

- Textile mills, cotton gins, cotton seed mills and flax processing plants
- Clothing manufacturing plants
- Any plant that shapes, pulverizes or cuts wood and creates sawdust or shavings

For more information, consult NEC®.

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NEMA Enclosures

NEMA Enclosures

Type 1

Intended for use indoors primarily to prevent accidental contact of personnel with the enclosed equipment.

Type 2

Intended for use indoors to protect the enclosed equipment against falling non-corrosive liquids and falling dirt.

Type 3

Intended for use outdoors to protect the enclosed equipment against rain, windblown dust, sleet and external ice formation.

Type 3R

Intended for use outdoors to protect the enclosed equipment against falling rain, sleet and external ice formation.

Type 4

Intended for use indoors and outdoors to protect the enclosed equipment against windblown dust, rain, splashing water and hose-directed water.

Type 5

Intended for indoor use primarily to protect against dust and falling dirt.

Type 6

Intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during occasional temporary submersion at a limited depth.

Type 6P

Intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during prolonged submersion at a limited depth.

Type 7

Intended for use indoors in locations classified as Class I, Groups A, B, C or D as defined in the National Electrical Code®.

Type 8

Intended for indoor or outdoor use in locations classified as Class I, Groups A, B, C & D as defined in the National Electrical Code®.

Type 9

Intended for indoor locations classified as Class II, Groups E, F & G, as defined in the National Electrical Code®.

Type 10

Enclosures are constructed to meet the applicable requirements of the Mine Safety and Health Administration.

Type 11

Intended for indoor use primarily to provide, by oil immersion, a degree of protection to enclosed equipment against the corrosive effects of liquids and gases.

Type 12

Intended for indoor use primarily to provide a degree of protection against dust, falling dirt and dripping non-corrosive liquids.

Type 12K

Enclosure with knockouts intended for indoor use primarily to provide a degree of protection against dust, falling dirt and dripping non-corrosive liquids other than at knockouts.

Type 13

Intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil and non-corrosive coolant.

National Electrical Code is a registered trademark of the National Fire Protection Association, Inc.

Spec-Grade Industrial

6- and 12-volt NEMA 4X battery unit.

Survive-All™ SV Series

NEMA 4X Certified! Where humidity, dust, water infiltration and the risk of vandalism are specification criteria, the Survive-All™ SV Series is ideally suited to perform in a wide range of commercial and industrial environments. The Survive-All™ SV Series battery units combine state-of-the art illumination with a visually appealing package.

NEMA 4X ADVANCED AD DIAGNOSTICS nexus® NSF UL

Standard Features

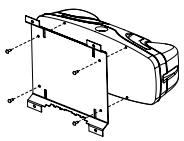
- Equipped with a tool-less MR-16 swivel lamp assembly to provide precise beam control plus a choice of MR-16 halogen lamps from 6V to 12V and 6-watt to 20-watt IR
- Fully gasketed cast aluminum back plate with clear, UV-resistant polycarbonate cover, tamper-proof screws and bit are included; available in black, white or gray
- Standard temperature: 50° F to 104° F (10° C to 40° C)
- Available with sealed, maintenance-free nickel-cadmium (UL® Listed for damp and wet locations) or lead-calcium batteries
- Standard 120/277VAC .3/.15 amp input, non-audible advanced diagnostic charger board, 15-minute time delay and lamp disconnect, audible warning and time-delay functions that can be enabled or disabled during installation, a non-obtrusive magnetic test switch and a micro controller diagnostic system that tests, detects and indicates battery, charger circuitry or MR-16 lamp failures
- Wall, strut or beam mounting
- UL® Listed; certified to meet UL® 924 standards, 90 minutes of emergency operation; NEMA 4X rated for high-abuse areas, wet locations and cold weather (-40° F/-40° C) applications; NSF Certified for use in food processing plants
- Three-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

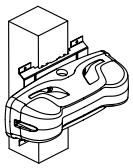
Additional Special Bit For Tamperproof Screws..... **690.0454-E**

Universal Bracket (for mounting on poles, I-beams or strut metal framing)..... **PMK-E**

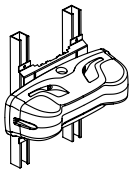
Universal Bracket



PMK Kit (screws included)



Beam Mounting



Strut Mounting

Applications

- Hosedown areas/ car washes
- Food processing/ preparation facilities
- Marine locations
- Chemical plants
- Schools and other public facilities
- Parking garages
- Transit platforms
- Sports arenas/swimming pools
- Security areas/prisons
- Warehouse and cold storage facilities
- Heavy industrial facilities

Note: *Units with lead-calcium batteries that are installed outdoors must be located in a shaded area.*

Unit Ratings

SEALED MAINTENANCE-FREE BATTERY TYPES	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
	1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — With Remote Capability				
Lead-Calcium	18	12	8	—
	24	16	12	8
	36	24	20	14
	54	36	27	20
Nickel-Cadmium	24	18	12	8
	40	27	20	14
Nickel-Metal Hydride	60	40	30	20

** National Electrical Code® specification.*

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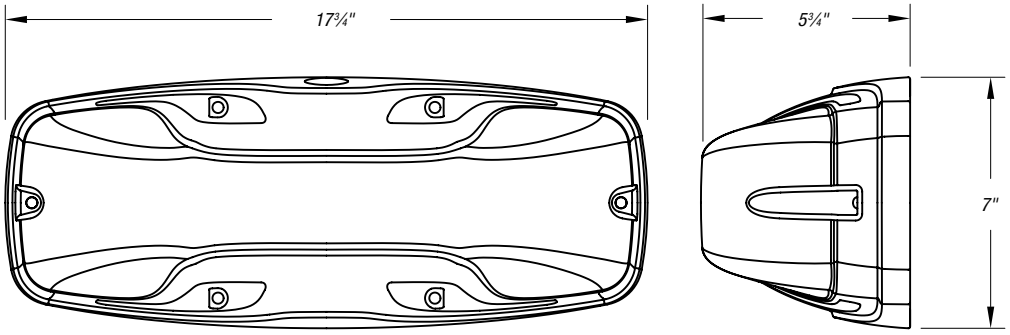
Spec-Grade Industrial

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

B	12SV36M	-	2	MK	-	D	-	

Color
B *= Black*
G *= Gray*
W *= White*

Series
SV18M *= 6V 18W, Lead-Calcium*
12SV24M *= 12V 24W, Lead-Calcium*
12SV36M *= 12V 36W, Lead-Calcium*
12SV54M *= 12V 54W, Lead-Calcium*
12SV24N *= 12V 24W, Nickel-Cadmium**
12SV40N *= 12V 40W, Nickel-Cadmium**
12SV60H *= 12V 60W, NiMH**

** Suitable for damp locations 50° F to 104° F (10° C to 40° C)*

No of Lamps
2 *= 2 Lamps*

Lamps
LA *= LED 6V 4W*
LG *= LED 12V 4W*
MI *= 6V 6W, MR-16*
MK *= 12V 12W, MR-16*
MW *= 12V 20W, MR-16-IR*

Charger
D *= Autodiagnostic, Non-Audible (standard)*
DA *= Autodiagnostic, Audible*
NEX *= Nexus® Wired Interface*
NEXRF *= Nexus® Wireless Interface*

Options
Blank *= No Options*
CW4 *= Cold Weather* -40° F to 104° F (-40° C to 40° C)*

** Only available with 12SV24M and 12SV36M. Not available with NEX option.*

Spec-Grade Industrial

NEMA 4X certified for wall or ceiling mounting.

Survive-All™ SVX Combo Series — 6 and 12 Volt

The Survive-All™ SVX Series combo unit delivers impressive, state-of-the-art illumination in a visually appealing package. It is designed for use in a wide range of commercial and industrial environments where resistance to humidity, dust, water infiltration and vandalism are specification criteria.

Each unit comes with two MR-16 high-intensity lamps (standard). The fully field-adjustable lamp head assembly offers the option of selecting either a halogen lamp or a high-efficiency 4-watt, white LED light source for optimum illumination over the path of egress. The exit light source is LED.

Advanced Diagnostics circuitry is standard on all self-powered models. This circuitry is programmed to ensure the exit sign's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single "Service Required" indicator illuminates immediately. A detailed diagnostic display that will further indicate the nature of the fault is located on the inside of the exit sign, out of sight from the general public. The self test will test the unit for a minimum of 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

NEMA 4X ADVANCED AD DIAGNOSTICS nexus® NSF UL

Standard Features

- Rugged PVC body will not dent, peel or corrode, and the sealed faceplate is constructed with a heavy-duty, vandal-resistant polycarbonate cover fastened with stainless steel tamper-resistant screws
- Available with sealed, maintenance-free nickel-cadmium batteries
- PulsePlus Charger circuitry offers 120/277VAC input 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature-compensated charger, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Magnetically operated test switch
- Can be wall, end or ceiling mounted
- NEMA 4X rated, UL® Listed for wet and damp locations 50° F to 104° F (10° C to 40° C)
- Five-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Additional Special Bit for Tamper-Proof Screws **690.0454-E**

Additional Test Magnet **199.0133-E**

Power Consumption

UNIT	AC SPECS		DC SPECS (90 MINUTES)	
SVX12N	120/277VAC	.12/.06A 13W	6V	12W
SVX24N	120/277VAC	.17/.08A 19W	12V	24W

Unit Ratings

SEALED MAINTENANCE-FREE BATTERY TYPES	WATTS TO 87.5% OF RATED BATTERY VOLTAGE*			
	1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — With Remote Capability				
Nickel-Cadmium	12	9	—	—
	24	18	12	9

** National Electrical Code® specification.*

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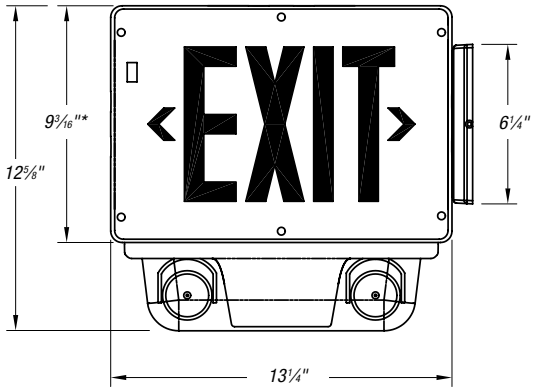
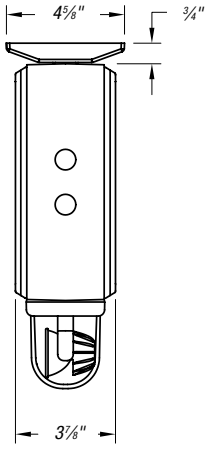
Spec-Grade Industrial

Dimensions

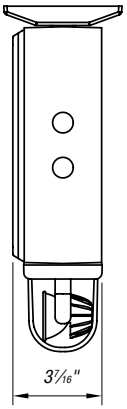
Dimensions are approximate and subject to change.



** Dimensions without heads.*



Double Face



Single Face

Applications

- Hosedown areas/car washes
- Food processing/prep facilities
- Marine locations
- Chemical plants
- Schools and other public facilities
- Parking garages
- Transit platforms
- Sports arenas/swimming pools
- Security areas/prisons
- Warehouse and cold storage facilities
- Heavy industrial facilities

Catalog Numbering System

WW	SVX12N	1	R	D	4X	2	LG	CW4

Housing/Face Color
WW *= White/White*
WB *= White/Black*
WA *= White/Aluminum*
BB *= Black/Black*
BW *= Black/White*
BA *= Black/Aluminum*
GA *= Gray/Aluminum*
GW *= Gray/White*
GB *= Gray/Black*

Series/Capacity
SVX12N *= 6V 12W*
SVX24N *= 12V 24W*

Faces
1 *= Single Face*
2 *= Double Face*

Legend Color
R *= Red Legend*
G *= Green Legend*

Diagnostics
Blank *= Standard*
D *= Advanced Diagnostics, Non-Audible*
DA *= Advanced Diagnostics, Audible*
NEX *= Nexus® System Interface*
NEXRF *= Nexus® Wireless System Interface*

Housing
4X *= Wet/Damp Locations*

No. of Heads
Blank *= 0 Heads**
2 *= Two Heads*

** A remote load must be connected.*

Lamp/Wattage
LG *= LED, 12V 4W MR-16*
LA *= LED, 6V 4W MR-16*
MI *= 6V 6W MR-16*
MK *= 12V 12W MR-16*

Options
Blank *= No Options*
CW1 *= Cold Weather 120V (-40° F/-40° C)**
CW2 *= Cold Weather 277V (-40° F/-40° C)**
CW4 *= Cold Weather (-40° F/-40° C)**
FA *= Flasher (fire alarm-activated)*
F/B *= Flasher/buzzer (AC power failure)***
FL *= Flasher (AC power failure)*
208V *= 208VAC, 60 Hz Input*
240V *= 240VAC, 60 Hz Input*
208V50HZ *= 208VAC, 50 Hz Input*
CM *= Canopy Pendant Mount*

** Single face only.*
*** Not available with D or DA option.*

Spec-Grade Industrial

NEMA 4X rated and UL® Listed for wet and damp locations (-40° F to 104° F).

Survive-All™ SVX Exit Series

NEMA 4X rated for wall or ceiling mounting, the Survive-All™ Exit SVX Series delivers impressive, state-of-the-art illumination in a visually appealing package.

The Survive-All™ Exit SVX Series is designed for use in a wide range of commercial and industrial environments where resistance to humidity, dust, water infiltration and vandalism are specification criteria.

Standard Features

Reliability

The Survive-All™ SVX Series has a five-year full warranty.

Unit Data — NEMA 4X Rated

Rugged polyvinyl chloride body will not dent, peel, rust or corrode. The sealed faceplate is constructed of heavy-duty, vandal-resistant polycarbonate and features an evenly illuminated legend. The fully gasketed faceplate is fastened with stainless steel tamper-resistant screws. Models can be wall, end or ceiling mounted. Legend and chevron comply with UL® and CSA requirements. A magnetically operated test switch is also included.

Survive-All™ SVX Series signs are unaffected by the vibrations, ambient temperature swings and typical power surges detrimental to standard exit light sources.

High-Performance Circuitry

- Self contained — batteries and circuitry located inside the exit housing
- Continuous self-diagnostic monitoring and monthly self testing
- Fully automatic charger is solid state
- AC, AC/DC and Self-Powered models have universal, 2-wire input, 120V to 277VAC, 50/60 Hz
- Sealed, maintenance-free nickel-cadmium battery provides 90 minutes of emergency operation
- Battery recharges per UL® 924 requirements
- Each unit comes standard with one tamper-proof driver bit

Accessories (Order as a separate item)

Extra Tamper-Proof Bit.....**690.0454-E**
Convert Single Face to Double Face, Red..... **DFKR**
Convert Single Face to Double Face, Green..... **DFKG**

NEMA 4X nexus® ADVANCED AD DIAGNOSTICS NSF UL

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only	120 to 277VAC	1.2W	—	—
AC/DC	120 to 277VAC	1.2W	6 to 24VDC	Less than 1.5W
Self-Powered	120 to 277VAC	3.7W	Ni-Cd Battery	Min. 90 Minutes

Applications

- Hosedown areas/car washes
- Food processing/prep facilities
- Marine locations
- Chemical plants
- Schools and other public facilities
- Parking garages
- Transit platforms
- Sports arenas/swimming pools
- Security areas/prisons
- Warehouse and cold storage facilities
- Heavy industrial facilities

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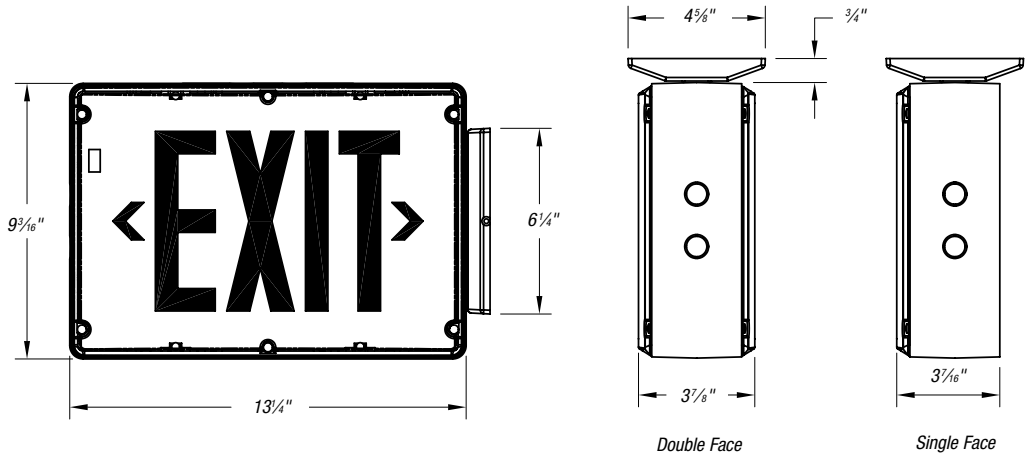
Spec-Grade Industrial

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

BB	SVXN	1	R	D	4X	-	FA

Color Option, Body/Face
BB *= Black/Black*
BW *= Black/White*
BA *= Black/Aluminum*
GB *= Gray/Black*
GW *= Gray/White*
GA *= Gray/Aluminum*
WB *= White/Black*
WW *= White/White*
WA *= White/Aluminum*

Series
SVX *= AC-Only*
SVXN *= Self-Powered Nickel-Cadmium Battery*

Faces
1 *= Single Face*
2 *= Double Face*

Legend Colors
R *= Red*
G *= Green*

Diagnostics
Blank *= Standard*
D *= Diagnostic (self-powered only)*
NEX *= Nexus® Interface*
NEXRF *= Nexus® Wireless System Interface*

Housing
4X *= Wet/Damp Locations*

Options
Blank *= No Options*
2CKT *= Dual Circuit (AC only)**
CW *= Cold Weather (self-powered -4° F to 77° F / -20° C to 25° C – AC/DC -40° F to 77° F / -40° C to 25° C)*
DC *= 6 to 48 VDC**
FA *= Fire Alarm-Activated Flasher**
FL *= Flasher Only**
FZ *= Flasher/Buzzer (self-powered only)**

** Not available with Nexus® option.*

Spec-Grade Industrial

NEMA 4X rated and UL® Listed for wet and damp locations.

Survive-All™ EF39 Series

NEMA-4X certified, the Survive-All™ EF39 Series delivers impressive, state-of-the-art illumination in a visually appealing package. It is designed for use in a wide range of commercial and industrial environments where resistance to humidity, dust, water infiltration and vandalism are specification criteria.

NEMA 4X NSF UL

Standard Features

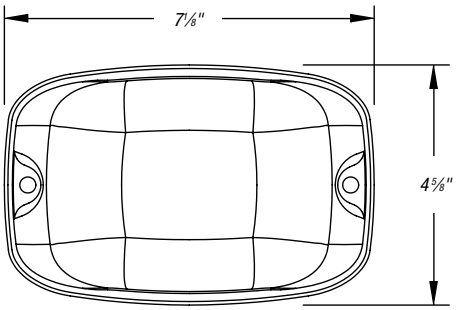
- Available in single- or double-lamp configurations with the option of highly efficient MR-16 lamps or the 4-watt MR-16 white LED lamp
- Delivers unsurpassed path-of-egress illumination — up to 70 feet, center-to-center when using two 20W MR-16-IR lamps
- Fully gasketed cast-aluminum back plate with a clear UV- and impact-resistant cover
- Choice of three colors: off-white, black or gray
- Comes standard with tamper-proof screws and bit
- Easy installation on a four-inch octagonal box
- NEMA 4X rated, NSF Certified for food processing plants

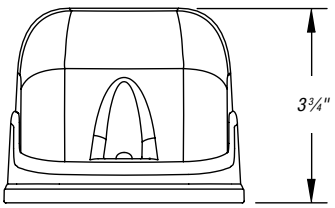
Accessories (Order as a separate item)

Additional Special Bit for Tamper-Proof Screws.....**690.0454-E**

Dimensions

Dimensions are approximate and subject to change.





Catalog Numbering System

EF39	LG	-	BK

Series
EF39 *= Single*
EF39D *= Double*

Lamp Type/Wattage
LG *= LED, 12V 4W*
LA *= LED, 6V 4W*
MI *= MR-16, 6V 6W*
MJ *= MR-16, 6V 10W*
MK *= MR-16, 12V 12W*
MW *= MR-16-IR, 12V 20W*
MS *= MR-16, 24V 12W*
MD *= MR-16, 24V 20W*
LL *= LED, 24V 4W*

Color
Blank *= White*
BK *= Black*
GY *= Gray*

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Spec-Grade Industrial

6- and 12-volt, Class I Division 2.

HZM Series

For use in Class I, Division 2, Groups A, B, C and D hazardous locations, the HZM Series is designed to prevent ignition of hazardous materials in locations where flammable materials are stored and handled.

The water- and corrosion-resistant gray industrial cabinet is made of fiberglass-reinforced polyester and is fully gasketed around the cover. The battery compartment is vented with a breather vent designed to permit exhaust of battery gases without admitting external moisture or corrosives.

Standard self-diagnostic circuitry continuously monitors every critical function of the unit. If a problem occurs, a single fault indicator on the outside of the fixture flashes immediately. A detailed diagnostic display is located internally. The detailed display will further indicate the nature of the fault as either a battery fault, load fault or charger fault.

Standard Features

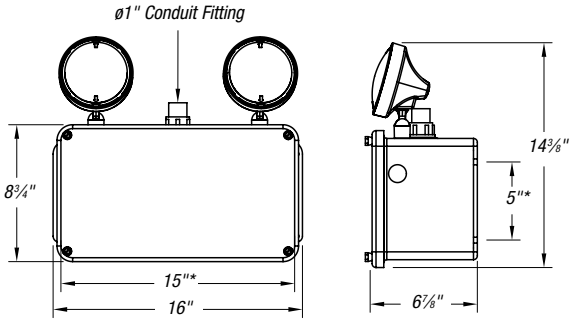
- Each unit comes with two weather-resistant, impact-resistant, flame-retardant thermoplastic EF-11 lamp heads with 12-watt high-intensity sealed-beam tungsten lamps
- Temperature code: T4A (max. 248° F/120° C)
- Available with sealed, maintenance-free lead-calcium batteries
- Fully automatic pulse charger offers 120/277VAC, 60 Hz, .43/.2 amp., limited-current temperature compensation, short-circuit protection, reverse-polarity protection, low-voltage battery disconnect, brownout protection and standard solid-state transfer feature
- PAR36 sealed-beam halogen lamps
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA
- The test switch and AC pilot light are explosion proof in design and exceed requirements for Class I, Division 2, Groups A, B, C and D
- Three-year full warranty, excluding lamps, pilot lights and fuses

Accessories (Order as a separate item)

Wire Guard **WG3-E**

Dimensions

Dimensions are approximate and subject to change.



** Mounting Lugs Center-to-Center Dimensions*

Unit Ratings

Furnished standard with two 12-watt high-intensity sealed-beam halogen lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — With Remote Capability						
Lead-Calcium	6	**6HZM24-2**	24	18	10	6
	12	**12HZM56-2**	56	37	21	6

** National Electrical Code® specification.*

Catalog Numbering System

For standard units without options, order only Model Number.
Options are added to units by listing suffix at end of Model Number.

Note: Includes standard lamp.

6HZM24 - **2** **XB** - **H1**

Series
6HZM24 *= 6V 24W, Lead-Calcium*
12HZM56 *= 12V 56W, Lead-Calcium*

Number of Heads
0 *= No Head*
1 *= One Head*
2 *= Two Heads*

Temperature code: T4A (max. 248° F/120° C)

Lamp Type*
XB *= 6V 8W Sealed-Beam Halogen*
XD *= 6V 12W Sealed-Beam Halogen*
XF *= 12V 8W Sealed-Beam Halogen*
XG *= 12V 12W Sealed-Beam Halogen*

Temperature code: T4A (max. 248° F/120° C)
** No other lamp option available.*

Options
H1 *= Temperature Control 120V Heater*
H2 *= Temperature Control 277V Heater*
D1 *= 5-Min. Time Delay*
D2 *= 10-Min. Time Delay*
D3 *= 15-Min. Time Delay**
TC *= Shatter-Resistant Teflon® Coated Lens*

** Note: Time delay 15 minutes standard.*

Teflon is a registered trademark of E.I. duPont de Nemours and Company.

Spec-Grade Industrial

Hazardous location combination exit sign and emergency battery unit.

Survive-All™ SVXH Series

Class I, Division 2, Groups A, B, C and D compliant, the SVXH Series Combination Exit Sign and Battery Unit has been designed specifically for installation in hazardous locations and other high-abuse industrial environments.

The weather-resistant SVXH Series can withstand high impact, vibrations and variations in temperature. It is ideally suited for areas where the presence of flammable gases, vapors or liquids can create an explosive gas atmosphere.

The exit sign module is illuminated by long-life, energy-efficient LEDs. A fully field adjustable lamp head assembly comes standard with a selection of two MR-16 halogen lamps for optimum illumination over the path of egress. Lamps are shielded by a cast aluminum housing and a polycarbonate cover.

The rugged PVC body will not dent, peel or corrode. The sealed faceplate has a heavy-duty, vandal-resistant polycarbonate cover fastened with stainless steel tamper-resistant screws. The polyvinyl chloride frame has a built-in gasket to prevent water infiltration. The heavy-duty ⅛"-thick aluminum back plate has keyholes for secure wall-mount installation.

Advanced Diagnostics circuitry is standard on all self-powered models. This circuitry is programmed to ensure readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single "Service Required" indicator illuminates immediately. A detailed diagnostic display that will further indicate the nature of the fault is located on the inside of the exit sign, out of sight from the general public. The self test will test the unit for a minimum of 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

Standard Features

- Available with sealed, maintenance-free nickel-cadmium or nickel-metal hydride batteries
- Fully automatic pulse charger offers 120/277VAC, 60 Hz, current-limiting temperature compensation, short-circuit protection, low-voltage battery disconnect, brownout protection and standard solid-state transfer feature
- The test switch is magnetically operated
- Designed for wall-mount installation only, with a ½" electrical conduit entry on both sides and at the top
- Evaluated to UL® 924 standard and to UL® 844 standard for hazardous locations: Class I, Division 2, Groups A, B, C and D; temperature codes evaluated for several types of emergency lamps
- Five-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Additional Special Bit for Tamper-Proof Screws **690.0454-E**

Applications

- Manufacturing plants
- Chemical plants
- Paint shops
- Moisture, dirt or dust concerns
- Oil refineries
- Wet or corrosive conditions
- Gas stations

Power Consumption

MODEL NO.	AC INPUT	MAXIMUM CURRENT	MAXIMUM POWER	STAND-BY CURRENT	STAND-BY POWER	UNIT RATING* 1.5 HRS.	2 HRS.	3 HRS.	4 HRS.
SVXH	120/277VAC	.15/.07A	16W	.09/.03A	8W	20	15	—	—
SVXH12N	120/277VAC	.30/.08A	29W	.13/.05A	10W	24	18	12	—
SVXH12H	120/277VAC	.30/.08A	29W	.13/.05A	10W	40	30	20	12

** Watts to 87.5% of rated battery voltage.*

Temperature Codes

LAMP RATING	TEMPERATURE CODE	MAX. TEMPERATURE	REPLACEMENT PART NO.
6V 10W	T3C	328° F/160° C	**580.0079-E**
12V 12W	T3A	356° F/180° C	**580.0080-E**
12V 20W	T2D	419° F/215° C	**580.0068-E**

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Spec-Grade Industrial

Dimensions

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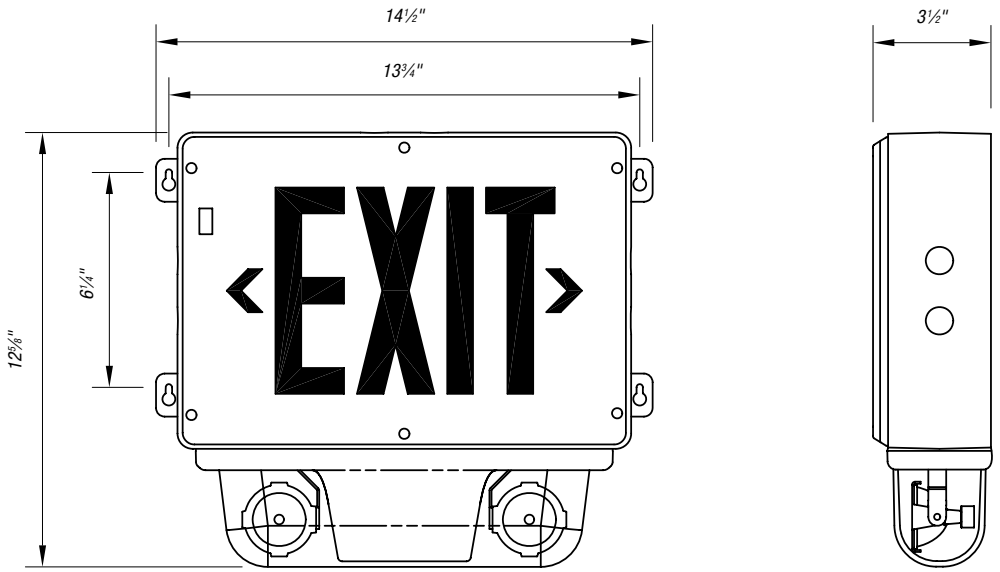


Catalog Numbering System

GG | SVXH | R | - | D | 2 | MJ

Housing/Face Color
GG *= Gray/Gray*

Series/Capacity
SVXH *= 6V 20W, Ni-Cd*
SVXH12N *= 12V 24W, Ni-Cd*
SVXH12H *= 12V 40W, NiMH*

Legend Color
R *= Red*
G *= Green*

Diagnostic
D *= Advanced Diagnostics, Non-Audible*
DA *= Advanced Diagnostics, Audible*
NEX *= Nexus® Interface*

Number of Heads
Blank *= 0 Head**
2 *= Two Heads*

** A remote load must be connected.*

Lamp/Wattage*
MK *= 12V 12W MR-16*
MJ *= 6V 10W MR-16*
MW *= 12V 20W MR-16 High Output*

** No other lamp option available.*

Spec-Grade Industrial

Hazardous location exit sign.

Survive-All™ SVX-HZ Series

A Class I, Division 2, Groups A, B, C and D compliant exit sign, the SVX-HZ Series has been designed specifically for installation in hazardous locations and other high-abuse industrial environments. The weather-resistant SVX-HZ Series can withstand high impact and is ideally suited for areas where the presence of flammable gases, vapors or liquids can create an explosive gas atmosphere. Survive-All™ SVX-HZ Series signs are unaffected by the vibrations, ambient temperature swings and typical power surges detrimental to standard exit light sources.

The SVX-HZ Series comes with a single-face heavy-duty ⅛"-thick aluminum back plate. A polyvinyl chloride frame, with built-in gasket to prevent water infiltration, will not dent, peel, rust or corrode. The sealed, heavy-duty, vandal-resistant polycarbonate faceplate features an evenly illuminated legend. The fully gasketed faceplate is fastened with stainless steel tamper-resistant screws. Self contained, the batteries and circuitry are located inside the exit housing.

Diagnostic/self-test circuitry is standard on all self-powered models. This circuitry is programmed to ensure the exit sign's readiness and reliability by continuously monitoring every critical function of the unit. If a problem occurs, a single "Service Required" indicator illuminates immediately. A detailed diagnostic display that will further indicate the nature of the fault is located on the inside of the exit sign, out of sight from the general public. The self test will test the unit for minimum 30 seconds every 30 days, 30 minutes every 60 days and 90 minutes annually.

Units can be wall, end or ceiling mounted. They come standard with an industrial-grade, die-cast aluminum electrical box, and there are ½" electrical conduit entries on both sides and at the top. Each unit comes standard with one tamper-proof driver bit.

Standard Features

- Energy efficient, consumes less than 2.5 watts in any configuration, and exit sign module is illuminated by long-life, energy-efficient LEDs
- Available with sealed, maintenance-free nickel-cadmium batteries that provide 90 minutes of emergency operation and recharge per UL® 924 requirements
- AC and self-powered models have universal, 2-wire input: 120 to 277VAC, 50/60 Hz
- Tamper-resistant, hermetically sealed magnetic test switch for self-powered models
- Legend and chevron comply with UL® requirements; evaluated to the UL® 844 standard for Class I, Division 2, Groups A, B, C and D, temperature code: T6 (maximum 185° F/85° C)
- Evaluated to UL® 924 and UL® 1598 standards; suitable for cold weather (-4° F/-20° C for self-powered model [CW option] and -40° F/-40° C for AC-only model)
- Five-year full warranty

Accessories (Order as a separate item)

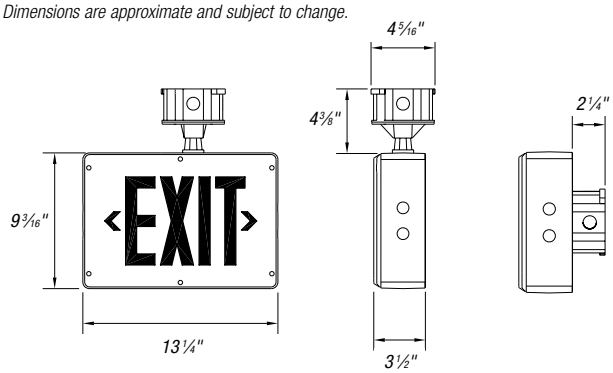
Extra Tamper-Proof Bit..... **690.0454-E**
Convert Single to Double Face, Red*..... **DFKR**
Convert Single to Double Face, Green*..... **DFKG**

** In the field.*

nexus® SP US

Dimensions

Dimensions are approximate and subject to change.



Applications

- Manufacturing plants
- Chemical plants
- Paint shops
- Moisture, dirt or dust concerns
- Oil refineries
- Wet or corrosive conditions
- Gas stations

Power Consumption

MODEL	AC SPECS		DC SPECS	
AC-Only Red	120 to 277VAC	Less than 2W	—	—
AC-Only Green	120 to 277VAC	Less than 1.5W	—	—
Self-Powered Red	120 to 277VAC	Less than 2W	Ni-Cd Battery	Min. 90 Minutes
Self-Powered Green	120 to 277VAC	Less than 2.5W	Ni-Cd Battery	Min. 90 Minutes

Catalog Numbering System

GG	SVXNHZ	2	R	-	D	4X	CW

Color of Body/Face
GG *= Gray/ Gray*

Series
SVXHZ *= AC Only*
SVXNHZ *= Self-Powered Ni-Cd*

Face(s)
1 *= Single (ceiling/ wall mount)*
2 *= Double (ceiling mount only)*

Legend
R *= Red*
G *= Green*

Diagnostic
D *= Diagnostic (self-powered only)*
NEX *= Nexus® Wired*

Housing
4X *= Suitable for wet/damp locations*

Options
Blank *= AC only*
CW *= Cold weather (-13° F/-20° C for self powered, -40° C/40° C for AC/DC)*

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Spec-Grade Industrial

Remote fixture for hazardous locations.

Survive-All™ EF41 Series

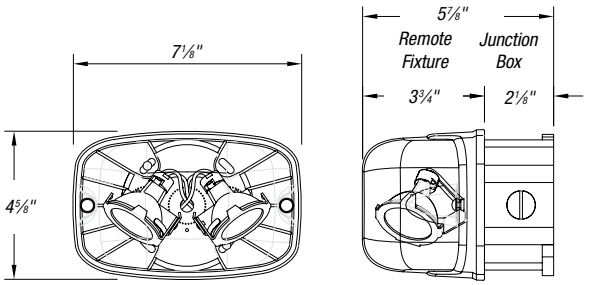
This Class I, Division 2, Groups A, B, C and D compliant remote fixture is specifically designed for installation in hazardous locations and other high-abuse industrial environments. It is highly weather and temperature resistant and stands up to impact and vibrations. The EF41 Series is ideally suited for environments where flammable gases, vapors or liquids can create an explosive gas atmosphere.

Standard Features

- Available with single or double lamp heads with high-efficiency MR-16 halogen lamps of 10, 12 or 20 watts
- Die-cast aluminum back plate with gasket
- Clear polycarbonate cover is UV and impact resistant
- Input voltage: 6V, 12V, 24V or 120V
- Easy installation on a 4" octagonal box (included) — also comes standard with tamper-proof screws and bit
- Evaluated to UL® 844 Standard for Class I, Division 2, Groups A, B, C and D
- Temperature codes: T3B (10W and 12W MR-16 lamps) and T2C (20W MR-16 lamps)
- Extreme operational temperature range: -40° F to 104° F (-40° C to 40° C)

Dimensions

Dimensions are approximate and subject to change.



4" Junction Box

Power Consumption

LAMP TYPE	INPUT VOLTAGE	POWER (EACH OF 2 LAMPS)	TEMPERATURE CODE
MR-16	6 Volts	10 Watts	T3B (max. 329° F/165° C)
MR-16	12, 24 Volts	12 Watts	T3B (max. 329° F/165° C)
MR-16	12, 24, 120 Volts	20 Watts	T2C (max. 446° F/230° C)

Catalog Numbering System

EF41 **MJ** - **GY**

Series
EF41 *= Single*
EF41D *= Double*

Lamp Type
MJ *= 6V 10W MR-16*
MK *= 12V 12W MR-16*
MW *= 12V 20W MR-16H*
MS *= 24V 12W MR-16*
MD *= 24V 20W MR-16*
MT *= 120VAC/VDC 20W MR-16 (GU10)*

Colors
GY *= Gray*

Spec-Grade Industrial

6-, 12- and 24-volt heavy-duty industrial emergency unit.

IL Series

A heavy-duty conventional emergency lighting unit for industrial applications, the IL Series is designed to provide ample battery capacity for use when remote fixtures are required.

Standard Features

- Each unit comes with two impact-resistant, flame-retardant thermoplastic EF-18 lamp heads with 9-watt high-intensity incandescent lamps (standard)
- All steel construction with gray baked enamel finish
- Available with sealed, maintenance-free nickel-cadmium, long-life lead, lead-calcium (free electrolyte) or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Provision for mounting to any standard 4" octagonal electrical box; the hinged and lockable front door allows easy access for maintenance and provides security against unauthorized access and vandalism
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA and is approved for use in the Commonwealth of Pennsylvania
- Three-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Mounting Bracket **B2**
Mounting Shelves (gray) **MP3-GY**
Wire Guard **WG3-E**

nexus® ADVANCED AD DIAGNOSTICS UL

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	4 HRS.	8 HRS.	NO. OF LOAD FUSES
Unit Equipment — No Remote Capability							
Nickel-Cadmium	6	**ILSC18-2**	18	12	6	—	—
Long-Life Lead	6	**ILSE18-2**	18	11	6	—	—
Lead-Calcium	6	**ILSM18-2**	18	12	7	—	—
Unit Equipment — With Remote Capability							
Nickel-Cadmium	6	**ILSC25-2**	25	18	9	—	—
	12	**12ILSC36-2**	36	21	12	6	1
	12	**12ILSC50-2**	50	36	18	10	1
	24	**24ILSC72-2**	72	42	24	12	2
	24	**24ILSC100-2**	100	73	36	20	2
Long-Life Lead	6	**ILSE27-2**	27	16	10	6	—
	6	**ILSE36-2**	36	24	13	7	—
	6	**ILSE54-2**	54	36	20	11	—
	6	**ILSE80-2**	80	65	35	19	—
	6	**ILSE110-2**	110	72	40	24	—
	12	**12ILSE36-2**	36	24	13	7	1
	12	**12ILSE54-2**	54	37	21	10	1
	12	**12ILSE72-2**	72	48	26	14	2
	12	**12ILSE110-2**	110	74	43	21	2
	24	**24ILSE72-2**	72	48	26	14	2
	24	**24ILSE110-2**	110	74	43	21	2
Lead-Calcium (Immobilized Electrolyte)	6	**ILC87-2**	87	70	41	24	—
	6	**ILC100-2**	100	77	47	24	—
Lead-Calcium	6	**ILSM27-2**	27	18	10	6	—
	6	**ILSM36-2**	36	25	14	7	—
	6	**ILSM54-2**	54	37	21	12	—
	6	**ILSM81-2**	81	54	36	18	—
	6	**ILSM110-2**	110	72	40	24	—
	12	**12ILSM36-2**	36	25	14	7	1
	12	**12ILSM54-2**	54	37	21	12	1
	12	**12ILSM110-2**	110	72	40	24	2
	24	**12ILSM110-2**	110	72	40	24	2

** National Electrical Code® specification.*

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Spec-Grade Industrial

Dimensions

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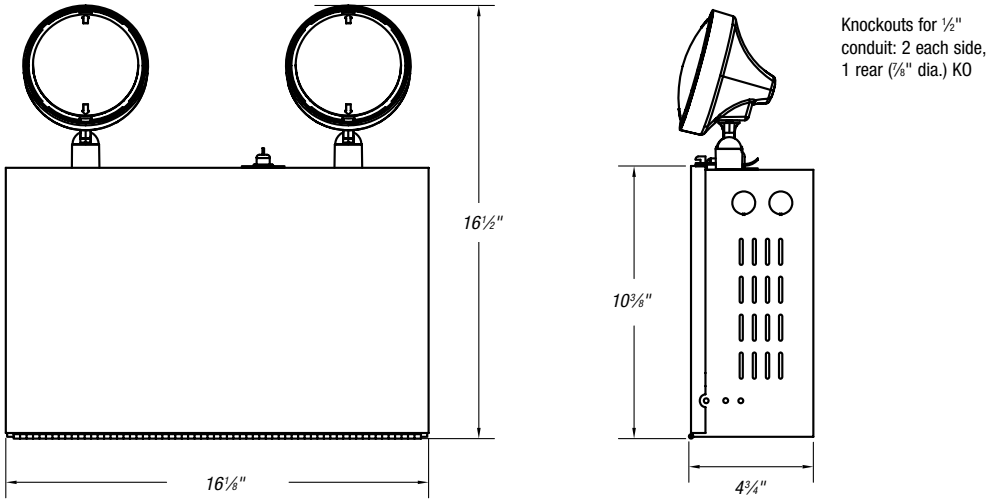

Catalog Numbering System

ILC	87	-	0	H_	-	A

Series/Voltage
ILC = 6V
ILS = 6V Industrial
12ILS = 12V
24ILS = 24V

Unit Capacity
87 = 87W Lead-Calcium
100 = 100W Lead-Calcium
C18 = 18W Ni-Cd
C25 = 25W Ni-Cd
E18 = 18W Long-Life Lead
E27 = 27W Long-Life Lead
E36 = 36W Long-Life Lead
E50 = 50W Long-Life Lead
E80 = 80W Long-Life Lead
E110 = 110W Long-Life Lead
M18 = 18W Lead-Calcium
M27 = 27W Lead-Calcium
M36 = 36W Lead-Calcium
M54 = 54W Lead-Calcium
M81 = 81W Lead-Calcium
M110 = 110W Lead-Calcium
C36 = 36W Ni-Cd
C50 = 50W Ni-Cd
E36 = 36W Long-Life Lead
E54 = 54W Long-Life Lead
E80 = 80W Long-Life Lead
E110 = 110W Long-Life Lead
M36 = 36W Lead-Calcium
M54 = 54W Lead-Calcium
M110 = 110W Lead-Calcium
C100 = 100W Ni-Cd
E72 = 72W Long-Life Lead
E110 = 110W Long-Life Lead
M110 = 110W Lead-Calcium

Number of Heads
0 = No Head
1 = One Head
2 = Two Heads
3 = Three Heads

Lamp Type
Blank = 6V 9W, 12V 9W, 24V 9W Incandescent Wedge Base
H_ = Halogen Bi-Pin
Z_ = Tungsten Incandescent
U_ = Tungsten Sealed Beam
X_ = Halogen Sealed Beam

Note: *For the complete lamp suffix, please refer to the lamp data on* ***pages I-311-I-312****.*

Options
A = Ammeter
V = Voltmeter
AD = Auto-Diagnostic, Audible
ADNA = Auto-Diagnostic, Non-Audible
CP = Cord and Plug 120V Only
D1 = Time Delay 5 Min.
D2 = Time Delay 10 Min.
D3 = Time Delay 15 Min.*
XP = Flexible Cord Provided with 120 or 277VAC Plug**
K = Lamp Disconnect Switch
OW = Off-White Cabinet and Heads
NEX = Nexus® Wired
NEXRF = Nexus® Wireless

** Not required with AD or ADNA — time delay standard at 15 minutes.*
*** Standard cord is 3 ft. (custom lengths available).*

Spec-Grade Industrial

6-, 12- and 24-volt harsh environment enclosures.

KS Steel Series

For areas where dust, liquids and atmospheric contaminants may be present, the KS Steel Series industrial emergency lighting units are designed to protect the circuitry and connections.

Standard Features

- Up to three weather-resistant thermoplastic heads can be mounted on the enclosure, and each unit comes with two 9-watt high-intensity incandescent lamps (standard)
- Constructed of 14-gauge steel with a fully gasketed hinged door and separate battery compartment
- Gray baked epoxy enamel finish
- Available with sealed, maintenance-free nickel-cadmium, long-life lead, lead-calcium (free electrolyte) or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA
- Three-year full warranty, excluding lamps and fuses

nexus® ADVANCED AD DIAGNOSTICS UL®

Unit Ratings

Furnished standard with two 9-watt high-intensity incandescent lamps.

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Unit Equipment — No Remote Capability						
Nickel-Cadmium	6	**KSC18-2**	18	12	10	7
Long-Life Lead	6	**KSE18-2**	18	11	8	6
Unit Equipment — With Remote Capability						
Nickel-Cadmium	6	**KSC25-2**	25	18	9	5
	12	**12KSC36-2**	36	21	21	6
	12	**12KSC50-2**	50	36	18	10
	24	**24KSC100-2**	100	73	37	20
Long-Life Lead	6	**KSE27-2**	27	19	10	5
	6	**KSE36-2**	36	24	13	7
	6	**KSE54-2**	54	36	20	11
	6	**KSE80-2**	80	65	35	19
	6	**KSE110-2**	110	74	43	21
	6	**KSE160-2**	160	130	70	38
	12	**12KSE36-2**	36	24	13	7
	12	**12KSE54-2**	54	37	21	10
	12	**12KSE110-2**	110	74	43	21
	12	**12KSE160-2**	160	130	70	38
	24	**24KSE110-2**	110	74	43	21
Lead-Calcium (Free Electrolyte)	6	**KC87-2**	87	70	41	24
	6	**KC100-2**	100	77	47	24
	6	**KC175-2**	175	140	85	48
	12	**12KC175-2**	175	140	85	48
Lead-Calcium	6	**KSM27-2**	27	18	10	6
	6	**KSM54-2**	54	37	21	12
	6	**KSM81-2**	81	54	30	18
	6	**KSM110-2**	110	72	40	24
	12	**12KSM54-2**	54	37	21	12
	12	**12KSM110-2**	110	72	40	24
	24	**24KSM110-2**	110	72	40	24

** National Electrical Code® specification.*

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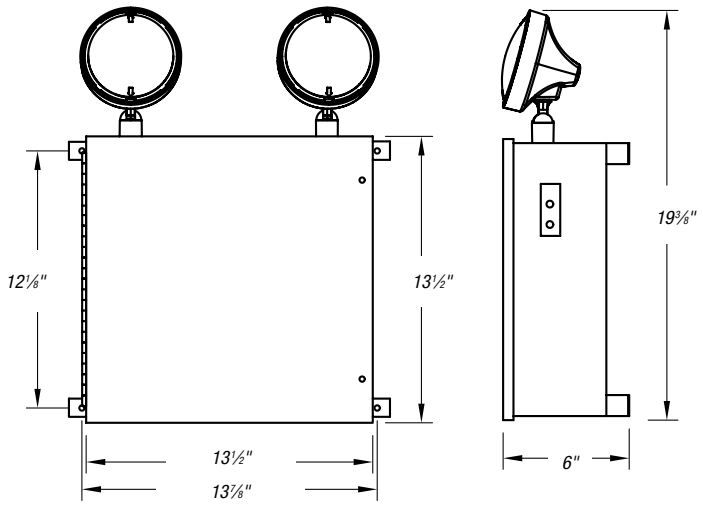
Spec-Grade Industrial

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

KS | C18 - 0 | H_ - AD

Series/Voltage

KS = 6V

12KS = 12V

24KS = 24V

K = 6V

12K = 12V

Unit Capacity

C18 = 6V 18W Ni-Cd
C25 = 6V 25W Ni-Cd
E18 = 6V 18W Long-Life Lead
E27 = 6V 27W Long-Life Lead
E36 = 6V 36W Long-Life Lead
E54 = 6V 54W Long-Life Lead
E80 = 6V 80W Long-Life Lead
E110 = 6V 110W Long-Life Lead
E160 = 6V 160W Long-Life Lead
M27 = 6V 27W Lead-Acid
M54 = 6V 54W Lead-Acid
M81 = 6V 81W Lead-Acid
M110 = 6V 110W Lead-Acid

C36 = 12V 36W Ni-Cd
C50 = 12V 50W Ni-Cd
E36 = 12V 36W Long-Life Lead
E54 = 12V 36W Long-Life Lead
E110 = 12V 110W Long-Life Lead
E160 = 12V 160W Long-Life Lead
M54 = 12V 54W Lead-Acid
M110 = 12V 110W Lead-Acid

C100 = 24V 100W Ni-Cd
E110 = 24V 110W Long-Life Lead
M110 = 24V 110W Lead-Calcium

C87-2 = 6V 87W Lead-Calcium (Free Electrolyte)
C100-2 = 6V 100W Lead-Calcium (Free Electrolyte)
C175-2 = 6V 175W Lead-Calcium (Free Electrolyte)

C175-2 = 12V 175W Lead-Calcium (Free Electrolyte)

Number of Heads

0 = No Head
1 = One Head
2 = Two Heads

Lamp Type

Blank = 6V 9W, 12V 9W, 24V 9W Incandescent Wedge Base
H_ = Halogen Bi-Pin
I_ = Incandescent DC Bayonet
U_ = Incandescent Sealed Beam
X_ = Halogen Sealed Beam
Z_ = Incandescent Wedge

Note: *For the complete lamp suffix, please refer to the lamp data on* ***pages I-311–I-312****.*

Options

AD = Advanced Diagnostic Self Test
ADNA = Advanced Diagnostic Non-Audible
TD = Time Delay
D1 = Time Delay 5 Min.
D2 = Time Delay 10 Min.
D3 = Time Delay 15 Min.*
K = Lamp Disconnect Switch
CP = Cord and Plug for Fiberglass Enclosure**
XP = Cord and Plug 277V**
S = Photometric Test Switch
V = Voltmeter
A = Ammeter
VR = Tamper-Proof Screws
FL = Large Cabinet
TM = Top Mounted Heads
NEX = Nexus® Wired
NEXRF = Nexus® Wireless
208V = Input 208VAC, 50/60 Hz

** Not required with AD or ADNA — time delay standard at 15 minutes.*
*** Standard cord is 3 ft. (custom lengths available).*

Spec-Grade Industrial

6-, 12- and 24-volt high-impact enclosures.

KS Series

With chemical-resistant, fully gasketed enclosures that come with stainless steel hardware, the KS Series is designed specifically for industrial applications involving severely corrosive or damp environments.

The KS Series is ideally suited for areas such as food processing plants.

Standard Features

- Each unit comes with two 9-watt high-intensity incandescent lamps (standard)
- Both the "S" and "L" enclosure are corrosion resistant and include separate battery compartments, a fully gasketed door and stainless steel hardware
- The "S" enclosure is constructed of high-impact thermoplastic
- The "L" enclosure is constructed of fiberglass
- Available with sealed, maintenance-free nickel-cadmium, long-life lead, lead-calcium (free electrolyte) or lead-calcium batteries
- PulsePlus Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amps (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA
- Three-year full warranty, excluding lamps and fuses

Large "L" Enclosure
Fiberglass Housing
UL® Listed NEMA 3R Enclosure, 160 and 175 Watts, 6 and 12 Volts

Small "S" Enclosure
High-Impact Thermoplastic Housing
18 to 110 Watts, 6, 12 and 24 Volts

NEMA 3R nexus® ADVANCED AD DIAGNOSTICS UL

Unit Ratings

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.	UNIT HOUSING
Unit Equipment — No Remote Capability							
Nickel-Cadmium	6	**KSC18-2-F**	18	12	10	7	S
Long-Life Lead	6	**KSE18-2-F**	18	11	8	6	S
Unit Equipment — With Remote Capability							
Nickel-Cadmium	6	**KSC25-2-F**	25	18	9	5	S
	12	**12KSC36-2-F**	36	21	12	6	S
	12	**12KSC50-2-F**	50	36	18	10	S
	24	**24KSC100-2-F**	100	73	37	20	S
Long-Life Lead	6	**KSE27-2-F**	27	19	10	5	S
	6	**KSE36-2-F**	36	24	13	7	S
	6	**KSE54-2-F**	54	36	20	11	S
	6	**KSE80-2-F**	80	65	35	19	S
	6	**KSE110-2-F**	110	74	43	21	S
	6	**KSE160-2-F**	160	130	70	38	L
	12	**12KSE36-2-F**	36	24	13	7	S
	12	**12KSE54-2-F**	54	37	21	10	S
	12	**12KSE110-2-F**	110	74	43	21	S
	12	**12KSE160-2-F**	160	130	70	38	L
	24	**24KSE110-2-F**	110	74	43	21	S
Lead-Calcium (Free Electrolyte)	6	**KC87-2-F**	87	70	41	24	S
	6	**KC100-2-F**	100	77	47	24	L
	6	**KC175-2-F**	175	140	82	48	L
	12	**12KC175-2-F**	175	140	85	48	L
Lead-Calcium	6	**KSM27-2-F**	27	18	10	6	S
	6	**KSM54-2-F**	54	37	21	12	S
	6	**KSM81-2-F**	81	54	30	18	S
	6	**KSM110-2-F**	110	72	40	24	S
	12	**12KSM54-2-F**	54	37	21	12	S
	12	**12KSM110-2-F**	110	72	40	24	S
	24	**24KSM110-2-F**	110	72	40	24	S

** National Electrical Code® specification.*

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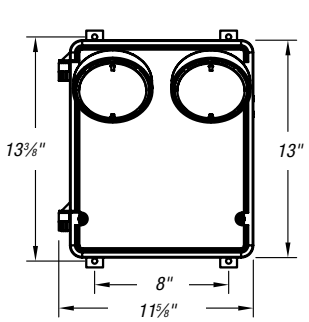
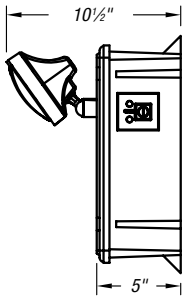
Spec-Grade Industrial

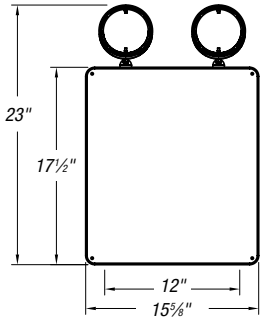
Dimensions

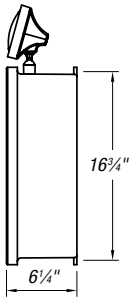
Dimensions are approximate and subject to change.





Small "S" Enclosure
High-Impact Thermoplastic Construction





Large "L" Enclosure
Fiberglass Construction

Catalog Numbering System

KS	18	-	0	H_	F	-	AD

Series/Voltage
KS = 6V
12KS = 12V
24KS = 24V
K = 6V
12K = 12V

Unit Capacity
C18 = 6V 18W Ni-Cd
C25 = 6V 25W Ni-Cd
E18 = 6V 18W Long-Life Lead
E27 = 6V 27W Long-Life Lead
E36 = 6V 36W Long-Life Lead
E54 = 6V 54W Long-Life Lead
E80 = 6V 80W Long-Life Lead
E110 = 6V 110W Long-Life Lead
E160 = 6V 160W Long-Life Lead
M27 = 6V 27W Lead-Acid
M54 = 6V 54W Lead-Acid
M81 = 6V 81W Lead-Acid
M110 = 6V 110W Lead-Acid

C36 = 12V 36W Ni-Cd
C50 = 12V 50W Ni-Cd
E36 = 12V 36W Long-Life Lead
E54 = 12V 36W Long-Life Lead
E110 = 12V 110W Long-Life Lead
E160 = 12V 160W Long-Life Lead
M54 = 12V 54W Lead-Acid
M110 = 12V 110W Lead-Acid

C100 = 24V 100W Ni-Cd
E110 = 24V 110W Long-Life Lead
M110 = 24V 110W Lead-Calcium

C87-2-F = 6V 87W Lead-Calcium (Free Electrolyte)
C100-2-F = 6V 100W Lead-Calcium (Free Electrolyte)
C175-2-F = 6V 175W Lead-Calcium (Free Electrolyte)

C175-2-F = 12V 175W Lead-Calcium (Free Electrolyte)

Number of Heads
0 = No Head
1 = One Head
2 = Two Heads

Lamp Type
Blank = 6V 9W, 12V 9W, 24V 9W Incandescent Wedge Base
H_ = Halogen Bi-Pin
I_ = Incandescent DC Bayonet
U_ = Incandescent Sealed Beam
X_ = Halogen Sealed Beam
Z_ = Incandescent Wedge

Note: *For the complete lamp suffix, please refer to the lamp data on* ***pages I-311–I-312****.*

Enclosure Type
F = Fiberglass or High-Impact Thermoplastic

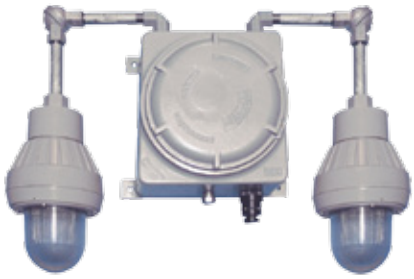
Options
AD = Advanced Diagnostic, Self Test
ADNA = Advanced Diagnostic, Non-Audible
TD = Time Delay
D1 = Time Delay 5 Min.
D2 = Time Delay 10 Min.
D3 = Time Delay 15 Min.*
K = Lamp Disconnect Switch
CP = Cord and Plug for Fiberglass Enclosure**
XP = Cord and Plug 277V**
S = Photometric Test Switch
V = Voltmeter
A = Ammeter
VR = Tamper-Proof Screws
FL = Large Cabinet
TM = Top-Mounted Heads
NEX = Nexus® Wired
NEXRF = Nexus® Wireless
208V = Input 208VAC, 50/60 Hz

** Not required with AD or ADNA — time delay standard at 15 minutes.*
*** Standard cord is 3 ft. (custom lengths available).*

Spec-Grade Industrial

6 and 12 Volt — Class I Div. 1 and 2, Groups C and D, Class II Div. 1 and 2, Groups E, F and G.

EXC Series



Completely self-contained and weather resistant, the EXC Series is a maintenance-free nickel-cadmium power system that provides safe emergency lighting in hazardous areas.

The copper-free cast aluminum housing features a gasketed cover that spins off for easy access to the battery and electronics. A variety of fixtures and exit signs are available for mounting either directly to the housing or remotely for complete job flexibility.

Standard Features

- Allows mounting up to three hazardous area fixtures directly on the power unit or remotely
- Corrosion-resistant, copper-free cast aluminum construction
- A weatherproof gasketed spin-off cover, UL® Listed stainless steel vent/drain and silicone conformal coating on the circuit board protect the electronics against humidity
- Comes standard with epoxy finish for added corrosion protection in harsh environments
- Available with sealed, maintenance-free nickel-cadmium batteries
- Charger offers 120/277VAC, 60 Hz, .3/.15 amp, 36 watt (other inputs available), fused DC output circuit, AC pilot light supervision, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection, lockout (automatic battery connect), solid-state and current-limited design, constant-current short-circuit and reverse-polarity protection
- Meets hazardous location requirements: Class I Division 1 and 2 (Groups C and D); Class II, Division 1 and 2 (Groups E, F and G)
- Three-year full warranty, excluding lamps, pilot lights and fuses

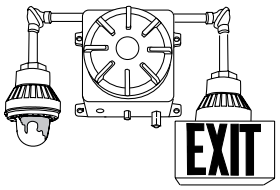
Unit Ratings

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	4 HRS.	8 HRS.
Unit Equipment — With Remote Capability						
Nickel-Cadmium	6	**EXC1**	18	12	—	—
	6	**EXC2**	25	18	9	—
	6	**EXC3**	36	21	12	6
	6	**EXC5**	50	36	18	10
	12	**1EXC3**	36	21	12	6
	12	**1EXC5**	50	36	18	10
	12	**1EXC7**	72	42	24	12

** National Electrical Code® specification.*

Dimensions

Housing:
12" x 12" x 9½"
(4) Mounting Lugs:
10" and 13½" on center;
Overall Dimensions
(including fixtures):
38" x 38" x 10"
Note: *Dimensions are approximate and are subject to change.*



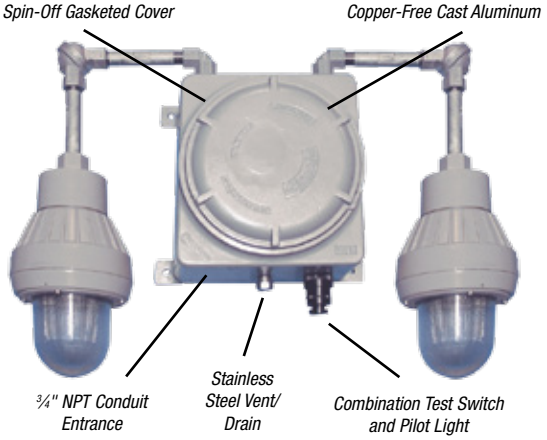
Fixtures

The EXC Series may be supplied with one or two hazardous fixtures mounted directly on the power unit and/or remotely as the application dictates. (For remote fixtures, consult hazardous area fixture data sheet.)

Lamp Fixtures (EP Series, see pages I-262–I-263): Fully directional UL® Listed copper-free cast aluminum construction, swivel-mounted, Pyrex® lens, complete with either 9-, 18-, or 25-watt HIT lamps (halogen optional). Available with optional guard or reflectors.

Pyrex® is a registered trademark of Corning Glass.

Exit Sign Fixtures (XP Series, see pages I-264–I-265): Mounted to the power unit, these exit signs are supplied standard with our unique integral transfer switch (TS) and utilize either a 6-volt 15-watt XX6 lamp or 12-volt 25-watt XX12 lamp. This enables the exit sign to operate in both the normal AC mode as well as the DC mode. The exit sign consists of an EP fixture coupled with a heavy-duty steel and baked enamel finish exit shroud with ample downlight. Supplied standard as a single-face sign, red stencil faceplate; double face and green stencil also available. For other legends, consult your Thomas & Betts sales representative.



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Spec-Grade Industrial

Catalog Numbering System

1EXC	7	-	1	HG	-	T1SR	-	D1

Series
EXC *= Series 6V*
1EXC *= Series 12V*

Capacity
1 *= 18W (6V only)*
2 *= 25W (6V only)*
3 *= 36W (6V, 12V)*
5 *= 50W (6V, 12V)*
7 *= 72W (12V only)*

Number of Fixtures
0 *= No Remote*
1 *= One Remote*
2 *= Two Remotes*

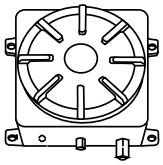
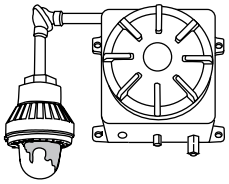
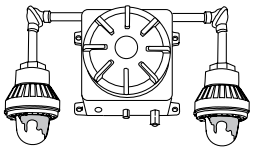
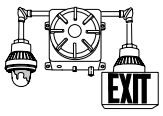
Lamps
Blank *= No lamps*
HB *= 6V 8W Bi-Pin Halogen*
HD *= 6V 12W Bi-Pin Halogen*
XX6 *= 6V 15W Bi-Pin Halogen*
HF *= 12V 8W Bi-Pin Halogen*
HG *= 12V 12W Bi-Pin Halogen*

Note: *Includes standard lamp.*

Exit
Blank *= No Exits*
-T1SR *= Single-Face Red*
-T1SG *= Single-Face Green*
-T1DR *= Double-Face Red*
-T1DG *= Double-Face Green*

Options
Blank *= No Options*
TS *= Transfer Switch*
D1 *= Time Delay 5 Min.*
D2 *= Time Delay 10 Min.*
D3 *= Time Delay 15 Min.*
GD *= Wire Guards*
DM *= Dome Reflector*
AG *= Angle Reflector*
GXP *= Aluminum Guard*

Standard Configurations for EXC Series

UNIT	CATALOG NO.	DESCRIPTION
 (Remote capability)	**1EXC5-0**	12-volt, 50-watt self-contained hazardous area emergency lighting power unit complete with battery and charger.
	1EXC5-TS	12-volt, 50-watt self-contained hazardous area emergency lighting power unit complete with battery, charger and transfer switch.
	**1EXC5-1IG**	12-volt, 50-watt, single-head unit with 12-volt, 25-watt HIT lamp.
	1EXC5-1IG-TS	12-volt, 50-watt, single-head unit with built-in transfer switch and 12-volt, 25-watt HIT lamp.
	**EXC3-2IB**	6-volt, 36-watt, self-contained hazardous area emergency lighting power unit complete with battery and charger. Fixture supplied with one IB 18-watt HIT lamp.
	EXC5-2IB-TS	6-volt, 50-watt, double-head unit with built-in transfer switch and 12-volt 25-watt HIT lamp.
	**EXC2-T1SR**	6-volt, 25-watt, self-contained unit with integral low-voltage transfer switch (TS) to operate exit lamp in both normal and emergency modes. Suggested Catalog Number shown indicates single-face exit with red stencil faceplate. For green, substitute G for R. For double face, substitute D for S.
	**EXC5-1IC-T1SR**	6-volt, 50-watt unit. In addition to the exit lamp, which operates in both normal and emergency modes, emergency lighting can be achieved with one additional emergency lighting head. Example: IC = 25 watts.

Note: *Above units are supplied with appropriate wattage high-intensity tungsten (HIT) lamps (unless otherwise specified). Alternate wattage lamps or halogen lamps may be substituted as required. Exit sign provided with 25-watt lamps only.*

Spec-Grade Industrial

Remote explosion-proof lighting fixtures.

EFEP Series

Designed for mounting in locations remote from the power source, the EFEP Series is offered with 6-, 12- and 24-volt lamps for DC operation or 120VAC fixtures.

If the power source is installed outside hazardous areas, the length of connection wires should be carefully considered to ensure that the voltage of the emergency power unit and the wire size of the connecting circuit are adequate to offset the voltage drop in the circuit.

Standard Features

- Manufactured of heavy cast aluminum with an epoxy finish and a Pyrex® lens; all attached hardware has been designed for explosion-proof applications
- EFEPP and EFEP1, 2 and 3 fixtures include elbow swivels, conduit extension pipe (6" increments) and combination explosion-proof junction box/mounting plate (4" box, 6¼" mounting center)
- Complies with NEC®, OSHA and NEMA specifications for the following Classes and Groups:
  - — Class I, Division 1 & 2, Groups C & D (300W PS-25 max.)
  - — Class II, Division 1 & 2, Groups E, F & G (60W max.)
  - — Class III, Division 1 & 2 (150W max.)
  - — UL® Listed for use in Paint Spray Areas (75W max.)
  - — Suitable for Wet Locations

Pyrex® is a registered trademark of Corning Glass.

***EFEPW** = Wall Bracket Mount, 14 lbs.*

***EFEPP** = Pendant Mount with Hanger Box and Pendant,14 lbs.*

***EFEPC** = Ceiling Mount, 11 lbs.*

Options

Description	Suffix
Guard	**-GXP**

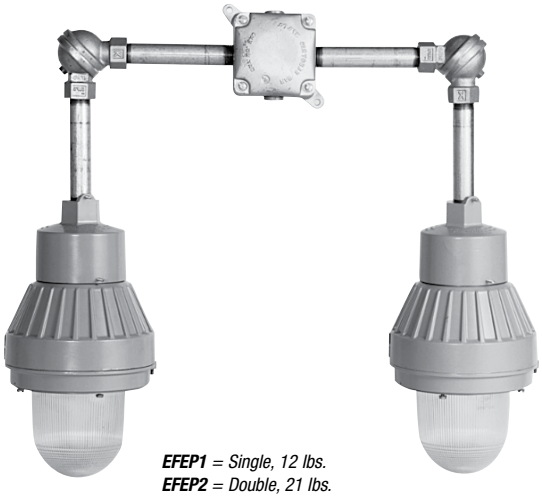
One-piece aluminum casting construction, attaches to globe holder ring with four screws.

Description	Suffix
Dome Reflector	**-RD**

Highly reflective white finish inside and out, attaches to globe holder ring with four screws.

Description	Suffix
Angle Reflector	**-RA**

Highly reflective white finish inside and out, attaches to globe holder ring with four screws.



***EFEP1** = Single, 12 lbs.*
***EFEP2** = Double, 21 lbs.*
***EFEP3** = Triple, 30 lbs.*

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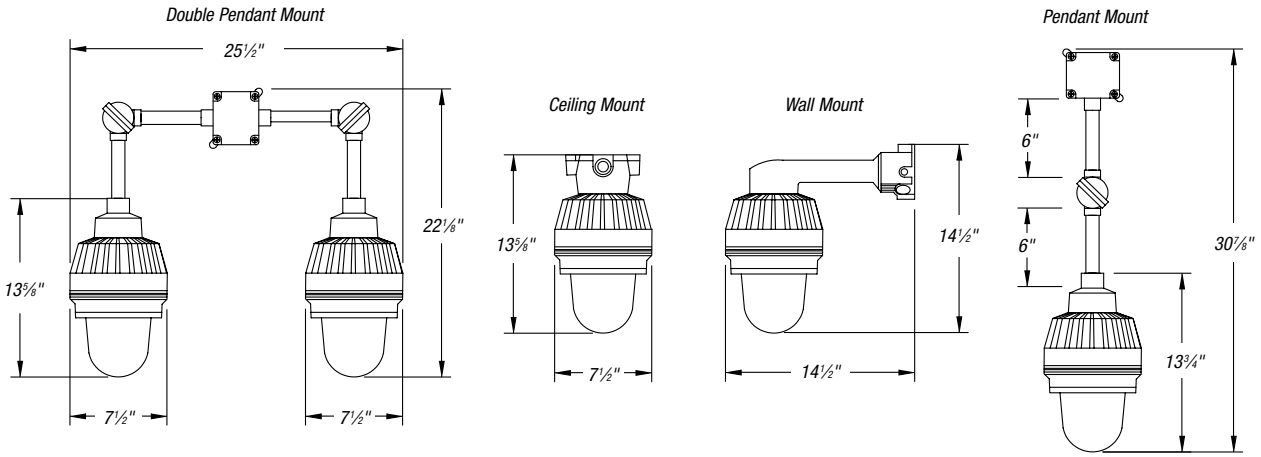
Spec-Grade Industrial

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

EFEP	C	HB	-	GXP

Series
EFEP = *Remote Series*

Mounting
C = *Ceiling Mount*
P = *Pendant Mount*
W = *Wall Mount*
2 = *Double Pendant Mount*

Lamps
HB = *6V 8W Bi-Pin Halogen*
HD = *6V 12W Bi-Pin Halogen*
XX6 = *6V 15W Bi-Pin Halogen*
HF = *12V 8W Bi-Pin Halogen*
HG = *12V 12W Bi-Pin Halogen*

Options
Blank = *No Options*
GXP = *Aluminum Guard*
RD = *Dome Reflector*
RA = *Angle Reflector*

Spec-Grade Industrial

Explosion-proof remote exit signs.

EFXP Series

Available with an explosion-proof housing (Class I, Division 1) or a NEMA 1 housing, the EFXP Series is designed for mounting in locations that are remote from the power source.

Exit signs shown are explosion-proof fixtures of heavy cast aluminum construction with Pyrex® lenses. The housing is an 18-gauge fabricated steel box with a baked enamel finish. Stenciled exit lettering is available on one or two faces. All EFXP Series have extra-large downlight openings.

If the power source is installed outside hazardous areas, the length of the connection wires should be carefully considered to ensure that the voltage of the emergency power unit and the wire size of the connecting circuit are adequate to offset the voltage drop in the circuit.

Standard Features

- Available with 6-, 12- and 24-volt lamps for DC operation or 120VAC fixtures
- Complies with NEC®, OSHA and NEMA specifications for the following Classes and Groups:
  - — Class I, Division 1 & 2, Groups C & D (300W PS-25 max.)
  - — Class II, Division 1 & 2, Groups E, F & G (60W max.)
  - — Class III, Division 1 & 2 (150W max.)
  - — UL® Listed for use in Paint Spray Areas (75W max.)
  - — Suitable for Wet Locations

Pyrex® is a registered trademark of Corning Glass.

Lamp Selection (exit signs)

LAMP TYPE	VOLTAGE	POWER	LAMP TYPE	AVERAGE LIFE (HOURS)	SUFFIX
Quartz Bi-Pin	6V	15W	JC-6V15W	2,000	**-XX6**
	6V	25W	25A-12	1,000	**-XX12**
Medium Base	24V	25W	143A	1,000	**-XX24**
	120V	25W	A19	2,500	**-AC**
LED Lamp, Red	120V	5W	—	100,000	**-XX120**

Mounting

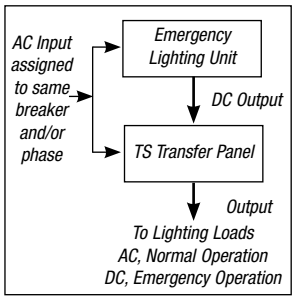
The transfer circuit is not designed for use in hazardous or explosive areas. The transfer circuit is to be mounted remotely from hazardous areas.

Electrical Specifications for Transfer Panel

Input Voltage: From AC: 120 Volt, 60 Hz, 1-Phase (other voltages available) From DC: 6, 12, 24 or 120 Volt (select)

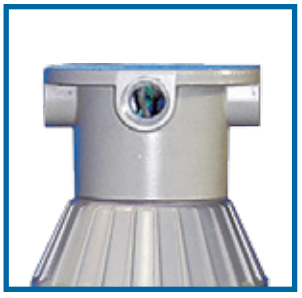
Output Voltage: Must be identical to DC Input Voltage

Wattage: Panel oversized 10–20% greater than total connected load



***EFXPW** = Wall Bracket Mount*

***EFXPP** = Adjustable Pendant Mount*



***EFXPC** = Ceiling Mount*

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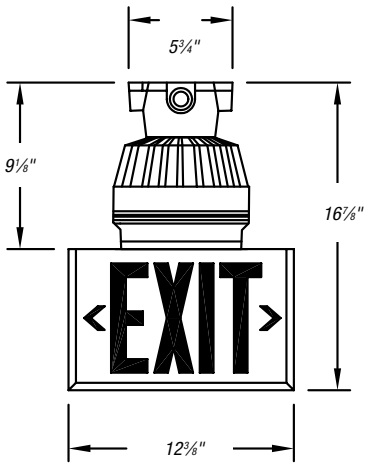
Spec-Grade Industrial

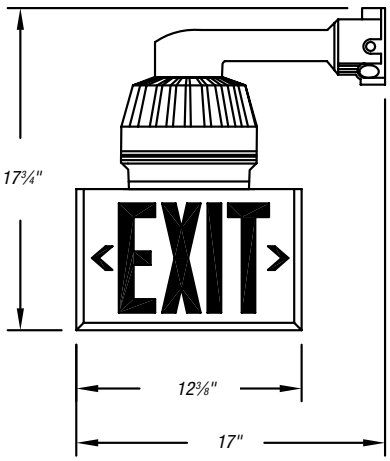
Dimensions

Dimensions are approximate and subject to change.

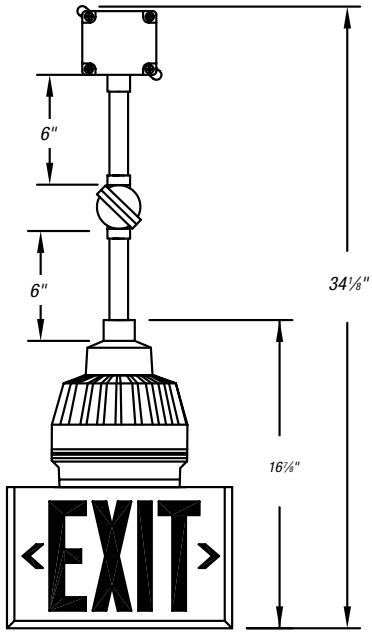
Ceiling Mount



Wall Mount



Pendant Mount



Catalog Numbering System

EFXP	C	XX6	2	-	R	120	-	6	-	TS	-	25

Series
EFXP *= Exit Series*

Mounting
C *= Ceiling Mount*
P *= Pendant Mount*
W *= Wall Mount*

Lamp Type
XX6 *= 6V 15W (DC only)*
XX12 *= 12V 25W (DC only)*
XX24 *= 24V 25W (DC only)*
AC120 *= 120V 25W (AC only)*
XX120 *= 120V 20W LED*

Number of Faces
Blank *= Single Face*
2 *= Double Face*

Letters
R *= Red*
G *= Green*

AC Voltage
120 *= 120VAC*
277 *= 277VAC*

DC Voltage
6 *= 6VDC*
12 *= 12VDC*
24 *= 24VDC*

Series
TS *= Transfer Circuit*

Load Wattage
25 *= 25W*
50 *= 50W*
75 *= 75W*
100 *= 100W*

Spec-Grade Industrial

X61-X62 self-luminous exit signs.

EverLite Self-Luminous Series

Non-electric — no wiring or energy required. For use in hazardous, explosive, corrosive, humid or any other harsh environments. EverLite exit signs will not cause or contribute to the ignition of any hazardous or explosive atmospheres. Ideal for any distinguished exit sign application, the EverLite Series is of rugged thermoplastic construction with a contemporary design, smooth rounded corners and a vibrant faceplate color.

Standard Features

- Legend is constructed of non-glare polycarbonate with .015"-thick, open letters, field-programmable arrows and white letters with background colors of red or green; contrast ratio for both colors exceeds .5 and meets requirements of UL® 924 and NFPA 101®
- Frame finishes include off-white or designer black, and the entire unit is tamper-proof and completely self-contained
- Tritium gas energizes the phosphor-coated borosilicate tubes, and the low-energy beta emission of tritium striking the phosphor coating inside the Pyrex® glass tubes causes illumination to be generated
- Signs mount flush to wall or ceiling surfaces; a canopy is not required
- UL® Listed; complies with NFPA, Life Safety Code® and OSHA
- EverLite signs are spark-free and suitable for use in hazardous, explosive, corrosive, humid or any other harsh environment
- Emergi-Lite® will replace free of charge any product in which the luminosity is found to be defective during its specified luminous life, or which falls below specified luminous life

Pyrex® is a registered trademark of Corning Glass.

Accessories (Order as a separate item)

White Pendant..... **P-WT***

** Specify pendant length (12", 24", 36", etc.).*

Mounting

Single-Face Signs

Wall Mount (flush wall or end) | *Ceiling Mount (flush ceiling)* | *Pendant Mount*

Double-Face Signs

Wall Mount (flush end) | *Ceiling Mount (flush ceiling)* | *Pendant Mount*

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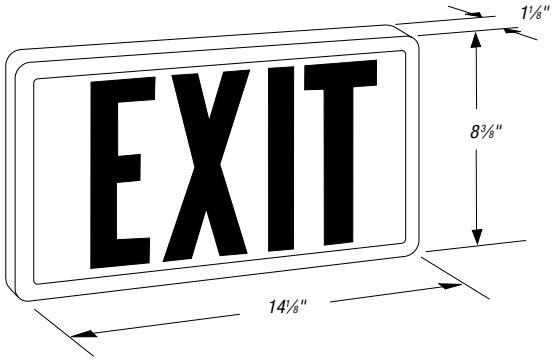
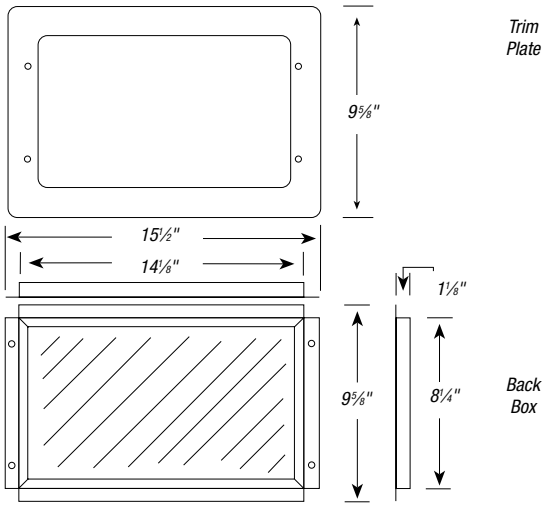
Spec-Grade Industrial

Dimensions

Dimensions are approximate and subject to change.

Fully Recessed FR Option





Applications (for use in harsh or dangerous environments)

- Meet full test specifications of ANSI (American National Standards Institute)
- Meet requirements of National Electrical Code®, Class I and II conditions
- Licensed for distribution by U.S. Nuclear Regulatory Commission

Harsh Environments

- Mines • Spray booth areas • Refineries • Off-shore rigs • Paper mills
- Chemical plants • Food processing plants • Grain elevators

Licenses and Codes

- UL® — Underwriters Laboratories
- OSHA — Occupational Safety and Health Association
- NFPA — National Fire Protection Association
- BOCA, ICBO, SBCCI — American Building Officials
- MSHA — Mine Safety and Health Administration
- NRC — Nuclear Regulatory Commission
- Uniform, Basic and Standard Building Codes
- City of Los Angeles Approved

Catalog Numbering System

W	SLX	-	10	61	R	-	AF

Frame Color
W *= Off-White*
B *= Black*

Series
SLX *= Series*

Years
10 *= 10 Years*
15 *= 15 Years*
20 *= 20 Years*

Number of Faces
61 *= Single Face*
62 *= Double Face*

Legend
R *= Red*
G *= Green*

Option
AF *= Aluminum Frame*
FR *= Fully Recessed Frame*
AFPC *= Aluminum Frame and Polycarbonate Shield*

Distributor Select

Die-cast exit sign.

Prestige™ Thin Series

NEW!

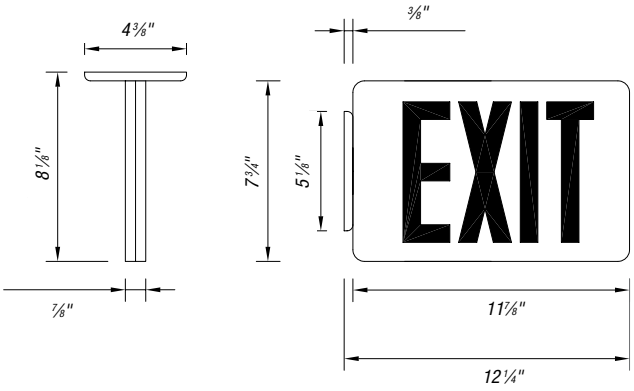
Ideal for applications requiring attractive, thin-profile, die-cast aluminum signage, superior illumination and low energy consumption, the THIN exit provides a sleek, thin architectural profile, which allows for an alternative to the traditional die-cast exit. The THIN exit is ideal for today's contemporary applications, where style and design are needed.

Standard Features

- Easy to install
- Thin-profile, die-cast aluminum housing
- Clear lacquer, brushed aluminum inhibits fingerprints and other surface contaminants; also available with white finish
- Universal directional chevron knockouts are completely concealed and easily removed from faceplate
- Letters are 6" high with ¾" stroke and 100 ft. viewing distance rating
- Low power consumption
- Dual-voltage input capability 120/277VAC
- Self-powered models are provided with test switch, LED pilot light and rechargeable nickel-cadmium battery
- Sealed, maintenance-free, nickel-cadmium battery delivers 90 minutes of emergency power on all self-powered models
- Universal mounting — top, back or end
- Mounting knockout and hole plugs are easily removed
- Die-cast aluminum canopy is provided (white canopy with white frame and black canopy with black frame)
- UL® Listed; damp location listing 32° F to 122° F (0° C to 50° C); meets UL® 924, NFPA 101® (Life Safety Code®), NEC®, NFPA 70 and OSHA illumination standards
- Five-year full warranty

Dimensions

Dimensions are approximate and subject to change.



Power Consumption

MODEL	AC SPECS			DC SPECS	
AC-only	120/277VAC 60 Hz	Typical 1W	Less than 1.5W	—	—
Self-powered	120/277VAC 60 Hz	Typical 1W	Less than 1.5W	Ni-Cd Battery	90 min.

Catalog Numbering System

BA	TXN	1	R

Frame Color/Face Plate
BA *= Black Trim/Brushed Aluminum*
WW *= White/White*

Series
TX *= AC Only*
TXN *= Self-Powered Unit (90 Min.)*

Number of Faces
1 *= Single Face*
2 *= Double Face*

Legend Color
R *= Red*
G *= Green*

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Distributor Select

6-volt thermoplastic unit.

DLM-2 Series

A molded-in strut style test switch and two flush-mounted fresnel lenses add a contemporary elegant style to the DLM-2 Series. Its compact design, measuring only 5" x 12", has a lightly textured, off-white finish that blends well with a variety of architectural surfaces. No screws or other mounting hardware are visible. The DLM-2 Series can be mounted in any orientation on walls or ceilings.

ESCORT II

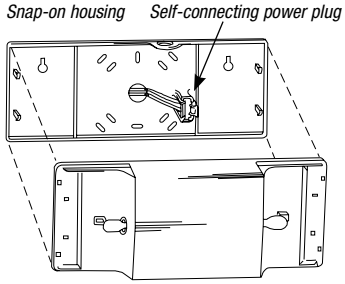
Standard Features

- Each self-contained unit comes with two 6V high-intensity glass wedge-based incandescent lamps
- Constructed of high-impact UL® Recognized 94V 5VA thermoplastic, the DLM-2 Series resists denting, peeling, scratching and corrosion and features a transparent polycarbonate lens
- Sealed, maintenance-free lead-calcium batteries
- Integrated circuitry offers 120/277VAC, .08/.04 amp standard, automatic charging, instantaneous transfer, test switch, long-life LED AC charge monitor light, temperature-compensated charger, short-circuit proof and reverse-polarity protection, low-battery voltage disconnect, brownout protection and lockout (automatic battery connection)
- Can be mounted in any orientation on walls or ceilings, and no screws or other mounting hardware are visible
- Listed to UL® 924 Standard and complies with NEC®, Life Safety Code® and OSHA
- Three-year full warranty, excluding lamps, pilot lamps and fuses
- Damp location standard

Performance

In both mechanical and electrical performance, the DLM-2 is a superior value in its class.

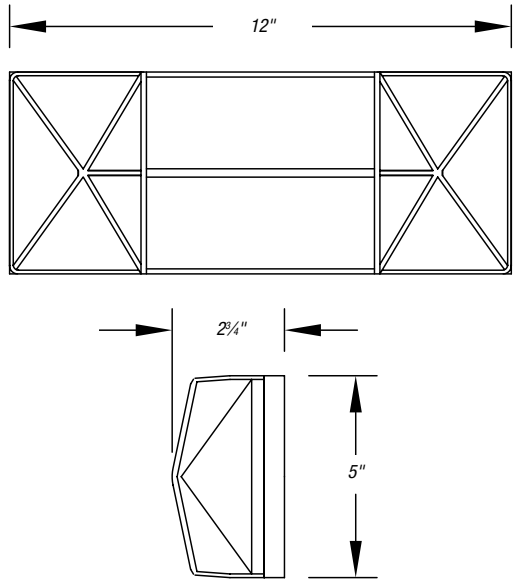
Its tough thermoplastic body and flush-mounted heads will not dent, peel or corrode. Snap-together lens and body and self-connecting power plug make installation quick and easy.



Electrical performance is assured by a 6-volt maintenance-free lead-calcium battery and a solid-state charger that includes premium features such as lockout, temperature compensation and low-voltage disconnect. Selectable 120/277V operation is standard.

Dimensions

Dimensions are approximate and subject to change.



Accessories (Order as a separate item)

Wire Guard **WG13-E**

Ordering Information	Model No.
Standard DLM-2 Unit	**DLM-2**

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Distributor Select

6-volt recessed down light.

GS Series

The GS Series recessed down light combines the function of an emergency lighting fixture with stylish design.

Standard Features

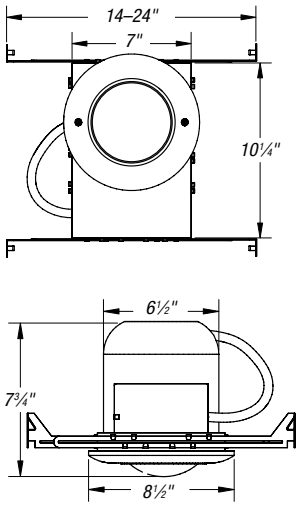
- An adjustable gimbal directs the light from one 6-volt 10-watt wedge-base PAR36 lamp head
- The low-profile trim ring is molded in polycarbonate with a semi-gloss white finish to complement a variety of ceilings
- The fully recessed backbox is constructed of 20-gauge steel
- Contains a sealed, maintenance-free lead-calcium battery
- A slide-out chassis and two quick-connect plugs make installation and servicing easy; adjustable bar hangers are included
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA
- 3-year full warranty, excluding lamps, pilot lights and fuses

Accessories (Order as a separate item)

Remote Test Switch (metal face plate)..... **RTS**
Remote Text Switch (plastic face plate)..... **RTS-1**

Dimensions

Dimensions are approximate and subject to change.

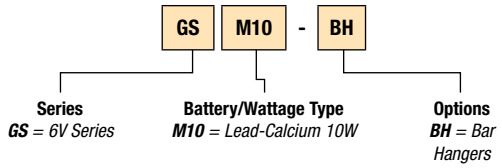


Unit Ratings

SEALED MAINTENANCE-FREE BATTERY TYPES	DC VOLTAGE	MODEL NO.	WATTS TO 87.5% OF RATED BATTERY VOLTAGE* 1½ HRS.	2 HRS.	3 HRS.	4 HRS.
Lead-Calcium	6	**GSM10-BH**	10	8	—	—

** National Electrical Code® Specification*

Catalog Numbering System



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Distributor Select

Thermoplastic unit with adjustable lighting heads.

EL-2SQ Series

For wall or ceiling mounting, the EL-2SQ Series comes standard with an 11-watt remote capacity and is damp location listed. The unit can be installed in minutes, giving you a versatile emergency lighting solution for the job site.

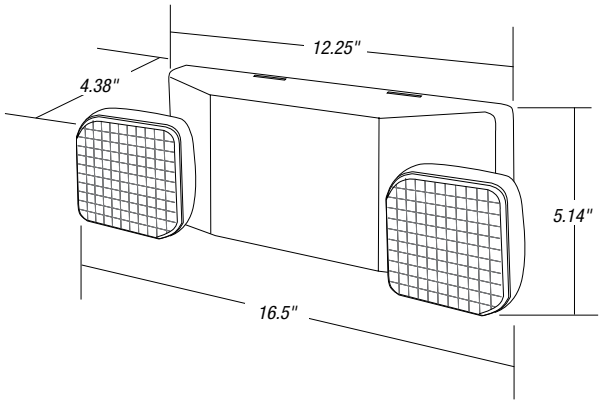
ESCORT II

Standard Features

- Two fully adjustable glare-free 6V 5.4W DC T5 wedge-base lamps for emergency mode egress light
- Injection-molded UV-stabilized thermoplastic housing and back plate; UL® 94, 5VA flame rated
- Sealed, maintenance-free lead-calcium batteries are designed to power 11 watts remote load or extended unit run time
- 120/277VAC dual-voltage operation, LED indicator light and push-button test switch and low-voltage battery disconnect
- Remote capacity may power additional remote heads (up to 6V 11W)
- Innovative, snap-together design allows for faster wall or ceiling mounting, and universal knock-out pattern on the back plate allows for junction box mounting
- UL® Listed for damp locations and complies with NEC®, Life Safety Code® and OSHA
- Three-year full warranty, excluding lamps and fuses

Dimensions

Dimensions are approximate and subject to change.



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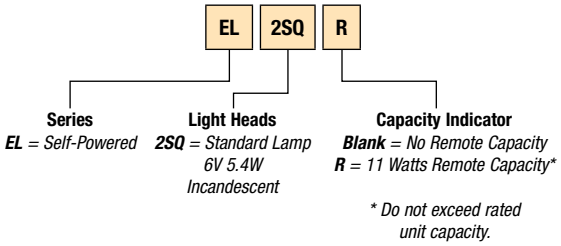
Accessories (Order as a separate item)

Replacement Battery	**860.0018-E**
Replacement Lamp (standard)	**570.0012-E**
Vandal Shield	**VRS.BB**
Vandal Shield (NEMA 4X)	**VRSBB.4X**
Wire Guard (heads in any position)	**WG10-E**

Catalog Numbering System



Distributor Select

Thermoplastic LED exit signs and combination units.

ELXN400 SQ Series

NEW!

Fully adjustable SQ heads can be configured for top mounting, side mounting or anywhere in between without disassembly or rewiring. The ELXN400 SQ Programmable Series confronts job-site mounting situations "head-on."

The ELXN400 SQ Series features 120/277VAC dual-voltage operation, an LED indicator light and push-button test switch. Remote-capacity exit signs with two heads may power additional remote heads up to 6 volts, 12 watts. Remote-capacity exit sign with no heads may power additional remote heads up to 6 volts, 22 watts. Low-voltage battery disconnect is another feature.

An innovative, snap-together design allows for fast installation for wall or ceiling mounting. The canopy snaps to the housing with a twist-lock feature, tightly securing the canopy to the housing. Replaceable directional chevron inserts are easily removed and reinserted.

ESCORT II

Standard Features

- Come with two fully adjustable, glare-free SQ light heads for egress lighting, with two 6-volt 5.4W DC T5 wedge-base lamps
- Low power consumption — LED lamps are operated in normal (AC input) and emergency (DC input) modes
- Injection-molded UV-stabilized thermoplastic housing, faceplates and canopy
- UL® 94, 5VA flame rating
- Includes two faces, back plate and canopy
- Available with a sealed, maintenance-free lead-calcium battery
- Additional battery available for 12-watt remote load* or extended unit run time
- UL® Listed; complies with NEC®, Life Safety Code® and OSHA, and damp location listing is standard on all models
- Three-year full warranty, excluding lamps, pilot lights and fuses

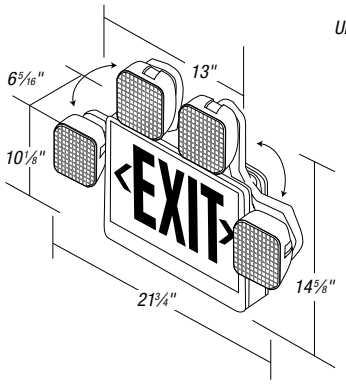
Accessories (Order as a separate item)

Wire Guard (heads in any position)..... **WG10-E**
Replacement Battery..... **860.0004-E**
Replacement Lamp **570.0012-E**

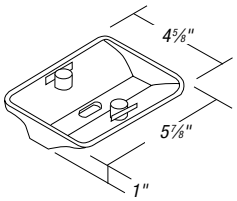
** Do not exceed rated unit capacity.*

Dimensions

Dimensions are approximate and subject to change.



Units with No Heads: 10⅛" x 13"



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Catalog Numbering System

ELXN400	R	-	2SQ	R	-	AD

Series
ELXN400

Stencil Face (Letters)
R *= Red*
G *= Green*

Light Heads
0 *= Combo No Heads**
2SQ *= Lamp Standard 6V 5.4W*
** Only available with remote capacity AD and red stencil.*

Capacity Indicator
Blank *= No Remote Capacity*
R *= 12W Remote Capacity**
** Do not exceed rated unit capacity.*

Options
Blank *= No Options*
AD *= Advanced Diagnostics**
** Only available with remote capacity and red stencil.*

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Distributor Select

Completely self-contained thermoplastic unit.

EL-2MRS Series

A compact unit for mounting in any orientation, the EL-2MRS Series is perfect for use where style and design are required in an economical package. Measuring only 5½" x 12⅛", the compact size accommodates space restrictions.

ESCORT II

Standard Features

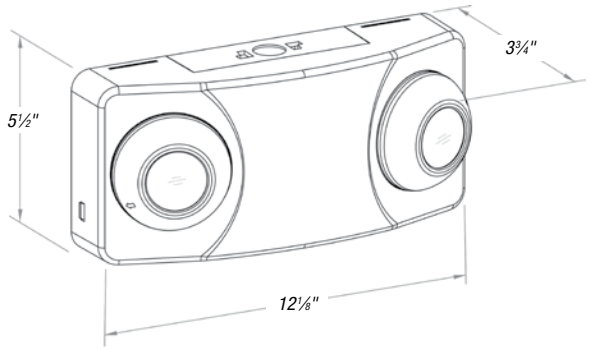
- Each self-contained unit comes with two 6V MR-16 halogen lamps housed in adjustable, gimbal-type assemblies to provide clean, adequate lighting
- High-impact thermoplastic construction is UL® Recognized 94, 5VA flame rated
- Sealed, maintenance-free lead-calcium batteries
- Reliable integrated circuitry offers 120/277VAC, .1/.05 amps input standard, automatic charging, instantaneous transfer, test switch, long-life LED AC charge monitor, temperature-compensated charger, short-circuit protection, low battery voltage disconnect, brownout protection and lockout (automatic battery detection during installation)
- Snap-together thermoplastic housing facilitates mounting in any orientation
- UL® Listed and complies with NEC®, Life Safety Code® and OSHA; damp location listing is standard
- Three-year full warranty, excluding lamps and fuses

Accessories (Order as a separate item)

Replacement MR-16 Lamp, 6V 5W **580.0072-E**
Wire Guard..... **WG13-E**
Replacement Battery **860.0004-E**

Dimensions

Dimensions are approximate and subject to change.



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Catalog Numbering System

EL - **2MRS-LA**

Series
***EL** = Series*

Lamp Option
***2MRS** = 6V 5W MR-16*
***2MRS-LA** = 6V 4W LED*

Distributor Select

Thermoplastic exit sign and combination unit.

ELX-MRS Series

The ELX-MRS Series is perfect for use where an easy-to-install, economical combo unit is required. Long-life LEDs are used to light all exit sign models. The combo unit's 6-volt MR-16 lamps are powered by a maintenance-free, lead-calcium battery to provide a clean, adequate amount of light. The snap-together thermoplastic housing facilitates quick assembly, making the ELX-MRS the most affordable sign on the market.

ESCORT II

Standard Features

- Rugged off-white thermoplastic construction
- Even illumination for excellent legibility
- Snap-together design for quick and easy installation
- Universal mounting, complete with two faces, backplate and canopy
- Replaceable knockout directional chevrons
- Energy-efficient, long-life red or green LEDs
- UL® 924 Listed
- Complies with NEC®, Life Safety Code® and OSHA
- Damp location listing is standard on all models
- 6-volt, sealed, maintenance-free lead-calcium battery
- Fully adjustable, glare-free, 6-volt MR-16 lamps

Charger

- 120/277VAC input
- Fully automatic charger
- Temperature compensated
- Brownout protection
- Short-circuit protected
- Low-voltage battery disconnect
- Push-to-test switch
- AC pilot light

Accessories (Order as a separate item)

Description

Replacement MR-16 Lamp, 6V 5W **580.0072-E**

Wire Guard, Wall Mount **WG6-E**

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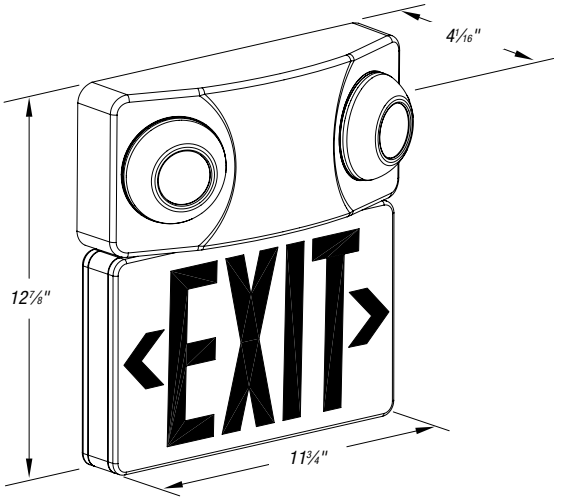
Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System

ELXN400	R	2MRSN
Series	**Stencil Face**	**Light Heads**
ELXN400 *= Self-Powered*	***R*** *= Red*	***2MRSN*** *= 6V 5W MR-16*
	G *= Green*	***2MRSN-LA*** *= 6V 4W LED MR-16*

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Distributor Select

Thermoplastic exit sign.

ELX Series

The ELX Series is perfect for use where an easy-to-install economical unit is required. Long-life LEDs are used to light all exit sign models. Nickel-cadmium batteries are used in the self-powerd exit signs. The snap-together thermoplastic housing facilitates quick assembly, making the ELX the most affordable sign of its kind on the market.

ESCORT II

Standard Features

- Rugged off-white thermoplastic construction
- Even illumination for excellent legibility
- Snap-together design for quick and easy installation
- Universal mounting, complete with two faces, backplate and canopy
- Replaceable knockout directional chevrons
- Energy-efficient, long-life red or green LEDs
- UL® 924 Listed
- Complies with NEC®, Life Safety Code® and OSHA
- Damp location listing is standard on all models

Emergency Models (Exit Signs)

- Replaceable, sealed nickel-cadmium battery
- Provide a minimum 90 minutes of continuous emergency illumination
- ENERGY STAR® compliant
- Batteries recharge per UL® 924 specifications
- All exit sign models consume less than 5 watts

Charger

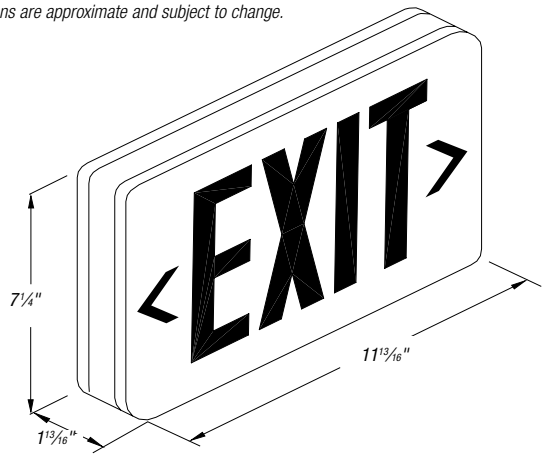
- 120/277VAC input
- Fully automatic
- Temperature compensated
- Brownout protection
- Short-circuit protected
- Low-voltage battery disconnect
- Push-to-test switch
- AC pilot light

ELX Series Offered Models

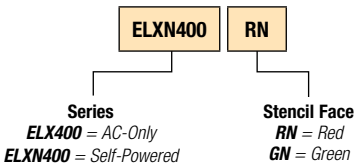
- AC-only exit signs, red or green
- Self-powered exit signs, red or green

Dimensions

Dimensions are approximate and subject to change.



Catalog Numbering System



Accessories (Order as a separate item)

Description	
Wire Guard, Wall Mount	**WG1-E**
Wire Guard, Ceiling or End Mount	**WG5-E**

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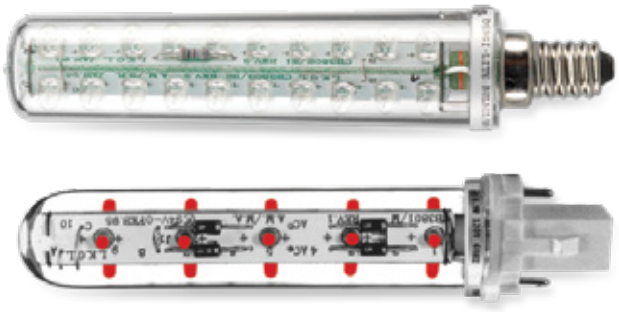
Distributor Select

QuickSwitch LED Replacement Lamps

- Quick and easy to install
- Available with wide range of lamp bases for quick lamp-to-lamp replacement
- Available in high-brightness LEDs
- 120VAC



Dimensions

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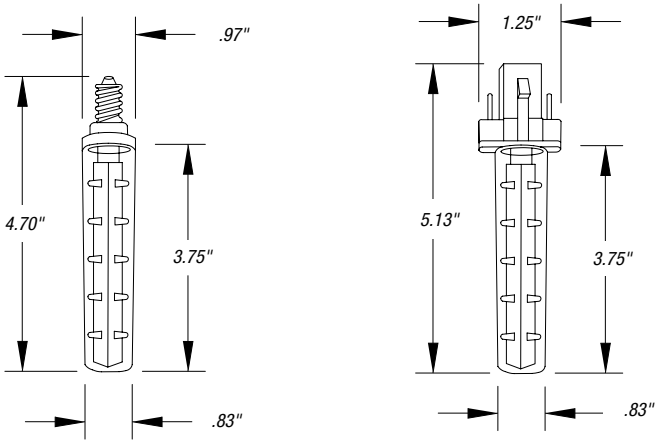
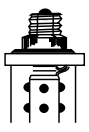
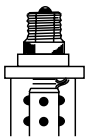


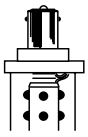
QS-C
Candelabra Base



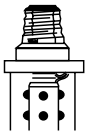
QS-I
Intermediate Screw Base



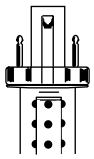
QS-B
DC Bayonet Base



QS-M
Medium Screw Base



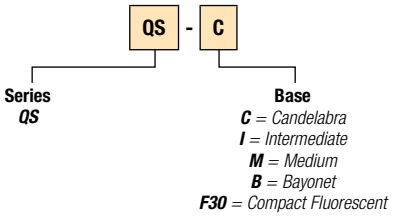
QS-F30
PL-5, -7 or -9W Base



Power Consumption

MODEL NO.	AC SPECS	
QS	120VAC	.90W
QS-F	120VAC	1.6W

Catalog Numbering System



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Distributor Select

QuickSwitch LED Retrofit Kits

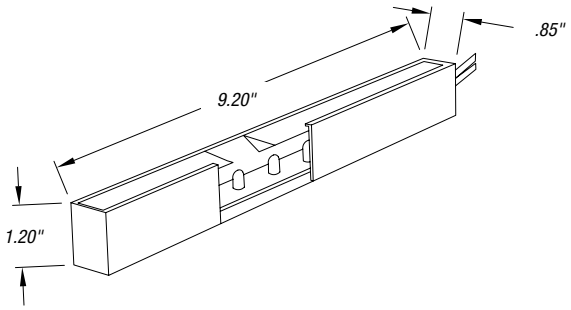
- Easiest to install in its class
- Compact size makes it ideal for virtually all exit signs
- Can be retrofitted directly on fluorescent ballast
- Long-life, energy-efficient red LED technology
- Available with AC adapter for all types of lamp sockets

Why use QuickSwitch LED Replacement Lamps and Retrofit Kits?

- Convert high-consumption incandescent and fluorescent lamps to energy-efficient LED lamps
- Reduce energy consumption by up to 90%
- Improve visibility and reliability
- Reduce maintenance costs

Dimensions

Dimensions are approximate and subject to change.



Power Consumption

MODEL NO.	AC SPECS	
LED-RX	120VAC	1.7W

Catalog Numbering System

Note: Please consult factory for green LED option.

LED-RX - **C**

Series
LED-RX

Base
C = *Candelabra*
I = *Intermediate*
M = *Medium*
B = *Bayonet*
F = *Compact Fluorescent*
277-HW = *Hard Wired*

Fluorescent Ballasts

Fluorescent emergency lighting ballasts.

FPDL Series

Eliminating the cost and installation of separate, sometimes unsightly emergency lighting units, FPDL Series emergency ballasts can be used to convert new or existing fluorescent fixtures into emergency lighting units.

Six models satisfy different application requirements and lumen outputs:

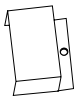
- FPDL-32 500-lumen emergency ballast operates with most 2' to 4' T8 linear fluorescent lamps and also with 28W T5 lamps
- FPDL/U 1400-lumen emergency ballast operates with most 2' to 4' T8 and T5 linear fluorescent lamps and also with most 4-pin compact fluorescent lamps
- FPDL13-42 650-lumen emergency ballast operates with most 13-42W 4-pin quad and triple compact fluorescent lamps with one or two lamps (max. 18W)
- FPDL-28 700-lumen emergency ballast operates with most 2' to 4' T8 and T5 linear fluorescent lamps
- FPDL-10-26 650-lumen emergency ballast operates with most 10–26W 2-pin compact fluorescent lamps
- FPDL-HL is a high-output emergency ballast capable of producing up to 3,000 lumens

Standard Features

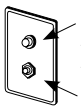
- Compatible with standard, energy-saving, dimming and electronic AC ballasts
- Can be wired to operate with switched, unswitched or normally-off fixtures without affecting normal operation
- Sealed, maintenance-free nickel-cadmium batteries.
- Upon failure of AC power, the FPDL-32 and FPDL10-26 models automatically switch to emergency mode, maintaining illumination of one lamp within the fixture; FPDL/U, FPDL13-42, FPDL-28 and FPDL-HL units will maintain operation of one or two lamps when switched to the emergency mode
- When AC power is restored, the FPDL Series automatically returns the fluorescent lamps to normal operating mode and the solid-state charger begins recharging the battery
- Self-contained in one compact housing for easy installation and maximum mounting flexibility
- UL® Listed for damp locations to UL® 924; complies with NEC®, Life Safety Code® and OSHA
- Three-year full warranty
- Each unit is fully computer tested

Accessories (Order as a separate item)

Description



External Mounting Kit; Includes Wire Bundle Cover for External Mounting (not needed for FPDL13-42, FPDL10-26 and FPDL-HL).....**EC6**



Remote Test Switch; Comes with Single-Gang Plastic Mounting Plate (included in FPDL13-42 and FPDL10-26) **RTS-1**

Catalog Numbering System

Note: Please consult factory for green LED option.

FPDL-32

Series

FPDL-32
FPDL-U
FPDL13-42
FPDL-28
FPDL10-26
FPDL-HL

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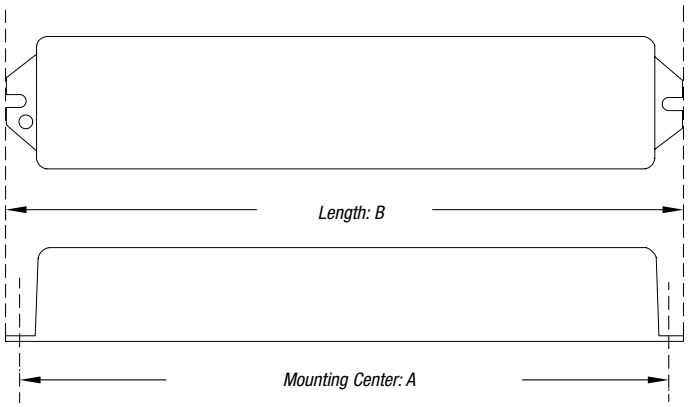
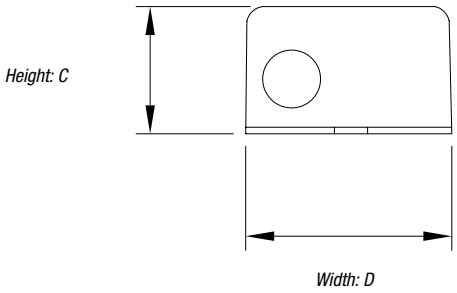
Fluorescent Ballasts

Dimensions

Dimensions are approximate and subject to change.



MODEL NO.	DIMENSIONS A	B	C	D
FPDL-32	9½"	10⅛"	1⅛"	2⅛"
FPDL/U	13¾"	14¼"	1⅛"	2⅛"
FPDL13-42	8⅞"	9⅜"	1½"	2⅜"
FPDL-28	13¾"	14¼"	1⅛"	2⅛"
FPDL10-26	8⅞"	9⅜"	1½"	2⅜"
FPDL-HL	15¾"	16¼"	1¾"	5½"



Unit Selection

MODEL NO.	LAMP OPERATED IN EMERGENCY MODE*	EMERGENCY ILLUMINATION TIME	LUMENS
FPDL-32	1 lamp 2'-4' (20W–40W)	90 minutes	500
FPDL/U	1 lamp 2'-8' (20W–60W) or 2 lamps 2'-4' (20W–32W)	90 minutes	1400
FPDL13-42	1 compact 4-pin (13W–42W) or 2 compact 4-pin (13W–18W)	90 minutes	650
FPDL-28	1 lamp 2'-4' (20W–54W) or 2 lamps 2'-4' (20W–32W)	90 minutes	700
FPDL10-26	1 compact 2-pin (10W–26W)	90 minutes	650
FPDL-HL	1 lamp 2'–8' or 2 lamps 2'–4' or 1 compact 4-pin (18W–70W) or 2 compact 4-pin (18W–32W)	90 minutes	3000

** See ballast reference chart on **pages I-288–I-289** for details.*

Fluorescent Ballasts

Fluorescent emergency lighting ballasts.

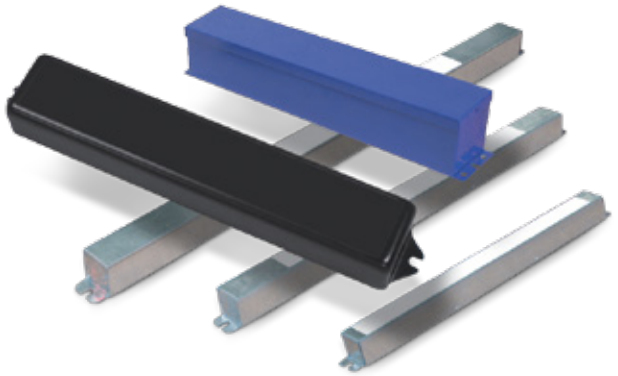
FPS Series

Eliminating the cost and installation of separate, sometimes unsightly emergency lighting units, FPS Series emergency ballasts can be used to convert new or existing fluorescent fixtures into emergency lighting units. Several models are offered to satisfy different application requirements and lumen output.

- FPS-500 and FPS-825 operate with most 2' to 4' T5 or T8 PL lamps; the FPS-825 also operates HO and 4-pin long compact fluorescent lamps from 40 through 55 watts
- FPS-540 operates T5 or T8 lamps, including HO and 4-pin long compact fluorescent lamps of 40 to 55 watts, with an initial output of up to 1300 lumens; testing the FPS-540 is made easy by using a one-piece indicator and test switch

Standard Features

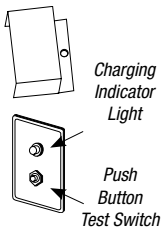
- FPS-80 is offered with Nexus® wired and wireless monitoring system, which includes Nexus® fluorescent emergency ballast as well as Nexus® wired or wireless communication modem
- Compatible with standard, energy-saving, dimming and electronic AC ballasts
- Can be wired to operate with switched, unswitched or normally off fixtures without affecting normal operation
- Sealed, maintenance-free nickel-cadmium batteries
- Upon failure of AC power, the FPS-500, FPS-825 and FPS-540 models automatically switch to emergency mode, maintaining illumination of one lamp within the fixture
- FPS-80 units will maintain operation of one or two lamps when switched to the emergency mode
- When AC power is restored, the FPS Series automatically returns the fluorescent lamps to normal operating mode, and the solid-state charger begins recharging the battery
- Self-contained in one compact housing for easy installation and maximum mounting flexibility
- UL® Listed to UL® 924; complies with NEC®, Life Safety Code® and OSHA
- Three-year full warranty
- Each unit is fully computer tested



nexus® UL®

Options

Description	Suffix
Nexus®	Consult your Thomas & Betts representative for more information
External Mounting Kit; Includes Wire Bundle Covers for External Mounting	-R
Damp Location Listing	-DL



Accessories (Order as a separate item)

Remote Test Switch; Includes Single-Gang Chrome-Finished Mounting Plate	RTS-1
Test Switch Kit for Fluorescent Ballast	-TBTS

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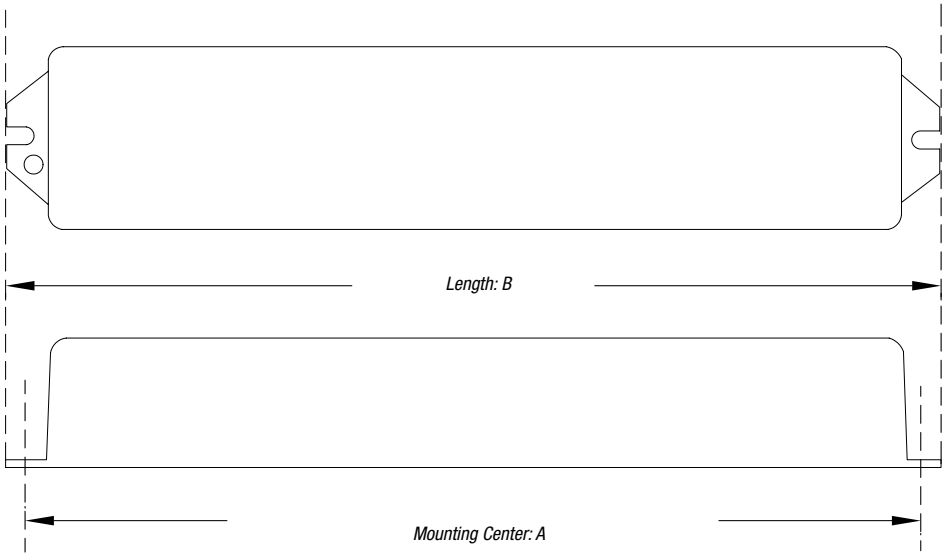
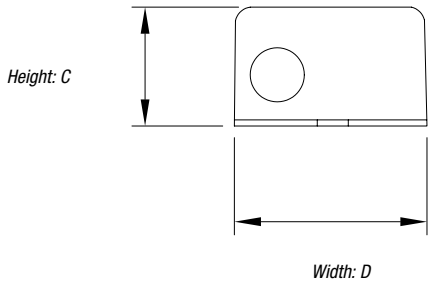
Fluorescent Ballasts

Dimensions

Dimensions are approximate and subject to change.



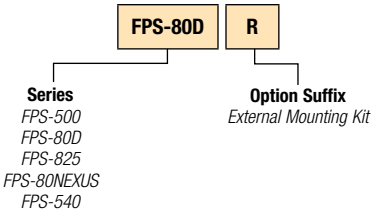
MODEL NO.	DIMENSIONS A	B	C	D
FPS-500	13¾"	14¼"	1 3/16"	1 3/16"
FPS-825	17"	17½"	1 3/16"	1 3/16"
FPS-540	12½"	13⅜"	1½"	2¼"
FPS-80D	12¾"	12¾"	1½"	2⅜"
FPS-80NEXUS	12¾"	12¾"	1½"	2⅜"



Unit Selection

MODEL NO.	LAMP OPERATED IN EMERGENCY MODE	EMERGENCY ILLUMINATION TIME	LUMENS	WIRE END CAPS
FPS-500	1 Lamp 2'–4'	90 Min.	500	Optional Order #EC54
FPS-825	1 Lamp 2'–4'	90 Min.	825	Optional Order #EC54
FPS-540	1 Lamp 2'–4' (40W–50W), Most 2'–4' T5 or T8 and 40–55W 4-Pin Compact Fluorescent Lamps	90 Min.	1300	Not Required
FPS-80D	Most 2'–8' Single, Bi-Pin T8–T12, Long Compact HO+HVO	90 Min.	1300	Not Required
FPS-80NEXUS	Most 2'–8' Single, Bi-Pin T8–T12, Long Compact HO+HVO Fluorescent Lamps	90 Min.	1300	Not Required

Catalog Numbering System



Fluorescent Ballasts

Fluorescent emergency packs.

FPS-R and FPS-T Series

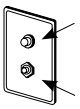
Developed to eliminate unsightly conventional emergency lighting units, the FPS-R and FPS-T Series incorporate emergency lighting into the normal fluorescent lighting system. With the FPS-R and FPS-T Series, high lumen levels can be maintained during a power failure without interrupting the lighting design.

Standard Features

- All-metal construction with white baked enamel finish and 3" pre-wired fixture whip
- Sealed, maintenance-free nickel-cadmium, long-life lead or lead-calcium batteries.
- During normal operation, when the AC line voltage is present, the fixture will fully illuminate by means of the regular ballast, while the emergency ballast converts AC into a low DC voltage to recharge the battery and maintain it fully charged
- When the AC fails, a solid-state voltage sensor instantly turns on a high-frequency inverter which supplies one or two lamps in the fixture for a minimum of 90 minutes (only FPS-T can run two lamps in a two- or four-lamp fixture
- At the end of the rated time, a low-voltage sensor disconnects the battery to prevent over-discharging
- When the AC returns, the inverter switches off and the battery begins to recharge
- Charger circuitry offers 120/277VAC, 60 Hz, .3/.15 amp (other inputs available), fused output circuit(s), dual diagnostic indicator lights, temperature compensation, sealed relay, low-voltage battery disconnect, brownout protection and lockout (automatic battery connect)
- Three-year full warranty
- Each unit is fully computer tested

Accessories (Order as a separate item)

Description



Remote Test Switch **RTS-1**

Available for installation where routine testing via the units standard integral test switch would be difficult due to either fixture location or inaccessibility. This option consists of a push button test switch and pilot light, mounted on a single gang switch plate.

Test Switch and Charging Indicator on a Single-Gang Chrome Mounting Plate..... **RTS**

Cabinets

Remote: External mounts on top or beside fixture. 18-gauge steel, white baked enamel finish and pre-wired 3" flexible conduit fixture whip.

T-Bar: Mounts in T-bar struts beside fixture. 18-gauge steel, white baked enamel finish, mounting eyes for fixture suspension and a pre-wired 3" flexible conduit fixture whip.

Servicing: Backplate lifts off for full access to battery and input/output wires.

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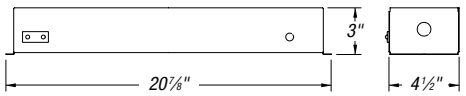
Fluorescent Ballasts

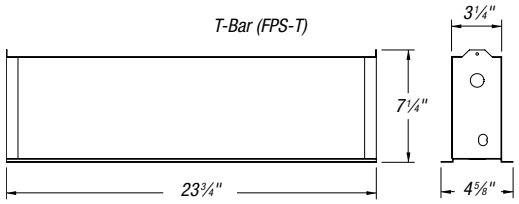
Outline and Dimensions

Dimensions are approximate and subject to change.

Remote (FPS-R)



T-Bar (FPS-T)



Unit Ratings

UNIT TYPE	LUMENS*	BATTERY SUFFIX	SEALED MAINTENANCE-FREE BATTERY TYPES	NUMBER OF LAMPS
Remote Mounted (FPS-R)				
FPS-R	720	C	Nickel-Cadmium	1
FPS-R	720	E	Long-Life Lead	1
FPS-R	720	M	Lead-Calcium	1
FPS-R	1800	C	Nickel-Cadmium	1
FPS-R	1800	E	Long-Life Lead	1
FPS-R	1800	M	Lead-Calcium	1
T-Bar Mounted (FPS-T)				
FPS-T	720	C	Nickel-Cadmium	1
FPS-T	720	E	Long-Life Lead	1
FPS-T	720	M	Lead-Calcium	1
FPS-T	1800	C	Nickel-Cadmium	1
FPS-T	1800	E	Long-Life Lead	1
FPS-T	1800	M	Lead-Calcium	1
FPS-T	720	C	Nickel-Cadmium	2
FPS-T	720	E	Long-Life Lead	2
FPS-T	720	M	Lead-Calcium	2
FPS-T	1800	C	Nickel-Cadmium	2
FPS-T	1800	E	Long-Life Lead	2
FPS-T	1800	M	Lead-Calcium	2

** Lumens in emergency mode on typical F-40 type lamps.*

Catalog Numbering System

FPS - **T** - **720** - **M** - **1**

Series
FPS *= Fluorescent Series*

Cabinet Type
R *= Remote*
T *= T-Bar*

Lumens
720 *= 720 Lumens*
1800 *= 1800 Lumens*

Battery Type
C *= Nickel-Cadmium*
E *= Long-Life Lead*
M *= Lead-Calcium*

No. of Lamps
1 *= One Lamp*
2 *= Two Lamps**

** Only available with FPS-T.*

Fluorescent Ballasts

Emergency transfer switch for generator supplies.

FTS Series

The Emergi-Lite® FTS Emergency Transfer Switch allows the use of auxiliary generator power on a switched fluorescent fixture in power failure situations. The FTS senses the loss of normal AC power and switches the AC ballast to the auxiliary generator supply. The FTS will operate the lamps at full light output for as long as the generator is able and will work in conjunction with any lamp type and fixture on the generator circuit. Dimming ballasts require one FTS for each hot lead.

Standard Features

- Compatible with standard, energy-saving, dimming and electronic AC ballasts
- UL® Listed
- Will cold start and operate all specified lamps
- Galvanized steel case
- Dual voltage 120/277V 60 Hz
- Available in flex or non-flex configuration
- Meets or exceeds all National Electrical Code® and Life Safety Code® emergency lighting requirements
- Five-year warranty (see warranty page for details)

Product Advantages

- Full light output
- Allows auxiliary generator power on a switched fixture

Technical Specifications

Input Voltage ..... **(Dual) 120/277V, 60 Hz**

Input Current **250mA**

Maximum Switching Voltage

- 3A @ 120V
- 3A @ 277V Circuit Protection
- 3A on Control Input
- 3A on Neutral and 120/277V Outputs

Emergency Operation

The FTS will operate any lamp type in the designated fixture for the duration of the generator supply

Initial Illumination

The FTS will operate the designated lamp at full light output

Weight ..... **1.0 lbs.**

Approval ..... **UL® Listed**

Options

Configuration

- FTS (no flex)
- FTS-R (with flex)

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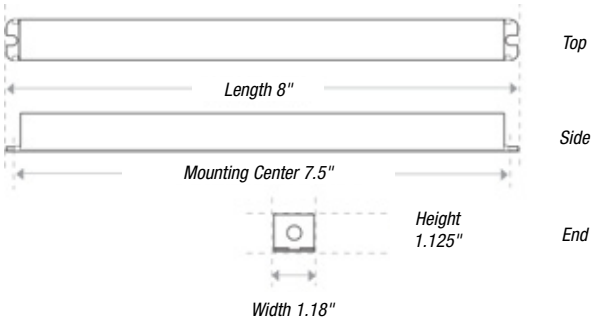
Fluorescent Ballasts

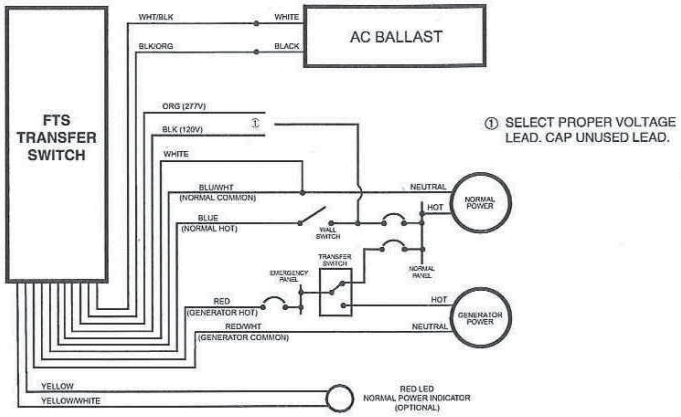
Dimensions

Dimensions are approximate and subject to change.

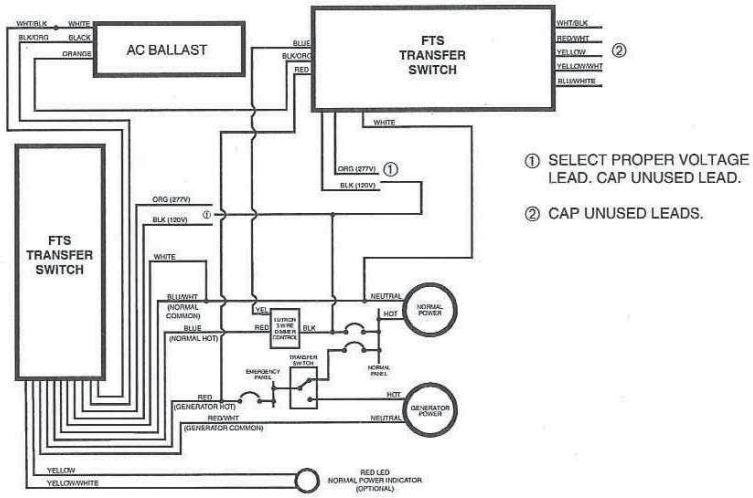


Wiring Diagrams

TYPICAL BALLAST/GENERATOR APPLICATION



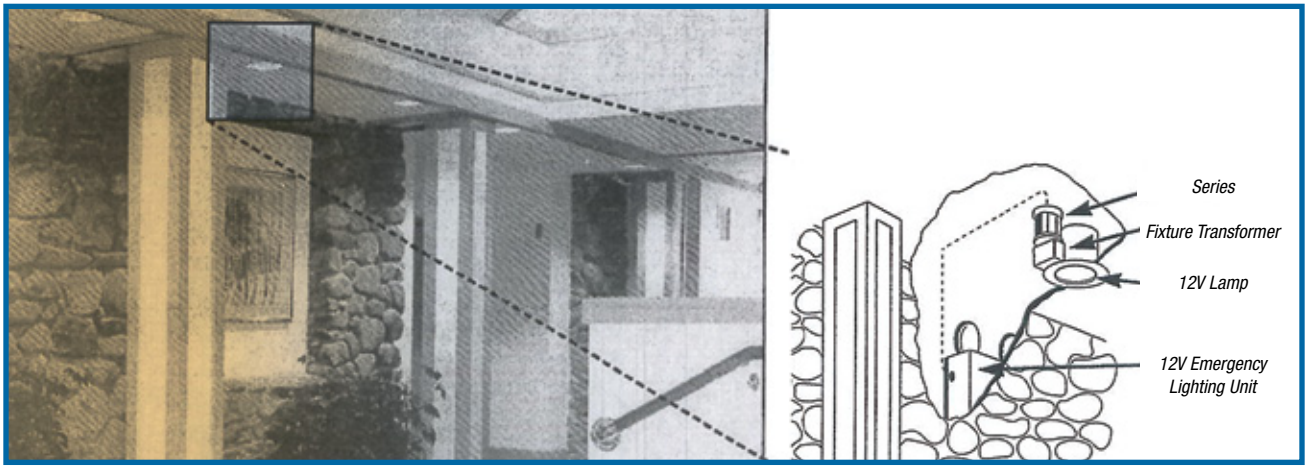
TYPICAL DIMMING BALLAST/GENERATOR APPLICATION



Fluorescent Ballasts

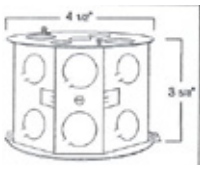
Enables normally on, low-voltage (12V) lamps to be used as emergency lighting.

ELMR-E Interface Module



To maintain the integrity of a lighting decor, the Emergi-Lite® ELMR-E interface module is designed to be incorporated with MR-16, PAR36, R12 or R14 low-voltage lighting fixtures that are selected to be used not only as normal lighting fixtures, but also as emergency lighting fixtures.

These fixtures are used in a variety of accent applications, especially in retail store lighting.



Module Information

The Emergi-Lite® ELMR-E interface module consists of a relay transfer panel enclosed in an octagonal electrical box which measures 4½" in diameter by 3⅝" deep. The module is designed to operate 12-volt lamps up to a total of 200 watts. A remotely located Emergi-Lite® 12-volt emergency lighting unit, in conjunction with the ELMR-E, supplies 12-volt power during an emergency situation regardless if the fixture is switched on or off.

Installation

The ELMR-E interface module is provided with a ½" threaded conduit nipple for fast, easy field installation and mounts directly to the step-down transformer junction box of the low-voltage lighting fixture. For applications requiring remote mounting, not only is a fixture stud plate provided, but also two mounting tabs with 3⁄16" diameter holes on 4 9⁄16" centers. Electrical connection is made by splicing to the secondary winding of the step-down transformer and connecting it and the remote feed from the 12-volt battery pack to the ELMR-E module. One ELMR-E is required for each fixture that contains an internally mounted step-down transformer. However, if several low-voltage lamps are assigned to a single, centrally located step-down transformer, only one ELMR-E is needed to operate all lamp fixtures, up to 200 watts.

Operation

In the event of a power failure, the 12-volt Emergi-Lite® battery unit will supply the ELMR-E module with 12-volt DC power. The ELMR-E module will then transfer the lighting fixture from its normal 12-volt AC source (transformer) to the 12-volt DC battery power. Upon restoration of the normal AC supply, the module will transfer the lighting fixture back to its normal operating mode.

Note: Remote battery pack should have sufficient capacity to support the connected load for a minimum of 90 minutes.

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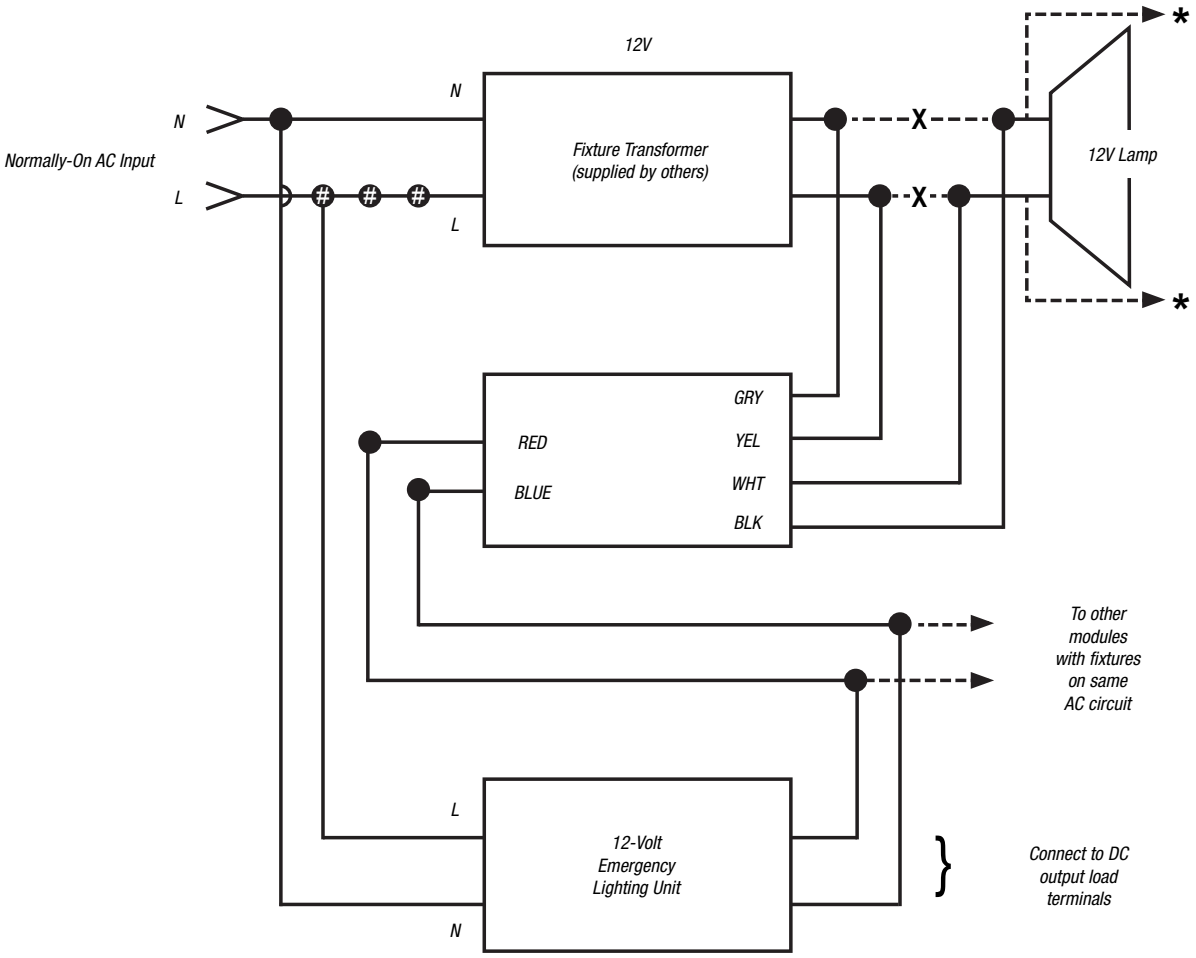
Fluorescent Ballasts



Notes: X Denotes "Cut Original Wiring"

**: "To other low-voltage lamps" (multiple-lamp, single transformer arrangements only)*

#: Install wall switch here, (if required)

IMPORTANT: Emergency lighting units must be fed from same branch feeder circuit (normally on circuit)

Consult the Technical Information section for wire run length and wire size requirements. Emergency lighting unit must be capable of supplying total wattage lamp loads for a minimum of 90 minutes. Applications may require longer time durations. Consult NFPA Life Safety Code® and National Electrical Code® and National Electrical Code® Article 700 with regard to standard engineering practices. Local codes may vary.

National Electrical Code and Life Safety Code are registered trademarks of the National Fire Protection Association, Inc.

Fluorescent Ballasts

Emergency Ballast Reference — Linear Lamps

EMERGI-LITE® MODEL #	FPDL-32	FPDL/U	FPDL13-42	FPDL-28	FPDL10-26	FPDL-HL	FPS500	FPS80D	FPS825	FPS540
LUMENS	500	1400	650	700	650	3000	500	1300	825	1300
LAMP TYPE (# OF LAMPS)	LINEAR LAMPS									
2'-4' RAPID, INSTANT, ENERGY SAVING, T8–T12 (1)	X	X		X		X	X	X	X	X
2'-4' RAPID, INSTANT, ENERGY SAVING, T8–T12, HO & VHO (2)		X		X		X		X		
2'-8' RAPID, INSTANT, ENERGY SAVING, T8–T12, HO & VHO (1)		X				X		X		
F17 T8 (1)	X	X		X		X	X	X	X	X
F17 T8 (2)		X		X		X		X		
F25 T8 (1)	X	X		X		X	X	X	X	X
F25 T8 (2)		X		X		X		X		
F32 T8 (1)	X	X		X		X	X	X	X	X
F32 T8 (2)		X		X		X		X		
F40 T8 (1)		X		X		X			X	X
F096 T8 59W (1)		X				X		X		
14W T5 (1)	X	X		X			X		X	X
21W T5 (1)	X	X		X		X	X		X	X
24W T5 (1)	X	X		X		X	X		X	X
28W T5 (1)	X	X		X		X	X	X	X	X
39W T5 (1)		X		X		X		X	X	X
54W T5 HO (1)		X		X		X		X	X	X
F20 T12 (1)	X	X		X		X		X		
F20 T12 (2)		X		X		X				
F40 T12 (1)	X	X		X		X		X		
F40 T12 (2)		X				X				
F48 T12 (1)		X				X		X		
F96 T12 60W (1)		X				X		X		

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Emergency Ballast Reference — Compact Lamps

EMERGI-LITE® MODEL #	FPDL-32	FPDL/U	FPDL13-42	FPDL-28	FPDL10-26	FPDL-HL	FPS500	FPS80D	FPS825	FPS540
LUMENS	500	1400	650	700	650	3000	500	1300	825	1300
LAMP TYPE (# OF LAMPS)	COMPACT LAMPS									
18W LONG COMPACT (1)	X	X		X		X				
24W LONG COMPACT (1)	X	X		X		X				
36W LONG COMPACT (1)	X	X		X		X		X	X	X
40W LONG COMPACT (1)	X	X		X		X		X	X	X
40W LONG COMPACT (2)						X				
50W LONG COMPACT (1)		X		X		X		X	X	X
55W LONG COMPACT (1)		X				X		X	X	X
7W PL CF 2-PIN (1)					X					
9W PL CF 2-PIN (1)					X					
13W PL CF 2-PIN (1)					X					
18W PL CF 2-PIN (1)					X					
26W PL CF 2-PIN (1)					X					
13W PL CF 4-PIN (1 OR 2)		X	X	X						
18W PL CF 4-PIN (1 OR 2)		X	X			X				
26W PL CF 4-PIN (1)		X	X	X		X				
26W PL CF 4-PIN (2)						X				
32W PL CF 4-PIN (1)		X	X	X		X				
32W PL CF 4-PIN (2)						X				
42W PL CF 4-PIN (1)		X	X			X				
42W PL CF 4-PIN (2)										
57W PL CF 4-PIN (1)		X				X		X		
57W PL CF 4-PIN (2)										
70W PL CF 4-PIN (1)		X				X		X		
20W CIRCLINE (1)	X	X	X	X		X		X	X	X
22W CIRCLINE T9 (1)		X	X	X		X		X		
22W CIRCLINE T5 (1)		X	X	X		X		X	X	X
40W CIRCLINE T8 (1)	X	X		X		X		X		
40W CIRCLINE T5 (1)		X		X		X				
55W CIRCLINE T5 (1)		X				X				
F28 2D (1)			X							
F28 2D (2)										
F38 2D (1)										
F38 2D (2)										

Central Systems

Operate loads during power failures or brownouts.

AC Central Systems

These battery-based power systems are self-contained and fully automatic.

Batteries offered:

- Sealed maintenance-free lead-calcium (AC and DC systems)
- Refillable nickel-cadmium (AC systems)

Single-Phase Standard-Transfer IPS

Single-phase power systems for incandescent, LED and fluorescent emergency lighting systems.

- 98% efficient — 50mS transfer time
- PWM/IGBT technology
- Microprocessor control
- User-programmable with password protection
- Tested to UL® 924
- Automatic event and alarm log
- RS-232 communications port
- Input circuit breaker
- Modular design
- Low audible noise
- Normally off output and normally on
- From 1.5kW/kVA to 16.7kW/kVA

Single-Phase UPS

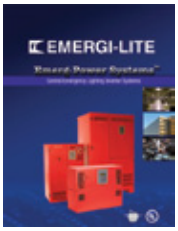
Single-phase power systems for HID, incandescent, LED and fluorescent emergency lighting systems.

- 90% efficient
- PWM/IGBT technology
- Microprocessor control
- User-programmable with password protection
- Tested to UL® 924
- Automatic event and alarm log
- RS-232 communications port
- Input circuit breaker
- Modular design
- Low audible noise
- Normally on output
- From .5kW/kVA to 16.7kW/kVA

Three-Phase UPS

Standby AC power systems for HID, incandescent, LED and fluorescent emergency lighting systems.

- 90% efficient
- PWM/IGBT technology
- Microprocessor control
- User-programmable with password protection
- Tested to UL® 924
- Automatic event and alarm log
- RS-232 communications port
- Input circuit breaker
- Modular design
- Low audible noise
- Internal battery circuit breaker/fuse
- From 4.8kW/kVA to 50kW/kVA



*For more information on Emergi-Lite® Central Systems, visit our website at **www.emergi-lite.com**.*

***Note:** All information and specifications contained on this page are subject to change without notice.*

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Central Systems

Provide power to designated emergency lighting fixtures in a power loss situation.

Mini-Inverters

MI125 and MI375
Interruptible 125-Watt and 375-Watt Unit Equipment

The MI125 and MI375 are UL® Listed standalone sine-wave output inverters designed to provide power to designated emergency lighting fixtures. In a power loss situation, they will supply 125W or 375W of power from the onboard battery supply. The MI125 and the MI375 work in conjunction with incandescent, LED and fluorescent lamp and fixture types and will automatically run switched, normally on or normally off designated emergency fixtures. They are ideal for applications requiring an emergency source for lighting arrangements that utilize multiple lamp and fixture types.

The MI125 is available in two mounting configurations (recessed wall or surface mount).

The MI125-CG Ceiling Grid model mounts across the 2-ft. T-bars of a grid ceiling. Support wires are then connected to the mounting tabs at the top of the unit.

The MI375 is available in a surface-mount housing.

All units come with a three-year warranty and seven-year pro-rata battery warranty.


MI125-CG

MI350
Uninterruptible 350-Watt Unit Equipment

The Uninterruptible MI350 is a UL® Listed standalone sine-wave output inverter designed to provide power to designated emergency lighting fixtures. In a power loss situation, the MI350 will supply 350W of power from the onboard battery supply. The double-conversion design of the MI350 delivers power with no interruption to the load, allowing "no-break" operation of HID, incandescent, LED and fluorescent lamp and ballast combinations. The MI350 is available in a surface-mount housing and comes with a three-year warranty and seven-year pro rata battery warranty.

For more information, visit our website at ***www.emergi-lite.com*** *or contact your Thomas & Betts sales representative.*

Remote Fixtures

Now with a white LED normally on option.

Lux-Ray™ Remote Series

The Lux-Ray™ Series combines photometric performance with a visually appealing design. Designed to meet the needs of architects and designers without sacrificing safety, the die-cast aluminum housing is offered in a wide range of colors to complement any interior and blend with the most sophisticated décor. An efficient reflector combined with two Xenon lamps delivers an incredible center-to-center spacing.

ADAcompliant

Standard Features

Reliability

The Lux-Ray™ Series comes complete with a three-year full warranty (excluding fuses and incandescent lamps).

Unit Data

The Lux-Ray™ units are made of durable cast aluminum housing, finished with textured polyester powder-coat paint. Four colors are available: off-white, black, platinum gray and dark bronze. The vacuum-plated die-cast reflector will last over time. The lens is made of an impact- and UV-resistant polycarbonate. The unit can be installed on various junction boxes with universal mounting pattern. It can also accept a surface-mount cable via the rigid conduit entry provision on the top of the unit.

Lamp Information

The Lux-Ray™ units are furnished with two high-output Xenon lamps for emergency lighting. These lamps deliver up to 34' center-to-center spacing. The reflector has been designed to provide an evenly distributed illumination pattern for corridors up to 6' wide.

White LED Accent Light Lux-Ray™ with Dual-Mode Illumination (optional)

The dual-mode illumination feature enables the Lux-Ray™ unit to provide lighting not only during power outages, but also in normal conditions. This is achieved with a secondary light source, a long-life, 5-watt power LED lamp dedicated to normal lighting.

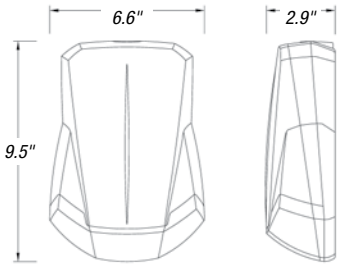
When equipped with this feature, the equipment includes two independent circuits, electrically isolated from each other: the standard input for emergency lighting and a secondary input for normal lighting. The secondary input can be connected to a regular AC line that may include an electric switch. The dual-mode illumination option is available with any model of Lux-Ray™ unit.

The Lux-Ray™ lamp for normal lighting uses one 5-watt white LED supplied with a simple and robust ballast circuitry.

- AC input: dual-voltage 120/277VAC, .04A, 5W
- LED lamp operational life: 50,000 hours (to 70% of initial light level)

Dimensions

Dimensions are approximate and subject to change.



Front View *Side View*

Replacement Lamps

MODEL NO.	SPECIFICATIONS
570.0213-E	ZU = 6V 6W Xenon
570.0214-E	ZV = 6V 10W Xenon
570.0215-E	ZW = 12V 6W Xenon
570.0216-E	ZX = 12V 10W Xenon

Catalog Numbering System

LUX - **ZU** - **OW** - **2**

Series
LUX *= Remote Fixture -40° F to 140° F (-40° C to 60° C) Outdoor Remote*

Lamp Wattage
ZU *= 6V 6W*
ZV *= 6V 10W*
ZW *= 12V 6W*
ZX *= 12V 10W*

Xenon wedge base T3-1/4.

Color
OW *= Off-White*
BK *= Black*
BZ *= Dark Bronze*
PG *= Platinum Gray*

Other colors available at a premium. Please contact your Thomas & Betts sales representative.

Options
Blank *= No Options*
2 *= Dual-Mode Lighting**
P *= Photo-Cell**

** -40° F to 140° F (-40° C to 40° C).*

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Remote Fixtures

PRO-2 Remote Series

A sleek, low-profile body and transparent polycarbonate lamp shield combine for a contemporary style that's just right for today's aesthetic demands. The PRO-2 Remote Series complements a variety of interiors in stores, offices, theaters, restaurants and shopping malls.

Standard Features

- Off-white finish
- 11" x 5" thermoplastic body
- Can be mounted in any orientation on walls or ceilings

Catalog Numbering System

6	PRO	10	B

Voltage
6 *= 6V*
12 *= 12V*
24 *= 24V*

Series
PRO *= Series*

Lamp Type
10 *= 2 x 6V 5.4W Incandescent Wedge*
(ZF) *= 2 x 12V 9W Incandescent Wedge*
(ZN) *= 2 x 24V 9W Incandescent Wedge*

Color
Blank *= Off-White*
B *= Black*

Revelation™ DC Remote Series

Ideal for walls with a cavity (drywall with 4-inch studs) or uninsulated ceilings with horizontal beams or T-bar structures, the Revelation™ Series is designed for unobtrusive architectural use. In normal conditions (standby), the Revelation™ Remote Series is completely concealed in the wall or ceiling. When supplied with remote power, the door of the unit rotates open 180° and exposes the emergency lights to illuminate the path of egress. After power disconnect, the lights turn off and the door rotates in to closed position automatically, driven by an energy storage circuit.

US

Standard Features

- Includes two high-efficiency MR-16 lamps
- Does not require any back box for pre-installation
- For remote AC generator applications, please contact your Thomas & Betts sales representative

Catalog Numbering System

12	RTL	2	-	12	-	DL

Input Voltage
12 *= 12VDC*
24 *= 24VDC*

Series
RTL *= Revelation Remote*

Number of Lamps
2 *= Two Lamps Standard*

Lamp Wattage
12 *= 12W MR-16*
20 *= 20W MR-16*
35 *= 35W MR-16*
50 *= 50W MR-16*
LG *= 12V 4W LED*
LL *= 24V 4W LED*

Options
Blank *= No Options*
DL *= Damp Location*

Remote Fixtures

Mini-Revelation™ AC Generator Remote Series

Specially designed for retrofitting in finished walls with a cavity (drywall with 4-inch studs), the Mini-Revelation™ Series concealed emergency lighting equipment provides impressive illumination. In normal conditions (standby), the unit is completely concealed in the wall.

Catalog Numbering System

MRT	G	1	-	2 (20)	DL

Series
MRT

G = *Remote AC Generator*

AC Input
1 = *120VAC*
2 = *277VAC*

Lamp Wattage
2 (12) = *12W Each Head*
2 (20) = *20W Each Head*
2 (35) = *35W Each Head*
2 (50) = *50W Each Head*
2 (20H) = *20W, High Lumem Output*
2 (35H) = *35W, High Lumem Output*
2 (50H) = *50W, High Lumem Output*
2 (LG) = *12V 4W LED*

Options
Blank = *No Options*
DL = *Damp Location*

Standard Features

- Includes two high-efficiency MR-16 lamps, maximum 2 x 50W, or LED lamps
- Does not require any back box for pre-installation

Literay™ Remote Series

Designed to withstand extreme weather conditions, the premium die-cast aluminum housing of this unique wall sconce is aesthetically pleasing with a compact footprint. Ideal for damp, wet and cold location specifications, the Literay™ Series has a fully gasketed cover with the option of vandal-resistant screws. With its robust polycarbonate lens, the Literay™ Series is the ideal choice for applications where impact- and tamper-resistant emergency lighting is specified.

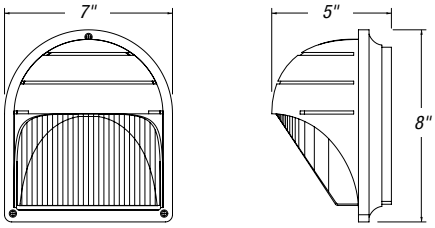
NEMA 3R

Standard Features

- Clear lens option available for high-efficiency lighting!
- Precise beam control is provided with two fully adjustable MR-16 halogen lamps secured in an attractive molded swivel assembly for maximum light output
- Can also be used with the premium option of the high-efficiency4-watt MR-16 white LED lamp

Dimensions

Dimensions are approximate and subject to change.



- Provides an average of one foot-candle along the path of egress
- Specially manufactured polycarbonate diffuser maximizes light output and completes the wall sconce's decorative lines
- Available in four textured powder-coat paint finishes: white, black, dark bronze and dark gray

Catalog Numbering System

LITE	-	2	MI	-	WT	-	VR

Series
LITE = *Exterior Remote*

No. of Lamps
2 = *2 Lamps (standard)*
1 = *1 Lamp (AC only)*

Lamp Type/Wattage
LA = *LED, 6V 4W*
LG = *LED, 12V 4W*
LL = *LED, 24V 4W*
MI = *MR-16, 6V 6W*
MJ = *MR-16, 6V 10W*
MK = *MR-16, 12V 12W*
MD = *MR-16, 24V 20W*
MS = *MR-16, 24V 12W*
MA = *MR-16, 12V 20W*
AC = *1 Med. Base Socket Only (max. 60W), No Lamp Included, for Non-Emergency*

Color
WT = *White*
BK = *Black*
DG = *Dark Gray*
BZ = *Dark Bronze*

Option
Blank = *No Option*
VR = *Vandal-Resistant Screws*
N = *Clear Lens*

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Remote Fixtures

Survive-All™ EF39 Series

Specifically designed for high-abuse areas and wet and cold weather locations, EF39 remote fixtures are fully gasketed with a die-cast aluminum back plate and a clear heavy-duty UV-resistant polycarbonate light cover. Easy lamp replacement, tool-less lamp aiming and easy installation on a four-inch octagonal box make this remote the perfect choice for any environment. Also available as a battery unit — refer to SurviveAll™ SV Series (**pages I-242–I-243**).

NEMA 4X NSF UL

Standard Features

- Available in single- or double-lamp configurations with the option of highly efficient MR-16 lamps or the 4-watt MR-16 white LED lamp
- Delivers unsurpassed path-of-egress illumination — up to 70 feet, center-to-center — when using two 20W MR-16-IR lamps
- Fully gasketed cast aluminum back plate with a clear UV- and impact-resistant cover
- Choice of three colors: off-white, black or gray
- Comes standard with tamper-proof screws and bit
- Easy installation on a 4" octagonal box
- NEMA 4X rated, NSF Certified for food processing plants

Catalog Numbering System

EF39	MK	

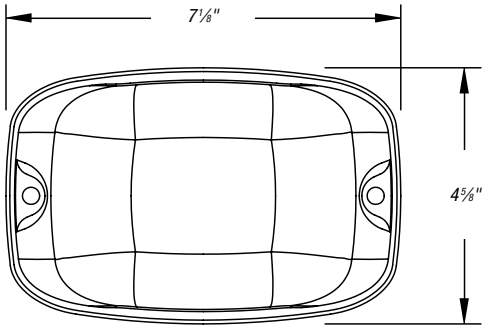
Series
EF39 *= Single NEMA 4X*
EF39D *= Double NEMA 4X*

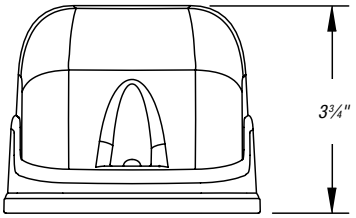
Lamp Type/Wattage
MI *= MR-16, 6V 6W*
MJ *= MR-16, 6V 10W*
MK *= MR-16, 12V 12W*
LA *= LED 6V 4W*
L *= LED 12V 4W*
LL *= LED 24V 4W*
MW *= MR-16-IR, 12V 20W*
MS *= MR-16, 24V 12W*
MD *= MR-16, 24V 20W*

Color
Blank *= Off-White*
BK *= Black*
GY *= Gray*

Dimensions

Dimensions are approximate and subject to change.





Remote Fixtures

Remote fixture for hazardous locations.

EF41 Series

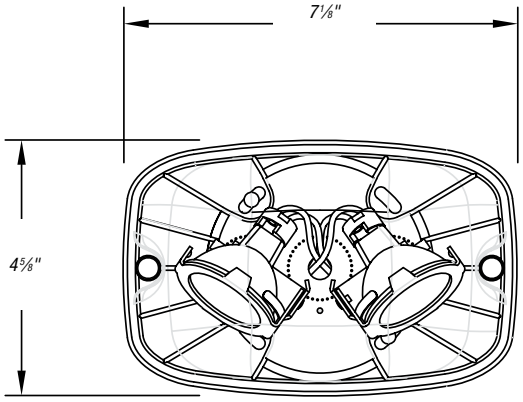
This Class I, Division 2 compliant remote fixture is specifically designed for installation in hazardous locations and other high-abuse industrial environments. Highly weather and temperature resistant and able to stand up to impact and vibrations, the EF41 Series is ideally suited for environments where flammable gases, vapors or liquids can create an explosive gas atmosphere.

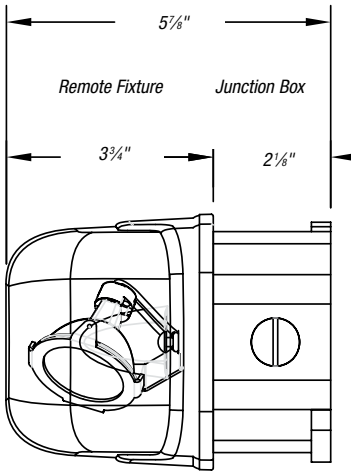
Standard Features

- Available with single or double lamp heads with high-efficiency MR-16 halogen lamps of 10W, 12W or 20W
- Die-cast aluminum back plate with gasket
- Clear polycarbonate cover, UV and impact resistant
- Input voltage: 6V, 12V, 24V or 120V
- Easy installation on a 4" octagonal box (included), and comes standard with tamper-proof screws and bit
- Evaluated to UL® 844 Standard for Class I, Division 2, Groups A, B, C & D
- Temperature Codes: T3B (10W and 12W MR-16 lamps) and T2C (20W MR-16 lamps)
- Extreme Operational Temperature Range: -40° F to 104° F (-40° C to 40° C)

Dimensions

Dimensions are approximate and subject to change.





4" Junction Box

Catalog Numbering System

EF41	MJ	-	GY

Series
EF41 *= Single NEMA 4X*
EF41D *= Double NEMA 4X*
NEMA 4X Hazardous

Lamp Type
MJ *= MR-16, 6V 10W*
MK *= MR-16, 12V 12W*
MW *= MR-16-IR, 12V 20W*
MS *= MR-16, 24V 12W*
MD *= MR-16, 24V 20W*
MT *= MR-16, 120VAC/VDC 20W (GU10)*

Colors
Blank *= Factory White*
BK *= Black*
GY *= Gray*

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Remote Fixtures

Distinction™ Series Surface-Mounted Designer Fixtures

These Distinction™ Series emergency fixtures are specially built to meet the needs of contemporary décor professionals' applications. Distinction™ fixtures reach a new level in emergency lighting function and form.

Standard Features

- White or black finish available
- **EF150:** Single compact adjustable decorative lighting head
  Dimensions: 4.48" diameter base, 5.2" height
- **EF150D:** Double compact adjustable decorative lighting heads
  Dimensions: 4.48" diameter base, 4.0" height
- **EF150T:** Triple compact adjustable decorative lighting heads
  Dimensions: 11.0" diameter base, 5.2" height

EF150/EF150D/EF150T

Catalog Numbering System

EF150	D	-	B	M

Series
EF150 *= Decorative MR-16 Remote Head*

No. of Heads
Blank *= Single Head*
D *= Double Head*
T *= Triple Head*

Enclosure Color
Blank *= White*
B *= Black*

Lamp Suffix
L *= LED MR-16**
M *= Halogen MR-16 50W Max.***

* See lamp chart for lamp code.
** For 50W, use heat shield.

Remote Fixtures

Distinction™ Series Remote Recessed Designer Fixtures

To meet the needs of contemporary décor professionals, the Distinction™ Remote Recessed Designer Collection emergency fixtures are specially built for recessed housing applications.

EFR2

Standard Features

- Decorative lighting trim
- 4.0" diameter base
- Requires recessed housing
- Available colors: WH-White, BK-Black, CH-Chrome, PB-Polished Brass, BN-Brushed Nickel

EFR8NB

Standard Features

- Decorative lighting trim
- 4.0" diameter base
- Requires recessed housing
- Available colors: WH-White, BK-Black, CH-Chrome, BN-Brushed Nickel

EFR8R

Standard Features

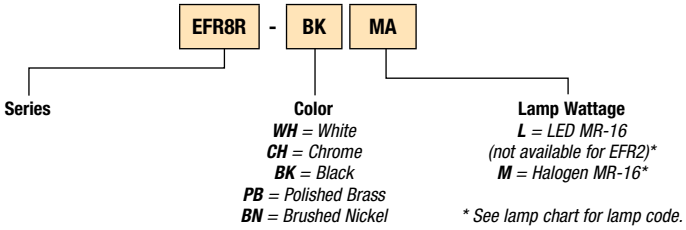
- Decorative lighting trim
- 4.0" diameter base
- Requires recessed housing
- Available colors: WH-White, BN-Brushed Nickel

EFR9WH

Standard Features

- Decorative lighting trim
- 4.0" diameter base
- Requires recessed housing
- Available color: WH-White

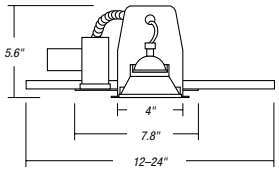
Catalog Numbering System for Trim



EL-GRHR03

Recessed Type Housing

- New construction housing
- Total height: 5.6"

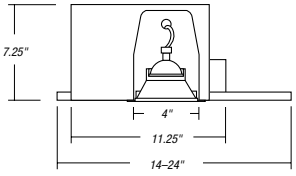


CAT. NO.	DESCRIPTION
EL-GRHR03	Housing for New Construction

EL-GRHR06

Recessed Type Housing

- Insulated ceiling housing
- Total height: 7.25"



CAT. NO.	DESCRIPTION
EL-GRHR06	Housing for Insulated Ceilings

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Remote Fixtures

A variety of remote, surface-mounted fixtures.

EF Surface-Mount Series

EF Series remote fixtures are furnished complete with lamps as specified. For alternate lamp selection, see lamp data sheet.

EF9/EF9D

- Single or double compact adjustable decorative lighting head
- Off-white (WT) finish; black (BK) optional
- Surface (wall or ceiling) mounting direct to 4" octagonal or single-gang box
- Accommodates Series H bi-pin halogen or Series Z high-intensity incandescent wedge base lamps
- Thermoplastic construction

Catalog Numbering System

EF9	D	HB	BK

Series
EF9 *= PAR18 Remote Head*

Number of Heads
Blank *= Single Head*
D *= Double Head*
T *= Triple Head*

Lamp Suffix
H_ *= Halogen Bi-Pin 12W Max.**
Z_ *= Tungsten Wedge 18W Max.**

Enclosure Color
Blank *= Factory White*
BK *= Black*

** See lamp chart for lamp code.*

EF10/EF10D

- Single and double MR-16 indoor lighting head with fully adjustable swivel
- Thermoplastic construction with off-white (WT) or black (BK) finish
- Direct mounting to 4" octagonal electrical box
- Accommodates Series M MR-16 lamps

Catalog Numbering System

EF10	D	LA	BK

Series
EF10 *= MR-16 PAR18 Remote Head*

Number of Heads
Blank *= Single Head*
D *= Double Head*
T *= Triple Head*

Lamp Suffix
L_ *= LED MR-16**
M_ *= Halogen MR-16 20W Max.**

Enclosure Color
Blank *= Factory White*
BK *= Black*

** See lamp chart for lamp code.*

EF14

- Rectangular fixture with diffused polycarbonate lens
- White baked enamel finish (specify other)
- Surface (wall or ceiling) mounting
- 8¼"W x 4½"H x 3"D
- Accommodates Series I high-intensity tungsten (HIT) double-contact bayonet-base lamps

Catalog Numbering System

EF14	IA	BK

Series
EF14 *= Remote RSCD Fixture*

Lamp Suffix
I_ *= Tungsten Double-Contact Bayonet Base 25W Max. (6, 12, 24 Volts)**
I_ *= Tungsten Double-Contact Bayonet Base 15W Max. (120VAC)**

Color
Blank *= Factory White*
BK *= Black*

** See lamp chart for lamp code.*

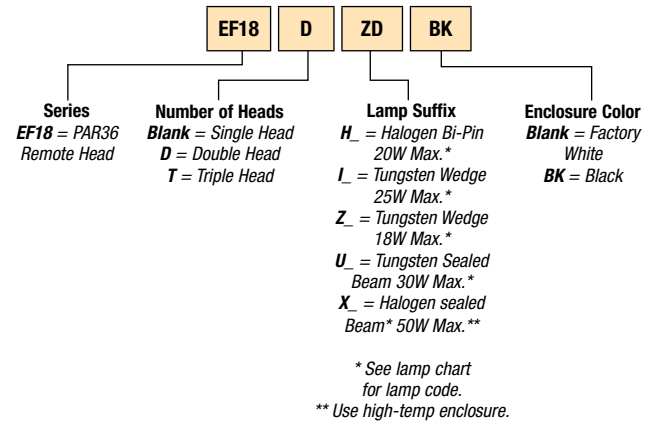
Remote Fixtures

EF Surface-Mount Series *(continued)*

EF18/EF18D

- Single or double adjustable decorative lighting head
- Thermoplastic construction with off-white (WT) finish; black (BK) optional
- Direct mounting to 4" octagonal or single-gang box
- Accommodates Series H bi-pin halogen, Series I high-intensity tungsten (HIT) double-contact bayonet-base, Series U sealed-beam tungsten, Series X sealed-beam halogen or Series Z high-intensity incandescent wedge-base lamps

Catalog Numbering System

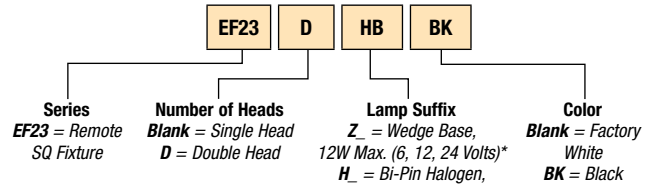


* See lamp chart for lamp code.
** Use high-temp enclosure.

EF23/EF23D

- Single adjustable decorative lighting head
- Thermoplastic construction with off-white (WT) or black (BK) finish
- Direct mounting to 4" octagonal or single-gang box
- Round mounting canopy standard
- Accommodates Series H bi-pin halogen 6-, 8- and 12-watt lamps and Series Z high-intensity incandescent wedge-base 5.4-, 9- and 12-watt lamps

Catalog Numbering System

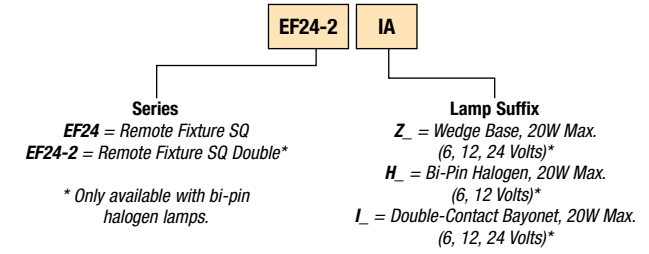


* See lamp chart for lamp code.

EF24/EF24-2

- Decorative square thermoplastic light with prismatic diffusing lens and metal reflector
- Off-white front trim; black back box
- Dimensions: 9"H x 9"W x 4"D
- Surface (wall or ceiling) mounting
- For semi-recessed mounting, order EF24R, which inculdes a semi-recessed deep mounting box (8½"H x 8½"W x 1¾"D)
- Accommodates Series H bi-pin halogen, Series I high-intensity tungsten (HIT) double-contact bayonet base or Series Z high-intensity incandescent wedge-base lamps

Catalog Numbering System



* Only available with bi-pin halogen lamps.

* See lamp chart for lamp code.

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Remote Fixtures

EF28/EF28D/EF28T

- Single or double metal housing head with fully adjustable swivel
- Chrome-finish head (off-white optional)
- EF28: surface mounting; 1 MPC — one plate supplied
- EF28D: surface mounting; 3 MPC — two plates supplied
- EF28 mounting plate dimensions: 2½" x 4¼"
- EF28D mounting plate dimensions: 6 7/16" x 4½"
- Accommodates Series H bi-pin halogen, Series I high-intensity tungsten (HIT) double-contact bayonet-base, Series U sealed-beam tungsten, Series X sealed-beam halogen or Series Z high-intensity incandescent wedge-base lamps

Catalog Numbering System

EF28	D	ZD	WT

Series
EF28 *= Aluminum Remote Fixture*

Number of Heads
Blank *= Single Head*
D *= Double Head*
T *= Triple Head*

Lamp
Z_ *= Wedge Base, 18W Max. (6, 12, 24 Volts)**
H_ *= Bi-Pin Halogen, 20W Max. (6, 12 Volts)**
I_ *= Double-Contact Bayonet, 25W Max. (6, 12, 24 Volts)**
U_ *= Sealed Beam Incandescent, 30W Max. (6, 12 Volts)**
X_ *= Sealed Beam Halogen, 50W Max. (6, 12 Volts)**

Color
Blank *= Chrome*
WT *= White*

** See lamp chart for lamp code.*

EF32/EF32D

- Single miniature, fully adjustable aluminum cylinder complete with matching round mounting plate
- Off-white baked enamel finish standard, black (BK) optional
- Cylinder dimensions: 3" diameter x 4¼"
- Direct mounting to 4" octagonal box
- Accommodates 6 or 12VDC Series H bi-pin halogen lamps

Catalog Numbering System

EF32	D	HB	BK

Series
EF32 *= Remote SQ Fixture*

Number of Heads
Blank *= Single Head*
D *= Double Head*

Lamp
Z_ *= Wedge Base, 12W Max. (6, 12, 24 Volts)**
H_ *= Bi-Pin Halogen, 20W Max. (6, 12 Volts)**

Enclosure Color
Blank *= Factory White*
BK *= Black*

** See lamp chart for lamp code.*

Remote Fixtures

The widest variety of remote, recessed-mounted fixtures!
EF Recessed-Mount Series

EF13

- Rectangular fixture with diffused polycarbonate lens
- White baked enamel finish (specify other)
- Recessed wall or ceiling mounting
- Trim plate dimensions: 8¼"W x 4½"H
- Back box dimensions: 6⅜"W x 3"H x 2⅝"D
- Accommodates Series I high-intensity tungsten (HIT) double-contact bayonet-base lamps

Catalog Numbering System

EF13 | IA | BK

Series
EF13 *= Remote RSCD Fixture*

Lamp Suffix
I_ *= Tungsten Double-Contact Bayonet Base 25W Max. (6, 12, 24 Volts)**
I_ *=Tungsten Double-Contact Bayonet Base 15W Max. (120 VAC)**

Color
Blank *= Factory White*
BK *= Black*

** See lamp chart for lamp code.*

EF15

- Recessed gimbal ring fixture PAR36 — adjustable in two planes to 45°
- Off-white thermoplastic housing
- Recessed wall or ceiling mounting
- Trim ring dimensions: 8½" diameter
- Back box dimensions: 5¾" x 4¾" deep
- Plaster ring dimensions: 9" square (furnished standard)

Catalog Numbering System

EF15 | ZD | BK

Series
EF15 *= Remote RSCD Plastic Fixture*

Lamp Suffix
Z_ *= Wedge Base, 18W Max. (6, 12, 24 Volts)**
H_ *= Bi-Pin Halogen, 20W Max. (6, 12 Volts)**
I_ *= Double-Contact Bayonet, 25W Max. (6, 12, 24 Volts)**
U_ *= Sealed-Beam Incandescent, 30W Max. (6, 12 Volts)**
X_ *= Sealed-Beam Halogen, 20W Max. (6, 12 Volts)**

Color
Blank *= Factory White*
BK *= Black*

** See lamp chart for lamp code.*

EF17

- Recessed adjustable eyeball PAR36
- Brushed aluminum finish (specify others)
- Recessed wall or ceiling mounting
- Trim ring dimensions: 8¾" diameter
- Back dimensions: 6¾" x 3½" deep

Catalog Numbering System

EF17 | HB | WT

Series
EF17 *= Recessed Adjustable Eyeball*

Lamp Suffix
Z_ *= Wedge Base, 18W Max. (6, 12, 24 Volts)**
H_ *= Bi-Pin Halogen, 20W Max. (6, 12 Volts)**
I_ *= Double-Contact Bayonet, 25W Max. (6, 12, 24 Volts)**
U_ *= Sealed-Beam Incandescent, 30W Max. (6, 12 Volts)**
X_ *= Sealed-Beam Halogen, 50W Max. (6, 12 Volts)**

Color
Blank *= Aluminum*
WT *= Factory White*

** See lamp chart for lamp code.*

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Remote Fixtures

EF21R

- Fully recessed metal decorator square housing with prismatic diffusing lens and metal reflector
- Off-white baked enamel finish
- Recessed wall or ceiling mounting
- Trim plate dimensions: 10⅝"H x 10⅝"W
- Back box dimensions: 8¾"H x 8¾"W x 3¼"D
- Accommodates Series H bi-pin halogen (available at additional cost), Series I high-intensity tungsten (HIT) double-contact bayonet-base or Series Z high-intensity incandescent wedge-base lamps

Catalog Numbering System

EF21R | IA

Series
EF21R *= Remote Recessed Metal Square Decorator Fixture*

Lamp Suffix
Z_ *= Wedge Base, 20W Max. (6, 12, 24 Volts)**
H_ *= Bi-Pin Halogen, 20W Max. (6, 12 Volts)**
I_ *= Double-Contact Bayonet, 20W Max. (6, 12, 24 Volts)**

** See lamp chart for lamp code.*

EF35

- Gasketed, fully recessed, with fresnel lens
- Suitable for damp locations
- Off-white finish
- Fully recessed ceiling mounting
- Dimensions: 7¼" deep; 6⅞" diameter ceiling opening

Catalog Numbering System

EF35 | IA

Series
EF35 *= Remote RSCD Metal Fixture*

Lamp Suffix
Z_ *= Wedge Base, 18W Max. (6, 12, 24 Volts)**
H_ *= Bi-Pin Halogen, 20W Max. (6, 12 Volts)**
I_ *= Double-Contact Bayonet, 25W Max. (6, 12, 24 Volts)**

** See lamp chart for lamp code.*

Remote Fixtures

EF Series Weatherproof Harsh Environment Remote Fixtures

EF11/EF11D/EF11T

- Weather-resistant adjustable heads
- Gasketed aluminum canopy
- Black (BK) finish; off-white (WT) optional
- Metal head
- Direct mounting to 4" octagonal electrical box

Catalog Numbering System

EF11	D	H*	WT

Series
EF11 *= PAR36 Remote Head (weatherproof)*

Number of Heads
Blank *= Single Head*
D *= Double Heads*
T *= Triple Heads*

Lamps
H *= Halogen Bi-Pin 20W Max.**
I *= Tungsten Wedge 25W Max.**
Z *= Tungsten Wedge 18W Max.**
U *= Tungsten Sealed-Beam 30W Max.**
X *= Halogen Sealed-Beam* 50W Max.***

** See lamp chart for lamp code.*
*** Use high-temp enclosure.*

Color
Blank *= Black**
WT *= Factory White*

** XI lamps available in gray only.*

EF11X

- Class I, Division 2, Groups A, B, C, D
- Single lighting head with fully adjustable swivel
- Gasketed aluminum canopy and junction box
- Round plate standard for mounting directly to 4" outlet box
- Lamps: PAR36 sealed beam (6 or 12VDC maximum 12W)

Catalog Numbering System

EF11	X	XD	GY

Series
EF11 *= Hazardous Locations Class.1 Div.2 Groups A, B, C and D*

Number of Heads
X *= Single Head*

Lamps
XD *= 6V 12W Halogen Sealed-Beam*
XG *= 12V 12W Halogen Sealed-Beam*

Color
Blank *= Black*
GY *= Gray*
WT *= Factory White*

EF11DX

- Class I, Division 2, Groups A, B, C, D
- Double lighting heads with fully adjustable swivel
- Gasketed aluminum canopy and junction box
- Round plate standard for mounting directly to 4" outlet box
- Lamps: PAR36 sealed beam (6 or 12VDC maximum 12W)

Catalog Numbering System

EF11	DX	XG	WT

Series
EF11 *= Hazardous Locations Class.1 Div.2 Groups A, B, C and D*

Number of Heads
DX *= Double Head*

Lamps
XD *= 6V 12W Halogen Sealed-Beam*
XG *= 12V 12W Halogen Sealed-Beam*

Color
Blank *= Black*
GY *= Gray*
WT *= Factory White*

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Remote Fixtures

EF39

- NEMA 4X rated
- Single head
- Gasketed cast aluminum back plate and clear, UV- and impact-resistant case
- Direct mounting to 4" octagonal electric box
- Accommodates Series M MR-16 lamps

NEMA 4X NSF UL

Catalog Numbering System

EF39 | MI | - | BK

Series
EF39 *= Single NEMA 4X*

Lamp Type/Wattage
MI *= MR-16, 6V 6W*
MJ *= MR-16, 6V 10W*
MK *= MR-16, 12V 12W*
MW *= MR-16-IR, 12V 20W*
MS *= MR-16, 24V 12W*
MD *= MR-16, 24V 20W*
L *= LED, 12V 4W*
LA *= LED, 6V 4W*
LL *= LED, 24V 4W*

Color
Blank *= White*
BK *= Black*
GY *= Gray*

EF39D

- NEMA 4X rated
- Double head
- Gasketed cast aluminum back plate and clear, UV- and impact-resistant case
- Direct mounting to 4" octagonal electric box
- Accommodates Series M MR-16 lamps

NEMA 4X NSF UL

Catalog Numbering System

EF39D | MJ | - | GY

Series
EF39D *= Double NEMA 4X*

Lamp Type/Wattage
MI *= MR-16, 6V 6W*
MW *= MR-16-IR, 12V 20W*
MJ *= MR-16, 6V 10W*
MS *= MR-16, 24V 12W*
MK *= MR-16, 12V 12W*
MD *= MR-16, 24V 20W*
L *= LED 12V 4W*

Color
Blank *= White*
BK *= Black*
GY *= Gray*

EF41

- Suitable for hazardous locations
- Single or double lamp heads
- Die-cast aluminum backplate with gasket
- Clear UV- and impact-resistant case
- Easy installation on a 4" octagonal box (included)
- Class I, Division 2; extreme operational temperature range: -40° F to 104° F (-40° C to 40° C)

CSA US

Catalog Numbering System

EF41 | (MJ) | - | GY

Series
EF41 *= Single Lamp*
EF41D *= Double Lamps*

Lamp Type/Wattage
(MJ) *= MR-16, 6V 10W*
(MT) *= MR-16, 20V 20W*
(MK) *= MR-16, 12V 12W**
(LG) *= MR-16, 12V 4W**
(MW) *= MR-16, 12V 20W**
(LA) *= LED, 6V 4W*
(MS) *= MR-16, 24V 12W**
(LL) *= LED, 24V 4W*
(MD) *= MR-16, 24V 20W**

Color
GY *= Gray*

** Wattage doubles for "D" 2-lamp version.*

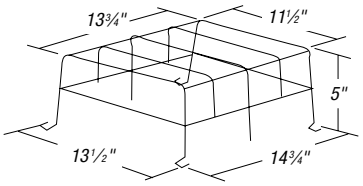
Accessories

Wire Guards

Catalog Number WG1-E

Applications

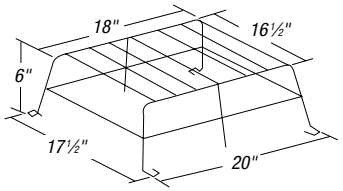
- JS Series (small cabinet)
- PS Series (surface or semi-recessed)
- EF24 or EF24R remote lighting fixtures
- Premier™ battery unit
- Premier™ exit sign (wall mount)



Catalog Number WG2-E

Applications

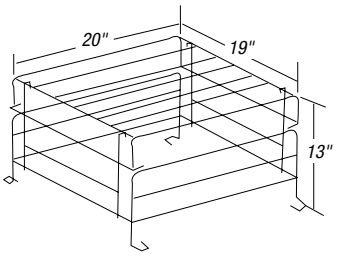
- JS Series (large cabinet)
- All A cabinets
- Premier™ Combo Series (wall mount)



Catalog Number WG3-E

Applications

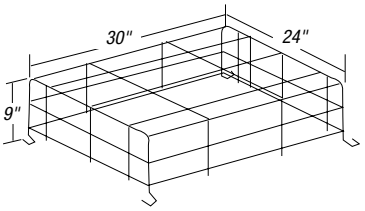
- IL Series
- All B and C cabinets



Catalog Number WG4-E

Applications

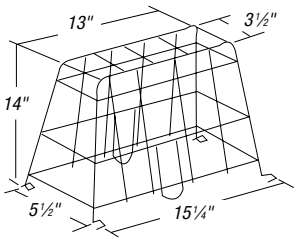
- All D cabinets
- KS Series (not for front-mounted heads)



Catalog Number WG5-E

Applications

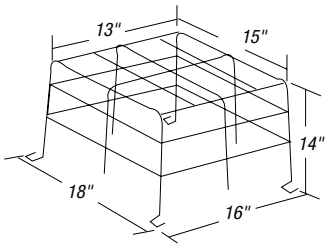
- X10 AC and AC/DC or self-powered exit sign with no mounted heads
- ECL and ECLXN Series LED (end or ceiling mounted) AC and AC/DC or self-powered
- Preceptor™ Series LED (AC and AC/DC or self-powered) (end or ceiling mounted)
- Prestige™ DX Series LED and Thin Die-Cast Series (end or ceiling mount)
- Premier™ exit sign (end or ceiling mount)



Catalog Number WG6-E

Applications

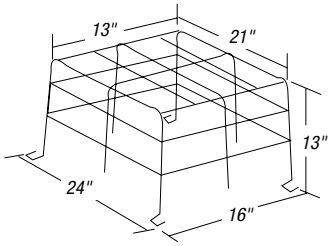
- Single EF22 head
- X10 mini systems (wall mounted), with front-mounted EF9 head(s) (wall mounted)
- KS Series with front-mounted heads



Catalog Number WG7-E

Applications

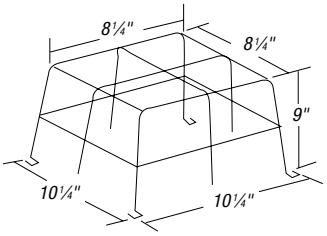
- EF22D heads
- RS Series with cylinder EF32 heads



Catalog Number WG8-E

Applications

- Single remote EF9, EF11, EF16, EF18, EF28 or EF32 lighting head



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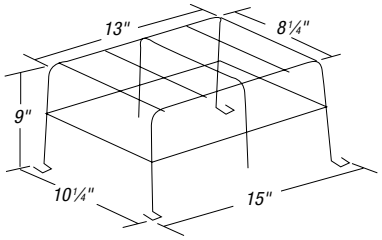
Accessories

Catalog Number WG9-E

Applications

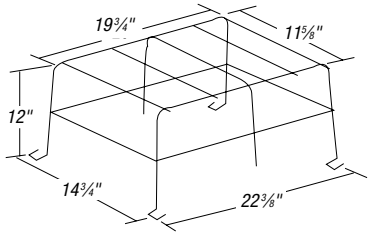
- Double or triple remote EF9, EF11, EF18, EF28 or EF32 lighting heads
- RS Series with EF9 or EF18 heads
- ECS-2 Series



Catalog Number WG10-E

Applications

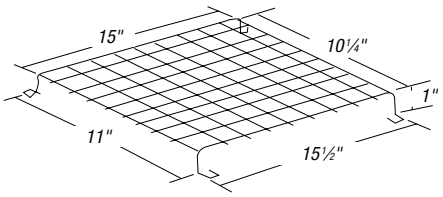
- JS Series with front-mounted heads



Catalog Number WG11-E

Applications

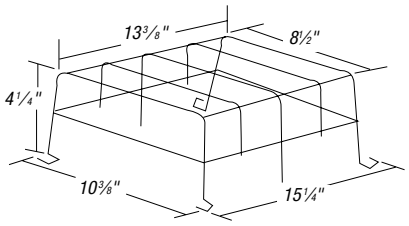
- Fully recessed PS Series
- GS Series
- EF15, EF20, EF21R, EF35 lighting fixtures
- Fully recessed Preceptor™ Series
- Prestige™ Thin Die-Cast exit sign (wall mounted)



Catalog Number WG12-E

Applications

- X10 Series LED (AC and AC/DC or self-powered) (wall mount)
- ECL and ECLXN Series LED (AC and AC/DC or self-powered) (wall mount)

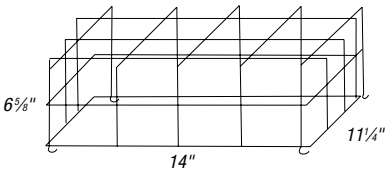


- Preceptor™ Series LED (AC and AC/DC or self-powered) (wall mount)
- Prestige™ DX Series LED (AC and AC/DC or self-powered) (wall mount)
- Remote EF13, EF14 or EF17 fixtures

Catalog Number WG13-E

Applications

- PRO-2 Series
- Preceptor™ Series self-powered (wall mount)



Accessories

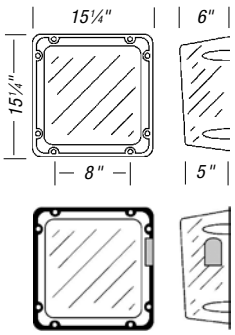
Unit Accessories

Catalog Number VRS or VRS-4X

Applications

- ME Series with top-mounted heads
- PS Series, all mountings
- X10 LED(wall mounted), AC and AC/DC or self-powered exit signs with no mounted heads
- ECL and ECLXN Series LED (wall mounted), AC and AC/DC or self-powered
- Preceptor™ Series LED (wall mounted) AC and AC/DC

NEMA 4X

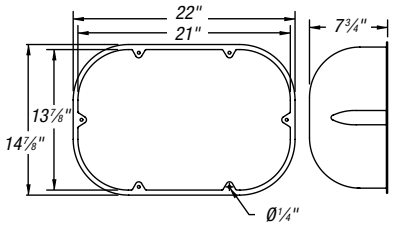


Catalog Number VRS-BB or VRSBB-4X

Applications

- JS Series (small cabinet), top- or front-mounted heads
- ECC and ECM Series (small cabinet)

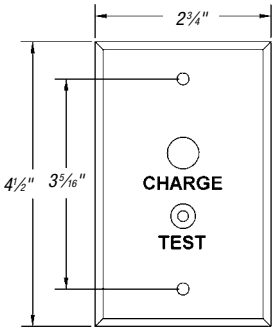
NEMA 4X



Remote Test Switch

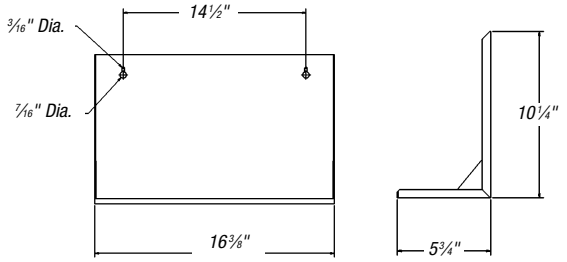
Make testing your ceiling-mounted equipment easier with the Remote Test Switch. Compatible with 120 or 277VAC circuits, the Remote Test Switch will interrupt the line voltage to your equipment by means of a momentary push-button switch. AC on/charge status indicator lamp assures that power is going to your emergency lighting.

CATALOG NO.	DESCRIPTION
RTS	Metal Faceplate, Chrome
RTS-1	Plastic Faceplate, Off-White



MP3 Mounting Platform

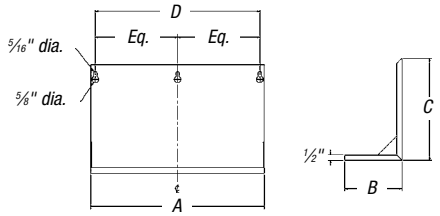
Constructed of 18-gauge steel, the MP3 Mounting Platform will accommodate all your unit equipment in our "B" cabinet.



CATALOG NO.	DESCRIPTION
MP3	Mounting Platform
MP3-GY	Mounting Platform, Gray

MP6, MP12, MP24 Mounting Platforms

Constructed of 18-gauge steel, the MP6, MP12 and MP24 Mounting Platforms will accommodate your unit equipment in our "C", "D" and "E" cabinets, respectively.

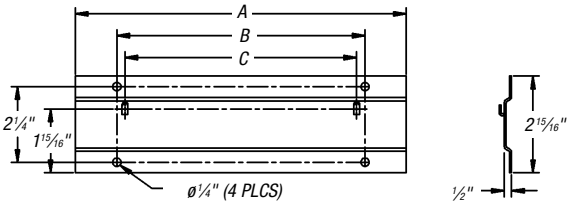


CATALOG NO.	DESCRIPTION	A	B	C	D
MP6	Mounting Platform (off-white)	17"	7.75"	12.25"	16"
MP12	Mounting Platform (off-white)	27.5"	7.75"	12.25"	16"
MP24	Mounting Platform (off-white)	27.5"	11.63"	12.25"	16"

Optional colors available; Contact your Thomas & Betts sales representative.

B1 and B2 Mounting Brackets

Constructed of 16-gauge steel, the B1 and B2 Mounting Brackets will accommodate your equipment in our "A" and "B" cabinets, respectively.



CATALOG NO.	DESCRIPTION	A	B	C
B1	Mounting Bracket (off-white)	10"	7"	7½"
B2	Mounting Bracket (off-white)	14¼"	11¾"	12⅝"

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Accessories

Mounting Plates

Specify mounting plate designation as a suffix to fixture type model number.
For plates ordered separately, specify plate designation and fixture type.

230.1238-E and 230.1239-E

- Single, double or triple round
- Thermoplastic construction
- Off-white or black finish only
- Direct mounting to 4" octagonal box

Dimensions: 5" diameter with slotted mounting holes, 3" to 3 9/16" mounting center

Standard: EF18, EF18D; EF9, EF9D

230.1238-E
Off-White

230.1239-E
Black

430.0765-E and 430.0766-E

- Single or double round
- Aluminum construction
- Matte white baked enamel finish
- Black finish optional
- Direct mounting to 4" octagonal box

Dimensions: 5 1/4" diameter, 3 7/16" mounting center

Standard: EF32, EF32D

430.0765-E
Off-White Single

430.0766-E
Off-White Double

450.0129-E, 450.0397-E and 450.0398-E

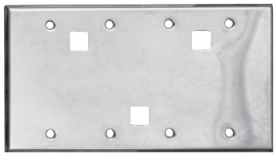
- Single, double or triple rectangular
- Single-, 3- or 4-gang steel construction
- Chrome-plated finish only
- Direct mounting to standard outlet box

Dimensions: Single-Gang — 2 3/4" x 4 1/2" (for 1 fixture), 3-Gang — 6 7/16" x 4 1/2" (for 2 fixtures), 4-Gang — 8 3/8" x 4 1/2" (for 2 or 3 fixtures)

Standard: EF28, EF28D; EF18T, EF28T

450.0129-E *— No Square Hole*
450.1151-E *— 7/16" Square Hole*
450.0194-E *— 1/2" Square Hole*

450.0397-E *— No Square Hole*
450.1152-E *— 7/16" Square Hole*
450.1153-E *— 1/2" Square Hole*



450.0398-E *— No Square Hole*
450.1154-E *— 7/16" Square Hole*
450.1155-E *— 1/2" Square Hole*

Accessories

Mounting Plates *(continued)*

330.7583-E, 330.7577-E, 330.7584-E and 330.7578-E

- Single or double round
- Die-cast aluminum construction
- Gasketed and weatherproof
- Off-white or black powder-paint finish only
- Direct mounting to 4" octagonal box

Dimensions: 4⅛" diameter, 3⁹⁄₁₆" mounting center

Standard: EF11, EF11D

330.7583-E
Off-White Single

330.7577-E
Black Single

330.7584-E
Off-White Double

330.7578-E
Black Double

245.0100-E
Gasket (not shown)

12804-E and 12805-E

- Single or double rectangular
- Die-cast aluminum construction
- Gasketed and weatherproof
- Silver-gray enamel finish only
- Direct mounting to standard outlet box

Dimensions: 4⅝" x 2⅞" 3¼" mounting center

Standard: Non-standard mounting plate

12804-E

12805-E

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Technical Information

Lamp Data — General Information

All Emergi-Lite® lighting fixtures are furnished complete with lamps; however, **all fixtures and unit catalog numbers must include a lamp designation.** Unless otherwise noted on the lighting fixture data sheet, the normal lamp furnished with each lighting fixture is a 9-watt high-intensity incandescent lamp of the designated voltage.

Example:

Fixture	Battery units with two lighting heads
EF18(ZD)	LSM 110-2ZD (6V 9W)
EF18(ZF)	12LSM 110-2ZF (12V 9W)
EF18(ZN)	24LSM 110-2ZN (24V 9W)

When an alternate lamp is required, refer to the lamp selection charts below, select the lamp type, the voltage and wattage required and add the symbol designation to the catalog number.

Not all lighting fixtures and lamp types are compatible — always check individual lighting fixture data sheets.

Example:
When an EF18(ZD) fixture, normally supplied with 6V 9W wedge-base incandescent is ordered with a 6V 25W sealed-beam lamp, the catalog number changes to EF18(UC).

LAMP TYPE	PART NO.	CATALOG SUFFIX	VOLTAGE (V)	POWER (W)	LUMEN AVERAGE	TOTAL CANDLE POWER (CP)	LAMP NO.	BULB TYPE
High-Intensity Tungsten (HIT) Lamps	**570.0010**	IA	6	9	126	10	135	S-8
	570.0020	IM	6	13	188	15	88	S-8
	570.0037	IB	6	18	300	24	1130	S-8
	570.0038	IC	6	25	400	32	1134	RP-11
	570.0011	IE	12	9	126	10	138	S-8
	570.0022	IN	12	13	188	15	94	S-8
	570.0030	IF	12	18	276	22	139	S-8
	570.0031	IG	12	25	400	32	1076	S-8
	570.0058	II	24	9	75	6	304	C-2F
	570.0040	IJ	24	18	250	20	142	S-8
	570.0061	IK	24	25	400	32	1638	S-8
Bi-Pin Halogen Lamps	**580.0012**	HA	6	6	113	9	784	T-2 1/4
	580.0013	HB	6	8	163	13	785	T-2 1/4
	580.0017	HC	6	10	200	16	787	T-2 1/4
	580.0011	HD	6	12	240	19	786	T-2 1/4
	580.0022	HE	6	20	400	32	788	T-2 1/4
	580.0014	HF	12	8	163	13	774	T-2 1/4
	580.0015	HG	12	12	276	22	783	T-2 1/4
	580.0016	HH	12	14	300	24	789	T-2 3/4
	580.0027	HI	12	20	314	25	782	T-2 3/4

RP-11 *S-8*

Double-Contact Bayonet Base

T-2 3/4 *T-2 1/4*

LAMP TYPE	PART NO.	CATALOG SUFFIX	VOLTAGE (V)	WATTS (W)	LUMEN AVERAGE	CENTER-BEAM CANDLE POWER (CBCP)	LAMP NO.	BULB TYPE
Sealed-Beam Halogen Lamps	**550.0022**	XA	6	6	107	400	H7556	PAR36
	550.0036	XB	6	8	155	550	H7551	PAR36
	550.0037	XC	6	10	190	650	H7552	PAR36
	550.0019	XD	6	12	225	850	H7553	PAR36
	550.0021	XE	6	20	380	1400	H7554	PAR36
	550.0024	XF	12	8	130	550	H7555	PAR36
	550.0025	XG	12	12	240	850	H7557	PAR36
	550.0047	XH	12	37	700	70,000	H7616	PAR36
	550.0012	XI	12	50	950	2000	H7614	PAR36
Sealed-Beam Incandescent Lamps	**550.0018**	UA	6	8	130	400	7613	PAR36
	550.0030	UI	6	12	180	1100	4042	PAR36
	550.0016	UB	6	18	270	1500	4014	PAR36
	550.0017	UC	6	25	400	800	4510	PAR36
	550.0035	UD	6	30	460	5500	4515	PAR36
	550.0026	UE	12	12	190	1110	4044	PAR36
	550.0027	UF	12	18	210	1500	4414	PAR36
	550.0023	UG	12	25	395	400	4446	PAR36
	550.0034	UH	12	30	430	35,000	4416	PAR36

PAR36

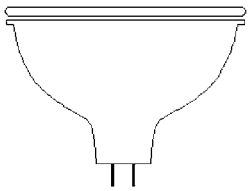
PAR36

LAMP TYPE	PART NO.	CATALOG SUFFIX	VOLTAGE (V)	WATTS (W)	LUMEN AVERAGE	TOTAL CANDLE POWER (CP)	LAMP NO.	BULB TYPE
High-Intensity Incandescent, Wedge Base	**570.0012**	ZP	6	5.4	68	5.4	939	T-5
	570.0026	ZL	6	7.2	100	8	927	T-5
	570.0016	ZD	6	9	150	12	908	T-5
	570.0025	ZF	12	9	138	11	915	T-5
	570.0028	ZG	12	12	150	12	912	T-5
	570.0029	ZH	12	18	264	21	921	T-5
	570.0045	ZN	24	9	113	9	EMS2209W	T-5
	570.0046	ZO	24	18	240	19	EMS2218W	T-5
Xenon Gas, Wedge Base	**570.0213**	ZU	6	6	120	9.6	B0606XA	T-3 1/4
	570.0214	ZV	6	10	180	14.3	B610XWB	T-3 1/4
	570.0215	ZW	12	6	105	8.4	B126XWB	T-3 1/4
	570.0216	ZX	12	10	200	16	B1210XWB	T-3 1/4

T-5

Technical Information

Lamp Data — General Information *(continued)*

LAMP TYPE	PART NO.	CATALOG SUFFIX	VOLTAGE (V)	WATTS (W)	LUMEN AVERAGE	CENTER-BEAM CANDLE POWER (CBCP)	BEAM ANGLE (DEGREES)	BULB TYPE
MR-16 Halogen Lamps 	**580.0072**	MH	6	5.4	34	73	36	MR-16
	580.0074	MI	6	6	40	130	24	MR-16
	580.0079	MJ	6	10	77	790	16	MR-16
	580.0099	MO	12	10	86	200	36	MR-16
	580.0080	MK	12	12	135	320	36	MR-16
	580.0064	MG	12	20	270	525	36	MR-16
	580.0075	MA	12	20-A	245	600	36	MR-16
	580.0068	MW	12	20-H	417	950	36	MR-16
	580.0083	MB	12	35	490	3300	24	MR-16
	580.0076	MC	12	50	785	2800	24	MR-16
	580.0089	MM	12	50-H	1550	5700	24	MR-16
	580.0070	MS	24	12	95	280	36	MR-16
	580.0077	MD	24	20	240	740	24	MR-16
	580.0094	MN	24	20-A	195	890	24	MR-16
	580.0084	ME	24	35	460	990	36	MR-16
	580.0078	MF	24	50	875	3200	24	MR-16
	580.0065	MT	120	20	100	240	36	MR-16
	580.0066	MU	120	35	230	520	36	MR-16
	580.0067	MV	120	50	460	1100	36	MR-16
MR-16 LED Lamps 	**580.0097**	LA	6	4	130	600	24	MR-16
	580.0093	LG	12	4	170	440	30	MR-16
	580.0096	LH	12	4	170	700	24	MR-16
	580.0098	LL	24	4	200	900	24	MR-16
	580.0095	LV	120	4	200	900	24	MR-16

LAMP TYPE	PART NO.	CATALOG SUFFIX	VOLTAGE (V)	WATTS (W)	LUMEN AVERAGE	TOTAL CANDLE POWER (CP)	LAMP NO.	BULB TYPE
Exit Signs, Hazardous Locations Incandescent Lamps	**580.0086**	XX6	6	15	210	17	JC6V-15W2K	Bi-Pin G4
	570.0071	XX12	12	25	220	18	13769	A19
	570.0118	XX24	24	25	220	18	24227-1	A19
	570.0136	AC	120	25	215	17	97478	A19

LAMP TYPE	PART NO.	VOLTAGE (V)	WATTS (W)	LUMEN AVERAGE	TOTAL CANDLE POWER (CP)	LAMP NO.	BASE TYPE
Exit Signs, 120VAC Incandescent	**570.0013**	145	15	150	12	15T6145	Candelabra Screw Base
	570.0024	120	20	90	7	20T61/2	Intermediate Screw Base
	570.0035	145	15	150	12	15T6	Intermediate Screw E17
	595.0010	120	7	330	26	PL7-T4	G23

Important: *Lumen rating and candle power values are only for general reference.*
The data was obtained from the manufacturer's catalogs, calculations or third-party laboratory measurements.
Actual performance in the field may and will vary.

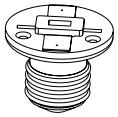
Explosion-Proof Incandescent Lamps

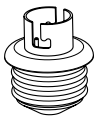
PART NO.	CATALOG SUFFIX	VOLTAGE	WATTS	LUMEN RATING	LAMP NO.
580.0086	XX6	6	15	225	JC-6V15W
570.0071	XX12	12	25	378	—
570.0118	XX24	24	25	345	—
570.0136	AC	120	25	215	—
540.0180	XX120	120	5	—	Red LED

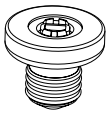
MSA Incandescent Lamp Adapter

For HIT, DCBB or Bi-Pin Halogen Lamps

DC lamp plus adapter for medium Edison screw-base socket.
This device converts any incandescent fixture into an emergency fixture.


MSA Bi-Pin

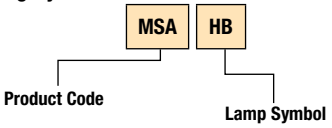

MSA Double Contact


MSA Wedge Base

120VAC Exit Lamps

LAMP TYPE	CATALOG NO.	WATTS	LAMP NO.	BASE
Incandescent	**570.0013**	15	15T6145	Candelabra Screw Base
Incandescent	**570.0024**	20	20T61/2	Intermediate Screw Base
Incandescent	**570.0035**	15	15T6	Intermediate Screw Base
Fluorescent	**595.0010**	7	PL7-T4	G23

Catalog Numbering System



Note: *Lumen figures based on information supplied by lamp manufacturers.*
Lamp drawings shown are for shape comparison only, and are not actual size.

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Wire Size Guide

Determining Wire Size

The following information is provided to assist in designing proper emergency lighting systems effectively and economically by using the smallest permissible wire size for load circuits. When remote lighting fixtures and/or exit signs are connected to emergency lighting units, circuit runs must be of sufficient size to maintain a proper operating voltage to all lamps. The National Electrical Code® limits voltage to drop to a maximum of 5% of nominal. The table below gives the maximum length or wire run based on system voltage, wire gauge and total wattage on the run. To determine the maximum length of a wire run not listed, divide the value of the load-in watts into the constant listed at the bottom of each row. For example, the maximum wire run for #10 AWG wire on a 12-volt system with a 54-watt load is 3397 ÷ 54, or 62 feet.

Conversely, to determine the maximum load on a run of known length, divide the length into the constant. For example, a 36-foot run of #12 AWG wire on a 6-volt system can be loaded to 534 ÷ 36, or 14 watts; on #10 AWG wire, 23 watts.

Wiring Distance in Feet (Maximum Voltage Drop 5%)

TOTAL WATTS ON WIRE RUN	6-VOLT WIRE SIZE				12-VOLT WIRE SIZE					24-VOLT WIRE SIZE			
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG	#12 AWG	#10 AWG	#8 AWG	#6 AWG
6	89	141	225	357	356	566	900	1431	+	1425	+	+	+
8	66	106	168	268	267	424	675	1073	1707	1068	1698	+	+
9	59	94	150	238	237	377	600	954	1517	949	1509	+	+
10	53	84	135	214	213	339	540	859	1366	854	1358	+	+
12	44	70	112	178	178	283	450	715	1138	712	1132	1801	+
16	33	53	84	134	133	212	337	536	853	534	849	1350	+
18	29	47	75	119	118	188	300	477	758	474	754	1200	1909
24	22	35	56	89	89	141	225	357	569	356	566	900	1431
25	21	33	54	85	85	135	216	343	546	341	543	864	1374
27	19	31	50	79	79	125	200	318	505	316	503	800	1272
30	17	28	45	71	71	113	180	286	455	284	452	720	1145
36	14	23	37	59	59	94	150	238	379	237	377	600	954
42	12	20	32	51	50	80	128	204	325	203	323	514	818
45	11	18	30	47	47	75	120	190	303	189	301	480	763
48	11	17	28	44	44	70	112	178	284	178	283	450	715
50	10	16	27	42	42	67	108	171	273	170	271	432	687
75	7	11	18	28	28	45	72	114	182	113	181	288	458
100	5	8	13	21	21	33	54	85	136	85	135	216	343
150	—	5	9	14	14	22	36	57	91	56	90	144	229
200	—	—	6	10	10	16	27	42	68	42	67	108	171
250	—	—	5	8	8	13	21	34	54	34	54	86	137
300	—	—	—	7	7	11	18	28	45	28	45	72	114
400	—	—	—	5	5	8	13	21	34	21	33	54	85
500	—	—	—	—	—	6	10	17	27	17	27	43	68
Constant	534	849	1350	2148	2137	3397	5403	8590	13,660	8548	13,588	21,613	34,363

Longer Wire Runs

The wiring distances give the maximum length of a battery circuit, assuming that the entire load is concentrated at the end of the circuit. If loads are uniformly spaced along the circuit path (equal watts, equal distances), the lengths in the table may be increased, based on number of fixtures on a given circuit, by means of the chart and formula below.

NUMBER OF FIXTURES	2	3	4	5	6	N
MULTIPLY BY FEET	1.33	1.5	1.6	1.67	1.71	2N/(N+1)

For example, a 36-foot long, 6-volt circuit has three 9-watt heads spaced 12 feet apart. According to the wire run table, #8 AWG wire must be used (at 50 feet for a 5% voltage drop), but by multiplying the 31 feet for #10 AWG wire by 1.5, a 46½-foot wire run is acceptable, so #10 AWG wire may be used and still meet the 5% voltage drop limitation.

NOTE: *According to the National Electrical Code®, Article 720-Y, the smallest permissible wire size for systems under 50 volts is #12 AWG wire gauge.*

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ARTICLE 700 – EMERGENCY SYSTEMS

I. General

700.1. Scope. The provisions of this article apply to the electrical safety of the installation, operation, and maintenance of emergency systems consisting of circuits and equipment intended to supply, distribute, and control electricity for illumination or power, or both, to required facilities when the normal electrical supply or system is interrupted.

(FPN No. 1): For further information regarding wiring and installation of emergency systems in health care facilities, see Article 517.

(FPN No. 2): For further information regarding performance and maintenance of emergency systems in health care facilities, see Standard for Health Care Facilities, NFPA 99-1999.

(FPN No. 3): Emergency systems are generally installed in places of assembly where artificial illumination is required for safe exiting and for panic control in buildings subject to occupancy by large numbers of persons, such as hotels, theaters, sports arenas, health care facilities, and similar institutions. Emergency systems may also provide power for such functions as ventilation where essential to maintain life, fire detection and alarm systems, elevators, fire pumps, public safety communications systems, industrial processes where current interruption would produce serious life safety or health hazards, and similar functions.

(FPN No. 4): For specification of locations where emergency lighting is considered essential to life safety, see Life Safety Code, NFPA 101-2000.

(FPN No. 5): For further information regarding performance of emergency and standby power systems, see Standard for Emergency and Standby Power Systems, NFPA 110-1999.

700.2. Definitions

Emergency Systems. Those systems legally required and classed as emergency by municipal, state, federal or other codes, or by any governmental agency having jurisdiction. These systems are intended to automatically supply illumination, power or both, to designated areas and equipment in the event of failure of the normal supply or in the event of accident to elements of a system intended to supply, distribute, and control power and illumination essential for safety to human life.

Informational Note: Emergency systems are generally installed in places of assembly where artificial illumination is required for safe exiting and for panic control in buildings subject to occupancy by large numbers of persons, such as hotels, theatres, sports, arenas, health care facilities, and similar institutions. Emergency systems may also provide power for such functions as ventilation where essential to maintain life, fire detection and alarm systems, elevators, fire pumps, public safety communications systems, industrial processes where current interruption would produce serious life safety or health hazards, and similar functions.

Relay automatic Load Control. A device used to energize switched or normally-off lighting equipment from an emergency supply in the vent of loss of the normal supply, and to de-energize or return the equipment to normal status when the normal supply is restored.

Informational Note: For requirements covering automatic load control relays, see ANSI/UL 924, Emergency Lighting and Power Equipment

700.3.Tests and Maintenance.

(A) Conduct or Witness Test. The authority having jurisdiction shall conduct or witness a test of the complete system upon installation and periodically afterward.

(B) Tested Periodically. Systems shall be tested periodically on a schedule acceptable to the authority having jurisdiction to ensure the systems are maintained in proper operating condition.

(C) Battery Systems Maintenance. Where battery systems or unit equipment are involved, including batteries used for starting, control, or ignition in auxiliary engines, the authority having jurisdiction shall require periodic maintenance.

(D) Written Record. A written record shall be kept of such tests and maintenance.

(E) Testing Under Load. Means for testing all emergency lighting and power systems during maximum anticipated load conditions shall be provided.

Informational Note: For requirements covering automatic load control relays, see ANSI/UL 024, *Emergency Lighting and Power Equipment.*

700.4. Capacity.

(A) Capacity and Rating. An emergency system shall have adequate capacity and rating for all loads to be operated simultaneously. The emergency system equipment shall be suitable for the maximum available fault current at its terminals.

(B) Selective Load Pickup, Load Shedding, and Peak Load Shaving. The alternate power source shall be permitted to supply emergency, legally required standby, and optional standby system loads where the source has adequate capacity or where automatic selective load pickup and load shedding is provided as needed to ensure adequate power to (1) the emergency circuits; (2) the legally required standby circuits; and (3) the optional standby circuits, in that order of priority. The alternate power source shall be permitted to be used for peak load shaving, provided the above conditions are met.

Peak load shaving operation shall be permitted for satisfying the test requirement of Section 700.3(B), provided all other conditions of Section 700.3 are met. A portable or temporary alternate source shall be available whenever the emergency generator is out of service for major maintenance or repair.

700.5. Transfer Equipment.

(A) General. Transfer equipment, including automatic transfer switches, shall be automatic and identified for emergency use and approved by the authority having jurisdiction. Transfer equipment shall be designed and installed to prevent the inadvertent interconnection of normal and emergency sources of supply in any operation of the transfer equipment. Transfer equipment and electric power production systems installed to permit operation in parallel with the normal source shall meet the requirements of article 705.

(B) Bypass Isolation Switches. Means shall be permitted to bypass and isolate the transfer equipment. Where bypass isolation switches are used, inadvertent parallel operation shall be avoided.

(C) Automatic transfer switches shall be electrically operated and mechanically held.

(D) Use. Transfer equipment shall supply only emergency loads.

700-6. Signals. Audible and visual signal devices shall be provided, where practicable, for the following purposes described in 700.6(A) through (D).

(A) Derangement. To indicate derangement of the emergency source.

(B) Carrying Load. To indicate that the battery is carrying load.

(C) Not Functioning. To indicate that the battery charger is not functioning.

(D) Ground Fault. To indicate a ground fault in solidly grounded wye emergency systems of more than 150 volts to ground and circuit protective devices rated 1000 amperes or more. The sensor for the ground-fault signal devices shall be located at, or ahead of, the main system disconnecting means for the emergency source, and the maximum setting of the signal devices shall be for a ground-fault current of 1200 amperes. Instructions on the course of action to be taken in

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event of indicated ground fault shall be located at or near the sensor location.

Informational Note: For signals for generator sets, see NFPA 110-2010, Standard for Emergency and Standby Power Systems

700.7. Signs.

(A) Emergency Sources. A sign shall be placed at the service entrance equipment indicating type and location of on-site emergency power sources.

Exception: A sign shall not be required for individual unit equipment as specified in Section 700-12(F).

(B) Grounding. Where removal of a grounding or bonding connection in the normal power source equipement interrupts the grounding electrode conductor connection to the alternate power source(s) grounded conductor, a warning sign shall be installed at the normal power source equipment stating:

WARNING

SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED.

II. Circuit Wiring

700-10. Wiring, Emergency System.

(A) identification. All boxes and enclosures (including transfer switches, generators, and power panels) for emergency circuits shall be permanently marked so they will be readily identified as a component of an emergency circuit or system.

(B) Wiring. Wiring of two or more emergency circuits supplied from the same source shall be permitted in the same raceway, cable, box, or cabinet. Wiring from an emergency source distribution overcurrent protection to emergency loads shall be kept entirely independent of all other wiring and equipment, unless otherwise permitted in (1) through (5):

(1) Wiring from the normal power source located in transfer equipment enclosures.

(2) Wiring supplied from two sources in exit or emergency luminaires

(3) Wiring from two sources in a listed load control relay supplying exit or emergency luminaires, or in a common junction box, attached to exit or emergency luminaires

(4) Wiring within a common junction box attached to unit equipment, containing only the branch circuit supplying the unit equipment and the emergency circuit supplied by the unit equipment.

(5) Wiring from an emergency source to supply any combination of emergency, legally required, or optional loads in accordance with (a), (b), (c) and (d):

a. From separate vertical switchboard sections, with or without a common bus, or from individual disconnects mounted in separate enclosures.

b. The common bus or separate sections of the switchboard or the individual enclosures shall be permitted to be supplied by single or multiple feeders without overcurrent protection at the source *Exception to (5)(b): Overcurrent protection shall be permitted at the source or for the equipment, provided the overcurrent protection complies with the requirements of 700.27*

c. Legally required and optional standby circuits shall not originate from the same vertical switchboard section, panel board enclosure, or individual disconnect enclosure as emergency circuits.

d. It shall be permissible to utilize single or multiple feeders to supply distribution equipment between an emergency source and the point where the combination of emergency, legally required, or optional loads are separated.

(C) Wiring Design and Location. Emergency wiring circuits shall be designed and located to minimize the hazards that might cause failure due to flooding, fire, icing, vandalism, and other adverse conditions.

(D) Fire Protection. Emergency systems shall meet the following additional requirements (D)(1) through (D)(3) in assembly occupancies for not less than 1000 persons or in buildings above 23 m (75 ft) in height with any of the following occupancy classes: assembly, educational, residential, detention and correctional, business, and mercantile.

Informational Note: For the definition of *Occupancy Classification,* see Section 6.1 of NFPA 101-2009, *Life Safety Code*

(1) Feeder-circuit wiring shall meet one of the following conditions:

(1) Be installed in spaces or areas that are fully protected by an approved automatic fire suppression system.

(2) Be listed electrical circuit protective system with a minimum 2-hour fire rating.

Informational note: UL guide information for electrical circuit protective systems (FHIT) contains information on proper installation requirements to maintain the fire rating

(3) Be protected by a listed thermal barrier system for electrical system components with a minimum 2-hour fire rating.

(4) Be protected by a listed fire-rated assembly that has a minimum fire rating of 2 hours and contains only emergency wiring circuits

(5) Be encased in a minimum of 50 mm (2 in) of concrete

(2) Feeder-Circuit Equipment. Equipment for feeder circuits (transfer switches, transformers, panel boards) shall be either located in spaces fully protected by approved automatic fire suppression systems (including sprinklers and carbon dioxide systems) or in spaces with a 2-hour fire resistance rating.

(3) Generator Control Wiring. Control conductors installed between the transfer equipment and the emergency generator shall be kept entirely independent of all other wiring and shall meet the conditions of 700.10(D)(1)

III. Sources of Power

700.12. General Requirements. Current supply shall be such that, in the event of failure of the normal supply to, or within, the building or group of buildings concerned, emergency lighting, emergency power, or both will be available within the time required for the application but not to exceed 10 seconds. The supply system for emergency purposes, in addition to the normal services to the building and meeting the general requirements of this section, shall be one or more of the types of systems described in 700.12(A) through (D) below. Unit equipment in accordance with Section 700.12(E) shall satisfy the applicable requirements of this article.

In selecting an emergency source of power, consideration shall be given to the occupancy and the type of service to be rendered, whether of minimum duration, as for evacuation of a theater, or longer duration, as for supplying emergency power and lighting due to an indefinite period of current failure from trouble either inside or outside the building.

Equipment shall be designed and located to minimize the hazards that might cause complete failure due to flooding, fires, icing, and vandalism.

Equipment for sources of power as described in Sections 700.12(A) through (E) where located within assembly occupancies for greater than 1000 persons or in buildings above 23 m (75 ft) in height with any of the following occupancy classes: assembly, educational, residential, detention and correctional, business, and mercantile, shall be installed either in spaces fully protected by approved automatic fire suppression systems (sprinklers, carbon dioxide systems, and so

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forth), or in spaces with a 1-hour fire rating.

Informational note No. 1: For definition of Occupancy Classification, see Section 6.1of NFPA 101-2009, Life Safety Code.

Informational note No. 2: Assignment of degree of reliability of the recognized emergency supply system depends on the careful evaluation of the variables at each particular installation. For further information, see ANSI/IEEE 493-2007, Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems.

(A) Storage Battery. Storage batteries used as source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for a period of 1 1/2 hours minimum, without the voltage applied to the load falling below 87 1/2 percent of normal.

Batteries, whether of the acid or alkali type, shall be designed and constructed to meet the requirements of emergency service and shall be compatible with the charger for that particular installation.

For a sealed battery, the container shall not be required to be transparent. However, for the lead acid battery that requires water additions, transparent or translucent jars shall be furnished.

Automotive-type batteries shall not be used.

An automatic battery charging means shall be provided.

(B) Generator Set.

(1) Prime Mover-Driven. For a generator set driven by a prime mover acceptable to the authority having jurisdiction and sized in accordance with Section 700-5. Means shall be provided for automatically starting the prime mover on failure of the normal service and for automatic transfer and operation of all required electrical circuits. A time-delay feature permitting a 15-minute setting shall be provided to avoid retransfer in case of short-time reestablishment of the normal source.

(2) Internal Combustion Engines as Prime Movers. Where internal combustion engines are used as the prime mover an on-site fuel supply shall be provided with an on-premise fuel supply sufficient for not less than 2 hours full-demand operation of the system. Where power is needed for the operation of the fuel transfer pumps to deliver fuel to a generator set dry tank, this pump shall be connected to the emergency power system.

(3) Dual Supplies. Prime movers shall not be solely dependent upon a public utility gas system for their fuel supply or municipal water supply for their cooling systems. Means shall be provided for automatically transferring from one fuel supply to another where dual fuel supplies are used.

Exception: Where acceptable to the authority having jurisdiction, the use of other than on-site fuels shall be permitted where there is a low probability of a simultaneous failure of both the off-site fuel delivery system and power from the outside electrical utility company.

(4) Where a storage battery is used for control or signal power, or as the means of starting the prime mover, it shall be suitable for the purpose and shall be equipped with an automatic charging means independent of the generator set. Where the battery charger is required for the operation of the generator set, it shall be connected to the emergency system. Where power is required for the operation of dampers used to ventilate the generator set, the dampers shall be connected to the emergency system.

(5) Auxiliary Power Supply. Generator sets that require more than 10 seconds to develop power shall be permitted is an auxiliary power supply energizes the emergency system until the generator can pick up the load.

(6) Outdoor Generator Sets. Where an outdoor housed generator set is equipped with a readily accessible disconnecting means located within sight of the building or structure supplied, an additional disconnecting means shall not be required where ungrounded conductors serve or pass through the building or structure. The disconnecting means shall meet the requirements of 225.36.

Exception: For installations under single management where conditions of maintenance and supervision ensure that only qualified persons will monitor and service the installation and where documented safe switching procedures are established and maintained for disconnection, the generator set disconnecting means shall not be required to be located within sight of the building of structure served.

(C) Uninterruptible Power Supplies. Uninterruptible power supplies used to provide power for emergency systems shall comply with the applicable provisions of Sections 700-12(A) and (B).

(D) Separate Service. Where acceptable to the authority having jurisdiction as suitable for use as an emergency source of power, an additional service shall be permitted. This service shall be in accordance with the applicable provisions of Article 230 and following additional requirements.

(1) Separate service drop or service lateral

(2) Service conductors sufficiently remote electrically and physically from any other service conductors to minimize the possibility of simultaneous interruption of supply

(E) Fuel Cell System. Fuel Cell Systems used as a source of power for emergency systems shall be of suitable rating and capacity to supply and maintain the total load for not less than 2 hours of full demand operation.

Installation of a fuel cell system shall meet the requirements of Parts II through VIII of Article 692. Where a single fuel cell system serves as the normal supply for the building or group of buildings concerned, it shall not serve as the sole source of power for the emergency standby system.

(F) Unit Equipment. Individual unit equipment for emergency illumination shall consist of the following:

(1) A rechargeable battery

(2) A battery charging means

(3) Provisions for one or more lamps mounted on the equipment, or shall be permitted to have terminals for remote lamps, or both and

(4) A relaying device arranged to energize the lamps automatically upon failure of the supply to the unit equipment.

The batteries shall be of suitable rating and capacity to supply and maintain at not less than

87 1/2 percent of the nominal battery voltage for the total lamp load associated with the unit for a period of at least 1 1/2 hours, or the unit equipment shall supply and maintain not less than 60 percent of the initial emergency illumination for a period of at least 1 1/2 hours. Storage batteries, whether of the acid or alkali type, shall be designed and constructed to meet the requirements of emergency service.

Unit equipment shall be permanently fixed in place (i.e., not portable) and shall have all wiring to each unit installed in accordance with the requirements of any of the wiring methods in Chapter 3.

Flexible cord and plug connection shall be permitted, provided that the cord does not exceed

3 ft (900 mm) in length. The branch circuit feeding the unit equipment shall be the same branch circuit as that serving the normal lighting in the area and connected ahead of any local switches. The branch circuit that feeds unit equipment shall be clearly identified at the distribution panel. Emergency

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luminaire's (illumination fixtures) that obtain power from a unit equipment and are not part of the unit equipment shall be wired to the unit equipment as required by Section 700-10 and by one of the wiring methods of Chapter 3.

Exception No. 1: In a separate and uninterrupted area supplied by a minimum of three normal lighting circuits, a separate branch circuit for unit equipment shall be permitted if it originates from the same panelboard as that of the normal lighting circuits and is provided with a lock-on feature.

Exception No. 2: Remote heads providing lighting for the exterior of an exit door shall be permitted to be supplied by the unit equipment serving the area immediately inside the exit door.

IV. Emergency System Circuits for Lighting and Power

700.15. Loads on Emergency Branch Circuits. No appliances and no lamps, other than those specified as required for emergency use, shall be supplied by emergency lighting circuits.

700.16. Emergency illumination. Emergency illumination shall include all required means of egress lighting, illuminated exit signs, and all other lights specified as necessary to provide required illumination.

Emergency lighting systems shall be designed and installed so that the failure of any individual lighting element, such as the burning out of a light bulb, cannot leave in total darkness any space that requires emergency illumination.

Where high-intensity discharge lighting such as high- and low-pressure sodium mercury vapor, and metal halide is used as the sole source of normal illumination, the emergency lighting system shall be required to operate until normal illumination has been restored.

Exception: Where alterative means that ensure the emergency lighting illumination level is maintained shall be permitted.

700.17. Branch Circuits for Emergency Lighting. Branch circuits that supply emergency lighting shall be installed to provide service from a source complying with Section 700-12 when the normal supply for lighting is interrupted. Such installations shall provide either one of the following:

(1) An emergency lighting supply, independent of the normal lighting supply, with provisions for automatically transferring the emergency lights upon the event of failure of the normal lighting branch circuit
(2) Two or more branch circuits supplied from separate and complete systems with independent power sources. One of the two power sources and systems shall be part of the emergency system and the other shall be permitted to be part of the normal power source and system. Each system shall provide sufficient power for emergency lighting purposes.

Unless both systems are used for regular lighting purposes and are both kept lighted, means shall be provided for automatically energizing either system upon failure of the other. Either or both systems shall be permitted to be a part of the general lighting of the protected occupancy if circuits supplying lights for emergency illumination arc installed in accordance with other sections of this article.

700.18. Circuits for Emergency Power. For branch circuits that supply equipment classed as emergency, there shall be an emergency supply source to which the load will be transferred automatically upon the failure of the normal supply.

V. Control—Emergency Lighting Circuits

700.20. Switch Requirements. The switch or switches installed in emergency lighting circuits shall be arranged so that only authorized persons will have control of emergency lighting.

Exception No. 1: Where two or more single-throw switches are connected in parallel to control a single circuit, at least one of these switches shall be accessible only to authorized persons.

Exception No. 2: Additional switches that act only to put emergency lights into operation but not disconnect them shall be permissible.

Switches connected in series or 3- and 4-way switches shall not be used.

700.21. Switch Location. All manual switches for controlling emergency circuits shall be in locations convenient to authorized persons responsible for their actuation. In facilities covered by Articles 518 and 520, a switch for controlling emergency lighting systems shall be located in the lobby or at a place conveniently accessible thereto. In no case shall a control switch for emergency lighting be placed in a motion-picture projection booth or on a stage or platform.

Exception: Where multiple switches are provided, one such switch shall be permitted in such locations where arranged so that it can energize the circuit only, but cannot deenergize the circuit.

700.22. Exterior Lights. Those lights on the exterior of a building that are not required for illumination when there is sufficient daylight shall be permitted to be controlled by an automatic light-actuated device.

700.23 Dimmer Systems. A dimmer system containing more than one dimmer and listed for use in emergency systems shall be permitted to be used as a control device for energizing emergency lighting circuits. Upon failure of normal power, the dimmer system shall be permitted to selectively energize only those branch circuits required to provide minimum emergency illumination. All branch circuits supplied by the dimmer system cabinet shall comply with the wiring methods of Article 700.

700.24 Automatic Load Control Relay. If an emergency lighting load is automatically energized upon loss of the normal supply, a listed automatic load control relay shall be permitted to energize the load. The load control relay shall not be used to transfer equipment.

VI. Overcurrent Protection

700-25. Accessibility. The branch-circuit overcurrent devices in emergency circuits shall be accessible to authorized persons only.

(FPN): Fuses and circuit breakers for emergency circuit overcurrent protection where coordinated to ensure selective clearing of fault currents, increase overall reliability of the system.

700-26. Ground-Fault Protection of Equipment. The alternate source for emergency systems shall not be required to have ground-fault protection of equipment with automatic disconnecting means. ground-fault indication of the emergency source shall be provided in accordance with Section 700.6(D).

700-27. Coordination. Emergency system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.

Exception: Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.

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7.8 Illumination of Means of Egress.

7.8.1 General.

7.8.1.1* Illumination of means of egress shall be provided in accordance with Section 7.8 for every building and structure where required in Chapters 11 through 43. For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairs, aisles, corridors, ramps, escalators, walkways, and exit passageways leading to a public way.

7.8.1.2 Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use, unless otherwise provided in 7.8.1.2.2.

7.8.1.2.1 Artificial lighting shall be employed at such locations and for such periods of time as are necessary to maintain the illumination to the minimum criteria values herein specified.

7.8.1.2.2 Unless prohibited by Chapters 11 through 43, automatic, motion sensor–type lighting switches shall be permitted within the means of egress, provided that the switch controllers comply with all of the following:

(1) The switch controllers are listed.

(2) The switch controllers are equipped for fail-safe operation, the and evaluated for this purpose.

(3) The illumination timers are set for a minimum 15-minute duration, and the duration.

(4) The motion sensor is activated by any occupant movement in the area served by the lighting units.

(5) The switch controller is activated by activation of the building fire alarm system, if provided.

7.8.1.2.3* Energy-saving sensors, switches, timers, or controllers shall be approved and shall not compromise the continuity of illumination of the means of egress required by 7.8.1.2.

7.8.1.3* The floors and other walking surfaces within an exit and within the portions of the exit access and exit discharge designated in 7.8.1.1 shall be illuminated as follows:

(1) During conditions of stair use, the minimum illumination for new stairs shall be at least 10 ft-candle (108 lux), measured at the walking surfaces.

(2) The minimum illumination for floors and walking surfaces, other than new stairs during conditions of stair use, shall be to values of at least 1 ft-candle (10.8 lux), measured at the floor.

(3) In assembly occupancies, the illumination of the walking surfaces of exit access shall be at least 0.2 ft-candle (2.2 lux) during periods of performances or projections involving directed light.

(4)*The minimum illumination requirements shall not apply where operations or processes require low lighting levels.

7.8.1.4* Required illumination shall be arranged so that the failure of any single lighting unit does not result in an illumination level of less than 0.2 ft-candle (2.2 lux) in any designated area.

7.8.1.5 The equipment or units installed to meet the requirements of Section 7.10 also shall be permitted to serve the function of illumination of means of egress, provided that all requirements of Section 7.8 for such illumination are met.

7.8.2 Sources of Illumination.

7.8.2.1* Illumination of means of egress shall be from a source considered reliable by the authority having jurisdiction.

7.8.2.2 Battery-operated electric lights and other types of portable lamps or lanterns shall not be used for primary illumination of means of egress. Battery-operated electric lights shall be permitted to be used as an emergency source to the extent permitted under Section 7.9.

7.9 Emergency Lighting.

7.9.1 General.

7.9.1.1* Emergency lighting facilities for means of egress shall be provided in accordance with Section 7.9 for the following:

(1) Buildings or structures where required in Chapters 11 through 43

(2) Underground and limited access structures as addressed in Section 11.7

(3) High-rise buildings as required by other sections of this Code

(4) Doors equipped with delayed-egress locks

(5) Stair shafts and vestibules of smoke proof enclosures, for which the following also apply:

(a) The stair shaft and vestibule shall be permitted to include a standby generator that is installed for the smoke proof enclosure mechanical ventilation equipment.

(b) The standby generator shall be permitted to be used for the stair shaft and vestibule emergency lighting power supply.

(6) New access-controlled egress doors in accordance with 7.2.1.6.2.

7.9.1.2 For the purposes of 7.9.1.1, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of 7.9.1.1, exit discharge shall include only designated stairs, ramps, aisles, walkways, and escalators leading to a public way.

7.9.1.3 Where maintenance of illumination depends on changing from one energy source to another, a delay of not more than 10 seconds shall be permitted.

7.9.2 Performance of System.

7.9.2.1* Emergency illumination shall be provided for a minimum of 1½ hours in the event of failure of normal lighting. Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point, not less than 0.1 ft-candle (1.1 lux), measured along the path of egress at floor level. Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle (6.5 lux) and, at any point, not less than 0.06 ft-candle (0.65 lux) at the end of 1½ hours. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

7.9.2.2 New emergency power systems for emergency lighting shall be at least Type 10, Class 1.5, Level 1, in accordance with NFPA110, Standard for Emergency and Standby Power Systems.

7.9.2.3* The emergency lighting system shall be arranged to provide the required illumination automatically in the event of any interruption of normal lighting due to any of the following:

(1) Failure of a public utility or other outside electrical power supply

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Life Safety Code® *(continued)*

(2) Opening of a circuit breaker or fuse

(3) Manual act(s), including accidental opening of a switch controlling normal lighting facilities

7.9.2.4 Emergency generators providing power to emergency lighting systems shall be installed, tested, and maintained in accordance with NFPA 110, Standard for Emergency and Standby Power Systems. Stored electrical energy systems, where required in this Code, other than battery systems for emergency luminaires

in accordance with 7.9.2.5, shall be installed and tested in accordance with NFPA 111, *Standard on Stored Electrical Energy Emergency and Standby Power Systems.*

7.9.2.5 Unit equipment and battery systems for emergency luminaires shall be listed to ANSI/UL 924, Standard for Emergency Lighting and Power Equipment.

7.9.2.6* Existing battery-operated emergency lights shall use only reliable types of rechargeable batteries provided with suitable facilities for maintaining them in properly charged condition. Batteries used in such lights or units shall be approved for their intended use and shall comply with NFPA 70, National Electrical Code.

7.9.2.7 The emergency lighting system shall be either continuously in operation or shall be capable of repeated automatic operation without manual intervention.

7.9.3 Periodic Testing of Emergency Lighting Equipment.

7.9.3.1 Required emergency lighting systems shall be tested in accordance with one of the three options offered by 7.9.3.1.1, 7.9.3.1.2, or 7.9.3.1.3.

7.9.3.1.1 Testing of required emergency lighting systems shall be permitted to be conducted as follows:

(1) Functional testing shall be conducted monthly, with a minimum of 3 weeks and a maximum of 5 weeks between tests, for not less than 30 seconds, except as otherwise permitted by 7.9.3.1.1(2).

(2)* The test interval shall be permitted to be extended beyond 30 days with the approval of the authority having jurisdiction.

(3) Functional testing shall be conducted annually for a minimum of 1½ hours if the emergency lighting system is battery powered.

(4) The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.1(1) and (3).

(5) Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

7.9.3.1.2 Testing of required emergency lighting systems shall be permitted to be conducted as follows:

(1) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall be provided.

(2) Not less than once every 30 days, self-testing/self-diagnostic battery-operated emergency lighting equipment shall automatically perform a test with a duration of a minimum of 30 seconds and a diagnostic routine.

(3) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall indicate failures by a status indicator.

(4) A visual inspection shall be performed at intervals not exceeding 30 days.

(5) Functional testing shall be conducted annually for a minimum of 1½ hours.

(6) Self-testing/self-diagnostic battery-operated emergency lighting equipment shall be fully operational for the duration of the 1½-hour test.

(7) Written records of visual inspections and tests shall be kept by the owner for inspection by the authority having jurisdiction.

7.9.3.1.3 Testing of required emergency lighting systems shall be permitted to be conducted as follows:

(1) Computer-based, self-testing/self-diagnostic battery-operated emergency lighting equipment shall be provided.

(2) Not less than once every 30 days, emergency lighting equipment shall automatically perform a test with a duration of a minimum of 30 seconds and a diagnostic routine.

(3) The emergency lighting equipment shall automatically perform annually a test for a minimum of 1½ hours.

(4) The emergency lighting equipment shall be fully operational for the duration of the tests required by 7.9.3.1.3(2) and (3).

(5) The computer-based system shall be capable of providing a report of the history of tests and failures at all times.

7.10 Marking of Means of Egress.

7.10.1 General.

7.10.1.1 Where Required. Means of egress shall be marked in accordance with Section 7.10 where required in Chapters 11 through 43.

7.10.1.2 Exits.

7.10.1.2.1* Exits, other than main exterior exit doors that obviously and clearly are identifiable as exits, shall be marked by an approved sign that is readily visible from any direction of exit access.

7.10.1.2.2* Horizontal components of the egress path within an exit enclosure shall be marked by approved exit or directional exit signs where the continuation of the egress path is not obvious.

7.10.1.3 Exit Door Tactile Signage. Tactile signage shall be provided to meet all of the following criteria, unless otherwise provided in 7.10.1.4:

(1) Tactile signage shall be located at each exit door requiring an exit sign.

(2) Tactile signage shall read as follows: EXIT.

(3) Tactile signage shall comply with ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

7.10.1.4 Existing Exemption. The requirements of 7.10.1.3 shall not apply to existing buildings, provided that the occupancy classification does not change.

7.10.1.5 Exit Access.

7.10.1.5.1 Access to exits shall be marked by approved, readily visible signs in all cases where the exit or way to reach the exit is not readily apparent to the occupants.

7.10.1.5.2* New sign placement shall be such that no point in an exit access corridor is in excess of the rated viewing distance or 100 ft (30 m), whichever is less, from the nearest sign.

Life Safety Code® *(continued)*

7.10.1.6* Floor Proximity Exit Signs. Where floor proximity exit signs are required in Chapters 11 through 43, such signs shall comply with 7.10.3, 7.10.4, 7.10.5, and 7.10.6 for externally illuminated signs and 7.10.7 for internally illuminated signs. Such signs shall be located near the floor level in addition to those signs required for doors or corridors. The bottom of the sign shall be not less than 6 in. (150 mm), but not more than 18 in.(455 mm), above the floor. For exit doors, the sign shall be mounted on the door or adjacent to the door, with the nearest edge of the sign within 4 in. (100 mm) of the door frame.

7.10.1.7* Floor Proximity Egress Path Marking. Where floor proximity egress path marking is required in Chapters 11 through 43, an approved floor proximity egress path marking system that is internally illuminated shall be installed within 18 in. (455 mm) of the floor. Floor proximity egress path marking systems shall be listed in accordance with ANSI/UL 1994, Standard for Luminous Egress Path Marking Systems. The system shall provide a visible delineation of the path of travel along the designated exit access and shall be essentially continuous, except as interrupted by doorways, hallways, corridors, or other such architectural features. The system shall operate continuously or at any time the building fire alarm system is activated. The activation, duration, and continuity of operation of the system shall be in accordance with 7.9.2. The system shall be maintained in accordance with the product manufacturing listing.

7.10.1.8* Visibility. Every sign required in Section 7.10 shall be located and of such size, distinctive color, and design that it is readily visible and shall provide contrast with decorations, interior finish, or other signs. No decorations, furnishings, or equipment that impairs visibility of a sign shall be permitted. No brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision of the required exit sign that could detract attention from the exit sign shall be permitted.

7.10.1.9 Mounting Location. The bottom of new egress markings shall be located at a vertical distance of not more than 6 ft 8 in. (2030 mm) above the top edge of the egress opening intended for designation by that marking. Egress markings shall be located at a horizontal distance of not more than the required width of the egress opening, as measured from the edge of the egress opening intended for designation by that marking to the nearest edge of the marking.

7.10.2 Directional Signs.

7.10.2.1* A sign complying with 7.10.3, with a directional indicator showing the direction of travel, shall be placed in every location where the direction of travel to reach the nearest exit is not apparent.

7.10.2.2 Directional exit signs shall be provided within horizontal components of the egress path within exit enclosures as required by 7.10.1.2.2.

7.10.3* Sign Legend.

7.10.3.1 Signs required by 7.10.1 and 7.10.2 shall read as follows in plainly legible letters, or other appropriate wording shall be used:

EXIT

7.10.3.2* Where approved by the authority having jurisdiction, pictograms in compliance with NFPA 170, *Standard for Fire Safety and Emergency Symbols*, shall be permitted.

7.10.4* Power Source. Where emergency lighting facilities are required by the applicable provisions of Chapters 11 through 43 for individual occupancies, the signs, other than approved self-luminous signs and listed photoluminescent signs in accordance with 7.10.7.2, shall be illuminated by the emergency lighting facilities. The level of illumination of the signs shall be in accordance with 7.10.6.3 or 7.10.7 for the required emergency lighting duration as specified in 7.9.2.1. However, the level of illumination shall be permitted to decline to 60 percent at the end of the emergency lighting duration.

7.10.5 Illumination of Signs.

7.10.5.1* General. Every sign required by 7.10.1.2, 7.10.1.5, or 7.10.8.1, other than where operations or processes require low lighting levels, shall be suitably illuminated by a reliable light source. Externally and internally illuminated signs shall be legible in both the normal and emergency lighting mode.

7.10.5.2* Continuous Illumination.

7.10.5.2.1 Every sign required to be illuminated by 7.10.6.3, 7.10.7, and 7.10.8.1 shall be continuously illuminated as required under the provisions of Section 7.8, unless otherwise provided in 7.10.5.2.2.

7.10.5.2.2* Illumination for signs shall be permitted to flash on and off upon activation of the fire alarm system.7.10.6 Externally Illuminated Signs.

7.10.6.1* Size of Signs.

7.10.6.1.1 Externally illuminated signs required by 7.10.1 and 7.10.2, other than approved existing signs, unless otherwise provided in 7.10.6.1.2, shall read EXIT or shall use other appropriate wording in plainly legible letters sized as follows:

(1) For new signs, the letters shall be not less than 6 in. (150 mm) high, with the principal strokes of letters not less than ¾ in. (19 mm) wide.

(2) For existing signs, the required wording shall be permitted to be in plainly legible letters not less than 4 in. (100 mm) high.

(3) The word EXIT shall be in letters of a width not less than 2 in. (51 mm), except the letter I, and the minimum spacing between letters shall be not less than ⅜ in. (9.5 mm).

(4) Sign legend elements larger than the minimum established in 7.10.6.1.1(1) through (3) shall use letter widths, strokes, and spacing in proportion to their height.

7.10.6.1.2 The requirements of 7.10.6.1.1 shall not apply to marking required by 7.10.1.3 and 7.10.1.7.

7.10.6.2* Size and Location of Directional Indicator.

7.10.6.2.1 Directional indicators, unless otherwise provided in 7.10.6.2.2, shall comply with all of the following:

(1) The directional indicator shall be located outside of the EXIT legend, not less than ⅜ in. (9.5 mm) from any letter.

(2) The directional indicator shall be of a chevron type, as shown in Figure 7.10.6.2.1.

(3) The directional indicator shall be identifiable as a directional indicator at a distance of 40 ft (12 m).

(4) A directional indicator larger than the minimum established for compliance with 7.10.6.2.1(3) shall be proportionately increased in height, width, and stroke.

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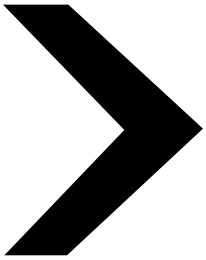
(5) The directional indicator shall be located at the end of the sign for the direction indicated.



7.10.6.2.1 Chevron Type Indicator.

7.10.6.2.2 The requirements of 7.10.6.2.1 shall not apply to approved existing signs.

7.10.6.3* Level of Illumination. Externally illuminated signs shall be illuminated by not less than 5 ft-candles (54 lux) at the illuminated surface and shall have a contrast ratio of not less than 0.5.

7.10.7 Internally Illuminated Signs.

7.10.7.1 Listing. Internally illuminated signs shall be listed in accordance with ANSI/UL 924, Standard for Emergency Lighting and Power Equipment, unless they meet one of the following criteria:

(1) They are approved existing signs.

(2) They are existing signs having the required wording in legible letters not less than 4 in. (100 mm) high.

(3) They are signs that are in accordance with 7.10.1.3 and 7.10.1.6.

7.10.7.2* Photoluminescent Signs. The face of a photoluminescent sign shall be continually illuminated while the building is occupied. The illumination levels on the face of the photoluminescent sign shall be in accordance with its listing. The charging illumination shall be a reliable light source, as determined by the authority having jurisdiction. The charging light source, shall be of a type specified in the product markings.

7.10.8 Special Signs.

7.10.8.1 Sign Illumination.

7.10.8.1.1 Where required by other provisions of this Code, special signs shall be illuminated in accordance with 7.10.5, 7.10.6.3, and 7.10.7.

7.10.8.1.2 Where emergency lighting facilities are required by the applicable provisions of Chapters 11 through 43, the required illumination of special signs shall additionally be provided under emergency lighting conditions.

7.10.8.2 Characters. Special signs, where required by other provisions of this Code, shall comply with the visual character requirements of ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

7.10.8.3* No Exit.

7.10.8.3.1 Any door, passage, or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified by a sign that reads as follows:

NO
EXIT

7.10.8.3.2 The NO EXIT sign shall have the word NO in letters 2 in. (51 mm) high, with a stroke width of ⅜ in. (9.5 mm), and the word EXIT in letters 1 in. (25 mm) high, with the word EXIT below the word NO, unless such sign is an approved existing sign.

7.10.8.4 Elevator Signs. Elevators that are a part of a means of egress (see 7.2.13.1) shall have both of the following signs with a minimum letter height of ⅝ in. (16 mm) posted in every elevator lobby:

(1) *Signs that indicate that the elevator can be used for egress, including any restrictions on use

(2) *Signs that indicate the operational status of elevators

7.10.8.5* Evacuation Diagram. Where a posted floor evacuation diagram is required in Chapters 11 through 43, floor evacuation diagrams reflecting the actual floor arrangement and exit locations shall be posted and oriented in a location and manner acceptable to the authority having jurisdiction.

7.10.9 Testing and Maintenance.

7.10.9.1 Inspection. Exit signs shall be visually inspected for operation of the illumination sources at intervals not to exceed 30 days or shall be periodically monitored in accordance with 7.9.3.1.3.

7.10.9.2 Testing. Exit signs connected to, or provided with, a battery-operated emergency illumination source, where required in 7.10.4, shall be tested and maintained in accordance with 7.9.3.

Technical Information

Limited Warranty

1.0 **EMERGI-LITE®** 6, 12 and 24 volt Emergency Lighting Unit Equipment (excluding lamps and fuses) are fully warranted to be free of defects in material and workmanship under normal use for a period of three years from date of installation (see Paragraph 2.0).

1.1 **EMERGI-LITE®** 6, 12 and 24 volt Unit Equipment Batteries are warranted as follows (Warrant below includes the 3-year full warranty on entire unit as called out in Paragraph 1.0).

1.2 **EMERGI-LITE®** volt Emergency Lighting Unit Equipment (excluding lamps, and fuses) is fully warranted to be free of defects in material and workmanship under normal use for a period of one year from date of installation (see Paragraph 2.0).

BATTERY TYPE	LIFE EXPECTANCY	SHELF LIFE*	FULL WARRANTY	PRO RATA WARRANTY
Sealed Lead-Calcium	8 years	6 months	3 years	3 years
Sealed Lead-Calcium (Immobilized Electrolyte)	12 years	6 months	5 years	5 years
Sealed Long Life Lead	12 years	6 months	5 years	5 years
Sealed Nickel-Cadmium	15 years	1 year	5 years	7 years
Refillable Lead-Calcium	15 years	6 months	3 years	8 years
Refillable Nickel-Cadmium	15 years	2 years	5 years	7 years

***Maximum Storage life. Must Be Recharged If Not Placed in Service Or Battery Warranty Void**

2.0 The full warranty period begins on the date of installation or 90 days from date of shipment, whichever date is earlier.

2.1 Should a defect appear in the equipment or batteries listed in Paragraphs 1.0, 1.1 or 1.2 above within the specified full warranty period, Emergi-Lite® will repair or replace equipment without charge (see Paragraph 3.3). Such repair or replacement shall be the purchaser's exclusive remedy.

2.2 The Pro Rata Warranty Period for batteries begins on the date the full warranty period ends.

2.3 A battery determined to be defective during the Pro Rata Warranty Period shall be repaired or replaced at a cost equal to the net price in effect at the time, reduced by the percentage obtained in multiplying 10% by the number of full years remaining in the total warranty period. Such repair or replacement at this adjusted price shall be the purchaser's exclusive remedy.

3.0 All warranties are subject to proper installation and maintenance in accordance with the instructions supplied.

3.1 Any material deemed defective must be returned, freight prepaid, to the factory for evaluation (see Paragraph 5.0-5.3). Any changes in circuitry or components by other than authorized Emergi-Lite® personnel or its service companies will void the warranty.

3.2 All warranties are limited to the repair and/or replacement or parts or equipment, which, upon examination at our plant, are determined to be defective and in our judgement are subject to repair or replacement under warranty. Replacement of lamps and fuses is not included in the warranty.

3.3 If new replacement parts are shipped before defective goods are received for evaluation, the replacement parts will be invoiced at the net price in effect at that time. These charges will be credited if, upon receipt and evaluation of goods, a defect is determined. Only replacement parts will be shipped under these circumstances, if field replacement is possible. **EMERGI-LITE® FACTORY ONLY RESERVES THE RIGHT TO SHIP NEW UNIT EQUIPMENT FOR REPLACEMENT PURPOSES.** Units returned after installation cannot be restored to 100% saleable condition.

4.0 In no event shall Emergi-Lite® be liable for backcharges of any kind, including, without limitation, labor charges for field repair or late penalties.

4.1 This warranty does not cover damages caused by improper maintenance of installation or damage due to installation in areas with other than normal temperatures and environmental conditions per application specifications. Emergi-Lite® assumes no responsibility for any damage to people, property, apparatus or otherwise resulting from improper installation or maintenance of its Emergency Lighting Unit Equipment.

4.2 This warranty does not cover damages caused by abuse, fire or Act of God.

4.3 In no event shall Emergi-Lite® be liable for incidental or consequential damages.

4.4 The foregoing warranty is in lieu of all other warranties, expressed or implied, or merchantability, fitness for a particular purpose or any other thing. Except as stated in this warranty, Emergi-Lite® shall not be liable for any defects in, or breach of any contract relating to, the quality of performance of Emergi-Lite® Equipment under any theory of law including, without limitation, contract, negligence, strict liability or misrepresentation.

4.5 Emergi-Lite® warranty coverage shall not apply to any equipment of another manufacturer used in conjunction with Emergi-Lite® Equipment.

4.6 Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This written warranty gives you specific legal rights and you may also have other rights which vary from state to state.

5.0 No returned defective materials will be accepted without a Returned Goods Authorization issued in writing by an authorized Emergi-Lite® employee.

5.1 Purchaser is responsible for secure packing of returned materials to provide best possible assurance against damage in shipment.

5.2 Defective batteries of any kind must not be returned to Emergi-Lite's® factory without strict adherence to special instructions for handling and shipping. WARNING Never ship a refillable wet battery in any type of emergency lighting equipment. Failure to adhere to this policy will void warranty.

5.3 Defective goods returned to the factory must be shipped prepaid. COLLECT RETURNED SHIPMENT WILL BE REFUSED. Freight charges to return repaired equipment or ship replacement equipment to the purchaser to be paid by Emergi-Lite®. Factory will return repaired goods via same shipping method as received.

FAILURE TO COMPLY WITH ANY OF THE STIPULATIONS SET FORTH WILL VOID THE WARRANTY. ANY EXCEPTIONS TO THE FORGOING WARRANTY MUST BE REQUESTED AND ACCEPTED IN WRITING PRIOR TO SHIPMENT. EMERGI-LITE® EQUIPMENT NOT LISTED IN PARAGRAPHS 1.0, 1.1 OR 1.2 IS WARRANTED AS DESCRIBED ON ITS INDIVIDUAL DATA SHEET WITH THE STIPULATIONS AS STATED IN PARAGRAPHS 2.0-5.3.

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Amerace® Airfield Lighting

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Overview

Series Isolating Transformers

Mechanical

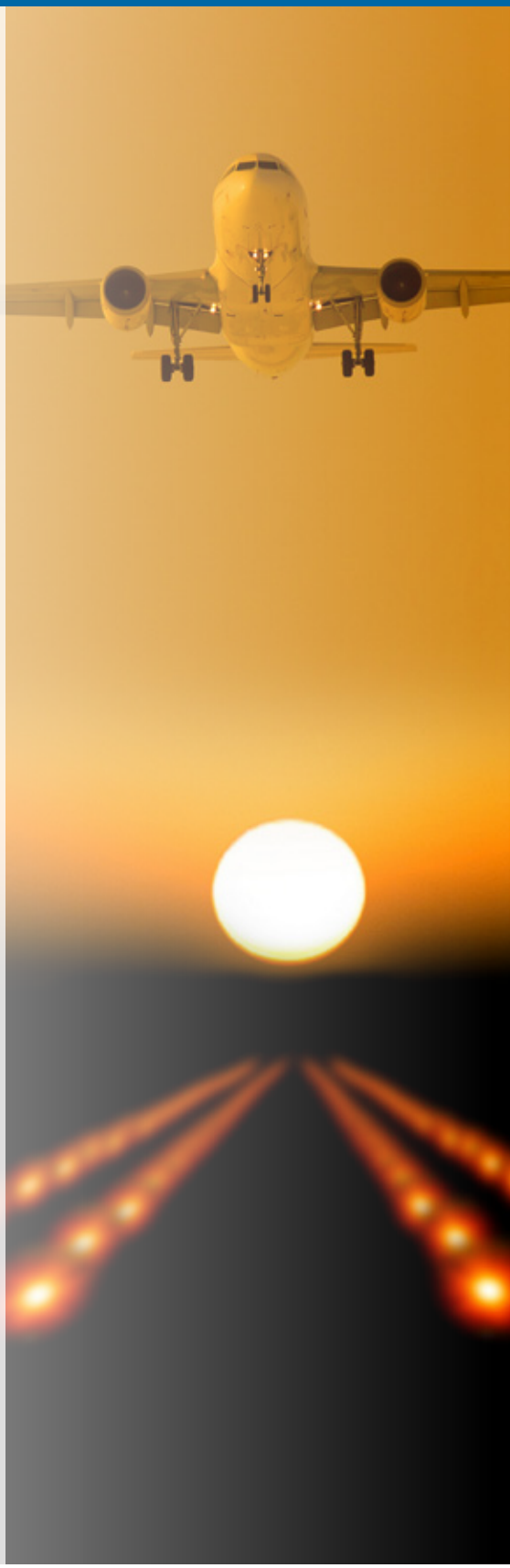
Core	Flat laminations (E&I) of high-grade, grain-oriented silicon steel for a long, stable life.
Encapsulant	TPR rubber (also known as TPV, TPE). Much higher dielectric strength and lower water absorption than older materials, such as epoxy, neoprene or polychloroprene. Minimal swelling in the presence of hydrocarbons, unlike neoprene, polychloroprene, etc.
Encapsulation process	Injection molding for maximum consistency of encapsulation, yielding exceptionally low leakage currents. Vacuum drawing prior to injection prevents air pockets inside. A far superior process to compression or transfer molding, or pouring.
Winding	Magnet wire on a plastic bobbin, specifically designed to electrically isolate the primary and secondary windings for maximum safety.
Connector pins and sockets	Tellurium copper, tin plated for corrosion resistance and excellent electrical power transmission.
Primary cables	Cable is AWG #8 (8.3 mm^2) Type C TPR for maximum reliability, 0.6 meter (24") with FAA Style 2 and FAA Style 9 connectors.
Secondary cable	Cable is AWG 2/12 (3.3 mm^2), 1.2 meters (48") with FAA L823 (standard) Style 8 or Style 7 connector.
Material compatibility	Transformer body, cables and connectors are all molded of TPR for perfect bonding.
Water proof	Amerace® transformers are designed and manufactured to operate submerged in water indefinitely.

Electrical

Insulation Level	Primary 5000V RMS; Secondary 600V RMS.
Insulation Resistance	• Minimum 7500 Megohms (tested hot with 15kV DC). • Typical 150,000 Megohms. • Much higher than that required by FAA.
Open Circuit Voltages	Less than three times the full load RMS value in all cases, generally much lower, when tested with sine waves.
Efficiencies	10–25W — min. 70% 45–500W — min. 80% to 95%, depending on the power rating.
Power Factor	> .97 for all.
Ratio	Flat response load curves for constant lamp brilliancy and long life.
Testing	• All units (100%) are hipotted and their ratio confirmed. • All ratio testing done with the appropriate frequency, 50 Hz or 60 Hz, for precision; no “conversion factors” used.

Environmental

Operating Temperature Range	-55° C to +65° C.
Contaminant Resistance	Suitable for areas contaminated with most oils, aircraft fuels, soil acids and alkalis and de-icing fluids; resistant to UV exposure and ozone.
Approvals/ Conformances/ Certification	Accepted in most countries. Formal approvals with FAA, CSA, US Military, STNA (France), etc. Also complies with ICAO and with IEC (a specification being prepared by TC 97). (India Specification IAF: compliance with Spec. No. CRI/ALE/107)
Installation Options	All types, including above ground, in concrete or other non-metallic pits, in metal cans or direct buried.



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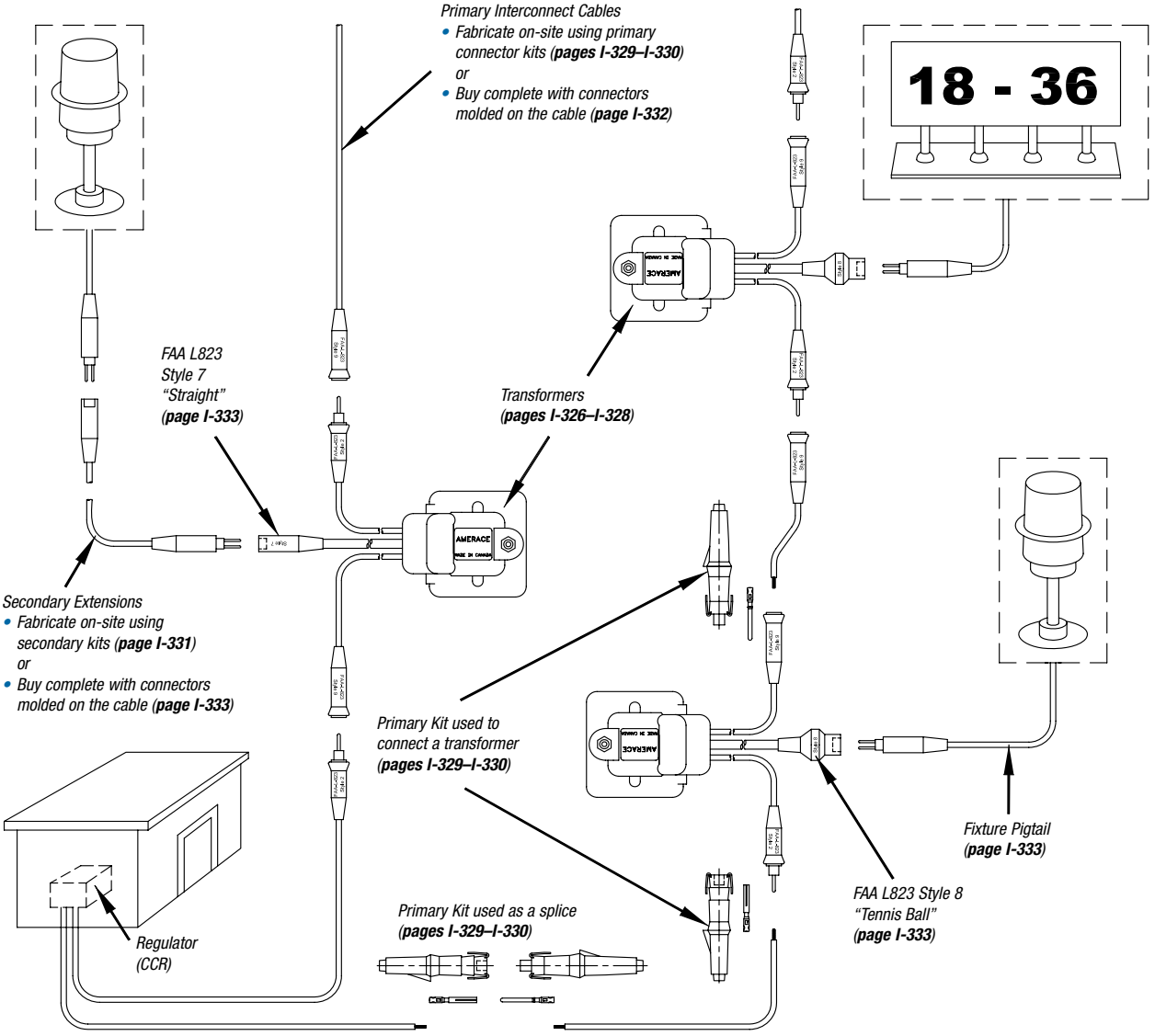
Overview

Product Index Guide for Typical Series Lighting Circuit



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Series Isolating Transformers

Amerace manufactures the world's broadest range of series isolating transformers. Many configuration choices are available:

- **Nominal Power (watts)** — 10/15, 20/25, 30/45, 65, 100, 150, 200, 250, 300, 400, 500
- **Primary/Secondary Current (A)** — 4, 4.4, 6.6, 8.3, 12, 20 in many combinations
- **Frequency (Hz)** — 50 or 60 "D" dual rated 50 and 60 Hz

The table **below** shows several available constructions.

Don't see what you want here?

Contact us with your requirements or go to our web site to create your own transformer.

FAA Style (Non–Earthed)

ICAO Style (with Earth Ground)

CONSTRUCTION	EARTHED	SECONDARY CONNECTOR	PRIMARY CONNECTORS
FAA	No	Style 7 or 8	Yes
US Military	No	Style 8	Yes
CSA (Canada)	Yes	Style 8	Yes
ICAO Style	Yes	Style 7 or 8	Yes
UK Style	Yes	Style 7 or 8	No
UK TISE	Yes	Style 7	No
IAF (India)*	No	Style 8	Yes
IEC	No/Yes	Style 7 or 8	Yes

** All molded connector contacts are nickel plated per IAF requirements.*
*Specifications References: FAA-AC No. 150/5345-47 CSA Standard No. C22.2 No. 180 IEC Standard ** in Ref: 61823*

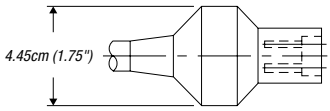
1. Secondary Connector configurations: _ _ _ _ _ _ _ -XX

- Suffix -01 denotes FAA Style 8 ("tennis ball")
- Suffix -10 denotes FAA Style 7 (straight)

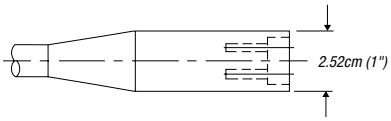
2. Grounded Transformers:

Unlike the FAA, ICAO recommends that each transformer have an earth (ground) connection for one side of the secondary (large socket, white wire). Any Amerace® transformer can be supplied with an earth stud to meet this recommendation. To specify, add the letter G to the catalog number. For example, a TA045666-01 would become a TAG045666-01.

Airport Equipment Qualified to FAA Specification AC 150/5345



Receptacle — Class A, Type II, Style 8



Receptacle — Class A, Type II, Style 7

FAA Specification L 830 60 Hz

CAT. NO.	FAA DESIGNATION	RATED WATTS	PRI/SEC. AMPS	FIG. (SEE PAGE I-90)	T DIM. (CM/IN.)	PRIMARY LEAD LENGTH (CM/IN.)	SEC. LEAD LENGTH (M/IN.)	WEIGHT (KG)	WEIGHT (LB.)
TA045666-XX	L830-1	30/45	6.6/6.6	2	8.6/3.4	60/24	1.2/48	2.4	5.2
TA045266-XX	L830-2	30/45	20/6.6	2	8.6/3.4	60/24	1.2/48	2.3	5.0
TA065666-XX	L830-3	65	6.6/6.6	2	8.6/3.4	60/24	1.2/48	2.4	5.25
TA10066D-XX	L830-4	100	6.6/6.6	3	8.9/3.5	60/24	1.2/48	3.5	7.7
TA100266-XX	L830-5	100	20/6.6	3	8.9/3.5	60/24	1.2/48	3.6	8.0
TA200666-XX	L830-6	200	6.6/6.6	4	9.1/3.6	60/24	1.2/48	4.9	10.8
TA200266-XX	L830-7	200	20/6.6	4	9.1/3.6	60/24	1.2/48	4.9	108
TA300626-XX	L830-8	300	6.6/20	4	11.4/4.5	60/24	1.2/48	6.9	15.1
TA300226-XX	L830-9	300	20/20	4	11.4/4.5	60/24	1.2/48	7.7	17
TA300666-XX	L830-10	300	6.6/6.6	4	11.4/4.5	60/24	1.2/48	7.2	15.8
TA300266-XX	L830-11	300	20/6.6	4	11.4/4.5	60/24	1.2/48	7.9	17.5
TA500626-XX	L830-12	500	6.6/20	4	12.5/4.9	60/24	1.2/48	8.0	17.6
TA500226-XX	L830-13	500	20/20	4	12.5/4.9	60/24	1.2/48	8.4	18.5
TA500666-XX	L830-14	500	6.6/6.6	4	12.5/4.9	60/24	1.2/48	8.0	17.6
TA500266-XX	L830-15	500	20/6.6	4	12.5/4.9	60/24	1.2/48	8.4	18.5
TA010666-XX	L830-16	10/15	6.6/6.6	1	6.6/2.6	60/24	1.2/48	1.30	2.88
TA025666-XX	L830-17	20/25	6.6/6.6	1	7.8/3.1	60/24	1.2/48	1.45	3.2
TA150666-XX	L830-18	150	6.6/6.6	3	8.9/3.5	60/24	1.2/48	3.6	8.0
TA150266-XX	L830-19	150	20/6.6	4	9.1/3.6	60/24	1.2/48	4.9	10.8

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Series Isolating Transformers

Airport Equipment Qualified to FAA Specification AC 150/5345

FAA Specification L 831 50 Hz

CAT. NO.	FAA DESIGNATION	RATED WATTS	PRI/SEC. AMPS	FIG. (SEE PAGE I-90)	T DIM. (CM/IN.)	PRIMARY LEAD LENGTH (CM/IN.)	SEC. LEAD LENGTH (M/IN.)	WEIGHT (KG)	WEIGHT (LB.)
TA045665-XX	L831-1	30/45	6.6/6.6	2	8.6/3.4	60/24	1.2/48	2.4	5.2
TA045265-XX	L831-2	30/45	20/6.6	2	8.6/3.4	60/24	1.2/48	2.3	5.0
TA065665-XX	L831-3	65	6.6/6.6	2	8.6/3.4	60/24	1.2/48	2.5	5.5
TA10066D-XX	L831-4	100	6.6/6.6	3	8.9/3.5	60/24	1.2/48	3.3	7.7
TA100265-XX	L831-5	100	20/6.6	3	8.9/3.5	60/24	1.2/48	3.6	8.0
TA200665-XX	L831-6	200	6.6/6.6	4	9.9/3.9	60/24	1.2/48	5.6	12.4
TA200265-XX	L831-7	200	20/6.6	4	9.9/3.9	60/24	1.2/48	5.9	13.0
TA300625-XX	L831-8	300	6.6/20	4	11.4/4.5	60/24	1.2/48	6.9	15.1
TA300225-XX	L831-9	300	20/20	4	11.4/4.5	60/24	1.2/48	7.7	17
TA300665-XX	L831-10	300	6.6/6.6	4	12.5/4.9	60/24	1.2/48	7.9	17.5
TA300265-XX	L831-11	300	20/6.6	4	11.4/4.5	60/24	1.2/48	7.9	17.5
TA500625-XX	L831-12	500	6.6/20	4	12.5/ 4.9	60/24	1.2/48	7.7	17.0
TA500225-XX	L831-13	500	20/20	4	12.5/4.9	60/24	1.2/48	8.4	18.5
TA500665-XX	L831-14	500	6.6/6.6	4	12.5/4.9	60/24	1.2/48	8.5	18.7
TA500265-XX	L831-15	500	20/6.6	4	12.5/4.9	60/24	1.2/48	8.5	18.7
TA010665-XX	L831-16	10/15	6.6/6.6	1	6.6/2.6	60/24	1.2/48	1.40	3.04
TA025665-XX	L831-17	20/25	6.6/6.6	1	7.8/3.1	60/24	1.2/48	1.45	3.20
TA150665-XX	L831-18	150	6.6/6.6	4	9.1/3.6	60/24	1.2/48	4.8	10.5
TA150265-XX	L831-19	150	20/6.6	4	9.1/3.6	60/24	1.2/48	4.9	10.8

Lay-In Ground Lug

CSA Certified Transformers (Canada) — With Lay-In Ground Lug

CAT. NO.	RATED WATTS	PRI/SEC. AMPS	FIG. (SEE PAGE I-90)	T DIM. (CM/IN.)	PRIMARY LEAD LENGTH (CM/IN.)	SEC. LEAD LENGTH (M/IN.)	WEIGHT (KG)	WEIGHT (LB.)
CTAG010666-XX	10/15	6.6/6.6	1	6.6/2.6	60/24	1.2/48	1.30	2.88
CTAG0255666-XX	20/25	6.6/6.6	1	7.8/3.1	60/24	1.2/48	1.45	3.20
CTAG045666-XX	30/45	6.6/6.6	2	8.6/3.4	60/24	1.2/48	2.4	5.2
CTAG04566D-XX	30/45	6.6/6.6	3	8.9/3.4	60/24	1.2/48	3.1	6.9
CTA10066D-XX	100	6.6/6.6	3	8.9/3.5	60/24	1.2/48	3.3	7.7
CTAG200666-XX	200	6.6/6.6	4	9.1/3.6	60/24	1.2/48	4.9	10.8
CTAG250626-XX	250	6.6/20	4	9.9/3.9	60/24	1.2/48	5.6	12.4
CTAG300666-XX	300	6.6/6.6	4	11.4/4.5	60/24	1.2/48	7.1	15.8
TAG500666-XX CS058	500	6.6/6.6	4	12.5/4.9	60/24	1.2/48	9.0	19.1

IAF Compliant Transformers (India)

CAT. NO.	RATED WATTS	PRI/SEC. AMPS	FIG. (SEE PAGE I-90)	T DIM. (CM/IN.)	PRIMARY LEAD LENGTH (CM/IN.)	SEC. LEAD LENGTH (M/IN.)	WEIGHT (KG)	WEIGHT (LB.)
TA045865-01 CS068	30/45	8.3/6.6	2	8.6/3.4	60/24	1.2/48	2.4	5.2
TA065865-01-CS069	65	8.3/6.6	2	8.9/3.4	60/24	1.2/48	3.3	7.7
TA200865-01 CS070	200	8.3/6.6	4	9.9/3.9	60/24	1.2/48	5.6	12.4

Series Isolating Transformers

Airport Equipment Qualified to FAA Specification AC 150/5345

Figure 1: Super Mini Format

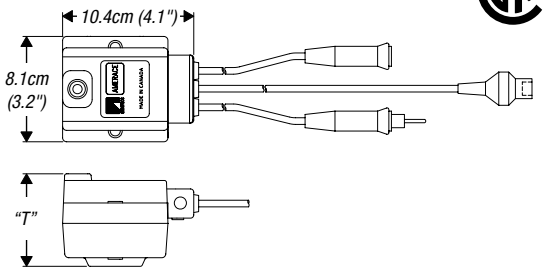


Figure 2: Mini Format

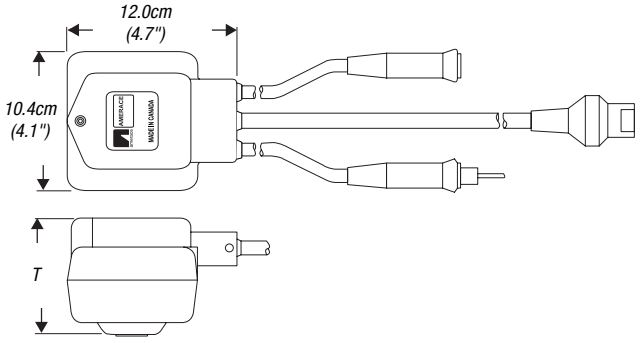


Figure 3: Midi Format

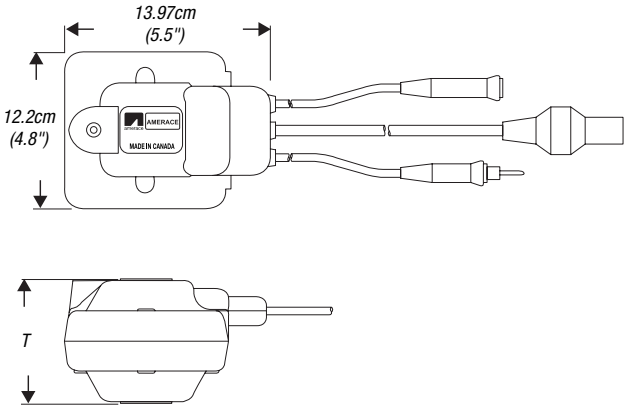
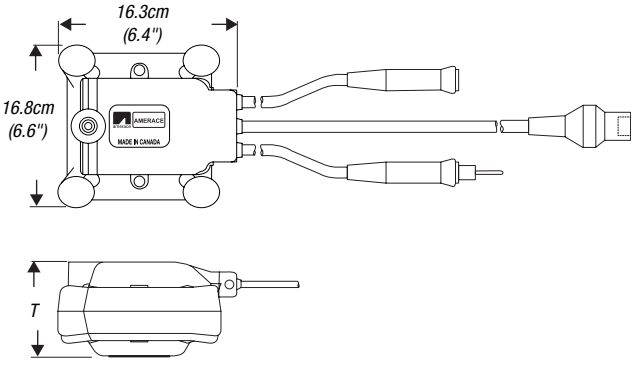


Figure 4: Maxi Format



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Fax: 416.292.1614
Email: amerace@tnb.com

www.amerace.com

Primary Connector Kits for Unscreened Cable

Airport Equipment Qualified to FAA Specification AC 150/5345

Electrical Rating

25 amps
5000 volts insulation

Construction

EPDM Rubber
Every kit filled with silicone

Shipping

.23kg (.5 lb. each)
11.5kg (25 lb.)

Suggested Crimping Tools

See **page I-336**

54 Super Kit (FAA L823: Style 3, Style 10)

54 Classic Kit (FAA L823: Style 3, Style 10)

Catalog Number Code

Model Number

54 = Classic

54 Super = Extra Features:

- Amerseal
- Superseal
- Positive Grip

Receptacle Housing

Cable Code — Outside diameter of cable: Select from Table 1

Conductor Code — Wire size: Select from Table 2

Plug Housing

Cable Code — Outside diameter of cable: Select from Table 1

Conductor Code — Wire size: Select from Table 2

***Example**: If a customer has a #8 AWG cable with an O.D. of .400" and desires the extra feature of the primary kit, the catalog code would be: 54SUPER-D4-D4*

Table 1

CABLE DIAMETER				
METRIC		IMPERIAL		SIZE CODE
MIN.	MAX.	MIN.	MAX.	
5.0	6.6	.195"	.260"	B*
6.4	8.4	.250"	.330"	C
8.1	10.9	.320"	.430"	D
9.4	12.9	.370"	.507"	Z
10.7	14.9	.420"	.585"	E
14.6	19.9	.575"	.785"	F

** 54 Classic Kit only includes adapter.*

Table 2

WIRE SIZE AND TYPE				
CONCENTRIC STRANDED		SOLID		SIZE CODE
MM^2	AWG	MM^2	AWG	
4–6	#10–#12	4–6	#8–#10	6
10	#8	10	#6	4
16	#6	16	#4	3
—	#4	—	—	2
—	#2	—	—	1

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Tel: 416.292.9782
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Email: amerace@tnb.com

Primary Connector Kits for Screened Cable

Airport Equipment Qualified to FAA Specification AC 150/5345

Electrical Rating

25 amps
5000 volts insulation

Shipping

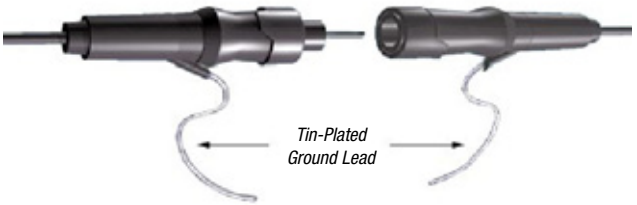
.23kg (.5 lb. each)
12kg (26.5 lb.)

Construction

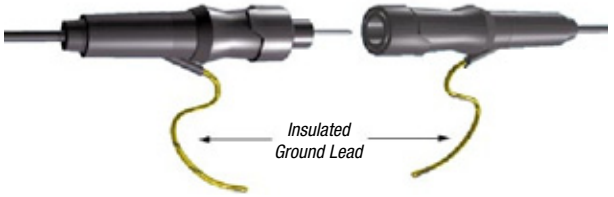
EPDM rubber
Every kit filled with silicone

Suggested Crimping Tools

See **page I-336**



52Super B Kit (FAA L823: Style 3, Style 10)



52Super I Kit (FAA L823: Style 3, Style 10)

Catalog Number Code

Model Number

52 Super = Connecting screened primary cable to Amerace® transformers or creating a separate splice in screened primary cable

Earth Wire:

B = Bare-tin plated

I = Insulated

Receptacle Housing

Cable Code — Outside diameter of jacket: Select from Table 1. Insulation diameter: Select from Table 1.

Conductor Code — Wire size: Select from Table 2.

Plug Housing

Cable Code — Outside diameter of jacket: Select from Table 1. Insulation diameter: Select from Table 1.

Conductor Code — Wire size: Select from Table 2.

***Example**: If a customer has a shielded cable that is:*
- #8 AWG
- Jacket O.D. of .500"
- Insulation diameter of .400"
- Insulated grounding wire
Catalog Code would be: 52SUPER-I-ED4-ED4

Table 1

CABLE DIAMETER				SIZE CODE
METRIC		IMPERIAL		
MIN.	MAX.	MIN.	MAX.	
6.4	8.4	.250"	.330"	C
8.1	10.9	.320"	.430"	D
10.7	14.9	.420"	.585"	E
14.6	19.9	.575"	.785"	F

Table 2

WIRE SIZE AND TYPE				SIZE CODE
CONCENTRIC STRANDED		SOLID		
MM²	AWG	MM²	AWG	
4–6	#10–#12	4–6	#8–#10	6
10	#8	10	#6	4
16	#6	16	#4	3
—	#4	—	—	2

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Secondary Connector Kits

Used for field assembly of extension cords or repair of damaged connectors.

Airport Equipment Qualified to FAA Specification AC 150/5345

Ordering Instructions

Amerace® connector kit model numbers make it easy to select the right product for your specific application.

Follow the chart to the right.

Example

Order catalog number 90P-B6 for a secondary connector kit for a plug (male) termination on two single conductors with an outside diameter over insulation between 5mm² (.195") and 6.6mm² (.260") and wire size of 4mm² (#10–#12 AWG) stranded or 6mm² (#8–#10 AWG) solid.

Shipping

.06kg (.14 lb. each)
6.5kg (14 lb., 100/box)

Suggested Crimping Tools

See **page I-336**

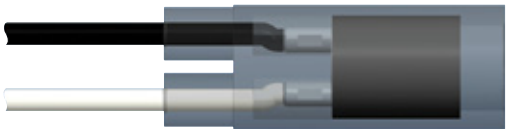
Electrical

20A

600V between contacts

1500V to earth

90 Series Plug Kit



90 Series Receptacle Kit

91 Series Plug Kit

91 Series Receptacle Kit

Catalog Number Code

Model Number

90 = Terminating two single wires

91 = Terminating two-core cable

Configuration

P = Plug (male) connector

R = Receptacle (female)

Cable/Conductor Code

Cable Code — Outside diameter of cable: Select from Table 1.

Conductor Code — Wire size: Select from Table 2.

Table 1

INSULATION OR JACKET DIAMETER				SIZE CODE	APPLICABLE TO KIT MODELS
METRIC		IMPERIAL			
MIN.	MAX.	MIN.	MAX.		
3.0	4.0	.120"	.160"	S	90P, 90R
3.9	5.5	.155"	.205"	A	90P, 90R
5.0	6.6	.195"	.260"	B	90P, 90R
6.4	8.4	.250"	.330"	C	90P, 90R
8.1	10.9	.320"	.430"	D	91P, 91R
10.7	14.9	.420"	.585"	E	91P, 91R
14.6	19.9	.575"	.785"	F	91P, 91R

Table 2

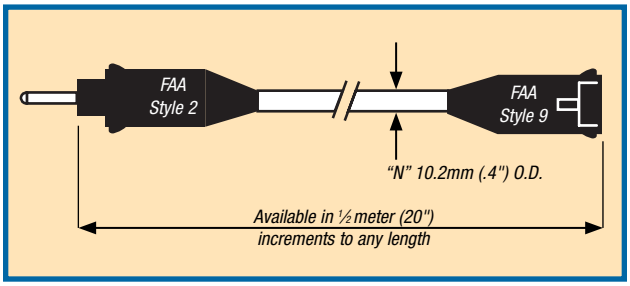
WIRE SIZE AND TYPE				
CONCENTRIC STRANDED		SOLID		SIZE CODE
MM²	AWG	MM²	AWG	
—	#14–#16	—	#12–#14	8
2.5	—	—	—	6
4	#10–#12	6	#8–#10	6
6	#8	10	6	4

Primary Cable Assemblies

Airport Equipment Qualified to FAA Specification AC 150/5345

- All connectors are molded on the cable for strong waterproof joints
- 25 amps
- 5000 volts to earth
- Every cable assembly is continuity checked prior to shipment
- Cable assemblies are conveniently coiled and shipped in boxes or fiber drums (contact factory for reels or other arrangements)

Standard Cable



Catalog Number Code

54 __ - __ , __

Connector Configuration

P = Plug (male) connector Style 2

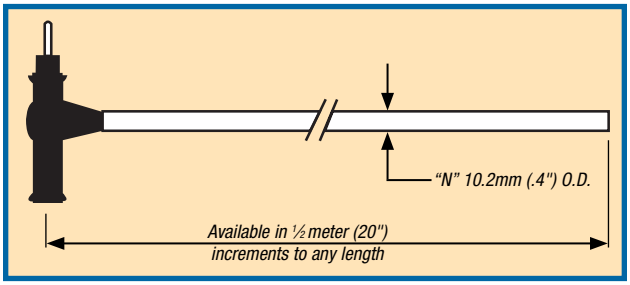
R = Receptacle (female) connector Style 9

- If both ends of the cable are to be terminated, use two letters here
- If only one end is to be terminated, select the correct configuration and use only one letter

Length in Meters

For example, a 5.5m cable is entered as 5,5

T Cable



***Note**: Also available with Style 2 plug or Style 9 receptacle on free end.*

Catalog Number Code

54MT __ - __ , __

Type of Cable

N = Single #8 AWG (8.4mm²)

Type C thermoplastic insulated cable rated 5000V, 25 amp, 90° C (19 strands)

Length in Meters

For example, a 5.5m cable is entered as 5,5

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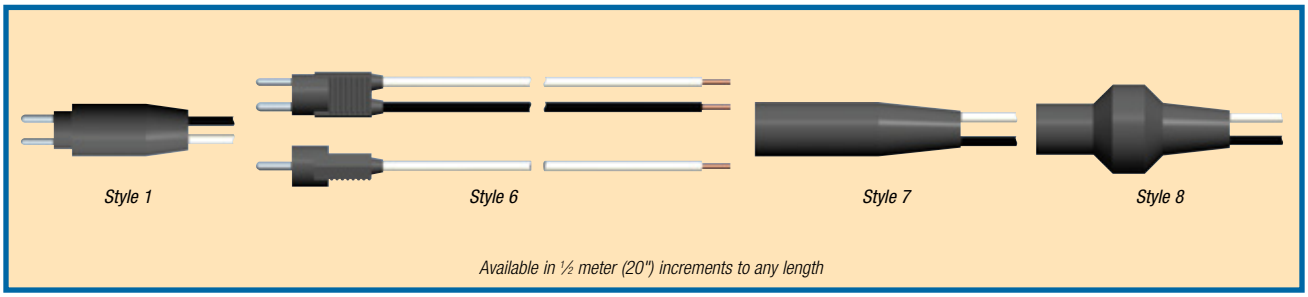
Secondary Cable Assemblies

Airport Equipment Qualified to FAA Specification AC 150/5345



Available in ½ meter (20") increments to any length

Catalog Number Code

95M __ - __ - __ __ , __ __

Connector(s) Configuration

P = FAA L823 Style 1 Plug
P6 = FAA L823 Style 6 Plug
R7 = FAA L823 Style 7 Receptacle
R8 = FAA L823 Style 8 Receptacle

For connectors on both ends use two codes; otherwise one

Cable

F = Two individual #12 AWG (3.3mm²) thermoplastic insulated, waterproof wires, rated 600 volts between contacts, 1500 volts to earth, 20 amp, 90° C, O.D. 4.7mm (.185")

G = #2/12 AWG (3.3mm²) thermoplastic insulated, waterproof cable with overall jacket, rated 600 volts between contacts, 1500 volts to earth, 20 amp, 90° C, O.D. 12.7mm (.5")

H = Two individual #16 AWG (1.3mm²) thermoplastic insulated, waterproof wires, rated 600 volts between contacts, 1500 volts to earth, 20 amp, 90° C, O.D. 3.2mm (.125")

I = #2/16 AWG (1.3mm²) thermoplastic insulated, waterproof cable with overall jacket, rated 600 volts between contacts, 1500 volts to earth, 20 amp, 90° C, O.D. 9.4mm (.37")

K = Two individual #14 AWG (2.1mm²) Teflon® insulated wires, rated 600 volts between contacts, 1500 volts to earth, 20 amp, 200° C, wires certified to UL 1199 and CSA 1A/B

L = As K above except #16 AWG (1.3mm²)F

For other available cable sizes, contact Amerace Sales.

Length in Meters

For example, a 30.5mm cable is entered as 30,50

Voltage Transformers

- Used in parallel circuits (see diagram on **page I-335**)
- Submersible
- Plug in using standard FAA connectors (**pages I-331–I-332**)
- Allow step down of line voltage for standard airfield bulbs (6.6 amp) or for other standard bulbs, such as automotive (12V) or 120/240 volt

Voltage Transformers 50/60 Hz

CAT. NO.	RATED WATTS	PRI/SEC. RATING.	FIG	"T" DIM. CM/IN.	LEAD LENGTH PRIMARY	LEAD LENGTH SECONDARY	APPROX. SHIP. WT. KG	APPROX. SHIP. WT. LBS.
VTA045P120S6.9-01	45	120/6.9	5	8.9/3.5	38cm (15")	38cm (15")	3.1	6.9
VTA045P240S6.9-01	45	240/6.9	5	8.9/3.5	38cm (15")	38cm (15")	3.1	6.9
VTA200P240S30.3-01	200	240/30	7	9.9/3.9	38cm (15")	38cm (15")	5.5	12.0
VTA300P240S45.5-01	300	240/45	7	11.4/4.5	38cm (15")	1.2m (48")	6.6	14.5

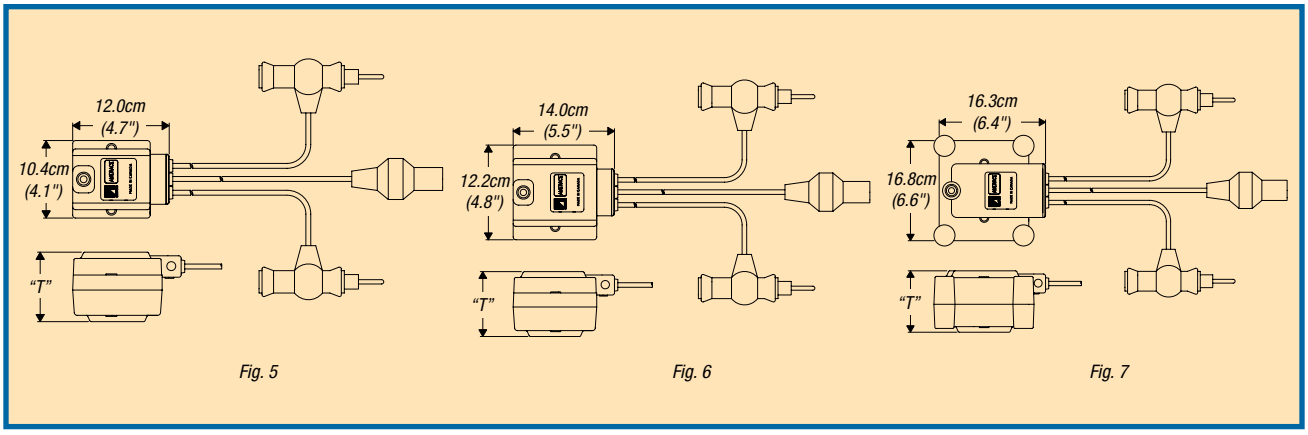


Fig. 5 *Fig. 6* *Fig. 7*

Don't see what you want here?

Contact us with your requirements or go to our web site to create your own transformer.

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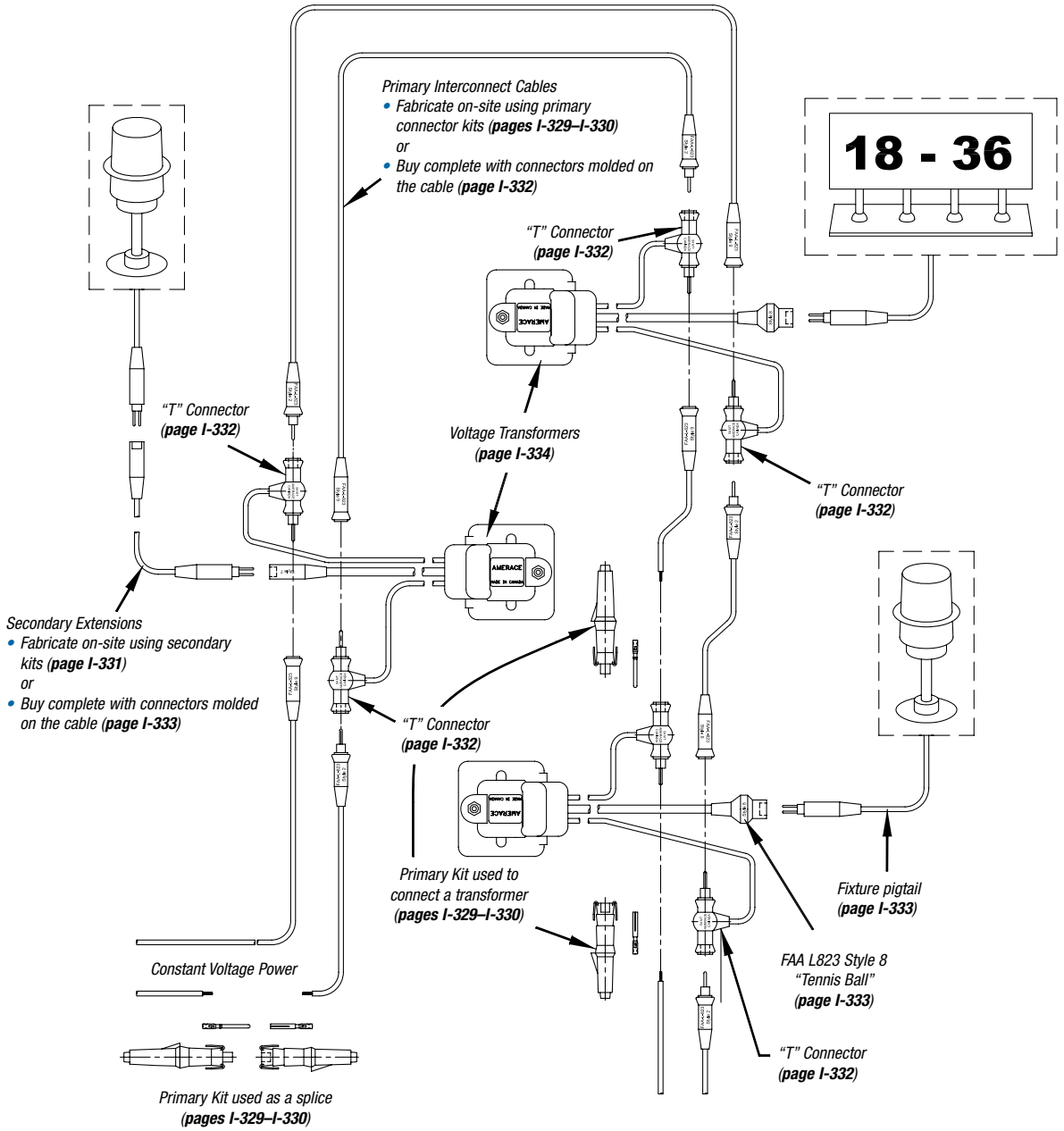
Email: amerace@tnb.com

Typical Parallel Lighting Circuit



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Fax: 416.292.1614
Email: amerace@tnb.com

Technical Information

Suggested Crimping Tools for Use with Amerace® Connector Kits

AMERACE CONTACT SIZE	MM²	AWG	RECOMMENDED TOOLS	CRIMPS #	CRIMPS LOCATION	APPLICATION
8	2 Stranded 3 Solid	#16 Stranded #14 Stranded #14 Solid #12 Solid	T&B WT 111M “AB” Groove Channel Lock #909 BURNDY Y 14MF	2	Rotate the second crimp 90° from the first	Primary Only Primary & Secondary Primary & Secondary
6	4 Stranded 6 Solid	#12 Stranded #10 Stranded #10 Solid #8 Solid	T&B WT 111M “C” Groove Channel Lock #909 BURNDY Y 14MF	2	Rotate the second crimp 90° from the first	Primary Only Primary & Secondary Primary & Secondary
4	6 Stranded 10 Solid	#8 Stranded #6 Solid	T&B TBM25S “Red” Groove T&B TBM45S “Red” Groove Channel Lock #909 BURNDY Y 14MF BURNDY MR4C “8” Groove Nico Press 31 “E” Groove	2	Rotate the second crimp 90° from the first	Primary Only Primary Only Primary & Secondary Primary & Secondary Primary Only Primary Only
3	10 Stranded 16 Solid	#6 Stranded #4 Solid	T&B TBM25S “Blue” Groove T&B TBM45S “Blue” Groove BURNDY MR4C “6” Groove Nico Press 41 “G” Groove	2	Rotate the second crimp 90° from the first	Primary Only Primary Only Primary Only Primary Only
2	16 Stranded	#4 Stranded	Nico Press 31 “J” Groove	2	Rotate the second crimp 90° from the first	Primary Only
1	—	#1 Stranded	T&B No. TBM45S or TBM25S “Brown” Groove	2	Rotate the second crimp 90° from the first	Primary Only

For available Amerace tools, please contact Amerace Sales.

Thomas&Betts

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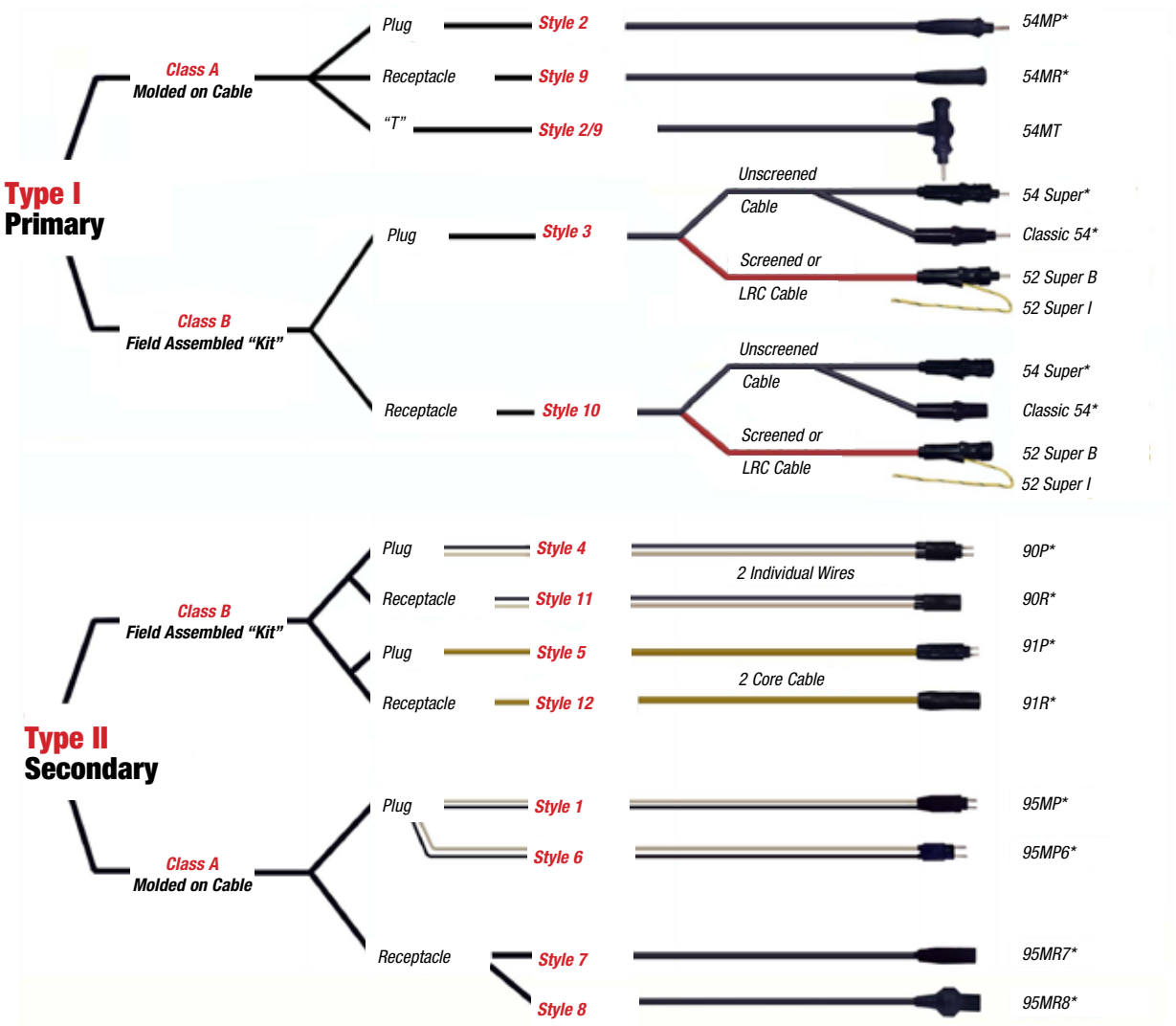
www.amerace.com

Amerace® Airport Lighting Guide to FAA L823 Connectors

FAA Designations in Red



*The * symbol indicates the connector is certified by ETL, and listed in the FAA AC 150/5345-IV "Approved Airport Equipment."*

This list is updated monthly and may be downloaded from ***http://www.faa.gov/airports/resources/advisory_circulars/****.*

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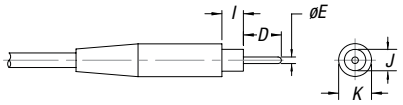
Technical Information

Amerace® Guide to FAA Style Airfield Lighting Connectors

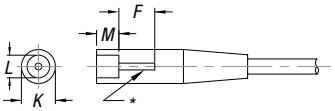
FAA Type I Primary

Single-Conductor, 25 Amps, 5000 Volts to Earth

Plug, Type I, Class A, Style 2



Receptacle, Type I, Class A, Style 9



** Metal socket shall be recessed not more than ⅛" (.318cm) below inside face of receptacle and before splitting shall not have I.D. of .188"±.001" (.478±.003cm).*

FAA Interface Dimensions

Extracted from FAA Advisory Circular A/C 150/5345-26

Checklist for FAA Conformance

ETL Certified
Conforms to FAA AC 150/5345-26
Tellurium Copper
Tin Plated for Corrosion Resistance

DIMENSION	INCHES	CENTIMETERS
D	1.062 ±.015	2.697 ±.038
E	.186 ±.001	.472 ±.003
F	1.080 Min.	2.743 Min.
I	.593 ±.015, -.000	1.506 +.038, -.000
J	.604 +.010, -.000	1.534 +.025, -.000
K	.937 +.000, -.031	2.380 +.000, -.079
L	.573 ±.010	1.455 ±.025
M	.608 +.000, -.015	1.544 +.000, -.038

Primary Cable Assemblies Series 54M

Single-Wire Extension

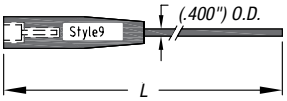
FAA Class A

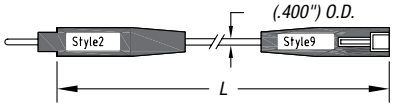
Factory Fabricated Cable Assemblies

L = Available in ½ meter (20") increments to any length

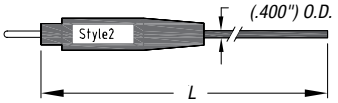
Typical Application:
** Portable Lighting Sets*

Receptacle Lead Style 9





Plug Lead Style 2



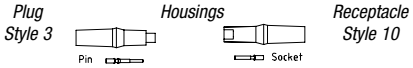
Cable is single #8 AWG (8.4mm²) Type C thermoplastic elastomere, insulated, rated 5000V, 25A, 90° C (19 strands)

Primary Connector Kits

FAA Class B

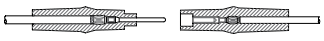
Field Applied Connectors

Series 54 for Unscreened Cable Kit Contents

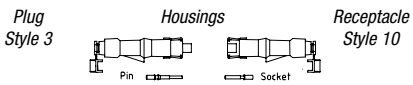


-Silicone Lubricant
-Wiper -Guide Pin
-Installation Instructions
-Protective Sleeve

Cutaway of Completed Assembly Kit Contents



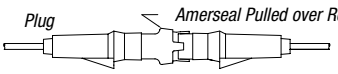
Series 54 Super for Unscreened Cable Kit Contents



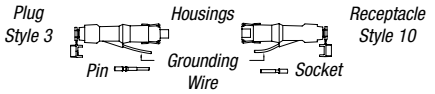
-Silicone Lubricant
-Wiper -Guide Pin
-Installation Instructions
-Protective Sleeve

Cutaway of Completed Assembly Kit Contents

Completed Assembly

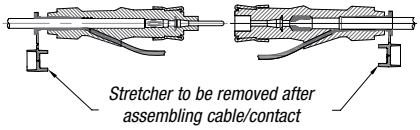


Series 52 Super for Screened Cable Kit Contents

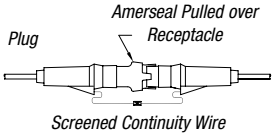


-Crimp Splice
-Silicone Lubricant
-Wiper
-Guide Pin
-Installation Instructions
-Protective Sleeve

(Non FAA) Cutaway View



Completed Assembly



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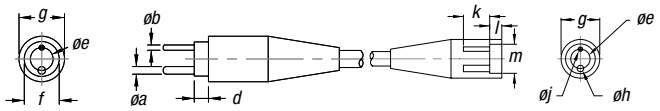
Technical Information

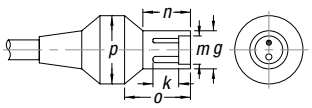
FAA Type II Secondary

Two-Conductor, 20 Amps, 600 Volts between Conductors, 1500 Volts to Earth

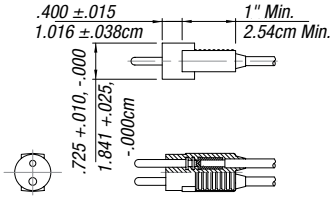
(a) Plug, Type II, Class A, Style 1 *(b) Receptacle, Type II, Class A, Style 7*



(c) Receptacle, Type II, Class A, Style 8



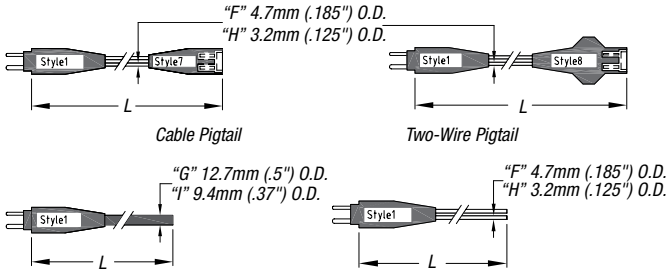
(d) Plug, Type II, Class A, Style 6



DIMENSION	INCHES	CENTIMETERS	REFERENCE
a	.155 ±.001	.394 ±.003	Connector for White Wire
b	.124 ±.001	.315 ±.003	Connector for Black Wire
c	.625 ±.015	1.587 ±.038	Plug Pin
d	.343 +.031, -.000	.871 +.079, -.000	Plug
e	.435 ±.010	1.105 ±.025	Plug, Receptacle
f	.725 +.010, -.000	1.841 +.025, -.000	Plug
g	.1.000 +.000, -.031	2.540 +.000, -.079	Plug, Receptacle
h	.157 ±.001	.399 ±.003	Socket Dia. before Splitting Connector for White Wire
j	.126 ±.001	.320 ±.003	Socket Dia. before Splitting Connector for Black Wire
k	.641 Min.	1.628 Min.	Depth of Socket includes .125" (.318cm) Recess below Inside Face of Receptacle
l	.358 +.000, -.015	.909 +.000, -.038	Receptacle
m	.694 ±.010	1.763 ±.025	Receptacle
n	1.125 ±.031	2.857 ±.079	Receptacle
o	1.500 ±.031	3.810 ±.079	Receptacle
p	1.750 ±.031	4.445 ±.079	Receptacle

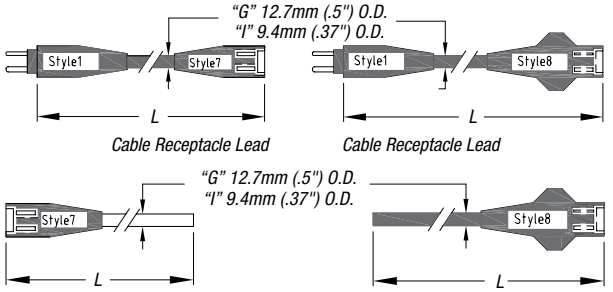
Secondary Cable Assemblies Series 95M

Two-Wire Extensions



"F" is two individual #12 AWG (3.3mm²) thermoplastic elastomer insulated, waterproof wires, rated 600V, 20A, 90° C
"H" is as "F" but #16 AWG (1.3mm²)

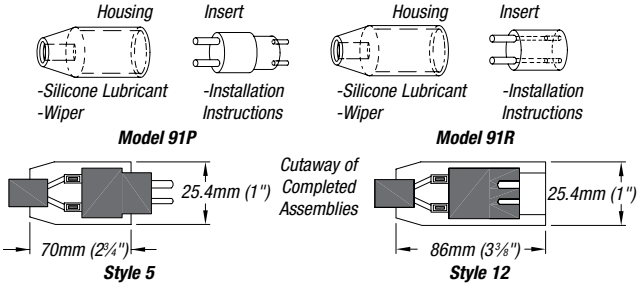
Cable Extensions



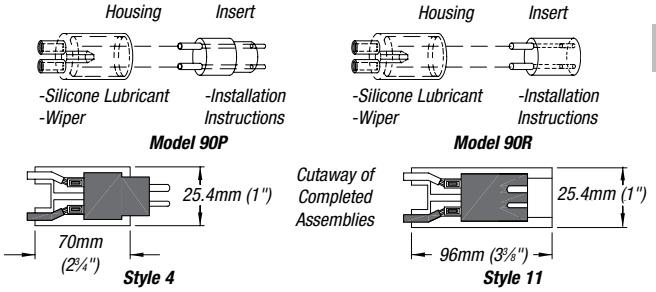
"G" is #2/12 AWG (3.3mm²) thermoplastic insulated, waterproof cable with overall jacket, rated 600V to earth, 1500V between wires, 20A, 90° C
"I" is as "G" but #2/16 AWG (1.3mm²)

Secondary Connector Kits

Series 91 for Two-Core Cable



Series 90 for Two Individual Wires



AMERACE®

We supply and manufacture products for airports around the world, supplying programs directly or through selected original equipment manufacturers and distributors.

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Current Technology

Current Technology® Surge Protection Products

In this section...

Current Technology® Surge Protection Products

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Select® Series

50kA Select® Surge Suppressor

The SL3® product line offers you the first box-type surge suppressor designed for selenium-enhanced protection of the line or load side of main service disconnects. In addition, the selenium-based Seamless Technology™ gives you added protection, maximum performance and dramatically extended product life.

Product Specifications

General Specifications	
Maximum Surge Current Rating	50kA per Mode, 100kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	16"H x 16"W x 9.2"D
Weight	35 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< .5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	20 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	50,000A*	5,500 Impulses*
Line-to-Ground	50,000A*	5,500 Impulses*
Neutral-to-Ground	50,000A*	5,500 Impulses*
Line-to-Line	100,000A	11,000 Impulses
Per Phase	100,000A	11,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (SL3®)

e.g.: SL3-050-480-3Y-SNT-M2-F1

SL3	-	050	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available SL3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration* (Must Choose One)	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

** See **page J-49** for Voltage/Configurations.*

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

Thomas&Betts

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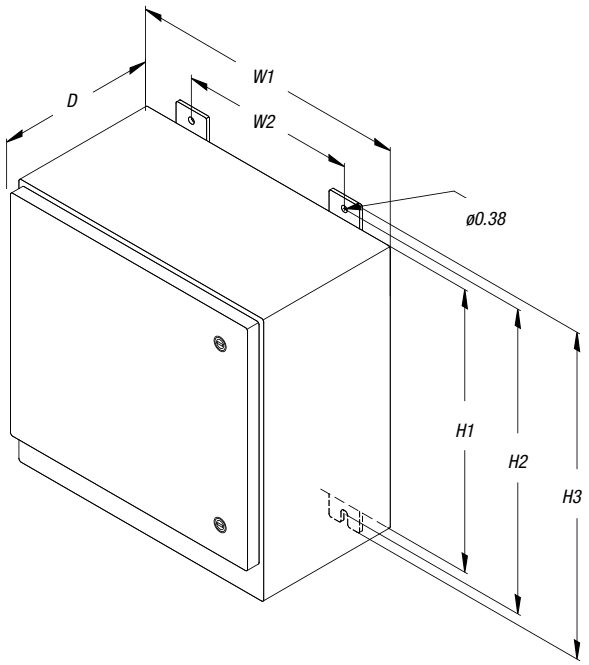
SL3/50 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				240V DELTA		480V DELTA		600V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L	L-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	550	420	420	420	690	320	300	552	552	420	690
B3 Ring Wave 6kV, 500A	300	375	350	350	500	825	675	650	570	650	730	680	850	590	1530	660	650	680
B3/C Combo Wave 6kV, 3kA	400	400	450	750	850	825	875	1650	1197	1260	1186	2354	1066	964	1604	1824	1260	2354
C3 Combo Wave 20kV, 10kA	600	600	725	950	1125	1050	1175	1925	2080	2200	2140	3390	1830	1960	2460	3020	2200	3390
UL 1449 3rd Edition VPR 6kV, 3kA	600	600	700	900	1000	1200	1200	1800	1200	1500	1200	2500	1200	1000	1800	2000	1500	2500

All SL3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensional Specifications

SL3/050	INCHES	MM
H1	16.00	406.4
H2	17.25	438.2
H3	18.50	469.9
W1	16.00	406.4
W2	10.00	234.0
D	9.20	233.7



Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

Select® Series

100kA Select® Surge Suppressor

The SL3® product line offers you the first box-type surge suppressor designed for selenium-enhanced protection of the line or load side of main service disconnects. In addition, the selenium-based Seamless Technology™ gives you added protection, maximum performance and dramatically extended product life.

Product Specifications

General Specifications	
Maximum Surge Current Rating	100kA per Mode, 200kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/ Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	16"H x 16"W x 9.2"D
Weight	40 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	<.5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	20 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	100,000A*	13,000 Impulses*
Line-to-Ground	100,000A*	13,000 Impulses*
Neutral-to-Ground	100,000A*	13,000 Impulses*
Line-to-Line	200,000A	26,000 Impulses
Per Phase	200,000A	26,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (SL3®)

e.g.: SL3-100-480-3Y-SNT-M2-F1

SL3	-	100	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available SL3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration* (Must Choose One)	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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Select® Series

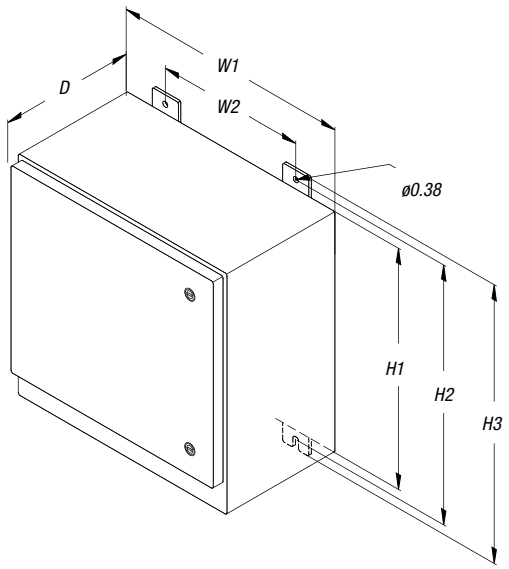
SL3/100 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				240V DELTA		480V DELTA		600V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L	L-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	550	420	420	420	690	320	300	552	552	420	690
B3 Ring Wave 6kV, 500A	300	375	350	350	500	825	675	650	570	650	730	680	850	590	1530	660	650	680
B3/C Combo Wave 6kV, 3kA	400	400	450	750	850	825	875	1650	1197	1260	1186	2354	1066	964	1604	1824	1260	2354
C3 Combo Wave 20kV, 10kA	600	600	725	950	1125	1050	1175	1925	2080	2200	2140	3390	1830	1960	2460	3020	2200	3390
UL 1449 3rd Edition VPR 6kV, 3kA	600	600	700	900	1000	1200	1200	1800	1200	1500	1200	2500	1200	1000	1800	2000	1500	2500

All SL3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensional Specifications

SL3/050	INCHES	MM
H1	16.00	406.4
H2	17.25	438.2
H3	18.50	469.9
W1	16.00	406.4
W2	10.00	234.0
D	9.20	233.7



Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

Select® Series

150kA Select® Surge Suppressor

The SL3® product line offers you the first box-type surge suppressor designed for selenium-enhanced protection of the line or load side of main service disconnects. In addition, the selenium-based Seamless Technology™ gives you added protection, maximum performance and dramatically extended product life.

Product Specifications

General Specifications	
Maximum Surge Current Rating	150kA per Mode, 300kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/ UL 1283/Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	32"H x 22"W x 11.95"D
Weight	110 lbs.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	<.5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	20 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)			
100 kHz	**1 MHz**	**10 MHz**	**100 MHz**
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)		
Protection Mode	**Single Pulse Surge Current Capacity/Mode**	**Repetitive Surge Current Capacity/Mode**
Line-to-Neutral	150,000A*	14,000 Impulses*
Line-to-Ground	150,000A*	14,000 Impulses*
Neutral-to-Ground	150,000A*	14,000 Impulses*
Line-to-Line	300,000A	28,000 Impulses
Per Phase	300,000A	28,000 Impulses

Maximum Continuous Operating Voltage (MCOV)			
Voltage	**L-N MCOV**	**Voltage**	**L-L MCOV**
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (SL3®)

e.g.: SL3-150-480-3Y-SNT-M2-F1

SL3	-	150	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
AVAILABLE SL3® kA RATINGS: 050, 100, 150, 200, 250, 300	
Voltage (Must Choose One)*	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration (Must Choose One)*	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
MD	Metal with Disconnect
SN	Stainless Steel without Disconnect
SD	Stainless Steel with Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring *(see remote MxR standalone option)*
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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Select® Series

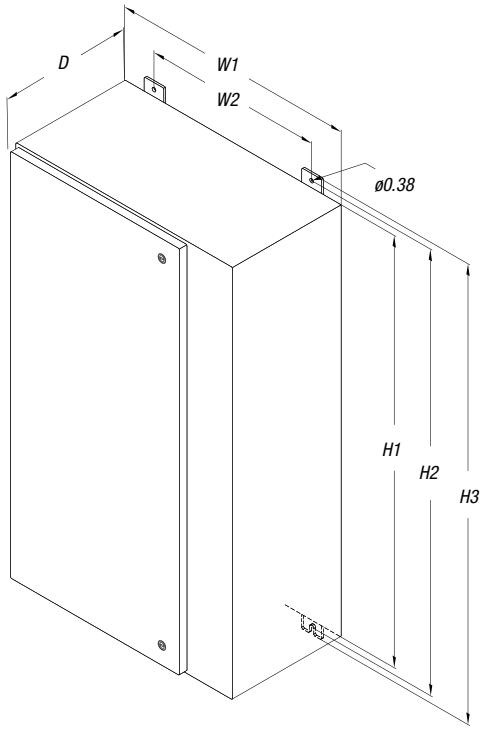
SL3/150 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				240V DELTA		480V DELTA		600V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L	L-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	550	420	420	420	690	320	300	552	552	420	690
B3 Ring Wave 6kV, 500A	300	375	350	375	500	825	675	650	570	650	730	680	850	590	1530	660	650	680
B3/C Combo Wave 6kV, 3kA	400	400	450	750	850	825	875	1650	1197	1260	1186	2354	1066	964	1604	1824	1260	2354
C3 Combo Wave 20kV, 10kA	600	600	725	950	1125	1050	1175	1925	2080	2200	2140	3390	1830	1960	2460	3020	2200	3390
UL 1449 3rd Edition VPR 6kV, 3kA	700	700	900	900	1200	1200	1500	1800	1200	1500	1200	2500	1200	1000	1800	2000	1500	2500

All SL3® systems voltage protection ratings are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensional Specifications

SL3/150	INCHES	MM
H1	32.00	812.8
H2	33.25	844.6
H3	34.50	876.3
W1	22.00	558.8
W2	16.00	406.4
D	11.95	303.5



Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

Select® Series

200kA Select® Surge Suppressor

The SL3® product line offers you the first box-type surge suppressor designed for selenium-enhanced protection of the line or load side of main service disconnects. In addition, the selenium-based Seamless Technology™ gives you added protection, maximum performance and dramatically extended product life.

Product Specifications

General Specifications	
Maximum Surge Current Rating	150kA per Mode, 300kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/ UL 1283/Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	32"H x 22"W x 11.95"D
Weight	110 lbs.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	<.5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	20 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)			
100 kHz	***1 MHz***	***10 MHz***	***100 MHz***
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)		
Protection Mode	**Single Pulse Surge Current Capacity/ Mode**	**Repetitive Surge Current Capacity/ Mode**
Line-to-Neutral	150,000A*	14,000 Impulses*
Line-to-Ground	150,000A*	14,000 Impulses*
Neutral-to-Ground	150,000A*	14,000 Impulses*
Line-to-Line	300,000A	28,000 Impulses
Per Phase	300,000A	28,000 Impulses

Maximum Continuous Operating Voltage (MCOV)			
Voltage	***L-N MCOV***	***Voltage***	***L-L MCOV***
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (SL3®)

e.g.: SL3-200-480-3Y-SNT-M2-F1

SL3	-	200	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available SL3® kA Ratings:	050, 100, 150, 200, 250, 300

Voltage (Must Choose One)*	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600

Configuration (Must Choose One)*	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta

Enclosure (Must Choose One)	
MN	Metal without Disconnect
MD	Metal with Disconnect
SN	Stainless Steel without Disconnect
SD	Stainless Steel with Disconnect

Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring *(see remote MxR standalone option)*
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet

Filter (Must Choose One)	
F	Filter
N	No Filter

Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port

Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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Select® Series

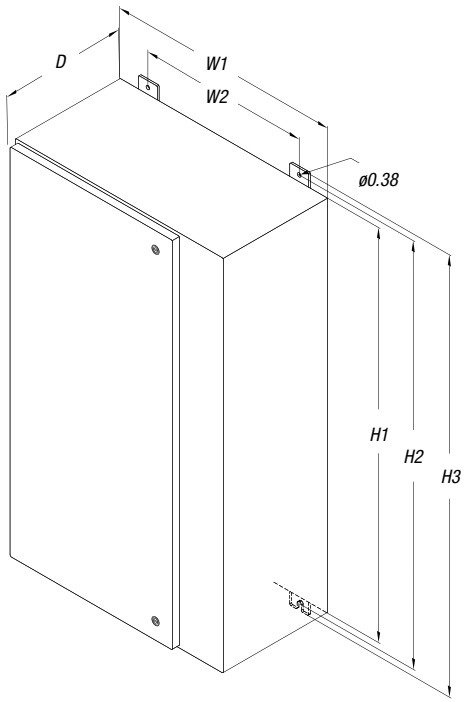
SL3/200 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				240V DELTA		480V DELTA		600V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L	L-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	550	420	420	420	690	320	300	552	552	420	690
B3 Ring Wave 6kV, 500A	300	375	350	375	525	825	675	625	570	650	730	680	850	590	1530	660	650	680
B3/C Combo Wave 6kV, 3kA	400	400	450	750	850	825	875	1625	1197	1260	1186	2354	1066	964	1604	1824	1260	2354
C3 Combo Wave 20kV, 10kA	625	625	725	925	1100	1050	1200	1925	2080	2200	2140	3390	1830	1960	2460	3020	2200	3390
UL 1449 3rd Edition VPR 6kV, 3kA	700	700	1000	1000	1200	1200	1500	1800	1200	1500	1200	2500	1200	1000	1800	2000	1500	2500

All SL3® systems voltage protection ratings are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensional Specifications

SL3/200	INCHES	MM
H1	32.00	812.8
H2	33.25	844.6
H3	34.50	876.3
W1	22.00	558.8
W2	16.00	406.4
D	11.95	303.5



Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

Select® Series

250kA Select® Surge Suppressor

The SL3® product line offers you the first box-type surge suppressor designed for selenium-enhanced protection of the line or load side of main service disconnects. In addition, the selenium-based Seamless Technology™ gives you added protection, maximum performance and dramatically extended product life.

Product Specifications

General Specifications	
Maximum Surge Current Rating	250kA per Mode, 500kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	32"H x 22"W x 11.95"D
Weight	120 lbs.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5% – 95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	<.5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	20 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)			
100 kHz	**1 MHz**	**10 MHz**	**100 MHz**
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)		
Protection Mode	**Single Pulse Surge Current Capacity/Mode**	**Repetitive Surge Current Capacity/Mode**
Line-to-Neutral	250,000A	16,000 Impulses*
Line-to-Ground	250,000A	16,000 Impulses*
Neutral-to-Ground	250,000A	16,000 Impulses*
Line-to-Line	500,000A	32,000 Impulses
Per Phase	500,000A	32,000 Impulses

Maximum Continuous Operating Voltage (MCOV)			
Voltage	**L-N MCOV**	**Voltage**	**L-L MCOV**
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (SL3®)

e.g.: SL3-250-480-3Y-SNT-M2-F1

SL3	-	250	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available SL3® kA Ratings:	050, 100, 150, 200, 250, 300

Voltage (Must Choose One)*	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600

Configuration (Must Choose One)*	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta

Enclosure (Must Choose One)	
MN	Metal without Disconnect
MD	Metal with Disconnect
SN	Stainless Steel without Disconnect

Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring *(see remote MxR standalone option)*
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet

Filter (Must Choose One)	
F	Filter
N	No Filter

Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port

Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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Select® Series

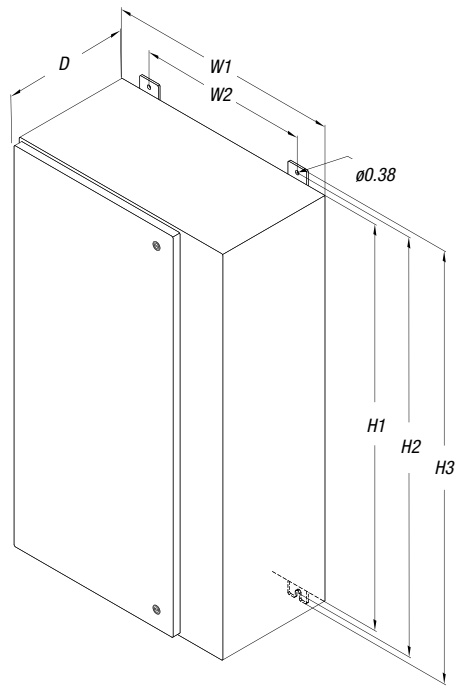
SL3/250 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				240V DELTA		480V DELTA		600V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L	L-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	550	420	420	420	690	320	300	552	552	420	690
B3 Ring Wave 6kV, 500A	300	375	350	375	525	825	675	625	570	650	730	680	850	590	1530	660	650	680
B3/C Combo Wave 6kV, 3kA	400	400	450	750	850	825	875	1625	1197	1260	1186	2354	1066	964	1604	1824	1260	2354
C3 Combo Wave 20kV, 10kA	625	625	725	925	1100	1050	1200	1925	2080	2200	2140	3390	1830	1960	2460	3020	2200	3390
UL 1449 3rd Edition VPR 6kV, 3kA	700	700	1000	1000	1200	1200	1500	1800	1200	1500	1200	2500	1200	1000	1800	2000	1500	2500

All SL3® systems voltage protection ratings are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensional Specifications

SL3/250	INCHES	(MM)
H1	32.00	812.8
H2	33.25	844.6
H3	34.50	876.3
W1	22.00	558.8
W2	16.00	406.4
D	11.95	303.5



Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

Select® Series

300kA Select® Surge Suppressor

The SL3® product line offers you the first box-type surge suppressor designed for selenium-enhanced protection of the line or load side of main service disconnects. In addition, the selenium-based Seamless Technology™ gives you added protection, maximum performance and dramatically extended product life.

Product Specifications

General Specifications	
Maximum Surge Current Rating	300kA per Mode, 600kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/ Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	32"H x 22"W x 11.95"D
Weight	125 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< .5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	20 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	300,000A*	17,000 Impulses*
Line-to-Ground	300,000A*	17,000 Impulses*
Neutral-to-Ground	300,000A*	17,000 Impulses*
Line-to-Line	600,000A	34,000 Impulses
Per Phase	600,000A	34,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (SL3®)

e.g.: SL3-300-480-3Y-SNT-M2-F1

SL3	-	300	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available SL3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage (Must Choose One)*	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration (Must Choose One)*	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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Select® Series

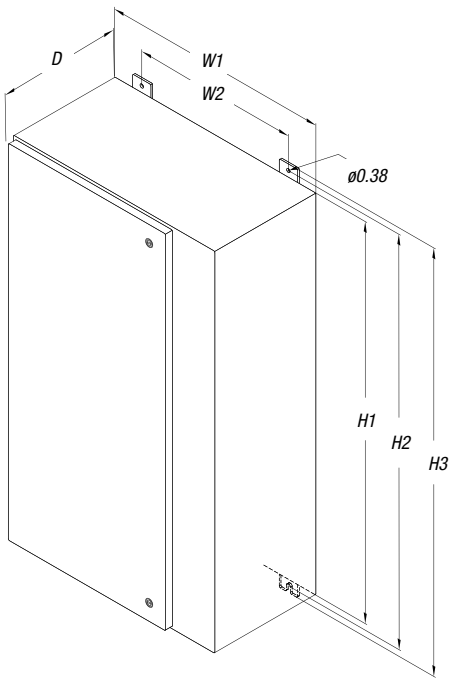
SL3/300 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				240V DELTA		480V DELTA		600V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L	L-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	550	420	420	420	690	320	300	552	552	420	690
B3 Ring Wave 6kV, 500A	300	375	350	350	500	825	675	650	570	650	730	680	850	590	1530	660	650	680
B3/C Combo Wave 6kV, 3kA	400	400	450	750	850	825	875	1650	1197	1260	1186	2354	1066	964	1604	1824	1260	2354
C3 Combo Wave 20kV, 10kA	600	600	725	950	1125	1050	1175	1925	2080	2200	2140	3390	1830	1960	2460	3020	2200	3390
UL 1449 3rd Edition VPR 6kV, 3kA	600	600	700	900	1000	1200	1200	1800	1200	1500	1200	2500	1200	1000	1800	2000	1500	2500

All SL3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensional Specifications

SL3/300	INCHES	MM
H1	16.00	406.4
H2	17.25	438.2
H3	18.50	469.9
W1	16.00	406.4
W2	10.00	234.0
D	9.20	233.7



Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

TransGuard® Series

50kA TransGuard® Surge Suppressor

TG3® suppression filter systems feature a powerful failure-free ISM® (Integrated Suppression Module). The suppression filter assembly features individual thermally fused TPMOVs, improved current sharing, multiple options and much more. It's precisely the protection today's facilities need to mitigate/eliminate costly downtime and equipment damage resulting from routine or catastrophic electrical disturbances.

RoHS Compliant

Product Specifications

General Specifications	
Maximum Surge Current Rating	50kA per mode, 100kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/ Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	Fiberglass Reinforced Polyester: 14"H x 12.75"W x 6.6"D Metal: 16"H x 16"W x 9.2"D
Weight	Fiberglass Reinforced Polyester: 57 lb. Metal: 91 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< .5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	15 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	50,000A*	4,000 Impulses*
Line-to-Ground	50,000A*	4,000 Impulses*
Neutral-to-Ground	50,000A*	4,000 Impulses*
Line-to-Line	100,000A	8,000 Impulses
Per Phase	100,000A	8,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (TG3®)

e.g.: TG3-050-480-3Y-SNT-M2-F1

TG3	-	050	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available TG3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage (Must Choose One)*	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration (Must Choose One)*	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
PN	Fiberglass Reinforced Polyester without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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TransGuard® Series

TG3/50 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				480V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	550	420	420	420	690	552	552
B3 Ring Wave 6kV, 500A	300	375	350	350	500	825	675	650	570	650	730	680	1530	660
B3/C Combo Wave 6kV, 3kA	400	400	450	750	850	825	875	1650	1197	1260	1186	2354	1604	1824
C3 Combo Wave 20kV, 10kA	600	600	725	950	1125	1050	1175	1925	2080	2200	2140	3390	2460	3020
UL 1449 3rd Edition VPR 6kV, 3kA	600	600	700	900	1000	1200	1200	1800	1200	1500	1200	2500	1800	2000

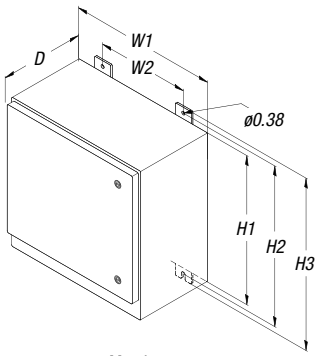
All TG3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensions — Metal

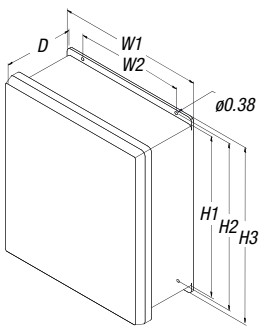
TG3/050	INCHES	MM
H1	16.00	406.4
H2	17.25	438.2
H3	18.50	469.9
W1	16.00	406.4
W2	10.00	234.0
D	9.20	233.7

Dimensions — Fiberglass Reinforced Polyester

TG3/50	INCHES	MM
H1	14.00	355.6
H2	14.75	374.7
H3	15.50	393.7
W1	12.75	323.9
W2	10.00	254.0
D	6.60	167.6



Metal



Fiberglass Reinforced Polyester

Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

TransGuard® Series

100kA TransGuard® Surge Suppressor

TG3® suppression filter systems feature a powerful failure-free ISM® (Integrated Suppression Module). The suppression filter assembly features individual thermally fused TPMOVs, improved current sharing, multiple options and much more. It's precisely the protection today's facilities need to mitigate/eliminate costly downtime and equipment damage resulting from routine or catastrophic electrical disturbances.

RoHS Compliant

Product Specifications

General Specifications	
Maximum Surge Current Rating	100kA per Mode, 200kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/ Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	Fiberglass Reinforced Polyester: 14"H x 12.75"W x 6.6"D Metal: 16"H x 16"W x 9.2"D
Weight	Fiberglass Reinforced Polyester: 57 lb. Metal: 91 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< .5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	15 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	100,000A*	5,000 Impulses*
Line-to-Ground	100,000A*	5,000 Impulses*
Neutral-to-Ground	100,000A*	5,000 Impulses*
Line-to-Line	200,000A	10,000 Impulses
Per Phase	200,000A	10,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (TG3®)

e.g.: TG3-100-480-3Y-SNT-M2-F1

TG3	-	100	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available TG3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage (Must Choose One)*	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration (Must Choose One)*	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
PN	Fiberglass Reinforced Polyester without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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TransGuard® Series

TG3/100 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				480V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	552	420	420	420	690	552	552
B3 Ring Wave 6kV, 500A	490	570	640	500	450	540	570	530	490	520	600	550	1450	530
B3/C Combo Wave 6kV, 3kA	614	629	634	1011	1013	1031	950	1857	1197	1219	1175	2369	1542	1857
C3 Combo Wave 20kV, 10kA	980	980	1170	1600	1420	1540	1600	2600	1670	1670	1730	2980	2270	2600
UL 1449 3rd Edition VPR 6kV, 3kA	700	700	700	1200	1200	1200	1000	2000	1200	1500	1200	2500	1800	2000

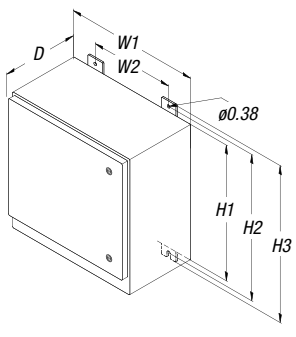
All TG3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensions — Metal

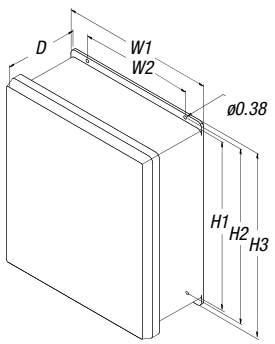
TG3/100	Inches	mm
H1	16.00	406.4
H2	17.25	438.2
H3	18.50	469.9
W1	16.00	406.4
W2	10.00	254.0
D	9.20	233.7

Dimensions — Fiberglass Reinforced Polyester

TG3/100	Inches	mm
H1	14.00	355.6
H2	14.75	374.7
H3	15.50	393.7
W1	12.75	323.9
W2	10.00	254.0
D	6.60	167.6



Metal



Fiberglass Reinforced Polyester

Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

TransGuard® Series

150kA TransGuard® Surge Suppressor

TG3® suppression filter systems feature a powerful failure-free ISM® (Integrated Suppression Module). The suppression filter assembly features individual thermally fused TPMOVs, improved current sharing, multiple options and much more. It's precisely the protection today's facilities need to mitigate/eliminate costly downtime and equipment damage resulting from routine or catastrophic electrical disturbances.

RoHS Compliant

Product Specifications

General Specifications	
Maximum Surge Current Rating	150kA per Mode, 300kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/ Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	Fiberglass Reinforced Polyester: 16.75"H x 14.75"W x 6"D Metal: 24"H x 16"W x 9.2"D
Weight	Fiberglass Reinforced Polyester: 57 lb. Metal: 91 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< .5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	15 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	150,000A*	6,000 Impulses*
Line-to-Ground	150,000A*	6,000 Impulses*
Neutral-to-Ground	150,000A*	6,000 Impulses*
Line-to-Line	300,000A	12,000 Impulses
Per Phase	300,000A	12,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports*

Catalog Numbering System (TG3®)

e.g.: TG3-150-480-3Y-SNT-M2-F1

TG3	-	150	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available TG3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration* (Must Choose One)	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
PN	Fiberglass Reinforced Polyester without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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TransGuard® Series

TG3/150 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				480V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	552	420	420	420	690	552	552
B3 Ring Wave 6kV, 500A	490	570	640	500	450	540	570	530	490	520	600	550	1450	530
B3/C Combo Wave 6kV, 3kA	614	629	634	1011	1013	1031	950	1857	1197	1219	1175	2369	1542	1857
C3 Combo Wave 20kV, 10kA	980	980	1170	1600	1420	1540	1600	2600	1670	1670	1730	2980	2270	2600
UL 1449 3rd Edition VPR 6kV, 3kA	700	700	700	1200	1200	1200	1000	2000	1200	1500	1200	2500	1800	2000

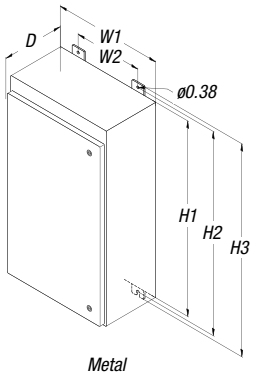
All TG3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensions — Metal

TG3/150	Inches	mm
H1	24.00	609.6
H2	25.25	641.4
H3	26.50	673.1
W1	16.00	406.4
W2	10.00	254.0
D	9.20	233.7

Dimensions — Fiberglass Reinforced Polyester

TG3/150	Inches	mm
H1	16.75	425.5
H2	16.75	425.5
H3	17.50	444.5
W1	14.75	374.7
W2	12.00	304.3
D	6.67	169.4



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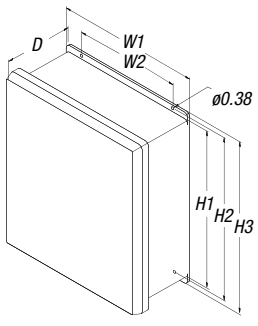

Fiberglass Reinforced Polyester

Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

TransGuard® Series

200kA TransGuard® Surge Suppressor

TG3® suppression filter systems feature a powerful failure-free ISM® (Integrated Suppression Module). The suppression filter assembly features individual thermally fused TPMOVs, improved current sharing, multiple options and much more. It's precisely the protection today's facilities need to mitigate/eliminate costly downtime and equipment damage resulting from routine or catastrophic electrical disturbances.

RoHS Compliant

Product Specifications

General Specifications	
Maximum Surge Current Rating	200kA per Mode, 400kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/ Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	Fiberglass Reinforced Polyester: 16.75"H x 14.75"W x 6"D Metal: 24"H x 16"W x 9.2"D
Weight	Fiberglass Reinforced Polyester: 57 lb. Metal: 91 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< .5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	15 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	200,000A*	7,000 Impulses*
Line-to-Ground	200,000A*	7,000 Impulses*
Neutral-to-Ground	200,000A*	7,000 Impulses*
Line-to-Line	400,000A	14,000 Impulses
Per Phase	400,000A	14,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (TG3®)

e.g.: TG3-200-480-3Y-SNT-M2-F1

TG3	-	200	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available TG3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration* (Must Choose One)	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
PN	Fiberglass Reinforced Polyester without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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TransGuard® Series

TG3/200 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				480V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	552	420	420	420	690	552	552
B3 Ring Wave 6kV, 500A	490	570	640	500	450	540	570	530	490	520	600	550	1450	530
B3/C Combo Wave 6kV, 3kA	614	629	634	1011	1013	1031	950	1857	1197	1219	1175	2369	1542	1857
C3 Combo Wave 20kV, 10kA	980	980	1170	1600	1420	1540	1600	2600	1670	1670	1730	2980	2270	2600
UL 1449 3rd Edition VPR 6kV, 3kA	700	700	700	1200	1200	1200	1000	2000	1200	1500	1200	2500	1800	2000

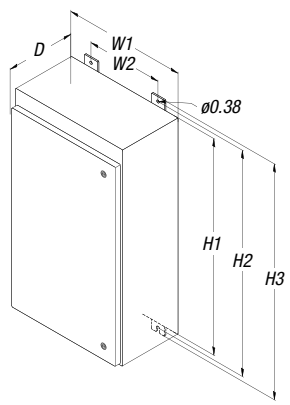
All TG3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensions — Metal

TG3/200	Inches	mm
H1	24.00	609.6
H2	25.25	641.4
H3	26.50	673.1
W1	16.00	406.4
W2	10.00	254.0
D	9.20	233.7

Dimensions — Fiberglass Reinforced Polyester

TG3/200	Inches	mm
H1	16.75	425.5
H2	16.75	425.5
H3	17.50	444.5
W1	14.75	374.7
W2	12.00	304.3
D	6.67	169.4



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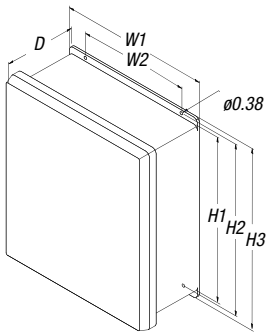

Fiberglass Reinforced Polyester

Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

TransGuard® Series

250kA TransGuard® Surge Suppressor

TG3® suppression filter systems feature a powerful failure-free ISM® (Integrated Suppression Module). The suppression filter assembly features individual thermally fused TPMOVs, improved current sharing, multiple options and much more. It's precisely the protection today's facilities need to mitigate/eliminate costly downtime and equipment damage resulting from routine or catastrophic electrical disturbances.

RoHS Compliant

Product Specifications

General Specifications	
Maximum Surge Current Rating	250kA per Mode, 500kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/ Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	Fiberglass Reinforced Polyester: 16.75"H x 14.75"W x 6"D Metal: 24"H x 16"W x 9.2"D
Weight	Fiberglass Reinforced Polyester: 57 lb. Metal: 91 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< .5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	15 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	250,000A*	7,500 Impulses*
Line-to-Ground	250,000A*	7,500 Impulses*
Neutral-to-Ground	250,000A*	7,500 Impulses*
Line-to-Line	500,000A	15,000 Impulses
Per Phase	500,000A	15,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (TG3®)

e.g.: TG3-250-480-3Y-SNT-M2-F1

TG3	-	250	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available TG3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration* (Must Choose One)	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
PN	Fiberglass Reinforced Polyester without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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TransGuard® Series

TG3/250 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				480V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	552	420	420	420	690	552	552
B3 Ring Wave 6kV, 500A	490	570	640	500	450	540	570	530	490	520	600	550	1450	530
B3/C Combo Wave 6kV, 3kA	614	629	634	1011	1013	1031	950	1857	1197	1219	1175	2369	1542	1857
C3 Combo Wave 20kV, 10kA	980	980	1170	1600	1420	1540	1600	2600	1670	1670	1730	2980	2270	2600
UL 1449 3rd Edition VPR 6kV, 3kA	700	700	700	1200	1200	1200	1000	2000	1200	1500	1200	2500	1800	2000

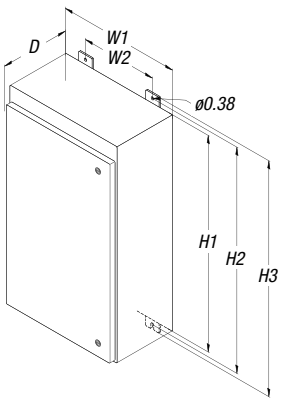
All TG3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensions — Metal

TG3/250	Inches	mm
H1	24.00	609.6
H2	25.25	641.4
H3	26.50	673.1
W1	16.00	406.4
W2	10.00	254.0
D	9.20	233.7

Dimensions — Fiberglass Reinforced Polyester

TG3/250	Inches	mm
H1	16.75	425.5
H2	16.75	425.5
H3	17.50	444.5
W1	14.75	374.7
W2	12.00	304.3
D	6.67	169.4



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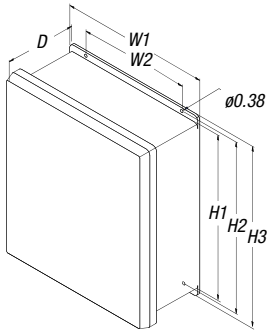

Fiberglass Reinforced Polyester

Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

TransGuard® Series

300kA TransGuard® Surge Suppressor

TG3® suppression filter systems feature a powerful failure-free ISM® (Integrated Suppression Module). The suppression filter assembly features individual thermally fused TPMOVs, improved current sharing, multiple options and much more. It's precisely the protection today's facilities need to mitigate/eliminate costly downtime and equipment damage resulting from routine or catastrophic electrical disturbances.

RoHS Compliant

Product Specifications

General Specifications	
Maximum Surge Current Rating	300kA per Mode, 600kA per Phase
Nominal Discharge Surge Current	L-N = 20kA
Safety Listings	Listed by UL® to UL 1449 3rd Edition 2009 Revision as a Type 1 SPD Suitable for Use in Type 1 or Type 2 Applications/UL 1283/ Meets Requirements for UL 96A
Protection Method	TPMOV, Selenium, Capacitive Filter
Product Design	Individually Fused TPMOVs and Selenium Cells, All Copper, Tin-Plated Bus
Dimensions	Fiberglass Reinforced Polyester: 16.75"H x 14.75"W x 6"D Metal: 24"H x 16"W x 9.2"D
Weight	Fiberglass Reinforced Polyester: 57 lb. Metal: 91 lb.
Enclosure Type	NEMA 4/12 Standard
Installation Location	Outdoor or Indoor
Operating Environment	-25° C to +60° C 5%–95% Non-Condensing Humidity
Fault Current (SCCR)	200kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< .5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	15 Years

Filtering Attenuation Frequencies (per MIL Std. 220B January 2000)

100 kHz	1 MHz	10 MHz	100 MHz
44 dB	33 dB	36 dB	53 dB

Single/Repetitive Surge Current Capacities (Tested)

Protection Mode	Single Pulse Surge Current Capacity/Mode	Repetitive Surge Current Capacity/Mode
Line-to-Neutral	300,000A*	8,000 Impulses*
Line-to-Ground	300,000A*	8,000 Impulses*
Neutral-to-Ground	300,000A*	8,000 Impulses*
Line-to-Line	600,000A	16,000 Impulses
Per Phase	600,000A	16,000 Impulses

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports.*

Catalog Numbering System (TG3®)

e.g.: TG3-300-480-3Y-SNT-M2-F1

TG3	-	300	-	480	-	3Y	-	SNT	-	M2	-	F1
Model		kA Rating		Voltage		Configuration		Enclosure / Cable Entry		Monitoring		Filter / Optional Feature

kA Rating (Must Choose One)	
Available TG3® kA Ratings: 050, 100, 150, 200, 250, 300	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration* (Must Choose One)	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MN	Metal without Disconnect
SN	Stainless Steel without Disconnect
PN	Fiberglass Reinforced Polyester without Disconnect
Cable Entry (Must Choose One)	
T	Top Feed
B	Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display
M4E	M3 + Ethernet
M5	Advanced Monitoring, Graphics Display
M6E	M5 + Ethernet
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Finger Guard
2	Test Port
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1R through M6R

** See following page for Voltage/Configuration options.*

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Technical Services
Tel: 888.862.3289

www.tnb.com

TransGuard® Series

TG3/300 Performance Data

SYSTEM VOLTAGE	120/240V OR 120/208V				277/480V				347/600V				480V DELTA	
Protection Mode	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L-G	L-L
MCOV	150	150	150	300	320	320	320	552	420	420	420	690	552	552
B3 Ring Wave 6kV, 500A	490	570	640	500	450	540	570	530	490	520	600	550	1450	530
B3/C Combo Wave 6kV, 3kA	614	629	634	1011	1013	1031	950	1857	1197	1219	1175	2369	1542	1857
C3 Combo Wave 20kV, 10kA	980	980	1170	1600	1420	1540	1600	2600	1670	1670	1730	2980	2270	2600
UL® 1449 3rd Edition VPR 6kV, 3kA	700	700	700	1200	1200	1200	1000	2000	1200	1500	1200	2500	1800	2000

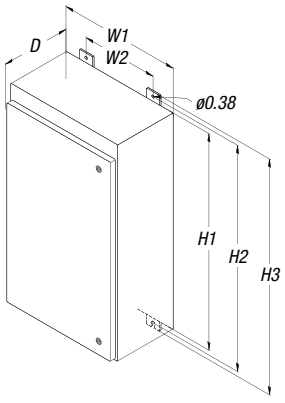
All TG3® systems voltage protection ratings (VPR) are peak values (±10%) measured from the 90° reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.41.

Dimensions — Metal

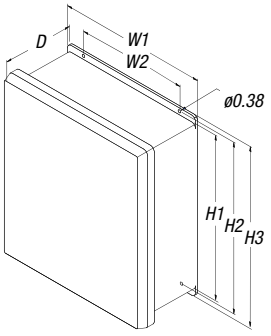
TG3/300	Inches	mm
H1	24.00	609.6
H2	25.25	641.4
H3	26.50	673.1
W1	16.00	406.4
W2	10.00	254.0
D	9.20	233.7

Dimensions — Fiberglass Reinforced Polyester

TG3/300	Inches	mm
H1	16.75	425.5
H2	16.75	425.5
H3	17.50	444.5
W1	14.75	374.7
W2	12.00	304.3
D	6.67	169.4



Metal



Fiberglass Reinforced Polyester

Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		

Panel Extension

Panel extension electrical transient suppression filter systems.

PX3™ Panel Extension

RoHS Compliant

The PX3™ offers an externally mounted surge solution that can be physically attached to the top or bottom of any panelboard, providing a reduced-profile surge solution. Designed for quick and easy installation, the PX3™ suppression filter systems feature a powerful failure-free ISM™ (Integrated Suppression Module). The ISM™ contains individual thermally fused TPMOVs, surge-rated copper busing, robust filtering and advanced remote communications capabilities. Unlike printed circuit board-based designs, the ISM's breakthrough technology does not rely on printed circuit board traces to carry full surge current magnitude. Instead, cumulative surge current travels on copper bus bars to multiple metal oxide varistor (MOV) paths. Printed circuit board trace failures are eliminated and current sharing is enhanced. Integral to the ISM™ is MOV fusing rated at 200 kAIC. This internal fusing ensures uninterrupted protection at rated surge current levels and protects all paths and elements.

- Provides direct bus connection capability to reduce wiring lead lengths, minimizing installation impedances and improving clamping voltages
- Removable end-plates allow installation above or below panelboards
- 15-year standard product warranty
- Space-saving design fits within a standard 6" deep wall and conserves horizontal wall space
- Provides electronic-grade power filtering for existing lighting and appliance distribution panels
- Extends equipment life by reducing equipment degrading high-frequency line noise and transients
- Easily mounts with most major brands of low-voltage (less than 600V) lighting and appliance panelboards
- Available in surface- or flush-mount configurations
- RoHS compliant

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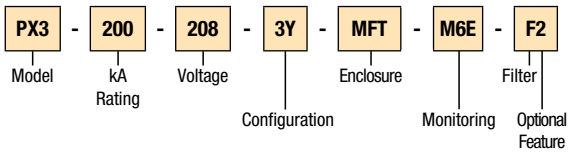
Panel Extension

Catalog Numbering System (PX3™)

Example: PX3-200-208-3Y-MFT-M6E-F2



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kA Rating (Must Choose One)	
Available PX3™ kA Ratings: 050, 080, 100, 125, 150, 200,	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration* (Must Choose One)	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Enclosure (Must Choose One)	
MFT	Metal, Flush Mount, Top Feed
MFB	Metal, Flush Mount, Bottom Feed
MST	Metal, Surface Mount, Top Feed
MSB	Metal, Surface Mount, Bottom Feed
SFT	Stainless, Flush Mount, Top Feed
SFB	Stainless, Flush Mount, Bottom Feed
SST	Stainless, Surface Mount, Top Feed
SSB	Stainless, Surface Mount, Bottom Feed

Monitoring (Must Choose One)	
M0	No Local Monitoring (see remote MxR standalone option)
M1	LED/Phase + Audible Alarm, Dry Relay Contacts
M2	M1 + Surge Counter
M3	Advanced Monitoring, Character Display, Modbus RTU
M4E	M3 + Ethernet, Modbus TCP
M5	Advanced Monitoring, Graphics Display, Modbus RTU
M6E	M5 + Ethernet, Modbus TCP
Filter (Must Choose One)	
F	Filter
N	No Filter
Optional Feature (May Choose One)	
1	Panel Mounted In-House
2	Test Port
4	Full Flush Cover
5	GE Version
6	Square D Version
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
MxR	Remote Monitor Extension M1X through M6EX
HPI	HPI Cable

Integrated Suppression Module

ISM™ Integrated Suppression Module

The ISM™ Integrated Suppression Module features a suppression filter assembly, with individual thermally fused TPMOVs for improved current sharing, as well as surge-rated copper bussing, robust filtering and advanced remote communications capabilities.

- Type 4 SPD component suitable for use in Type 1 or Type 2 applications
- Individual thermally fused TPMOVs ensure seamless product performance in the event of single MOV failure
- Heavy-duty filter capacitors ensure industry's best high-frequency noise and transient filtering
- Solid copper bus construction ensures that cumulative surge current is carried on copper bus bars, eliminating reliance on PCB trace for conducting full surge current
- Advanced remote communications capabilities
- Thermoplastic polycarbonate rated UL94V-0 housing

RoHS Compliant

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Product Specifications

General Specifications	
Safety Listings	Listed by UL® to UL 1449 3rd Edition Type 4 – Component SPD Suitable for use in Type 1 or Type 2 SPD Applications
Protection Method	TPMOV, Capacitive Filter
Product Design	Individual Thermally Fused TPMOVs and All Copper, Tin-Plated Bus
Installation Location	Indoor
Operating Environment	-40° C to +60° C 5% – 95% Non-Condensing Humidity
Fault Current (SCCR)	200 kAIC
Connection Method	Parallel
Protection Modes	All Modes (L-N, L-G, N-G, L-L)
Response Time	< 0.5 Nanoseconds
Operating Frequency	47–63 Hz
Warranty	15 Years

*Filtering Attenuation Frequencies (Per Mil-Std-220B January 2000)**

10 KHz	100 KHz	1 MHz	10 MHz	Max at 142 KHz
18.1 dB	44 dB	22.8 dB	15.3 dB	54.6 dB

Maximum Continuous Operating Voltage (MCOV)

Voltage	L-N MCOV	Voltage	L-L MCOV
120V	150V	240V	300V
277V	320V	480V	552V
347V	420V	600V	690V

** Data based on actual tests. Contact factory for test reports*

Catalog Numbering System (ISM™)

Exmaple: ISM-300-240-3D-SDT-M0-F

ISM	-	300	-	240	-	3D	-	M0	-	F
Model		kA Rating		Voltage		Configuration		Monitoring		Filter

kA Rating (Must Choose One)	
Available ISM™ kA Ratings: 050, 080, 100, 125, 150, 200, 250, 300	
Voltage (Must Choose One)*	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600
Configuration (Must Choose One)*	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta

** Not all Voltage and Configurations are displayed; contact Thomas & Betts Power Solutions for additional options.*

Filter (Must Choose One)	
F	Filter
N	No Filter
Standalone Options (to be Ordered as Separate Items)	
DTS	DTS-2 Diagnostic Test Set
HPI	HPI Cable
Standalone Monitoring Options	
M0	No Local Monitoring (see remote MxR standalone option)
M1X	LED/Phase + Audible Alarm, Dry Relay Contacts
M2X	M1 + Surge Counter
M3X	Advanced Monitoring, Character Display, Modbus RTU
M4EX	M3 + Ethernet, Modbus TCP
M5X	Advanced Monitoring, Graphics Display, Modbus RTU
M6EX	M5 + Ethernet, Modbus TCP

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Integrated Suppression Module

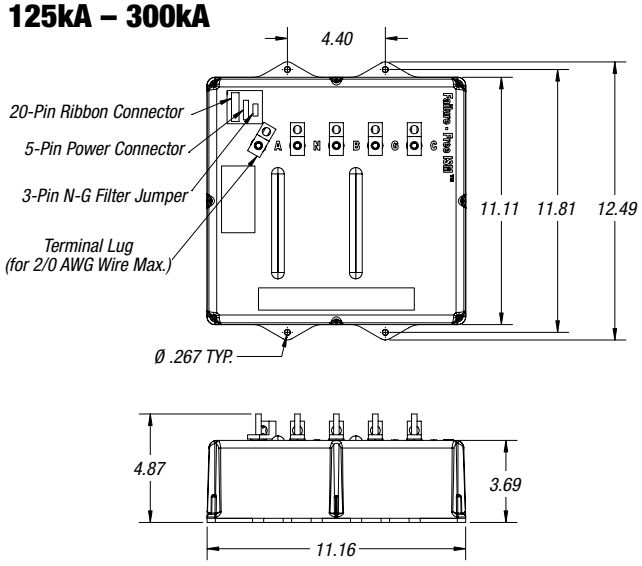
Typical Clamping Voltage Data

SYSTEM VOLTAGE	MODE	B3 RINGWAVE	B3/C1 COMB. WAVE	C3 COMB. WAVE	UL 1449 3RD EDITION 2009 REVISION
120/240 120/208	L-N	300	400	550	600
	L-G	400	400	600	600
	N-G	325	475	800	600
	L-L	425	725	900	1,000
277/480	L-N	500	875	1,050	1,000
	L-G	825	825	1,025	1,200
	N-G	650	875	1,200	1,000
	L-L	700	1,625	1,825	2,000

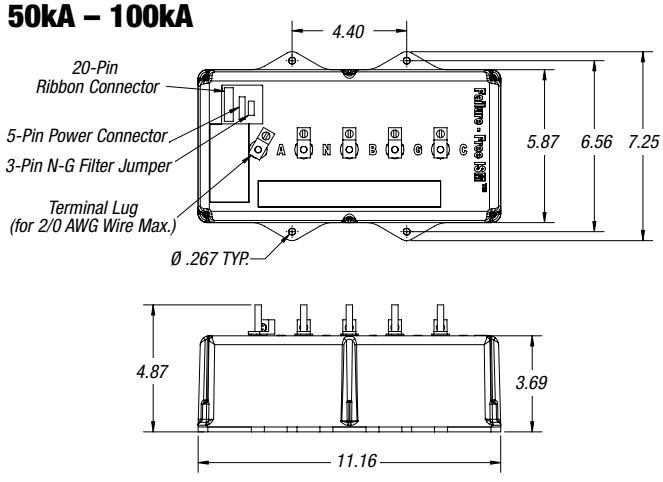
All ISM™ systems clamping voltages are in compliance with test and evaluation procedures outlined in NEMA LS 1-1992 (R2000), paragraphs 2.210 and 3.10.

ISM™ — Integrated Suppression Module
TPMOV® component of SL3®, TG3® and PX3™ products.

125kA – 300kA



50kA – 100kA



Voltage/Configuration Options

Not all voltage configurations are displayed. Contact Thomas & Betts Power Solutions for additional configurations.

VOLTAGE	1-Phase, Grounded 1G	2-Phase, Grounded, Split Phase 2G	3-Phase, Grounded Wye 3Y	3-Phase, Grounded High Resistance 3R	3-Phase, Grounded, High Leg Delta 3H	3-Phase, Grounded Delta 3D
	CONFIGURATION					
120	✔					
208	✔		✔	✔		✔
220	✔	✔		✔		✔
230	✔					✔
240	✔	✔			✔	✔
380		✔	✔	✔		✔
415		✔	✔	✔		✔
480		✔	✔	✔		✔
600		✔	✔	✔		✔

Advanced Monitoring

A full-featured monitoring option for SL3®, TG3® and PX3™ products.

MasterMind® Monitoring Options

The Current Technology® MasterMind® monitoring system offers multiple levels of advanced, multifunction, power quality monitoring for SL3®, TG3® and PX3™ suppression filter systems. The robust, full-featured MasterMind® system provides real-time data on product performance and distribution system power quality. This critical information can now be accessed remotely through the addition of both ModBus and ethernet communications options. The MasterMind® system is capable of providing time date stamps, magnitudes and durations for most types of power quality events. End users have the ability to set alarm conditions by establishing the magnitude and duration required to trigger an alarm event. Memory capacity will allow for up to 2,000 events and 1,000 P.Q. records to be recorded.

Percent Protection Sensing

All MasterMind® monitoring options sense and communicate the available surge protection for each phase. This capability assures the operator that critical loads are fully and safely protected at all times. Most surge devices standardize on providing LED indication for communicating the status of the surge device. They say, if the LED is on, the surge device is working, and if the LED is off, the surge device has failed. The MasterMind® provides real-time analysis of the percent of protection remaining so that the true status of the suppression filter system is known.

Not a standard surge counter

The surge counter function of the MasterMind® system exceeds the capability of standard surge counters by not only counting but categorizing surges into three industry-recognizable categories. Most surge device counters use a current transformer that detects the amount of current flow through neutral or ground. When the current is high enough for the current transformer to detect it, the surge counter is incremented. Some surge devices that employ both surge protection and filtering protection can have false surge counts caused by noise filtering. The MasterMind® surge counter registers and records surge events in excess of 100A to eliminate false readings. Surges detected by the MasterMind® system will be categorized as low, medium or high depending upon the level of surge current associated with each event.

Remote Communications

Methods for remote communications include ModBus-TCP/IP over ethernet, webserver via the ethernet connection and ModBus over RS485 or standard dry relay contacts. The ethernet and ModBus options provide the end user access to the critical power quality data and health of the surge unit remotely. With the webserver, there is a platform for the end user to easily view all of the available information arranged in an easily recognizable display format. The versatility of the remote connectivity available with the MasterMind® monitoring package allows for access to the surge unit from just about anywhere and at any time.

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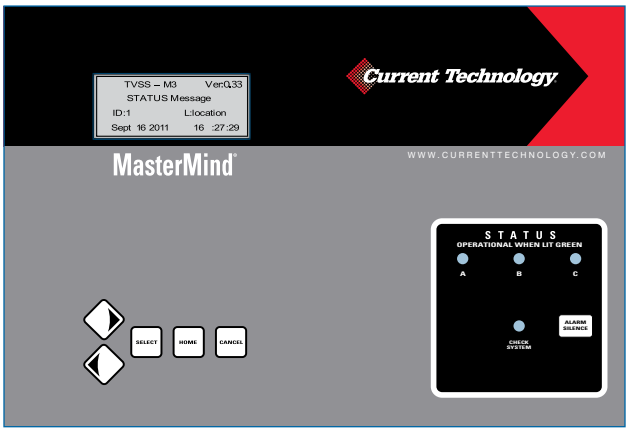
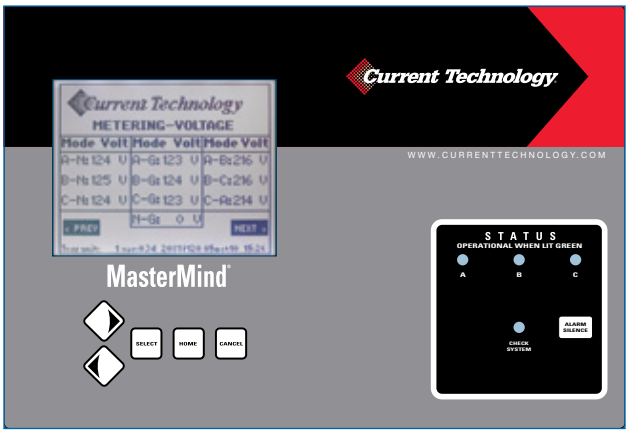
Advanced Monitoring



M3 or M4E local display



M5 or M6E local display

M3 Monitoring

- Local display with membrane switch user interface
- Power Quality Monitor that provides time, date, magnitude and duration of the following
  - Sags
  - Swells
  - Dropouts
  - Outages
  - THD
  - Frequency
  - Volts RMS per phase
  - Surges
    - Low 100A–500A
    - Med 500A–3000A
    - High 3000A+
  - Remaining surge protection percentage
- User-settable alarm thresholds (magnitude and duration)
- Dry relay contacts
- Audible alarm, alarm silence
- Per-phase LED indication
- ModBus RTU remote communications capability

M4E Monitoring

- M3 features plus...
- Ethernet, ModBus TCP remote communications capability
- Web Interface

M5 Monitoring

- Large local display with membrane switch user interface
- Power Quality Monitor that provides time, date, magnitude and duration of the following
  - Sags
  - Swells
  - Dropouts
  - Outages
  - THD
  - Frequency
  - Volts RMS per phase
  - Surges
    - Low 100A–500A
    - Med 500A–3000A
    - High 3000A+
  - Remaining surge protection percentage
- User-settable alarm thresholds (magnitude and duration)
- Dry relay contacts
- Audible alarm, alarm silence
- Per-phase LED indication
- ModBus RTU remote communications capability

M6E Monitoring

- M5 features plus...
- Ethernet, ModBus TCP remote communications capability
- Web Interface

CurrentGuard® Series

Innovative design ensures dependable operation.

CurrentGuard® Standard Protection

The CurrentGuard® product line delivers worry-free performance in reliable, innovative design packages. Our Innovative Z-Path System® ensures equal current sharing among MOVs, suppressing transients before they reach sensitive loads and resulting in maximum performance and increased reliability. An enhanced built-in EMI/RFI filter eliminates high-frequency noise and low-level transients for best-in-class design and performance.

Each product is designed and tested at a nationally recognized third-party independent laboratory to withstand single-pulse surge currents in accordance with ANSI/IEEE recommendations. Available in all standard voltage configurations with six surge ratings, CurrentGuard® and CurrentGuard® Plus are the ideal choices for mainstream surge protection requirements.

RoHS Compliant

CurrentGuard® Plus

- UL® 1449 3rd Edition Type 1 SPD
- Individually fused MOVs provide superior protection and continuous operation
- 200kAIC short-circuit current rating allows direct bus connection without the need for an upstream over-current protection device
- Includes best-in-class UL® 1283 enhanced EMI/RFI filter
- All modes of protection (L-N, L-G, N-G and L-L)
- Surge event counter standard
- DTS-2 compatible for proactive field testing
- NEMA 4 steel enclosure
- 15-year standard product warranty
- RoHS compliant

Catalog Numbering System (CGP®)

Exmaple: CGP-200-120/208-3GY

CGP	-	200	-	120/208-3GY	-	D
Model		kA Rating		Voltage		Disconnect

kA Rating (Must Choose One)	
Available CGP® kA Ratings: 060, 080, 100, 150, 200,	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
600	347/600

** Consult factory for additional voltage configurations*

Configuration (Must Choose One)*	
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta
Standard Monitoring Features	
Status Indicator Lights (one per phase)	
Service Indicator Light	
Form C Contacts (NO/NC)	
Audible Alarm with Silence Button	
Surge Counter	

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CurrentGuard® Series

CurrentGuard®

RoHS Compliant

- UL® 1449 3rd Edition Type 1 SPD
- Each mode protected by surge-rated over-current fuse
- 200kAIC short-circuit current rating allows direct bus connection without the need for an upstream overcurrent protection device
- UL® 1283 EMI/RFI filter
- All modes of protection (L-N, L-G, N-G and L-L)
- DTS-2 compatible for proactive field testing
- NEMA 4 steel enclosure
- 10-year standard product warranty
- RoHS compliant

Catalog Numbering System (CG®)

Exmaple: CG-200-277/480-3GY

CGP	-	200	-	277/480-3GY
Model		kA Rating		Voltage

kA Rating (Must Choose One)
Available CGP® kA Ratings: 040, 060, 080, 100, 150, 200,
Voltage* (Must Choose One)
208 120/208
240 120/240
380 220/380
480 277/480
600 347/600

** Consult factory for additional voltage configurations*

Configuration (Must Choose One)*
2G 2-Phase, Grounded, Split Phase
3Y 3-Phase, Grounded Wye
3H 3-Phase, Grounded, High Leg Delta
3D 3-Phase, Grounded Delta
Standard Monitoring Features
Status Indicator Lights (one per phase)
Service Indicator Light
Form C Contacts (NO/NC)
Audible Alarm with Silence Button
Surge Counter

CurrentGuard® Compact

Intertek

RoHS Compliant

CurrentGuard® Compact incorporates the same best-in-class features of the CurrentGuard® series of products in a rugged, compact enclosure. Pre-wired and measuring only 6"W x 6"H x 4"D, CurrentGuard® Compact easily installs in applications with minimum space requirements.

- UL® 1449 3rd Edition Type 1 SPD
- Ideal for in-wall recessed panel applications
- Surge-rated component-level fusing
- UL® 1283 EMI/RFI filter
- All modes of protection (L-N, L-G, N-G and L-L)
- Ultra-compact weatherproof NEMA 4 steel enclosure
- Flush-mount plate available
- Small footprint and pigtail connection
- DTS-2 compatible for proactive testing
- 10-year standard product warranty
- RoHS compliant

Catalog Numbering System (CGC®)

Exmaple: CGC 050-120/208-3GY

CGC 050	-	120/208-3GY	-	M
Model		Voltage		Option

kA Rating (Must Choose One)
Available CGC® kA Ratings: 050
Voltage* (Must Choose One)
208 120/208
240 120/240
480 277/480
Configuration* (Must Choose One)
2G 2-Phase, Grounded, Split Phase
3Y 3-Phase, Grounded Wye
3H 3-Phase, Grounded, High Leg Delta

Standard Monitoring Features
Status Indicator Lights (one per phase)
Optional Monitoring Features
M – Status Indicator Lights
Audible Alarm
Alarm Silence
Dry Relay Contacts

** Consult factory for additional voltage configurations*

LoadGuard® System

LoadGuard® Series-Connected Suppression Filter System

The LoadGuard® MSU (Modular Series Unit) is engineered for hard-wired installation within or adjacent to electrical loads such as outdoor lighting, robotics, process automation systems, motors, HVAC systems, pumps, heaters, programmable logic controllers and other point-of-use applications.

Compact and powerful, the LoadGuard® MSU protects these and other individual components from damaging electrical transients, high-frequency noise and high-energy disturbances. LoadGuard® provides 50kA of surge protection for loads up to 24 Amps.

LoadGuard® products employ metal oxide varistors (MOVs) in parallel arrays placed at the input and output terminals to protect critical loads from high-energy transient damage. MSU surge current capacity is 50kA per mode.

- Recognized to UL® 1449 3rd edition as a Type 4 SPD for Type 2 applications
- Industry's best surge current rating
- Series-connected design
- Rugged, non-metallic enclosure
- Sand-encapsulated
- Component-level fusing
- High-frequency noise filtering
- Compact footprint/easy installation
- Status indicator light

Catalog Numbering System (MSU®)

Exmaple: MSU-050-120/240-2G-24A-6

MSU	-	050	-	120/240	-	2G	-	24A	-	6
Model		kA Rating		Voltage		Configuration		Load Current		Modes of Protection

kA Mode (Must Choose One)	
Available MSU® kA Mode:	
050	
Voltage* (Must Choose One)	
208	120/208
240	120/240
380	220/380
480	277/480
Configuration* (Must Choose One)	
1G	1-Phase, Grounded
2G	2-Phase, Grounded, Split Phase
3Y	3-Phase, Grounded Wye
3R	3-Phase, Grounded High Resistance
3H	3-Phase, Grounded, High Leg Delta
3D	3-Phase, Grounded Delta

Load Current	
24A	
Filter (Must Choose One)	
F	Filter
N	No Filter
Modes of Protection	
3 or 6	

** Consult factory for additional voltage configurations*

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High-Performance Interconnect System

HPI™ SPD Connection System

Installing SPD units using standard off-the-shelf cable can increase the clamping voltage unless the cable length is kept short.

The Current Technology® High Performance Interconnect (HPI™) SPD Connection System provides the lowest possible impedance connection, improving SPD performance.

The HPI™ SPD Connection System has 25% of the typical impedance of regular cable and allows the installer to increase the interconnection cable length by up to four times, while maintaining acceptable clamping voltage levels, ensuring maximum SPD unit performance.

Using the HPI™ SPD Connection System adds more location flexibility within the electrical room and significantly reduces installation time.

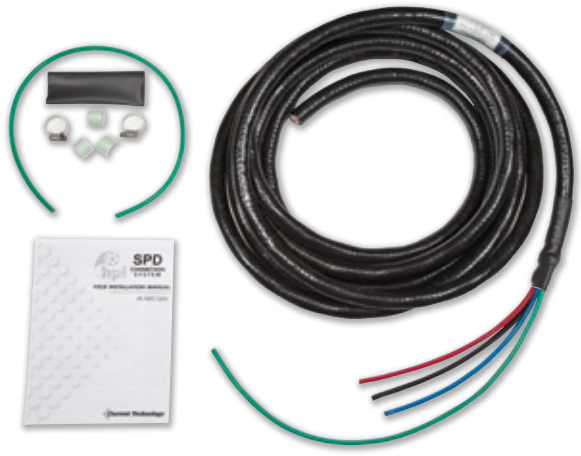
What is the HPI™ SPD Connection System?

The HPI™ SPD Connection System is a dual-shielded, triple-insulated multi-core power conductor specially constructed to minimize interconnection impedance for SPD installations.

The HPI™ SPD Connection System is a UL® approved connection means for use with Current Technology® SPD products only.

The ground and neutral shielded design of the HPI™ SPD Connection System provides the installer with a pre-manufactured SPD termination, significantly reducing the total time to install the SPD protection unit.

- Maximizes SPD unit performance
- Allows the SPD unit to be installed outside of the switchgear
- Interconnect cable length can be increased up to four times
- Increases installation location options
- Simplifies installation and reduces installation time
- Improves installation quality
- Removes hazards of internal SPD installations
- Pre-terminated end for SPD connection

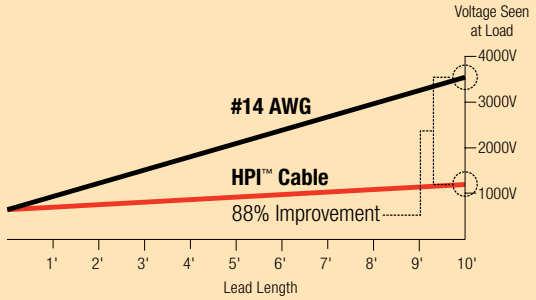


WIRE GAUGE	NOMINAL LENGTH*
6 AWG	5–30 ft.
10 AWG	5–30 ft.

** Lengths in 5 ft. increments*

Lead Length Test: Six-Inch Lead-Length Test Criteria

Every SPD manufacturer tests their units with only six inches of lead length outside of the enclosure per the test criteria outlined in IEEE C62.41. Six inches of lead length does not represent the actual lead length required for installing an SPD. Current Technology® applied a 20kV/10kA surge to a #14, #10 and #6 AWG wire measuring the voltage drop across a 10-foot section of each wire. The graph shows the impact 10 feet of #14 AWG wire would have to the installed performance of the SPD. The SPD, as tested with only six inches of lead length, may drop the surge down to 700V, but with 10 feet of #14 AWG wire, its installed performance is now 3,350V. The HPI™ cable was tested with the same 20kV/10kA surge with significant improvement. With 10 feet of HPI™ cable the installed, performance of the same SPD could be 1,150V. **This represents an 88% improvement.**



Diagnostic Tools

DTS-2 Diagnostic Test Set

The Current Technology® DTS-2 tester provides actual clamping performance values for SPDs. Every Current Technology® product is evaluated with this tester at the factory to establish its benchmark of performance. The portable DTS-2 tester can be deployed in the field to test units that have been in service for the remaining useful life of an installed product by comparing its latest clamping values against its benchmark values. The end user is given the opportunity to repair or replace the SPD before it fails, rather than waiting for it to fail and being left unprotected.

CAT. NO.	DESCRIPTION
DTS-2	Diagnostic Test Set

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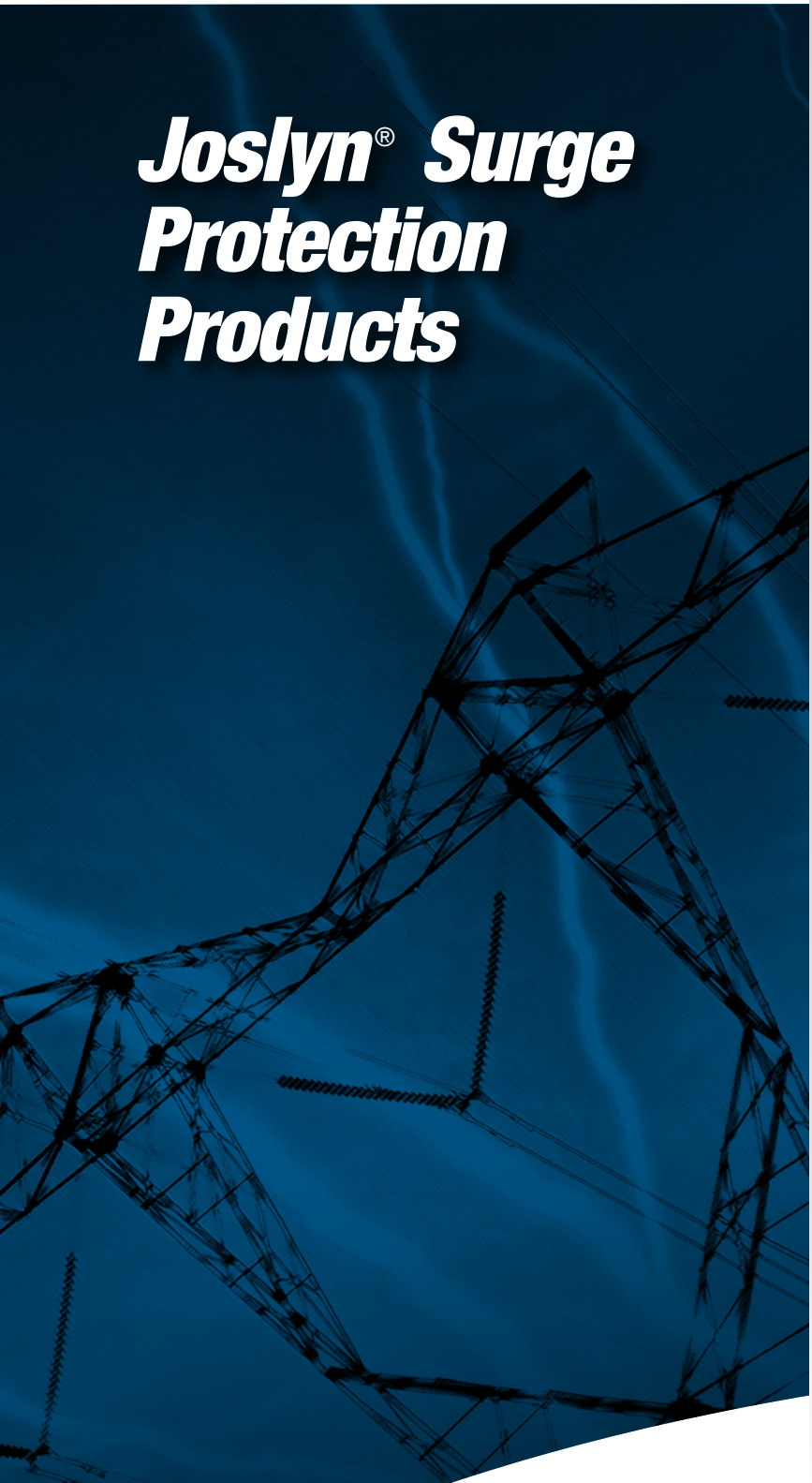
Joslyn® Surge Protection Products



In this section...

Joslyn® Surge Protection Products

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Overview

Modern equipment,

now and in the future, requires electrical systems to be free of transient surge events. Technology that is dependent on electrical utility power, while evolving with more sophistication, is also becoming more susceptible to power quality issues. Everyday equipment — such as fax machines, printers and elevators — produces electrical transients and noise, which can be destructive, disruptive and cause degradation to vital equipment. The threat of damage is rapidly growing, and the data-centric world is more susceptible to damage than ever before.

Risk

There are very few events that can match the destructive capability of transient and noise-induced surges, which are responsible for 30–50% of most electrical failures. Large surges, which can reach hundreds of thousands of volts, can cause immediate and intermittent equipment failure. The most destructive transient surges are attributed to lightning and utility load switching. A commonly held belief is that lightning never strikes the same place twice. In reality, lightning strikes are not single events, but instead typically produce four to six "hits," and have even been recorded with as many as 40 hits. Therefore, facilities need protection from multiple surge events.

Lightning only accounts for 20% of transient surges, while the other 80% is produced internally in a facility. Everyday equipment such as computers and lighting are typical culprits of smaller surges. Though these surges may be smaller in size, they are higher in occurrence. Continued exposure can cause random delayed equipment failures and lockups. Sensitive electronics are most susceptible to these types of transients and noise events. Smaller surges contribute to the degradation of equipment and can mimic communication errors, causing detrimental errors such as computer system restarts or lockups.

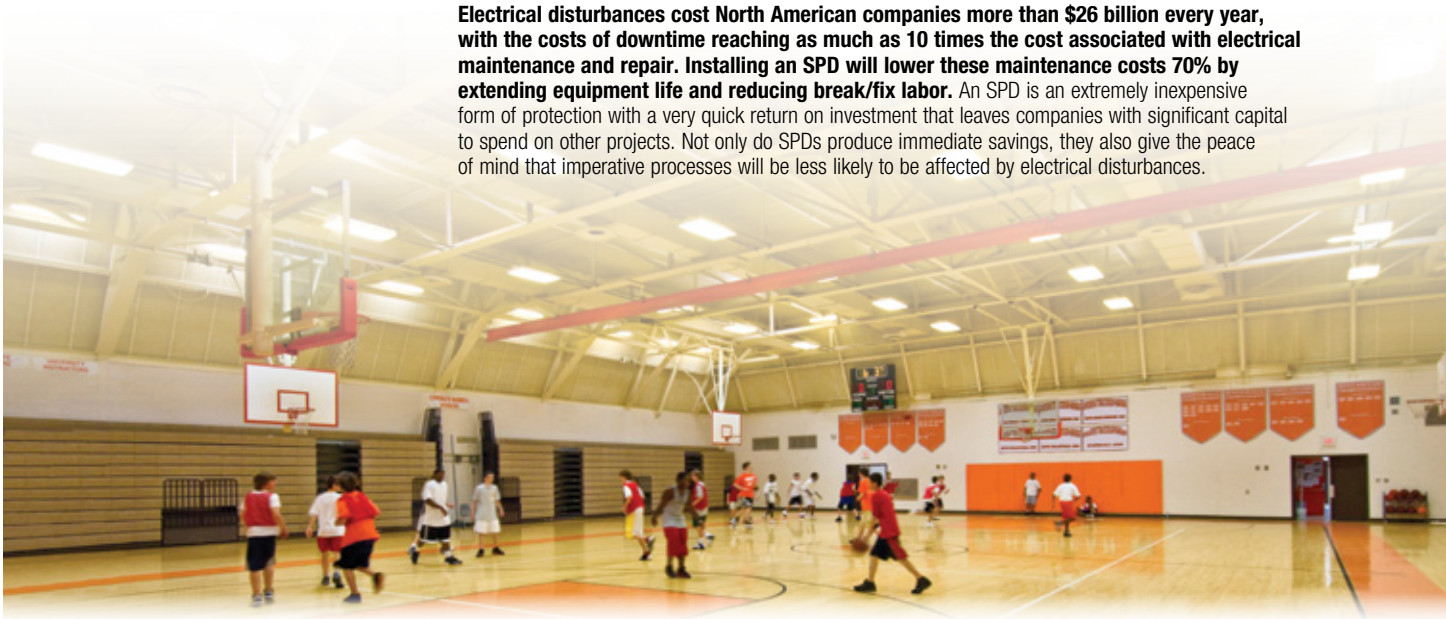
Reasons

In order to reduce and prevent damage caused by transient surges and noise, surge protective devices (SPD) or transient voltage surge suppressors (TVSS) should be installed in all facilities to safeguard systems. An SPD's function is to eliminate damaging activity throughout all electrical distribution systems and equipment operations. With the use of an SPD, transients and noise are reduced to harmless levels, preventing disruption of important processes. Companies can spend more time on other issues while less time is spent on service calls, which can greatly impact maintenance budgets.

Results

Surge protective devices are quality and performance-based products that lead to greater reliability of facilities and improved operating productivity. They cost-effectively protect electrical distribution, telecommunications and data systems throughout your facility and prevent unnecessary downtime and repairs.

Electrical disturbances cost North American companies more than $26 billion every year, with the costs of downtime reaching as much as 10 times the cost associated with electrical maintenance and repair. Installing an SPD will lower these maintenance costs 70% by extending equipment life and reducing break/fix labor. An SPD is an extremely inexpensive form of protection with a very quick return on investment that leaves companies with significant capital to spend on other projects. Not only do SPDs produce immediate savings, they also give the peace of mind that imperative processes will be less likely to be affected by electrical disturbances.



Overview

UL® 1449 3rd Edition

UL 1449 3rd Edition September 2009 Compliant

Four SPD Types Created

Type 1 is what we have historically referred to as a surge arrester. It is a permanently connected SPD installed between the secondary of the service transformer and the line side of the service disconnect.

Type 2 is what we have historically referred to as a TVSS or SPD device. It is a permanently connected SPD installed on the load side of the main service disconnect.

Type 3 point-of-use SPDs, installed a minimum of 10m from the panel. They can be cord-connected, direct plug-in or receptacle types.

Type 4 component SPDs include discrete components as well as component assemblies.

Type 1

Type 2

Measured Limiting Voltage Test

SVR (suppressed voltage rating) 6kV 500A is being replaced with VPR (Voltage Protective Rating) 6kV 3kA.

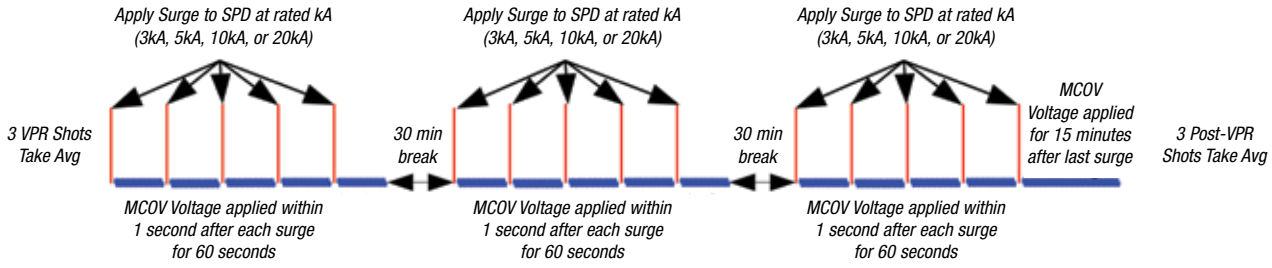
In Test or Nominal Discharge Surge Current Test

This is a new test designed to thermally stress the MOVs and the design of the SPD. The manufacturer must claim the surge rating kA level per mode of the protection device and the MCOV value per mode. Type 1 devices can be 10 or 20kA. Type 2 devices can be 3, 5, 10 or 20kA. During this test, the unit is surged at the claimed kA level. One second after the surge, the manufacturer's claimed MCOV voltage must be applied to the unit under test for one minute. This is repeated for a total of five surges, then the unit can rest for 30 minutes. After 30 minutes, five more surges are applied, followed by another 30-minute rest, followed by a final set of five surges. Pre- and post-VPR shot clamping voltages cannot deviate by more than ±10% for the test to be successful. The key to this test is that MCOV values are no longer determined based upon the value of the MOV used in the system. MCOV values are now a tested value that is determined and/or verified during this test. A graphical representation of this test is shown below.

Type 3

Type 4

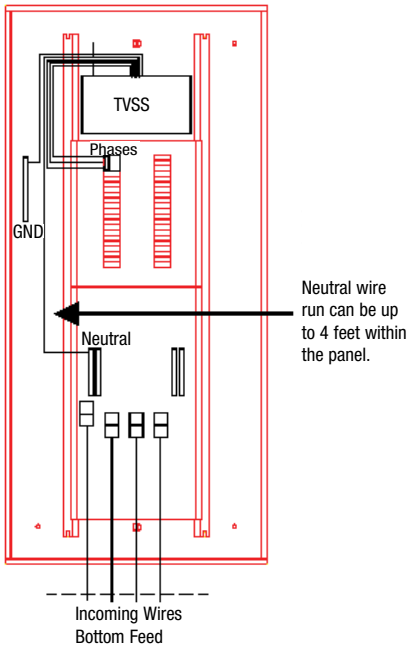
In Nominal Discharge Current Test



Overview

Does an Internally Mounted Surge Protector Really Have Shorter Lead Lengths?

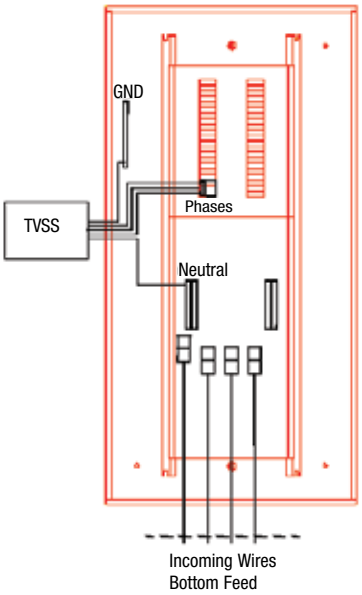
For years, panelboard manufacturers have been touting that their panel-integrated SPDs (surge protection devices) outperform externally mounted SPDs because they have the shortest lead lengths. In fact, all SPD manufacturers suggest in their installation instructions to keep the lead length as short as possible. Extra lead length has a negative effect on the performance of the SPD by increasing clamping levels. Internally mounted SPDs are typically integrated at the top or bottom of a panelboard. Due to space constraints within the panel, the Neutral and Ground buses for those panels are typically installed on the opposite end of the SPD. The clamping characteristics of the SPD are not isolated to how long the SPD's connection to the phase conductors are. They must also include how long the connections are to the Neutral and Ground. The clamping level of an SPD is determined by mode, which could be a Line to Neutral mode or a Line to Ground mode. So, the clamping level of an internally mounted SPD must take into account the length of the phase connection as well as how long the connection is to the Neutral and Ground. With the Neutral and Ground buses at the opposite end of the panel, the overall system lead length for an integrated SPD can, in some cases, be longer than a side-mounted external SPD. The two installation diagrams below show the difference between the conductor lengths of an internally mounted and externally mounted SPD.



The surge must travel through the phase through the SPD and through Neutral

Phase length + Neutral length

= SPD clamping voltage



Is an Internally Mounted SPD Safe to Operate?

IEEE Standard 1100-2006 (Emerald Book) Section 8.4.2.5 states, "... when an SPD is located inside switchboards or panelboards, there is a concern that failure of the SPD can cause collateral damage to the switchboard or panelboards, including compromising the insulation system with subsequent L-L and L-G faults... Locating the SPD external to the switchboard or panelboard allows the disconnecting means to be located inside the switchboard or panelboard and does not require access to the switchboard or panelboard interior when servicing the SPD."

There are two consequences that represent risk when considering an internal SPD in power distribution equipment:

- A catastrophic failure due to failure of the SPD within the equipment
- A service or a need to replace the SPD within the equipment

Unless you do nothing and have no protection, in both cases above, the integrated SPD will need to be replaced or repaired, which will require the following:

- Shut down power and de-energize connected loads
- Repair SPD on live load with appropriate PPE per NFPA 70E due to arc flash

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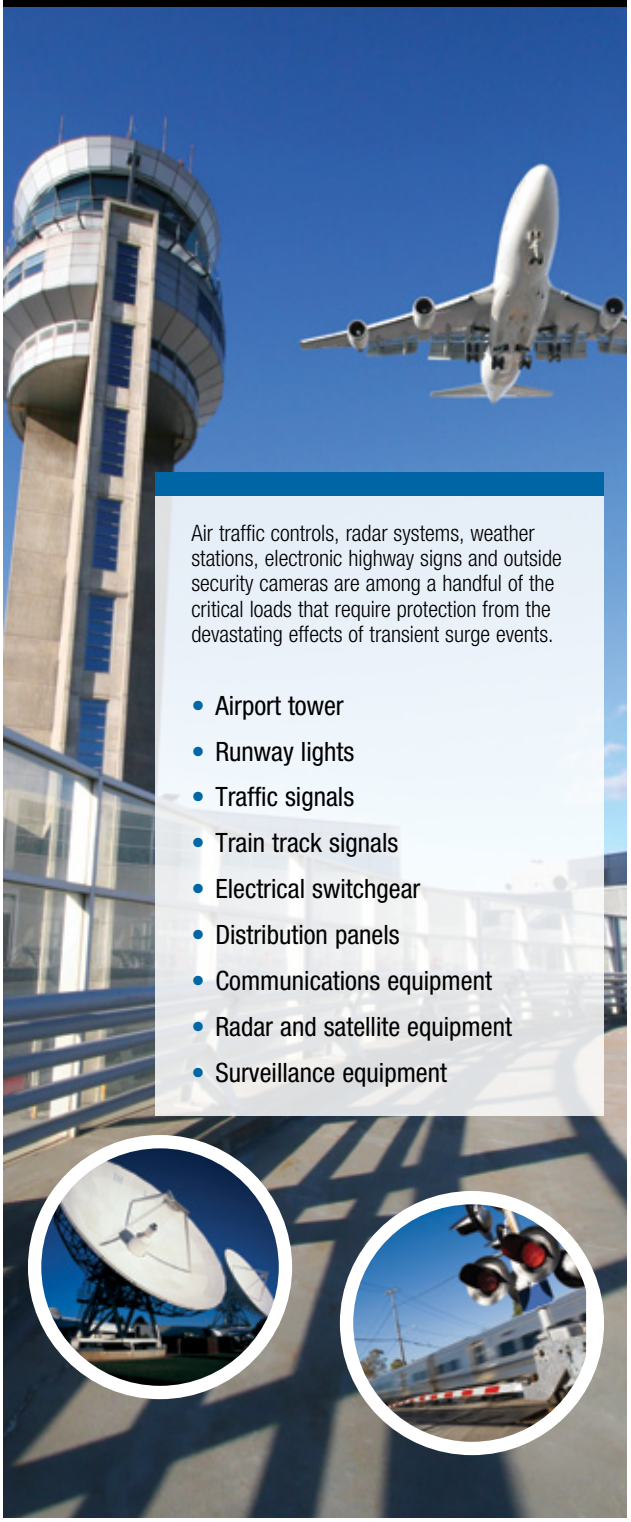
Overview

Transportation



Air traffic controls, radar systems, weather stations, electronic highway signs and outside security cameras are among a handful of the critical loads that require protection from the devastating effects of transient surge events.

- Airport tower
- Runway lights
- Traffic signals
- Train track signals
- Electrical switchgear
- Distribution panels
- Communications equipment
- Radar and satellite equipment
- Surveillance equipment

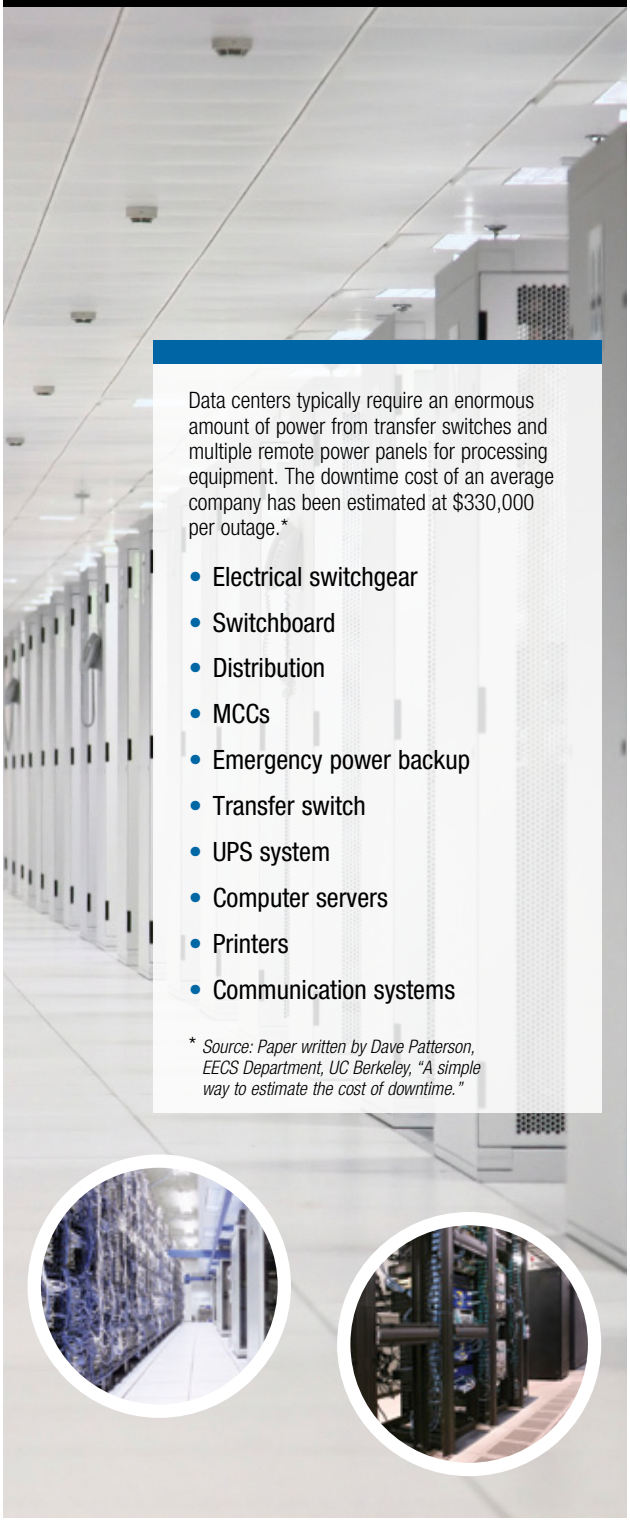
Renewable Energy

Today's technologies are rapidly developing innovative ways to harvest electricity. Wind farms, solar panels and solar collectors are technologies currently being developed that allow us to create energy from readily available natural resources. Due to their location on the electrical grid, these advanced technologies are typically installed in remote locations and are more susceptible to lightning and power quality anomalies.

- Emergency power backup
- Transfer switches
- Control boxes
- Switchgear
- Generators
- Computer servers
- Building management systems

Overview

Information/Data Management



Data centers typically require an enormous amount of power from transfer switches and multiple remote power panels for processing equipment. The downtime cost of an average company has been estimated at $330,000 per outage.*

- Electrical switchgear
- Switchboard
- Distribution
- MCCs
- Emergency power backup
- Transfer switch
- UPS system
- Computer servers
- Printers
- Communication systems

* *Source: Paper written by Dave Patterson, EECS Department, UC Berkeley, "A simple way to estimate the cost of downtime."*

Commercial/Retail

Many retail and commercial facilities are adopting innovative ways to help reduce the demand for power. New energy-efficient ballasts, dimmers and integrated renewable energy systems are just a few examples. These new technologies require sophisticated circuitry which is more susceptible to power quality events, resulting in a decrease in power demand but an increase in maintenance costs.

- Surveillance equipment
- Security systems
- HVAC
- Building management systems
- Fire alarm panels
- Copiers
- Telephone systems
- Fax machines

Surge Fact

Lightning-caused problems are one of the most common troubles faced by American business today. A recent Carnegie Mellon study showed that 33% of U.S. businesses are affected by lightning — and that more businesses are affected by lightning storms than by floods, fires, explosions, hurricanes and earthquakes.

Source: "Securing the Supply of Electrical Services," by Jay Apt, Carnegie Mellon University, presented at the Carnegie Mellon Conference on Crisis Readiness, "Before the Next Crisis: Steps to Secure America's Essential Systems," February 2006.

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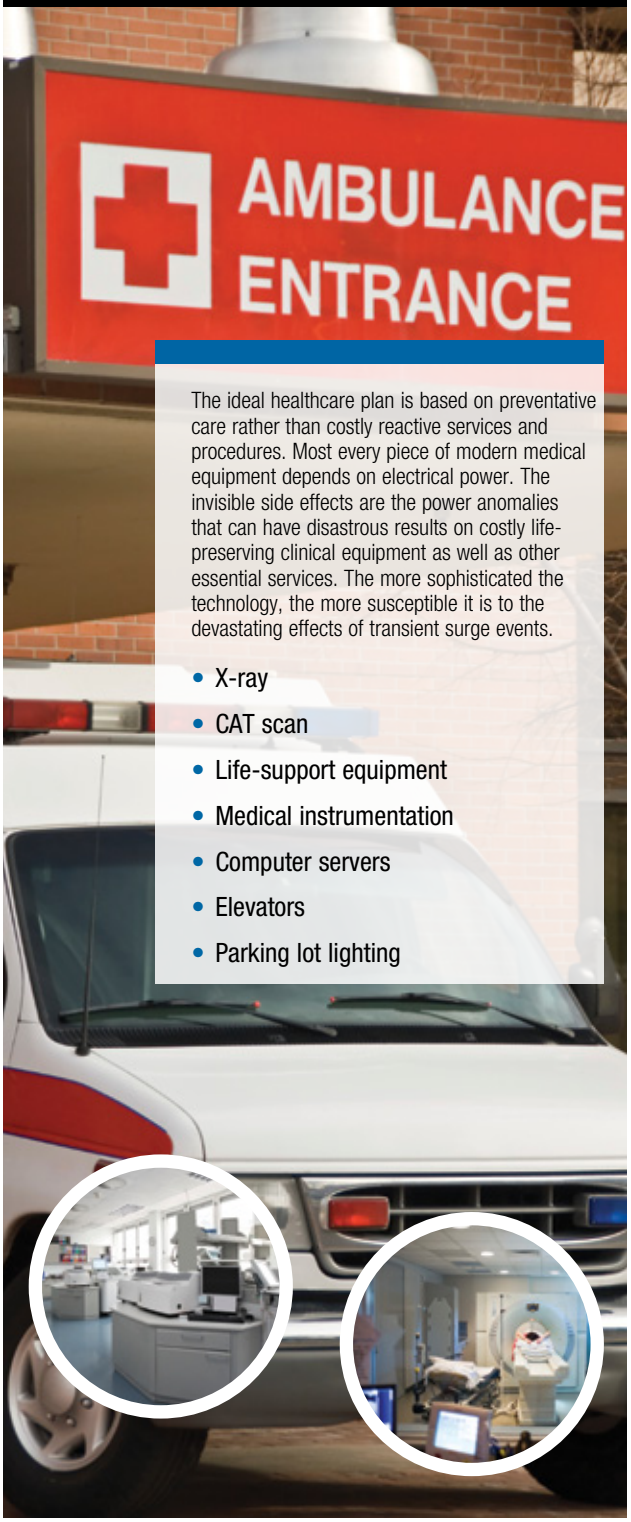
Overview

Healthcare



The ideal healthcare plan is based on preventative care rather than costly reactive services and procedures. Most every piece of modern medical equipment depends on electrical power. The invisible side effects are the power anomalies that can have disastrous results on costly life-preserving clinical equipment as well as other essential services. The more sophisticated the technology, the more susceptible it is to the devastating effects of transient surge events.

- X-ray
- CAT scan
- Life-support equipment
- Medical instrumentation
- Computer servers
- Elevators
- Parking lot lighting

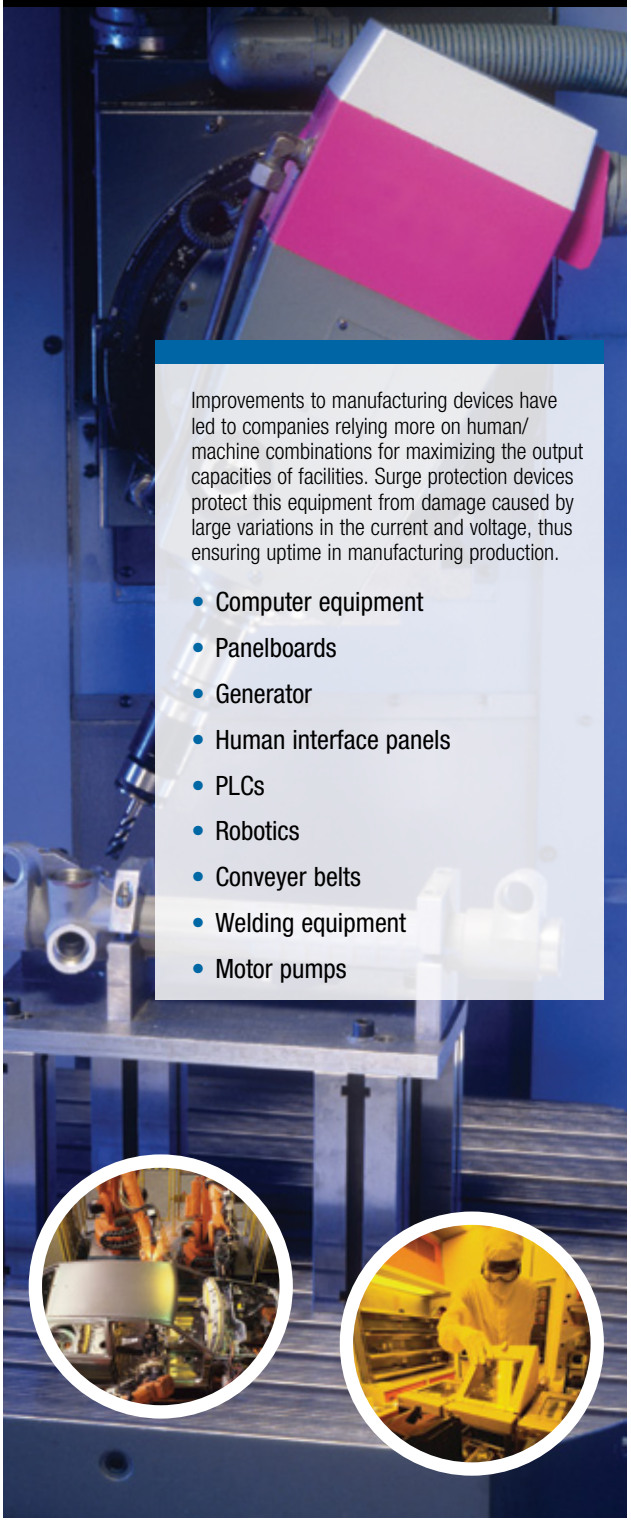
Education

As we strive to provide future generations with the best education, schools have turned to computer technology to aid educators and students. Most school systems utilize state-of-the-art multimedia outlets and more computers in the classrooms. Keeping classrooms up and running keeps growing minds energized!

- Emergency power backup
- Transfer switch
- UPS system
- TVs
- VCRs
- Computer servers
- Printers
- Communication systems

Overview

Manufacturing/Industrial



Improvements to manufacturing devices have led to companies relying more on human/machine combinations for maximizing the output capacities of facilities. Surge protection devices protect this equipment from damage caused by large variations in the current and voltage, thus ensuring uptime in manufacturing production.

- Computer equipment
- Panelboards
- Generator
- Human interface panels
- PLCs
- Robotics
- Conveyer belts
- Welding equipment
- Motor pumps

Utilities

As the demand for clean water increases, wastewater treatment facilities are utilizing additional technologies to monitor sites and surroundings. Increasing facility security requires surveillance equipment to guard against hostile acts. Surge protection devices are necessary to provide confidence and reliability in today's personnel-restricted environments.

- Computer equipment
- Panelboards
- Generator
- Variable frequency drives
- Servo drives
- Robotics
- Conveyer belts
- Motor pumps

Surge Fact

A wind turbine generator is the most exposed of all types of generators connected to electric utility systems. Wind turbines are most often erected in hostile lightning environments. Lightning damage is the single largest cause of unplanned downtime in wind turbines.

Source: "Effective Lightning Protection For Wind Turbine Generators," EEE, March 2007.

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JSP Series

JSP Surge Suppressors

- Listed to UL® 1449 3rd Edition as a Type 1 SPD
- Fail-safe design with individually fused MOVs that eliminate single point failure protecting against overcurrent
- 200kAIC short circuit rating permits direct bus connection to most electrical services
- Low let-through voltage ensured by the lowest possible impedance path to ground and equal current sharing during surge events
- Powder-coated NEMA 4/IP65 housing is designed for indoor/outdoor applications
- 10-year warranty

Available Configurations

CAT. NO.	VOLTAGE	CONFIGURATION
JSPXXX-1P120-X	120V	1-Phase, 2-Wire + Ground
JSPXXX-1S240-X	120/240V	Split-Phase, 3-Wire + Ground
JSPXXX-3Y208-X	120/208V	3-Phase, 4-Wire + Ground
JSPXXX-3Y480-X	277/480V	3-Phase, WYE, 4-Wire + Ground
JSPXXX-3Y600-X	347/600V	3-Phase WYE, 4 Wire + Ground
JSPXXX-3D600-X	600V	3-Phase Delta, 3 Wire + Ground

xxx = 60, 100, 160, 240, 400kA per phase.
x = -F for Transient Filter that meets UL® 1283, -M for advanced monitoring and -S for SS enclosure.

Optional Features:

- Advanced monitoring (-M suffix) includes dry relay contact, audible alarm, alarm silence button and fault indication
- Transient filter* (-F suffix) that meets UL® 1283
- Stainless steel enclosure (-S suffix)

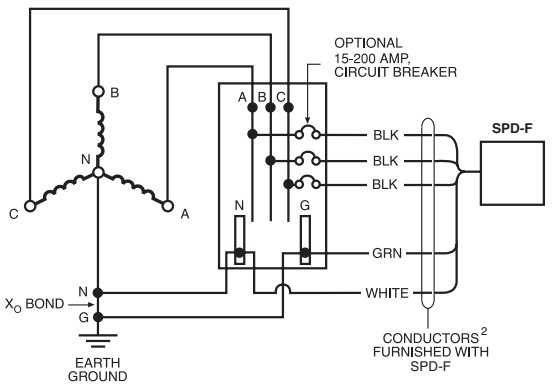
** Not recommended when using telecommunication rectifiers.*

Specifications

Mechanical		
Weight	60, 100	10 lbs. (4.5kg)
	160	20 lbs. (9kg)
	240, 400	40 lbs. (18.2kg)
Enclosure Type	Powder-coated, impact-resistant steel, weatherproof NEMA 4	
Installation Location	Indoor or outdoor	
Connection Method		
60, 100	Pre-wired with 36" stranded #10 AWG conductor	
160, 240, 400	Hard-wired via internal lugs #10 AWG – #3 AWG (5.27mm – 26.7mm)	
Mounting Method	Dual mounting flanges	
Operating Environment	-40° C to +70° C (-40° F to +158° F) 5% – 95% non-condensing humidity	
Altitude	Up to 13,000 ft. (4000m)	
EMI/RFI Filter Attenuation — MIL Standard 220B		
Max. Attenuation Freq.	41dB @ 106kHz	

Typical 3-Phase Installation

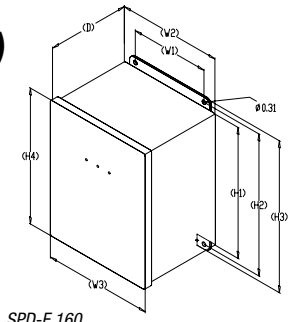
4-Wire WYE



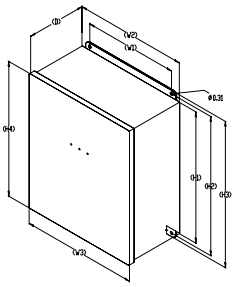
JSP Surge Suppressors *(continued)*

Specifications

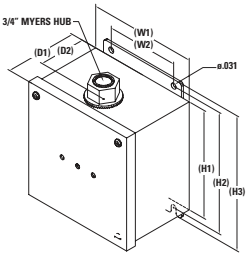
Electrical	
Operating Frequency	47–63 Hz
Connection Method	Parallel to electrical distribution system
Modes of Protection	L-N, L-G, L-L, N-G
Fault Rating (SCCR)	200kAIC — no upstream over-current protection device (breaker or fuse) required
Response Time	Less than .5 nanoseconds
Standard Monitoring — 160kA	Status indicator lights (one per phase)
— 240kA	Dual remote relay contacts – normal
— 400kA	Open and normal close; relay contacts are rated 150VDC/125VAC with maximum switching power of 30WDC/60VA AC; audible alarm with silence button
Standard Monitoring — 60, 100kA	Status indicator lights (one per phase)
General	
Maximum Surge Current Rating	60kA, per phase; 30kA per mode 100kA, per phase; 50kA per mode 160kA, per phase; 80kA per mode 240kA, per phase; 120kA per mode 400kA, per phase; 200kA per mode
Repetitive Surge Current Rating (10,000 Amps/Mode Using the ANSI/IEEE C62)	60kA, 3250 impulses 100kA, 3250 impulses 160kA, 4000 impulses 240kA, 6500 impulses 400kA, 6500 impulses
Product Design	Parallel design with individual fused MOVs and optional UL® 1283 Listed EMI/RFI filter
Regulatory Listing	Listed to UL® 1449 3rd Edition Type 1 SPD, UL 1283



SPD-F 160



SPD-F 240, 400



SPD-F 60, 100

Dimensions

DIM	JSP 60, 100		JSP 160		JSP 240, 400	
H1	6.00	(152.4)	10.00	(254.0)	14.00	(254.0)
H2	6.75	(171.5)	10.75	(273.1)	14.75	(374.7)
H3	7.50	(190.5)	11.50	(292.1)	15.50	(393.7)
W1	6.00	(152.4)	8.00	(203.2)	12.00	(304.8)
W2	4.00	(101.6)	6.00	(152.4)	10.00	(354.0)
D	—	—	6.20	(157.5)	6.20	(157.5)
D1	4.16	(105.7)	—	—	—	—
D2	2.50	(63.5)	—	—	—	—

All measurements in inches (mm).

Surge Fact

In the United States, between five and 10 times a day, an arc flash explosion results in personal injury. At least one burn victim will die as a result of injuries received*. Highly respected electrical industry organizations have recommended two ways of reducing injury or death associated with arc flash incidents. IEEE section 8.4.2.5 recommends that SPDs be mounted external to the gear to eliminate potential arc flash incidents. The NFPA advocates the use of PPE (personal protection equipment) outlined in NFPA 70E guidelines for working on live gear.

The only way to effectively eradicate arc flash incidents is by reducing or eliminating the opportunity for exposure to "live" gear. Installing the SPD external to the gear eliminates the chance that the SPD could fail and possibly cause an arc flash. Also, keeping the SPD out of the gear eliminates the chance that an electrician might have to work on live gear to repair or replace a damaged SPD.

** Statistics compiled by CapSchell, Inc., a research and consulting firm specializing in preventing workplace injuries or deaths.*

JSP Performance Data

				ANSI/IEEE C62.41.1-2002, C62.41.2-2002 AND C62.45-2902 MEASURED LIMITING VOLTAGE			
CAT. NO.	VOLTAGE CONFIGURATION	PROTECTION MODE	MCOV	B3 RING WAVE 6KV, 500A	B3/C1 COMBO WAVE 6KV, 3KA	C3 COMBO WAVE 20KV, 10KA	UL 1449 3RD EDITION 6KV, 3KA VPR
JSP060-1S240	1S240	L-N	150V	202V	587V	1078V	600V
		L-G	150V	529V	564V	1157V	600V
		L-L	300V	290V	1029V	1667V	1000V
		N-G	0V	548V	594V	1180V	600V
JSP060-3Y208	3Y208	L-N	150V	202V	587V	1078V	600V
		L-G	150V	529V	564V	1157V	600V
		L-L	300V	290V	1029V	1667V	1000V
		N-G	0V	548V	594V	1180V	600V
JSP060-3Y480	3Y480	L-N	320V	180V	1036V	1553V	1200V
		L-G	320V	855V	989V	1483V	1200V
		L-L	600V	261V	1847V	2520V	2000V
		N-G	0V	840V	989V	1470V	1200V

JSP Performance Data *(continued)*

CAT. NO.	VOLTAGE CONFIGURATION	PROTECTION MODE	MCOV	ANSI/IEEE C62.41.1-2002, C62.41.2-2002 AND C62.45-2902 MEASURED LIMITING VOLTAGE B3 RING WAVE 6KV, 500A	B3/C1 COMBO WAVE 6KV, 3KA	C3 COMBO WAVE 20KV, 10KA	UL 1449 3RD EDITION 6KV, 3KA VPR
JSP060-3Y600-X	3Y600	L-N	420V	56V	1242V	1710V	1200V
		L-G	420V	99V	1294V	1738V	1200V
		L-L	840V	76V	2280V	2893V	2500V
		N-G	420V	88V	1190V	1610V	1200V
JSP060-3D600-X	3D600	L-G	750V	1253V	1907V	2420V	2500V
		L-L	750V	36V	1927V	2410V	2500V
JSP100-1S240	1S240	L-N	150V	202V	587V	1078V	700V
		L-G	150V	529V	564V	1157V	700V
		L-L	300V	290V	1029V	1667V	1200V
		N-G	150V	548V	594V	1180V	700V
JSP100-3Y208	3Y208	L-N	150V	202V	587V	1078V	700V
		L-G	150V	529V	564V	1157V	700V
		L-L	300V	290V	1029V	1667V	1200V
		N-G	150V	548V	594V	1180V	700V
JSP100-3Y480	3Y480	L-N	320V	180V	1036V	1553V	1000V
		L-G	320V	855V	989V	1483V	1000V
		L-L	640V	261V	1847V	2520V	1800V
		N-G	320V	840V	989V	1470V	1000V
JSP160-1S240	1S240	L-N	150V	440V	629V	1413V	700V
		L-G	150V	496V	640V	1360V	700V
		L-L	300V	544V	971V	1707V	1200V
		N-G	150V	464V	624V	1360V	700V
JSP160-3Y208	3Y208	L-N	150V	440V	629V	1413V	700V
		L-G	150V	496V	640V	1360V	700V
		L-L	300V	544V	971V	1707V	1200V
		N-G	150V	464V	624V	1360V	700V
JSP160-3Y480	3Y480	L-N	320V	347V	525V	1069V	1000V
		L-G	320V	1145V	565V	1117V	1000V
		L-L	640V	491V	860V	1443V	1800V
		N-G	320V	1090V	507V	930V	1000V
JSP160-3Y600-X	3Y600	L-N	420V	56V	1242V	1710V	1500V
		L-G	420V	99V	1294V	1738V	1500V
		L-L	840V	76V	2280V	2893V	2500V
		N-G	420V	88V	1190V	1610V	1500V
JSP160-3D600-X	3D600	L-G	750V	1253V	1907V	2420V	2500V
		L-L	750V	36V	1927V	2410V	2500V
JSP240-1S240	1S240	L-N	150V	464V	502V	907V	800V
		L-G	150V	672V	627V	1173V	800V
		L-L	300V	576V	864V	1267V	1200V
		N-G	150V	512V	568V	1090V	800V
JSP240-3Y208	3Y208	L-N	150V	464V	502V	907V	800V
		L-G	150V	672V	627V	1173V	800V
		L-L	300V	576V	864V	1267V	1200V
		N-G	150V	512V	568V	1090V	800V
JSP240-3Y480	3Y480	L-N	320V	427V	828V	1170V	1200V
		L-G	320V	944V	996V	1540V	1200V
		L-L	640V	555V	1497V	1950V	1800V
		N-G	320V	848V	899V	1500V	1200V
JSP240-3Y600-X	3Y600	L-N	420V	44V	1090V	1537V	1500V
		L-G	420V	77V	1144V	1707V	1500V
		L-L	840V	54V	2017V	2470V	2500V
		N-G	420V	52V	1155V	1800V	1500V
JSP240-3D600-X	3D600	L-G	750V	1080V	1763V	2420V	2500V
		L-L	750V	42V	1737V	2203V	2500V
JSP400-1S240	1S240	L-N	150V	464V	502V	907V	800V
		L-G	150V	672V	627V	1173V	800V
		L-L	300V	576V	864V	1267V	1200V
		N-G	150V	512V	568V	1090V	800V
JSP400-3Y208	3Y208	L-N	150V	464V	502V	907V	800V
		L-G	150V	672V	627V	1173V	800V
		L-L	300V	576V	864V	1267V	1200V
		N-G	150V	512V	568V	1090V	800V
JSP400-3Y480	3Y480	L-N	320V	427V	828V	1170V	1200V
		L-G	320V	944V	996V	1540V	1200V
		L-L	640V	555V	1497V	1950V	1800V
		N-G	320V	848V	899V	1500V	1200V
JSP400-3Y600-X	3Y600	L-N	420V	44V	1090V	1537V	1500V
		L-G	420V	77V	1144V	1707V	1500V
		L-L	840V	54V	2017V	2470V	2500V
		N-G	420V	52V	1155V	1800V	1500V
JSP400-3D600-X	3D600	L-G	750V	1080V	1763V	2420V	2500V
		L-L	750V	42V	1737V	2203V	2500V

All SPD-F systems measured limited voltages are peak values (±10%) measured from the zero reference point and are in compliance with test and evaluation procedures outlined in ANSI/IEEE C62.

Surgitron I Series

Surgitron I Series AC Modular Heavy-Duty SPDs

Surgitron I Series models offer primary protection against multiple lightning strikes or other induced voltage surges. The surge current capability of this family greatly exceeds the heaviest surge described by ANSI/IEEE C62.41-1991 (Location Category C3).

Older versions of this family have an exceptional track record of protection and reliability across 30 years of service. With tens of thousands of satisfied customers that have been field proving these products for years, a Surgitron solution is the safe bet when you cannot afford to have your load electronics damaged or your installation down for surge-induced repairs.

Voltage Configurations

MODEL	VOLTAGE	CONFIGURATION
1260-45/-85	120 VAC	Single-Phase, 2-Wire
1261-45/-85	230 VAC	Single-Phase, 2-Wire
1265-45/-85 **1265-85M/MN**	120/240 VAC	Split Single-Phase, 3-Wire
1266-85	220/440 to 240/280 VAC	Split Single-Phase, 3-Wire
1455-45/-80/-85 **1455-85-M/MN**	208Y/120 VAC	3-Phase Grounded Wye, 4-Wire
1457-45/-80/-85	400Y/230 VAC	3-Phase Grounded Wye, 4-Wire
1456-45/-80/-85 **1456-85-M/MN** **1456-85-L**	480Y/277 VAC	3-Phase Grounded Wye, 4-Wire
1450-85	240 VAC	3-Phase Delta, Ungrounded, 3-Wire
1266-85	240 VAC	3-Phase Delta, Corner-Grounded, 3-Wire
1452-80/-85	240/120 VAC	3-Phase Delta, Center-Tap Grounded, 4-Wire
1451-85	480 VAC	3-Phase Delta, Ungrounded, 3-Wire
1260-97	—	Remote Monitor (standalone)

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Surgitron II Series

Surgitron II Series SPDs

- Listed to UL® 1449 3rd Edition as a Type 2 SPD
- For use at service entrance or distribution panel, permanently connected
- Multiple metal oxide varistors with individual and over-current protection; LED on faceplate indicates proper functioning/fault of production elements
- Three-year warranty

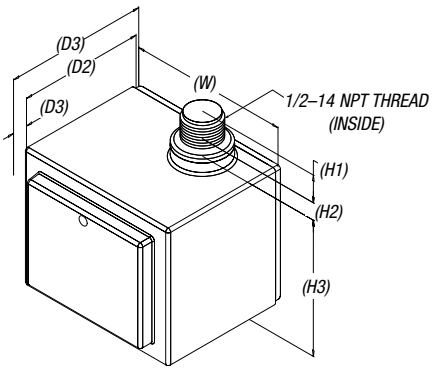
Available Configurations

CAT. NO.	Voltage	Configuration
1265-22-40	120/240V	1-Phase, 3-Wire + Ground 50–60 Hz
1265-22-60	120/240V	1-Phase, 3-Wire + Ground 50–60 Hz
1265-22-80	120/240V	1-Phase, 3-Wire + Ground 50–60 Hz

Specifications

Electrical		
Connection Means		60A max. breaker
Short Circuit Current Rating		65,000A
Protection Modes		L1-N, L2-N, L1-G, L2-G, N-G and L1-L2
Maximum Continuous Operating Voltage		150VAC
Nominal Varistor Voltage at 1mADC		235V
Leakage, L-G at 120VAC		<600µA
Dimensions		
H1	.75	(19.1)
H2	.25	(6.4)
H3	2.93	(74.4)
W	3.56	(90.4)
D1	.32	(8.1)
D2	2.78	(70.6)
D3	3.10	(78.7)

All measurements in inches (mm).



Specifications *(continued)*

General			
Maximum Surge Current			
Single Pulse, 8/20µs, per Phase		SPD-80-1S240-S	80kA
		SPD-60-1S240-S	60kA
		SPD-40-1S240-S	40kA
	per Mode	SPD-80-1S240-S	40kA
		SPD-60-1S240-S	30kA
		SPD-40-1S240-S	20kA
Transient Energy Rating, 10/1000µs		2720 Joules	
Suppression Voltage, L (N+G) Using ANSI/IEEE C62.41 Waveshapes			
200A	100kHz	385V	
500A	100kHz	435V	
500A	8/20µs	365V	
3kA	8/20µs	435V	
10kA	8/20µs	660V	
UL 1449 3rd Edition Voltage Protection Rating 6kV, 3kA			
	L-N	600V	
	L-G	600V	
	N-G	900V	
Surge Life, L-(N+G)			
	3kA, 8/20µs	15,000 times	
	10kA, 8/20µs	300 times	
Component Response Time		<1 ns	
Operating Temperature		-40° to +85° C	
Maximum Operating Altitude		7000m	

Surge Fact

Lightning detection systems in the United States monitor an average of 25 million strikes of lightning from clouds to ground during some 100,000 thunderstorms every year. It is estimated that the earth is struck by an average of more than a hundred lightning bolts every second.

Source: "Flash Facts About Lightning," National Geographic News, June 2005.

Surgitron III Series

Surgitron III Series SPDs

- Listed to UL® 1449 3rd Edition
- Suitable for use on service entrance, distribution panels or point-of-use applications
- Install on load side of the main service disconnect
- Features multiple metal oxide varistors
- Individual fusing for each MOV; LED indication per phase indicates proper functioning of individual MOVs
- Three-year warranty

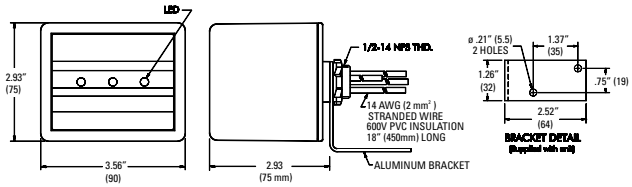
Available Configurations

CAT. NO.	TYPE	VOLTAGE	CONFIGURATION
1260-21	Type 1	120V	1-Phase, 2-Wire + Ground
1265-21	Type 1	120/240V	Split Phase, 3-Wire + Ground
1455-21	Type 1	120/208V	3-Phase, 4-Wire + Ground
1457-21	Type 2	277/480V	3-Phase, 4-Wire + Ground

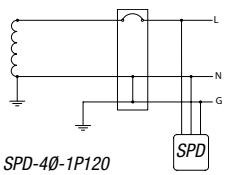
Specifications

Electrical	
Operating Frequency	47–63 Hz
Connection Method	Parallel to Load, #14 AWG (2mm) wires 600V PVC insulation, 18" long
Short Circuit Current Rating Type 2	100kAIC behind a 30A maximum breaker
Short Circuit Current Rating Type 1	100kAIC, no upstream over-current protection required
Modes of Protection (model specific)	L-N, L-G, L-L, N-G
Response Time	Less than 1 nanosecond
Monitoring	Status indicator lights (one per phase)
Leakage Current L-G	<100µA

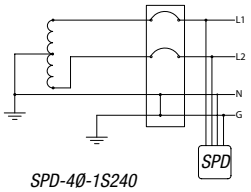
Dimensions



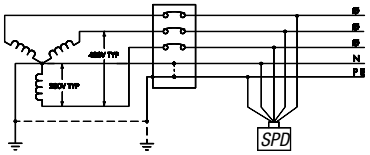
Connections



SPD-4Ø-1P120



SPD-4Ø-1S240



SPD-4Ø-3Y208, 3Y480

Specifications (cont.)

General	
Weight	2 lbs. (.9kg)
Dimensions	2.93" x 2.93" x 3.56" (75mm x 75mm x 90mm)
Enclosure Type	NEMA 1, non-metallic
Surge Current	40kA per mode
Nominal Discharge Surge Current	20kA per UL 1449 3rd Edition
Surge Life @ 3kA 8/20µs	> 3,000 impulses
Product Design	Individually fused MOVs
Mounting Method	½"–14 NPS thread, aluminum bracket option
Operating Temperature	-40° to +80° C (-40° to 176° F)
Operating Altitude	16,400 ft. (5000m)
Approvals	UL 1449 3rd Edition

Performance Data

		ANSI/IEEE C62.41.1-2002, C62.41.2-2002 AND C62.45-2002 MEASURE LIMITING VOLTAGE					
CAT. NO.	VOLTAGE CONFIG.	MODE	MCOV	RING WAVE 6KV, 500A	COMB WAVE 6KV, 3KA	COMB WAVE 20KV, 10KA	UL® 1449 3RD EDITION VOLTAGE PROTECTION RATING
1260-21	120	L-N	150	460	480	740	700
		L-G	300	765	910	1205	1200
		N-G	150	460	480	740	700
1265-21	120/240	L-N	150	460	480	740	700
		L-G	300	765	910	1205	1200
		L-L	300	765	910	1205	1200
		N-G	150	460	480	740	700
1455-21	120/208	L-G	300	765	910	1205	1200
		L-L	300	765	910	1205	1200
		N-G	150	460	480	740	700
		L-N	150	460	480	740	700
1457-21	277/480	L-N	320	730	900	1175	1200
		L-G	640	1683	1936	2826	2000
		N-G	320	956	1113	1906	1200
		L-L	640	1663	1933	2686	2500

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TransEnd® Series

TransEnd® 25

- Provides 25,000-amp per mode single-pulse surge current capacity (50,000 amps per phase)
- Protects facilities and equipment against the harmful effects of lightning strikes and internally generated electrical transients
- Fulfills the single-pulse surge current capacity testing recommendations per NEMA LS-1, 2.2.9 and 3.9
- Includes pre-wired pigtail conductors to streamline installation
- Features internal copper bus conduction path to minimize system impedances, reducing clamping voltage and increasing reliability
- Five-year warranty

CAT. NUMBER	SYSTEM VOLTAGE	SYSTEM CONFIGURATION	PROTECTION MODE	MCOV	VOLTAGE PROTECTION RATING
XN25-120/240-2G	120/240V	1-Phase 3-wire+grnd	L-N	150	800
			L-G	150	800
			L-L	300	1200
			N-G	150	800
XN25-120/208-3GY	120/208V	3-Phase WYE 4-wire+grnd	L-N	150	800
			L-G	150	800
			L-L	300	1200
			N-G	150	800
XN25-220/380-3GY	220/380V	3-Phase WYE 4-wire+grnd	L-N	275	1000
			L-G	275	1000
			L-L	550	1800
			N-G	275	1000
XN25-277/480-3GY	277/480V	3-Phase WYE 4-wire+grnd	L-N	320	1200
			L-G	320	1200
			L-L	640	2000
			N-G	320	1200
XN25-120/240-3GHD	120/240V	3-Phase High-Leg DELTA 4-wire+grnd	L-N	150	800
			H-N	275	1000
			L-G	150	800
			H-G	275	1000
			L-L	300	1200
			H-L	425	1500
			N-G	150	800
XN25-240-3DG	240V	3-Phase DELTA 3-wire+grnd	L-G	275	1000
			L-L	300	1200
XN25-380-3DG	380V	3-Phase DELTA 3-wire+grnd	L-G	420	1500
			L-L	550	1800
XN25-480-3DG	480V	3-Phase DELTA 3-wire+grnd	L-G	550	1800
			L-L	640	2000

All tests performed with 6" lead length, positive polarity. All voltages are peak values measured from the zero reference point.

EMI / RFI Noise Rejection

Filtering Attenuation Frequencies (L-N) w/ 6" Hook-Up Wire

FREQUENCY	NOISE SOURCE 50 FT.	NOISE SOURCE 100 FT.
100kHz	-50 dB	-50 dB
1MHz	-34 dB	-39 dB
10MHz	-34 dB	-40 dB
100MHz	-47 dB	-53 dB

Mechanical Specifications

Dimensions	7"H x 7"W x 5"D
Weight	12.7 lbs.
Enclosure Type	NEMA 4X fiberglass-reinforced polyester (FRP), surface-mount, non-removable cover
Operating Environment	-40 °C to +60 °C, 5% to 95% noncondensing humidity

Electrical Specifications

Connection Method	Parallel
Protection Modes	L-N, L-G, N-G, L-L
Prewired	24" stranded #10 AWG pigtail conductors
Status Indicators	LEDs for each phase illuminate to indicate protection is active

Short circuit current rating 65 kAIC using 20 A breaker or fuse (not provided), except 277/480 and 480V where it is 18 kAIC when using a 20 A breaker or fuse (not provided).

Applicable standards

Safety Listing: UL® 1449 3rd Edition 2009 Revision
UL® 1283
ANSI/IEEE C62.41
ANSI/IEEE C62.1, ANSI/IEEE C62.45

OPTIONS

Dry Contacts: Single Form "C" dry contacts for remote alarm monitoring are available as an option. To order a model with dry contacts, add suffix "-FCC" to the standard part number. Example: XN25-120/208-3GY-FCC

FITTINGS

Option A: Metallic conduit installation kit has a ¾" x 3" metallic nipple and all associated hardware required to complete the TransEnd® installation. Part No. 300-0255-001 (order as a separate item)

Option B: Flexible plastic conduit installation kit, including 18" flexible conduit and all associated hardware required to complete the TransEnd® installation. Part No. 300-0255-002 (order as a separate item)

TransEnd® Series

TransEnd® 50

- Provides 55,000-amp per mode single-pulse surge current capacity (100,000 amps per phase)
- Protects facilities and equipment against the harmful effects of lightning strikes and internally generated electrical transients
- Fulfills the single-pulse surge current capacity testing recommendations per NEMA LS-1, 2.2.9 and 3.9
- Includes pre-wired pigtail conductors to streamline installation
- Features internal copper bus conduction path to minimize system impedances, reducing clamping voltage and increasing reliability
- Five-year warranty

CAT. NUMBER	SYSTEM VOLTAGE	SYSTEM CONFIGURATION	PROTECTION MODE	MCOV	VOLTAGE PROTECTION RATING
XN50-120/240-2G	120/240V	1-Phase 3-wire+grnd	L-N	150	800
			L-G	150	800
			L-L	300	1200
			N-G	150	800
XN50-120/208-3GY	120/208V	3-Phase WYE 4-wire+grnd	L-N	150	800
			L-G	150	800
			L-L	300	1200
			N-G	150	800
XN50-220/380-3GY	220/380V	3-Phase WYE 4-wire+grnd	L-N	275	1000
			L-G	275	1000
			L-L	550	1800
			N-G	275	1000
XN50-277/480-3GY	277/480V	3-Phase WYE 4-wire+grnd	L-N	320	1200
			L-G	320	1200
			L-L	640	2000
			N-G	320	1200
XN50-120/240-3GHD	120/240V	3-Phase High-Leg DELTA 4-wire+grnd	L-N	150	800
			H-N	275	1000
			L-G	150	800
			H-G	275	1000
			L-L	300	1200
			H-L	425	1500
			N-G	150	800
XN50-240-3DG	240V	3-Phase DELTA 3-wire+grnd	L-G	275	1000
			L-L	300	1200
XN50-380-3DG	380V	3-Phase DELTA 3-wire+grnd	L-G	420	1500
			L-L	550	1800
XN50-480-3DG	480V	3-Phase DELTA 3-wire+grnd	L-G	550	1800
			L-L	640	2000

All tests performed with 6" lead length, positive polarity. All voltages are peak values measured from the zero reference point.

EMI / RFI Noise Rejection

Filtering Attenuation Frequencies (L-N) w/ 6" Hook-Up Wire

FREQUENCY	NOISE SOURCE 50 FT.	NOISE SOURCE 100 FT.
100kHz	-50 dB	-50 dB
1MHz	-34 dB	-39 dB
10MHz	-34 dB	-40 dB
100MHz	-47 dB	-53 dB

Mechanical Specifications

Dimensions	7"H x 7"W x 5"D
Weight	12.7 lbs.
Enclosure Type	NEMA 4X fiberglass-reinforced polyester (FRP), surface-mount, non-removable cover
Operating Environment	-40 °C to +60 °C, 5% to 95% noncondensing humidity

Electrical Specifications

Connection Method	Parallel
Protection Modes	L-N, L-G, N-G, L-L
Prewired	24" stranded #10 AWG pigtail conductors
Status Indicators	LEDs for each phase illuminate to indicate protection is active

Short circuit current rating 65 kAIC using 20 A breaker or fuse (not provided), except 277/480 and 480V where it is 18 kAIC when using a 20 A breaker or fuse (not provided).

Applicable standards

Safety Listing:
UL® 1449 3rd Edition 2009 Revision
UL® 1283
ANSI/IEEE C62.41
ANSI/IEEE C62.1, ANSI/IEEE C62.45

OPTIONS

Dry Contacts: Single Form "C" dry contacts for remote alarm monitoring are available as an option. To order a model with dry contacts, add suffix "-FCC" to the standard part number. Example: XN50-120/208-3GY-FCC

FITTINGS

Option A: Metallic conduit installation kit has a ¾" x 3" metallic nipple and all associated hardware required to complete the TransEnd® installation. Part No. 300-0255-001 (order as a separate item)

Option B: Flexible plastic conduit installation kit, including 18" flexible conduit and all associated hardware required to complete the TransEnd® installation. Part No. 300-0255-002 (order as a separate item)

TransEnd® Series

TransEnd® 80

- Provides 80,000-amp per mode single-pulse surge current capacity (160,000 amps per phase)
- Protects facilities and equipment against the harmful effects of lightning strikes and internally generated electrical transients
- Fulfills the single-pulse surge current capacity testing recommendations per NEMA LS-1, 2.2.9 and 3.9
- Includes pre-wired pigtail conductors to streamline installation
- Features internal copper bus conduction path to minimize system impedances, reducing clamping voltage and increasing reliability
- Five-year warranty

CAT. NUMBER	SYSTEM VOLTAGE	SYSTEM CONFIGURATION	PROTECTION MODE	MCOV	VOLTAGE PROTECTION RATING
XN80-120/240-2G	120/240V	1-Phase 3-wire+grnd	L-N	150	800
			L-G	150	800
			L-L	300	1200
			N-G	150	800
XN80-120/208-3GY	120/208V	3-Phase WYE 4-wire+grnd	L-N	150	800
			L-G	150	800
			L-L	300	1200
			N-G	150	800
XN80-220/380-3GY	220/380V	3-Phase WYE 4-wire+grnd	L-N	275	1000
			L-G	275	1000
			L-L	550	1800
			N-G	275	1000
XN80-277/480-3GY	277/480V	3-Phase WYE 4-wire+grnd	L-N	320	1200
			L-G	320	1200
			L-L	640	2000
			N-G	320	1200
XN80-120/240-3GHD	120/240V	3-Phase High-Leg DELTA 4-wire+grnd	L-N	150	800
			H-N	275	1000
			L-G	150	800
			H-G	275	1000
			L-L	300	1200
			H-L	425	1500
			N-G	150	800
XN80-240-3DG	240V	3-Phase DELTA 3-wire+grnd	L-G	275	1000
			L-L	300	1200
XN80-380-3DG	380V	3-Phase DELTA 3-wire+grnd	L-G	420	1500
			L-L	550	1800
XN80-480-3DG	480V	3-Phase DELTA 3-wire+grnd	L-G	550	1800
			L-L	640	2000

All tests performed with 6" lead length, positive polarity. All voltages are peak values measured from the zero reference point.

EMI / RFI Noise Rejection

Filtering Attenuation Frequencies (L-N) w/ 6" Hook-Up Wire

FREQUENCY	NOISE SOURCE 50 FT.	NOISE SOURCE 100 FT.
100kHz	-50 dB	-50 dB
1MHz	-34 dB	-39 dB
10MHz	-34 dB	-40 dB
100MHz	-47 dB	-53 dB

Mechanical Specifications

Dimensions	7"H x 7"W x 5"D
Weight	12.7 lbs.
Enclosure Type	NEMA 4X fiberglass-reinforced polyester (FRP), surface-mount, non-removable cover
Operating Environment	-40 °C to +60 °C, 5% to 95% noncondensing humidity

Electrical Specifications

Connection Method	Parallel
Protection Modes	L-N, L-G, N-G, L-L
Prewired	24" stranded #10 AWG pigtail conductors
Status Indicators	LEDs for each phase illuminate to indicate protection is active

Short circuit current rating 65 kAIC using 20 A breaker or fuse (not provided), except 277/480 and 480V where it is 18 kAIC when using a 20 A breaker or fuse (not provided).

Applicable standards

Safety Listing: UL® 1449 3rd Edition 2009 Revision
UL® 1283
ANSI/IEEE C62.41
ANSI/IEEE C62.1, ANSI/IEEE C62.45

OPTIONS

Dry Contacts: Single Form "C" dry contacts for remote alarm monitoring are available as an option. To order a model with dry contacts, add suffix "-FCC" to the standard part number. Example: XN80-120/208-3GY-FCC

FITTINGS

Option A: Metallic conduit installation kit has a ¾" x 3" metallic nipple and all associated hardware required to complete the TransEnd® installation. Part No. 300-0255-001 (order as a separate item)

Option B: Flexible plastic conduit installation kit, including 18" flexible conduit and all associated hardware required to complete the TransEnd® installation. Part No. 300-0255-002 (order as a separate item)

TransEnd® Series

TransEnd® 100

- Provides 100,000-amp per mode single-pulse surge current capacity (200,000 amps per phase)
- Protects facilities and equipment against the harmful effects of lightning strikes and internally generated electrical transients
- Fulfills the single-pulse surge current capacity testing recommendations per NEMA LS-1, 2.2.9 and 3.9
- Includes pre-wired pigtail conductors to streamline installation
- Features internal copper bus conduction path to minimize system impedances, reducing clamping voltage and increasing reliability
- Five-year warranty

CAT. NUMBER	SYSTEM VOLTAGE	SYSTEM CONFIGURATION	PROTECTION MODE	MCOV	VOLTAGE PROTECTION RATING
XN100-120/240-2G	120/240V	1-Phase 3-wire+grnd	L-N	150	800
			L-G	150	800
			L-L	300	1200
			N-G	150	800
XN100-120/208-3GY	120/208V	3-Phase WYE 4-wire+grnd	L-N	150	800
			L-G	150	800
			L-L	300	1200
			N-G	150	800
XN100-220/380-3GY	220/380V	3-Phase WYE 4-wire+grnd	L-N	275	1000
			L-G	275	1000
			L-L	550	1800
			N-G	275	1000
XN100-277/480-3GY	277/480V	3-Phase WYE 4-wire+grnd	L-N	320	1200
			L-G	320	1200
			L-L	640	2000
			N-G	320	1200
XN100-120/240-3GHD	120/240V	3-Phase High-Leg DELTA 4-wire+grnd	L-N	150	800
			H-N	275	1000
			L-G	150	800
			H-G	275	1000
			L-L	300	1200
			H-L	425	1500
			N-G	150	800
XN100-240-3DG	240V	3-Phase DELTA 3-wire+grnd	L-G	275	1000
			L-L	300	1200
XN100-380-3DG	380V	3-Phase DELTA 3-wire+grnd	L-G	420	1500
			L-L	550	1800
XN100-480-3DG	480V	3-Phase DELTA 3-wire+grnd	L-G	550	1800
			L-L	640	2000

All tests performed with 6" lead length, positive polarity. All voltages are peak values measured from the zero reference point.

EMI / RFI Noise Rejection

Filtering Attenuation Frequencies (L-N) w/ 6" Hook-Up Wire

FREQUENCY	NOISE SOURCE 50 FT.	NOISE SOURCE 100 FT.
100kHz	-50 dB	-50 dB
1MHz	-34 dB	-39 dB
10MHz	-34 dB	-40 dB
100MHz	-47 dB	-53 dB

Mechanical Specifications

Dimensions	7"H x 7"W x 5"D
Weight	12.7 lbs.
Enclosure Type	NEMA 4X fiberglass-reinforced polyester (FRP), surface-mount, non-removable cover
Operating Environment	-40 °C to +60 °C, 5% to 95% noncondensing humidity

Electrical Specifications

Connection Method	Parallel
Protection Modes	L-N, L-G, N-G, L-L
Prewired	24" stranded #10 AWG pigtail conductors
Status Indicators	LEDs for each phase illuminate to indicate protection is active

Short circuit current rating 65 kAIC using 20 A breaker or fuse (not provided), except 277/480 and 480V where it is 18 kAIC when using a 20 A breaker or fuse (not provided).

Applicable standards

Safety Listing:
UL® 1449 3rd Edition 2009 Revision
UL® 1283
ANSI/IEEE C62.41
ANSI/IEEE C62.1, ANSI/IEEE C62.45

OPTIONS

Dry Contacts: Single Form "C" dry contacts for remote alarm monitoring are available as an option. To order a model with dry contacts, add suffix "-FCC" to the standard part number. Example: XN100-120/208-3GY-FCC

FITTINGS

Option A: Metallic conduit installation kit has a ¾" x 3" metallic nipple and all associated hardware required to complete the TransEnd® installation. Part No. 300-0255-001 (order as a separate item)

Option B: Flexible plastic conduit installation kit, including 18" flexible conduit and all associated hardware required to complete the TransEnd® installation. Part No. 300-0255-002 (order as a separate item)

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LPD Series

LDP Series AC Leaded Light-Duty SPD

There are numerous Joslyn® Light-Duty Protector designs. With well over three-quarters of a million light-duty field installations serving applications ranging from sprinkler system control panels to nuclear missile silo matrix protection arrays, Joslyn® Light Duty Protectors offer the versatility to serve almost any application.

- Type 1 SPD per UL® 1449 3rd Edition
- SPD Category and Type — Service entrance or service panel, permanently connected; intended for use on US, TN-C, TN-C-S and TNS grounded systems
- Technology — Multiple Metal Oxide Varistors (MOVs), with individual current fusing and thermal disconnects for each MOV; LED indicates proper functioning of L-N MOVs
- Service Amperage/Fault Current — 65,000A maximum short-circuit current; if a dedicated breaker is used, it should be >20A at main panel or ≥10A at subpanel
- Connection Means — In parallel across mains or behind breaker

Specifications

Maximum Surge Current	20, 25 or 30kA
Nominal Discharge Surge Curent In	10kA
Short-Circuit Current Rating SCCR	65kAIC
Surge Energy Capability, total	1360 joules
Surge Life, 120 VAC L-N applied,	
3 kA, 8/20µs	3,000 times
10 kA, 8/20 µs	75 times
Component Response Time	<1 ns
Operating Temperature	-40° C to 80° C
Operating Altitude	5,000m
Shipping Weight	1 lb. (.5 kg)
Approvals:	UL1449 3rd Edition
Warranty:	3 years

Performance Data

MODEL	SYSTEM VOLTAGE	SPD TYPE	MCOV			VOLTAGE PROTECTION RATING (VPR) 6KV, 3KA		
			L-N	L-G	N-G	L-N	L-G	N-G
LDP-XX-120	120	Type 1	150	150	150	700	700	700
LDP-XX-127	127	Type 1	180	180	180	700	700	700
LDP-XX-230	230/415	Type 1	320	320	320	1,000	1,000	1,000
LDP-XX-277	277/480	Type 1	320	320	320	1,000	1,000	1,000

Note: *XX = kA rating (20, 25 or 30).*

1000 Series

1000 Series DC Protectors

Joslyn® DC protectors come in a wide variety of shapes and sizes. They are also available with kA ratings ranging from very low to quite large. Designed to meet the needs of any application where DC power is supplied over a bus/high-capacity cabling or through the wall of a facility to an exterior DC load, these protectors prevent damage to rectifiers, power storage banks, DC powered load equipment and the input side of inverters. Several popular configurations are shown below. Contact us for other configurations.

Model 1020 Series
Low-Voltage DC and AC Surge Protector

- SPD Category and Type — Full-weather permanently connected
- Technology — Matrix of individually fused Metal Oxide Varistors (MOVs)
- Application — For direct connection to power busses, load centers or equipment input/outputs; may be used on grounded (+ or -) or floating power systems, for DC or low-voltage AC (up to 400 Hz)
- Features — LEDs for L-L and L-G protection modes indicate proper functioning of each element

Available Configurations

MODEL	MAX. CONTINUOUS OPERATING VOLTAGE
1020-30	30 VDC, 25 VAC
1020-60	60 VDC, 45 VAC
1020-90	90 VDC, 65 VAC
1020-150	150 VDC, 110 VAC*

** Model 1020-150 is not intended for use on 110–120 VAC power systems.*

Model 1035-20 and 1045-20
Three-Mode Protector Modules

- SPD Category and Type — Single-mode protector for use in OEM protector cabinets
- Technology – Metal Oxide Varistors with individual fusing
- Application — In normal use, these models are applied on grounded power systems (positive or negative), to be installed close to the service conductor ground bond. When connected across a pair of ungrounded conductors, they will provide differential protection but will be ineffective against common mode lighting surges. Modules can be used on DC or AC power systems (up to 400 Hz).
- Features — Includes monitor lead for local or remote functional status annunciation (LED or relay); the wire provides POS and NEG line voltages when the protector is functional

Available Configurations

MODEL	MAX. CONTINUOUS OPERATING VOLTAGE
1035-31	24 VDC
1045-30	48 VDC

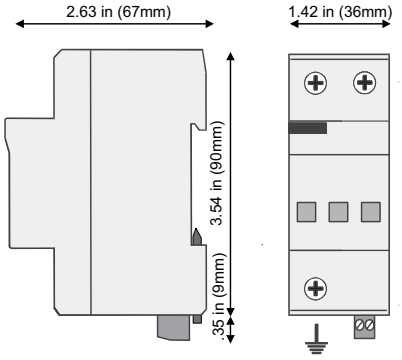
JMD Series

DIN rail surge protection for control panels.

JMD DIN Rail Surge Protectors

Joslyn® JMD DIN rail surge protectors offer Class I or Class II, Category B or C protection suitable for use at the main electrical panel, sub-panels or point of use. Units come standard with internal thermal disconnect, failure indicator, remote signaling and a 10-year warranty. With four distinctive platforms offering products at 40, 70 and 165kA levels of protection, all of your applications can be met with ease. Products are MOV based and include hybrid designs for those applications where zero N-G leakage current is of utmost importance.

- Include internal thermal disconnect, failure indicator and remote signaling
- Standard 10-year warranty



JMD 165 MUR Dimensions

JMD 165 MUR Series

Class I/Cat. C devices suitable for use at the main electrical panel

Available Configurations

CAT. NO.	VOLTAGE	CONFIGURATION
JMD-165-1-120-MUR	120V	1-Pole Non-Replaceable Block + Remote Signal
JMD-165-1-220-MUR	220V	1-Pole Non-Replaceable Block + Remote Signal
JMD-165-1-277-MUR	277V	1-Pole Non-Replaceable Block + Remote Signal
JMD-165-1-480-MUR	480V	1-Pole Non-Replaceable Block + Remote Signal
JMD-100-NG-GU	N-G	1 Neutral to Ground Non-Replaceable Block

Specifications

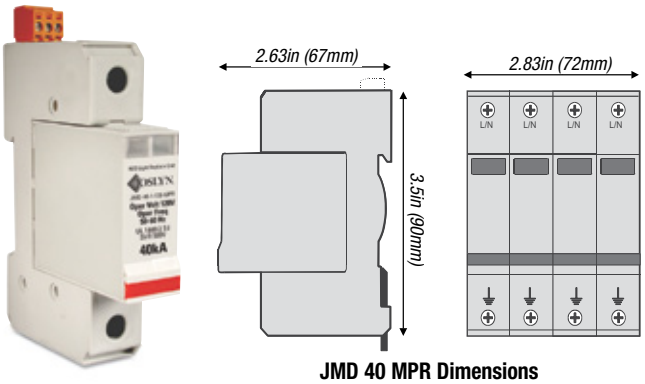
Electrical	**120**	**220**	**277**	**480**
Max. Operating Voltage	150V	330V	330V	550V
Max. Surge Current Rating 8/20µs	165kA	165kA	165kA	165kA
Nominal Surge Current Rating for a Min. of 20 8x20µs Surges	70kA	70kA	70kA	70kA
Max. Surge Current Rating 10/350µs	15kA	15kA	15kA	15kA
UL® 1449 2nd 6kV, 500A 8/20µs SVR	500V	900V	900V	1500V
C3 Combo Wave 20kV, 10kA 8/20µs	625V	950V	950V	1750V
Associated Fusing				
Thermal Fuses	Internal			
Over-Current Fuses	30A–125A, Class-J, Time-Delayed			
General				
Connection Method	Screw Terminal #2–#10 AWG (4–35mm²)/ by Bus			
Operating Temperature	-40° to +185° F (-40° to 85° C)			
Operating Altitude	13,000 ft. (4,000m)			
Enclosure	IP20			
Housing Material	UL94-V0 Thermoplastic			
Mounting	DIN Rail 35mm Symmetrical			

Approvals: All units meet UL 1449 2nd Ed., EN61643-11 (Europe), ANSI/IEEE C 62.41-2002, NFEN61643-11 (France), VDE0675-6, CSA-22.2 and CE marked.

JMD DIN Rail Surge Protectors *(continued)*

JMD 40 MPR Series

Class II/Cat. B devices suitable for use at the main electrical panel



JMD 40 MPR Dimensions

Available Configurations

CAT. NO.	VOLTAGE	CONFIGURATION
JMD-40-1-120-MPR	120V	1-Pole Replaceable Block + Remote Signal
JMD-40-1-220-MPR	220V	1-Pole Replaceable Block + Remote Signal
JMD-40-1-277-MPR	277V	1-Pole Replaceable Block + Remote Signal
JMD-40-1-480-MPR	480V	1-Pole Replaceable Block + Remote Signal
JMD-40-1-NG-GP	N-G	1 Neutral to Ground Replacable Block

Specifications

Electrical	**120**	**220**	**277**	**480**
Max. Operating Voltage	150V	255V	320V	550V
Max. Surge Current Rating	40kA	40kA	40kA	40kA
Nominal Surge Current Rating for a Min. of 20 8x20µs Surges	20kA	20kA	20kA	20kA
UL® 1449 2nd 6kV, 500A 8/20µs SVR	500V	700V	800V	1800V
C3 Combo Wave 20kV, 10kA 8/20µs	500V	900V	1000V	2100V
Associated Fusing				
Thermal Fuses	Internal			
Over-Current Fuses	30A–125A, Class-J, Time-Delayed			
General				
Connection Method	Screw Terminal #4–#10 AWG (4–25mm²)/by Bus			
Operating Temperature	-40° to +185° F (-40° to 85° C)			
Operating Altitude	13,000 ft. (4,000m)			
Enclosure	IP20			
Housing Material	UL94-V0 Thermoplastic			
Mounting	DIN Rail 35mm Symmetrical			

Approvals: All units meet UL 1449 2nd Ed., EN61643-11 (Europe), ANSI/IEEE C 62.41-2002, NFEN61643-11 (France), VDE0675-6, CSA-22.2 and CE marked.

Custom and OEM Protectors

For its entire history, Joslyn® has been creating custom and OEM surge protection products. If you have a different/unusual application or space requirement, need other equipment integrated in conjunction with surge protection or have special let-through level restrictions, then contact us and talk with our experienced applications support staff.

We are readily available to help you identify and correct application or installation variables that contribute to load electronics damage. If there is a viable business case, we will design a custom solution to fit your needs.

With more than 50 years of experience in custom products, using every available surge protection technology and a team of product engineers that participate on the IEEE, PEG, NEMA, IEC and other electrical protection standards committees, we have the expertise to develop high-performance solutions for almost any application.

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