

Industrial Lighting

Section L



L Industrial Lighting

Table of Contents

Section L of the Cooper Crouse-Hinds Catalog contains information on industrial lighting.

Product details on individual luminaires are given in eleven separate sections, as noted below. In addition, a complete section (8L) is devoted to luminaire hangers and accessories.

Considerations for Selection

Preceding the eleven product sections is a Selector Guide. Included in this section is information on:

- a selection of the appropriate light source for a given application
- a Quick Selector Guide of the luminaires that are designed and approved to meet the various environmental requirements of the National Electric Code
- determining the proper size (i.e., wattage) and number of units to achieve the desired light levels in a given application
- methods to follow in making a luminaire layout. Cat. Nos. are shown, in many cases, for complete assemblies including mounting, reflector, globe, and guard, as well as individual components. In these cases, ordering can be done by component or by complete assembly. Photometric and other technical data is included in each section for the luminaires it contains.

Information relating to product families in the Lighting Section is shown as follows:

Section 1L Incandescent Lighting— Enclosed and Gasketed (for use in non-hazardous areas; some luminaires have specific hazardous [classified] locations suitability.)

Indoor and outdoor vaportight luminaires and accessories for use in industrial applications where dirt, moisture, and corrosion problems exist.

NDA Corro*Gard® Series V160
V Series
Vaporgard™ Series

Section 2L Incandescent Lighting (for use in hazardous [classified] locations)

Indoor and outdoor luminaires and accessories
EV Series
EVI Series

Section 3L High Intensity Discharge (H.I.D.) Lighting— Enclosed and Gasketed (for use in hazardous [classified] locations, non-hazardous locations, and marine locations)

Indoor and outdoor vaportight luminaires for use in applications where dirt, moisture, and corrosion problems exist. Included are units with integral ballasts.

DMV Champ® Series
LMV Champ® Series
VMV Champ® Series
N2MV Champ® Series

Section 4L High Intensity Discharge (H.I.D.) Lighting (for use in hazardous [classified] locations)

Indoor and outdoor luminaires and accessories. Included are luminaires with integral ballasts.

Hazard*Gard® Series
Lo*Pro Hazard*Gard® Series

Section 5L Luminaires with Induction Lighting System (for use in hazardous [classified] locations, non-hazardous locations, and marine locations)

DMVIG, VMVIG

Section 6L Fluorescent Lighting (for use in hazardous [classified] locations and non-hazardous locations)

Indoor and outdoor fluorescent luminaires and accessories for application in all classes of hazardous and non-hazardous locations.

For hazardous locations	For non-hazardous locations
CPMVF	NFL
EVF, EVFDR	VF Vaporgard Series
FVN, FVS	
EVFT, DMVF	
N2MVF, EVLPF	
VF, ELLK, NLLK	
eLLB20	

Section 7L Floodlights (for use in hazardous [classified] locations and non-hazardous locations)

CPMV Champ-Pak™ Wall Pack
EVMA-S812 HazardGard® Series
FMV Champ® Series
F2MV, FMV1000
FZD
RCDE
SSFMV Voyager nR™

Section 8L Luminaire Hangers and Accessories (for use in hazardous [classified] locations and non-hazardous locations)

A variety of luminaire hangers for use with the luminaires listed. Information on mounting accessories required and typical luminaire weights also included.

For hazardous locations	For non-hazardous locations
EAHC, EFHC	AL
EC	AHG
EFH	ARB
GUA, GUF	FHM
UNR	UNE, UNH, UNHC
CPS	UNJ
	UNJC

Section 9L Portable Lighting

A variety of portable luminaires for hazardous and non-hazardous applications.

VS
EVH
RCDER
EVP

Section 10L Emergency Lighting (for use in hazardous [classified] locations) ♦

Emergency lighting for use in power outage situations. Also, exit signs and strobe warning lights.

N2LPS Light-Pak™ Series	CPMVFB
EXL – exit sign	DMVFB
ELPS Light-Pak™ Series	N2MVFB
	EVLFPB

Section 11L Beacons and Strobes

Indoor and outdoor luminaires for use in applications where visual signaling is a requirement.

For hazardous locations
EX Beacons and Strobes
VF Beacons
VDAS Strobes

Section 12L Specialty Lighting

Luminaires for use in applications where conventional lighting is not acceptable due to size and/or location, such as tank, instrument, and gauge applications.

For hazardous locations	For non-hazardous locations
EV – tank lights	V Observation
EVTL	
ELG – gauge light	

Quick Reference Chart

	LIGHT SOURCE			Emergency & Warning	WallPacks & Floodlights	Luminaire Hangers
Application Environment	Incandescent	H.I.D. ● Pulse Start Metal Halide ● Metal Halide ● High Pressure Sodium ● Mercury Vapor	Fluorescent ● Linear ● Long Twin Tube ● Compact	● Exit Signs ● Emergency Lighting ● "Steady On" Beacons ● Strobes	● Pulse Start Metal Halide ● Metal Halide ● High Pressure Sodium ● Mercury Vapor ● Incandescent	
General Industrial	Section 1L Vaporgard™, V Series, NDA Section 12L V160 Tank light	Section 3L LMV, DMV, VMV, N2MV Champ® Section 5L Champ Induction	Section 6L VF Series, NFL, FVN, FVS DMVF, N2MVF	Section 10L N2LPS Light-Pak™, DMVFB, N2MVF Section 11L VF "SO" Beacon VDAS Strobe	Section 7L F2MV, FMV, FMV1000	Section 8L AL, UNJ, FHM, ARB, UNE, UNH, CHS
Wet Locations	Section 1L Vaporgard™, V series, NDA	Section 3L LMV, DMV, VMV, N2MV Champ® Section 5L Champ Induction	Section 6L VF Series, NFL, FVN, FVS, DMVF, N2MVF	Section 10L DMVFB, N2MVF, N2LPS Light-Pak™, Section 11L VF "SO" Beacon VDAS Strobe	Section 7L F2MV, FMV, FMV1000	Section 8L AHG, ARB_21 series
Marine Locations or 4X	Section 1L NDA	Section 3L LMV, DMV, VMV, N2MV Champ® Section 4L EVLV Lo-Pro EVM Hazard-Gard	Section 6L NFL, FVS, DMVF, N2MVF, CPMVF EVFDR, EVFT Illuminator™	Section 10L DMVFB, N2MVF, Section 11L VDAS Strobe	Section 7L CPMV, F2MV, FMV, FMV1000	
Corrosive	Section 1L Vaporgard™, NDA	Section 3L LMV, DMV, VMV, N2MV Champ® Section 5L Champ Induction	Section 6L NFL, N2MVF, FVS, VF Series, DMVF, CPMVF	Section 10L DMVF-EXD exit, N2MV-EXD exit, N2LPS Light-Pak™, N2MVF, DMVFB Section 11L VF "SO" Beacon VDAS Strobe	Section 7L CPMV, F2MV, FMV, FMV1000	Section 8L EFHC-S752 ECHF-S758 ECF-S516
Class I, Div. 1 or Zone 1	Section 2L EV Section 12L EVL, EVA160, EVO, ELG	Section 4L EVLV Lo-Pro EVM Hazard-Gard	Section 6L EVF, EVFDR, EVFT Illuminator®, EVLPF, eLLK	Section 10L EXL exit, EVLPF-EXD exit, ELPS Light-Pak™ EVLVFB Section 11L EV "SO" Beacon EVAS Strobe	Section 7L FZD, EVM-S812, RCDE	Section 8L EAHC, EFHC, ECHF, GUA, GUF, EFHX, CPS, UNR
Class I, Div. 2 and Zone 2	Section 1L Vaporgard™, NDA	Section 3L LMV, DMV, VMV, N2MV Champ® Section 5L Champ Induction	Section 6L VF Series, NFL, nLLK, eLLK, FVN, FVS, CPMVF, DMVF, N2MVF	Section 10L DMVF-EXD exit, N2LPS Light-Pak™, DMVFB, N2MVF Section 11L VF "SO" Beacon VDAS Strobe	Section 7L CPMV, F2MV, FMV, FMV1000 FZD	Section 8L AL, AHG, UNJ, UNJC, ARB, UNE, UNH, COUP
Restricted Breathing ● Class I, Div 2 and Zone 2 ● Certified IEC Zone 2		Section 3L LMV, DMV, VMV, N2MV Champ® Section 5L Champ Induction	Section 6L CPMVF, DMVF, N2MVF	Section 10L DMVFB, N2MVF	Section 7L CPMV, F2MV, FMV	Section 8L AL, AHG, UNH, UNJC, ARB, UNE, UNH, COUP
Class II Class III Simultaneous Presence	Section 2L EV Section 12L EVL, EVO	Section 3L LMV, DMV, VMV, N2NV Champ® Section 4L EVLV Lo-Pro EVM Hazard-Gard Section 5L Champ Induction	Section 6L FVN, nLLK, eLLK, FVS, DMVF, N2MVF EVF, EVFDR, EVFT, EVLP	Section 10L EXL, N2LPS Light-Pak™, DMVFB, N2MVF Section 11L VF "SO" Beacon VDAS Strobe EVAS Strobe	Section 7L CPMV	Section 8L ECHF, GUA, GUF, GUJ. EAHC, EFHC, AHG (Class II, Div 2)
Paint Spray		Section 4L EVP	Section 6L EVF, EVFT			
Portables	Section 9L VS, EVH, RCDER	Section 9L EVP	Section 9L EVH			

New ideas in industrial lighting, translated into modern equipment design, backed technically by a nationwide sales force, available worldwide through knowledgeable electrical distributors – these are some of the reasons you'll be light-years ahead when you look to Cooper Crouse-Hinds for industrial lighting products.

This Lighting Selector Guide will help you solve many of your lighting problems. For additional assistance on complex projects, call your Cooper Crouse-Hinds representative or distributor. They can provide detailed lighting layouts and recommendations using the **most advanced computer and application engineering facilities and techniques.**

Lighting Selector Guide

Below is a simple five-step procedure to help you select the right equipment for a specific job. Typical examples – with illustrations, easy-to-read charts, and layouts – are included to ensure correct results.

The five steps are:

1.) Determine Area Lighting Needs and Operational Factors Page 665	When known, proceed to Step 2
2.) Select Type of Lamp Page 666	When known, proceed to Step 3
3.) Select Type of Luminaire Page 668	When known, proceed to Step 4
4.) Calculate Number of Luminaires Required Page 683	When several light sources or systems seem suitable, determine most economical one
5.) Determine Placement of Luminaires and Make Layout Page 688	



C R O U S E - H I N D S
LUXICON™

With Luxicon™ you'll be able to make 'light' work of analyzing the performance of Cooper Crouse-Hinds broad line of industrial luminaires.

From exterior/interior layouts to economic performance data, you'll be able to access and evaluate information needed to design and specify the most efficient and effective lighting system possible.

Luxicon™ offers:

- Online tutorial
- Color output, either text or graphics
- Exterior/interior layouts in one program
- Daylight lighting analysis
- Importing/exporting of any IES file
- Importing/exporting of any .DXF CAD file
- Detailed architectural feature calculations
- Entire Cooper Crouse-Hinds and Cooper Lighting line search
- Economic performance/analysis calculations
- Database of customers and their projects
- Professional output including summary reports, luminaire schedules, calculation results and renderings on multiple pages
- Luminaire editing capabilities
- Allowances of varying ambient temperature levels

1

Determine Area Lighting Needs and Operational Factors

The selection of the proper luminaire/lamp combination and the determination of the number of luminaires required is a function of the desired quantity and quality of light required, together with consideration of any special factors arising from the nature of the work operation. Several aspects of this selection process are discussed below. The conditions will vary from job to job. It is important to consider these conditions if the lighting system is to yield optimum results.

A) Determine Illumination Quantity Required

The Illuminating Engineering Society in the current IES Lighting Handbook gives a comprehensive listing of footcandle levels recommended for all types of Industrial Lighting. A condensed version of this listing is given in Table 1 and is presented according to the types of visual tasks encountered.

B) Determine Illumination Quality Required

Quality of illumination pertains to the distribution of brightness in the visual environment. Care must be taken to avoid discomforting glare within the normal visual field.

Luminaires normally selected for lower mounting should be designed to limit brightness below the 45° zone.

C) National Electric Code Compliance

The National Electric Code delineates some areas as hazardous, depending on materials or atmosphere within an area. The choice of luminaire and lamp is therefore somewhat restricted if the area is classified as hazardous.

In hazardous areas, luminaire design and operating temperature of both luminaire and lamp must meet strict limitations. These limitations are detailed under Step 3 of this selection guide.

If the area is non-hazardous in nature, the selection of the proper luminaire and lamp is less restrictive and should be based on general operational and environmental conditions.

D) Maintenance Considerations

In order to insure optimum performance of the lighting system at a reasonable cost, some of the following related factors must be introduced into the selection process:

- **Atmospheric Conditions:** Luminaires for use in extremely wet locations should be enclosed and gasketed.
- Luminaires for use in extremely dirty locations should provide a minimum of light depreciation under the anticipated maintenance schedule (i.e., reflector with open top and bottom should be used where maintenance is infrequent).
- Luminaires for use in extremely corrosive atmospheres should have protection for the optical system and have finishes to withstand the particular corrosive agent (i.e., epoxy power finish; enclosed Alzak reflector; Krydon™ fiberglass reinforced polyester reflector).
- **Accessibility:** Since it may be necessary to locate luminaires in inaccessible areas, the luminaire and lamp selected should minimize need for maintenance and maximize ease of maintenance when required (i.e., high bay open reflector with mercury lamp).
- **Area Usage:** The selection of the proper lamp/luminaire combination will depend greatly on the required burning hours per year. The anticipated usage should be a major factor in lamp selection.

Table 1 / Recommended Levels of Illuminance			
Seeing Task	Typical Type of Work	Illuminance Category	Footcandles†
Difficult	Difficult assembly and inspection, color coding, paper manufacturing (Inspection and Rewinder) finishing operations.	F	100 to 200
Moderate	Moderately difficult assembly and inspection, checking and sorting, service garage repair areas, medium bench work, instrument panel (vertical illumination).	E	50 to 100
Casual	Simple assembly, rough bench work, grinding, simple inspection, wrapping, packing and labeling, control house general lighting.	D	20 to 50
Easy	Rough active storage, washrooms, dry lumber warehouse, compressor houses.	C	10 to 20
Limited	Inactive storage, stairway	B	5 to 10

NOTE: For other industrial footcandle levels such as petrochemical, refer to the Illuminating Engineering Society's Lighting Handbook (Application Volume) for more information.

† Values recommended are average maintained footcandles at 30" above floor (work plane).

2

Select Type of Lamp

After identification of the factors discussed in Step 1, the following guide can be used in selecting the proper lamp:

A) Illumination Level

High (30FC or more): high intensity discharge (H.I.D.) lamps are generally the most economic choice.

- Exception: where luminaires must be placed within an operator's normal visual span, a low brightness light source such as fluorescent should be used.

Low (less than 30FC): all light sources can be considered. Selection of best lamp is usually based on other factors.

- Exception: at medium to high mounting, high intensity discharge is generally best.

B) National Electrical Code®

Hazardous locations – all light sources can be considered.

- Exception: Article 500 of the National Electrical Code classifies the various categories of hazardous locations and provides general rules for the application of luminaires in these areas. (See Step 3 of Selection Guide.)

- Exception: where process must be shut down for relamping, high intensity discharge is best due to long lamp life. Non-hazardous locations – all light sources.

C) Accessibility

High intensity discharge lamps should be used where luminaires are relatively inaccessible because of long life and the need for infrequent relamping.

D) Area Usage (Burning Hours)

At more than 2,000 burning hours per year, high intensity discharge and fluorescent lamps generally yield the lowest system cost.

At less than 2,000 hours per year, incandescent may be the best system depending on the size of the area, mounting height and illumination level required.

E) Other Considerations

- Energy cost: where energy cost is high, high intensity discharge lamps generally prove most economical. H.I.D. lamps produce more lumens per watt of electricity than other lamp types.

- Safety: due to warmup and restart characteristics of high intensity discharge lamps, auxiliary or emergency lighting should be used in critical areas.

2

(continued)

Select Type of Lamp

The following table of lamp characteristics provides guidelines for choosing the best lamp. If the decision is not obvious, contact your Cooper Crouse-Hinds representative for a computer analysis of the option desired.

Table II/Lamp Characteristics

	Lamp	Advantages	Disadvantages
1.	Induction	Exceptionally long life – 100,000 hours. Instant illumination upon start-up or warm restart. Crisp, white light >80 color rendering index. Low operating cost.	Initial cost is higher than HID type luminaires.
2.	High Pressure Sodium	Good beam control. Long lamp life (24,000 hrs). Highest lamp output (lumens per watt). Low operating cost. Shortest restart time of H.I.D. lamps (instant with optional instant restrike).	High initial cost. Requires warmup period.
3.	Metal Halide Pulse Start	Improved lamp life (15,000- 30,000 hrs). Increased lumen output over standard metal halide (25 to 50%). Better lumen maintenance (80%). Superior cold starting -40°C. Improved color stability. Color shift reduced by two-thirds. Improved lamp-to-lamp color consistency. Warm up time 2 minutes. Restrike time 3-4 minutes.	High initial cost. Requires warmup period. Does not restart immediately after power outage.
4.	Metal Halide	Moderately long lamp life (7500 + hrs). High light output (lumens per watt). Makes colors look close to natural. Low operating cost.	High initial cost. Requires warmup period. Does not restart immediately after power outage.
5.	Mercury	Long lamp life (24,000 hrs). High light output per watt. Low operating cost.	High initial cost. Requires warmup period. Does not restart immediately after power outage.
6.	Fluorescent	Long lamp life (7500-24,000 hrs). High light output per watt. Low operating cost. Low brightness. Cool operation.	High initial cost. Poor light control. Output may vary with ambient temperature.
7.	Incandescent	Low initial cost. Good color rendition. Good light control. Instant restart.	Low light output (lumens per watt), short lamp life (500-2000 hrs). High operating cost.

3

Select Type of Luminaire

Choice of Reflector

The following list gives broad guidelines for selection of the proper reflectors.

Mounting Height

Above Floor	Reflector
Up to 19'	Dome
20' or more	High bay

Where low footcandle levels will be provided, reflectors may be used at higher mounting heights than shown; where high footcandle levels will be provided, reflectors may be used at lower mounting heights than shown in the table.

Quick Selector (Environment—Product)

Opposite the industrial environments listed below are the luminaires designed and approved to meet the requirements unique to each environment. Where different types of light sources might be used, a choice is given.

Environment		Type	Description	Cat. Sect.	Pg. #
Corrosive	Non Metallic Enclosed & Gasketed	NDA	General—Incandescent	1L	691
		N2MV	General—H.I.D.	3L	721
		N2MVF	General—Fluorescent	6L	809
		N2MVFB	Emergency—Fluorescent	10L	923
		NFW	General—Fluorescent	6L	809
		N2LPS	Emergency—Halogen	10L	923
Explosive Vapors (Class I, Div. 1)	Explosion- proof	EV, EVI	General—Incandescent	2L	709
		EVLP, EVM Hazard*Gard®	General—H.I.D.	4L	779
		EVF, EVFDR	General—Fluorescent	6L	809
		EVFT	General—Fluorescent	6L	809
		EVLFP	General—Fluorescent	6L	809
		RCDE/RCDER	Flood—Incandescent	7L & 9L	865 & 913
		ELPS	Emergency—Halogen	10L	923
		EVLFPB	Emergency—Fluorescent	10L	923
		EV	Strobe—Incandescent	11L	939
Combustible Dusts (Class II, Div. 1)	Dust- ignition-proof	EV	General—Incandescent	2L	709
		DMV Champ®	General—H.I.D.	3L	721
		N2MV Champ®	General—H.I.D.	3L	721
		DMVIG, VMVIG	General—Induction	5L	801
		DMVF, N2MVF	General—Fluorescent	6L	809
		EVM Hazard*Gard®	General—H.I.D.	4L	779
		FVN	General—Fluorescent	6L	809
		FVS	General—Fluorescent	6L	809
		DMVFB, N2MVFB	Emergency—Fluorescent	10L	923
Moisture, Non-Combustible Dusts, or Potential for Hazardous Vapors Class I, Div. 2	Enclosed & Gasketed	Vaporgard™	General—Incandescent	1L	691
		CPMV Champ®	General—H.I.D./Fluorescent	3L & 6L	721 & 809
		NDA	General—Incandescent	1L	691
		LMV Champ®	General—H.I.D.	3L	721
		DMV Champ®	General—H.I.D.	3L	721
		VMV Champ®	General—H.I.D.	3L	721
		N2MV Champ®	General—H.I.D.	3L	721
		FVN	General—Fluorescent	6L	809
		DMVF, N2MVF	General—Fluorescent	6L	809
		VF	General—Fluorescent	6L	809
		FVS	General—Fluorescent	6L	809
		FMV Champ®	Flood—H.I.D.	7L	865
		SSFMV Voyager	Flood—H.I.D.	7L	865
		N2LPS	Emergency—Halogen	10L	923
		DMVFB, N2MVFB	Emergency—Fluorescent	10L	923
Non-Hazardous	Enclosed & Gasketed	NFL	General—Fluorescent	6L	809

Lamps Used With Cooper Crouse-Hinds Luminaires

H.I.D. Medium Base
Series - LMV, EVLP_1

L

LAMP WATTS	ANSI Ballast	MANUFACTURER			
		GE	Osram/ Sylvania	Phillips	Venture

High Pressure Sodium

35	S76	LU35/MED	LU35/MED	C35S76/M	
50	S68	LU50/MED	LU50/MED	C50S68/M	
70	S62	LU70/MED	LU70/MED	C70S62/M	
100	S54	LU100/MED	LU100/MED	C100S54/M	
150	S55	LU150/MED	LU150/MED	C150S55/M	

Metal Halide

70	M98	MXR70/U/MED	MP70/U/MED	MHC70/U/M/3K	MH70W/U
100	M90	MXR100/U/MED	MP100/U/MED	MHC100/U/M/3K	MH100W/U
175	M57	MVR175/U/MED	M175/U/MED	MH175/U/M	

Pulse Start Metal Halide

150	M102	MXR150/U/MED	MP150/U/MED		MH150W/U/PS
175	M137	MXR175/VBU/MED/PA			MS175W/BU/MED/PS

Lamps Used With Cooper Crouse-Hinds Luminaires

H.I.D. Medium Base
Series - LMV, EVLP_1

LAMP WATTS	ANSI Ballast	MANUFACTURER				MANUFACTURER			
		Lumens/Life (hrs)				Bulb			
		GE	O/S	Ph	Venture	GE	O/S	PH	Venture

High Pressure Sodium

35	S76	2250/16K	2250/16K	2250/24K		B17	E17	ED17	
50	S68	4000/24K	4000/24K	4000/24K		B17	E17	ED17	
70	S62	6400/24K	6300/24K	6300/24K		B17	E17	ED17	
100	S54	9500/24K	9500/24K	9500/24K		B17	E17	ED17	
150	S55	16000/24K	15800/24K	16000/24K		B17	E17	ED17	

Metal Halide

70	M98	5500/12K	5200/15K	6200/10K	5600/15K	BD17	E17	ED17	ED17
100	M90	9000/15K	8500/15K	9300/12.5K	9000/15K	BD17	E17	ED17	ED17
175	M57	13600/10K	14400/10K	13500/10K		BD17	ED17	ED17	

Pulse Start Metal Halide

150	M102	12500/15K	13300/15K		14000/15K	BD17	E17		ED17
175	M137	17700/15K			17500/15K	BD17	E17		ED17

Lamps Used With Cooper Crouse-Hinds Luminaires

H.I.D. Mogul Base
Series - DMV, VMV, CPMV,
FMV, F2MV, EVLP_0, FZD

L

LAMP WATTS	ANSI Ballast	MANUFACTURER			
		GE	Osram/ Sylvania	Phillips	Venture

High Pressure Sodium

50	S68	LU50	LU50	C50S68	
70	S62	LU70	LU70	C70S62	
100	S54	LU100	LU100	C100S54	
150	S55	LU150/55	LU150/55	C150S55	
150 (100V)	S56	LU150/100	LU150/100	C150S56	

200	S66	LU200	LU200	C200S66	
250	S50	LU250	LU250	C250S50	
310	S67	LU310	LU310	C310S67	
400	S51	LU400	LU400	C400S51	
1000	S52	LU1000	LU1000	C1000S52	

Metal Halide

70	M98				MH70W/U/ED28
100	M90				MH100W/U/ED28
175	M57	MVR175/U	M175/U	MH175/U	
250	M58	MVR250/U	M250/U	MH250/U	
400	M59	MVR400/U	M400/U	MH400/U	
400	M59	MVR400/U/ED28	M400/U/BT-28	MH400/U/ED28	
1000	M47	MVR1000/U	M1000/U	MH1000/U	
1500	M48	MVR1500/HBD	M1500/BD	MH1500/BD	

Pulse Start Metal Halide

(Base up+ -15%)

(Base up+ -15%)

150	M102	MXR175/VBU/PA		MS175/BU/PS	MH150W/U/ED28/PS
175	M137				MS175W/BU/PS
200	M136				MH200W/U/PS
250	M138	MXR250/VBU/PA		MS250/BU/PS	MH250W/HBU/PS
	M138				MH250W/HBD/PS
320	M132	MXR320/VBU/PA	MS320/PS/BU-ONLY	MS320W/BU/PS	MH320W/U/ED28/PS
350	M131				MH350W/U/PS
	M131				MH350W/U/ED28/PS
400	M135	MXR400/VBU/PA	MS400/PS/BU-ONLY	MS400/BU/PS	MH400W/HBU/PS
	M135				MH400W/HBD/PS
	M135				MH400W/HBU/ED28/PS
	M135				MH400W/HBD/ED28/PS
1000	M141				

Mercury Vapor

100	H38	HR100A38	H38HT-100	H38HT-100	
175	H39	HR175A39	H39KB-175	H39KB-175	
250	H37	HR250A37	H37KB-250	H37KB-250	
400	H33	HR400A33	H33CD-400	H33CD-400	
1000	H36	HR1000A36	H36GV-1000	H36GV-1000	

HID Double Contact Metal Halide for EVP Series

70W		CMH70/TD/830/R7S	HQI-DE 70/WDX	CDM70/TD/830	
-----	--	------------------	---------------	--------------	--

Industrial
Lighting

Lamps Used With Cooper Crouse-Hinds Luminaires

H.I.D. Mogul Base
Series - DMV, VMV, CPMV,
FMV, F2MV, EVM, EVLP_0, FZD

LAMP WATTS	ANSI Ballast	MANUFACTURER				MANUFACTURER			
		Lumens/Life (hrs)				Bulb			
		GE	O/S	Ph	Venture	GE	O/S	PH	Venture

High Pressure Sodium

50	S68	4000/24K	4000/24K	4000/24K		ED231/2	ET231/2	ED231/2	
70	S62	6400/24K	6300/24K	6300/24K		ED231/2	ET231/2	ED231/2	
100	S54	9500/24K	9500/24K	9500/24K		ED231/2	ET231/2	ED231/2	
150	S55	16000/24K	16000/24K	16000/24K		ED231/2	ET231/2	ED231/2	
150 (100V)	S56	15000/24K	15700/24K	16000/24K		ED28	BT28	ED28	

200	S66	22000/24K	22000/24K	22000/24K		ED18	ET18	ED18	
250	S50	28000/24K	29000/24K	285000/24K		ED18	ET18	ED18	
310	S67	37000/24K	37000/24K	37000/24K		ED18	ET18	ED18	
400	S51	51000/24K	50000/24K	50000/24K		ED18	ET18	ED18	
1000	S52	140000/24K	130000/24K	140000/24K		E25	E25	E25	

Metal Halide

70	M98				5600/15K				ED28
100	M90				9000/15K				ED28
175	M57	13600/10K	14400/10K	13500/10K		ED28	BT28	ED28	
250	M58	20800/10K	22000/10K	20500/20K		ED28	BT28	ED28	
400	M59	36000/20K	36000/20K	36000/20K		ED37	BT37	ED37	
400	M59	36000/20K	36000/20K	36000/20K		ED28	BT28	ED28	
1000	M47	105000/12K	110000/15K	110000/12K		BT56	BT56	BT56	
1500	M48	155000/3K	155000/3K	165000/3K		BT56	BT56	BT56	

Pulse Start Metal Halide

150	M102				14000/15K				ED28
175	M137	17200/15K		16000/15K	17500/15K	ED231/2		ED28	ED28
200	M136				21000/15K				ED28
250	M138	23000/15K		23800/15K	25000/15K	ED28		ED28	ED28
	M138				25000/15K				ED28
320	M132	31000/15K	32000/20K		33000/20K	ED28	BT28	ED28	ED28
350	M131				37000/20K				ED37
	M131				37000/20K				ED28
400	M135	44000/20K	41000/20K	44000/20K	44000/20K	ED37	BT37	ED37	ED37
	M135				44000/20K				ED37
	M135								ED28
	M135								ED28
1000	M141				44000/20K				ED28

Mercury Vapor

100	H38	3850/24K	4000/24K	4100/24K		ED231/2	ET231/2	ED231/2	
175	H39	7850/24K	7700/24K	7900/24K		ED28	BT28	ED28	
250	H37	11000/24K	11600/24K	12100/24K		ED28	BT28	ED28	
400	H33	21000/24K	20500/24K	21000/24K		ED37	BT37	ED37	
1000	H36	57000/24K	55200/24K	57500/24K		BT56	BT56	BT56	

--	--	--	--	--	--	--	--	--	--

Lamps Used With Cooper Crouse-Hinds Luminaires

Fluorescent Lamps

L

LAMP WATTS	BASE	LUMINAIRE SERIES	MANUFACTURER		
			GE	Osram/ Sylvania	Phillips

Compact

5W-T4	G23	VF	F5BX/SPX41/840	CF5DS/841	PL-S5W/27
7W-T4	G23	VF	F7BX/SPX35/835	CF7DS/835	PL-S7W/35
9W-T4	G23	VF	F9BX/SPX35/835	CF9DS/835	PL-S9W/35
13W-T4	GX23-2	DMVF (Disc)	F13DBX23T4/SPX35	CF13DD/835	PL-C13W/35/USA
26W-T4	GX24q-3	DMVF, N2MVF, CPMVF, EVLPF	F26TBX/SPX35/A/4P	CF26DT/E/IN/835	PL-T26W/35/4P/ALTO
32W-T4	GX24q-3	DMVF, N2MVF, CPMVF, EVLPF	F32TBX/SPX35/A/4P	CF32DT/E/IN/835	PL-T32W/35/4P/ALTO
42W-T4	GX24q-4	DMVF, N2MVF, CPMVF, EVLPF	F42QBX/SPX35/A/4P	CF42DT/E/IN/835	PL-T42W/35/4P/ALTO

Long Twin Tube

70	2G11	EVFT	F39/36/BX/SPX35	FT36DL/835	PL-L36W/35
40	2G11	NFL, FVS	F40/30BX/SPX35	FT40DL/835/RS	PL-L40W/35/RS

Linear

32W-T8	Medium Bipin	NFL, FVN, EVF, EVFDR	F32T8/SP35	F032/735	F32T8/TL735/ALTO
40(34)W-T12	Medium Bipin	NFL, FVN, EVF, EVFDR	F40CW/RS/WM	F40CW/SS	F40CW/RS/EW/ALTO
60W (800ma)-T12 HIGH OUTPUT	Recessed Double Contact	FVN, EVF, EVFDR	F48T12/CW/HO	F48T12/CW/HO	F48T12/CW/HO
110W (1500ma)-T12 VERY HIGH OUTPUT	Recessed Double Contact	EVF, EVFDR	F48T12/CW/1500	F48T12/CW/VHO	F48T12/CW/VHO

Lamps Used With Cooper Crouse-Hinds Luminaires

Fluorescent Lamps

LAMP WATTS	BASE	LUMINAIRE SERIES	MANUFACTURER		
			Lumens/Life (Hrs)		
			GE	Osram/Sylvania	Phillips

Compact

5W-T4	G23	VF	250/10K	230/10K	250/10K
7W-T4	G23	VF	400/10K	400/10K	400/10K
9W-T4	G23	VF	600/10K	580/10K	600/10K
13W-T4	GX23-2	DMVF (Disc)	810/10K	780/10K	860/10K
26W-T4	GX24q-3	DMVF, N2MVF, CPMVF, EVLPPF	1800/10K	1800/10K	1800/10K
32W-T4	GX24q-3	DMVF, N2MVF, CPMVF, EVLPPF	2200/10K	2400/10K	2400/10K
42W-T4	GX24q-4	DMVF, N2MVF, CPMVF, EVLPPF	3200/10K	3200/10K	3200/10K

Long Twin Tube

70	2G11	EVFT	2850/12K	2900/12K	2900/12K
40	2G11	NFL, FVS	3150/20K	3150/20K	3150/20K

Linear

32W-T8	Medium Bipin	NFL, FVN, EVF, EVFDR	2850/20K	2800/20K	2850/20K
40(34)W-T12	Medium Bipin	NFL, FVN, EVF, EVFDR	2650/20K	2700/20K	2650/20K
60W (800ma)-T12 HIGH OUTPUT	Recessed Double Contact	FVN, EVF, EVFDR	4050/12K	4050/12K	4050/12K
110W (1500ma)-T12 VERY HIGH OUTPUT	Recessed Double Contact	EVF, EVFDR	6200/10K	6600/10K	7050/12K

Lamps Used With Cooper Crouse-Hinds Luminaires

Incandescent & Quartz
(Halogen) Lamps

L

MAX WATTS AND BULB TYPE	LUMINAIRE SERIES	MANUFACTURER		
		GE	Osram/ Sylvania	Phillips

25W T10	EXLD	25T10	25T10	25T10
50W PAR20	EVTL	50PAR20/H/SP10 50PAR20/H/FL25	50PAR20/CAP/NSP 50PAR20/CAP/NFL	50PAR20/HAL/NSP9 50PAR20/HAL/NFL30
52W A19 58W A19	ELG ELG	60A52WMP/98	60A52/SS/XL 58A19/62	60A-52A/99/EW
60W T10	EXL	60T10	60T10	60T10
65W BR30	EVO2376	75R30/SP/65WM	65BR30/SP	65BR30/SP20
75W ER30	EVO2376	75ER30	75ER30	75ER30
100W A19	EV 40 Series	100A (IF)	100A (IF)	100A (IF)
100W A21	V160, EV160, EVH, EV 15 Series	100A21 (IF)	100A21 (IF)	100A21 (IF)
100W A23	VS	100A23 120V	100A23	100A23
100W D.C. Bay	Suffix QTZ	Q100CL/DC	100Q/CL/DC	100Q/CL/DC
150W A21	Vaporgard 150W EV 10 Series EV 20 Series	150A (IF)	150A (IF)	150A (IF)
150W A23	V Series		150A23 (IF)	150A23/CL
150W PAR38	RCDE6		150PAR/FL	150PAR38/2FL
200W A23	Vaporgard 200W EV 10 Series		200A23 (IF)	200A (IF)
200W A25	Vaporgard 200W EV 15 Series			200A25/35
200W PS25	EV 15 Series		200PS25/99XL	
200W PS30	EV 20 Series EV 30 Series	200 130V	200PS/CL 130V	200 130V
300W PS25	Vapourgard 300W NDA EV 15 Series	300M		300M
300W PS30	Vaporgard 300W EV 20 Series EV 15 Series	300M/99 (130v)	300M/CL	300M/PS30
300W R40	RCDE6	300R/FL	300R40/FL	300BR/FL
300W PS35	EV 30 Series	300	300/CL	300
500W PS40	EV 30 Series	500PS40		500PS40
500W PAR64	RCDE10	500PAR64/MFL	500PAR64/MFL	500PAR64/MFL

Industrial
Lighting

L

Lamps Used With Cooper Crouse-Hinds Luminaires

Incandescent & Quartz
(Halogen) Lamps

MAX WATTS AND BULB TYPE	LUMINAIRE SERIES	MANUFACTURER			MANUFACTURER		
		Lumens			Life-Hours		
		GE	O/S	Ph	GE	O/S	PH
25W T10	EXLD	248	232	260	1000	1000	1000
50W PAR20	EVTL	570	530	550	2500	2500	2000
		570	530	550	2500	2500	2000
52W A19	ELG	670	650	564	2500	2500	4250
58W A19	ELG	630	630	630	3000	3000	3000
60W T10	EXL	740	630	745	1000	1000	1000
65W BR30	EVO2376	775	640		2000	2000	2000
75W ER30	EVO2376	850	750		2000	2000	2000
100W A19	EV 40 Series	1710	1750	1650	750	750	750
100W A21	V160, EV160, EVH, EV 15 Series	1710	1690	1680	750	750	750
100W A23	VS	1600		1730	750	750	750
100W D.C. Bay	Suffix QTZ	1600	1600	1600	2000	2000	2000
150W A21	Vaporgard 150W EV 10 Series EV 20 Series	2850	2780	2850	750	750	750
150W A23	V Series		2810	2475		750	1275
150W PAR38	RCDE6	1660	1660	1660	2000	2000	2000
200W A23	Vaporgard 200W EV 10 Series		3930	3800		750	750
200W A25	Vaporgard 200W Ev 15 Series	2720	2720	2720	3500	3500	3500
200W PS25	EV 15 Series	3000	3000	3000	2500	2500	2500
200W PS30	EV 20 Series EV 30 Series	2725	2665	2825	1950	1875	2120
300W PS25	Vapourgard 300W NDA EV 15 Series	6200		6280	750	750	750
300W PS30	Vaporgard 300W EV 20 Series EV292 Series	3935	5870	6100	6800	7500	7500
300W R40	RCDE6	3700	3030	np	2000	2000	2000
300W PS35	EV 30 Series	5820	5700	5700	1000	1000	1000
500W PS40	EV 30 Series	9900	10100	10100	1000	1000	1000
500W PAR64	RCDE10	6500			2000	2000	2000

Ballasts Used With Cooper Crouse-Hinds Luminaires

High Pressure Sodium
Data

L

Watts	ANSI Code	Volts	Type R/HX/CWA	Starting Current	Operating Current	Input Watts	Kit Cat No.
35	S76	120	R-HPF	0.8	0.4	46	CHRBS 035 /120
50	S68	120 120/277 220/240-50 Hz	R-HPF HX-HPF HX-HPF	1.0 0.7/0.3 0.3/0.3	0.6 0.6/0.3 0.6/0.6	62 66 66	CHRBS 050 /120 CHRBS 050 /DT CHRBS 050 /220 50
70	S62	120 120/208/240/277 120/277/347 220 420 220/240-50Hz	R-HPF HX-HPF HX-HPF HX-HPF HX-HPF HX-HPF	0.9 0.8/0.5/0.4/0.4 .8/.4/.3 0.4 0.2 .5/.4	0.8 0.8/0.5/0.4/0.4 0.8/0.4/0.3 0.4 0.2 .5/.4	86 91 93 91 93 94	CHRBS 070 /120 CHRBS 070 /MT CHRBS 070 /TT CHRBS 070 /220 CHRBS 070 /480 CHRBS 070 /220 50
100	S54	120 120/208/240/277 120/277/347 220 480 220/240-50 Hz	R-HPF HX-HPF HX-HPF HX-HPF HX-HPF HX-HPF	1.5 1.3/0.8/0.7/0.6 1.3/0.6/0.5 0.7 0.4 0.5/0.5	1.1 1.2/0.7/0.6/0.5 1.2/0.5/0.4 0.6 0.3 0.7/0.6	115 130 130 130 130 130	CHRBS 100 /120 CHRBS 100 /MT CHRBS 100 /TT CHRBS 100 /220 CHRBS 100 /480 CHRBS 100 /220 50
150 (55v)	S55	120 120/208/240/277 120/277/347 220 480 220/240-50 Hz	R-HPF HX-HPF HX-HPF HX-HPF HX-HPF HX-HPF	2.3 2.0/1.2/1.0/0.9 2.0/0.9/0.5 1.1 0.5 0.9/0.8	1.5 1.7/1.0/0.8/0.7 1.7/0.7/0.6 0.9 0.4 0.9/0.8	170 188 188 188 188 188	CHRBS 150 /120 CHRBS 150 /MT CHRBS 150 /TT CHRBS 150 /220 CHRBS 150 /480 CHRBS 150 /220 50
150 (100v)	S56	120/208/240/277 480 220/240-50 Hz	CWA CWA R-PFC	1.2/0.7/0.6/0.05 0.3 0.9/1.0	1.8/1.0/0.9/0.8 0.4 0.9/0.8	188 188 175	CHRBS 150 /MT CE CHRBS 150 /480 CE CHRBS 150 /220 50 CE
200	S66	12-/208/240/277 480	CWA CWA	1.4/0.8/0.7/0.6 0.4	2.4/1.4/1.2/1.0 0.6	250 250	CHRBS 200 /MT CHRBS /200 /480
250	S50	120 120/208/240/277 120/277/347 220 480 230-50 Hz	CWA CWA CWA CWA CWA CWA	1.7 1.7/1.0/0.8/0.7 1.7/0.7/0.6 0.9 0.4 1.0	2.5 2.5/1.5/1.3/1.1 2.7/1.2/0.9 1.5 0.7 1.4	295 295 295 295 310 300	CHRBS 250 /120 CHRBS 250 /MT CHRBS 250 /TT CHRBS 250 /220 CHRBS 250 /480 CHRBS 250 /220 50
400	S51	120 120/208/240/277 120/277/347 220 480 230-50 Hz	CWA CWA CWA CWA CWA CWA	3.3 3.3/1.8/1.5/1.4 3.3/1.4/1.0 1.6 0.8 1.9	3.8 3.8/2.2/1.9/1.7 3.8/1.7/1.3 2.1 1.0 2.0	457 464 464 457 464 465	CHRBS 400 /120 CHRBS 400 /MT CHRBS 400 /TT CHRBS 400 /220 CHRBS 400 /480 CHRBS 400 /220 50
1000	S52	120/208/240/277 120/277/347 220 480 220/240-50 Hz	CWA CWA CWA CWA CWA	6.4/3.8/3.2/2.8 6.4/2.8/2.2 3.6 1.6 6.0/5.6	9.5/5.5/4.8/4.2 9.5/4.2/3.3 5.0 2.3 5.2/4.8	1100 1100 1100 1100 1100	CHRBS 1000 /MT CHRBS 1000 /TT CHRBS 1000 /220 CHRBS 1000 /480 CHRBS 1000 /220 50

Industrial
Lighting

Ballasts Used With Cooper Crouse-Hinds Luminaires

Pulse Start Metal Halide
Data

Watts	ANSI Code	Volts	Type R/HX/CWA	Starting Current	Operating Current	Input Watts	Kit Cat No.	
150	M102	120/208/240/277	HX-HPF	1.8/1.3/0.9/0.8	1.6/1.0/0.8/0.7	185	CHRBM 150 /MT	S828
		120/277/347	HX-HPF	1.8/0.8/0.7	1.6/0.7/0.6	185	CHRBM 150 /TT	S828
175	M137	120/208/240/277	Super CWA	1.0/0.6/0.5/0.4	1.8/1.1/0.9/0.8	208	CHRBM 175 /MT	S828
		120/277/347	Super CWA	0.8/0.4/0.3	1.9/0.8/0.7	208	CHRBM 175 /TT	S828
200	M136	120/208/240/277	Super CWA	0.8/0.4/0.4/0.3	2.0/1.2/1.0/0.9	232	CHRBM 200 /MT	S828
		120/277/347	Super CWA	0.7/0.3/0.3	2.1/0.9/0.7	232	CHRBM 200 /TT	S828
		480	Super CWA	0.2	0.5	232	CHRBM 200 /480	S828
250	M138	120/208/240/277	Super CWA	2.3/1.3/1.2/1.0	2.5/1.5/1.3/1.1	288	CHRBM 250 /MT	S828
		120/277/347	Super CWA	2.0/0.9/0.8	2.5/1.1/0.9	290	CHRBM 250 /TT	S828
320	M132	120/208/240/277	Super CWA	1.8/1.1/0.9/0.8	3.3/1.9/1.7/1.4	368	CHRBM 250 /MT	S828
		120/277/347	Super CWA	2.2/1.0/0.7	3.3/1.4/1.1	368	CHRBM 250 /TT	S828
		220	Super CWA	1.4	1.7	365	CHRBM 250 /220	S828
		480	Super CWA	0.5	0.8	368	CHRBM 250 /480	S828
		230/50	Super CWA	1.1	1.6	365	CHRBM 250 /220 50	S828
400	M135	120/208/240/277	Super CWA	2.9/1.7/1.5/1.3	3.8/2.2/1.9/1.7	452	CHRBM 400 /MT	S828
		120/277/347	Super CWA	3.2/1.4/1.1	3.8/1.7/1.4	450	CHRBM 400 /TT	S828
		480	Super CWA	0.8	1.0	452	CHRBM 400 /480	S828
		230/50	Super CWA	2.0	2.1	454	CHRBM 400 /220 50	S828
1000	M141	120/208/240/277	Super CWA	7.8/4.0/3.7/3.2	9.0/5.2/4.5/3.9	1080	CHRBM 1000 /MT	S828
		347	Super CWA	2.3	3.2	1075	CHRBM 1000 /347	S828
		480	Super CWA	1.7	2.4	1075	CHRBM 1000 /480	S828
		220/240-50 Hz	CWA	4.5/4.1	5.0/4.5	1090	CHRBM 1000 /220 50	S828

Ballasts Used With Cooper Crouse-Hinds Luminaires

Metal Halide
Data

L

Watts	ANSI Code	Volts	Type R/HX/CWA	Starting Current	Operating Current	Input Watts	Kit Cat No.
70	M98	120/208/240/277	HX-HPF	0.6/0.3/0.3/0.3	0.8/0.5/0.4/0.4	88	CHRBM 070 /MT
		120/277/347	HX-HPE	0.6/0.2/0.2	0.8/0.4/0.3	88	CHRBM 070 /TT
		220	HX-HPF	0.4	0.5	94	CHRBM 070 /220
		220/240-50 Hz	HX-HPF	0.7/0.6	0.5/0.4	95	CHRBM 070 /220 50
100	M90	120/208/240/277	HX-HPF	1.2/0.8/0.7/0.6	1.2/0.7/0.6/0.5	129	CHRBM 100 /MT
		120/277/347	HX-HPF	1.2/0.5/0.4	1.2/0.5/0.4	129	CHRBM 100 /TT
		220	HX-HPF	0.9	0.6	129	CHRBM 100 /220
		480	HX-HPF	0.3	0.3	132	CHRBM 100 /480
		220/240-50 Hz	HX-HPF	0.7/0.7	0.7/0.6	129	CHRBM 100 /220 50
175	M57	120	CWA	1.3	1.8	210	CHRBM 175 /120
		120/208/240/277	CWA	1.3/0.8/0.7/0.6	1.8/1.1/0.9/0.8	210	CHRBM 175 /MT
		120/277/347	CWA	1.3/0.6/0.5	1.8/0.8/0.7	210	CHRBM 175 /TT
		220	CWA	0.6	1.0	210	CHRBM 175 /220
		480	CWA	0.4	0.5	210	CHRBM 175 /480
		230/50	CWA	0.8	1.1	210	CHRBM 175 /220 50
250	M58	120	CWA	1.0	2.6	294	CHRBM 250 /120
		120/208/240/277	CWA	1.0/0.6/0.5/0.5	2.6/1.5/1.3/1.1	294	CHRBM 250 /MT
		120/277/347	CWA	2.2/1.0/0.8	2.5/1.1/0.9	295	CHRBM 250 /TT
		220	CWA	1.4	1.5	295	CHRBM 250 /220
		480	CWA	0.6	0.6	295	CHRBM 250 /480
		230/50	CWA	1.0	1.3	290	CHRBM 250 /220 50
400	M59	120	CWA	3.0	4.0	456	CHRBM 400 /120
		120/208/240/277	CWA	3.5/2.0/1.8/1.5	4.0/2.2/2.0/1.8	458	CHRBM 400 /MT
		120/277/347	CWA	3.5/1.5/1.2	4.0/1.8/1.4	460	CHRBM 400 /TT
		220	CWA	1.9	2.2	458	CHRBM 400 /220
		480	CWA	0.9	1.0	462	CHRBM 400 /480
		230/50	CWA	1.4	2.1	462	CHRBM 400 /220 50
1000	M47	120/208/240/277	CWA	7.84/0.3/7/3.2	9.0/5.2/4.5/3.9	1080	CHRBM 1000 /MT
		120/277/347	CWA	7.8/3.2/2.5	9.0/3.9/3.2	1080	CHRBM 1000 /TT
		220	CWA	3.9	4.9	1080	CHRBM 1000 /220
		480	CWA	1.9	2.3	1080	CHRBM 1000 /480
		220/240-50 Hz	CWA	4.5/4.1	5.0/4.5	1090	CHRBM 1000 /220 50
1500	M48	120/208/240/277	CWA	13.4/7.7/6.7/5.7	13.5/7.8/6.8/5.9	1605	CHRBM 1500 /MT
		120/277/347	CWA	13.4/5.7/4.6	13.5/5.9/4.8	1615	CHRBM 1500 /TT
		220	CWA	7.3	7.4	1605	CHRBM 1500 /220
		480	CWA	3.3	3.4	1625	CHRBM 1500 /480
		220/240-50 Hz	CWA	6.9/6.3	7.5/6.9	1605	CHRBM 1500 /220 50

Industrial
Lighting

Ballasts Used With Cooper Crouse-Hinds Luminaires

Mercury Vapor
Data

Watts	ANSI Code	Volts	Type R/HX/CWA	Starting Current	Operating Current	Input Watts	Kit Cat No.
100	H38	120	CWA	1.1	1.1	120	CHRBC 100 /120
		120/208/240/277	CWA	1.1/0.6/0.5/0.5	1.1/0.6/0.5/0.5	125	CHRBC 100 /MT
		120/277/347	CWA	1.1/0.5/0.4	1.1/0.5/0.3	125	CHRBC 100 /TT
		480	CWA	0.3	0.3	125	CHRBC 100 /480
		220/240-50 Hz	CWA	0.7/0.6	0.6/0.5	125	CHRBC 100 /220 50
175	H39	120	CWA	1.6	1.9	205	CHRBC 175 /120
		120/208/240/277	CWA	1.6/1.0/0.8/0.7	1.9/1.1/1.0/0.8	205	CHRBC 175 /MT
		120/277/347	CWA	1.3/0.6/0.5	1.8/0.8/0.7	210	CHRBC 175 /TT
		220	CWA	0.6	1.0	210	CHRBC 175 /220
		480	CWA	0.4	0.4	200	CHRBC 175 /480
		230/50	CWA	0.8	1.1	210	CHRBC 175 /220 50
250	H37	120	CWA	2.5	2.5	280	CHRBC 250 /120
		120/208/240/277	CWA	2.5/1.5/1.3/1.1	2.5/1.5/1.3/1.1	285	CHRBC 250 /MT
		120/277/347	CWA	2.2/1.0/0.8	2.5/1.1/0.9	295	CHRBC 250 /TT
		220	CWA	1.4	1.5	295	CHRBC 250 /220
		480	CWA	0.6	0.6	285	CHRBC 250 /480
		230/50	CWA	1.0	1.3	290	CHRBC 250 /220 50
400	H33	120/208/240/277	CWA	3.2/2.0/1.7/1.7	3.9/2.2/2.0/1.7	454	CHRBC 400 /MT
		120/277/347	CWA	3.5/1.5/1.2	4.0/1.8/1.4	460	CHRBC 400 /TT
		220	CWA	1.9	2.1	454	CHRBC 400 /220
		480	CWA	1.0	1.0	454	CHRBC 400 /480
		230/50	CWA	1.4	2.1	462	CHRBC 400 /220 50
1000	H36	120/208/240/277	CWA	8.0/4.6/4.0/3.5	9.8/5.6/4.9/4.3	1080	CHRBC 1000 /MT
		120/277/347	CWA	7.8/3.2/2.5	9.0/3.9/3.2	1080	CHRBC 1000 /TT
		220	CWA	3.9	4.9	1080	CHRBC 1000 /220
		480	CWA	1.9	2.3	1080	CHRBC 1000 /480
		220/240-50 Hz	CWA	4.5/4.1	5.0/4.5	1090	CHRBC 1000 /220 50

Ballasts Used With Cooper Crouse-Hinds Luminaires

Fluorescent Data

L

Luminaire Series	Lamp Type & Watts	Lamp Base	Lamp No. Qty.	Ballast Voltage	Starting Operating Amp	Input Watts	Kit Cat. No.
COMPACT							
VF	9W T4	G23	2	120	0.4	22	CHRBFC2C18/120
DMVF, N2MVF, EVLPP	26W T4	GX24q-3	2	120	0.5	55	CHRBFC64/UNV
	26W T4	GX24q-3	2	220/240	0.3	55	CHRBFC64/UNV
	26W T4	GX24q-3	2	277	0.2	55	CHRBFC64/UNV
	26W T4	GX24q-3	2	347	0.2	44	CHRBFC64/347
	26W T4	GX24q-3	2	DC 12V	3.6	43	CHRBFC64/12VDC
	26W T4	GX24q-3	2	DC 24V	1.8	43	CHRBFC64/24VDC
DMVF, N2MVF, EVLPP	32W T4	GX24q-3	2	120	0.6	68	CHRBFC64/UNV
	32W T4	GX24q-3	2	220/240	0.3	68	CHRBFC64/UNV
	32W T4	GX24q-3	2	277	0.3	68	CHRBFC64/UNV
	32W T4	GX24q-3	2	347	0.2	62	CHRBFC64/347
	32W T4	GX24q-3	2	DC 12V	4.4	60	CHRBFC64/12VDC
	32W T4	GX24q-3	2	DC 24V	2.2	60	CHRBFC64/24VDC
CPMVF	42W T4	GX24q-4	2	120	0.8	93	CHRBFC84/120
	42W T4	GX24q-4	2	277	0.3	68	CHRBFC84/277
	42W T4	GX24q-4	2	347	0.3	80	CHRBFC84/347
LONG TWIN TUBE							
NFL	40W T5	2G11	1	120	0.4	42	CHRBFT40/120
	40W T5	2G11	1	277	0.2	42	CHRBFT40/277
	40W T5	2G11	1	347	0.1	44	CHRBFT80/347
	40W T5	2G11	1	220/240	0.2	41	CHRBFT80/UNV
FVS	40W T5	2G11	2	120	0.6	76	CHRBFT80/UNV
	40W T5	2G11	2	277	0.3	73	CHRBFT80/UNV
	40W T5	2G11	2	347	0.2	70	CHRBFT80/347
	40W T5	2G11	2	220/240	0.3	74	CHRBFT80/UNV
EVFT	36/39W	2G11	2	120	0.6	74	CHRBFT78/120
	36/39W	2G11	2	277	0.3	74	CHRBFT78/277
	36/39W	2G11	2	220/240	0.3	71	CHRBFT78/220

Note:

For 3 Lamp luminaires, order one 1 lamp ballast and one 2 lamp, lamp ballast. Add current and watts values
For 4 lamp luminaires, order two 2 lamp, lamp ballasts. Double currents and watts values

Industrial
Lighting

Ballasts Used With Cooper Crouse-Hinds Luminaires

Fluorescent
Data

Luminaire Series	Lamp Type & Watts	Lamp Base	Lamp No. Qty.	Ballast Voltage	Starting Operating Amp	Input Watts	Kit Cat. No.
LINEAR							
NFL, FVN, EVF & EVFDR	32W T8	Med Bipin	1	120	0.3	35	CHRBFL64/UNV
	32W T8	Med Bipin	1	277	0.2	35	CHRBFL64/UNV
	32W T8	Med Bipin	1	347	0.1	32	CHRBFL64/347
	32W T8	Med Bipin	1	220/240	0.3	38	CHRBFL64/UNV
	32W T8	Med Bipin	2	120	0.5	58	CHRBFL64/UNV
	32W T8	Med Bipin	2	277	0.2	58	CHRBFL64/UNV
	32W T8	Med Bipin	2	347	0.1	50	CHRBFL64/347
	32W T8	Med Bipin	2	220	0.4	58	CHRBFL64/UNV
NFL, FVN, EVF & EVFDR	40(34W)T12	Med Bipin	1	120	0.4	46	CHRBFL80/120
	40(34W)T12	Med Bipin	1	277	0.2	46	CHRBFL80/277
	40(34W)T12	Med Bipin	1	347	0.2	52	CHRBFL40/347
	40(34W)T12	Med Bipin	1	220 50	0.2	51	CHRBFL40/220 50
	40(34W)T12	Med Bipin	2	120	0.6	73	CHRBFL80/120
	40(34W)T12	Med Bipin	2	277	0.3	80	CHRBFL80/277
	40(34W)T12	Med Bipin	2	347	0.2	62	CHRBFL80/347
	40(34W)T12	Med Bipin	2	220/240	0.2	71	CHRBFL80/220
FVN, EVF & EVFDR	60W (800ma) T12 HO	Recessed Double Contact	1	120	0.9	79	CHFBFL120/120
	60W (800ma) T12 HO	Recessed Double Contact	1	277	0.5	82	CHFBFL120/277
	60W (800ma) T12 HO	Recessed Double Contact	1	220 50	0.7	140	CHFBFL120/220 50
	60W (800ma) T12 HO	Recessed Double Contact	2	120	1.2	133	CHFBFL120/120
	60W (800ma) T12 HO	Recessed Double Contact	2	277	0.5	131	CHFBFL120/277
	60W (800ma) T12 HO	Recessed Double Contact	2	220 50	1.0	224	CHFBFL120/220 50
EVF & EVFDR	110W (1500ma) T12 VHO	Recessed Double Contact	1	120	1.7	130	CHRBFL220/120
	110W (1500ma) T12 VHO	Recessed Double Contact	1	277	0.6	137	CHRBFL220/277
	110W (1500ma) T12 VHO	Recessed Double Contact	2	120	2.2	230	CHRBFL220/120
	110W (1500ma) T12 VHO	Recessed Double Contact	2	277	0.9	241	CHRBFL220/277

Note:

For 3 Lamp Luminaires, order one 1 lamp ballast and one 2 lamp, lamp ballast. Add current and watts values

For 4 lamp luminaires, order two 2 lamp, lamp ballasts. Double currents and watts values

4

Calculate the Number of Luminaires Required

For uniform lighting of a specific area, the **lumen method** is used to calculate the number of luminaires required. This method takes into account not only the direct light from the luminaire, but also that which is reflected from the ceiling, walls and floor. As the calculations will show, the higher the reflectivity of the surfaces, the fewer number of luminaires required. Clean, light-colored surfaces also provide visual comfort.

The Coefficient of Utilization as used in these calculations makes allowances for light absorbed by walls and ceiling, and the light absorbed within the luminaire.

To obtain the Coefficient of Utilization, the reflection factors of the walls, floors, and ceiling must be estimated. These reflectances should be the minimum values expected just before cleaning or repainting of the surfaces. The reference below gives approximate factors for various surfaces.

Color	Reflectance Factor
White	80%
Light tints of blue-green, cream, blue, buff or gray	70%
Medium blue-green, yellow, medium buff, or gray	50%
Dark gray, medium blue	30%
Dark blue, brown, dark green, and many wood finishes, such as dark oak and mahogany	10%

When supplementary lighting (highlighting) or floodlighting is needed, use the **point-by-point** method to determine footcandles at a specific point or points on the work plane. This method can also be used with angle reflectors for lighting of irregular rooms or where ceiling use is restricted. Candlepower distribution curves for individual lighting units are shown on the appropriate catalog pages.

Basic Steps in the Lumen Method (Zonal Cavity Method)

- Step 4a** Determine Cavity Ratios
- Step 4b** Determine Cavity Reflectances
- Step 4c** Determine Coefficient of Utilization
- Step 4d** Determine Light Loss Factor
- Step 4e** Calculate Lamp Lumens Required
- Step 4f** Calculate Number of Luminaires Required

4a Determine Cavity Ratios

There are three Cavity Ratios that should be determined, as in Figure 1:

Ceiling Cavity Ratio Room Cavity Ratio Floor Cavity Ratio

Each of these ratios can be found through use of Table IV, page 684. Simply find the appropriate Cavity Depth, whether it is Ceiling Cavity Depth (h_{CC}), Room Cavity Depth (h_{RC}), or Floor Cavity Depth (h_{FC}), and match it with the room length and width to obtain the Cavity Ratio.

For example, to determine the Ceiling Cavity Ratio when the Ceiling Cavity Depth (distance from luminaire to ceiling) is 4', the width of the room 20' and the length 60', cross-reference to Cavity Depth 4.0, width 20, length 60, and find Ceiling Cavity Ratio of 1.3.

If the Room Cavity Depth (distance from luminaire to work plane) is 12', then the Room Cavity Ratio would be 4.0.

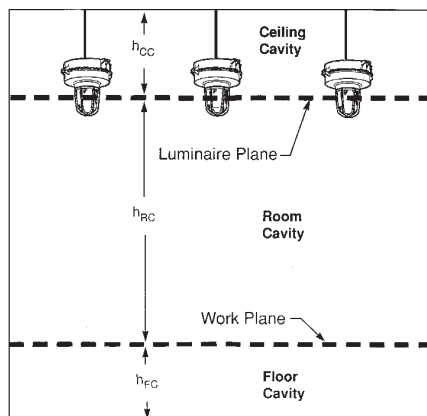


Figure 1/The three cavities used in the Lumen Method

4b Determine Cavity Reflectances

Effective reflectances of the different room cavities are determined in Table V, page 685, by using the estimated ceiling, wall and floor reflectances together with the corresponding cavity ratios.

Using the example in Step 4a, we estimate the wall reflectance at 70% and the ceiling reflectance at 70%. Using the Ceiling Cavity Ratio of 1.3 (also from Step 4a) in Table V, we find the Effective Ceiling Cavity Reflectance is 61%.

4c Determine Coefficient of Utilization

The Coefficient of Utilization is determined from the CU table found on the catalog page for the previously selected luminaire/lamp combination.

Using our example again, the three required factors for use with the CU table would be:

Room Cavity Ratio (from Step 4a)	4.0
Wall Reflectance (from Step 4b)	70%
Effective Ceiling Cavity Reflectance (from Step 4b)	61%

In most instances some interpolations will be necessary to obtain the proper Coefficient of Utilization.

You will note that the table gives Coefficients of Utilization for a 20% Effective Floor Cavity Reflectance. Use of this factor for all applications will provide reasonable accuracy; however, if more accuracy is desired, refer to the current Illuminating Engineering Society Handbook for an additional detailed step.

Table V/Effective Ceiling Reflectance

% Ceiling or Floor Reflectance		90				80				70			50			30				10			
% Wall Reflectance		90	70	50	30	80	70	50	30	70	50	30	70	50	30	65	50	30	10	50	30	10	
Ceiling or Floor Cavity Ratio	0	90	90	90	90	80	80	80	80	70	70	70	50	50	50	30	30	30	30	10	10	10	
	0.1	90	89	88	87	79	79	78	78	69	69	68	59	49	48	30	30	29	29	10	10	10	
	0.2	89	88	86	85	79	78	77	76	68	67	66	49	48	47	30	29	29	28	10	10	9	
	0.3	89	87	85	83	78	77	75	74	68	66	64	49	47	46	30	29	28	27	10	10	9	
	0.4	88	86	83	81	78	76	74	72	67	65	63	48	46	45	30	29	27	26	11	10	9	
	0.5	88	85	81	78	77	75	73	70	66	64	61	48	46	44	29	28	27	25	11	10	9	
	0.6	88	84	80	76	77	75	71	68	65	62	59	47	45	43	29	28	26	25	11	10	9	
	0.7	88	83	78	74	76	74	70	66	65	61	58	47	44	42	29	28	26	24	11	10	8	
	0.8	87	82	77	73	75	73	69	65	64	60	56	47	43	41	29	27	25	23	11	10	8	
	0.9	87	81	76	71	75	72	68	63	63	59	55	46	43	40	29	27	25	22	11	9	8	
	1.0	86	80	74	69	74	71	66	61	63	58	53	46	42	39	29	27	24	22	11	9	8	
	1.1	86	79	73	67	74	71	65	60	62	57	52	46	41	38	29	26	24	21	11	9	8	
	1.2	86	78	72	65	73	70	64	58	61	56	50	45	41	37	29	26	23	20	12	9	7	
	1.3	85	78	70	64	73	69	63	57	61	55	49	45	40	36	29	26	23	20	12	9	7	
	1.4	85	77	69	62	72	68	62	55	60	54	48	45	40	35	28	26	22	19	12	9	7	
	1.5	85	76	68	61	72	68	61	54	59	53	47	44	39	34	28	25	22	18	12	9	7	
	1.6	85	75	66	59	71	67	60	53	59	52	45	44	39	33	28	25	21	18	12	9	7	
	1.7	84	74	65	58	71	66	59	52	58	51	44	44	38	32	28	25	21	17	12	9	7	
	1.8	84	73	64	56	70	65	58	50	57	50	43	43	37	32	28	25	21	17	12	9	6	
	1.9	84	73	63	55	70	65	57	49	57	49	42	43	37	31	28	25	20	16	12	9	6	
	2.0	83	72	62	53	69	64	56	48	56	48	41	43	37	30	28	24	20	16	12	9	6	
	2.1	83	71	61	52	69	63	55	47	56	47	40	43	36	29	28	24	20	16	13	9	6	
	2.2	83	70	60	51	68	63	54	45	55	46	39	42	36	29	28	24	19	15	13	9	6	
	2.3	83	69	59	50	68	62	53	44	54	46	38	42	35	28	28	24	19	15	13	9	6	
	2.4	82	68	58	48	67	61	52	43	54	45	37	42	35	27	28	24	19	14	13	9	6	
	2.5	82	68	57	47	67	61	51	42	53	44	36	41	34	27	27	23	18	14	13	9	6	
	2.6	82	67	56	46	66	60	50	41	53	43	35	41	34	26	27	23	18	13	13	9	5	
	2.7	82	66	55	45	66	60	49	40	52	43	34	41	33	26	27	23	18	13	13	9	5	
	2.8	81	66	54	44	66	59	48	39	52	42	33	41	33	25	27	23	18	13	13	9	5	
	2.9	81	65	53	43	65	58	48	38	51	41	33	40	33	25	27	23	17	12	13	9	5	
	3.0	81	64	52	42	65	58	47	38	51	40	32	40	32	24	27	22	17	12	13	8	5	
	3.1	80	64	51	41	64	57	46	37	50	40	31	40	32	24	27	22	17	12	13	8	5	
	3.2	80	63	50	40	64	57	45	36	50	39	30	40	31	23	27	22	16	11	13	8	5	
	3.3	80	62	49	39	64	56	44	35	49	39	30	39	31	23	27	22	16	11	13	8	5	
	3.4	80	62	48	38	63	56	44	34	49	38	29	39	31	22	27	22	16	11	13	8	5	
	3.5	79	61	48	37	63	55	43	33	48	38	29	39	30	22	26	22	16	11	13	8	5	
	3.6	79	60	47	36	62	54	42	33	48	37	28	39	30	21	26	21	15	10	13	8	5	
	3.7	79	60	46	35	62	54	42	32	48	37	27	38	30	21	26	21	15	10	13	8	4	
	3.8	79	59	45	35	62	53	41	31	47	36	27	38	29	21	26	21	15	10	13	8	4	
	3.9	78	59	45	34	61	53	40	30	47	36	26	38	29	20	26	21	15	10	13	8	4	
	4.0	78	58	44	33	61	52	40	30	46	35	26	38	29	20	26	21	15	9	13	8	4	
	4.1	78	57	43	32	60	52	39	29	46	35	25	37	28	20	26	21	14	9	13	8	4	
	4.2	78	57	43	32	60	51	39	29	46	34	25	37	28	19	26	20	14	9	13	8	4	
	4.3	78	56	42	31	60	51	38	28	45	34	25	37	28	19	26	20	14	8	13	8	4	
	4.4	77	56	41	30	59	51	38	28	45	34	24	37	27	19	26	20	14	8	13	8	4	
	4.5	77	55	41	30	59	50	37	27	45	33	24	37	27	19	25	20	14	8	14	8	4	
	4.6	77	55	40	29	59	50	37	26	44	33	24	36	27	18	25	20	14	8	14	8	4	
	4.7	77	54	40	29	58	49	36	26	44	33	23	36	26	18	25	20	13	8	14	8	4	
	4.8	76	54	39	28	58	49	36	25	44	32	23	36	26	18	25	19	13	8	14	8	4	
	4.9	76	53	38	28	58	49	35	25	44	32	23	36	26	18	25	19	13	7	14	8	4	
	5.0	76	53	38	27	57	48	35	25	43	32	22	36	26	17	25	19	13	7	14	8	4	

4d

Determine Light Loss Factor

The light loss factor takes into account two things: lamp light output dropoff (lamp lumen depreciation) and dirt accumulation on the luminaire, lamp and reflector. The table below lists suggested total light loss factors according to light source and operating conditions. (Other factors that may affect light loss, such as voltage to luminaire, luminaire ambient temperature (fluorescent) and ballast operating characteristics, should also be considered.)

Suggested Total Light Loss Factors Operating Conditions

	CLEAN	AVERAGE	DIRTY
	Clean air, free of fumes and dust, luminaires scheduled to be cleaned frequently, and lamps replaced systematically.	Less favorable atmospheric conditions, luminaires cleaned at fairly frequent intervals, and lamps replaced only after burnout.	Quite dirty locations and work atmospheres, infrequent maintenance of lighting equipment.
Lamp and Luminaire	Clean	Average	Dirty
Incandescent	.74	.69	.64
Quartz	.82	.76	.70
Mercury	.70	.65	.60
Metal Halide	.64	.59	.55
High Pressure Sodium	.77	.71	.66
Fluorescent	.71	.66	.61

4e

Calculate Lamp Lumens Required

Formula: Total Lamp Lumens =

$$\frac{\text{Footcandles}[\dagger] \times \text{Area of Room (sq. ft.)}}{\text{Coefficient of Utilization}[\ddagger] \times \text{Light Loss Factor}[\diamond]}$$

[†] from Table 1, page 665 or IES Handbook

[‡] from catalog page on luminaire selected—and calculated from 4b

[♦] from above

♦♦ For lamp data check current lamp manufacturing catalog. Variances exist between manufacturers.

4f

Calculate Number of Luminaires Required

Formula:

$$\text{Luminaires Required} = \frac{\text{Total Lamp Lumens}}{\text{Total Lamp Lumens per Luminaire}}$$

Typical Lamp Lumens
from list below: ♦ ♦

Lamp	Watts	Lumens	Life (hours)
Induction	55	3500	100,000
	85	6000	100,000
	165	12000	100,000
Incandescent (inside frosted)	100	1750	750
	150	2880	750
	200 A-23;	4010	750
	PS-30, PS-25	3710	750
	300 PS-25;	6360	750
	PS-30;	6110	750
	PS-35;	5820	1000
Mercury Vapor (deluxe white)	500	10850	1000
	100	4200	24000
	175	8600	24000
	250	12100	24000
	400	22500	24000
Metal Halide (clear)	1000	63000	24000
	70	5600	10000
	100	7800	10000
	175	14000	10000
	250	20500	10000
High Pressure Sodium (clear)	400	36000	20000
	1000	110000	12000
	35	2250	16000
	50	4000	24000
	70	6400	24000
	100	9500	24000
	150	16000	24000
	200	22000	24000
	250	27500	24000
	400	50000	24000
Linear Fluorescent	1000	140000	24000
	32 (T8)	2900	20000
	40 (Slimline)	3000	9000
	40 (Rapid Start)	3150	20000
	60 (800 ma)	4300	12000
	110 (1500 ma)	6850	10000
Compact Fluorescent	215 (1500 ma)	16000	12000
	5	250	10000
	7	400	10000
	9	600	10000
	13	860	10000
	26	1800	10000
Long Twin Tube Fluorescent	32	2400	10000
	39	2850	12000
	40	3150	20000

In using the formula make sure you divide by the total lamp lumens per luminaire. For example, if an EVF24022, 4 lamp, 32 watt, T8 luminaire is being used, you would multiply the total lamp lumens by 4. (4 × 2900 or 11,600 lumens.)

4f (continued)

EXAMPLE: Lumen Method

Requirement:

Design a system for lighting a room classified Class I, Division 2, Group D

Assumptions:

- a) Room dimensions – 40' wide; 80' long; 15' high
- b) Luminaires to be suspended 3' from ceiling; work plane is 4' above floor
- c) Ceiling is off-white; walls are light gray; floor is concrete
- d) Good maintenance conditions exist
- e) Lighting system will be operated 16 hours daily; 5 days a week
- f) Color rendition is not critical

Using the Coefficient of Utilization worksheet, follow procedure given below. Answers to our example are on the worksheet.

Step #1. Determine required illumination level in FOOTCANDLES (FC) – Table 1, page 665.

Step #2. Select type of lamp – pages 666 and 667. For the room size in example, considering long hours of operation and color rendition not being critical, high pressure sodium lighting is recommended.

Step #3. Select type of luminaire, page 668. VMV series *Champ*® luminaires are recommended. For our example VMVS3A150G pendant luminaire with RD70 dome reflector is selected.

Step #4. Calculation of number of luminaires necessary.

(A) Compute CAVITIES of ceiling, room and floor. H_{CC} ; H_{RC} and H_{FC} (see sketch on worksheet).

(B) Obtain REFLECTANCE FACTORS (using values on page 685) RC; RW and RF (see sketch on worksheet).

(C) Compute CAVITY RATIOS for ceiling, room and floor using Formula or Table IV, page 684.

Formula

$$CCR = \frac{5 \times H_{CC} (L + W)}{L \times W}$$

$$RCR = \frac{5 \times H_{RC} (L + W)}{L \times W}$$

$$FCR = \frac{5 \times H_{FC} (L + W)}{L \times W}$$

(D) Determine Effective Ceiling Reflectance from Table V, page 685. See work sheet for values of RC, RW and CCR.

(E) Determine Coefficient of Utilization – from CU table. For a VMVS3A150G luminaire, applying an Effective Ceiling Cavity Reflectance of 70; a wall reflectance of 50 and a room Cavity Ratio of 1.5 (all figures applicable to our example), the CU (see CU Table, page 733) is at mid-point between .804 and .690, which is .747.

(F) Determine Light Loss Factor (LLF) – page 686.

(G) Compute Total Lamp Lumens required.

Formula

$$\frac{(FC \times Area) 50 \times 80 \times 40}{(CU \times LLF) .747 \times 0.77} = 278,169 \text{ Lumens}$$

Therefore, the number of VMVS3A150G luminaires required

$$= \frac{\text{Total Lamp Lumens } 278,169}{\text{Lamp Lumens per luminaire (page 686) } 16,000} = 17.4$$

= 17 VMVS3A150G luminaires with RD70 dome reflectors (use 18 luminaires, see page 685).

Coefficient of Utilization Worksheet

Job Requirement:

(See typical example at left)

Given Data:

(See typical assumptions at left)

Lamp Characteristics:

Type – High Pressure Sodium

Catalog # – VMVS3A150G with RD70 dome reflector

Lumens – 16,000

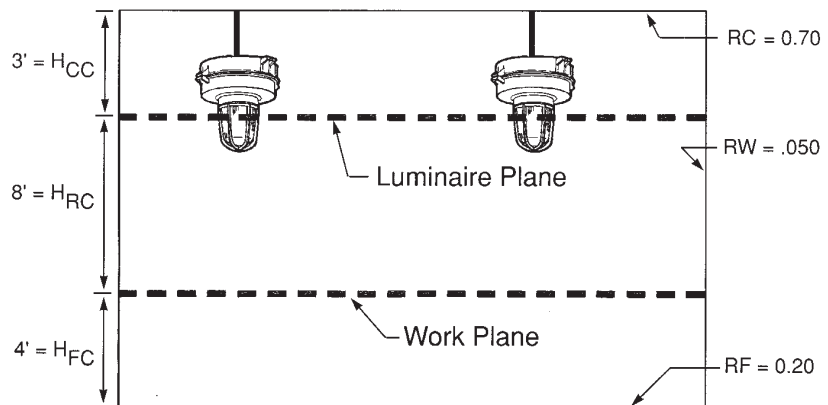
LLF – 0.77

No. of Footcandles Required: 50

Room: Length 80' Width 40' Height 15'

Cavities

Reflectance



Cavity Ratios: CCR 0.56 RCR 1.5 FCR 0.75

Effective Ceiling Cavity Reflectance: 72 (use 70)

Wall Reflectance: 50

CU: .747

Total Lumens Required: 278,170

No. of Luminaires: 18 luminaires (see page 686)

Use 3 x 6 spacing

5

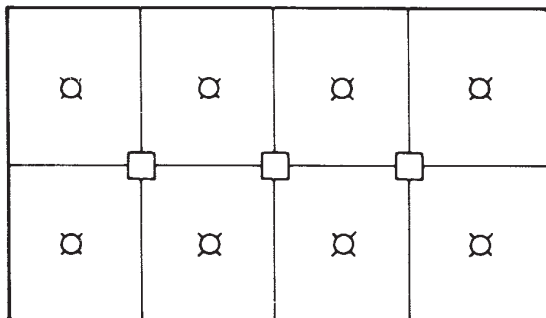
Determine Placement of Luminaires and Make Layout

Using the number of units as determined in Step 4 as a basic quantity to work with, determine the number of lights per row and number of rows required for the lighting system. Logic plays a part; for example: if a room is 4 times as long as it is wide, you should have 4 times as many luminaires in each row as there are number of rows. In any case, the distance between the lighting units should not be greater than the mounting height of the units above the floor. The distance between the wall and first luminaire should not be more than $\frac{1}{2}$ the spacing between the units, and in situations where work is done immediately adjacent to the wall, the distance should be reduced to $\frac{1}{3}$ or $\frac{1}{4}$ the distance between units.

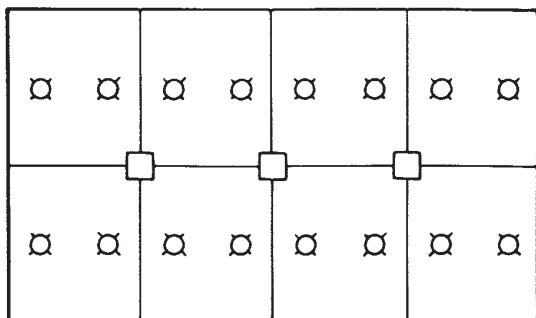
In rooms that are divided by columns or beams, it is desirable to locate the units symmetrically in the bays. The following layouts will serve as a guide in planning such installations.

Important: Remember to observe the permissible spacing to mounting height ratio or spacing criterion. If the number of luminaires is insufficient to fulfill this requirement, recalculate using lower wattage luminaires.

Figure 2 Typical Placement Incandescent/H.I.D., etc.

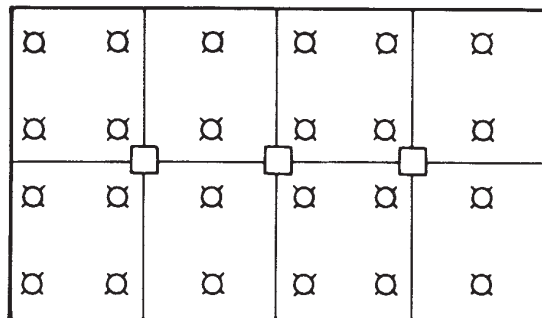


One unit per bay – satisfactory only where the bay size is no greater than the maximum allowable spacing – an unusual condition.

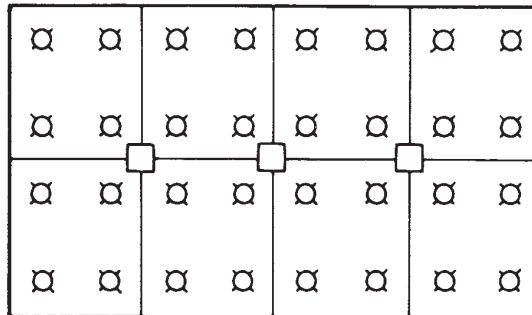


Two units per bay – usually applicable only in narrow bays, where the width is less than $\frac{2}{3}$ the length.

Figure 2 (continued)

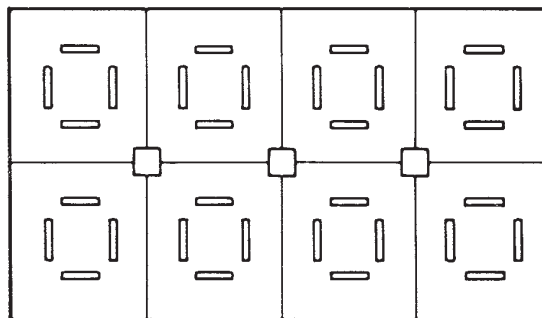


Four-Two system – equivalent to three units per bay or four per bay where spacing allows.

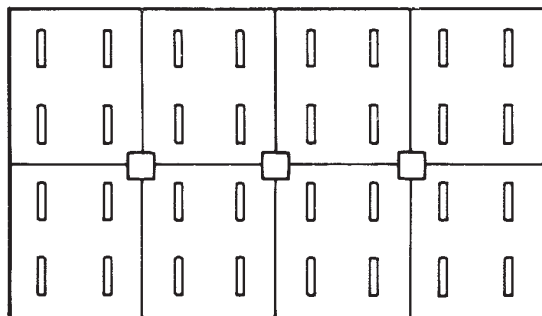


Four units per bay – if necessary could run in continuous rows across room, or turned and run lengthwise with room.

Fluorescent



Grid pattern – usual condition dependent on room size and type of work done there.



Four units per bay – this is the most common system for the square bay of usual dimensions.

Point-by-Point Method

(for use in highlighting – see Step 4, page 683)

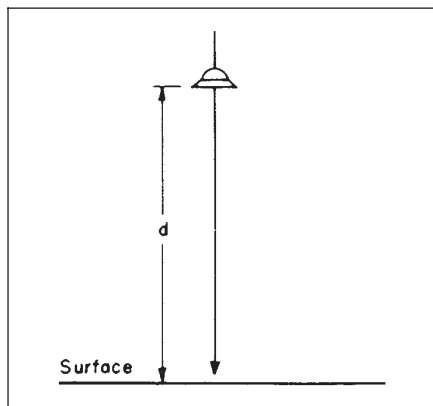
Use this method to determine the footcandle value at a point on a surface that is illuminated by direct light from a luminaire or luminaires.

When the light hits a point on the surface head on (such as directly under a luminaire), use formula “A”, but when the light hits the surface at an angle (such as between luminaires) formula “B” must be used.

Figure 4/Methods of Measurement

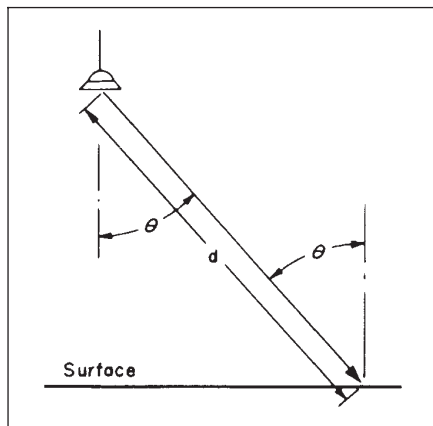
Formula “A”

$$\text{Foot-candles} = \frac{\text{Candlepower}}{d^2 (\text{Distance})} \times \text{Light Loss factor}$$



Formula “B”

$$\text{Foot-candles} = \frac{\text{Candlepower} \times \cos \theta}{d^2 (\text{Distance})} \times \text{Light Loss factor}$$



Candlepower (at the proper angle) is found from the Light Distribution Curve on the luminaire catalog page. Distance “d” and angle are found by measurement of a scaled sketch of the lighting situation or through trigonometric calculations.

EXAMPLE: Point-by-Point Method

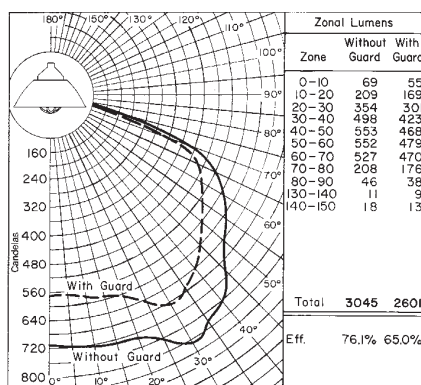
#1 Determine the footcandle value at floor level immediately below a VDA22GRD with 200 Watt lamp and Dome reflector. Mounting height of unit above floor is 12’.

#2 Using same unit as in #1, determine footcandle value at floor level at a point 7 feet away from luminaire.

Fig. 5/Candlepower Distribution Curve

Luminaire With Globe, Dome Reflector and With or Without Guard

200 Watt, A-23 Incandescent



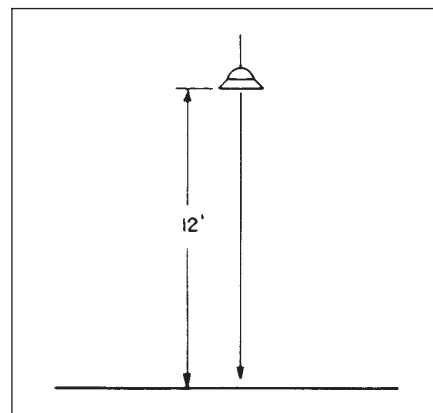
Candelas at 25 Feet

Mid-zone Angle	Without Guard	With Guard
0	715	575
5	722	575
15	736	595
25	764	650
35	793	674
45	715	605
55	615	534
65	531	473
75	197	166
85	42	35
90	14	14
135	13	12
145	28	21

Figure 6

Problem #1 – use Formula “A”

$$fc = \frac{CP}{d^2} \times LLF$$



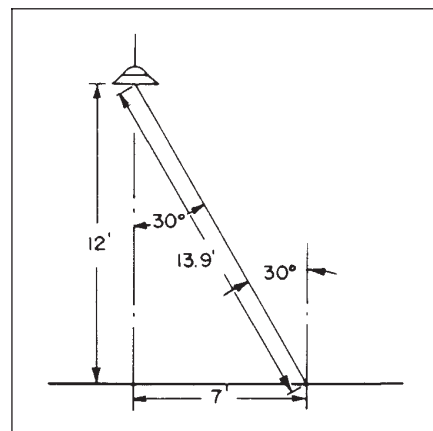
$$fc = \frac{715^{(a)}}{(12')^2} \times 0.69^{(b)} = 3.4 \text{ fc}$$

(a) Candlepower at 0° (from Light Distribution Curve at left)

(b) Light loss factor from page 686

Problem #2 – use Formula “B”

$$fc = \frac{CP \times \cos \theta}{d^2} \times LLF$$



$$fc = \frac{779^{(c)} \times 0.866}{(13.9')^2} \times 0.69 = 2.4 \text{ fc}$$

(c) Candlepower at 30° (from light Distribution Table at left). Interpolate between 25° and 35°

Notes Page

[illegible]

Description	Page No.
Application	692
Industrial Luminaires	
Vaporgard™ Series	693-701
V Series	702-705
NDA Corro•Gard™ Series	706, 707

**Enclosed and Gasketed
General Information****Application:**

Incandescent luminaires are used:

- indoors or outdoors in industrial locations
- in tunnels, building entrances or similar locations, where moisture, dirt, chemicals, vibration or rough usage are a problem
- either mounted directly in the conduit system or attached to cast outlet boxes, by means of pendant, ceiling, wall bracket or stanchion mountings

Features:

- Enclosed and gasketed luminaires that accept incandescent lamps
- Gaskets and glass globes help prevent dirt, water and corrosive atmosphere from entering the conduit system and corroding the interior parts

Standard Materials:

- Luminaires-bodies, boxes and guards – copper-free aluminum or *Feraloy*® iron alloy
- Globes – heat-resistant glass or polycarbonate
- Reflectors – Krydon® fiberglass-reinforced polyester

Standard Finishes:

- *Vaporgard*™ – copper-free aluminum-epoxy powder coat
- V SERIES, – *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- *Krydon* material – luminaires: gray; reflectors: high reflectance white

Size Ranges:

- Include up to 300 watt, PS-30 lamp
- ½" to 1¼" hubs

**Certifications and
Compliances:**

- Weather resistant, NEMA 3, 3R
- NEC/CEC: Class I, Division 2
- UL Standard: 1598
- CSA Standard: C22.2

**Table 500-3(d)
Identification Numbers.**

Maximum Temperature		Identification Number
Deg. C	Deg. F	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

Application:

Vaporgard series incandescent luminaires are used:

- indoors or outdoors in industrial locations where enclosed and gasketed fixtures are required
- in tunnels, building entrances and similar locations, where moisture, dirt, chemicals, vibration or rough usage are a problem
- for flush or surface mounting on ceiling or wall; pendant or in conduit systems; with or without a cast outlet box

Features:

- Designed to exclude dirt, moisture and corrosive vapors from the interior of the luminaires and the conduit system
- There are no screws to remove as the shock-absorbing socket strap is keyhole slotted and removes quickly for ease of wiring
- The glass globe-guard assembly is installed and/or removed as a unit, making it necessary to handle only one piece in relamping
- There are no crevices to accumulate a dirt or dust buildup and fixture has an attractive finish with a smooth, dust and dirt shedding design
- Configured glass globe has vertical fluting and stippled bottom which provides for more even light distribution and glare elimination
- For non-hazardous locations, shatterproof plastic polycarbonate globes are available for use with the 200 watt series.
- Reversible offset socket mounting strap permits use of various size lamps while holding light center in same position for maximum light output and efficiency
- Shock absorbing medium base lamp socket

Krydon® fiberglass-reinforced polyester reflectors

- Reflectance is equivalent to the finest porcelain enamel
- Cannot corrode – no enamel to chip and rust
- Ultraviolet inhibitors are incorporated in the material to prevent discoloration and brittleness

Standard Materials:

- Bodies and guards – copper-free aluminum
- Globes
 - heat and impact resistant tempered glass
 - colored glass nontempered (G55, G56, G57, G58)
 - plastic polycarbonate (G63, G65, G67)
- Reflectors – Krydon® fiberglass-reinforced polyester

Standard Finishes:

- Bodies and guards – epoxy powder coat
- Krydon material – high reflectance white

Options:

The following options are available from the factory by adding suffix to fixture Cat. No.:

Description	Suffix to be Added to Cat. No.:
• Teflon coating on globe for increased shatter protection (G24 globe 200 watt series only)	S808
• 250V nameplate for export applications	/250
• Plastic polycarbonate globe	See page 696

Ratings (Electrical/Size):

- Up to 300 watt, PS-30 medium base lamp
- 1/2" to 1-1/4" hubs
- 120V nameplate is standard – for NEC compliance
- 250V nameplate is optional. Supplied when ordered with suffix: /250

Certifications and Compliances:

- Wet locations
- NEC/CEC: Class I, Division 2
- UL Standard: 1598
- CSA Standard: C22.2 No. 9
- UL/CSA Fixture Fitting



Class I, Division 2 Temperature Performance Data: (Based on 40°C ambient)

Lamp Watts	T-Number	Supply Wire °C
150	T2A	150°C
200	T2B	200°C
300	T2B	150°C



VAPORGARD™ Incandescent Luminares

Enclosed and Gasketed

Cl. I, Div. 2, Groups A,B,C,D
Wet Locations
NEMA 3,3R

Pendant Mount - VDA Series



Hub Size	Series	Max Lamp Size	Complete Cat.# with globe/guard
1/2"	150	150 watt	VDA15GP✓
3/4"	150	A-21	VDA25GP✓
1"	150		VDA35GP✓
1/2"	200	200 watt	VDA12GP✓
3/4"	200	A-23	VDA22GP✓
1"	200		VDA32GP✓
1/2"	300	300 watt	VDA13GP✓
3/4"	300	PS-25 & PS-30	VDA23GP✓
1"	300		VDA33GP✓

Luminaire Components Catalog Nos.

Pendant Body	Globe	Guard
VDA15✓	G54✓	P50✓
VDA25✓	G54✓	P50✓
VDA35✓	G54✓	P50✓
VDA12✓	G24✓	P21✓
VDA22✓	G24✓	P21✓
VDA32✓	G24✓	P21✓
VDA13✓	G34/G251✓	P22✓
VDA23✓	G34/G251✓	P22✓
VDA33✓	G34/G251✓	P22✓

Thru-Feed - VDC Series



Hub Size	Series	Max Lamp Size	Complete Cat.# with globe/guard
1/2"	150	150 watt	VDC15GP✓
3/4"	150	A-21	VDC25GP✓
1/2"	200	200 watt	VDC12GP✓
3/4"	200	A-23	VDC22GP✓
1/2"	300	300 watt	VDC13GP✓
3/4"	300	PS-25 & PS-30	VDC23GP✓

Thru Feed Body	Globe	Guard
VDC15✓	G54✓	P50✓
VDC25✓	G54✓	P50✓
VDC12✓	G24✓	P21✓
VDC22✓	G24✓	P21✓
VDC13✓	G34/G251✓	P22✓
VDC23✓	G34/G251✓	P22✓

Ceiling Mount for Recessed 4" Round Box - VXH Series



Hub Size	Series	Max Lamp Size	Complete Cat.# with globe/guard
1/2"	150	150 watt A-21	VXH15GP✓
1/2"	200	200 watt A-23	VXH12GP✓
1/2"	300	300 watt PS-25 & PS-30	VXH13GP✓

Lamp Socket Body	Globe	Guard
VXH15✓	G54✓	P50✓
VXH12✓	G24✓	P21✓
VXH13✓	G34/G251✓	P22✓

Ceiling Mount with Junction Box - VXHF Series



Hub Size	Series	Max Lamp Size	Complete Cat.# with globe/guard
1/2"	150	150 watt	VXHF15GP✓
3/4"	150	A-21	VXHF25GP✓
1/2"	200	200 watt	VXHF12GP✓
3/4"	200	A-23	VXHF22GP✓
1/2"	300	300 watt	VXHF23GP✓
3/4"	300	PS-25 & PS-30	VXHF23GP✓

Lamp Socket Body	Globe	Guard	Junction Box
VXH15✓	G54✓	P50✓	VXF10✓
VXH15✓	G54✓	P50✓	VXF20✓
VXH12✓	G24✓	P21✓	VXF10✓
VXH12✓	G24✓	P21✓	VXF20✓
VXH13✓	G54/G251✓	P22✓	VXF20✓
VXH13✓	G34/G251✓	P22✓	VXF20✓

✓ – available with Lightning Service™
See Section G for complete details

VAPORGARD™ Incandescent Luminaires

Enclosed and Gasketed

Cl. I, Div. 2, Groups A,B,C,D
Wet Locations
NEMA 3,3R

1L



Wall Mount - VXHT Series



Hub Size	Series	Max Lamp Size	Complete Cat. # with globe/guard
1/2"	150	150 watt	VXHT15GP✓
3/4"	150	A-21	VXHT25GP✓
1/2"	200	200 watt	VXHT12GP✓
3/4"	200	A-23	VXHT22GP✓
1/2"	300	300 watt	VXHT13GP✓
3/4"	300	PS-25 & PS-30	VXHT23GP✓

Luminaire Components Catalog Nos.

Wall Bracket Mounting Module	Body	Globe	Guard
VXT10✓	VXH15✓	G54✓	P50✓
VXT20✓	VXH15✓	G54✓	P50✓
VXT10✓	VXH12✓	G24✓	P21✓
VXT20✓	VXH12✓	G24✓	P21✓
VXT10✓	VXH13✓	G34/G251✓	P22✓
VXT20✓	VXH13✓	G34/G251✓	P22✓

Wall Mount - Adapter Kit

Mounts wall mount VXHT Series
to a 4" Round Box.
Cat. No. VXT-K1

Wall Mount with Junction Box VXHBF Series



Hub Size	Series	Max Lamp Size	Complete Cat. # with globe/guard
1/2"	150	150 watt	VXHBF15GP✓
3/4"	150	A-21	VXHBF25GP✓
1/2"	200	200 watt	VXHBF12GP✓
3/4"	200	A-23	VXHBF22GP✓
1/2"	300	300 watt	VXHBF13GP✓
3/4"	300	PS-25 & PS-30	VXHBF23GP✓

Wall Bracket Mounting Module	Body	Globe	Guard	Junction Box
VXT10✓	VXH15✓	G54✓	P50✓	VXF10✓
VXT20✓	VXH15✓	G54✓	P50✓	VXF20✓
VXT10✓	VXH12✓	G24✓	P21✓	VXF10✓
VXT20✓	VXH12✓	G24✓	P21✓	VXF20✓
VXT10✓	VXH13✓	G34/G251✓	P22✓	VXF10✓
VXT20✓	VXH13✓	G34/G251✓	P22✓	VXF20✓

Stanchion Mount - VXHA Series



Hub Size	Series	Max Lamp Size	Complete Cat. # with globe/guard
1 1/4"		150 watt A-21	VXHA45GP✓
1 1/4"		200 watt A-23	VXHA42GP✓
1 1/4"		300 watt PS-25 & PS-30	VXHA43GP✓

Stanchion Mounting Module	Body	Globe	Guard
VXA4✓	VXH15✓	G54✓	P50✓
VXA4✓	VXH12✓	G24✓	P21✓
VXA4✓	VXH13✓	G34/G251✓	P22✓

✓ – available with Lightning Service™
See Section G for complete details

1L
Incandescent
Fixtures



Medium Base Lamp Receptacle with Strap Shock Absorbing

Cat. #
V84✓



Reflectors



Dome



30° Angle

Max. Lamp Size	Dome Cat. #	30° Angle Cat. #
150 watt, A-21	RD64✓	RA64✓
200 watt, A-23, A-25, PS-25 and 300 watt, PS-30	RD71✓	RA71✓



VXFT – 5 Hubs, 4 Plugs

Hub Size	Cat. #
1/2	VXFT10✓
3/4	VXFT20✓

For use when rear wiring entry is required. Use in lieu of VXF10 or VXF20.

✓ – available with Lightning Service™
See Section G for complete details

Globes† and Guards



150 and 200W globe



300W globe

Plastic Globes①



Shatterproof polycarbonate plastic globe**

Maximum Lamp Size

150 Watt, A-21	200 Watt, A-23, A-25, PS-25	300 Watt, PS-25 PS-30‡
----------------	-----------------------------	------------------------

Color	Cat. #	Cat. #	Cat. #
Clear (heat-resisting)	G54✓	G24 ♦ ✓	{ G34✓ G251✓
Green	G55*✓	G25	
Blue	G56*✓	G26	
Red	G57*✓	G27	
Amber	G58*✓	G28	



Guard P50 and P21



Guard P22

Guards for Glass Globes (Not for use with plastic globes)

Cat. #	Maximum Lamp Size
P50✓	150 watt, A-21
P21✓	200 watt, A-23, A-25, PS-25
P22✓	300 watt, PS-30 (with G251 only)

Mounting Adapter Kit

- Allows for the mounting of non-Crouse-Hinds outlet boxes to the VXT20 wall mount bracket and VXH ceiling mount bracket

Cat. #
VXT-K1



VXT-K1

Application:

For use in:

- food processing plants and canneries, dairies, breweries and bakeries
- emergency lighting

Features:

- Shatterproof, which precludes contamination of food products with broken particles of glass.
- Designed to comply with U.S. Dept. of Agriculture specification for food processing plants.
- Provides protection against vandalism, with resultant lower replacement and maintenance costs.
- Particularly adaptable for use on emergency police or fire alarm boxes.
- Same size as G24 series glass globes. Existing installations can be changed to plastic globes simply by replacing globe.
- For use with 200 watt series luminaires such as VDA22, etc.
- For use without guard.

Color	Max. Wattage, Lamp Size	Cat. #
Natural	200 watt, A-23	G63 ✓
Green	200 watt, A-23	G65
Red	200 watt, A-23	G67

Note: Polycarbonate globes for non-hazardous locations only.

♦ G24 is available with a TEFLON® coating for increased shatter protection by adding suffix S808.

* With G55, G56, G57, G58 color globes, maximum lamp size is 60 watt for outdoor applications.

** Prior to wash-down, globes must be cool.

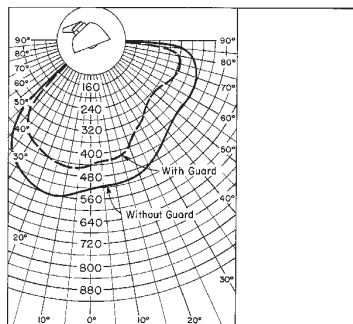
† All glass globes are configured type, having fluted side and stippled bottom.

‡ Globe G251 required when guard P22 is used. Use globe G34 when guard is not used.

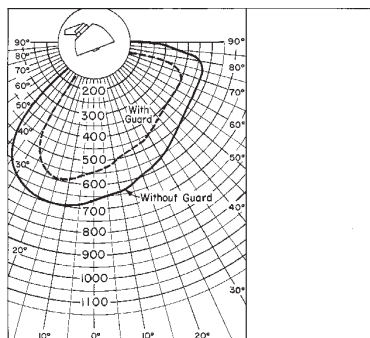
① Lamp must be mounted in vertical position base up to 45°C (stanchion) only.

1L



Luminaire VXHA45GPRA
Lamp: 150W/A-21
Total Bare Lamp Lumens: 2850

Measurements taken from A-A' plane.

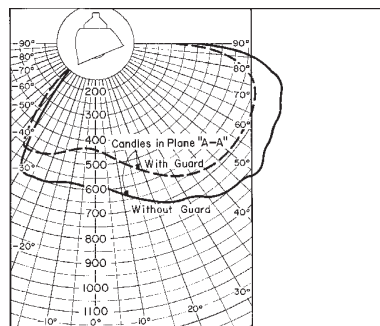

	Total Lumens	Eff. %
With Guard	1490	52.3
Without Guard	1881	66.0

Luminaire VXHA42GPRA
Lamp: 300W/PS-30
Total Bare Lamp Lumens: 6300

Measurements taken from A-A' plane.

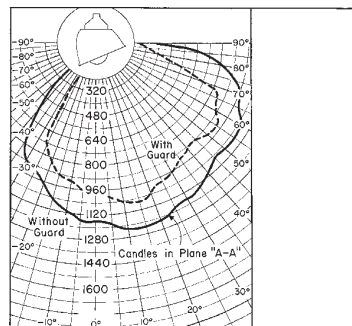

	Total Lumens	Eff. %
With Guard	3630	57.6
Without Guard	4271	67.8

**Luminaire With Globe, 30° Angle Reflector and With
or Without Guard**
Lamp: 100W/A-21 through 200W/A-23
Total Bare Lamp Lumens: 4000

NOTE: All data provided is for 200W/A-23 incandescent lamp. Use following candlepower/lumen multipliers for other lamp sizes:
100W 0.42; 150W 0.7


Measurements taken from A-A' plane.


	Without Guard		With Guard	
Lamp Size	Total Lumens	Eff. %	Total Lumens	Eff. %
100W	1141		949	
150W	1890		1582	
200W/A-23	2700	67.5	2260	56.5
200W/PS-25	2174		1819	

**Luminaire With Globe, 30° Angle Reflector and With
or Without Guard**
Lamp: 300W/PS-30
Total Bare Lamp Lumens: 6000

Measurements taken from A-A' plane.


	Total Lumens	Eff. %
With Guard	3360	56.0
Without Guard	3954	65.9

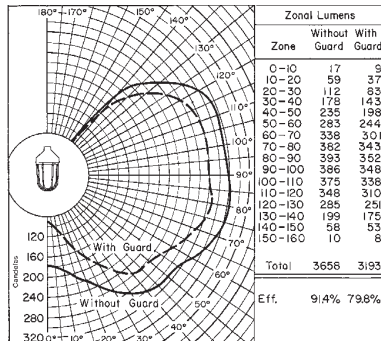
Lamp: 100W/A-21 through 200W/PS-25

Total Bare Lamp Lumens: 4000

To determine number and placement of luminaires see Lighting Selector Guide, pages 665 to 689.

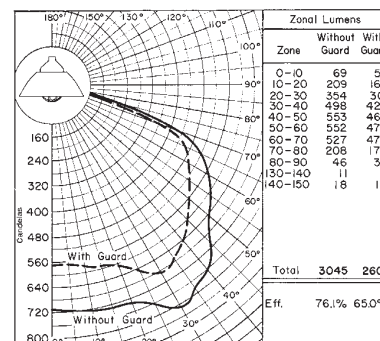
NOTE: All data provided is for 200W/A-23 incandescent lamp. Use following candela/lumen multipliers for other lamp sizes: 100W 0.42; 150W 0.7; 200W/PS-25 0.82

Luminaire With Globe and With or Without Guard



Example: Zonal Lumens for 200W/A-23 lamp with guard for 0-40° is 272 Zonal Lumens for 150W lamp with guard for 0-40° is $272 \times 0.7 = 190$.

Luminaire With Globe, Dome Reflector and With or Without Guard



Example: Zonal Lumens for 200W/A-23 lamp with guard for 0-40° is 948 Zonal Lumens for 150W lamp with guard for 0-40° is $948 \times 0.7 = 664$.

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.654	.549	.471	.407	.353
	30	.608	.486	.400	.333	.282
	10	.567	.432	.345	.277	.228
70	50	.603	.506	.434	.375	.326
	30	.563	.449	.370	.309	.260
	10	.523	.401	.320	.257	.211
50	50	.509	.424	.363	.312	.273
	30	.477	.380	.313	.260	.220
	10	.449	.341	.271	.218	.179
30	50	.422	.349	.297	.255	.223
	30	.399	.315	.259	.214	.180
	10	.376	.285	.225	.180	.147
10	50	.343	.280	.237	.202	.176
	30	.324	.253	.206	.170	.142
	10	.307	.230	.180	.143	.115

% Reflectance		Room Cavity Ratio				
Eff Ceil.	Wall	6	7	8	9	10
80	50	.315	.279	.249	.226	.201
	30	.244	.210	.183	.162	.140
	10	.193	.164	.137	.118	.100
70	50	.289	.257	.230	.208	.185
	30	.225	.194	.170	.150	.130
	10	.177	.150	.127	.110	.093
50	50	.242	.215	.192	.175	.156
	30	.189	.163	.143	.126	.109
	10	.150	.126	.106	.092	.077
30	50	.198	.175	.158	.143	.128
	30	.155	.134	.116	.103	.088
	10	.123	.102	.086	.075	.061
10	50	.157	.140	.124	.114	.101
	30	.122	.106	.091	.080	.068
	10	.096	.080	.066	.057	.045

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.604	.522	.454	.395	.347
	30	.576	.480	.404	.340	.290
	10	.552	.444	.364	.298	.248
70	50	.591	.512	.445	.387	.339
	30	.565	.472	.398	.336	.286
	10	.543	.440	.361	.296	.246
50	50	.564	.490	.428	.372	.327
	30	.544	.457	.387	.327	.280
	10	.526	.428	.354	.292	.245
30	50	.541	.470	.411	.358	.315
	30	.525	.444	.377	.319	.273
	10	.509	.419	.348	.288	.241
10	50	.521	.452	.396	.345	.304
	30	.507	.429	.367	.311	.268
	10	.494	.409	.342	.283	.238

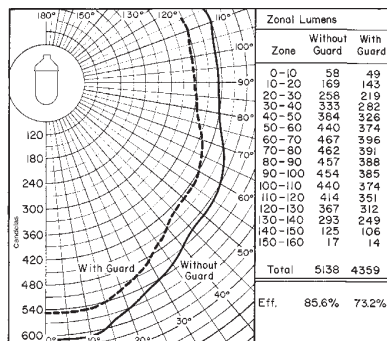
Reflectance		Room Cavity Ratio				
Eff Ceil.	Wall	6	7	8	9	10
80	50	.309	.274	.244	.222	.193
	30	.253	.220	.192	.170	.142
	10	.214	.184	.155	.135	.110
70	50	.303	.270	.241	.219	.189
	30	.250	.217	.191	.168	.142
	10	.211	.181	.154	.135	.110
50	50	.291	.260	.232	.211	.184
	30	.245	.212	.186	.166	.139
	10	.209	.179	.153	.134	.109
30	50	.281	.250	.225	.204	.178
	30	.239	.209	.182	.162	.136
	10	.207	.177	.152	.133	.107
10	50	.272	.243	.217	.198	.173
	30	.234	.205	.179	.159	.134
	10	.205	.175	.150	.131	.106

Lamp: 300W/PS-30

Total Bare Lamp Lumens: 6000

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

Luminaire With Globe Only



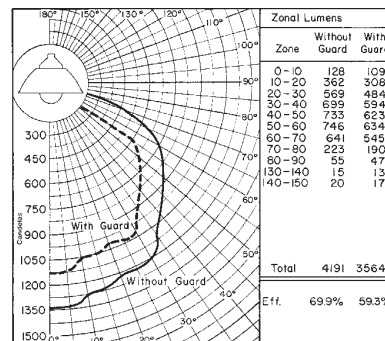
Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.692	.582	.499	.431	.373
	30	.644	.515	.425	.354	.300
	10	.602	.459	.367	.295	.243
70	50	.636	.534	.458	.396	.345
	30	.594	.475	.392	.327	.276
	10	.552	.425	.339	.273	.223
50	50	.532	.444	.380	.327	.286
	30	.500	.398	.328	.272	.230
	10	.470	.358	.285	.229	.188
30	50	.437	.362	.308	.264	.230
	30	.412	.326	.268	.222	.186
	10	.389	.295	.234	.186	.152
10	50	.350	.285	.241	.205	.179
	30	.331	.258	.210	.172	.144
	10	.313	.235	.183	.145	.116

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.333	.295	.263	.238	.212
	30	.258	.223	.194	.170	.147
	10	.205	.173	.145	.125	.105
70	50	.305	.271	.241	.219	.194
	30	.238	.204	.178	.157	.136
	10	.188	.158	.133	.115	.097
50	50	.253	.224	.200	.181	.162
	30	.198	.170	.148	.131	.113
	10	.157	.132	.110	.095	.079
30	50	.204	.180	.162	.146	.130
	30	.160	.138	.119	.105	.090
	10	.127	.105	.088	.075	.061
10	50	.158	.141	.124	.114	.101
	30	.123	.106	.091	.080	.067
	10	.096	.079	.066	.055	.044

Luminaire With Globe and Dome Reflector



Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

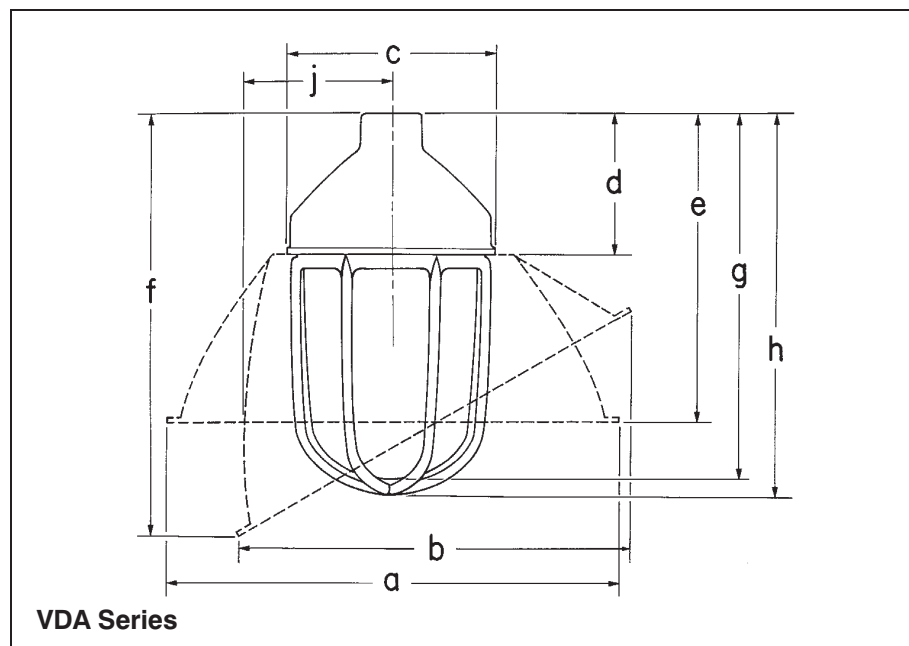
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.766	.671	.587	.514	.454
	30	.734	.621	.528	.448	.385
	10	.706	.579	.482	.398	.334
70	50	.750	.657	.577	.505	.443
	30	.720	.610	.521	.444	.380
	10	.694	.573	.477	.395	.332
50	50	.717	.630	.555	.485	.429
	30	.693	.592	.507	.432	.372
	10	.672	.558	.468	.390	.329
30	50	.688	.606	.535	.468	.414
	30	.670	.575	.494	.422	.364
	10	.651	.546	.460	.385	.325
10	50	.663	.584	.516	.452	.400
	30	.647	.557	.482	.412	.357
	10	.632	.534	.452	.379	.321

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.404	.360	.322	.293	.254
	30	.337	.294	.258	.229	.191
	10	.289	.250	.212	.185	.151
70	50	.397	.354	.317	.288	.249
	30	.333	.290	.256	.227	.191
	10	.285	.246	.211	.185	.151
50	50	.383	.342	.306	.279	.243
	30	.326	.284	.250	.223	.187
	10	.283	.244	.209	.184	.150
30	50	.371	.330	.297	.270	.235
	30	.320	.280	.245	.218	.184
	10	.281	.241	.208	.182	.148
10	50	.359	.322	.288	.262	.229
	30	.313	.275	.241	.215	.181
	10	.277	.239	.206	.180	.146

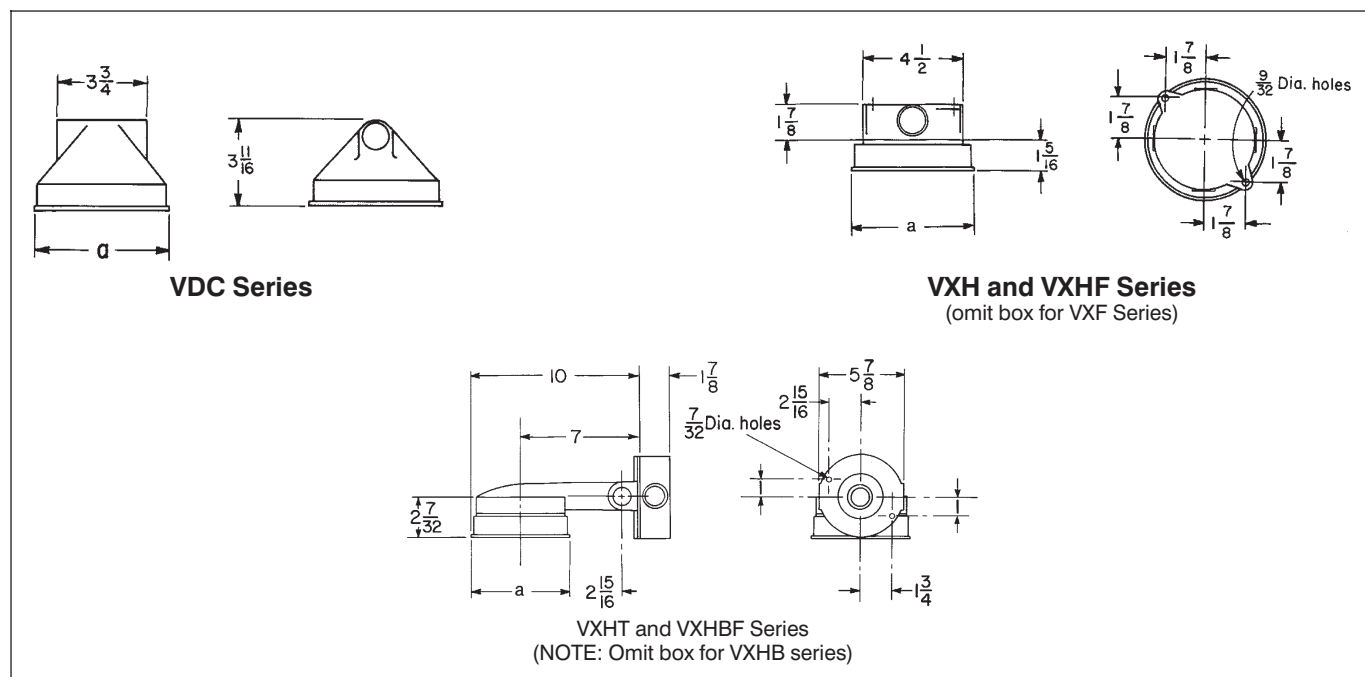
VAPORGARD™ Incandescent Luminaires

Dimensions

1L



	150 watt, A-21	200 watt, PS-25	300 watt, PS-30
a	12 ⁷ / ₈	16 ⁷ / ₈	16 ⁷ / ₈
b	11 ¹ / ₈	14 ⁵ / ₈	14 ⁵ / ₈
c	5 ³ / ₈	6	6
d	3 ¹³ / ₁₆	4	4
e	8 ⁷ / ₁₆	9 ¹ / ₈	9 ¹ / ₈
f	12	14	14
g	8 ¹³ / ₁₆	10 ¹ / ₂	12
h	9	10 ¹³ / ₁₆	13 ¹ / ₈
i	4 ¹ / ₂	6 ¹¹ / ₁₆	6 ¹¹ / ₁₆



Max. Lamp Size
150 watt, A-21 a
5³/₈

200 watt, A-23, A-25, PS-25
and 300 watt, PS-30 6

1L Incandescent
Fixtures

Application:

V-Series incandescent luminaires are used:

- indoors or outdoors in industrial locations where enclosed and gasketed fixtures are required
- in tunnels, building entrances and similar locations, where moisture, dirt, chemicals, vibration or rough usage are a problem
- for flush or surface mounting on ceiling or wall, with or without a cast outlet box, pendant or in conduit systems

Features:

- Designed to exclude dirt, moisture and corrosive vapors from the interior of the fixtures and the conduit system.
- Several body styles provide a wide variety of mountings, while all use the same globes, guards and optional accessories.
- Rugged and corrosion resistant.

Standard Materials:

- Bodies – *Feraloy*® iron alloy
- Guards – copper-free aluminum
- Globes – glass
- Reflectors – *Krydon*® fiberglass-reinforced polyester material reflectors

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- *Krydon*® material – high reflectance white

Size Ranges:

- ¾ hubs
- Maximum wattage lamp:
 - Glass globes 150W, A23
 - Polycarbonate 75W, A33

Options:

Description	Suffix
<i>Corro-free</i> ™ epoxy powder coat	S752
plastic polycarbonate globe	Order separately. See below

Certifications and Compliances:

- Wet locations
- NEMA: 3, 3R
- UL Standard: 1598

**VDA**

Cat. #
VDA2759

Description
With plain globe and guard

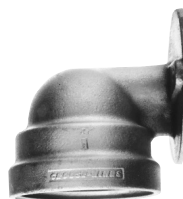
Without globe and guard

VDA275

**VC**

Cat. #
VC2759

VC275

**VG**

Cat. #
VG2759

VG275

**VJ**

Cat. #
VJ2759

VJ275

**VD**

Cat. #
VD2759

VD275

Glass Globes**Guard For Glass Globes****Polycarbonate Globes****Application:**

- Polycarbonate globes are used:
- in food processing plants, canneries, dairies, breweries and bakeries
 - in emergency lighting
 - emergency police and fire alarm boxes

Features:

- Polycarbonate globes are shatterproof, preclude contamination of food products with broken particles of glass.
- Comply with U.S. Dept. of Agriculture specification for food processing plants.

**V63**

Color
Clear (heat resisting)
Green
Blue
Red
Amber

Cat. #
V63
VN72
VN73
VN75
VN76

**V911**

Globe Size
6¾"

Cat. #
V911

**V470**

Color
Natural
Red

Cat. #
V470
V475



Dome



Angle

Reflectors

Krydon® – fiberglass-reinforced polyester
(Must be used with V 911 Guard)

Lamp Size	Dome	
	Dia.	Cat. #
50-150W	12"	RD60
Lamp Size	30° Angle	
	Dia.	Cat. #
50-150W	12"	RA60

NOTE: Angle reflector cannot always be used with bracket style fixtures. Check distance from mounting surface to center of body against reflector size to determine if reflector will fit.



Receptacles (medium base)

Cat. #
V46



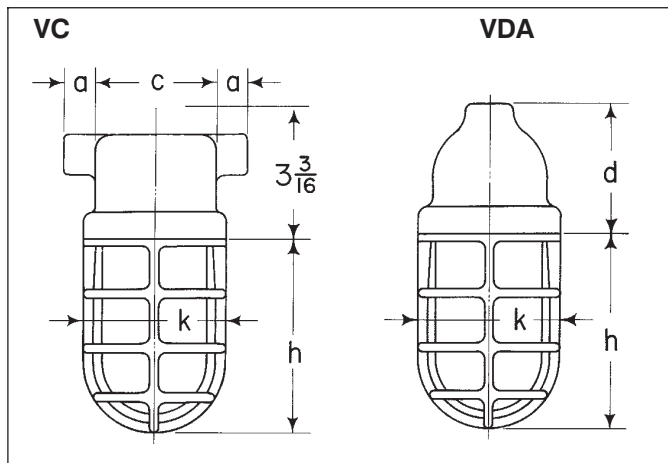
Gasket

Cat. #
GASK213

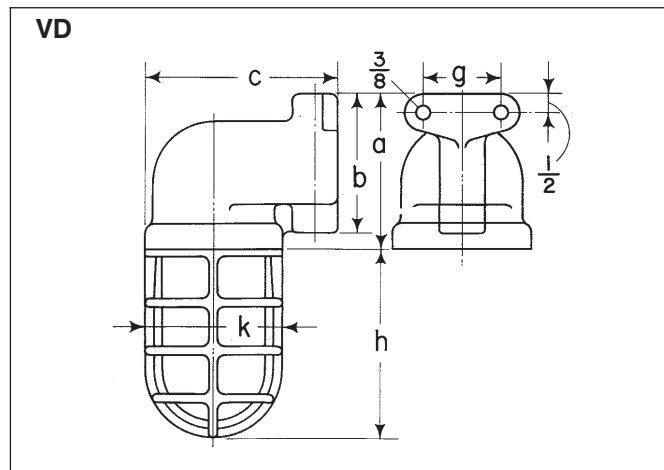
1L

V-Series Incandescent Luminaires

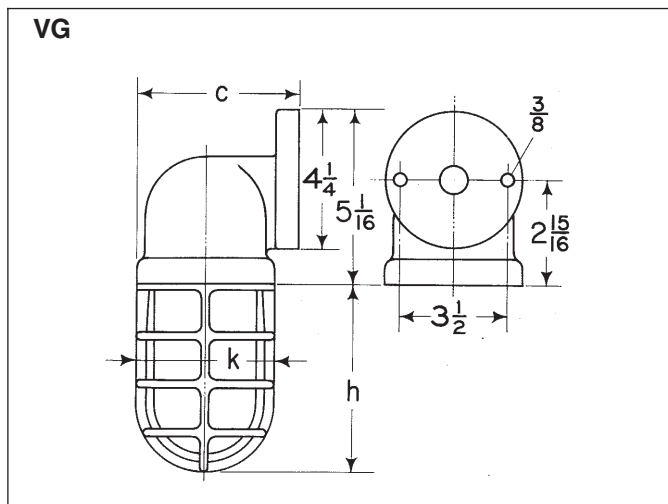
Enclosed and Gasketed Dimensions



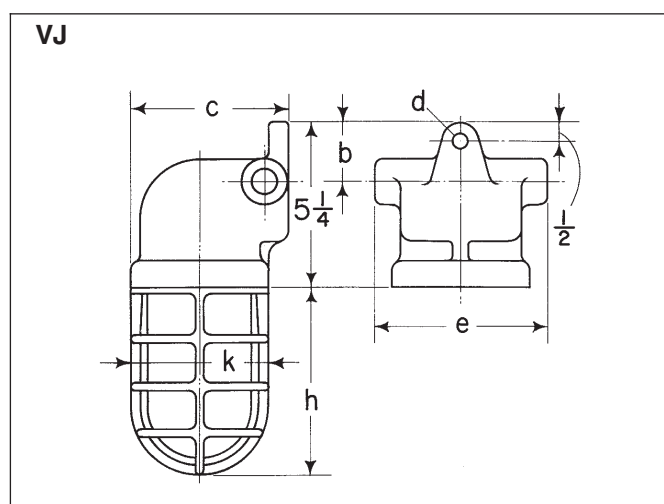
Hub Size	a	c	d	h	k
1/2	7/8	3 11/16	4	6 3/16	4 9/16
3/4	7/8	3 11/16	4	6 3/16	4 9/16



Hub Size	a	b	c	g	h	k
1/2	4 15/16	4 3/16	5 15/16	2 1/2	6 3/16	4 9/16
3/4	4 15/16	4 3/16	6 3/16	2 3/4	6 3/16	4 9/16



Hub Size	c	h	k
1/2	4 7/8	6 3/16	4 9/16
3/4	4 7/8	6 3/16	4 9/16



Hub Size	b	c	d	e	h	k
1/2	1 13/16	4 7/8	3/8	5 3/8	6 3/16	4 9/16
3/4	1 15/16	4 7/8	3/8	5 3/8	6 3/16	4 9/16

V-Series Incandescent Luminaires

Photometric Data

1L

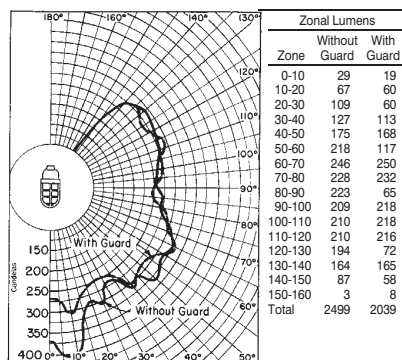
Enclosed and Gasketed

Luminaires V-Series

Lamp: 150W/A23 Clear

Total Bare Lamp Lumens: 2800

To determine number and placement of fixtures, see Lighting Selector Guide pages 665 to 689.



NOTE: All data provided is for 150W incandescent lamp. Use following candela/lumen multipliers for the other lamp sizes:
100W – 0.61

Example: Zonal lumens for 150W lamp for 0-40° with guard is 252.

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.659	.558	.479	.416	.361
	30	.623	.504	.417	.349	.298
	10	.591	.458	.367	.298	.248
70	50	.609	.515	.442	.384	.336
	30	.577	.466	.386	.324	.275
	10	.545	.426	.342	.278	.230
50	50	.515	.434	.372	.321	.282
	30	.491	.397	.328	.274	.234
	10	.469	.364	.293	.238	.197
30	50	.429	.359	.307	.264	.232
	30	.411	.332	.274	.228	.194
	10	.395	.307	.245	.198	.165
10	50	.350	.290	.246	.211	.185
	30	.337	.269	.221	.183	.156
	10	.325	.251	.199	.160	.132
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.325	.290	.261	.236	.211
	30	.259	.227	.199	.176	.153
	10	.212	.183	.157	.136	.116
70	50	.299	.268	.241	.219	.194
	30	.240	.210	.186	.164	.143
	10	.197	.170	.146	.127	.108
50	50	.252	.226	.203	.185	.165
	30	.205	.178	.158	.140	.122
	10	.169	.145	.125	.109	.092
30	50	.208	.186	.169	.153	.137
	30	.170	.149	.131	.117	.101
	10	.141	.121	.105	.091	.076
10	50	.167	.151	.135	.124	.110
	30	.136	.121	.106	.094	.081
	10	.114	.098	.084	.073	.060

1L Incandescent Fixtures

NDA Corro•Gard™ Corrosion-Resistant Incandescent Luminaires

Cl. I, Div. 2, Groups A,B,C,D
Corrosive
Wet Locations
NEMA 3,3R,4,4X

Application:

Corro•Gard™ NDA series Luminaires made of Krydon® fiberglass-reinforced polyester are used to provide incandescent lighting:

- indoors or outdoors in industrial wet or dirty locations and where corrosion is a problem
- in marine applications, above and below deck, where salt spray corrosion shortens fixture life
- in food and beverage industries where frequent wash-downs are necessary
- for walkways, bridges, tunnels, security lighting, cold storage facilities, garages, coal handling areas, shipboard, processing plants, and nuclear generating plant containment areas

Features:

- Luminaire is molded Krydon® for excellent corrosion, heat, and impact resistance.
- Accommodates all popular incandescent lamps up to 300W, PS-25.
- Attractive modern design and color complement other Corro•Gard products.
- Weighs only 8½ lbs. complete with lamp and globe.
- Medium screw base porcelain lamp socket has a vibration absorbing mounting bracket.
- All joints are gasketed to ensure watertightness.
- Configured glass globe reduces glare.
- Corro•Gard reflectors made of Krydon® reflect light better than porcelainized steel; do not yellow or discolor with age; cannot chip, peel, rust or dent.

Standard Materials:

- Bodies and reflectors – Krydon® fiberglass-reinforced polyester material
- Globes – configured heat-resistant glass

Standard Finishes:

- Bodies – natural
- Reflectors – natural, high reflectance white

Options:

- TEFLON® coating on G24 globe for increased shatter protection. add suffix S808.

Accessories & Parts Globe



Color
Clear (heat resisting)
Green
Blue
Red
Amber

Cat. #
G24
G25
G26
G27
G28

Guard



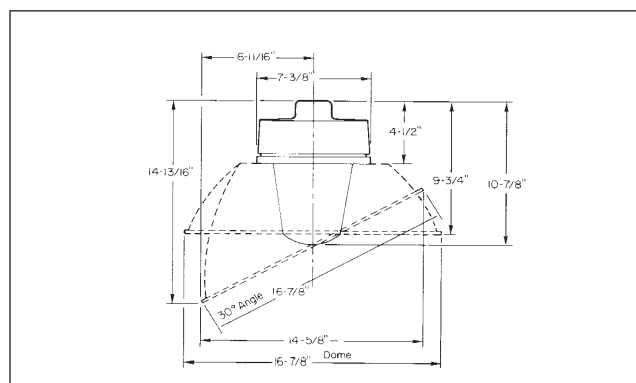
Cat. #
P21



Certifications and Compliances:

- UL Standard: 1598
- Wet Locations
- Suitable for 40°C ambient temperature

Dimensions



NDA Series Ordering Information For Pendant Mounting

Hub Size	Max. Lamp Size	Body Only Cat. #	Globe Only Cat. #	Body With Globe† Cat. #
3/4"	300W PS-25 Med. Base 120V	NDA22	G24	NDA22G

Temperature Performance Data: (based on 40°C ambient)

Max. Lamp Size	T-Number	Supply Wire (°C)
300W	T2A	150°C

(Note: Fixtures are not marked with T-Number.)

Replacement Lamp Receptacles with Strap Shock Absorbing



Cat No. NV84

Reflectors (Order separately)



Dome



30° Angle

Type
Dome
30° Angle

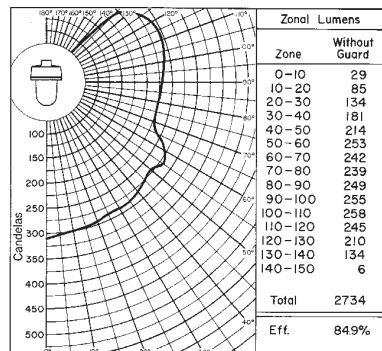
Cat. #
RD725 (RD75)
RA725 (RA75)

Lamp: 200W/PS-25

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

NOTE: All data provided is for incandescent with 200W/PS-25 lamp. See Multipliers for other wattages and lamp types.

Luminaire With Globe



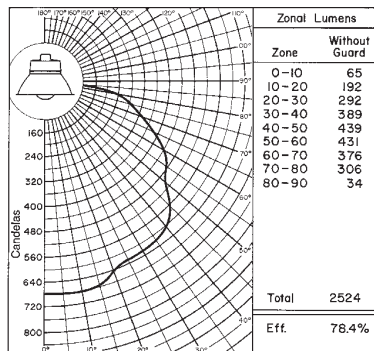
Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil. Wall		1	2	3	4	5
80	50	.762	.651	.565	.494	.433
	30	.715	.585	.491	.416	.358
	10	.673	.529	.433	.357	.300
70	50	.708	.605	.526	.461	.406
	30	.667	.546	.460	.390	.335
	10	.626	.496	.407	.336	.282
50	50	.608	.519	.452	.395	.292
	30	.576	.473	.399	.339	.250
	10	.547	.432	.356	.295	.248
30	50	.516	.439	.382	.335	.297
	30	.492	.404	.342	.290	.250
	10	.469	.372	.307	.254	.215
10	50	.433	.366	.319	.279	.247
	30	.413	.339	.287	.244	.211
	10	.396	.315	.259	.215	.181
0	0	.354	.277	.226	.184	.154

% Reflectance		Room Cavity Ratio				
Eff. Ceil. Wall		6	7	8	9	10
80	50	.389	.348	.312	.284	.253
	30	.312	.273	.240	.214	.185
	10	.258	.222	.190	.166	.141
70	50	.363	.324	.291	.266	.236
	30	.293	.256	.226	.201	.175
	10	.242	.208	.179	.157	.133
50	50	.312	.280	.252	.230	.205
	30	.256	.223	.198	.177	.153
	10	.213	.183	.158	.139	.117
30	50	.266	.238	.216	.197	.175
	30	.220	.193	.170	.152	.131
	10	.185	.158	.137	.121	.100
10	50	.223	.201	.180	.166	.147
	30	.185	.163	.144	.129	.110
	10	.156	.135	.116	.102	.084
0	0	.132	.112	.096	.084	.068

Luminaire With Globe and Dome Reflector



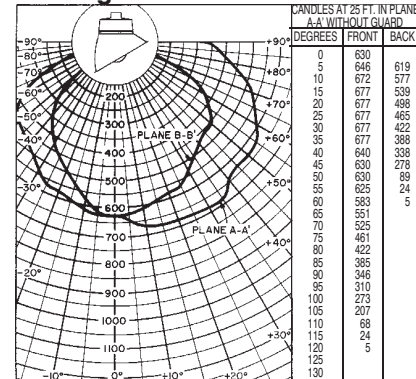
Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil. Wall		1	2	3	4	5
80	50	.809	.703	.615	.541	.481
	30	.773	.647	.550	.470	.408
	10	.742	.601	.499	.416	.354
70	50	.791	.688	.604	.531	.470
	30	.758	.636	.542	.465	.403
	10	.729	.595	.494	.413	.315
50	50	.756	.659	.580	.510	.455
	30	.729	.617	.528	.453	.395
	10	.706	.579	.485	.408	.349
30	50	.726	.634	.558	.492	.439
	30	.705	.599	.514	.442	.385
	10	.684	.566	.477	.402	.344
10	50	.699	.610	.539	.475	.424
	30	.663	.580	.501	.431	.378
	10	.580	.553	.468	.396	.340
0	0	.647	.536	.451	.378	.323

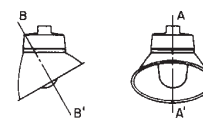
% Reflectance		Room Cavity Ratio				
Eff. Ceil. Wall		6	7	8	9	10
80	50	.431	.386	.347	.317	.277
	30	.360	.317	.280	.250	.211
	10	.309	.269	.231	.204	.169
70	50	.423	.380	.342	.312	.272
	30	.356	.312	.277	.247	.211
	10	.305	.265	.231	.204	.169
50	50	.408	.368	.331	.302	.265
	30	.348	.305	.272	.243	.207
	10	.303	.263	.229	.202	.167
30	50	.396	.355	.321	.294	.257
	30	.342	.301	.266	.238	.203
	10	.300	.260	.227	.201	.165
10	50	.383	.346	.311	.285	.250
	30	.334	.295	.262	.235	.200
	10	.297	.258	.225	.199	.163
0	0	.281	.243	.210	.184	.150

Luminaire With Globe and 30° Angle Reflector



Total Lumens
2595

Eff. %
80.6



Multipliers for Other Lamps

Photometric data was developed using a 200 watt/PS-25 inside frosted incandescent lamp (3,220 lumens). For other incandescent watts/lamp size, use the following conversion factors (multipliers):

Watts	Lamp Size	Lamp Lumens	Conversion Factor
100	A-19	1750	.54
100	A-21	1690	.52
150	A-21	2880	.89
150	PS-25	2680	.83
200	A-23	4010	1.25
300	PS-25	6360	1.98

Example: Zonal lumens for 200W/PS-25 luminaire with globe and dome reflector for 30-40° is 389. Zonal lumens for 100W/A-21 luminaire with globe and dome reflector for 30-40° is 389 x .52 = 202.

Notes Page

[illegible]

Description	Page No.
Application/Selection	Page 710
Class I Hazardous Area Luminaires	
EVI Series Groups C, D	711-719
EV Series Groups A, B, C, D	720

2L Incandescent Luminaires

Hazardous Application and Selection

Application:

- For use in areas made hazardous by presence of flammable vapors, gases, or dusts
- For indoor or outdoor use. For general area or spot lighting

Considerations for Selection:

Environmental:

- What is the hazardous area classification (NEC)/(CEC) of the location in which the luminaires will be installed?

Lighting levels required:

- What wattage fixture(s) will provide the desired light level? (See Lighting Selector Guide, pages 665 through 689, to determine number and location of luminaires required.)

Physical arrangement:

- Type of luminaire mounting needed

Product Selection:

Two product families are included in Section 2L as follows:

- EVI models suitable for use in Class I, Groups C, D, and Class II, Groups E, F and G locations. These luminaires may be ordered with a wide variety of reflector styles and mounting arrangements to provide the required light distribution, depending on application, mounting height and lamp size. Check individual catalog pages for specific hazardous location suitabilities of each luminaire. Models are available for lamp sizes 100 watt, A-19 to 500 watt, PS-40.
- EV Models suitable for use in Class 1, Groups A, B, C, D locations. These luminaires may be ordered with a wide variety of reflector styles and arrangements to provide the required light distribution, depending on application, mounting height and lamp size. Check individual catalog pages for specific hazardous location suitabilities of each luminaire. Models are available for lamp size 300 watt PS35 mogul base.

Table 500-3(d) Identification Numbers.

Maximum Temperature		Identification Number
Deg. C	Deg. F	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

EVI Series Explosionproof Incandescent Luminaires

Factory Sealed

100-500W Medium and Mogul Base

Cl. I, Div. 1, Groups C,D
Cl. I, Zone 1 & 2, Group IIB
Cl. II, Groups E,F,G (Max 150W-Med. base)
Cl. III & Simultaneous Presence (Max 150W-Med. base)
Marine and Wet Locations • Type 4X; IP66

2L



Application:

EVI series incandescent luminaires are used:

- for **Type 4X, marine**, wet location and hose down environments.

- where a consistent light level relatively unaffected by extremes in ambient temperature (-40°C to +65°C) is required.
- in areas that require lamps to reach full illumination immediately.
- in areas that require lamps to be frequently turned on and off.
- indoor & outdoor in locations which are hazardous due to the presence of flammable vapors or gases, ignitable dusts or ignitable fibers & flyings.
- where a luminaire is required for tough environmental conditions involving corrosives, water, dust and extreme temperatures.
- manufacturing plants, heavy industrial facilities, industrial process facilities such as refineries, chemical, petrochemical, pharmaceutical and platforms.
- for lighting of loading docks, tunnels, stairways, storage closets & task lighting.

Features:

- **Ambient suitability to 65°C.**
- **Standard 90°C rated building wire for 150W max 40°C ambient application - represents more than 75% of all applications.**
- **Type 4X, marine outdoor locations.**
- **Factory sealed - no external seals required.**
- Quick connect - fixture threads onto the mounting module for easy installation.
- One size luminaire for all medium base incandescent lamps through 300W.
- One size luminaire for all mogul base incandescent lamps through 500W.
- Small compact size - ceiling mount is 13¾" long.
- Shock absorbing receptacle.
- Easy to assemble & relamp.
- Silicone gaskets seal out dirt and moisture.
- Epoxy powder coat for corrosion resistance.
- Same mounting modules as used with the EVM & EVLP series.

Standard Materials:

- Body, mounting modules and guard - copperfree aluminum
- Globe - heat & impact resistant glass
- Gaskets - silicone
- External hardware - stainless steel
- Reflectors - Krydon® fiberglass-reinforced polyester

Standard Finishes:

- Copper free aluminum - Corro-free™ epoxy powder coat
- Stainless steel - Natural
- Krydon® Reflectors - High reflectance white

Electrical Ratings:

Sources/Wattages

- Medium Base - Maximum 300W (PS25)
- Mogul Base - Maximum 500W (PS40)

Voltages

- Medium Base 120V (250V with suffix /250)
- Mogul Base 277V

Hub Size

- ¾" or 1" NPT pendant, ceiling, wall mount
- ¾" NPT bulkhead mount

Certifications and Compliances:

NEC & CEC:

- Class I, Division 1, Groups C & D
- Class I, Zone 1, Group IIB
- Class II, Groups E, F & G
- Marine Locations, Wet Locations, Enclosure Type 4X, IP66
- UL Listed
- cUL Listed (Certified by UL to CSA Standards)

NEC:

- Class III; Simultaneous Presence

UL Standards:

- 844 Electric Fixture Hangers for Hazardous Locations
- 1598 Luminaires
- 1598A Luminaires for Installation on Marine Vessels

CSA Standards:

- C22.2 No. 137

Options:

Description

- 250V luminaire for export applications (medium base only)

Suffix to be
added to Cat. No.
/250

Accessories:

- Reflectors - See Ordering by Components on page 713.



2L Incandescent Fixtures

2L



EVI Series Explosionproof Incandescent Luminaires

Factory Sealed
100-500W Medium and Mogul Base

Cl. I, Div. 1, Groups C,D
Cl. I, Zone 1 & 2, Group IIB
Cl. II, Groups E,F,G (Max 150W-Med. base)
Cl. III & Simultaneous Presence (Max 150W-Med. base)
Marine and Wet Locations • Type 4X; IP66

	Mounting Style	Hub Size	EVI301 SERIES	EVI501 SERIES
			Medium Base with EV505 Guard (Max. 300W PS25)	Mogul Base with EV503 Guard (Max. 500W PS40)
	Pendant Mount	3/4"	EVI2301	EVI2501
		1"	EVI3301	EVI3501
	Ceiling Mount	3/4"	EVICX2301	EVICX2501
		1"	EVICX3301	EVICX3501
	Wall Mount	3/4"	EVIBX2301	EVIBX2501
		1"	EVIBX3301	EVIBX3501
	Bulkhead Mount	3/4"	EVIBH2301	—
		1"	—	—
	Stanchion Mount	1 1/4"	EVIJ4301	EVIJ4501
	Luminaire with Guard Less Mounting Module		EVI301✓	EVI501✓

Note:

Medium base luminaires (EVI301 Series) - For A19 lamps up to 100W, use Leviton socket extension catalog number 2005.
Mogul base luminaires (EVI501 Series) - For PS30 medium base lamps, use Cooper Wiring Devices socket adapter catalog number 332.

✓ - Available with Lightning Service™ Delivery. See Section G for complete details.

EVI Series Explosionproof Incandescent Luminaires

Ordering By Components

2L



Factory Sealed 100-500W Medium and Mogul Base

EVI Luminaires are available in components.

A complete luminaire consists of:

- I. Mounting Module
- II. EVI Luminaire Body and Globe Assembly
- III. Guard, Reflector

I. Mounting Module:

Type	Conduit	Cat. No.
Pendant	3/4"	EVMP2✓
	1"	EVMP3✓
Ceiling and Wall Box	3/4"	EV22✓
	1"	EV33✓
Wall Bracket Arm	3/4"	EV22✓ & EV87✓
	1"	EV33✓ & EV87✓
Stanchion	1 1/4"	EVMJ4✓
Bulk Head	3/4"	EVIJ2✓

II. Luminaire Body and Globe Assembly with Guard

Type	Cat. No.
Medium Base	EVI301✓
Mogul Base	EVI501✓

III. Guards and Reflectors

Type	Cat. No.
Guard - Fits EVI301 Series (medium base)	EV505
Guard - Fits EVI501 Series (mogul base)	EV503
Dome Reflector - Fits EVI301 Series (medium base)	RD636
Angle Reflector - Fits EVI301 Series (medium base)	RA636
Dome Reflector - Fits EVI501 Series (mogul base)	RD739
Angle Reflector - Fits EVI501 Series (mogul base)	RA739

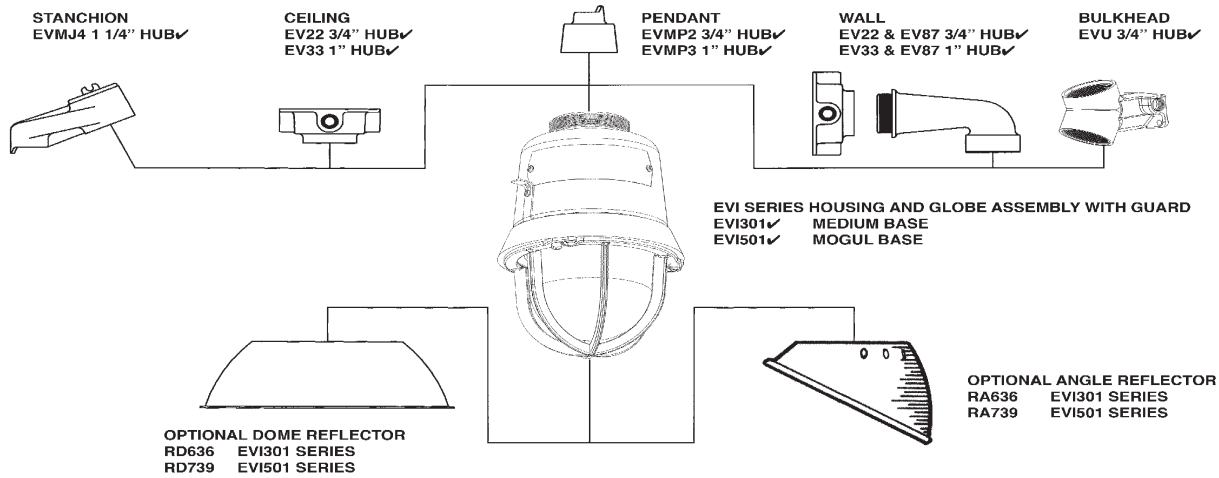
✓ - Available with Lightning Service™ Delivery. See Section G for complete details.



EVl Series Explosionproof Incandescent Luminaires

Factory Sealed
100-500W Medium and Mogul Base

Family Tree
Temperature Performance Data



Temperature Performance Data:

Type	Watts/Lamp	Class I, Div 1 (Class I, Zone 1)			Class II	Simultaneous Presence	Supply Wire Temp (°C)		
		Ambient					Ambient	Ambient	Ambient
		40°C	55°C	65°C	40°C	40°C	40°C	55°C	65°C
EV1301 Medium Base	100W/A21 or A19*	T4	T3C	T3C	T3C	T3C	90°C	105°C	125°C
	150W/A21	T4	T3C	T3C	T3C	T3C	90°C	105°C	125°C
	200W/A23 or A25	T3	T2D	T2C	—	—	105°C	125°C	125°C
	300W/PS25	T3	T2D	T2C	—	—	105°C	125°C	125°C
EV1501 Mogul Base	200W/PS30*	T4A	T4	T4	T3A	T3A	90°C	90°C	105°C
	300W/PS35	T4	T3C	T3C	—	—	90°C	90°C	105°C
	500W/PS40	T3A	T3	T3	—	—	105°C	125°C	125°C

* Note:

Medium base luminaires (EV1301 Series) - For A19 lamps up to 100W, use Leviton socket extension catalog number 2005.

Mogul base luminaires (EV1501 Series) - For PS30 medium base lamps, use Cooper Wiring Devices socket adapter catalog number 332.

✓ - Available with Lightning Service™ Delivery. See Section G for complete details.

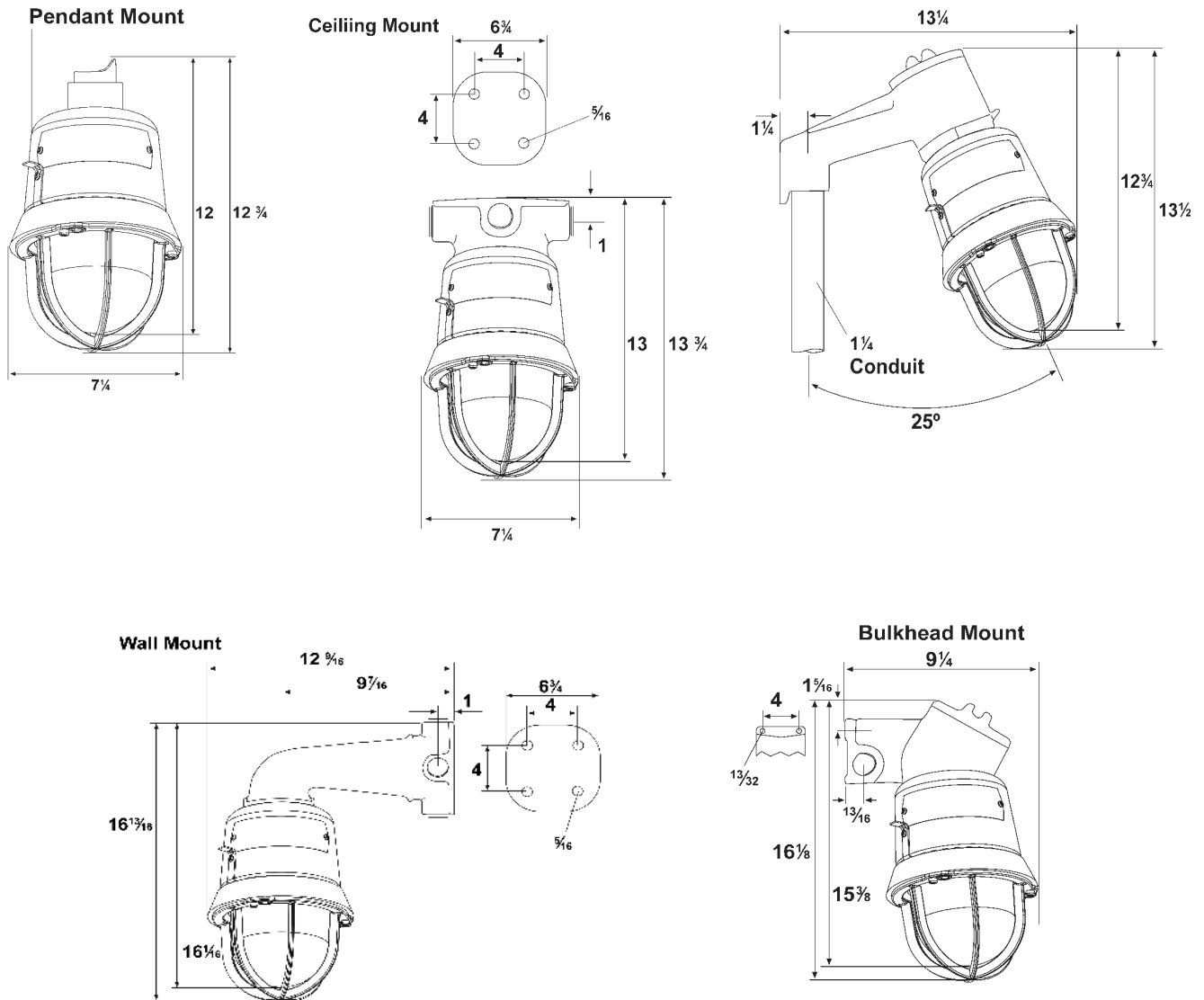
EVI Series Explosionproof Incandescent Luminaires

Medium Base Dimensions and Weights

2L

Factory Sealed
100-500W Medium and Mogul Base

Medium Base EVI Luminaire Dimensions (Inches):



Medium Base Net Luminaire Weights (lbs.):

EVI301 with guard

11 lbs.

Add mounting modules:

Pendant	1.0 lbs
Ceiling	2.0 lbs
Wall	4.5 lbs
Bulkhead	2.2 lbs
Stanchion	2.5 lbs

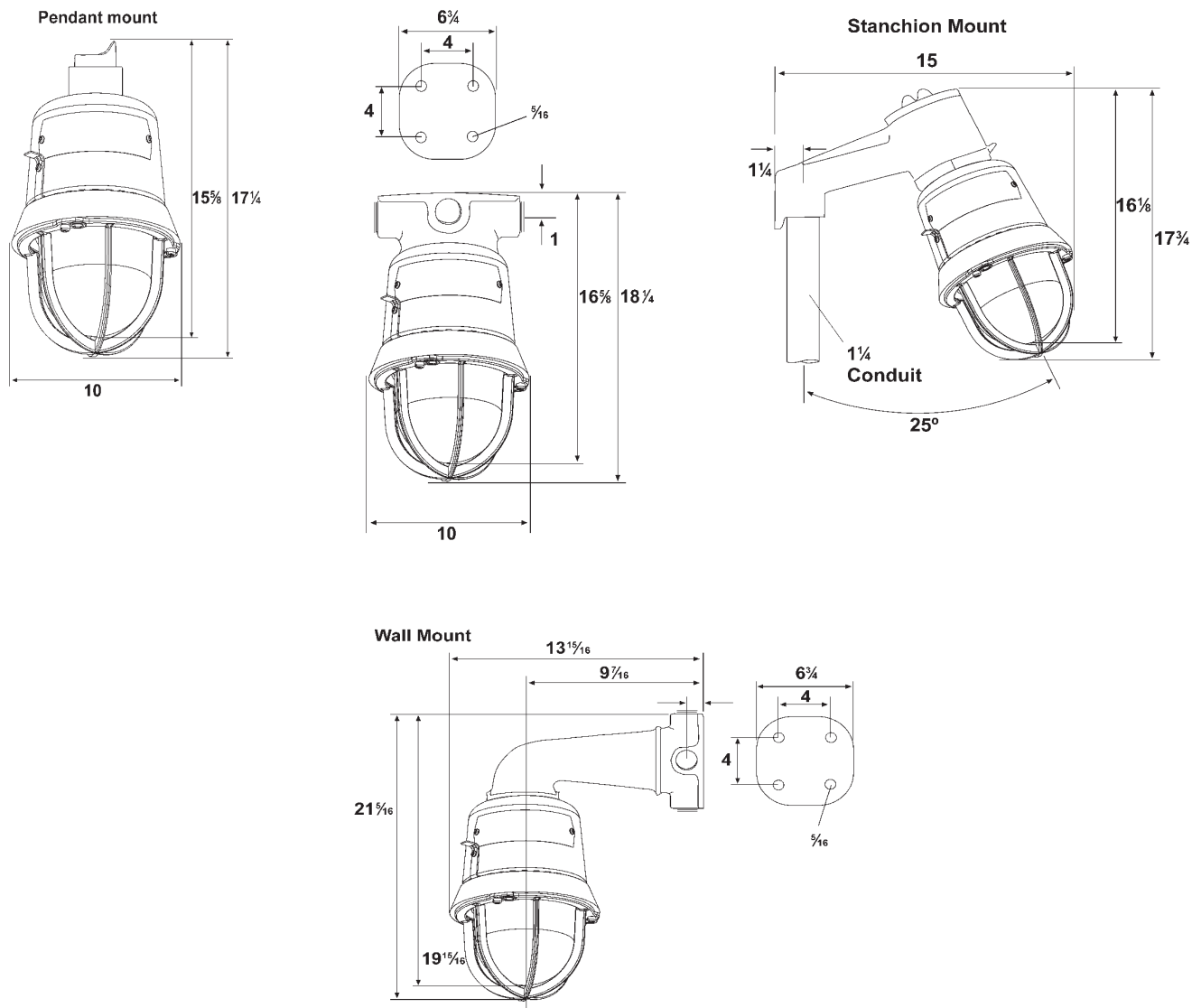
Add for Reflectors

RD636 (Dome Reflector, Small)	1.5 lbs
RA636 (Angle Reflector, Small)	1.0 lbs
RD739 (Dome Reflector, Small)	2.0 lbs
RA739 (Angle Reflector, Small)	1.4 lbs

2L Incandescent Fixtures

Factory Sealed
100-500W Medium and Mogul Base

Medium Base EVI Luminaire Dimensions (Inches):



Mogul Base Net Luminaire Weights (lbs.):

EVI501 with guard

24 lbs.

Add mounting modules:

Pendant

1.0 lbs

Ceiling

2.0 lbs

Wall

4.5 lbs

Bulkhead

2.2 lbs

Stanchion

2.5 lbs

Add for Reflectors

RD636 (Dome Reflector, Small)

1.5 lbs

RA636 (Angle Reflector, Small)

1.0 lbs

RD739 (Dome Reflector, Small)

2.0 lbs

RA739 (Angle Reflector, Small)

1.4 lbs

EVI Series Explosionproof Incandescent Luminaires

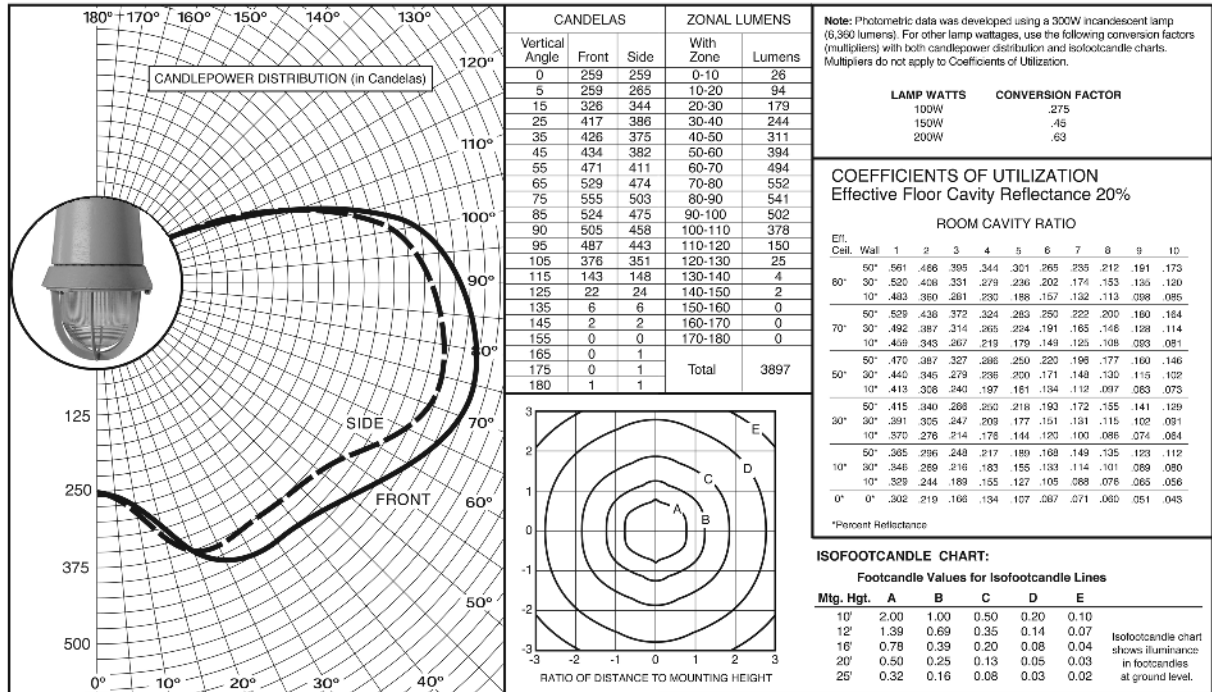
Photometric Data

2L

Factory Sealed
100-500W Medium and Mogul Base

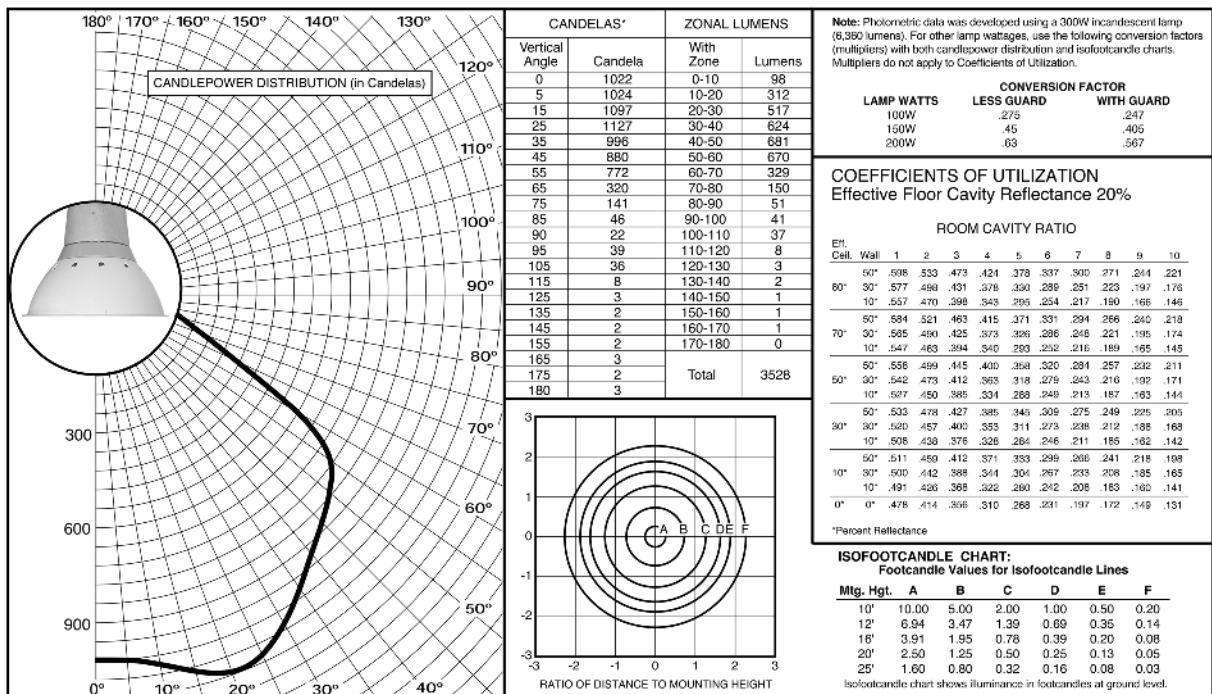
Medium Base

Luminaire with Globe and Guard
EVICX2301 Lamp: 300W/PS25 Incandescent



Medium Base

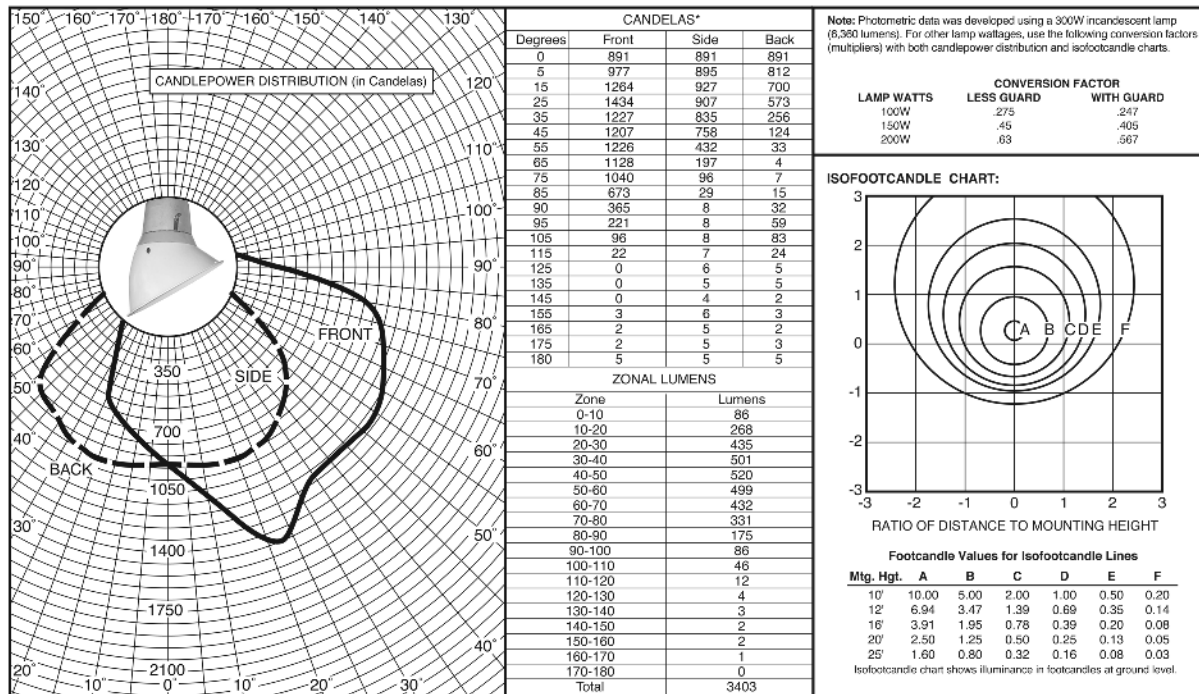
Luminaire with Globe and Dome Reflector (Less Guard)
EVICX2300 Lamp: 300W/PS25 Incandescent



EVI Series Explosionproof Incandescent Luminaires **Factory Sealed** **100-500W Medium and Mogul Base**

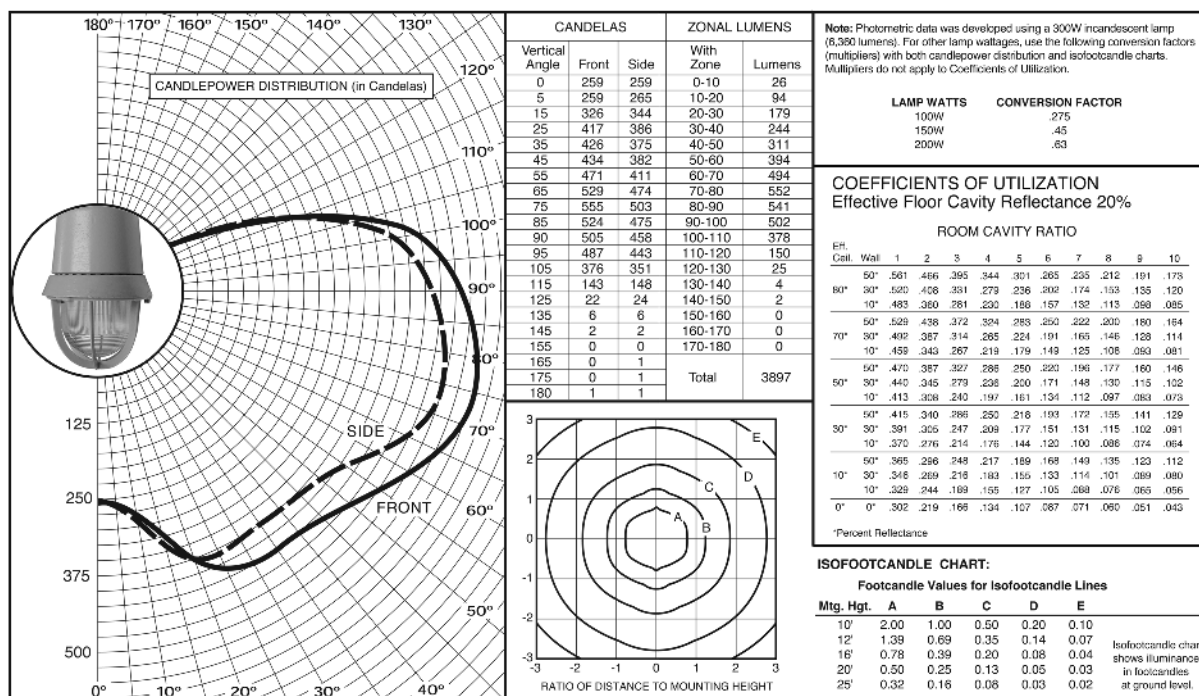
Medium Base

Luminaire with Globe and 30° Angle Reflector (Less Guard)
EVICX2300 Lamp: 300W/PS25 Incandescent



Mogul Base

Luminaire with Globe and Guard
EVIA2501 Lamp: 500W/PS40 Incandescent



EVI Series Explosionproof Incandescent Luminaires

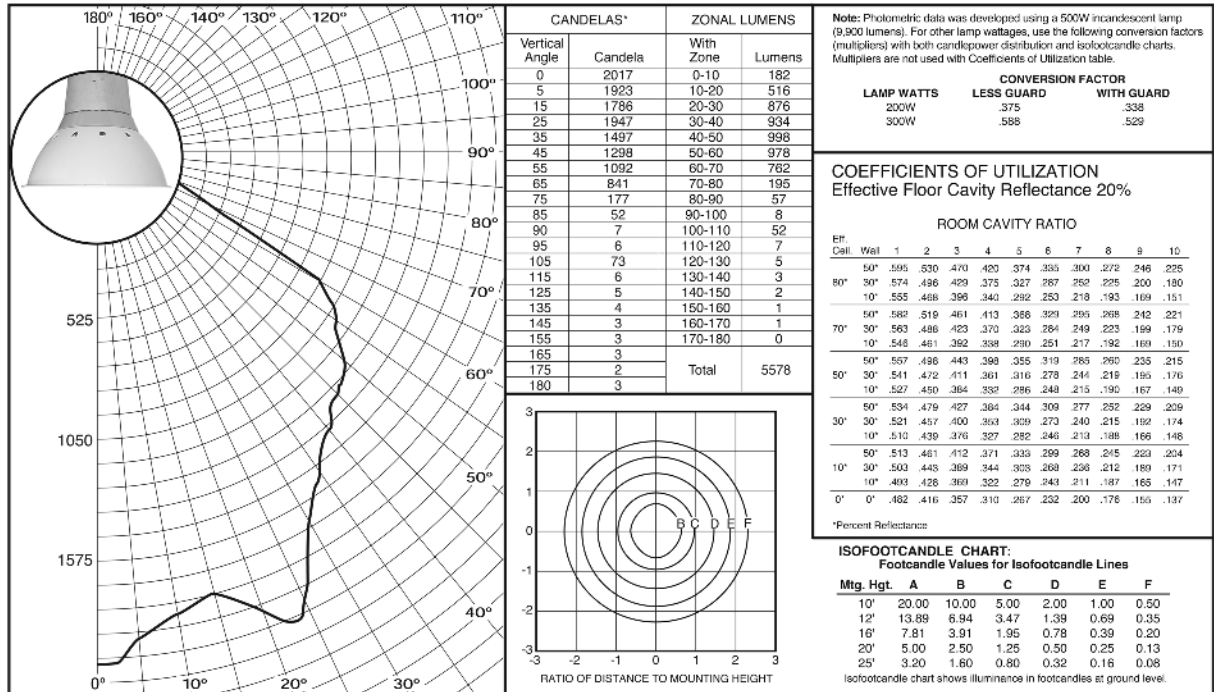
Photometric Data

2L

Factory Sealed
100-500W Medium and Mogul Base

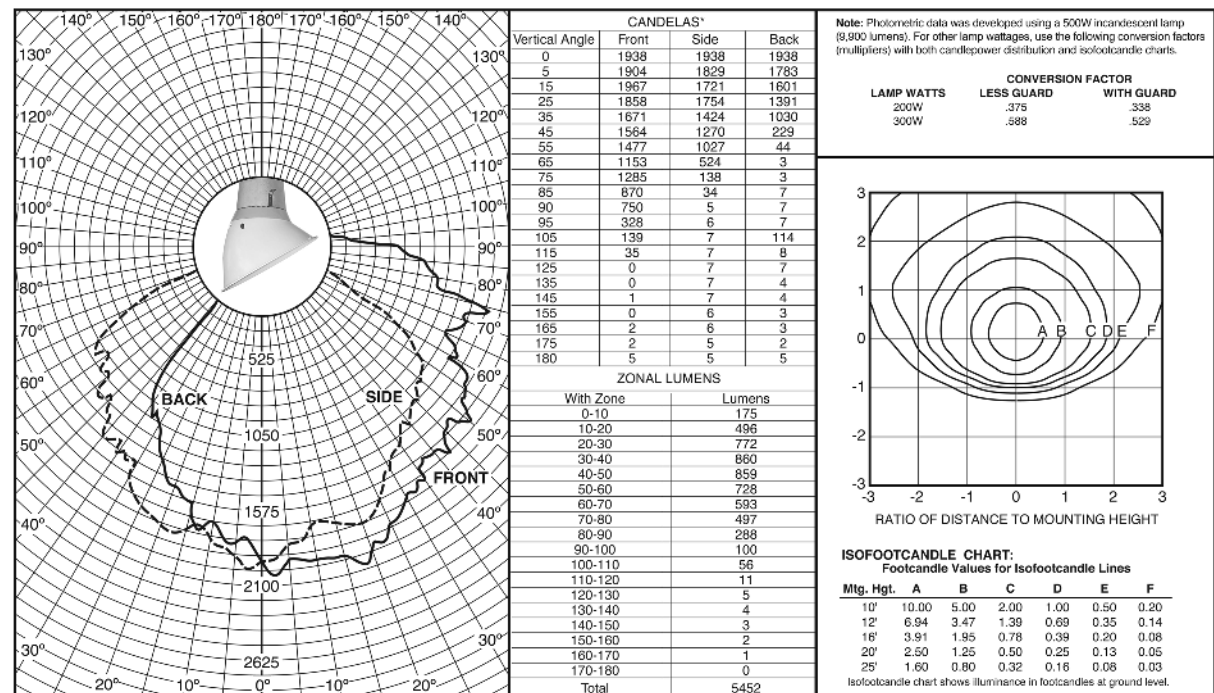
Mogul Base

Luminaire with Globe and Dome Reflector (Less Guard)
EVI2500 Lamp: 500W/PS40 Incandescent



Mogul Base

Luminaire with Globe and Angle Reflector (Less Guard)
EVI2500 Lamp: 500W/PS40 Incandescent



Application:

EV292 Series luminaires are used:

- to provide incandescent lighting in locations made hazardous due to the presence of hydrogen, gases or vapors of an equivalent hazard, such as manufactured gas.
- hydrogen areas of process industries, missile bases where hydrogen fuel is used and gas manufacturing plants.
- in areas of lesser hazard than indicated above.
- EVA292 pendant mount luminaire is also suitable for use in locations made hazardous due to the presence of acetylene.

Features:

- Flametight threaded joints – no external seal needed
- Easy to assemble and relamp
- Shock absorbing receptacle
- Gasket seals out dirt and liquids
- Positive locking of globe holder
- Heat and impact resistant globe
- Inner reflector eliminates upward spill light
- Lightweight
- Corrosion Resistant
- Dome and 30° angle reflectors available

Standard Materials:

- Globes – heat and impact resistant glass
- Luminaire and bracket arm – copper-free aluminum
- Reflectors – *Krydon*® fiberglass-reinforced polyester
- Back box – *Feraloy*® iron alloy

Standard Finishes:

- Aluminum – epoxy powder coat
- *Krydon* – high reflectance white
- *Feraloy* – electrogalvanized and aluminum acrylic paint

Size Ranges:

- 3/4" conduit hub

Capacity Ranges:

- 300 watt, PS-30 medium base lamps

Certifications and

Compliances:

- NEC/CEC: Class I, Divisions 1 and 2, Groups A,B,C,D – pendant mount
- Class I, Divisions 1 and 2, Groups B,C,D – ceiling and bracket mount
- UL Standard: 844
- CSA Standard: C22.2 No. 137

Temperature Performance

Data:

Style	Class I UL	Ambient Temp. °C	Supply Wire °C
Pendant	T3A	25/40	150°C
Ceiling	T3A	25/40	150°C
Bracket	T3A	25/40	150°C

NOTE: Photometric curves and data are the same as shown for EV Groups C, D series.



Pendant style with RD725 dome reflector

Style	Max. Lamp Size
Pendant	300 watt, PS-30 (medium base)

Pendant style with RA725 30° angle reflector

Style	Hub Size	Without Reflector Cat. #
Pendant	3/4"	EVA292

Pendant style without reflector

Style	Dome Reflector Cat. #	30° Angle Reflector Cat. #
Pendant	RD725	RA725

Ceiling	300 watt, PS-30 (medium base)
---------	-------------------------------------

With Guard	3/4"	EVCX292
---------------	------	---------

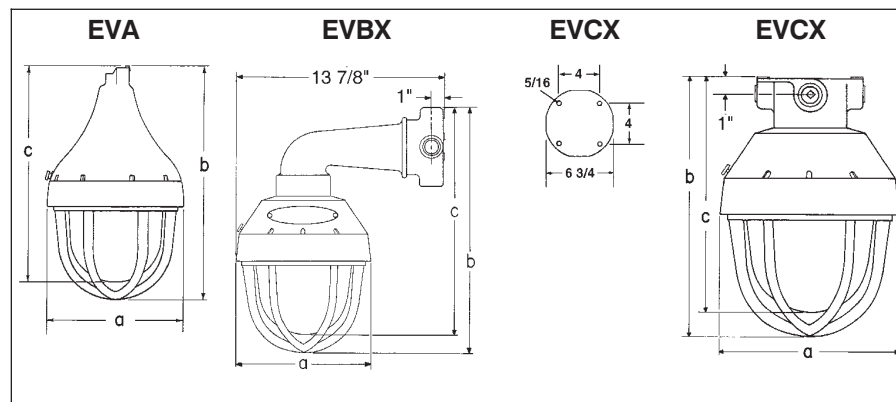
RD725	RA725
-------	-------

Bracket	300 watt, PS-30 (medium base)
---------	-------------------------------------

With Guard	3/4"	EVBX292
---------------	------	---------

Not Applicable

Dimensions



	EVA	EVBX	EVCX	Reflector Diameter Type
a	8 7/8"	8 7/8"	8 7/8"	Dome 16"
b	16 3/8"	18 1/8"	14 3/8"	30° Angle 16"
c	14 7/8"	16 5/8"	12 7/8"	

Description	Page No.
Application/Selection	722, 723
Champ® Series - Integrally Ballasted Luminaires	
Accessories	775, 776
Ballast Data (USA)	677-682
Ballast Data (Canada)	677-682
DMV Series 50 – 250W H.I.D.	743
Catalog Listings	744-749
Dimensions, Weights, Temperature Data	750, 751
Photometric Data	752, 753
LMV Series 35 – 150W H.I.D.	735
Catalog Listings	736-739
Dimensions, Weights, Temperature Data	740, 741
Photometric Data	742
VMV Series 50 – 175W H.I.D.	724
Catalog Listings	725-731
Dimensions, Weights, Temperature Data	731, 732
Photometric Data	733, 734
VMV High Wattage Series 200 – 400W H.I.D.	754
Catalog Listings	755-760
Dimensions, Weights, Temperature Data	761, 762
Photometric Data	763, 764
N2MV Non-Metallic H.I.D.	765
Catalog Listings	766-770
Dimensions, Weight, Temperature Data	771, 772
Photometric Data	773, 774
V2PC Photocell	777, 778

H.I.D. (High Intensity Discharge) Luminaires

Enclosed & Gasketed Application and Selection

Application:

Luminaires included in this section are enclosed and gasketed, designed for use with H.I.D. lamps as follows:

- in locations where protection is required from wet, dirty and corrosive atmospheres
- where long life lamps provide desirable maintenance cost savings and return on investment through use of fewer luminaires, circuits and ancillary apparatus.
- where relamping and maintenance difficulties require long life lamps.

Considerations for Selection:

Environmental:

- What are the hazardous areas classifications (NEC/CEC) of the locations in which the luminaires will be installed?
- Must luminaires be suitable for use in marine, hosedown, corrosive applications?

Lighting levels required:

- What wattage luminaire(s) will provide the desired light level? (See Lighting Selector Guide, Section L to determine number and location of luminaires required)

Product Selection:

Quick Selector Chart - (See specific sections for lamp type and wattage suitability)			
- Series -	- Watts HPS, MH & MV Lamps	Hazardous Area & Other Environmental Suitabilities NEC, CEC, IEC	- Ballast Voltages -
VMV Champ	50, 70, 100, 150, 175 Mogul Base	NEC & CEC Cl. I, Div. 2 Groups A, B, C, D Cl. II, Groups E, F, G Class III Simultaneous Presence Restricted Breathing (Suffix - S826) CL. I Div. 2 & Zone 2 AEx nR, Ex nR IIC Marine Outdoor & Wet Locations Type 3, 3R, 4, 4X IP56 to 1P66	Standard Voltage Ballasts (60 Hz) NEC (UL) Multi-tap: 120, 208, 240 & 277 Volt 60 Hz. Dual-tap: 120 & 277 Volt 60 Hz (50W HPS) 120 Volt 60 Hz 480 Volt 60 Hz
VMV High Wattage Champ	200, 250, 400 Mogul Base		CEC/CSA (cUL) Tri-tap: 120, 277 & 347 Volt 60 Hz Dual-tap: 120 & 277 Volt 60 Hz (50W HPS) 120 Volt 60 Hz
LMV Champ Low Profile	35, 50, 70, 100, 150 Medium Base		Optional Voltage Ballasts (50 or 60 Hz) CEC/CSA (cUL) 208 Volt 60 Hz CWI - Isolated 240 Volt 60 Hz CWI - Isolated 480 Volt 60 Hz CWI - Isolated 600 Volt 60 Hz CWI - Isolated EXPORT 220 Volt 50 Hz 230 Volt 50 Hz 240 Volt 50 Hz
DMV Champ Expanded Class II Suitability	50, 70, 100, 150, 175, 250 Mogul Base	IEC Certified for IEC Zone 2 (Suffix - S826TB) Ex nR IIC	
N2MV Champ Non Metallic	50, 70, 100, 150, 175 Mogul Base	IP 56 to IP 66	

Champ® H.I.D. Luminaires

VMV, LMV, DMV, VMV High Wattage & N2MV Series

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II, Groups E, F, G, Cl. III
- Simultaneous Presence
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP56 to IP66

3L

The *Champ* family is an extremely versatile industrial lighting system. Five different series of *Champ* Luminaires embrace a broad range of wattages, lamp sources, compliances, optics, and accessories. Each series is covered in detail on the following pages. General information to help in the proper selection of series and luminaires is shown below.

Application:

Heavy duty *Champ* lighting luminaires are used:

- in manufacturing plants, refineries, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, offshore, dockside, and harbor installations, and other heavy industrial applications
- in areas where ignitable concentrations of flammable gases or vapors will be present only due to abnormal, unusual, or accidental conditions
- where combustible dusts are present
- in marine applications where water spray and corrosive atmospheres are considerations
- in elevated ambient temperatures often found in industrial applications
- in installations where moisture, dirt, dust, vibration, corrosion, and rough usage are problems
- wherever the damaging effects of water, wind, snow, sleet, hot sun, or any combination of these elements are found.

Features:

- Cast copper-free aluminum construction (less than 0.4 of 1% copper) and epoxy powder finish provide excellent resistance to corrosion.
- Seven mounting arrangements in each series, to suit any lighting layout – pendant, flexible pendant, ceiling, wall bracket, angle stanchion, straight stanchion, and quad-mount.
- Wide range of light sources and wattages to meet specifiers' needs: 35, 50, 70, 100, 150, 200, 250 and 400 watt high pressure sodium (HPS); 100, 175, 250, and 400 watt mercury vapor (MV); 70, 100 175, 250, and 400 watt metal halide (MH).
- Hinged ballast housings for ease of installation and maintenance; all mounting modules fit all ballast housings.
- Wide choice of photometric distributions. Globes available for lamps up through 400 watt HPS, and 250 watt MV and MH. Glass refractors available for all VMV and DMV units; reflector/lens for 200-400 watt VMV units
- All luminaires are designed to perform in a 40°C ambient temperature. Selected luminaires are suitable for ambient temperatures up to 65°C.
- Superior gasketing seals between the mounting module, housing, and optical assembly for optimum performance in wet and corrosive environments.



- Hubs with an integral conduit stop and bushing to help prevent damage to field wiring during installation
- Low ambient capability to -40°C
- Dome and 30° angle reflectors made of bright white *Krydon*® fiberglass-reinforced polyester material provide superior reflectivity, with twist-on feature

requiring no tools or additional hardware. Will not chip, peel, dent, rust, or corrode

- Grounding wire for safety
- Ballasts are high power factor (min P.F. 90%) and available in a variety of voltages to meet local area requirements.

3L
H.I.D. Lighting

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (HPS 50W, 70W)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

Application:

VMV series *Champ* luminaires are used:

- in manufacturing plants, refineries, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, offshore, dockside, and harbor installations, and other heavy industrial applications
- in areas in which ignitable concentrations of flammable gases or vapors will be present only due to abnormal, unusual, or accidental conditions
- where combustible dusts are present
- in marine applications where water spray and corrosive atmospheres are considerations
- in elevated ambient temperatures often found in industrial applications
- in installations where moisture, dirt, dust, vibration, corrosion, and rough usage are problems
- wherever the damaging effects of water, wind, snow, sleet, hot sun, or any combination of these elements are found

Features:

- Compact, lightweight design is ideal for medium and low mounting heights
- Cast copper-free aluminum construction (less than 0.4 of 1% copper) and epoxy powder finish provide excellent resistance to corrosion
- Seven mounting arrangements to suit any lighting layout – pendant, flexible pendant, ceiling, wall bracket, angle stanchion, straight stanchion, and quad-mount
- Wide range of light sources and wattages to meet specifiers' needs: 50, 70, 100, and 150 watt high pressure sodium (HPS); 100, and 175 watt mercury vapor (MV); 70, 100, 175 watt metal halide (MH)
- Hinged ballast housing for ease of installation and maintenance
- Wide choice of photometric distributions. Glass globes, refractors and compact refractors available for all wattage luminaires; plastic refractors (for non-hazardous applications only) for 50-100 watt luminaires
- All luminaires are designed to perform in a 40°C ambient temperature. Selected luminaires are suitable for ambient temperatures up to 65°C.
- Superior gasketing seals between the mounting module, housing, and optical assembly for optimum performance in wet and corrosive environments
- Hubs with an integral conduit stop and bushing to help prevent damage to field wiring during installation
- Low ambient capability to (-40°C)
- Dome and 30° angle reflectors made of bright white *Krydon*® material provide superior reflectivity, with twist-on feature requiring no tools or additional hardware. Will not chip, peel, dent, rust, or corrode
- Grounding wire for safety
- High power factor ballasts (Min P.F. 90%) and available in a variety of voltages to meet local area requirements.
- Mogul base porcelain lamp socket



Standard Materials:

- Ballast housings and mountings – copper free aluminum (less than 0.4 of 1%)
- Exterior hardware – stainless steel
- Reflectors (dome and angle) – *Krydon* fiberglass-reinforced polyester material
- Globes – heat and impact resistant internally fluted glass
- Refractors – glass (50-175 watts); plastic (50-100 watts), for non-hazardous applications.
- Guards: globe – copper-free aluminum refractor – stainless steel

Standard Finishes:

- Copper-free aluminum – epoxy powder coat
- *Krydon* material – high reflectance white
- Stainless steel – natural

Electrical Ratings:

- 120, 208, 240, 277, 347, 480, 600, Multi-tap* (120, 208, 240 and 277)
- 50 to 150W HPS; 100 to 175W MV; 70 to 175W MH

Certifications and

Compliances:

- NEC & CEC:
 - Class I, Division 2, Groups A,B,C,D
 - HPS 50W, 70W - Class II, Class III & Simultaneous Presence (Class I, Division 2 and Class II)
 - Class I Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards:
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15

♦ VMV Series now available with Champ Induction Lighting System. See Section 5L.

Options:

The following special options are available from the factory by adding suffix to luminaire Cat. No.:

Description **Suffix to be added to Cat. No.**

- **Factory Sealed Champs** **S865†**
 - **Class I Division 2 & Zone 2**
 - **Provides T3 code without conduit or cable seals**

- **Restricted breathing/Non-sparking**
- **Restricted Breathing Construction** . . . **S826†**
 - Class I Division 2 & Zone 2 Suitability
 - Cooler Operating Temperatures (T-Numbers)

- **Certified for IEC Zone 2** **S826TB**
 - Furnished with terminal block, crimp terminals and dedicated voltage ballasts (no MT, DT or TT)

- **Fused** – to protect ballast and capacitors against abnormal line conditions **S658*** (Not for use in Canada)

- **Ballast-Gard™** starter cut-out switch – prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life. Available for use with 50-150W LX HPS only **BG**

- **Instant restrike** – enables a hot HPS lamp to immediately restrike after a momentary loss of arc due to voltage fluctuation or power outage. It has no effect on the warm-up period of cold lamps. Available for use with 50-150W LX HPS only **IR**

- **Quartz auxiliary lighting** for use with R2 & R5 large glass refractors only! – comes to full brightness immediately and remains lit until the HID lamp attains 60-70% of full illumination. For *non-hazardous* locations only **QTZ**

- **Stainless steel insert** - top hat with stainless steel threaded insert to attach ballast housing **S806**

- **TEFLON coating** on globe for increased shatter protection. **S808** T-Numbers not affected

- **Factory assembled with H.I.D. lamps** installed for additional labor savings. **FA**

(Note: BG and IR options cannot be used together. IR and QTZ options cannot be used together.)

Accessories:

- See pages 775 and 776 for complete listing.

TEFLON is a registered trademark of E.I. duPont Co.

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

† For detailed information on Restricted Breathing and Non-Sparking, see page 32 of the Cooper Crouse-Hinds 2005 Code Digest.

50-150W High Pressure Sodium VMV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing CL. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- CL. II Groups E, F, G, CL. III & Simultaneous Presence (50W, 70W)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

3L



See Notes 1 (to specify voltage), 2 and 3. For guards and other optics see VMV Luminaires – Ordering by Components section.

BASIC CATALOG NUMBER

	Mounting Style	Hub Size	Lamp Watts	With G24 Globe and P21 Guard	With G241 Type I Compact Refractor	With G245 Type V Compact Refractor	With R5 Glass Refractor
	Pendant Mount	3/4	50	VMVS2A050GP	VMVS2A050G241	VMVS2A050G245	VMVS2A050R5
		1		VMVS3A050GP	VMVS3A050G241	VMVS3A050G245	VMVS3A050R5
		3/4	70	VMVS2A070GP ✓	VMVS2A070G241 ✓	VMVS2A070G245 ✓	VMVS2A070R5 ✓
		1		VMVS3A070GP ✓	VMVS3A070G241 ✓	VMVS3A070G245 ✓	VMVS3A070R5 ✓
		3/4	100	VMVS2A100GP ✓	VMVS2A100G241 ✓	VMVS2A100G245 ✓	VMVS2A100R5 ✓
		1		VMVS3A100GP ✓	VMVS3A100G241 ✓	VMVS3A100G245 ✓	VMVS3A100R5 ✓
		3/4	150	VMVS2A150GP ✓	VMVS2A150G241 ✓	VMVS2A150G245 ✓	VMVS2A150R5 ✓
		1		VMVS3A150GP ✓	VMVS3A150G241 ✓	VMVS3A150G245 ✓	VMVS3A150R5 ✓
	Flexible Pendant Mount	3/4	50	VMVS2HA050GP	VMVS2HA050G241	VMVS2HA050G245	VMVS2HA050R5
		3/4	70	VMVS2HA070GP ✓	VMVS2HA070G241 ✓	VMVS2HA070G245 ✓	VMVS2HA070R5 ✓
		3/4	100	VMVS2HA100GP ✓	VMVS2HA100G241 ✓	VMVS2HA100G245 ✓	VMVS2HA100R5 ✓
		3/4	150	VMVS2HA150GP ✓	VMVS2HA150G241 ✓	VMVS2HA150G245 ✓	VMVS2HA150R5 ✓
	Ceiling Mount Thru-Feed	3/4	50	VMVS2C050GP	VMVS2C050G241	VMVS2C050G245	VMVS2C050R5
		1		VMVS3C050GP	VMVS3C050G241	VMVS3C050G245	VMVS3C050R5
		3/4	70	VMVS2C070GP ✓	VMVS2C070G241 ✓	VMVS2C070G245 ✓	VMVS2C070R5 ✓
		1		VMVS3C070GP ✓	VMVS3C070G241 ✓	VMVS3C070G245 ✓	VMVS3C070R5 ✓
		3/4	100	VMVS2C100GP ✓	VMVS2C100G241 ✓	VMVS2C100G245 ✓	VMVS2C100R5 ✓
		1		VMVS3C100GP ✓	VMVS3C100G241 ✓	VMVS3C100G245 ✓	VMVS3C100R5 ✓
		3/4	150	VMVS2C150GP ✓	VMVS2C150G241 ✓	VMVS2C150G245 ✓	VMVS2C150R5 ✓
	1		VMVS3C150GP ✓	VMVS3C150G241 ✓	VMVS3C150G245 ✓	VMVS3C150R5 ✓	
	Wall Mount Thru-Feed	3/4	50	VMVS2TW050GP	VMVS2TW050G241	VMVS2TW050G245	VMVS2TW050R5
		1		VMVS3TW050GP	VMVS3TW050G241	VMVS3TW050G245	VMVS3TW050R5
		3/4	70	VMVS2TW070GP ✓	VMVS2TW070G241 ✓	VMVS2TW070G245 ✓	VMVS2TW070R5 ✓
		1		VMVS3TW070GP ✓	VMVS3TW070G241 ✓	VMVS3TW070G245 ✓	VMVS3TW070R5 ✓
		3/4	100	VMVS2TW100GP ✓	VMVS2TW100G241 ✓	VMVS2TW100G245 ✓	VMVS2TW100R5 ✓
		1		VMVS3TW100GP ✓	VMVS3TW100G241 ✓	VMVS3TW100G245 ✓	VMVS3TW100R5 ✓
		3/4	150	VMVS2TW150GP ✓	VMVS2TW150G241 ✓	VMVS2TW150G245 ✓	VMVS2TW150R5 ✓
	1		VMVS3TW150GP ✓	VMVS3TW150G241 ✓	VMVS3TW150G245 ✓	VMVS3TW150R5 ✓	
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½ ° Angle	3/4	50	VMVS25Q050GP	VMVS25Q050G241	VMVS25Q050G245	VMVS25Q050R5
		3/4	70	VMVS25Q070GP	VMVS25Q070G241	VMVS25Q070G245	VMVS25Q070R5
		3/4	100	VMVS25Q100GP	VMVS25Q100G241	VMVS25Q100G245	VMVS25Q100R5
		3/4	150	VMVS25Q150GP	VMVS25Q150G241	VMVS25Q150G245	VMVS25Q150R5
	Stanchion Mount 25° Angle	1½	50	VMVSJ050GP	VMVSJ050G241	VMVSJ050G245	VMVSJ050R5
		1½	70	VMVSJ070GP ✓	VMVSJ070G241 ✓	VMVSJ070G245 ✓	VMVSJ070R5 ✓
		1½	100	VMVSJ100GP ✓	VMVSJ100G241 ✓	VMVSJ100G245 ✓	VMVSJ100R5 ✓
		1½	150	VMVSJ150GP ✓	VMVSJ150G241 ✓	VMVSJ150G245 ✓	VMVSJ150R5 ✓
	Stanchion Mount Straight	1½	50	VMVSP050GP	VMVSP050G241	VMVSP050G245	VMVSP050R5
		1½	70	VMVSP070GP ✓	VMVSP070G241 ✓	VMVSP070G245 ✓	VMVSP070R5 ✓
		1½	100	VMVSP100GP ✓	VMVSP100G241 ✓	VMVSP100G245 ✓	VMVSP100R5 ✓
		1½	150	VMVSP150GP ✓	VMVSP150G241 ✓	VMVSP150G245 ✓	VMVSP150R5 ✓

Standard Voltage Ballasts - 60Hz

1. Voltage Suffix	NEC/UL			CEC/CSA (cUL)		
	Multi Tap /MT	Dual Tap /DT	120V /120	Tri Tap /TT	Dual Tap /DT	120V /120
(Multi Tap and Dual Tap ballasts are prewired for 277V)						

Optional Voltage Ballasts - 50 or 60Hz

Voltage Suffix	CEC/CSA (cUL) - CWI Isolated Ballasts					EXPORT		
	208V CWI /208CWI	240V CWI /240CWI	480V CWI /480CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. 150W HPS Luminaires, 55V Lamps is standard; for 100V lamps - Add suffix "CE". 50W HPS Luminaire is dual tap only.
3. Options - Add the required options suffixes from page 724, in Alpha-numeric order.
✓ - available with Lightning Service™ delivery. See Section G for complete details.

3L

150-175W Pulse Start Metal Halide VMV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

See Note 1 (to specify voltage). For guards and other optics see VMV Luminaires – Ordering by Components section.

BASIC CATALOG NUMBER

	Mounting Style	Hub Size	Lamp Watts	With G24 Globe and P21 Guard	With G245 Type V Compact Refractor	With R5 Glass Refractor
	Pendant Mount	¾	150	VMVM2A150GP-S828	VMVM2A150G245-S828	VMVM2A150R5-S828
		1		VMVM3A150GP-S828	VMVM3A150G245-S828	VMVM3A150R5-S828
		¾	175	VMVM2A175GP-S828	VMVM2A175G245-S828	VMVM2A175R5-S828
		1		VMVM3A175GP-S828	VMVM3A175G245-S828	VMVM3A175R5-S828
	Flexible Pendant Mount	¾	150	VMVM2HA150GP-S828	VMVM2HA150G245-S828	VMVM2HA150R5-S828
		¾	175	VMVM2HA175GP-S828	VMVM2HA175G245-S828	VMVM2HA175R5-S828
	Ceiling Mount Thru-Feed	¾	150	VMVM2C150GP-S828	VMVM2C150G245-S828	VMVM2C150R5-S828
		1		VMVM3C150GP-S828	VMVM3C150G245-S828	VMVM3C150R5-S828
		¾	175	VMVM2C175GP-S828	VMVM2C175G245-S828	VMVM2C175R5-S828
		1		VMVM3C175GP-S828	VMVM3C175G245-S828	VMVM3C175R5-S828
	Wall Mount Thru-Feed	¾	150	VMVM2TW150GP-S828	VMVM2TW150G245-S828	VMVM2TW150R5-S828
		1		VMVM3TW150GP-S828	VMVM3TW150G245-S828	VMVM3TW150R5-S828
		¾	175	VMVM2TW175GP-S828	VMVM2TW175G245-S828	VMVM2TW175R5-S828
		1		VMVM3TW175GP-S828	VMVM3TW175G245-S828	VMVM3TW175R5-S828
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	¾	150	VMVM25Q150GP-S828	VMVM25Q150G245-S828	VMVM25Q150R5-S828
		¾	175	VMVM25Q175GP-S828	VMVM25Q175G245-S828	VMVM25Q175R5-S828
	Stanchion Mount 25° Angle	1½	150	VMVMJ150GP-S828	VMVMJ150G245-S828	VMVMJ150R5-S828
		1½	175	VMVMJ175GP-S828	VMVMJ175G245-S828	VMVMJ175R5-S828
	Stanchion Mount Straight	1½	150	VMVMP150GP-S828	VMVMP150G245-S828	VMVMP150R5-S828
		1½	175	VMVMP175GP-S828	VMVMP175G245-S828	VMVMP175R5-S828

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz			CEC/CSA (cUL)	
	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT	120V /120
Voltage Suffix	Optional Voltage Ballasts - 50 or 60Hz				
	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50	

100-175W Metal Halide VMV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

3L



See Note 1 (to specify voltage), 2 and 3. For guards and other optics see VMV Luminaires – Ordering by Components section.

BASIC CATALOG NUMBER

	Mounting Style	Hub Size	Lamp Watts	With G24 Globe and P21 Guard	With G241 Type I Compact Refractor	With G245 Type V Compact Refractor	With R5 Glass Refractor
	Pendant Mount	3/4	70	VMVM2A070GP	VMVM2A070G241	VMVM2A070G245	VMVM2A070R5
		1		VMVM3A070GP	VMVM3A070G241	VMVM3A070G245	VMVM3A070R5
			100	VMVM2A100GP ✓	VMVM2A100G241 ✓	VMVM2A100G245 ✓	VMVM2A100R5 ✓
		1		VMVM3A100GP ✓	VMVM3A100G241 ✓	VMVM3A100G245 ✓	VMVM3A100R5 ✓
		3/4	175	VMVM2A175GP ✓	VMVM2A175G241 ✓	VMVM2A175G245 ✓	VMVM2A175R5 ✓
	Flexible Pendant Mount	3/4	70	VMVM2HA070GP	VMVM2HA070G241	VMVM2HA070G245	VMVM2HA070R5
		3/4	100	VMVM2HA100GP ✓	VMVM2HA100G241 ✓	VMVM2HA100G245 ✓	VMVM2HA100R5 ✓
		3/4	175	VMVM2HA175GP ✓	VMVM2HA175G241 ✓	VMVM2HA175G245 ✓	VMVM2HA175R5 ✓
	Ceiling Mount Thru-Feed	3/4	70	VMVM2C070GP	VMVM2C070G241	VMVM2C070G245	VMVM2C070R5
		1		VMVM3C070GP	VMVM3C070G241	VMVM3C070G245	VMVM3C070R5
		3/4	100	VMVM2C100GP ✓	VMVM2C100G241 ✓	VMVM2C100G245 ✓	VMVM2C100R5 ✓
		1		VMVM3C100GP ✓	VMVM3C100G241 ✓	VMVM3C100G245 ✓	VMVM3C100R5 ✓
		3/4	175	VMVM2C175GP ✓	VMVM2C175G241 ✓	VMVM2C175G245 ✓	VMVM2C175R5 ✓
		1		VMVM3C175GP ✓	VMVM3C175G241 ✓	VMVM3C175G245 ✓	VMVM3C175R5 ✓
	Wall Mount Thru-Feed	3/4	70	VMVM2TW070GP	VMVM2TW070G241	VMVM2TW070G245	VMVM2TW070R5
		1		VMVM3TW070GP	VMVM3TW070G241	VMVM3TW070G245	VMVM3TW070R5
		3/4	100	VMVM2TW100GP ✓	VMVM2TW100G241 ✓	VMVM2TW100G245 ✓	VMVM2TW100R5 ✓
		1		VMVM3TW100GP ✓	VMVM3TW100G241 ✓	VMVM3TW100G245 ✓	VMVM3TW100R5 ✓
		3/4	175	VMVM2TW175GP ✓	VMVM2TW175G241 ✓	VMVM2TW175G245 ✓	VMVM2TW175R5 ✓
		1		VMVM3TW175GP ✓	VMVM3TW175G241 ✓	VMVM3TW175G245 ✓	VMVM3TW175R5 ✓
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	3/4	70	VMVM25Q070GP	VMVM25Q070G241	VMVM25Q070G245	VMVM25Q070R5
		3/4	100	VMVM25Q100GP	VMVM25Q100G241	VMVM25Q100G245	VMVM25Q100R5
		3/4	175	VMVM25Q175GP	VMVM25Q175G241	VMVM25Q175G245	VMVM25Q175R5
	Stanchion Mount 25° Angle	1½	70	VMVMJ070GP	VMVMJ070G241	VMVMJ070G245	VMVMJ070R5
		1½	100	VMVMJ100GP ✓	VMVMJ100G241 ✓	VMVMJ100G245 ✓	VMVMJ100R5 ✓
		1½	175	VMVMJ175GP ✓	VMVMJ175G241 ✓	VMVMJ175G245 ✓	VMVMJ175R5 ✓
	Stanchion Mount Straight	1½	70	VMVMJ070GP	VMVMJ070G241	VMVMJ070G245	VMVMJ070R5
		1½	100	VMVMJ100GP ✓	VMVMJ100G241 ✓	VMVMJ100G245 ✓	VMVMJ100R5 ✓
		1½	175	VMVMJ175GP ✓	VMVMJ175G241 ✓	VMVMJ175G245 ✓	VMVMJ175R5 ✓
1. Standard Voltage Ballasts - 60Hz NEC/UL CEC/CSA (cUL)							

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz			CEC/CSA (cUL)		
	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT	120V /120	
Optional Voltage Ballasts - 50 or 60Hz						
Voltage Suffix	CEC/CSA (cUL) - CWI Isolated Ballasts			EXPORT		
	208V CWI /208CWI	480V CWI /240CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	240V 50Hz /240 50

2. Options - Add the required options suffixes from page 718, in Alpha-numeric order.

3. 70W Ballast not available in 480V.

✓ - available with Lightning Service™ delivery. See Section G for complete details.

3L

100-175W Mercury Vapor VMV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

See Notes 1 (to specify voltage) and 2. For guards and other optics see VMV Luminaires – Ordering by Components section.

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G24 Globe and P21 Guard	With G241 Type I Compact Refractor	With G245 Type V Compact Refractor	With R5 Glass Refractor
	Pendant Mount	3/4	100 VMVC2A100GP ✓	100 VMVC2A100G241 ✓	100 VMVC2A100G245 ✓	100 VMVC2A100R5 ✓
		1	100 VMVC3A100GP ✓	100 VMVC3A100G241 ✓	100 VMVC3A100G245 ✓	100 VMVC3A100R5 ✓
	Pendant Mount	3/4	175 VMVC2A175GP ✓	175 VMVC2A175G241 ✓	175 VMVC2A175G245 ✓	175 VMVC2A175R5 ✓
		1	175 VMVC3A175GP ✓	175 VMVC3A175G241 ✓	175 VMVC3A175G245 ✓	175 VMVC3A175R5 ✓
	Flexible Pendant Mount	3/4	100 VMVC2HA100GP ✓	100 VMVC2HA100G241 ✓	100 VMVC2HA100G245 ✓	100 VMVC2HA100R5 ✓
		3/4	175 VMVC2HA175GP ✓	175 VMVC2HA175G241 ✓	175 VMVC2HA175G245 ✓	175 VMVC2HA175R5 ✓
	Ceiling Mount Thru-Feed	3/4	100 VMVC2C100GP ✓	100 VMVC2C100G241 ✓	100 VMVC2C100G245 ✓	100 VMVC2C100R5 ✓
		1	100 VMVC3C100GP ✓	100 VMVC3C100G241 ✓	100 VMVC3C100G245 ✓	100 VMVC3C100R5 ✓
	Ceiling Mount Thru-Feed	3/4	175 VMVC2C175GP ✓	175 VMVC2C175G241 ✓	175 VMVC2C175G245 ✓	175 VMVC2C175R5 ✓
		1	175 VMVC3C175GP ✓	175 VMVC3C175G241 ✓	175 VMVC3C175G245 ✓	175 VMVC3C175R5 ✓
	Wall Mount Thru-Feed	3/4	100 VMVC2TW100GP ✓	100 VMVC2TW100G241 ✓	100 VMVC2TW100G245 ✓	100 VMVC2TW100R5 ✓
		1	100 VMVC3TW100GP ✓	100 VMVC3TW100G241 ✓	100 VMVC3TW100G245 ✓	100 VMVC3TW100R5 ✓
	Wall Mount Thru-Feed	3/4	175 VMVC2TW175GP ✓	175 VMVC2TW175G241 ✓	175 VMVC2TW175G245 ✓	175 VMVC2TW175R5 ✓
		1	175 VMVC3TW175GP ✓	175 VMVC3TW175G241 ✓	175 VMVC3TW175G245 ✓	175 VMVC3TW175R5 ✓
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	3/4	100 VMVC25Q100GP	100 VMVC25Q100G241	100 VMVC25Q100G245	100 VMVC25Q100R5
		3/4	175 VMVC25Q175GP	175 VMVC25Q175G241	175 VMVC25Q175G245	175 VMVC25Q175R5
	Stanchion Mount 25° Angle	1½	100 VMVCJ100GP ✓	100 VMVCJ100G241 ✓	100 VMVCJ100G245 ✓	100 VMVCJ100R5 ✓
		1½	175 VMVCJ175GP ✓	175 VMVCJ175G241 ✓	175 VMVCJ175G245 ✓	175 VMVCJ175R5 ✓
	Stanchion Mount Straight	1½	100 VMVCP100GP ✓	100 VMVCP100G241 ✓	100 VMVCP100G245 ✓	100 VMVCP100R5 ✓
		1½	175 VMVCP175GP ✓	175 VMVCP175G241 ✓	175 VMVCP175G245 ✓	175 VMVCP175R5 ✓

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz				CEC/CSA (cUL)	
	Multi Tap /MT	120V /120	480V /480		Tri Tap /TT	120V /120
Voltage Suffix	Optional Voltage Ballasts - 50 or 60Hz				EXPORT	
	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50		240V 50Hz /240 50	

2. Options - Add the required options suffixes from page 724, in Alpha-numeric order.
✓ - available with Lightning Service™ delivery. See Section G for complete details.

VMV luminaires are available in components.

A complete luminaire consists of:

- I. Champ Cover (Mounting Module)
- II. VMV Ballast Housing - Include voltage and required option(s)
- III. Optical & Guard components - Globe, Reflector, Refractor, Guard

I. Champ Cover (Mounting Module)

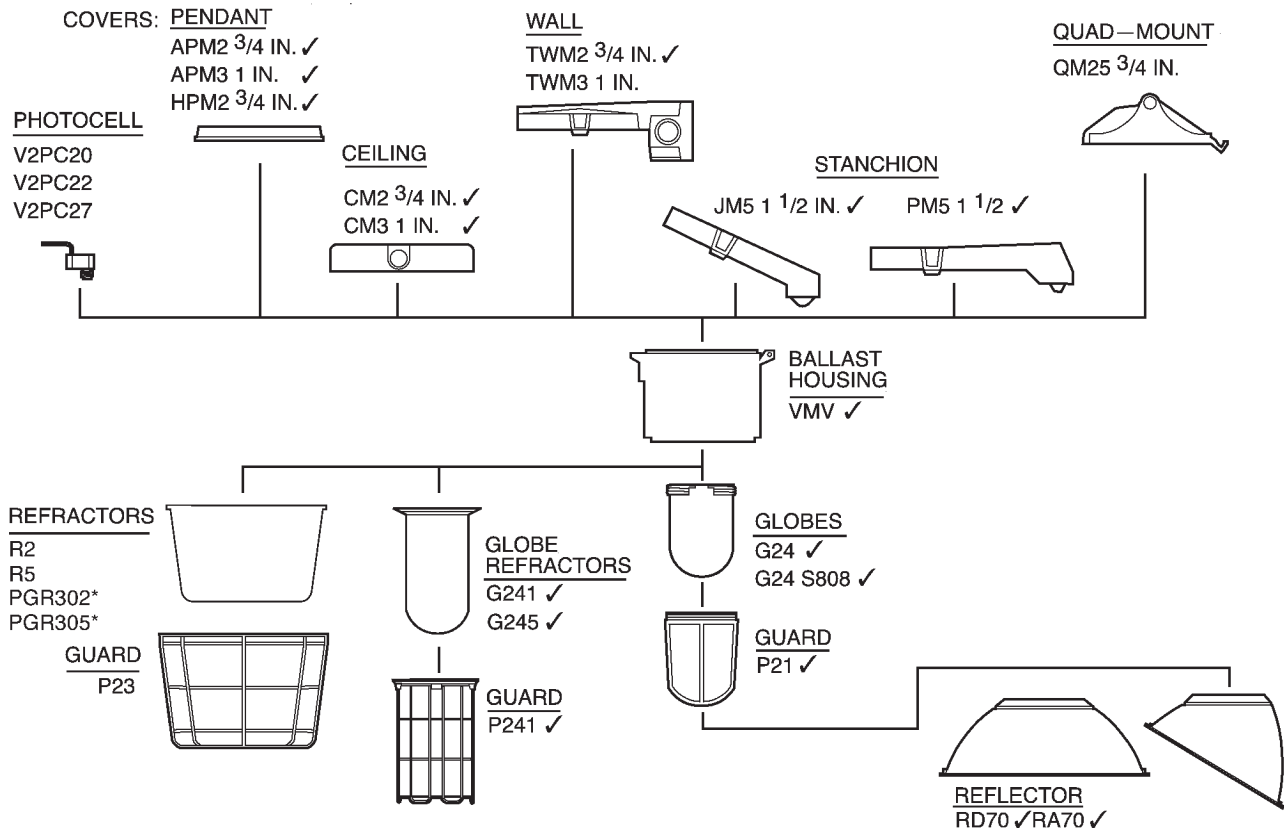
Type	Conduit	Cat. No.
Pendant	3/4 1	APM2 APM3
Flexible Pendant	3/4	HPM2
Ceiling	3/4 1	CM2 CM3
Wall	3/4 1	TWM2 TWM3
Stanchion - 25 Degree Angle	1 1/2	JM5
Stanchion - Straight	1 1/2	PM5
Quad-Mount	3/4	QM25

II. Ballast Housings. Complete catalog number must have the **voltage suffix** (MT shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Cat No.	
		For Globe and Compact Refractor	For Large Refractor
High Pressure Sodium	50	VMVS050/MT	VMVS050/MT-RM
	70	VMVS070/MT	VMVS070/MT-RM
	100	VMVS100/MT	VMVS100/MT-RM
	150	VMVS150/MT LX	VMVS150/MT LX-RM
Metal Halide	70	VMVM070/MT	VMVM070/MT-RM
	100	VMVM100/MT	VMVM100/MT-RM
	175	VMVM175/MT	VMVM175/MT-RM
Mercury Vapor	100	VMVC100/MT	VMVC100/MT-RM
	175	VMVC175/MT	VMVC175/MT-RM

III. Globe, Reflectors, Refractors, Guards

Type	Cat. No.
Globe	G24
Globe - Teflon Coated	G24-S808
Globe Guard	P21
Reflector - Dome	RD70
Reflector - Angle	RA70
Compact Refractor Type 1	G241
Compact Refractor Type 5	G245
Compact Refractor Guard	P241
Large Refractor Type 2	R2
Large Refractor Type 5	R5
Large Refractor Guard	P23
Large Plastic Refractor Type 2	PR2
Large Plastic Refractor Type 3	PR3
Large Plastic Refractor Type 5	PR5



✓ – available with Lightning Service™ delivery. See Section G for complete details.
 * Plastic refractors are for non-hazardous areas only (50-100W Max.)

	LAMP		RATED AMBIENT °C	CLASS I, DIVISION 2				CLASS II, DIVISION 1		CLASS I, ZONE 2			SUPPLY WIRE SUITABLE FOR °C	
				Globe (G24) w/ Reflector (RA70 or RD70)		Refractor (G241 or G245)	Group	Globe (G24) w/ or w/o Reflector (RA70 or RD70)	Simultaneous Presence Class I, Div. 2 Class II, Div.2	Restricted Breathing Suffix S826 w/ Globe (G24)	Factory Sealed Suffix S865 AEx nA nR II	Globe (G24)	Refractor (G241 or G245)	
Cat. No.	Wattage	Type		Globe (G24)										
VMVC100-S712	100	MV	40	T2B	T2B	—				T4	T3	75	—	
VMVC100	100	MV	40	—	—	—				T4	T3	75	75	
VMVC175	175	MV	40	T2	T2	T2B				T3	T3	90	85	
VMVM70	70	MH	40	T3A	T3A	T3A				T5	T3	90	90	
VMVM70	70	MH	55	T3	T3	T3				T4	T3	90	90	
VMVM70	70	MH	65	T3	T3	T3				T4	T3	90	90	
VMVM100	100	MH	40	T2D	T2D	T2D				T4	T3	90	90	
VMVM100-S849	100	MH	40	T2	T2	T2				T4	T3	75	75	
VMVM100	100	MH	55	T2D	T2D	T2D				T4	T3	90	90	
VMVM150	150	MH	40	T2A	T2A	T2B				T3	T3	90	90	
VMVM175	175	MH	40	T2A	T2A	T2B				T3	T3	90	90	
VMVS50	50	HPS	40	T3A	T3A	T3B	EFG	T4A	T3A	T5	T3	75	65	
VMVS50	50	HPS	55	T3A	T3A	T3A	EFG	T4	T3	T5	T3	75	75	
VMVS50	50	HPS	65	T3	T3	T3	EFG	T4	T2D	T5	T3	75	75	
VMVS70	70	HPS	40	T3	T3	T3B	EFG	T3C	T2C	T4	T3	75	65	
VMVS70	70	HPS	55	T3	T3	T3	EFG	T3C	T2B	T4	T3	90	90	
VMVS100	100	HPS	40	T2C	T2C	T2D	EFG	T3A	T2A	T4	T3	90	75	
VMVS100	100	HPS	55	T2B	T2B	T2C	EFG			T3	T3	105	90	
VMVS150	150	HPS	40	T2A	T2A	T2B				T3	T3	90	85	
VMVS150	150	HPS	55	T2	T2	T2A				T3	T3	105	105	
VMVIG055	55	Induction	40	T2C	T2C	—				T6	—	65	—	
VMVIG055	55	Induction	55	T2C	T2C	—				T5	—	65	—	

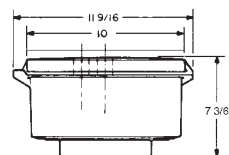
The Class I, Division 2 T-codes apply to luminaires without the restricted breathing (S826) or factory sealed (S865) options. These luminaires are listed to UL 844. UL 844 specifies how the temperatures are measured.

The Class I, Zone 2 T-codes are for luminaires that are additionally listed to UL 60079-15 that specify a different method for measuring temperatures. Since NEC® 501.1 states that equipment "...for use in Class I, Zone 0, 1 or 2 locations shall be permitted in Class I, Division 2 locations..." then these luminaires are suitable for Class I, Division 2 but with lower temperature ratings. They also have the advantage of meeting the more rigorous mechanical tests of UL 844.

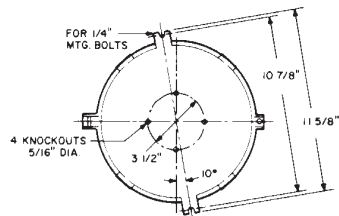
3L 50-175W VMV Series Champ® H.I.D. Luminaires

Dimensions and Weights

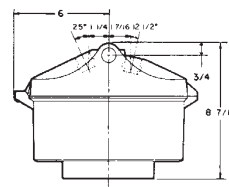
Pendant Mount



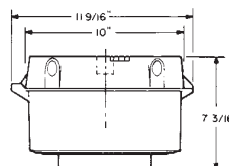
Ceiling Mount Top View



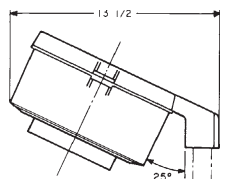
Quad-Mount



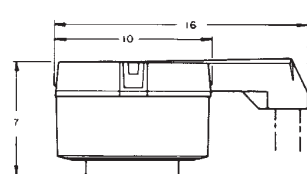
Ceiling Mount



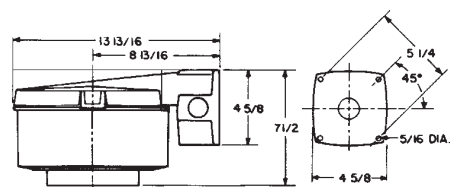
25° Angle Stanchion Mount



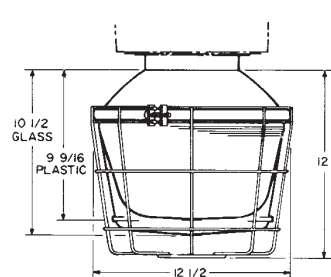
Straight Stanchion Mount



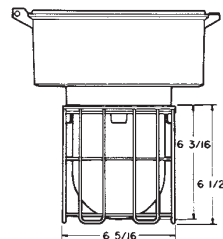
Wall Mount



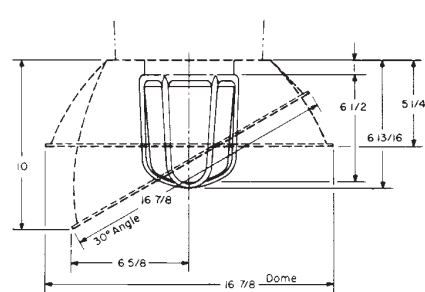
Luminaire With: Refractors, Guard



Compact Refractor



Globe, Guard, Reflectors



Net Luminaire Weights (lbs.):

Luminaire Series	50	70	100	150	175
------------------	----	----	-----	-----	-----

Luminaire with Globe, Guards (lbs):

VMVS	13 1/2	14 1/2	14 1/2	14 1/2	
VMVC			13 3/4		15 1/2
VMVM		13	13 3/4		15 1/2

Luminaire with Glass Refractor (lbs):

VMVS	21 3/4	22 3/4	22 3/4	22 3/4	
VMVC			21 1/2		23 3/4
VMVM		21	21 1/2		23 3/4

Add for mounting modules (lbs):

Pendant	1 1/4		Quad-Mount	3 1/2
Flexible Pendant	1 1/2		Angle Stanchion	3 1/2
Ceiling	2 3/4		Straight Stanchion	4 1/2
Wall	4 1/2			

Add for reflectors (lbs):

Dome	1 1/2		30° Angle	1 1/2
------	-------	--	-----------	-------

Deduct: 1/2 lb. for fixture without P21 Guard

Champ® H.I.D. Luminaires

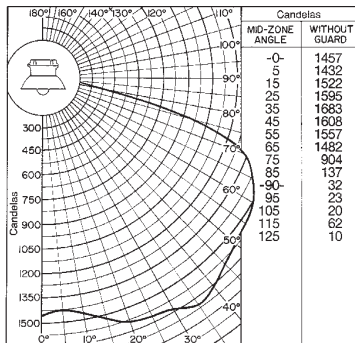
Lamp: 100W/E-23½ high pressure sodium (HPS)

Total bare lamp lumens: 9500

To determine number and placement of luminaires see Lighting Selector Guide, pages 665 to 689.

NOTE: All data provided is for high pressure sodium luminaires with 100W/E-23½ clear lamps. Use conversion factors (multipliers) shown below for other clear lamp types and wattages. Consult Cooper Crouse-Hinds for additional photometric data on any Champ Series luminaire.

Luminaire with Globe and Dome Reflector



Multipliers (for use with candela curve only).

Luminaire Series	Lamp Watts	Conversion Factor
VMVS	50	0.42
	70	0.67
	150	1.68

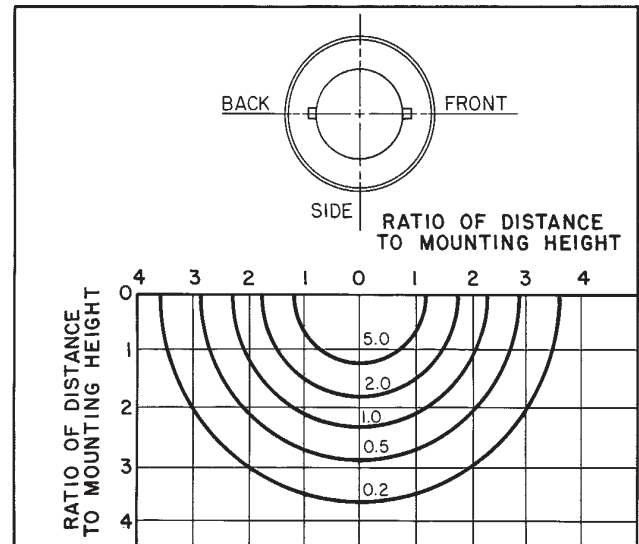
Luminaire spacing ratio: 1.85

Coefficient of Utilization

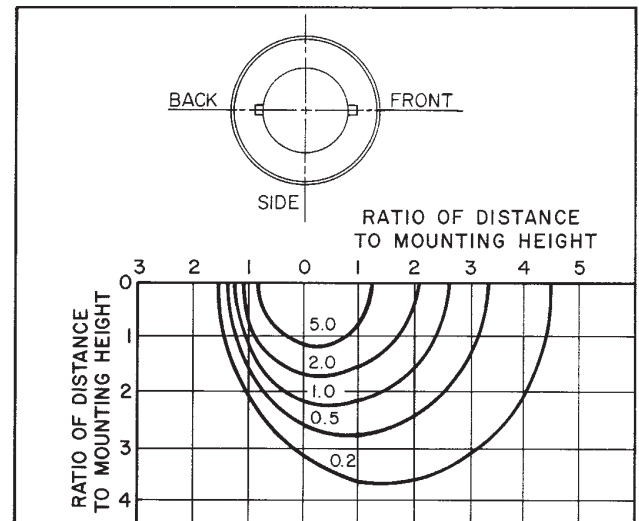
Effective Floor Cavity Reflectance 20%

% Reflectance Eff. Cell	Wall	Room Cavity Ratio				
		1	2	3	4	5
80	50	.823	.707	.610	.529	.464
	30	.784	.646	.538	.451	.384
	10	.749	.594	.482	.391	.324
70	50	.804	.690	.597	.517	.452
	30	.767	.633	.530	.445	.377
	10	.734	.587	.477	.388	.321
50	50	.765	.658	.571	.494	.434
	30	.735	.611	.513	.431	.368
	10	.709	.569	.466	.381	.318
30	50	.731	.629	.546	.473	.416
	30	.708	.591	.497	.419	.357
	10	.685	.555	.456	.375	.312
10	50	.701	.603	.524	.454	.399
	30	.681	.569	.482	.406	.348
	10	.662	.541	.446	.367	.307
0	0	.644	.521	.427	.348	.288
% Reflectance Eff. Cell	Wall	Room Cavity Ratio				
		6	7	8	9	10
80	50	.412	.366	.326	.296	.258
	30	.334	.290	.253	.224	.187
	10	.278	.239	.201	.175	.142
70	50	.403	.359	.320	.291	.252
	30	.329	.285	.250	.221	.187
	10	.274	.235	.200	.174	.142
50	50	.386	.344	.307	.279	.244
	30	.320	.277	.244	.216	.182
	10	.271	.231	.197	.172	.140
30	50	.371	.329	.296	.269	.235
	30	.312	.272	.237	.210	.178
	10	.267	.227	.195	.170	.137
10	50	.357	.319	.285	.260	.227
	30	.304	.266	.232	.206	.173
	10	.263	.224	.192	.167	.135
0	0	.245	.207	.176	.152	.120

Isofootcandle Chart: Luminaire with Globe and Dome Reflector



Isofootcandle Chart: Luminaire with Globe and 30° Angle Reflector

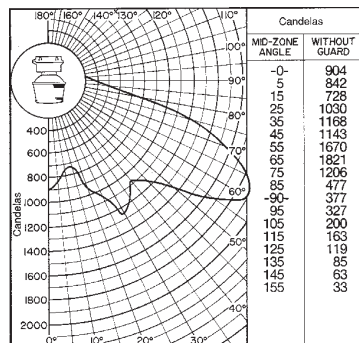


Isofootcandle charts show illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

Height (Ft.)	Factor	Height (Ft.)	Factor
6	2.78	14	0.51
8	1.56	16	0.39
12	0.70		

Lamp: 100W/E-23½ high pressure sodium (HPS)

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

Luminaire with I.E.S. Type V Glass Refractor

NOTE: Photometric data was developed using a 100 watt clear high pressure sodium lamp (9500 lumens). For other clear lamps, use the following conversion factors (multipliers):

Luminaire Series	Lamp Watts	Conversion Factor
VMVS	50	0.42
	70	0.67
	150	1.68

Luminaire spacing ratio: 2.0

Coefficient of Utilization

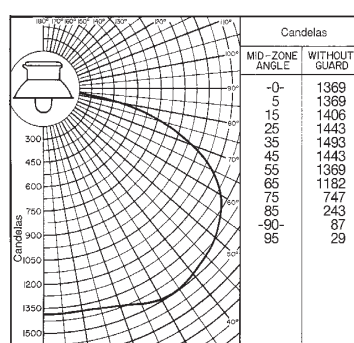
Effective Floor Cavity Reflectance 20%

% Reflectance Eff. Ceil.	Room Cavity Ratio	1	2	3	4	5
80	50	.848	.709	.597	.508	.437
	30	.796	.631	.509	.414	.343
	10	.750	.566	.439	.341	.271
70	50	.818	.682	.576	.489	.419
	30	.770	.611	.493	.402	.331
	10	.726	.552	.428	.334	.264
50	50	.759	.632	.533	.451	.389
	30	.720	.574	.464	.377	.312
	10	.685	.521	.407	.318	.253
30	50	.706	.586	.493	.417	.359
	30	.675	.538	.435	.354	.291
	10	.645	.495	.386	.302	.240
10	50	.658	.544	.457	.385	.331
	30	.632	.504	.408	.331	.274
	10	.608	.469	.366	.286	.227
0	0	.581	.441	.340	.260	.203

% Reflectance Eff. Ceil.	Room Cavity Ratio	6	7	8	9	10
80	50	.384	.337	.299	.272	.238
	30	.292	.249	.214	.189	.159
	10	.226	.189	.154	.132	.103
70	50	.369	.325	.288	.262	.229
	30	.283	.240	.203	.183	.156
	10	.218	.182	.150	.130	.105
50	50	.341	.301	.266	.243	.214
	30	.266	.225	.195	.173	.146
	10	.209	.173	.143	.124	.099
30	50	.316	.277	.248	.225	.198
	30	.249	.213	.182	.161	.136
	10	.199	.163	.136	.117	.093
10	50	.292	.258	.223	.209	.134
	30	.233	.200	.171	.151	.127
	10	.188	.154	.128	.110	.087
0	0	.165	.133	.108	.091	.070

Lamp: 175W/E-28 mercury vapor (MV)

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

Luminaire with Globe and Dome Reflector

NOTE: Photometric data was developed using a 175 watt diffuse mercury vapor lamp (8600 lumens). For other diffuse lamps, use the following conversion factors (multipliers):

Luminaire Series	Lamp Watts	Conversion Factor
VMVC	100	0.49
VMVM	70	0.65
	100	0.91
	175	1.63

Luminaire spacing ratio: 1.60

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance Eff. Ceil.	Room Cavity Ratio	1	2	3	4	5
80	50	.793	.682	.591	.515	.453
	30	.753	.623	.522	.440	.376
	10	.718	.572	.468	.382	.319
70	50	.775	.667	.580	.505	.442
	30	.738	.611	.514	.435	.370
	10	.705	.566	.463	.379	.316
50	50	.739	.637	.555	.483	.426
	30	.709	.591	.498	.422	.362
	10	.682	.550	.454	.374	.313
30	50	.707	.611	.532	.484	.409
	30	.683	.572	.485	.411	.352
	10	.660	.537	.445	.388	.309
10	50	.679	.588	.512	.446	.394
	30	.658	.553	.471	.400	.345
	10	.639	.525	.436	.362	.304
0	0	.622	.506	.418	.343	.287

% Reflectance Eff. Ceil.	Room Cavity Ratio	6	7	8	9	10
80	50	.403	.359	.320	.291	.253
	30	.328	.285	.250	.221	.185
	10	.275	.236	.199	.174	.142
70	50	.395	.352	.314	.286	.248
	30	.324	.281	.247	.219	.185
	10	.271	.233	.198	.174	.142
50	50	.379	.339	.303	.276	.241
	30	.316	.274	.241	.215	.181
	10	.298	.230	.196	.172	.140
30	50	.366	.325	.293	.266	.233
	30	.309	.268	.235	.209	.177
	10	.265	.226	.195	.170	.138
10	50	.353	.318	.282	.257	.225
	30	.301	.264	.231	.208	.179
	10	.282	.224	.193	.168	.136
0	0	.245	.208	.177	.153	.122

35-150W LMV Series

Champ® H.I.D. Luminaires Medium Base

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (HPS 35, 50W)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

3L

Application:

LMV series *Champ*® luminaires are used:

- in applications involving low luminaire mounting heights or restricted mounting space or where luminaire weight is a factor
- in areas in which ignitable concentrations of flammable gases or vapors will be present only due to abnormal, unusual, or accidental conditions
- where combustible dusts are present
- where combustible dusts and flammable vapors are present simultaneously
- in elevated ambient temperatures often found in industrial applications
- in marine applications where water spray and corrosive atmospheres are considerations
- wherever the damaging effects of wind, snow, sleet, or hot sun are found
- in manufacturing plants, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, offshore or dockside installations, cold storage facilities, parking garages or wherever dust, dirt, water, vibration and rough usage are a problem

Features:

- Compact, lightweight design is ideal for low mounting heights.
- Cast copper-free aluminum construction (less than 0.4 of 1% copper) and epoxy powder finish provide excellent resistance to corrosion.
- Seven mounting arrangements to suit any lighting layout – pendant, flexible pendant, ceiling, wall, straight stanchion, angle stanchion, and quad-mount.
- Wide range of lamp wattages to meet specifiers needs: 35, 50, 70, 100 and 150 watt (HPS); 70 and 100 watt (MH) medium base lamps.
- Hinged ballast housing for ease of installation and maintenance.
- All luminaires designed to perform in a 40°C ambient temperature. Selected luminaires are suitable for ambient temperatures up to 65°C.
- Superior gasketing seals between the mounting module, housing, and optical assembly for optimum performance in wet and corrosive environments.
- Hubs with an integral conduit stop and bushing to help prevent damage to field wiring during installation.
- Low ambient capability to -40°C.
- Dome and 30° angle reflectors made of bright white *Krydon*® material provide superior reflectivity, with twist-on feature requiring no tools or additional hardware. Will not chip, peel, dent, rust, or corrode.
- Grounding wire for safety.
- Medium base lamp sockets.



Standard Materials:

- Ballast housings and mountings – copper-free aluminum (less than 0.4 of 1%)
- Exterior hardware – stainless steel
- Reflectors (dome and angle) – *Krydon* fiberglass-reinforced polyester material
- Globes – heat and impact resistant, internally fluted glass
- Guards – copper-free aluminum

Standard Finishes:

- Copper-free aluminum – epoxy powder coat
- *Krydon* material – high reflectance white
- Stainless steel – natural

Electrical Ratings:

- 120 volts, dual-tap (120/277*), multi-tap*
- 35, 50, 70, 100, 150 watts HPS
- 70 and 100 watts MH

Certifications and Compliances:

- NEC and CEC:
 - Class I, Division 2, Groups A,B,C,D
 - HPS 35W, 50W - Class II, Class III & Simultaneous Presence (Class 1, Division 2 and Class II)
 - Class I Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards:
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15

Options:

The following special options are available from the factory by adding suffix to luminaire Cat. No.:

Description	Suffix to be Added to Cat. No.
• Restricted Breathing Construction . . .	S826
- Class I Division 2 & Zone 2 Suitability	
- Cooler Operating Temperatures (T-Numbers)	
• Certified for IEC Zone 2	S826TB
- Furnished with terminal block, crimp terminals and dedicated voltage ballasts (no MT, DT, or TT)	
• Fused – to protect ballast and capacitors against abnormal line conditions	S658*
(Not for use in Canada)	
• Ballast-Gard™ starter cut-out switch – prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life. Available for use with 50-100W HPS only	BG
• Factory assembled with H.I.D. lamps installed for additional labor savings. . . .	FA
• Stainless steel insert - top hat with stainless steel threaded insert to attach ballast housing	S806

Accessories:

- See pages 775 and 776 for complete listing

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

3L

35-150W High Pressure Sodium

LMV Series Champ® H.I.D. Luminaires Medium Base

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G; Cl. III & Simultaneous Presence (35W, 50W)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

See Note 1 (to specify voltage), 2 and 3. For guards and other optics see LMV Luminaires - Ordering by Components section.

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G54 Globe and P50 Guard		
	Pendant Mount	3/4	35	LMVS2A035GP	
		1		LMVS3A035GP	
		3/4	50	LMVS2A050GP	
		1		LMVS3A050GP	
		3/4	70	LMVS2A070GP ✓	
		1		LMVS3A070GP ✓	
		3/4	100	LMVS2A100GP ✓	
		1		LMVS3A100GP ✓	
	Flexible Pendant Mount	3/4	35	LMVS2HA035GP	
		3/4	50	LMVS2HA050GP	
		3/4	70	LMVS2HA070GP ✓	
		3/4	100	LMVS2HA100GP ✓	
		3/4	150	LMVS2HA150GP	
	Ceiling Mount Thru-Feed	3/4	35	LMVS2C035GP	
		1		LMVS3C035GP	
		3/4	50	LMVS2C050GP	
		1		LMVS3C050GP	
		3/4	70	LMVS2C070GP ✓	
		1		LMVS3C070GP ✓	
		3/4	100	LMVS2C100GP ✓	
		1		LMVS3C100GP ✓	
	Wall Mount Thru-Feed	3/4	35	LMVS2TW035GP	
		1		LMVS3TW035GP	
		3/4	50	LMVS2TW050GP	
		1		LMVS3TW050GP	
		3/4	70	LMVS2TW070GP ✓	
		1		LMVS3TW070GP ✓	
		3/4	100	LMVS2TW100GP ✓	
		1		LMVS3TW100GP ✓	
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	3/4	35	LMVS25Q035GP	
		3/4	50	LMVS25Q050GP	
		3/4	70	LMVS25Q070GP	
		3/4	100	LMVS25Q100GP	
		3/4	150	LMVS25Q150GP	
	Stanchion Mount 25° Angle	1½	35	LMVSJ035GP	
		1½	50	LMVSJ050GP	
		1½	70	LMVSJ070GP ✓	
		1½	100	LMVSJ100GP ✓	
		1½	150	LMVSJ150GP	
	Stanchion Mount Straight	1½	35	LMVSP035GP	
		1½	50	LMVSP050GP	
		1½	70	LMVSP070GP ✓	
		1½	100	LMVSP100GP ✓	
		1½	150	LMVSP150GP	
1. Standard Voltage Ballasts - 60Hz NEC/UL					
Voltage	Multi Tap	Dual Tap	120V	480V	Tri

1. Standard Voltage Ballasts - 60Hz					CEC/CSA (cUL)		
NEC/UL							
Voltage Suffix	Multi Tap /MT	Dual Tap /DT	120V /120	480V /480	Tri Tap /TT	Dual Tap /DT	120V /120

2. 150W HPS Luminaires, 55V Lamps is Standard. 50W HPS luminaire is dual-tap only.
 3. Options - Add the Required Options Suffixes from page 735, In Alpha-numeric Order
 ✓ - available with Lightning Service™ delivery. See Section G for complete details

US: 1-866-764-5454 CAN: 1-800-265-0502 Copyright© 2006 Cooper Crouse-Hinds

COOPER Crouse-Hinds

70-100W Metal Halide

LMV Series Champ® H.I.D. Luminaires Medium Base

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

3L

See Note 1 (to specify voltage), 2 and 3. For guards and other optics see LMV Luminaires - Ordering by Components section.

BASIC CATALOG NUMBER				
Mounting Style	Hub Size	Lamp Watts	With G54 Globe and P50 Guard	
	Pendant Mount	3/4	70	LMVM2A070GP
		1		LMVM3A070GP
		3/4	100	LMVM2A100GP
		1		LMVM3A100GP
	Flexible Pendant Mount	3/4	70	LMVM2HA070GP
		3/4	100	LMVM2HA100GP
	Ceiling Mount Thru-Feed	3/4	70	LMVM2C070GP
		1		LMVM3C070GP
		3/4	100	LMVM2C100GP
		1		LMVM3C100GP
	Wall Mount Thru-Feed	3/4	70	LMVM2TW070GP
		1		LMVM3TW070GP
		3/4	100	LMVM2TW100GP
		1		LMVM3TW100GP
	Stanchion Mount 25° Angle	1½	70	LMVMJ070GP
		1½	100	LMVMJ100GP
	Stanchion Mount Straight	1½	70	LMVMP070GP
		1½	100	LMVMP100GP

Standard Voltage Ballasts - 60Hz					
NEC/UL				CEC/CSA (cUL)	
Voltage Suffix	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT	120V /120

- Options - Add the Required Options Suffixes from page 735 in Alpha-numeric Order
- 70W Ballast not available in 480V.

3L
H.I.D. Lighting

3L LMV Luminaires - Ordering by Components

LMV luminaires are available in components

A complete luminaire consists of:

- I. Champ Cover (mounting module)
- II. LMV Ballast Housing - Include voltage and required option(s)
- III. Globe, Guard, Reflector

I. Champ Cover (Mounting Module):

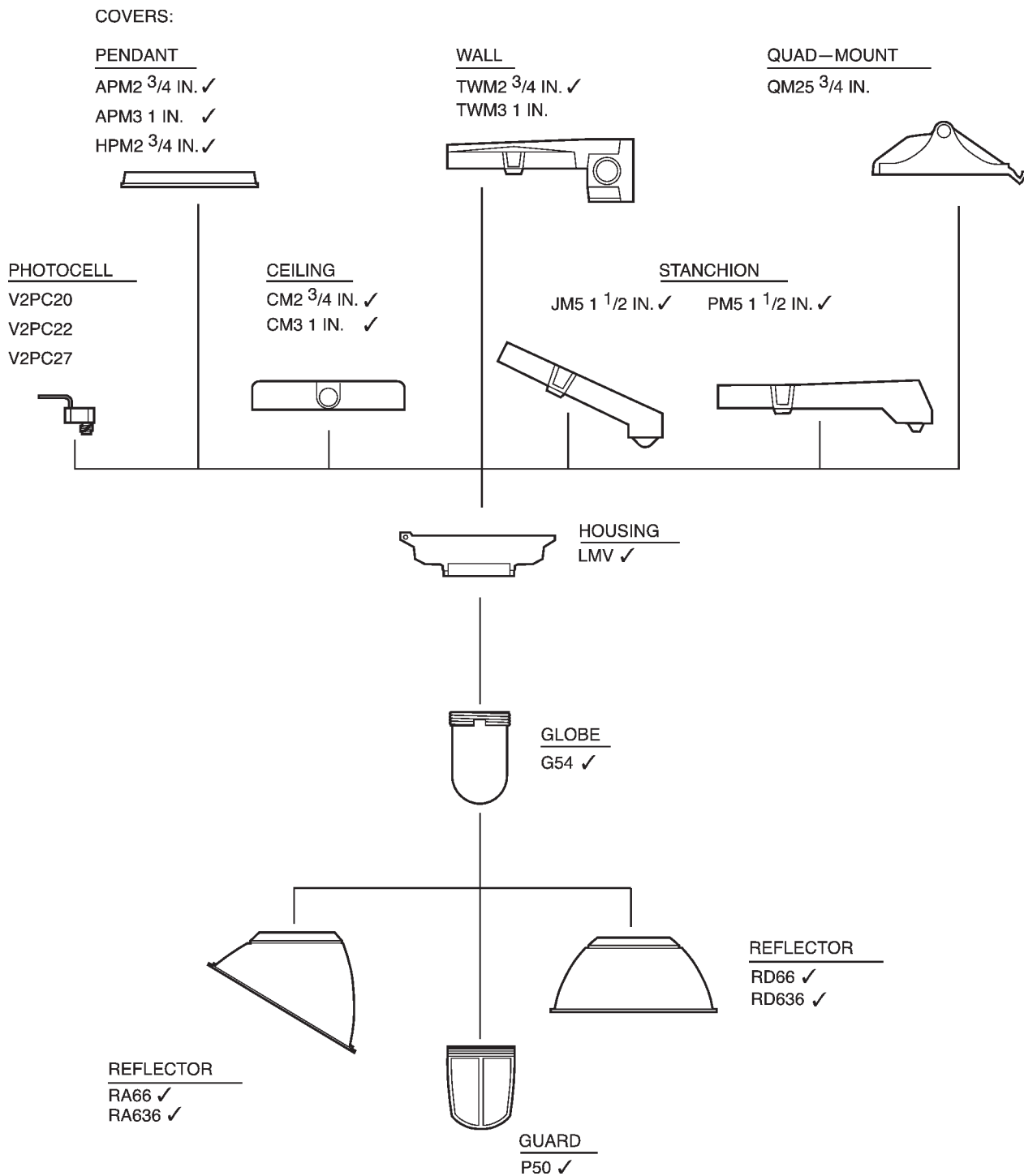
Type	Conduit	Cat. No.
Pendant	¾ 1	APM2 APM3
Flexible Pendant	¾	HPM2
Ceiling	¾ 1	CM2 CM3
Wall	¾ 1	TWM2 TWM3
Stanchion - 25 Degree Angle	1½	JM5
Stanchion - Straight	1½	PM5
Quad-Mount	¾	QM25

II. Ballast Housings: Complete catalog number must have the **voltage suffix** (MT shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Catalog Number
High Pressure Sodium	35	LMVS035/MT
	50	LMVS050/MT
	70	LMVS070/MT
	100	LMVS100/MT
	150	LMVS150/MT LX
Metal Halide	70	LMVM070/MT
	100	LMVM100/MT

III. Globe, Guards and Reflectors:

Type	Catalog Number
Globe	G54
Globe Guard	P50
Globe Reflector-Dome	RD636
Globe Reflector-Angle	RA636



✓ – available with Lightning Service™ delivery. See Section G for complete details.

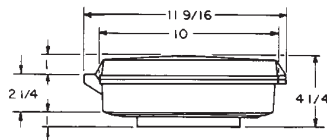
Cat. No.	LAMP		RATED AMBIENT °C	CLASS I, DIVISION 2	CLASS II, DIVISION 1		Simultaneous Presence Class I, Div. 2 Class II, Div. 1	CLASS I, ZONE 2		Supply Wire Suitable for °C
	Wattage	Type			Group	Globe (G54) w/ or w/o Reflector (RA636 or RD636)*		Restricted Breathing Suffix S826 w/ Globe (G54)	Factory Sealed Suffix S865 AEx nA nR II	
LMVS35	35	HPS	40	T3A	EFG	T4A	T2D	T6	T3	N/A
LMVS35	35	HPS	55	T3	EFG	T4	T2C	T5	T3	75
LMVS35	35	HPS	65	T3	EFG	T3C	T2C	T4	T3	85
LMVS50	50	HPS	40	T2D	EFG	T3C	T2B	T5	T3	N/A
LMVS50	50	HPS	55	T2C	—	—	—	T4	T3	75
LMVS50	50	HPS	65	T2C	—	—	—	T4	T3	85
LMVS70	70	HPS	40	T2B	—	—	—	T4	T3	75
LMVS70	70	HPS	55	T2B	—	—	—	T4	T3	85
LMVS100	100	HPS	40	T2	—	—	—	T4	T3	85
LMVS100	100	HPS	50	—	—	—	—	T3	T3	90
LMVM70	70	MH	40	T2B	—	—	—	T4	T3	75
LMVM70	70	MH	55	T2B	—	—	—	T4	T3	85
LMVM100	100	MH	40	—	—	—	—	T3	T3	85
LMVM150	150	HPS	40	T1 350°C	—	—	—	—	—	85

The Class I, Division 2 T-codes apply to luminaires without the restricted breathing (S826) or factory sealed (S865) options. These luminaires are listed to UL 844. UL 844 specifies how the temperatures are measured.

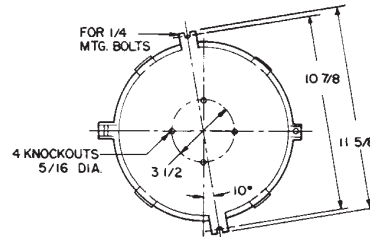
The Class I, Zone 2 T-codes are for luminaires that are additionally listed to UL 60079-15 that specify a different method for measuring temperatures. Since NEC® 501.1 states that equipment "...for use in Class I, Zone 0, 1 or 2 locations shall be permitted in Class I, Division 2 locations..." then these luminaires are suitable for Class I, Division 2 but with lower temperature ratings. They also have the advantage of meeting the more rigorous mechanical tests of UL 844.

Dimensions

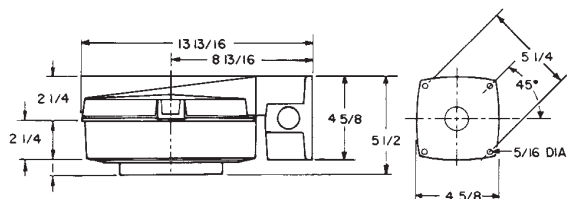
Pendant Mount



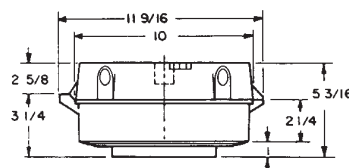
Top View



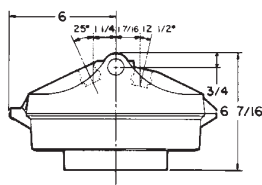
Wall Mount



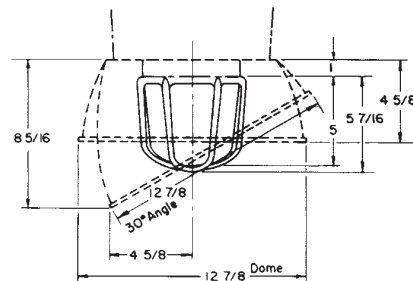
Ceiling Mount



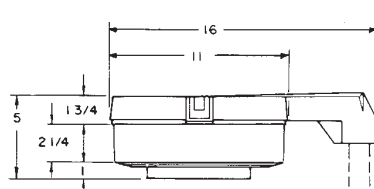
Quad-Mount



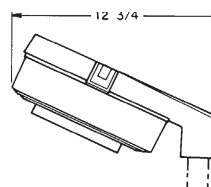
Luminaire with Globe, Guard, Reflectors



Straight Stanchion Mount



25° Angle Stanchion Mount



Luminaire Net Weights:

Luminaire Series	Lamp Watts	Luminaire with Globe, Guard (lbs.)
LMVS	35	7 1/4
	50	7 3/4
	70	8 1/4
	100	8 3/4
	150	9 1/4
LMVM	70	9
	100	9

Add for mounting modules (lbs.)

Pendant	1 1/4	Wall	4 1/2
Flexible Pendant	1 1/2	Angle Stanchion	3 1/2
Ceiling	2 3/4	Straight Stanchion	4 1/2
Quad-Mount	3 1/2		

Add for reflectors (lbs.):

Dome 1.0 30° Angle 1.0

Deduct for luminaire without guard (lbs.):
P50 Guard 1/2

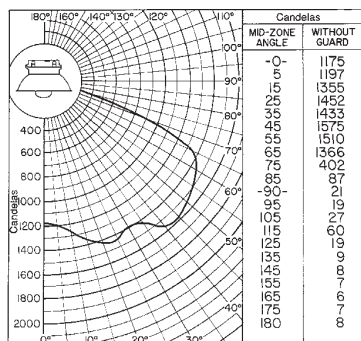
Lamp: 100W/E-17 high pressure sodium (HPS)

Total bare lamp lumens: 9500

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

NOTE: All data provided is for high pressure sodium luminaires with 100W/E-17 clear lamps. Use conversion factors (multipliers) shown below for other lamp types and wattages. Consult Cooper Crouse-Hinds for additional photometric data on any *Champ* Series luminaire.

Luminaire with Globe and Dome Reflector



Multipliers (for use with candlepower curves only).

Luminaire Series	Lamp Watts	Conversion Factors
LMVS	35	0.24
	50	0.42
	70	0.67
	150	1.68

Luminaire spacing ratio: 2.0

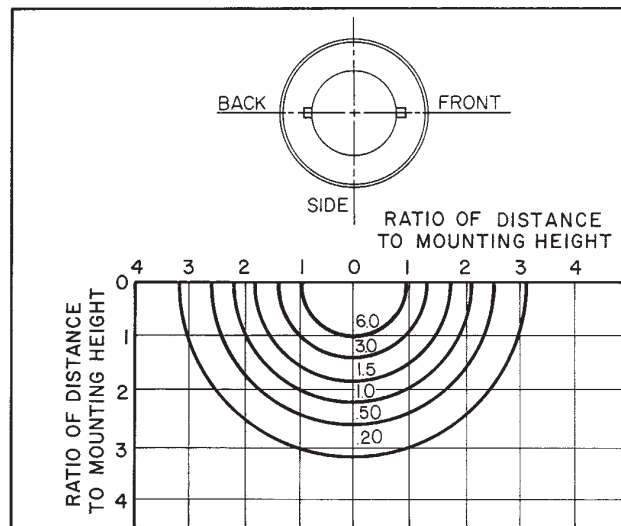
Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

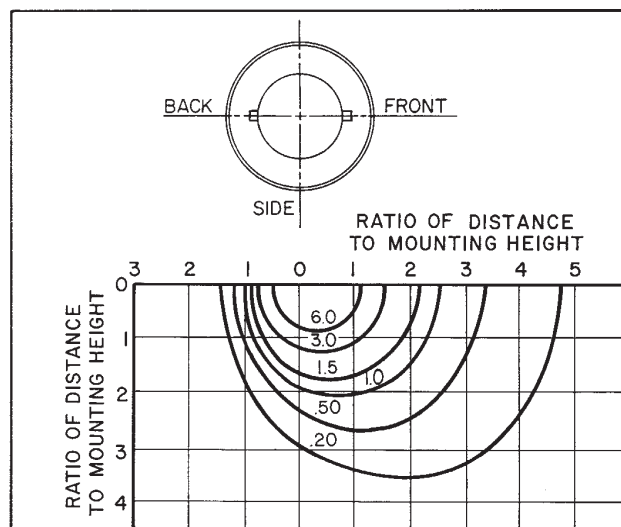
% Reflectance Eff. Cell	Room Cavity Ratio	1	2	3	4	5
80	Wall 50	.722	.628	.545	.473	.413
	30	.691	.579	.487	.408	.346
	10	.663	.537	.441	.358	.296
70	Wall 50	.705	.613	.534	.463	.403
	30	.676	.568	.479	.403	.340
	10	.650	.531	.436	.355	.293
50	Wall 50	.671	.585	.511	.442	.387
	30	.647	.548	.464	.390	.332
	10	.627	.514	.426	.349	.289
30	Wall 50	.641	.560	.489	.424	.371
	30	.623	.529	.450	.379	.322
	10	.605	.501	.416	.342	.284
10	Wall 50	.614	.537	.470	.407	.356
	30	.598	.510	.436	.367	.311
	10	.584	.488	.407	.335	.279
0	0	.568	.471	.391	.319	.263

% Reflectance Eff. Cell	Room Cavity Ratio	6	7	8	9	10
80	Wall 50	.366	.324	.288	.261	.226
	30	.300	.259	.225	.199	.165
	10	.253	.215	.180	.156	.127
70	Wall 50	.358	.318	.282	.256	.221
	30	.295	.255	.223	.196	.165
	10	.249	.212	.179	.156	.126
50	Wall 50	.343	.305	.271	.246	.214
	30	.288	.248	.217	.192	.161
	10	.246	.209	.177	.154	.124
30	Wall 50	.330	.292	.261	.237	.206
	30	.280	.243	.210	.186	.157
	10	.242	.205	.175	.152	.122
10	Wall 50	.317	.282	.251	.228	.199
	30	.272	.237	.206	.182	.152
	10	.238	.202	.172	.149	.120
0	0	.223	.187	.158	.136	.107

Isofootcandle Chart: Luminaire with Globe and Dome Reflector



Isofootcandle Chart: Luminaire with Globe and 30° Angle Reflector



Isofootcandle charts show illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

Height (Ft.)	Factor	Height (Ft.)	Factor
6	2.78	14	0.51
8	1.56	16	0.39
12	0.70		

50-250W DMV Series

Champ®

H.I.D. Lighting Luminaires
Enclosed & Gasketed

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (175W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

3L

Application:

DMV series *Champ* luminaires are used:

- in applications made hazardous by the presence of combustible dusts
- in areas in which ignitable concentrations of flammable gases or vapors will be present only due to abnormal, unusual, or accidental conditions
- in marine applications where water spray and corrosive atmospheres are considerations
- in areas where combustible dusts and flammable vapors are present simultaneously
- in elevated ambient temperatures often found in industrial applications
- in installations where moisture, dirt, dust, vibration, corrosion and rough usage are problems
- wherever the damaging effects of wind, snow, sleet, or hot sun are found
- in grain handling, storage and processing plants, coal preparation plants, coal conveying areas, food processing plants, manufacturing plants, refineries, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, offshore, dockside, and harbor installations, and other heavy industrial applications

Features:

- Cast copper-free aluminum construction (less than 0.4 of 1% copper) and epoxy powder finish provide excellent resistance to corrosion.
- Seven mounting arrangements to suit any lighting layout – pendant, flexible pendant, ceiling, wall bracket, angle stanchion, straight stanchion, and quad-mount.
- Wide range of light sources and wattages to meet specifiers needs: 50, 70, 100, 150 watt high pressure sodium (HPS); 100, 175, 250 watt mercury vapor (MV); 70, 100, 175, 250 watt metal halide.
- Hinged ballast housing for ease of installation and maintenance.
- All luminaires designed to perform in a 40° C ambient temperature. Selected luminaires are suitable for ambient temperatures up to 65° C.
- Superior gasketing seals between the mounting module, housing, and optical assembly for optimum performance in wet and corrosive environments.
- Hubs with an integral conduit stop and bushing to help prevent damage to field wiring during installation.
- Low ambient capability to (-40° C.)
- Dome and 30° angle reflectors made of bright white *Krydon*® material provide superior reflectivity, with twist-on feature requiring no tools or additional hardware. Will not chip, peel, dent, rust, or corrode.
- Mogul base porcelain lamp socket.
- Stainless steel open bottom guard permits direct access to the globe for easy relamping.

DMV Series

* Now available with Champ Induction Lighting System. See Section 5L.



- Grounding wire for safety.
- Ballasts available in voltages of 120, 208, 240, 277, 347, 480, 600 and multi-tap.*

Standard Materials:

- Ballast housings and mountings – copper-free aluminum (less than 0.4 of 1% copper)
- Guard and exterior hardware – stainless steel
- Reflectors (dome and angle) – *Krydon* fiberglass-reinforced polyester material
- Globes – heat and impact resistant, internally fluted glass

Standard Finishes:

- Copper-free aluminum – epoxy powder coat
- *Krydon* material – high reflectance white
- Stainless steel – natural

Electrical Ratings:

- 120, multi-tap* (120, 208, 240 and 277), tri-tap (120, 208, 347) 208, 240, 277, 347, 480, 600 volts
- 50-250W HPS; 100-250W† MV; 70-250W‡ MH

Certifications and Compliances:

- NEC & CEC:
 - Class I, Division 2, Groups A,B,C,D
 - 175W max - Class II, Class III & Simultaneous Presence (Class I, Division 2 and Class II)
 - Class I Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards:
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15

Options:

The following special options are available from the factory by adding suffix to luminaire Cat. No.:

- | Description | Suffix to be Added to Cat. No. |
|---|--------------------------------|
| • Restricted Breathing Construction. | S826 |
| - Class I Division 2 & Zone 2 Suitability | |
| - Cooler Operating Temperatures (T-Numbers) | |
| • Restricted Breathing/Non-Sparking. | S865 |
| - Class I Division 2 & Zone 2 | |
| - Provides T3 code without conduit or cable seals | |
| • Certified for IEC Zone 2 | S826TB |
| - Furnished with terminal block, crimp terminals and dedicated voltage ballasts (no MT, DT or TT) | |
| • Fused – to protect ballast and capacitors against abnormal line conditions | S658* |
| (Not for use in Canada) | |
| • Ballast-Gard™ starter cut-out switch – prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life. Available for use with 50-150W LX HPS only | BG |
| • Instant restrike – enables a hot HPS lamp to immediately restrike after a momentary loss of arc due to voltage fluctuation or power outage. It has no effect on the warm-up period of cold lamps. Available for use with 50-150W LX HPS only | IR |
| • Quartz auxiliary lighting – comes to full brightness immediately and remains lit until the HID lamp attains 60-70% of full illumination. For <i>non-hazardous</i> locations only. (Note: QTZ lamp not included; use 100W single ended lamp – Q100DC, Q100CL/DC, or 100Q/CL/DC) Consult factory for top-hat limitations. | QTZ |
| • Factory assembled with H.I.D. lamps installed for additional labor savings. | FA |
| • TEFLON® coated globe-for additional protection against breakage. For use with 50-150W HPS, 70-175W MH and 100-175W MV | S808 |
| NOTE: Some T-numbers (operating temperatures) change. See "Temperature Performance Data" section. | |
| • Stainless steel insert - top hat with stainless steel threaded insert to attach ballast housing | S806 |
| (Note: BG and IR options cannot be used together. IR and QTZ options cannot be used together.) | |

Accessories:

- See pages 775 and 776 for complete listing.
- See page 749 for family tree.
- ♦ TEFLON is a registered trademark of E.I. duPont Co.
- * When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

3L H.I.D. Lighting

3L

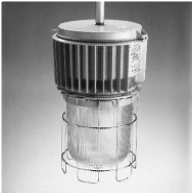
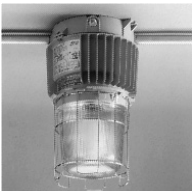
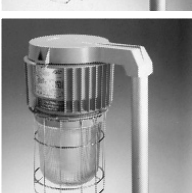
50-150W High Pressure Sodium

DMV Series
Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups E, F, G; Cl. III & Simultaneous Presence
- Marine & Wet Locations
- 3,3R, 4,4X; IP66

See notes 1 (to specify voltage) 2 and 3. For guards and other optics see DMV Luminaires - Ordering by Components section.

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard	With GR305 Glass Refractor	
	Pendant Mount	3/4	50	DMVS2A050GP	DMVS2A050GR305
		1		DMVS3A050GP	DMVS3A050GR305
		3/4	70	DMVS2A070GP	DMVS2A070GR305
		1		DMVS3A070GP	DMVS3A070GR305
		3/4	100	DMVS2A100GP✓	DMVS2A100GR305✓
		1		DMVS3A100GP✓	DMVS3A100GR305✓
		3/4	150	DMVS2A150GP✓	DMVS2A150GR305✓
1		DMVS3A150GP✓	DMVS3A150GR305✓		
	Flexible Pendant Mount	3/4	50	DMVS2HA050GP	DMVS2HA050GR305
		3/4	70	DMVS2HA070GP	DMVS2HA070GR305
		3/4	100	DMVS2HA100GP✓	DMVS2HA100GR305✓
		3/4	150	DMVS2HA150GP✓	DMVS2HA150GR305✓
	Ceiling Mount Thru-Feed	3/4	50	DMVS2C050GP	DMVS2C050GR305
		1		DMVS3C050GP	DMVS3C050GR305
		3/4	70	DMVS2C070GP	DMVS2C070GR305
		1		DMVS3C070GP	DMVS3C070GR305
		3/4	100	DMVS2C100GP✓	DMVS2C100GR305✓
		1		DMVS3C100GP✓	DMVS3C100GR305✓
		3/4	150	DMVS2C150GP✓	DMVS2C150GR305✓
1		DMVS3C150GP✓	DMVS3C150GR305✓		
	Wall Mount Thru-Feed	3/4	50	DMVS2TW050GP	DMVS2TW050GR305
		1		DMVS3TW050GP	DMVS3TW050GR305
		3/4	70	DMVS2TW070GP	DMVS2TW070GR305
		1		DMVS3TW070GP	DMVS3TW070GR305
		3/4	100	DMVS2TW100GP✓	DMVS2TW100GR305✓
		1		DMVS3TW100GP✓	DMVS3TW100GR305✓
		3/4	150	DMVS2TW150GP✓	DMVS2TW150GR305✓
1		DMVS3TW150GP✓	DMVS3TW150GR305✓		
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	3/4	50	DMVS25Q050GP	DMVS25Q050GR305
		3/4	70	DMVS25Q070GP	DMVS25Q070GR305
		3/4	100	DMVS25Q100GP	DMVS25Q100GR305
		3/4	150	DMVS25Q150GP	DMVS25Q150GR305
	Stanchion Mount 25° Angle	1½	50	DMVSJ050GP	DMVSJ050GR305
		1½	70	DMVSJ070GP	DMVSJ070GR305
		1½	100	DMVSJ100GP✓	DMVSJ100GR305✓
		1½	150	DMVSJ150GP✓	DMVSJ150GR305✓
	Stanchion Mount Straight	1½	50	DMVSP050GP	DMVSP050GR305
		1½	70	DMVSP070GP	DMVSP070GR305
		1½	100	DMVSP100GP✓	DMVSP100GR305✓
		1½	150	DMVSP150GP✓	DMVSP150GR305✓

1.

Standard Voltage Ballasts - 60Hz
NEC/UL

CEC/CSA (cUL)

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz				CEC/CSA (cUL)			
	Multi Tap /MT	Dual Tap /DT	120V /120	480V /480	Tri Tap /TT	Dual Tap /DT	120V /120	
Optional Voltage Ballasts - 50 or 60Hz								
CEC/CSA (cUL) - CWI Isolated Ballasts					EXPORT			
Voltage Suffix	208V CWI /208CWI	240V CWI /240CWI	480V CWI /480CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. 150W HPS Luminaires, 55V Lamps is Standard, for 100V lamps - Add suffix "CE". 50W HPS luminaire is dual-tap only.

3. Options - Add the Required Options Suffixes from page 743, in Alpha-numeric order.

✓ - available with Lightning Service™ delivery. See Section G for details.

150-250W Pulse Start Metal Halide

DMV Series
Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (175W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

3L

See Notes 1 (to specify voltage) and 2. For Guards and other optics see DMV Luminaires - Ordering by Components Section

BASIC CATALOG NUMBER

	Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard Cat. No.	With GR305 Glass Refractor Cat. No.
	Pendant Mount	3/4	150	DMVM2A150GP-S828	DMVM2A150GR305-S828
		1		DMVM3A150GP-S828	DMVM3A150GR305-S828
		3/4	175	DMVM2A175GP-S828	DMVM2A175GR305-S828
		1		DMVM3A175GP-S828	DMVM3A175GR305-S828
		3/4	200	DMVM2A200GP-S828	DMVM2A200GR305-S828
		1		DMVM3A200GP-S828	DMVM3A200GR305-S828
	Flexible Pendant Mount	3/4	150	DMVM2HA150GP-S828	DMVM2HA150GR305-S828
		3/4	175	DMVM2HA175GP-S828	DMVM2HA175GR305-S828
		3/4	200	DMVM2HA200GP-S828	DMVM2HA200GR305-S828
		3/4	250	(Use Ceiling Mount) - Ceiling Mount has pendant conduit hub	
		1		(Use Ceiling Mount)	
	Ceiling Mount Thru-Feed	3/4	150	DMVM2C150GP-S828	DMVM2C150GR305-S828
		1		DMVM3C150GP-S828	DMVM3C150GR305-S828
		3/4	175	DMVM2C175GP-S828	DMVM2C175GR305-S828
		1		DMVM3C175GP-S828	DMVM3C175GR305-S828
		3/4	200	DMVM2C200GP-S828	DMVM2C200GR305-S828
		1		DMVM3C200GP-S828	DMVM3C200GR305-S828
	Wall Mount Thru-Feed	3/4	150	DMVM2TW150GP-S828	DMVM2TW150GR305-S828
		1		DMVM3TW150GP-S828	DMVM3TW150GR305-S828
		3/4	175	DMVM2TW175GP-S828	DMVM2TW175GR305-S828
		1		DMVM3TW175GP-S828	DMVM3TW175GR305-S828
		3/4	200	DMVM2TW200GP-S828	DMVM2TW200GR305-S828
		1		DMVM3TW200GP-S828	DMVM3TW200GR305-S828
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	3/4	150	DMVM25Q150GP-S828	DMVM25Q150GR305-S828
		3/4	175	DMVM25Q175GP-S828	DMVM25Q175GR305-S828
		3/4	200	DMVM25Q200GP-S828	DMVM25Q200GR305-S828
		3/4	250	DMVM25Q250GP-S828	DMVM25Q250GR305-S828
	Stanchion Mount 25° Angle	1½	150	DMVMJ150GP-S828	DMVMJ150GR305-S828
		1½	175	DMVMJ175GP-S828	DMVMJ175GR305-S828
		1½	200	DMVMJ200GP-S828	DMVMJ200GR305-S828
		1½	250	DMVMJ250GP-S828	DMVMJ250GR305-S828
	Stanchion Mount Straight	1½	150	DMVMP150GP-S828	DMVMP150GR305-S828
		1½	175	DMVMP175GP-S828	DMVMP175GR305-S828
		1½	200	DMVMP200GP-S828	DMVMP200GR305-S828
		1½	250	DMVMP250GP-S828	DMVMP250GR305-S828

1.

Standard Voltage Ballasts - 60Hz
NEC/UL

CEC/CSA (cUL)

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz				CEC/CSA (cUL)	
	Multi Tap /MT	120V /120	480V /480	NEC/UL	Tri Tap /TT	120V /120
Voltage Suffix	Optional Voltage Ballasts - 50 or 60Hz				EXPORT	
	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50		

2. Options - Add the Required Options Suffixes for page 743 in Alpha-numeric Order

3L

70-250W Metal Halide

DMV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (175W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

See Note 1 (to specify voltage), 2 and 3. For Guards and other optics see DMV Luminaires - Ordering by Components Section

BASIC CATALOG NUMBER

	Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard Cat. No.	With GR305 Glass Refractor Cat. No.
	Pendant Mount	¾	70	DMVM2A070GP	DMVM2A070GR305
		1		DMVM3A070GP	DMVM3A070GR305
		¾	100	DMVM2A100GP	DMVM2A100GR305
		1		DMVM3A100GP	DMVM3A100GR305
		¾	175	DMVM2A175GP	DMVM2A175GR305
		1		DMVM3A175GP	DMVM3A175GR305
		¾	250	(Use Ceiling Mount) (Use Ceiling Mount)	- Ceiling Mount has pendant conduit hub
	Flexible Pendant Mount	¾	70	DMVM2HA070GP	DMVM2HA070GR305
		¾	100	DMVM2HA100GP	DMVM2HA100GR305
		¾	175	DMVM2HA175GP	DMVM2HA175GR305
		¾	250	(Use Ceiling Mount)	- Ceiling Mount has pendant conduit hub
	Ceiling Mount Thru-Feed	¾	70	DMVM2C070GP	DMVM2C070GR305
		1		DMVM3C070GP	DMVM3C070GR305
		¾	100	DMVM2C100GP	DMVM2C100GR305
		1		DMVM3C100GP	DMVM3C100GR305
		¾	175	DMVM2C175GP	DMVM2C175GR305
		1		DMVM3C175GP	DMVM3C175GR305
		¾	250	DMVM2C250GP DMVM3C250GP	DMVM2C250GR305 DMVM3C250GR305
	Wall Mount Thru-Feed	¾	70	DMVM2TW070GP	DMVM2TW070GR305
		1		DMVM3TW070GP	DMVM3TW070GR305
		¾	100	DMVM2TW100GP	DMVM2TW100GR305
		1		DMVM3TW100GP	DMVM3TW100GR305
		¾	175	DMVM2TW175GP	DMVM2TW175GR305
		1		DMVM3TW175GP	DMVM3TW175GR305
		¾	250	DMVM2TW250GP DMVM3TW250GP	DMVM2TW250GR305 DMVM3TW250GR305
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	¾	70	DMVM25Q070GP	DMVM25Q070GR305
		¾	100	DMVM25Q100GP	DMVM25Q100GR305
		¾	175	DMVM25Q175GP	DMVM25Q175GR305
		¾	250	DMVM25Q250GP	DMVM25Q250GR305
	Stanchion Mount 25° Angle	1½	70	DMVMJ070GP	DMVMJ070GR305
		1½	100	DMVMJ100GP	DMVMJ100GR305
		1½	175	DMVMJ175GP	DMVMJ175GR305
		1½	250	DMVMJ250GP	DMVMJ250GR305
	Stanchion Mount Straight	1½	70	DMVMP070GP	DMVMP070GR305
		1½	100	DMVMP100GP	DMVMP100GR305
		1½	175	DMVMP175GP	DMVMP175GR305
		1½	250	DMVMP250GP	DMVMP250GR305

1.

Standard Voltage Ballasts - 60Hz
NEC/UL

CEC/CSA (cUL)

1.

Standard Voltage Ballasts - 60Hz

NEC/UL

CEC/CSA (cUL)

Voltage Suffix	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT	120V /120
----------------	---------------	-----------	-----------	-------------	-----------

Optional Voltage Ballasts - 50 or 60Hz

CEC/CSA (cUL) - CWI Isolated Ballasts - 175W and

250W MH only

EXPORT

Voltage Suffix	208V CWI /208CWI	240V CWI /240CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50
----------------	------------------	------------------	------------------	----------------	-------------------	-------------------	-------------------

2. 70W Ballast not available in 480V

3. Options - Add the required options suffixes from page 743, in Alpha-numeric order.

US: 1-866-764-5454 CAN: 1-800-265-0502 Copyright© 2006 Cooper Crouse-Hinds


COOPER Crouse-Hinds

100-250W Mercury Vapor

DMV Series

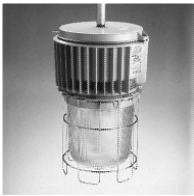
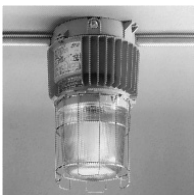
Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (175W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

3L

See Note 1 (to specify voltage) and 2. For Guards and other optics see DMV Luminaires - Ordering by Components Section

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard Cat. No.	With GR305 Glass Refractor Cat. No.
	Pendant Mount	100	DMVC2A100GP	DMVC2A100GR305
			DMVC3A100GP	DMVC3A100GR305
	¾	175	DMVC2A175GP	DMVC2A175GR305
			DMVC3A175GP	DMVC3A175GR305
	¾	250	DMVC2A250GP	DMVC2A250GR305
			DMVC3A250GP	DMVC3A250GR305
	Flexible Pendant Mount	¾	DMVC2HA100GP	DMVC2HA100GR305
		¾	DMVC2HA175GP	DMVC2HA175GR305
		¾	DMVC2HA250GP	DMVC2HA250GR305
	Ceiling Mount Thru-Feed	¾	DMVC2C100GP	DMVC2C100GR305
			DMVC3C100GP	DMVC3C100GR305
		¾	DMVC2C175GP	DMVC2C175GR305
			DMVC3C175GP	DMVC3C175GR305
		¾	DMVC2C250GP	DMVC2C250GR305
			DMVC3C250GP	DMVC3C250GR305
	Wall Mount Thru-Feed	¾	DMVC2TW100GP	DMVC2TW100GR305
			DMVC3TW100GP	DMVC3TW100GR305
		¾	DMVC2TW175GP	DMVC2TW175GR305
			DMVC3TW175GP	DMVC3TW175GR305
		¾	DMVC2TW250GP	DMVC2TW250GR305
			DMVC3TW250GP	DMVC3TW250GR305
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	¾	DMVC25Q100GP	DMVC25Q100GR305
		¾	DMVC25Q175GP	DMVC25Q175GR305
		¾	DMVC25Q250GP	DMVC25Q250GR305
	Stanchion Mount 25° Angle	1½	DMVCJ100GP	DMVCJ100GR305
		1½	DMVCJ175GP	DMVCJ175GR305
		1½	DMVCJ250GP	DMVCJ250GR305
	Stanchion Mount Straight	1½	DMVCP100GP	DMVCP100GR305
		1½	DMVCP175GP	DMVCP175GR305
		1½	DMVCP250GP	DMVCP250GR305

1.	Standard Voltage Ballasts - 60Hz				
	NEC/UL			CEC/CSA (cUL)	
	Voltage Suffix	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT 120V /120
2.	Optional Voltage Ballasts - 50 or 60Hz				
	EXPORT				
	Voltage Suffix	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

Options - Add the required options suffixes from page 743, in Alpha-numeric order.

3L DMV Luminaires - Ordering by Components

DMV luminaires are available in components

A complete luminaire consists of:

- I. Champ Cover (mounting module)
- II. DMV Ballast Housing - Include voltage and required option(s)
- III. Globe, Refractor, Guard, Reflector

I. Champ Cover (Mounting Module):

Type	Conduit	Cat. No.
Pendant	¾ 1	APM2 APM3
Flexible Pendant	¾	HPM2
Ceiling	¾ 1	CM2 CM3
Wall	¾ 1	TWM2 TWM3
Stanchion - 25 Degree Angle	1½	JM5
Stanchion - Straight	1½	PM5
Quad-Mount	¾	QM25

II. Ballast Housings. Complete catalog number must have the **voltage suffix** (MT shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Catalog Number
High Pressure Sodium	50	DMVS050/MT
	70	DMVS070/MT
	100	DMVS100/MT
	150	DMVS150/MT LX
	250	DMVS250/MT
Metal Halide	70	DMVM070/MT
	100	DMVM100/MT
	175	DMVM175/MT
	250	DMVM250/MT
Mercury Vapor	100	DMVC100/MT
	175	DMVC175/MT
	250	DMVC250/MT

III. Globe, Refractors, Reflectors, Guards

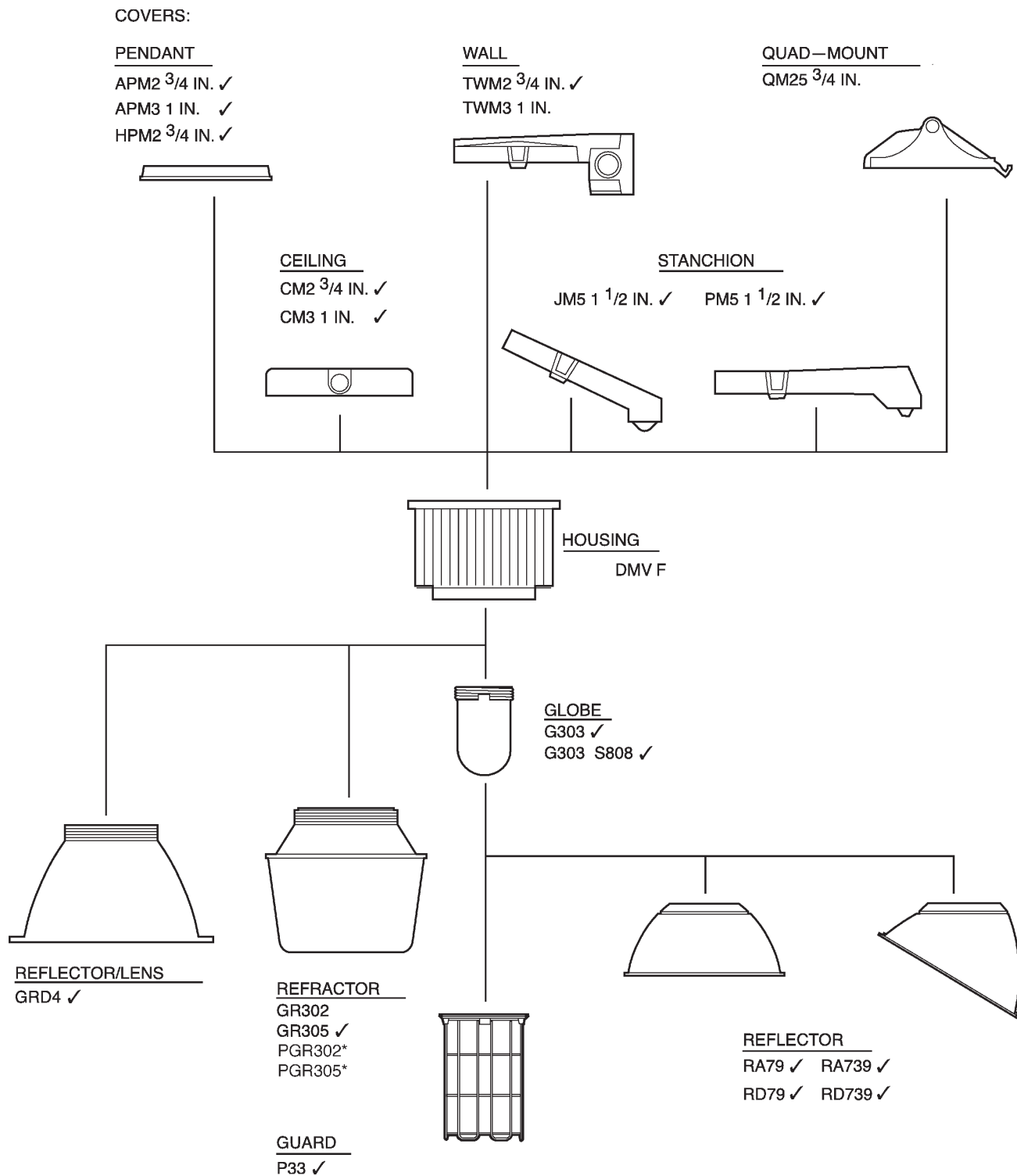
Type	Catalog Number
Globe	G303
Globe - Teflon Coated	G303-S808
Globe Guard	P33
Reflector-Dome	RD739
Reflector-Angle	RA739
Refractor - Type 2	GR302
Refractor - Type 5	GR305
Large Plastic Refractor Type 2	PGR302
Large Plastic Refractor Type 3	PGR303
Large Plastic Refractor Type 5	PGR305
Refractor Guard	P23
High Bay Reflector/Lens	GRD4

50-250W DMV Series

Champ® H.I.D. Luminaires

Family Tree

3L



3L H.I.D. Lighting

✓ – available with Lightning Service™ delivery. See Section G for complete details.
* Plastic refractors are for non-hazardous areas only (50-100W Max.)

Cat. No.	LAMP		RATED AMBIENT °C	CLASS I, DIVISION 2			CLASS II, DIVISION 1		Simultaneous Presence Class I, Div.2 Class II, Div.1 (with G303 Globe only)	CLASS I, ZONE 2			Supply Wire Suitable for °C
	Wattage	Type		Globe (G303) w/ or w/o Reflector (RA739 or RD739)*	Reflector (GR302 or GR305)	Group	Refractor (G302 or G305) or Globe (G303)**	Globe (G303) with Reflector (RA739 or RD739)		Restricted Breathing Suffix S826 w/ Globe (G303)	Globe (G303) with Reflector (RA739 or RD739)	Factory Sealed Suffix S865 AEx nA nR II	
DMVS50	50	HPS	40	T3A	T3A	EFG	T6	T6	T3A	T6	T6	T3	75
DMVS50	50	HPS	55	T3	T3	EFG	T5	T5	T3	T5	T5	T3	85
DMVS50	50	HPS	65	T3	T3	EFG	T4A	T4A	T3	T5	T5	T3	90
DMVS70	70	HPS	40	T3A	T3A	EFG	T6	T6	T3A	T6	T6	T3	75
DMVS70	70	HPS	55	T3	T3	EFG	T5	T5	T3	T5	T5	T3	85
DMVS70	70	HPS	65	T3	T3	EFG	T4A	T4A	T3	T5	T5	T3	90
DMVS100	100	HPS	40	T2D	T2D	EFG	T5	T5	T3D	T6	T6	T3	75
DMVS100	100	HPS	55	T2C	T2C	EFG	T4A	T4A	T2C	T5	T5	T3	85
DMVS100	100	HPS	65	T2C	T2C	—	—	—	—	T4	T4	T3	90
DMVS150	150	HPS	40	T2B	T2B	EFG	T3C	T3C	T2A	T5	T5	T3	75
DMVS150	150	HPS	55	T2B	T2B	EFG	T4A	—	—	T4	T4	T3	85
DMVS150	150	HPS	65	T2A	T2B	EFG	—	—	—	—	—	T3	85
DMVC100	100	MV	40	T3	T3	EFG	T4A	T4A	T2B	T5	T5	T3	75
DMVC100	100	MV	55	T2D	T2D	EFG	T4	T4	T2B	T4	T4	T3	85
DMVC100	100	MV	65	T2C	T2C	EFG	T3C	T3C	T2B	T4	T4	T3	90
DMVC175	175	MV	40	T2A	T2	EFG	T3B	T3C	T2A	T4	T4	T3	75
DMVC175	175	MV	55	T2A	T2	EFG	T4	—	—	T4	T4	T3	85
DMVC175	175	MV	65	T2A	T2	—	—	—	—	T3	T3	T3	90
DMVC250	250	MV	40	T1	—	—	—	—	—	T3	T3	T3	85
DMVC250	250	MV	55	T1	—	—	—	—	—	T3	T3	T3	110
DMVM70	70	MH	40	T3C*	T3C	—	—	—	—	T6	T6	T3	60
DMVM70	70	MH	55	T3B*	T3C	—	—	—	—	T5	T5	T3	75
DMVM70	70	MH	65	T3A*	T3A	—	—	—	—	T5	T5	T3	85
DMVM100	100	MH	40	T3*	T3A	—	—	—	—	T5	T5	T3	60
DMVM100	100	MH	55	T3*	T3A	—	—	—	—	T5	T5	T3	75
DMVM100	100	MH	65	T2D*	T2D	—	—	—	—	T4	T4	T3	85
DMVM175	175	MH	40	T2B*	T2	EFG	T3C	T3C	T2A	T4	T4	T3	85
DMVM175	175	MH	55	T2A*	T2	EFG	T4	—	—	T4	T4	T3	85
DMVM175	175	MH	65	T2A*	T2	—	—	—	—	T3	T3	T3	90
DMVM200	200	MH	40	T2	—	—	—	—	—	T4	T4	T3	75
DMVM200	200	MH	55	T1 (325)	—	—	—	—	—	T3	T3	T3	90
DMVM250	250	MH	40	T2	—	—	—	—	—	T4	T4	T3	75
DMVM250	250	MH	55	T1 (325)	—	—	—	—	—	T3	T3	T3	90
DMVF26	2/13 (26)	CF	40	T3A	—	EFG	T6	T6	—	T6	T6	T3	60
DMVF39	3/13 (39)	CF	40	T3A	—	EFG	T6	T6	—	T6	T6	T3	60
DMVF52	2/26 (52)	CF	40	T3	—	EFG	T6	—	—	T6	T6	T3	60
DMVF64	2/32 (64)	CF	40	T3	—	EFG	T6	—	—	T6	T6	T3	60
DMVIG85	85	Induction	40	T3	—	—	—	—	—	T6	T6	—	60
DMVIG165	165	Induction	40	T3	—	—	T2D	—	T2D	T5	—	—	75

The Class I, Division 2 T-codes apply to luminaires without the restricted breathing (S826) or factory sealed (S865) options. These luminaires are listed to UL 844. UL 844 specifies how the temperatures are measured.

The Class I, Zone 2 T-codes are for luminaires that are additionally listed to UL 60079-15 that specify a different method for measuring temperatures. Since NEC® 501.1 states that equipment "...for use in Class I, Zone 0, 1 or 2 locations shall be permitted in Class I, Division 2 locations..." then these luminaires are suitable for Class I, Division 2 but with lower temperature ratings. They also have the advantage of meeting the more rigorous mechanical tests of UL 844.

* All DMVM 175W and below MH luminaires provided with Catalog number G303-S808 have a T2A T-code.

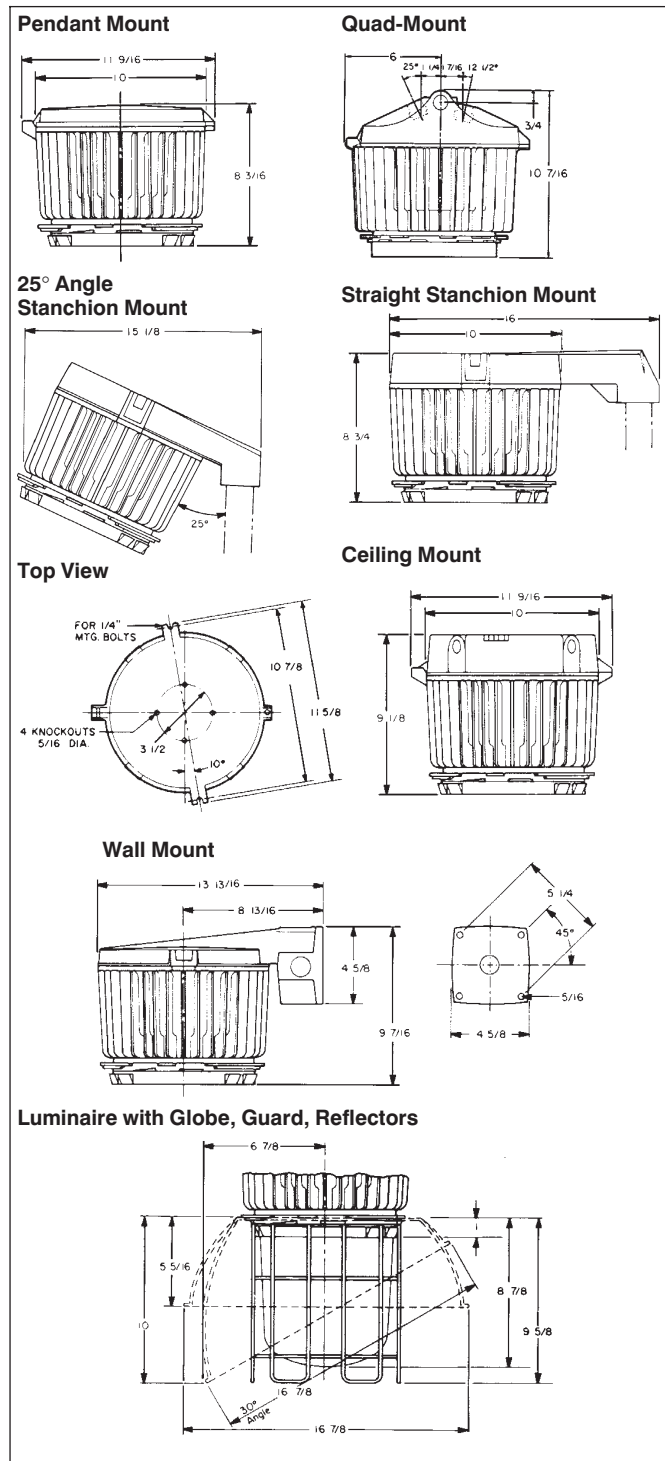
** For use with refractor only when this table indicates by means of a T-code that the refractor is suitable for use with Class I, Division 2 luminaires.

50-250W DMV Series

Champ® H.I.D. Luminaires Dimensions and Weights

3L

DMV Dimensions



Net Luminaire Weights (lbs.)

Luminaire Series	Lamp Watts	Luminaire with Globe, Guard (lbs.)	Lamp Watts	Luminaire with Globe, Guard (lbs.)
DMVS	50	23	70	23 1/16
	100	24 1/16	150	26 1/8
DMVC	100	21 1/16	175	22 1/4
	250	24		
DMVM	70	21	100	21 1/16
	175	22 1/4	250	24

Add for mounting modules (lbs.):

Pendant	1 1/4	Flexible Pendant	1 1/2
Ceiling	2 3/4	Wall	4 1/2
Quad Mount	3 1/2	Angle Stanchion	3 1/2
Straight Stanchion	4 1/2		

Add for reflectors (lbs.):

Dome	1 1/4	30° Angle	1 3/4
------	-------	-----------	-------

Deduct: 1 lb. for luminaire without P33 Guard.

Add: 5 1/2 lbs. for luminaire with GR305 refractor.

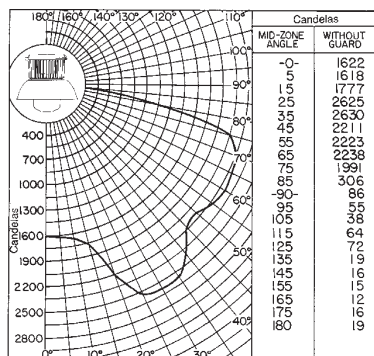
Lamp: 150W/E-23-1/2 clear high pressure sodium (HPS)

Total bare lamp lumens: 16000

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

NOTE: All data provided is for high pressure sodium luminaires with 150W/E-23½ clear lamps. Use conversion factors (multipliers) shown below for other clear lamp types and wattages. Consult Cooper Crouse-Hinds for additional photometric data on any *Champ* series luminaires.

Luminaire with Globe and Dome Reflector



Multipliers: (for use with candela curves only).

Luminaire Series	Lamp Watts	Conversion Factor
DMVS	50	0.25
	70	0.40
	100	0.59

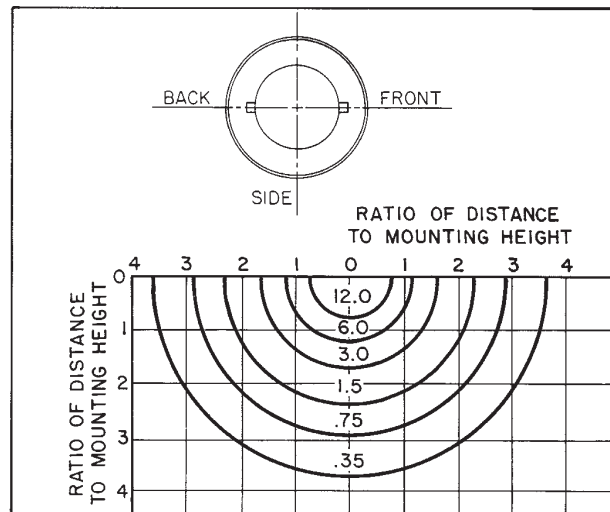
Luminaire spacing ratio: 1.90

Coefficient of Utilization

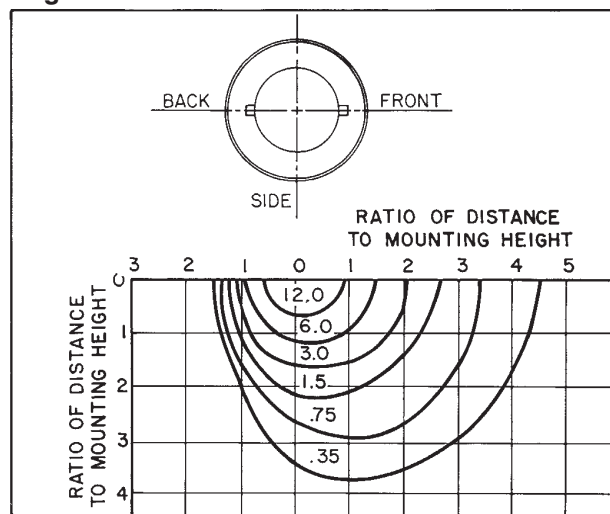
Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.759	.643	.551	.476	.418
	30	.719	.582	.480	.400	.340
	10	.683	.530	.424	.342	.283
70	50	.740	.627	.538	.465	.406
	30	.703	.570	.471	.394	.334
	10	.669	.523	.418	.338	.280
50	50	.703	.595	.512	.442	.388
	30	.672	.548	.455	.381	.324
	10	.645	.506	.408	.332	.276
30	50	.669	.567	.488	.422	.370
	30	.646	.528	.439	.368	.314
	10	.622	.492	.399	.325	.270
10	50	.640	.541	.466	.403	.354
	30	.619	.508	.424	.356	.305
	10	.600	.479	.389	.318	.265
0	0	.582	.459	.370	.299	.247
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.371	.330	.294	.267	.231
	30	.296	.257	.224	.198	.164
	10	.243	.208	.174	.151	.121
70	50	.362	.323	.288	.262	.226
	30	.291	.252	.221	.195	.164
	10	.238	.204	.173	.151	.121
50	50	.345	.309	.275	.250	.218
	30	.283	.244	.215	.190	.159
	10	.235	.201	.170	.148	.119
30	50	.331	.294	.265	.240	.209
	30	.275	.239	.208	.184	.154
	10	.231	.196	.168	.146	.116
10	50	.317	.284	.253	.231	.201
	30	.266	.233	.203	.180	.150
	10	.227	.193	.165	.143	.114
0	0	.210	.177	.149	.128	.100

Isofootcandle Chart: Luminaire with Globe and Dome Reflector



Isofootcandle Chart: Luminaire with Globe and 30° Angle Reflector



Isofootcandle charts show illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

Height (Ft.)	Factor	Height (Ft.)	Factor
8	1.56	16	.391
12	.694	20	.250
14	.510		

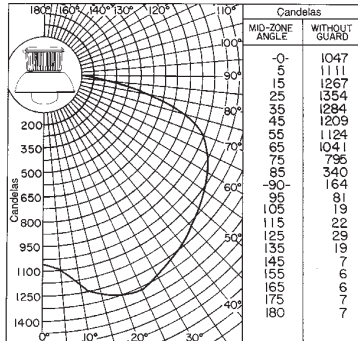
Champ® H.I.D. Luminaires

Lamp: 175W/E-28 coated mercury vapor (MV)
Total bare lamp lumens: 8600

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

NOTE: All data provided is for mercury vapor luminaires with 175W/E-28 diffuse lamps. Use conversion factors (multipliers) shown below for other diffuse lamp types and wattages. Consult Cooper Crouse-Hinds for additional photometric data on any *Champ* series luminaire.

Luminaire with Globe and Dome Reflector



Multipliers: (for use with candela curves only).

Luminaire Series	Lamp Watts	Conversion Factor
DMVC	100	0.49
	250	1.41
DMVM	175	1.63
	250	2.38

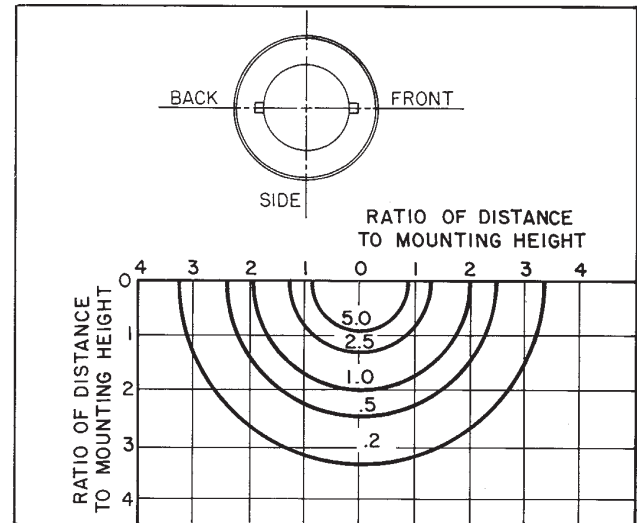
Luminaire spacing ratio: 1.7

Coefficient of Utilization

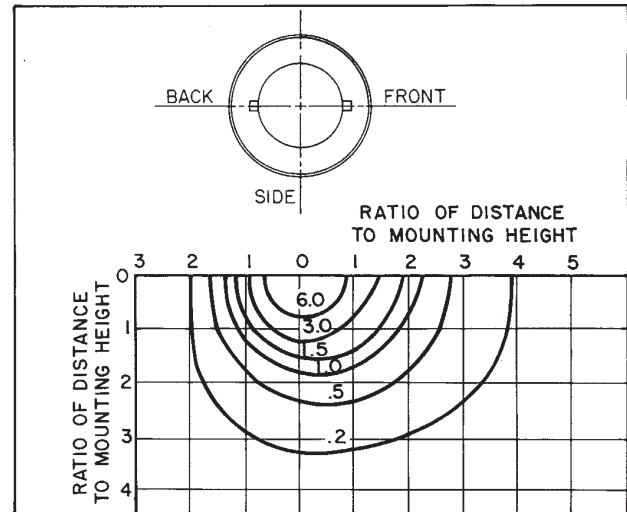
Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.723	.619	.536	.467	.412
	30	.684	.561	.470	.396	.340
	10	.649	.512	.417	.342	.286
70	50	.705	.604	.524	.456	.401
	30	.668	.549	.461	.390	.334
	10	.635	.505	.412	.338	.283
50	50	.668	.572	.498	.434	.384
	30	.638	.528	.445	.377	.324
	10	.611	.488	.401	.331	.279
30	50	.635	.545	.474	.414	.366
	30	.611	.508	.429	.365	.314
	10	.588	.474	.391	.324	.273
10	50	.606	.519	.453	.395	.350
	30	.585	.488	.414	.352	.305
	10	.566	.460	.381	.317	.268
0	0	.549	.442	.363	.299	.251
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.368	.329	.294	.269	.234
	30	.298	.261	.229	.204	.172
	10	.248	.215	.182	.160	.131
70	50	.359	.322	.289	.263	.229
	30	.293	.256	.226	.201	.171
	10	.244	.211	.181	.159	.131
50	50	.343	.308	.276	.252	.221
	30	.284	.248	.220	.196	.166
	10	.240	.207	.178	.157	.128
30	50	.329	.294	.266	.243	.212
	30	.276	.243	.213	.190	.162
	10	.236	.203	.176	.154	.126
10	50	.315	.284	.255	.233	.205
	30	.268	.236	.208	.186	.157
	10	.231	.200	.173	.151	.123
0	0	.216	.184	.158	.138	.110

Isofootcandle Chart: Luminaire with Globe and Dome Reflector



Isofootcandle Chart: Luminaire with Globe and 30° Angle Reflector



Isofootcandle charts show illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

Height (Ft.)	Factor	Height (Ft.)	Factor
8	1.56	16	.391
12	.694	20	.250
14	.510		

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (with Glass Refractor)
- Marine (with Globe or Glass Refractor) & Wet Locations
- 3, 3R, 4, 4X; IP66

Application:

VMV high wattage series *Champ* luminaires are used:

- in manufacturing plants, refineries, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, and other heavy industrial applications
- in applications involving medium and high mounting heights
- in applications where energy efficient, high lumen output is required
- in areas in which ignitable concentrations of flammable gases or vapors will be present only due to abnormal, unusual, or accidental conditions
- in marine applications where water spray and corrosive atmospheres are considerations
- in elevated ambient temperatures often found in industrial applications
- in installations where moisture, dirt, dust, vibration, corrosion and rough usage are problems
- wherever the damaging effects of water, wind, snow, sleet, hot sun, or any combination of these elements, are problems

Features:

- Cast copper-free aluminum construction (less than 0.4 of 1% copper) and epoxy powder finish provide excellent resistance to corrosion
- Six mounting arrangements to suit any lighting layout – pendant, ceiling, wall bracket, angle stanchion, straight stanchion and quad-mount.
- Wide range of light sources and wattages to meet specifiers needs: 200, 250, 400 watt high pressure sodium (HPS); 250 and 400 watt mercury vapor (MV); 250 and 400 watt metal halide (MH)
- Hinged ballast housing for ease of installation and maintenance
- Wide choice of photometric distributions. Glass globes, glass refractors, and reflector/lens are available
- All luminaires designed to perform in a 40°C ambient temperature. Selected luminaires are suitable for ambient temperatures up to 65°C.
- Superior gasketing seals between the mounting module, housing, and optical assembly for optimum performance in wet and corrosive environments.
- Hubs with integral conduit stop and bushing to help prevent damage to field wiring during installation
- Low ambient capability to (-40°C)
- Dome and 30° angle reflectors made of bright white *Krydon*® material and etched Alzak® high bay reflectors provide superior reflectivity
- Grounding wire for safety
- High power factor ballasts (Min. P. F. 90%) are available in a variety of voltages to meet local area requirements.
- Mogul base lamp socket

Standard Materials:

- Ballast housings and mountings – copper-free aluminum (less than 0.4 of 1%)
- Exterior hardware and guards – stainless steel
- Reflectors (dome and angle) – *Krydon* fiberglass-reinforced polyester material
- Globes – heat and impact resistant internally fluted glass
- Refractors – glass
- Reflector lens – spun Alzak aluminum, tempered glass, stainless steel door frame

Standard Finishes:

- Copper-free aluminum – epoxy powder coat
- Alzak aluminum – natural
- Stainless steel – natural
- *Krydon* material – high reflectance white

Certifications and Compliances:

- NEC and CEC:
 - Class I, Division 2, Groups A, B, C, D
 - with Glass Refractor - Class II, Class III & Simultaneous Presence (Class I, Division 2 and Class II)
 - Class 1 Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards:
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15

Options:

The following special options are available from the factory by adding suffix to luminaire Cat. No.

- | Description | Suffix to be Added to Cat. No. |
|--|--------------------------------|
| • Restricted Breathing Construction | .. S826† |
| - Class I Division 2 & Zone 2 Suitability | |
| Cooler Operating Temperatures (T-Numbers) | |
| • Certified for IEC Zone 2 | S826TB‡ |
| - Furnished with terminal block crimp terminals and dedicated voltage ballasts (no MT, DT, or TT) | |
| • Fused – to protect ballast and capacitors against abnormal line conditions | S658†* |
| • Quartz auxiliary lighting – comes to full brightness immediately and remains lit until the HID lamp attains 60-70% of full illumination. For <i>non-hazardous</i> locations only | QTZ |
| (NOTE: Quartz lamp not included use 100W single ended lamp – Q100DC, Q100CL/DC, or 100Q/CL/DC). Consult factory for top-hat limitations. | |
| • Ballast-gard™ starter cutout switch – prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life. Available for use with 200-400W HPS only | BG |
| • Factory assembled with H.I.D. lamps installed for additional labor savings. | FA |
| • Top hat with stainless steel threaded insert to attach ballast housing. | S806 |



Pendant mount with globe and guard



Ceiling mount with etched Alzak reflector and tempered glass lens



Ceiling mount with glass refractor

Electrical Ratings:

- 120 to 600 volts and multi-tap*
- 200, 250, 400W HPS; 250, 400W MV and MH

Accessories:

- See pages 775 to 776 for complete listing.

*Alzak is a registered trademark of ALCOA.

† Not for use in Canada.

‡ Suffix S826 and S826TB cannot be used with GRD4 Reflector/Lens

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

200-400W High Pressure Sodium

VMV High Wattage Series Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (with Glass Refractor)
- Marine (with Globe or Glass Refractor) & Wet Locations
- 3, 3R, 4, 4X; IP56 to IP66

3L



See notes 1 (to specify voltage) and 2. For guards and other optics see VMV Luminaires - Ordering by Components section.

BASIC CATALOG NUMBER

	Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard	With GR305 Glass Refractor	With GRD4 Reflector/Lens²
	Pendant Mount (Rigid or Flexible)	¾	200	VMVS2A200GP	VMVS2A200GR305	VMVS2A200GRD4
		1		VMVS3A200GP	VMVS3A200GR305	VMVS3A200GRD4
		¾	250	VMVS2A250GP✓	VMVS2A250GR305✓	VMVS2A250GRD4✓
		1		VMVS3A250GP✓	VMVS3A250GR305✓	VMVS3A250GRD4✓
		¾	400	VMVS2A400GP✓	VMVS2A400GR305✓	VMVS2A400GRD4✓
		1		VMVS3A400GP✓	VMVS3A400GR305✓	VMVS3A400GRD4✓
	Ceiling Mount Thru-Feed	¾	200	VMVS2C200GP	VMVS2C200GR305	VMVS2C200GRD4
		1		VMVS3C200GP	VMVS3C200GR305	VMVS3C200GRD4
		¾	250	VMVS2C250GP✓	VMVS2C250GR305✓	VMVS2C250GRD4✓
		1		VMVS3C250GP✓	VMVS3C250GR305✓	VMVS3C250GRD4✓
		¾	400	VMVS2C400GP✓	VMVS2C400GR305✓	VMVS2C400GRD4✓
		1		VMVS3C400GP✓	VMVS3C400GR305✓	VMVS3C400GRD4✓
	Wall Mount Thru-Feed	¾	200	VMVS2TW200GP	VMVS2TW200GR305	
		1		VMVS3TW200GP	VMVS3TW200GR305	
		¾	250	VMVS2TW250GP✓	VMVS2TW250GR305✓	
		1		VMVS3TW250GP✓	VMVS3TW250GR305✓	
		¾	400	VMVS2TW400GP✓	VMVS2TW400GR305✓	
		1		VMVS3TW400GP✓	VMVS3TW400GR305✓	
	Quad-Mount	¾	200	VMVS25Q200GP	VMVS25Q200GR305	VMVS25Q200GRD4
	Pendant, Adjustable	¾	250	VMVS25Q250GP	VMVS25Q250GR305	VMVS25Q250GRD4
	Thru-Feed, 25° Angle, 12½° Angle	¾	400	VMVS25Q400GP	VMVS25Q400GR305	VMVS25Q400GRD4
	Stanchion Mount 25° Angle	1½	200	VMVSJ200GP	VMVSJ200GR305	VMVSJ200GRD4
		1½	250	VMVSJ250GP✓	VMVSJ250GR305✓	VMVSJ250GRD4✓
		1½	400	VMVSJ400GP✓	VMVSJ400GR305✓	VMVSJ400GRD4✓
	Stanchion Mount Straight	1½	200	VMVSP200GP	VMVSP200GR305	
		1½	250	VMVSP250GP✓	VMVSP250GR305✓	
		1½	400	VMVSP400GP✓	VMVSP400GR305✓	

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz				CEC/CSA (cUL)			
	Multi Tap /MT	120V /120	480V /480		Tri Tap /TT	120V /120		
Voltage Suffix	Optional Voltage Ballasts - 50 or 60Hz				EXPORT			
	CEC/CSA (cUL) - CWI Isolated Ballasts							
	208V CWI /208CWI	240V CWI /240CWI	480V CWI /480CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. Options - Add the Required Options Suffixes from page 754, in Alpha-numeric Order.
✓ - available with Lightning Service™ delivery. See Section G for details

3L

250-400W Pulse Start Metal Halide

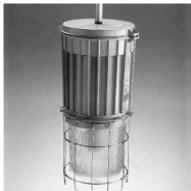
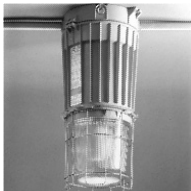
VMV High Wattage Series
Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (with Glass Refractor)
- Marine (with Globe or Glass Refractor) & Wet Locations
- 3, 3R, 4, 4X; IP56 to IP66

See Note 1 (to specify voltage) and 2. For guards and other optics, see VMV luminaires - ordering by components section

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard	With GR305 Glass Refractor	With GRD4 Reflector/Lens
	Pendant Mount (Rigid or Flexible)	3/4	250	VMVM2A250GR305-S828	VMVM2A250GRD4-S828
		1	250	VMVM3A250GR305-S828	VMVM3A250GRD4-S828
		3/4	320	VMVM2A320GR305-S828	VMVM2A320GRD4-S828
		1	320	VMVM3A320GR305-S828	VMVM3A320GRD4-S828
		3/4	400	VMVM2A400GR305-S828	VMVM2A400GRD4-S828
		1	400	VMVM3A400GR305-S828	VMVM3A400GRD4-S828
	Ceiling Mount Thru-Feed	3/4	250	VMVM2C250GP-S828	VMVM2C250GRD4-S828
		1	250	VMVM3C250GP-S828	VMVM3C250GRD4-S828
		3/4	320	VMVM2C320GR305-S828	VMVM2C320GRD4-S828
		1	320	VMVM3C320GR305-S828	VMVM3C320GRD4-S828
		3/4	400	VMVM2C400GR305-S828	VMVM2C400GRD4-S828
		1	400	VMVM3C400GR305-S828	VMVM3C400GRD4-S828
	Wall Mount Thru-Feed	3/4	250	VMVM2C250GP-S828	VMVM2C250GRD4-S828
		1	250	VMVM3C250GP-S828	VMVM3C250GRD4-S828
		3/4	320	VMVM2C320GR305-S828	VMVM2C320GRD4-S828
		1	320	VMVM3C320GR305-S828	VMVM3C320GRD4-S828
		3/4	400	VMVM2C400GR305-S828	VMVM2C400GRD4-S828
		1	400	VMVM3C400GR305-S828	VMVM3C400GRD4-S828
	Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle	3/4	250	VMVM25Q250GP-S828	VMVM25Q250GRD4-S828
		3/4	320	VMVM25Q320GR305-S828	VMVM25Q320GRD4-S828
		3/4	400	VMVM25Q400GR305-S828	VMVM25Q400GRD4-S828
	Stanchion Mount 25° Angle	1½	250	VMVMJ250GP-S828	VMVMJ250GRD4-S828
		1½	320	VMVMJ320GR305-S828	VMVMJ320GRD4-S828
		1½	400	VMVMJ400GR305-S828	VMVMJ400GRD4-S828
	Stanchion Mount Straight	1½	250	VMVMP250GP-S828	VMVMP250GRD4-S828
		1½	320	VMVMP320GR305-S828	VMVMP320GRD4-S828
		1½	400	VMVMP400GR305-S828	VMVMP400GRD4-S828

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz			
	Multi Tap /MT	120V /120	480V /480	CEC/CSA (cUL)
				Tri Tap /TT
				120V /120
Voltage Suffix	Optional Voltage Ballasts - 50 or 60Hz			
	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. Options - Add the Required Options Suffixes from page 754, In Alpha-numeric Order.

250-400W Metal Halide

VMV High Wattage Series Champ® H.I.D. Luminaires

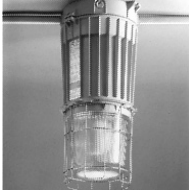
- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (with Glass Refractor)
- Marine (with Globe or Glass Refractor) & Wet Locations
- 3, 3R, 4, 4X; IP56 to IP66

3L

See Note 1 (to specify voltage) and 2. For guards and other optics, see VMV luminaires - ordering by components section

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard	With GR305 Glass Refractor	With GRD4 Reflector/Lens
 Pendant Mount (Rigid or Flexible)	3/4	250	VMVM2A250GP	VMVM2A250GR305	VMVM2A250GRD4
	1		VMVM3A250GP	VMVM3A250GR305	VMVM3A250GRD4
	3/4	400	N/A	VMVM2A400GR305	VMVM2A400GRD4
	1		N/A	VMVM3A400GR305	VMVM3A400GRD4
 Ceiling Mount Thru-Feed	3/4	250	VMVM2C250GP	VMVM2C250GR305	VMVM2C250GRD4
	1		VMVM3C250GP	VMVM3C250GR305	VMVM3C250GRD4
	3/4	400	N/A	VMVM2C400GR305	VMVM2C400GRD4
	1		N/A	VMVM3C400GR305	VMVM3C400GRD4
 Wall Mount Thru-Feed	3/4	250	VMVM2TW250GP	VMVM2TW250GR305	
	1		VMVM3TW250GP	VMVM3TW250GR305	
	3/4	400	N/A	VMVM2TW400GR305	
	1		N/A	VMVM3TW400GR305	
 Quad-Mount Pendant, Adjustable Thru-Feed, 25° Angle, 12 1/2° Angle	3/4	250	VMVM25Q250GP	VMVM25Q250GR305	VMVM25Q250GRD4
	3/4	400	N/A	VMVM25Q400GR305	VMVM25Q400GRD4
 Stanchion Mount 25° Angle	1 1/2	250	VMVMJ250GP	VMVMJ250GR305	VMVMJ250GRD4
	1 1/2	400	N/A	VMVMJ400GR305	VMVMJ400GRD4
 Stanchion Mount Straight	1 1/2	250	VMVMP250GP	VMVMP250GR305	
	1 1/2	400	N/A	VMVMP400GR305	

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz				CEC/CSA (cUL)			
	Multi Tap /MT	120V /120	480V /480		Tri Tap /TT	120V /120		
Voltage Suffix	Optional Voltage Ballasts - 50 or 60Hz				EXPORT			
	208V CWI /208CWI	240V CWI /240CWI	600V CWI /600CWI		220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. Options - Add the Required Options Suffixes from page 754, In Alpha-numeric Order.

3L

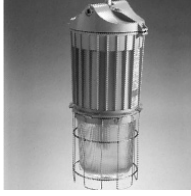
250-400W Mercury Vapor

VMV High Wattage Series
Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence (with Glass Refractor)
- Marine (with Globe or Glass Refractor) & Wet Locations
- 3, 3R, 4, 4X; IP66

See Note 1 (to specify voltage) and 2. For guards and other optics see VMV - Luminaires - Ordering by Components section.

Mounting Style	Hub Size	Lamp Watts	BASIC CATALOG NUMBER		
			With G303 Globe and P33 Guard	With GR305 Glass Refractor	With GRD4 Reflector/Lens²
	3/4	250	VMVC2A250GP	VMVC2A250GR305	VMVC2A250GRD4
	1		VMVC3A250GP	VMVC3A250GR305	VMVC3A250GRD4
	3/4	400	N/A	VMVC2A400GR305	VMVC2A400GRD4
	1		N/A	VMVC3A400GR305	VMVC3A400GRD4
	3/4	250	VMVC2C250GP	VMVC2C250GR305	VMVC2C250GRD4
	1		VMVC3C250GP	VMVC3C250GR305	VMVC3C250GRD4
	3/4	400	N/A	VMVC2C400GR305	VMVC2C400GRD4
	1		N/A	VMVC3C400GR305	VMVC3C400GRD4
	3/4	250	VMVC2TW250GP	VMVC2TW250GR305	
	1		VMVC3TW250GP	VMVC3TW250GR305	
	3/4	400	N/A	VMVC2TW400GR305	
	1		N/A	VMVC3TW400GR305	
	3/4	250	VMVC25Q250GP	VMVC25Q250GR305	VMVC25Q250GRD4
	3/4	400	N/A		
			N/A	VMVC25Q400GR305	VMVC25Q400GRD4
	1½	250	VMVCJ250GP	VMVCJ250GR305	VMVCJ250GRD4
	1½	400	N/A	VMVCJ400GR305	VMVCJ400GRD4
	1½	250	VMVCP250GP	VMVCP250GR305	
	1½	400	N/A	VMVCP400GR305	

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz			CEC/CSA (cUL)	
	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT	120V /120
Voltage Suffix	Optional Voltage Ballasts - 50 or 60Hz				
	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50	

2. Options - Add the required options suffixes from page 754, in Alpha-numeric order.

VMV High Voltage Luminaires - Ordering by Components

3L

VMV High Wattage Luminaires are available in components

A complete luminaire consists of:

- I. Champ Cover (mounting module)
- II. VMV Ballast Housing - Include voltage and required option(s)
- III. Optical & Guard Components - Globe, Reflector, Refractor, Guard

I. Champ Cover (Mounting Module):

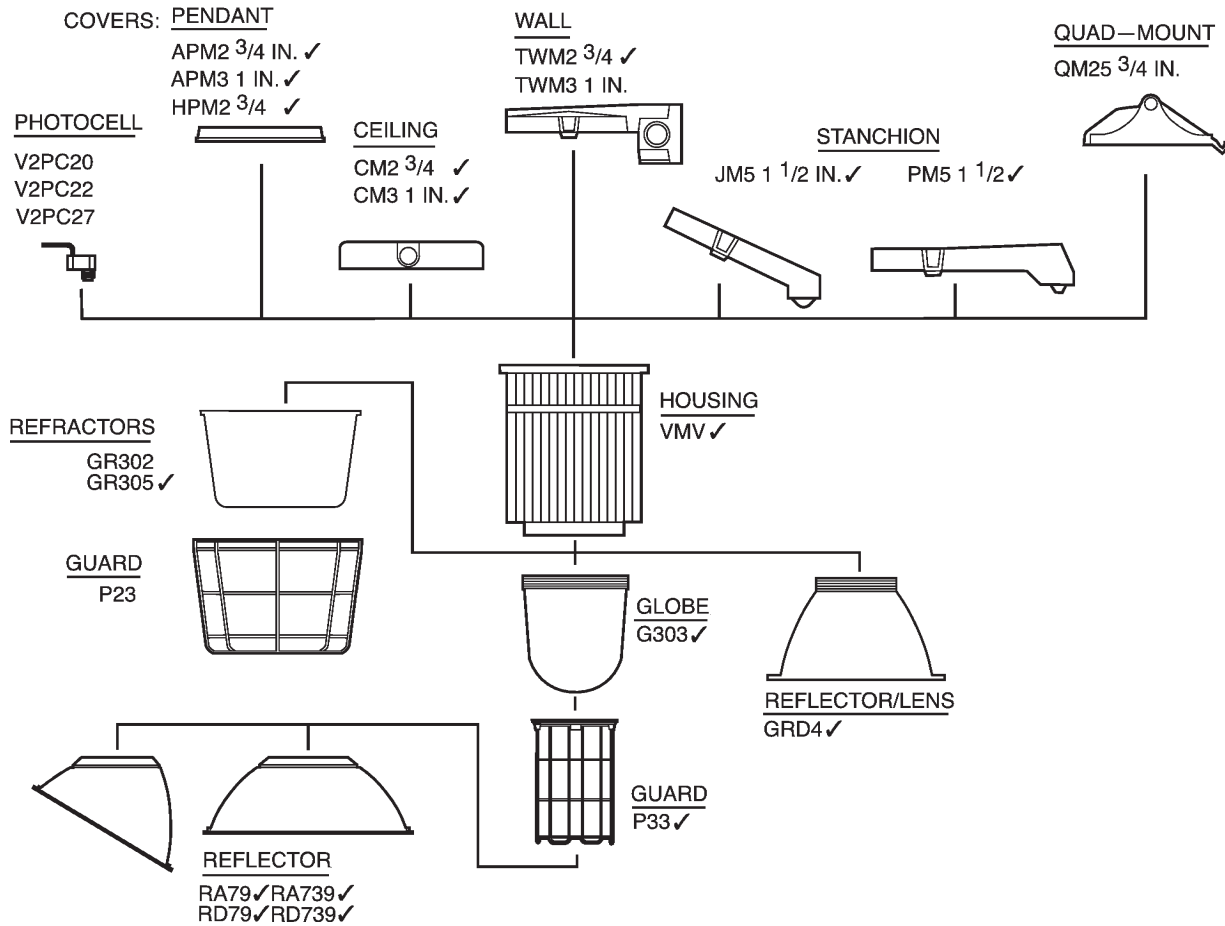
Type	Conduit	Cat. No.
Pendant	¾ 1	APM2 APM3
Ceiling	¾ 1	CM2 CM3
Wall	¾ 1	TWM2 TWM3
Stanchion - 25 Degree Angle	1½	JM5
Stanchion - Straight	1½	PM5
Quad-Mount	¾	QM25

II. Ballast Housings. Complete catalog number must have the **voltage suffix** (MT shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Catalog Number
High Pressure Sodium	200	VMVS200/MT
	250	VMVS250/MT
	400	VMVS400/MT
Metal Halide	70	LMVM070/MT
	250	VMVM250/MT
	400	VMVM400/MT
Mercury Vapor	250	VMVC250/MT
	400	VMVC400/MT

III. Globe, Refractors, Reflectors, Guards

Type	Catalog Number
Globe	G303
Globe Guard	P33
Reflector-Dome	RD739
Reflector-Angle	RA739
Refractor - Type 2	GR302
Refractor - Type 5	GR305
Refractor Guard	P23
High Bay Reflector/Lens	GRD4



✓ – available with Lightning Service™ delivery. See Section G for complete details.

200-400W VMV High Wattage Series

Champ® H.I.D. Luminaires

Temperature Performance Data

3L

Lamp Watts	Ambient Temp C	Optics	Class I (Gas/Vapors)				Class II (Dust) and Class III	Simultaneous Presence Gas and Dust Present in the Same Area			Supply Wire Temp C	
			Non Restricted Breathing		Restricted Breathing			Non Restricted Breathing		Restricted Breathing		
					Ex nR					Ex nR		
			Standard Product		Option S826(TB)			Standard Product		Option S826		
			Division 2		Zone 2 or Division 2			Standard Product		Class I, Division 2 and Class II		Class I, Zone 2 or Division 2 and Class II
		G303	X	–	X	–	–	–	–	–		
		GR305	–	X	–	X	X	X	X			
GRD4	X	–	–	–	–	–	–					

High Pressure Sodium

200	40	325 C	325 C	T3	T4	T3C	T1/T3C	T3C	75
	55	325 C	325 C	T3	T4	–	–	–	75
	65	325 C	325 C	T3	–	–	–	–	85
250	40	350 C	350 C	T3	T4	T3C	T1/T3C	T3C	75
	55	350 C	350 C	T3	T4	–	–	–	85
	65	350 C	350 C	T3	–	–	–	–	–
400	40	350 C	350 C	T3	T4	T3C	T1/T3C	T3C	85
	55	T1	T1	T3	T4	–	–	–	90

Metal Halide

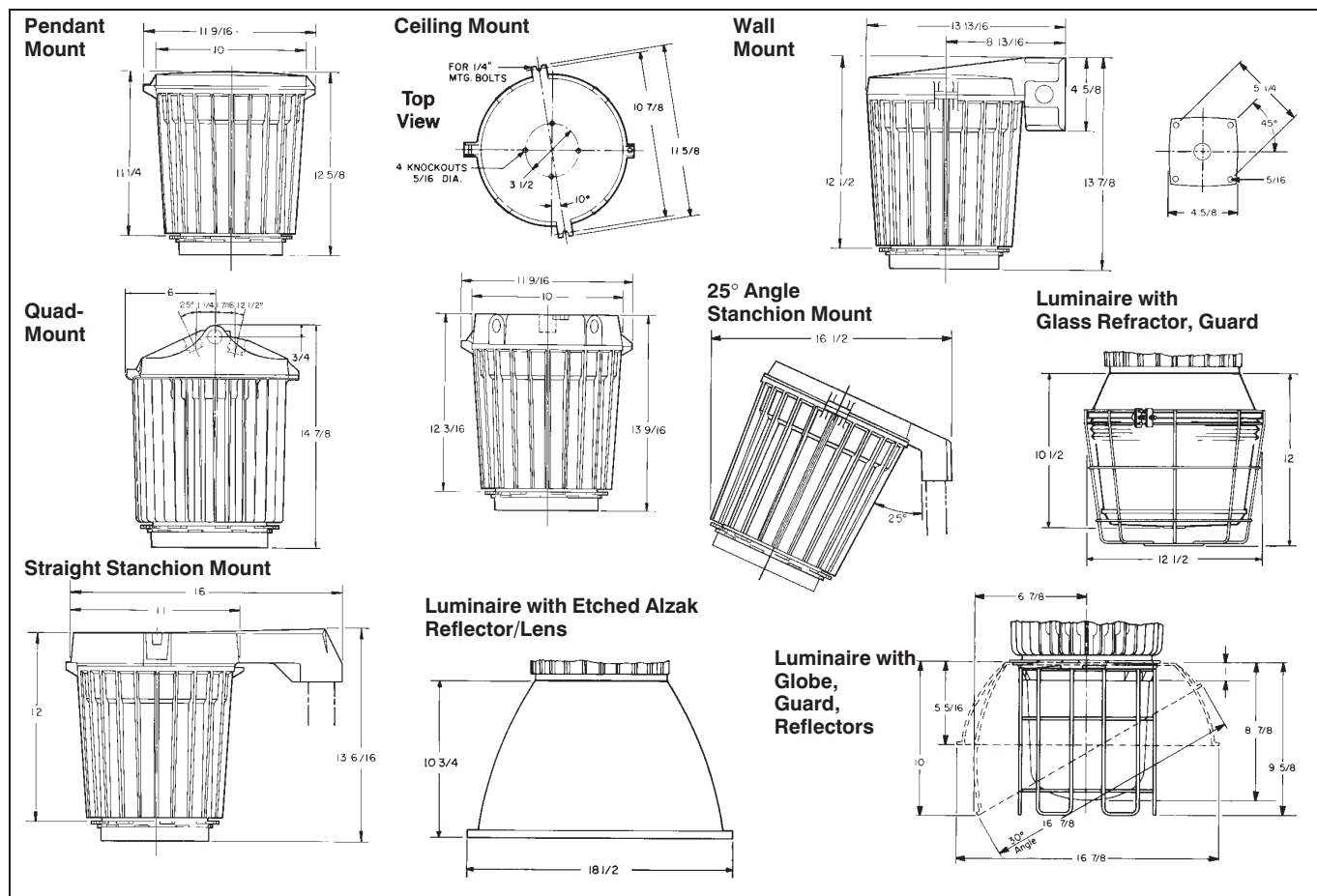
200 (S828)	40	350 C	325 C	T3	T4	T3B	350 C/T3B	T3B	85
	55	350 C	350 C	T4	T3	–	–	–	90
250 (Includes S828)	40	350 C	325 C	T3	T4	T3B	350 C/T3B	T3B	85
	55	350 C	350 C	T3	T3	–	–	–	90
320 (S828)	40	–	325 C	T1	T4	T3B	350 C/T3B	T3B	85
	55	–	–	–	–	–	–	–	–
400 (includes S828)	40	–	325 C	T1	T4	T3B	350 C/T3B	T3B	85
	55	–	–	–	–	–	–	–	–

Mercury Vapor

250	40	350 C	325 C	T3	T4	T3B	350 C/T3B	T3B	85
	55	T1	350 C	T3	T3	–	–	–	90
400	40	–	325 C	T1	T4	T3B	350 C/T3B	T3B	85
	55	–	–	–	–	–	–	–	–

3L
H.I.D. Lighting

Champ® H.I.D. Luminaires



Net Luminaire Weights (lbs.):

Luminaire Series	Lamp Watts	Luminaire with:		
		Globe, Guard	Reflector/Lens	Glass Refractor
VMVS	200	29½	30	32½
	250	29½	30	32½
	400	38½	39	41½
VMVC	250	29½	30	35½
	400		33	35½
VMVM	250	32½	33	35¾
	400		34	35½

Add for mounting modules (lbs):

Pendant	1¼	Quad-Mount	3½
Ceiling	2¾	Angle Stanchion	3½
Wall	4½	Straight Stanchion	4½

Add for reflectors (lbs):

Dome	1½	30° Angle	1½
High Bay	1¾		

Deduct: 1½ lb. for Luminaire without P33 Guard

200-400W VMV High Wattage Series

Champ® H.I.D. Luminaires

Photometric Data

3L

Lamp: 250W/E-18 high pressure sodium (HPS)

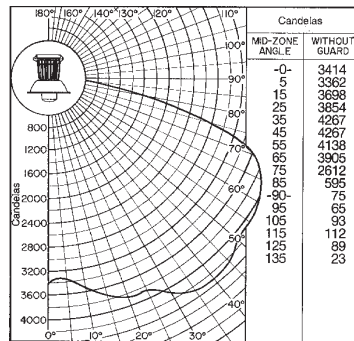
Total bare lamp lumens: 27500

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689. NOTE: All data provided is for high pressure sodium luminaires with 250W/E-18 clear lamps.

Use conversion factors (multipliers) shown below for other clear lamp types and wattages.

Consult Cooper Crouse-Hinds for additional photometric data on any *Champ* series luminaire.

Luminaire with Globe and Dome Reflector



Multipliers (for use with candela curves only)

Luminaire Series	Lamp Watts	Conv- ersion Factors
VMVS	200	0.80
	400	1.82

Luminaire spacing ratio: 2.0

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio					
Eff. Ceil. Wall		1	2	3	4	5	
80	50	.750	.640	.550	.476	.416	
	30	.711	.582	.482	.402	.341	
	10	.677	.532	.429	.346	.285	
70	50	.732	.625	.538	.465	.405	
	30	.696	.570	.474	.397	.335	
	10	.664	.526	.424	.343	.282	
50	50	.695	.594	.513	.443	.388	
	30	.666	.549	.458	.384	.326	
	10	.641	.509	.414	.336	.279	
30	50	.663	.567	.490	.423	.371	
	30	.640	.530	.443	.372	.316	
	10	.618	.496	.405	.330	.273	
10	50	.635	.542	.469	.405	.355	
	30	.615	.510	.429	.360	.307	
	10	.597	.483	.395	.323	.268	
0	0	.580	.464	.377	.305	.251	
% Reflectance		Room Cavity Ratio					
Eff. Ceil. Wall		6	7	8	9	10	
80	50	.369	.327	.290	.263	.229	
	30	.295	.255	.222	.196	.163	
	10	.243	.208	.173	.150	.121	
70	50	.360	.320	.285	.258	.224	
	30	.291	.251	.219	.193	.163	
	10	.239	.204	.172	.149	.121	
50	50	.344	.306	.272	.247	.216	
	30	.283	.243	.213	.189	.159	
	10	.236	.200	.170	.147	.119	
30	50	.330	.292	.262	.238	.207	
	30	.275	.238	.207	.183	.154	
	10	.233	.196	.167	.145	.116	
10	50	.317	.282	.251	.229	.200	
	30	.267	.233	.202	.179	.150	
	10	.229	.194	.165	.142	.114	
0	0	.212	.178	.149	.128	.101	

Temperature Performance Data with Globe & Guard

Lamp Watts	Ambient Temp °C	Class I Division 2 Globe & Guard	Supply Wire °C
High Pressure Sodium:			
200	40	325°C	75
	55	325°C	75
	65	325°C	85
250	40	350°C	75
	55	350°C	85
	65	350°C	—
400	40	T1	85
	55	T1	90
	65	—	—

Mercury Vapor:

250	40	350°C	85
	55	T1	85
	65	—	—
400	40	—	85
	55	—	—
	65	—	—

Metal Halide:

250	40	350°C	75
	55	350°C	90
	65	—	90
400	40	—	75
	55	—	—
	65	—	—

(Data not applicable with QTZ suffix)

Temperature Data With GR305 or GR302 Refractor

				Simultaneous Presence	
	Ambient	Class I	Class II	Class I, Div. 2/ Class II, Div. 1	Supply
Wattage	Temp °C	Division 2	Division 1		Wire °C
High Pressure Sodium					
200	40	350°C	T3C	T1/T3C	75
	55	T1	–	–	75
250	40	350°C	T3C	T1/T3C	75
	55	T1	–	–	85
400	40	350°C	T3C	T1/T3C	85
	55	T1	–	–	90
Mercury Vapor					
250	40	325°C	T3B	350°C/T3B	85
	55	350°C	–	–	85
400	40	325°C	T3B	350°C/T3B	85
Metal Halide					
250	40	325°C	T3B	350°C/T3B	85
	55	350°C	–	–	90
400	40	325°C	T3B	350°C/T3B	85

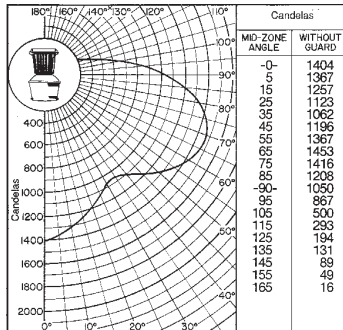
3L H.I.D. Lighting

Lamp: 250W/E-28 coated (DX) mercury vapor (MV)
Total bare lamp lumens: 13000

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

NOTE: All data provided is for mercury vapor luminaires, with 250W/E-28 diffuse lamps. Use conversion factors (multipliers) shown below for other diffuse lamp types and wattages. Consult Cooper Crouse-Hinds for additional photometric data on any *Champ* series luminaire.

Luminaire with I.E.S. Type V Glass Refractor



Multipliers: (for use with candela curves only).

Luminaire Series	Lamp Watts	Conversion Factor
VMVC	400	1.73
VMVM	250	1.58
	400	2.77

Luminaire spacing ratio: 1.30

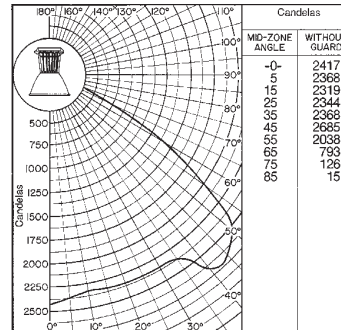
Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.711	.585	.508	.440	.384
	30	.659	.524	.430	.358	.304
	10	.614	.464	.368	.295	.244
70	50	.677	.566	.484	.418	.365
	30	.630	.500	.411	.343	.291
	10	.586	.446	.353	.285	.234
50	50	.611	.509	.435	.376	.330
	30	.573	.456	.375	.313	.266
	10	.538	.409	.326	.263	.217
30	50	.551	.457	.390	.337	.296
	30	.521	.414	.341	.285	.242
	10	.482	.375	.299	.242	.200
10	50	.496	.409	.349	.301	.265
	30	.471	.374	.308	.257	.219
	10	.449	.343	.273	.220	.182
0	0	.419	.314	.246	.195	.159

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.343	.306	.274	.251	.223
	30	.285	.231	.203	.181	.156
	10	.209	.180	.152	.134	.113
70	50	.326	.292	.262	.240	.213
	30	.253	.220	.195	.174	.151
	10	.199	.171	.147	.129	.109
50	50	.294	.264	.237	.218	.195
	30	.232	.201	.179	.160	.139
	10	.185	.158	.136	.120	.101
30	50	.265	.237	.215	.197	.177
	30	.212	.185	.162	.146	.127
	10	.171	.145	.125	.110	.092
10	50	.238	.215	.193	.178	.160
	30	.191	.168	.148	.133	.115
	10	.155	.133	.114	.101	.083
0	0	.135	.113	.096	.084	.068

Luminaire with Etched Alzak® Reflector and Tempered Glass Lens



Multipliers: (for use with candela curves only).

Luminaire Series	Lamp Watts	Conversion Factor
VMVC	400	1.73
VMVM	250	1.58
	400	2.77

Luminaire spacing ratio: 1.60

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.681	.609	.544	.483	.430
	30	.658	.573	.500	.433	.376
	10	.638	.542	.465	.394	.337
70	50	.667	.598	.536	.476	.422
	30	.646	.564	.494	.429	.372
	10	.627	.537	.461	.391	.335
50	50	.639	.576	.518	.459	.410
	30	.622	.548	.482	.419	.366
	10	.607	.523	.453	.387	.332
30	50	.615	.556	.501	.445	.397
	30	.602	.533	.471	.410	.358
	10	.589	.512	.446	.382	.328
10	50	.594	.537	.486	.432	.386
	30	.582	.518	.460	.401	.352
	10	.571	.501	.438	.377	.324
0	0	.559	.489	.426	.364	.312

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.383	.340	.302	.273	.234
	30	.329	.286	.249	.220	.182
	10	.291	.250	.212	.183	.148
70	50	.377	.335	.298	.269	.230
	30	.326	.283	.248	.218	.182
	10	.288	.247	.211	.183	.148
50	50	.365	.325	.289	.261	.225
	30	.320	.277	.243	.214	.178
	10	.286	.245	.209	.182	.147
30	50	.356	.315	.282	.254	.218
	30	.315	.274	.238	.210	.175
	10	.284	.242	.208	.180	.145
10	50	.346	.308	.274	.247	.213
	30	.309	.270	.235	.208	.173
	10	.281	.240	.206	.179	.144
0	0	.269	.228	.194	.168	.133

Alzak is a registered trademark of Alcoa.

50-175W N2MV Series

Champ® H.I.D. Luminaires Non-Metallic

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups F, G, Cl. III & Simultaneous Presence (100W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP56

3L

Application:

- N2MV series *Champ* luminaires are used:
- in areas in which ignitable concentrations of flammable gases or vapors will be present due to abnormal, unusual or accidental conditions.
 - in installations where moisture, dirt, vibration, corrosion or rough usage are concerns.
 - wherever the damaging effects of water, wind, snow, sleet, hot sun or any combination of these elements are found.
 - ideal for marine use; resists the harmful effects of salt water.
 - withstands the harshest of corrosive environments.
 - to provide low wattage spot and floodlighting.
 - for general area lighting.
 - in areas where the ambient temperature will get as low as 40°C (-40°F).
 - In manufacturing plants, refineries, chemical, petrochemical and other industrial process facilities, wastewater and sewage treatment facilities, offshore, dockside and harbor installations as well as other heavy industrial applications.

Features:

- Housing and mounting modules made of polyphenylene sulfide (PPS) for strength and maximum resistance to corrosion.
- Pendant mounting module equipped with integral hub set screws for vibration resistance.
- Hubs are provided with an integral bushing to help prevent damage to field wiring during installation and ground connection for positive bonding.
- Guard, hub inserts, stanchion elbow and hardware made of stainless steel for maximum resistance to corrosion.
- Grounding wire for safety.
- Stainless steel open bottom guard permits direct access to the globe for easy relamping.
- Hinged assembly allows the luminaire to hang free during installation to permit the use of both hands when wiring.
- One, external captive screw for ease of installation.
- Handle – hinge assembly doubles as a handle for ease of installation, especially when carrying up a ladder.



Standard Materials:

- Housing, mounting modules, component pallets – polyphenylene sulfide PPS
- Guard, hub inserts, stanchion elbow, hardware – stainless steel
- Globe – heat tempered
- Gaskets – silicone rubber

Electrical Ratings:

- 120, multi-tap/MT* (120, 208, 240 and 277), Dual-Tap/DT (120, 277 volts), Tri-Tap/TT (120, 277, 347 volts) 480 volt, 600 volt, 220/240 volt-50 Hz
- 50-150W HPS; 100-175W MV; 70-175W MH

Certifications and Compliance:

- NEC and CEC:
 - Class I, Division 2, Groups A, B, C, D
 - 100W Maximum - Class II, Class III & Simultaneous Presence (Class I, Division 2 and Class II)
 - Class 1 Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards:
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15

Options:

The following special options are available from the factory by adding suffix to luminaire Cat. No.:

- | Description | Suffix to be Added to Cat. No. |
|---|--------------------------------|
| • Restricted Breathing Construction. | S826 |
| – Class I Division 2 & Zone 2 Suitability | |
| – Cooler Operating Temperatures (T-Numbers) | |
| • Certified for IEC Zone 2 | S826TB |
| – Furnished with terminal block crimp terminals and dedicated voltage ballasts (no MT, DT, or TT) | |
| • Wall Mount Arm. For converting a ceiling-mount luminaire to a wall-mount. | N2MV-WM1 |
| • Ballast Gard™ starter cut-out switch. Prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life. Available for use with 50-150 watt – HPS | BG |
| • Factory Assembled. For a factory assembled luminaire with lamp installed . . | FA |
| • Instant Restrike. Enables a hot HPS lamp to immediately restrike after a momentary loss of arc due to voltage fluctuation or power outage. It has no effect on the warm-up period of cold lamps. Available for use with 50-150W LX HPS only. | IR |
| • Quartz Auxiliary Lighting. Comes to full brightness immediately and remains lit until the HID lamp attains 60–70% of full illumination. For <i>non-hazardous</i> locations only. (Note: QTZ lamp not included; use 100W single ended lamp – Q100DC, Q100CL/DC, or 100Q/CL/DC) Consult factory for top-hat limitations | QTZ |
| • Fused. To protect ballast and capacitor against abnormal line conditions | S658 |
| (Not for use in Canada) | |
| • Furnished with Lamps. | S714 |
| • Teflon® Coated Globe. For additional protection against breakage. For use with 50–100W HPS, 70–175W MH and 100–175W MV | S808 |

Accessories:

- See pages 775 and 776 for complete listing.

3L H.I.D. Lighting

3L

50-150W High Pressure Sodium

N2MV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups F, G, Cl. III & Simultaneous Presence (100W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP56

See notes 1 (to specify voltage) 2 and 3. For guards and other optics see N2MV Luminaires - Ordering by Components Section.

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard	With GR305 Glass Refractor
Pendant Mount	3/4	50	N2MVS2A050GP	N2MVS2A050GR305
	1		N2MVS3A050GP	N2MVS3A050GR305
	3/4	70	N2MVS2A070GP	N2MVS2A070GR305
	1		N2MVS3A070GP	N2MVS3A070GR305
	3/4	100	N2MVS2A100GP	N2MVS2A100GR305
	1		N2MVS3A100GP	N2MVS3A100GR305
Ceiling Mount Thru-Feed	3/4	150	N2MVS2A150GP	N2MVS2A150GR305
	1		N2MVS3A150GP	N2MVS3A150GR305
	3/4	50	N2MVS2C050GP	N2MVS2C050GR305
	1		N2MVS3C050GP	N2MVS3C050GR305
	3/4	70	N2MVS2C070GP	N2MVS2C070GR305
	1		N2MVS3C070GP	N2MVS3C070GR305
Stanchion Mount 25° Angle	3/4	100	N2MVS2C100GP	N2MVS2C100GR305
	1		N2MVS3C100GP	N2MVS3C100GR305
	3/4	150	N2MVS2C150GP	N2MVS2C150GR305
	1		N2MVS3C150GP	N2MVS3C150GR305
	1 1/2	50	N2MVSJ050GP	N2MVSJ050GR305
	1 1/2	70	N2MVSJ070GP	N2MVSJ070GR305
	1 1/2	100	N2MVSJ100GP	N2MVSJ100GR305
	1 1/2	150	N2MVSJ150GP	N2MVSJ150GR305

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz						CEC/CSA (cUL)	
	Multi Tap /MT	Dual Tap /DT	120V /120	480V /480	Tri Tap /TT	Dual Tap /DT	120V /120	
Optional Voltage Ballasts - 50 or 60Hz								
Voltage Suffix	CEC/CSA (cUL) - CWI Isolated Ballasts					EXPORT		
	208V CWI /208CWI	240V CWI /240CWI	480V CWI /480CWI	600V CWI /600CWI	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. 150W HPS Luminaires, 55V Lamps is standard, for 100V lamps - Add suffix "CE". 50W HPS luminaire is dual-tap only.
 3. Options - Add the required options suffixes from page 765, In Alpha-numeric order.

150-175W Pulse Start Metal Halide

N2MV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups F, G, Cl. III & Simultaneous Presence (100W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP56

3L

See notes 1 (to specify voltage) and 2. For guards and other optics see N2MV Luminaires - Ordering by Components Section.

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard	With GR305-S828 Glass Refractor
Pendant Mount	3/4	150	N2MVM2A150GP-S828	N2MVM2A150GR305-S828
	1		N2MVM3A150GP-S828	N2MVM3A150GR305-S828
	3/4	175	N2MVM2A175GP-S828	N2MVM2A175GR305-S828
	1		N2MVM3A175GP-S828	N2MVM3A175GR305-S828
Ceiling Mount Thru-Feed	3/4	150	N2MVM2C150GP-S828	N2MVM2C150GR305-S828
	1		N2MVM3C150GP-S828	N2MVM3C150GR305-S828
	3/4	175	N2MVM2C175GP-S828	N2MVM2C175GR305-S828
	1		N2MVM3C175GP-S828	N2MVM3C175GR305-S828
Stanchion Mount 25° Angle	1 1/2	150	N2MVMJ150GP-S828	N2MVMJ150GR305-S828
	1 1/2	175	N2MVMJ175GP-S828	N2MVMJ175GR305-S828

1.	Standard Voltage Ballasts - 60Hz				
	NEC/UL		CEC/CSA (cUL)		
	Voltage Suffix	Multi Tap /MT	120V /120	480V /480	Tri Tap /TT 120V /120
2.	Optional Voltage Ballasts - 50 or 60Hz				
	EXPORT				
	Voltage Suffix	220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. Options - Add the required options suffixes from page 765, In Alpha-numeric order

3L

70-175W Metal Halide

N2MV Series
Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups F, G, Cl. III & Simultaneous Presence (100W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP56

See notes 1 (to specify voltage), 2 and 3. For guards and other optics see N2MV Luminaires - Ordering by Components Section.

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard Cat. No.	With GR305 Glass Refractor Cat. No.
Pendant Mount	¾	70	N2MVM2A070GP	N2MVM2A070GR305
	1		N2MVM3A070GP	N2MVM3A070GR305
	¾	100	N2MVM2A100GP	N2MVM2A100GR305
	1		N2MVM3A100GP	N2MVM3A100GR305
	¾	175	N2MVM2A175GP	N2MVM2A175GR305
	1		N2MVM3A175GP	N2MVM3A175GR305
Ceiling Mount Thru-Feed	¾	70	N2MVM2C070GP	N2MVM2C070GR305
	1		N2MVM3C070GP	N2MVM3C070GR305
	¾	100	N2MVM2C100GP	N2MVM2C100GR305
	1		N2MVM3C100GP	N2MVM3C100GR305
	¾	175	N2MVM2C175GP	N2MVM2C175GR305
	1		N2MVM3C175GP	N2MVM3C175GR305
Stanchion Mount 25° Angle	1½	070	N2MVMJ070GP	N2MVMJ070GR305
	1½	100	N2MVMJ100GP	N2MVMJ100GR305
	1½	175	N2MVMJ175GP	N2MVMJ175GR305

100-175W Mercury Vapor

N2MV Series
Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups F, G, Cl. III & Simultaneous Presence (100W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP56

BASIC CATALOG NUMBER

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard	With GR305 Glass Refractor
Pendant Mount	¾	100	N2MVC2A100GP	N2MVC2A100GR305
	1		N2MVC3A100GP	N2MVC3A100GR305
	¾	175	N2MVC2A175GP	N2MVC2A175GR305
	1		N2MVC3A175GP	N2MVC3A175GR305
Ceiling Mount Thru-Feed	¾	100	N2MVC2C100GP	N2MVC2C100GR305
	1		N2MVC3C100GP	N2MVC3C100GR305
	¾	175	N2MVC2C175GP	N2MVC2C175GR305
	1		N2MVC3C175GP	N2MVC3C175GR305
Stanchion Mount 25° Angle	1½	100	N2MVCJ100GP	N2MVCJ100GR305
	1½	175	N2MVCJ175GP	N2MVCJ175GR305

1.

Voltage Suffix	Standard Voltage Ballasts - 60Hz				CEC/CSA (cUL)			
	Multi Tap /MT	120V /120	480V /480		Tri Tap /TT	120V /120		
Voltage Suffix	Optional Voltage Ballasts - 50 or 60Hz				EXPORT			
	208V CWI /208CWI	240V CWI /240CWI	600V CWI /600CWI		220V 60Hz /220	220V 50Hz /220 50	230V 50Hz /230 50	240V 50Hz /240 50

2. 70W Ballast not available in 480V.

3. Options - Add the required options suffixes from page 765, in Alpha-numeric order.

N2MV Luminaires - Ordering by Components

3L

N2MV luminaires are available in components

A complete luminaire consists of:

- I. N2MV Cover (mounting module)
- II. N2MV Ballast Housing - Include voltage and required option(s)
- III. Globe, Refractor, Guard, Reflector

I. N2MV Cover (Mounting Module):

Type	Conduit	Cat. No.
Pendant	3/4	N2APM2
	1	N2APM3
Ceiling	3/4	N2CM2
	1	N2CM3
Wall (Use wall bracket accessory with Ceiling Cover)	3/4	N2MV - WM1 and N2CM2
	1	N2MV - WM1 and N2CM3
Stanchion - 25 Degree Angle	1 1/2	N2JM5

II. Ballast Housings. Complete catalog number must have the **voltage suffix** (MT shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Catalog Number
High Pressure Sodium	50	N2MVS050/MT
	70	N2MVS070/MT
	100	N2MVS100/MT
	150	N2MVS150/MT LX
Metal Halide	70	N2MVM070/MT
	100	N2MVM100/MT
	175	N2MVM175/MT
Mercury Vapor	100	N2MVC100/MT
	175	N2MVC175/MT

III. Globe, Refractors, Guards and Reflectors

Type	Catalog Number
Globe	G303
Globe Teflon Coated	G303-S808
Globe Guard	P33
Reflector-Dome	RD739
Reflector-Angle	RA739
Refractor - Type 2	GR302
Refractor - Type 5	GR305
Refractor Guard	P23
Large Plastic Refractor Type 2	PGR302
Large Plastic Refractor Type 3	PGR303
Large Plastic Refractor Type 5	PGR305

3L
H.I.D. Lighting

Non-Metallic Champ® H.I.D. Luminaires

N2MV Champ Series Luminaire

A complete luminaire consists of a cover mount, a ballast housing and a globe,
with or without guard, refractor or reflector.

PHOTOCELL

V2PC20
V2PC22
V2PC27

COVERS: PENDANT

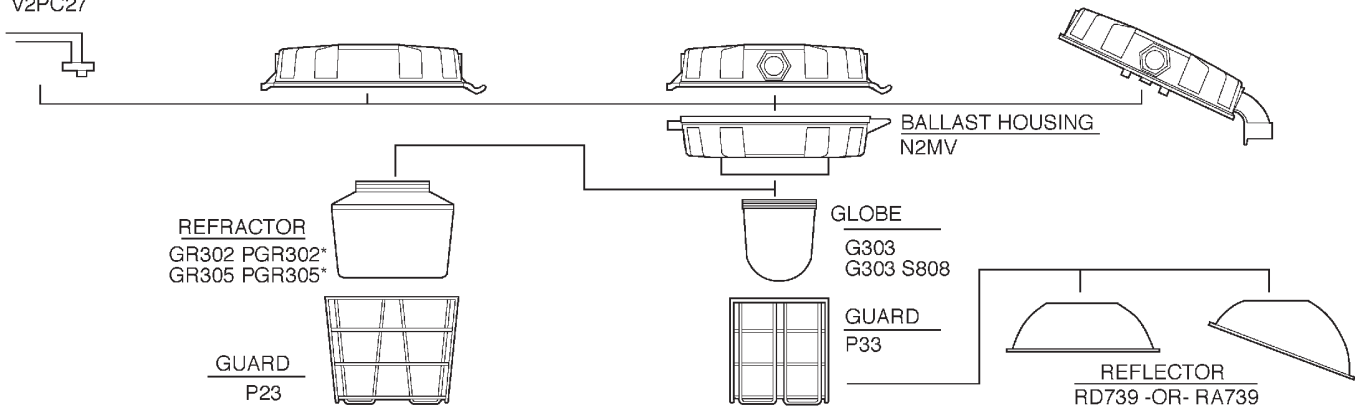
N2APM2 3/4 IN.
N2APM3 1 IN.

CEILING

N2CM2 3/4 IN.
N2CM3 1 IN.

STANCHION

N2JM5 1 1/2 IN.



* These plastic refractors are for non-hazardous areas only (50-100W max.)

Lamp Watts	Ambient Temp C	Optics	Class I (Gas/Vapors)		Class II (Dust) and Class III	Simultaneous Presence Gas and Dust Present in the Same Area		Supply Wire Temp C
			Non Restricted Breathing	Restricted Breathing		Non Restricted Breathing	Restricted Breathing	
				Ex nR			Ex nR	
			Standard Product	Option S826(TB)		Standard Product	Option S826	
			Division 2	Zone 2 or Division 2		Class I, Division 2 and Class II	Class I, Zone 2 or Division 2 and Class II	
		G303	X	X	X	X	X	
		GR305	X	X	X	X	X	

High Pressure Sodium

50	40	T3A	T5	T4A	T2C/T4A	T4A	75
	55	T3A	T5	—	—	—	85
	65	—	—	—	—	—	—
70	40	T3A	T5	T4A	T2C/T4A	T4A	75
	55	T3A	T5	—	—	—	85
	65	—	—	—	—	—	—
100	40	T2D	T5	T4A	T2C/T4A	T4A	85
	55	T2C	T4	—	—	—	100
	65	—	—	—	—	—	—
150	40	T2C	T4	—	—	—	85
	55	—	—	—	—	—	—
	65	—	—	—	—	—	—

Metal Halide

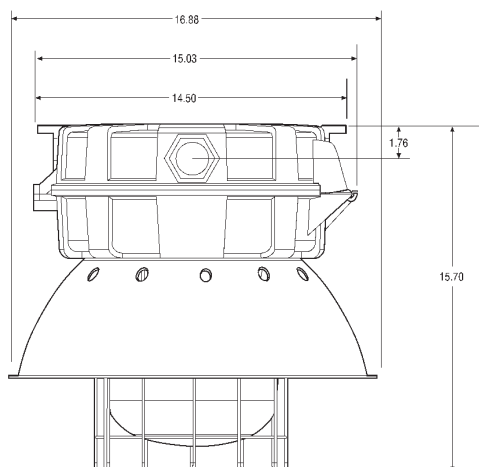
70	40	T3C	T5	T4	T2B/T4	T4	75
	55	T3B	T5	—	—	—	85
	65	—	—	—	—	—	—
100	40	T2B	T4	T4	T2B/T4	T4	85
	55	T2B	T4	—	—	—	—
	65	—	—	—	—	—	—
150 (S828)	40	T2	T3	—	—	—	—
	55	—	—	—	—	—	—
	65	—	—	—	—	—	—
175 (Includes S828)	40	T2	T3	—	—	—	—
	55	—	—	—	—	—	—
	65	—	—	—	—	—	—

Mercury Vapor

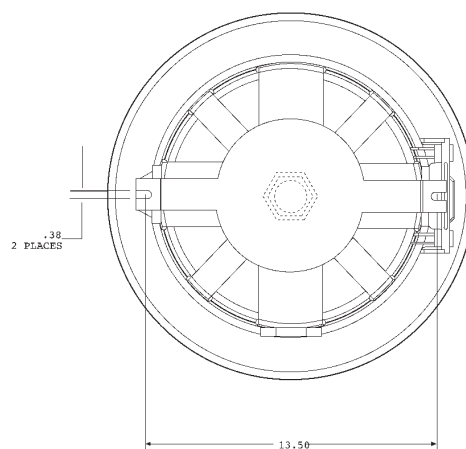
100	40	T2B	T4	T4	T2B/T4	T4	75
	55	T2B	T4	—	—	—	85
	65	—	—	—	—	—	—
175	40	T2	T3	—	—	—	85
	55	—	—	—	—	—	—
	65	—	—	—	—	—	—

N2MV Dimensions

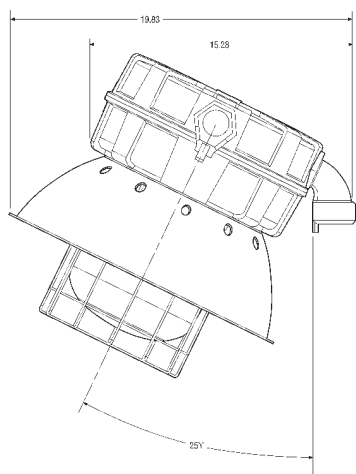
Ceiling Mount



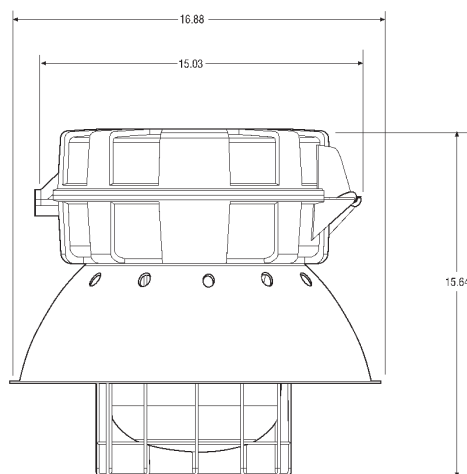
Ceiling Mount – Top View



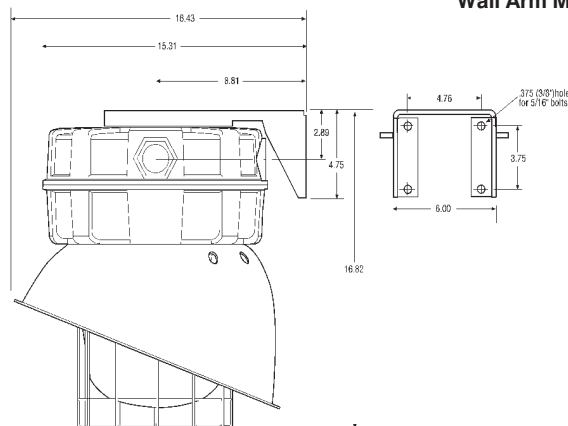
25° Angle Stanchion Mount



Pendant Mount



Wall Arm Mount



Net Luminaire Weights (lbs.)

Luminaire Series	Lamp Watts	Luminaire with Globe, Guard (lbs.)	Lamp Watts	Luminaire with Globe, Guard (lbs.)
N2MVS	50	23	70	23 1/16
	100	24 1/16	150	26 1/8
N2MVC	100	21 1/16	175	22 1/4
	250	24		
N2MVM	70	21	100	21 1/16
	175	22 1/4	250	24

Add for mounting modules (lbs.):

Pendant	1 1/4	Flexible Pendant	1 1/2
Ceiling	2 3/4	Wall	4 1/2
Quad Mount	3 1/2	Angle Stanchion	3 1/2
Straight Stanchion	4 1/2		

Add for reflectors (lbs.):

Dome	1 1/4	30° Angle	1 3/4
------	-------	-----------	-------

Deduct: 1 lb. for luminaire without P33 Guard.

Add: 5 1/2 lbs. for luminaire with GR305 refractor.

50-175W N2MV Series

Champ® H.I.D. Luminaires

Non-Metallic

Photometric Data

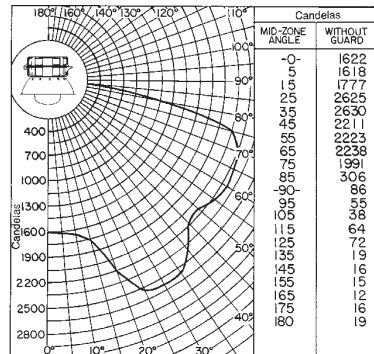
3L

Lamp: 150W/E-23-1/2 clear high pressure sodium (HPS)
Total bare lamp lumens: 16000

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

NOTE: All data provided is for high pressure sodium luminaires with 150W/E-23½ clear lamps. Use conversion factors (multipliers) shown below for other clear lamp types and wattages. Consult Cooper Crouse-Hinds for additional photometric data on any *Champ* series luminaires.

Luminaire with Globe and Dome Reflector



Multipliers: (for use with candela curves only).

Luminaire Series	Lamp Watts	Conversion Factor
N2MVS	50	0.25
	70	0.40
	100	0.59

Luminaire spacing ratio: 1.90

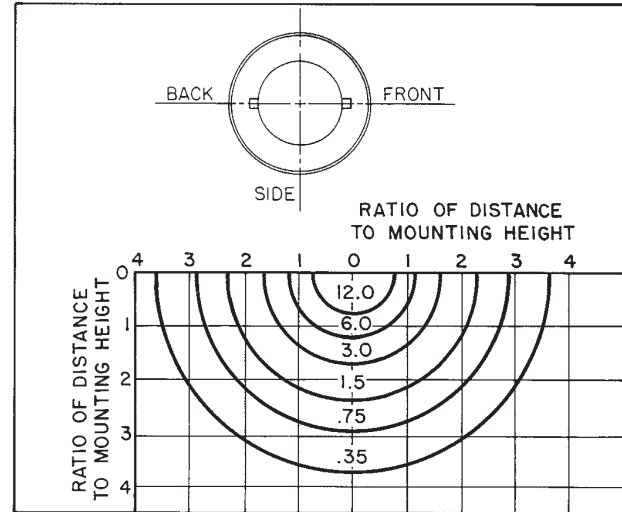
Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

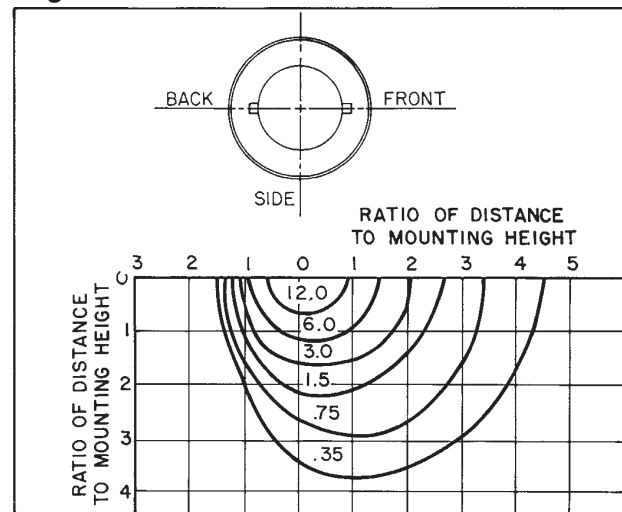
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.759	.643	.551	.476	.418
	30	.719	.582	.480	.400	.340
	10	.683	.530	.424	.342	.283
70	50	.740	.627	.538	.465	.406
	30	.703	.570	.471	.394	.334
	10	.669	.523	.418	.338	.280
50	50	.703	.595	.512	.442	.388
	30	.672	.548	.455	.381	.324
	10	.645	.506	.408	.332	.276
30	50	.669	.567	.488	.422	.370
	30	.646	.528	.439	.368	.314
	10	.622	.492	.399	.325	.270
10	50	.640	.541	.466	.403	.354
	30	.619	.508	.424	.356	.305
	10	.600	.479	.389	.318	.265
0	0	.582	.459	.370	.299	.247

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.371	.330	.294	.267	.231
	30	.296	.257	.224	.198	.164
	10	.243	.208	.174	.151	.121
70	50	.362	.323	.288	.262	.226
	30	.291	.252	.221	.195	.164
	10	.238	.204	.173	.151	.121
50	50	.345	.309	.275	.250	.218
	30	.283	.244	.215	.190	.159
	10	.235	.201	.170	.148	.119
30	50	.331	.294	.265	.240	.209
	30	.275	.239	.208	.184	.154
	10	.231	.196	.168	.146	.116
10	50	.317	.284	.253	.231	.201
	30	.266	.233	.203	.180	.150
	10	.227	.193	.165	.143	.114
0	0	.210	.177	.149	.128	.100

Isofootcandle Chart: Luminaire with Globe and Dome Reflector



Isofootcandle Chart: Luminaire with Globe and 30° Angle Reflector



Isofootcandle charts show illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

Height (Ft.)	Factor	Height (Ft.)	Factor
8	1.56	16	.391
12	.694	20	.250
14	.510		

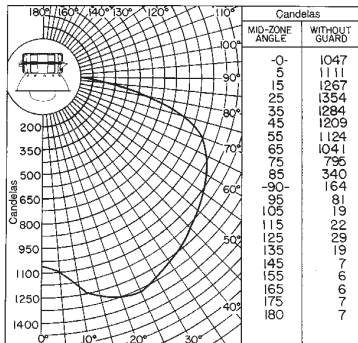
3L H.I.D. Lighting

Lamp: 175W/E-28 coated mercury vapor (MV)
Total bare lamp lumens: 8600

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

NOTE: All data provided is for mercury vapor luminaires with 175W/E-28 diffuse lamps. Use conversion factors (multipliers) shown below for other diffuse lamp types and wattages. Consult Cooper Crouse-Hinds for additional photometric data on any *Champ* series luminaire.

Luminaire with Globe and Dome Reflector



Multipliers: (for use with candela curves only).

Luminaire Series	Lamp Watts	Conversion Factor
N2MVC	100	0.49
	250	1.41
N2MVM	175	1.63
	250	2.38

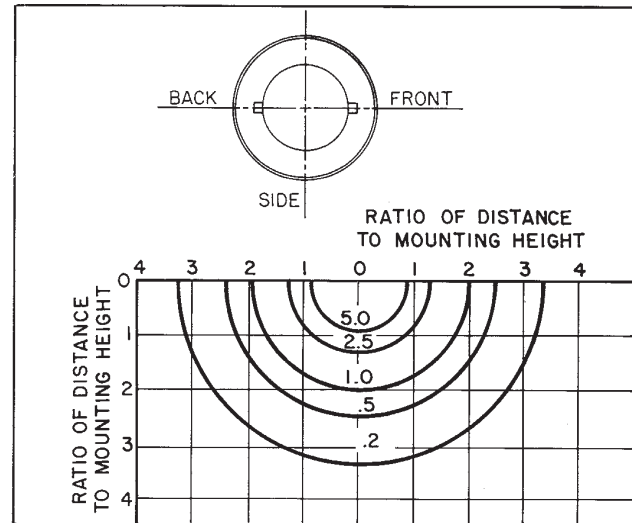
Luminaire spacing ratio: 1.7

Coefficient of Utilization

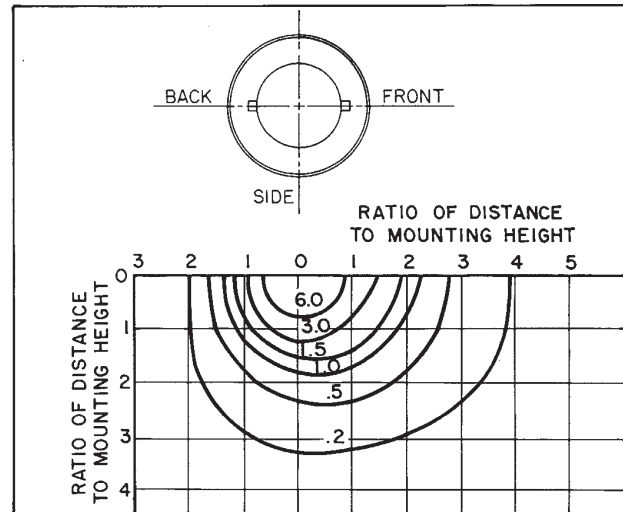
Effective Floor Cavity Reflectance 20%

% Reflectance	Room Cavity Ratio	1	2	3	4	5
Eff. Ceil. Wall						
50		.723	.619	.536	.467	.412
80	30	.684	.561	.470	.396	.340
	10	.649	.512	.417	.342	.286
70	50	.705	.604	.524	.456	.401
	30	.668	.549	.461	.390	.334
	10	.635	.505	.412	.338	.283
50	50	.668	.572	.498	.434	.384
	30	.638	.528	.445	.377	.324
	10	.611	.488	.401	.331	.279
30	50	.635	.545	.474	.414	.366
	30	.611	.508	.429	.365	.314
	10	.588	.474	.391	.324	.273
10	50	.606	.519	.453	.395	.350
	30	.585	.488	.414	.352	.305
	10	.566	.460	.381	.317	.268
0	0	.549	.442	.363	.299	.251
% Reflectance	Room Cavity Ratio	6	7	8	9	10
Eff. Ceil. Wall						
50		.368	.329	.294	.269	.234
80	30	.298	.261	.229	.204	.172
	10	.248	.215	.182	.160	.131
70	50	.359	.322	.289	.263	.229
	30	.293	.256	.226	.201	.171
	10	.244	.211	.181	.159	.131
50	50	.343	.308	.276	.252	.221
	30	.284	.248	.220	.196	.166
	10	.240	.207	.178	.157	.128
30	50	.329	.294	.266	.243	.212
	30	.276	.243	.213	.190	.162
	10	.236	.203	.176	.154	.126
10	50	.315	.284	.255	.233	.205
	30	.268	.236	.208	.186	.157
	10	.231	.200	.173	.151	.123
0	0	.216	.184	.158	.138	.110

Isofootcandle Chart: Luminaire with Globe and Dome Reflector



Isofootcandle Chart: Luminaire with Globe and 30° Angle Reflector



Isofootcandle charts show illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

Height (Ft.)	Factor	Height (Ft.)	Factor
8	1.56	16	.391
12	.694	20	.250
14	.510		

VMV, LMV, DMV, VMV High Wattage & N2MV Series



Globes



G54



G24



G303

Lamp Watts	Luminaire Series	Type	Cat. #
35-150	LMVS, LMVM	Heat/impact resistant	G54✓
50-175	VMVC, VMVM, VMVS	Heat/impact resistant	G24✓
50-250	DMVC, DMVM, DMVS	Heat/impact resistant	G303✓
200-400	VMVS	Heat/impact resistant	G303✓
250	VMVC, VMVM	Heat/impact resistant	G303✓
50-175	N2MVC, N2MVM, N2MVS	Heat/impact resistant	G303✓

Guards



P50 – use with G54 globe



P21 – use with G24 globe



P33 – use with G303 globe



P23 – use with refractors

Lamp Watts	Luminaire Series	Type	Cat. #
35-150	LMVS, LMVM	Copper-free aluminum	P50✓
50-175	VMVC, VMVM, VMVS	Copper-free aluminum	P21✓
50-250	DMVC, DMVM, DMVS	Stainless steel	P33✓
200-400	VMVS	Stainless steel	P33✓
250	VMVC, VMVM	Stainless steel	P33✓
Refractors	All	Stainless steel	P23
50-175	N2MVC, N2MVM, N2MVS	Stainless steel	P33

✓ – available with Lightning Service™ delivery.
See Section G. for complete details.

Reflectors



Dome – Krydon® material



30° Angle – Krydon material

Lamp Watts	Luminaire Series	Dome Cat. #	Angle Cat. #
35-150	LMVS, LMVM	RD636 (RD66)✓	RA636 (RA66)✓
50-175	VMVC, VMVM, VMVS	RD70✓	RA70✓
50-250	DMVC, DMVM, DMVS	RD739 (RD79)✓	RA739 (RA79)✓
200-400	VMVS	RD739 (RD79)✓	RA739 (RA79)✓
250	VMVC, VMVM	RD739 (RD79)✓	RA739 (RA79)✓
50-175	N2MV, N2MVF(B)	RD739✓	RA740



Reflector/Lens – Etched Alzak aluminum reflector/tempered glass lens

Lamp Watts	Luminaire Series	Type	Cat. #
200-400	VMVC, VMVM, VMVS	Reflector/Lens	GRD4✓
70-250	DMVS, DMVC, DMVM	Reflector/Lens	GRD4✓

Globes – Teflon Coated

Teflon coated for increased shatter protection

Lamp Watts	Luminaire Series	Cat. #
50-175	VMVC, VMVM, VMVS	G24-S808
50-175	DMVC, DMVM, DMVS	G303-S808

Alzak is a registered trademark of Alcoa.
Teflon is a registered trademark of E.I. DuPont Co.



Refractors



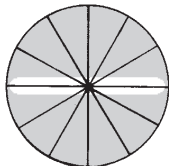
R2, R5, PR2, PR3, PR5



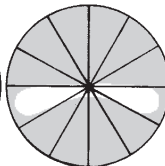
GR302, GR305

Lamp Watts	Luminaire Series	I.E.S. Type	Glass Cat. #	Plastic (100W max. non hazardous) Cat. #
50-175	VMVC,	II	R2	PR2
	VMVM,	III		PR3
	VMVS }	V	R5	PR5
200-400	VMVC,	II	GR302	
	VMVM,	V	GR305✓	
	VMVS }			
50-250	DMVC,	II	GR302	PGR302
	DMVS,	III		PGR303
	DMVM }	V	GR305✓	PGR305
50-175	N2MV }			

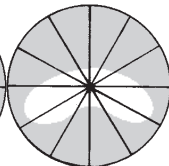
I.E.S. Distribution Curves



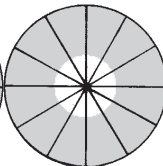
Type I



Type II



Type III



Type V

Compact Refractors



G241, G245



With optional P241 wire guard.

Lamp Watts	Luminaire Series	IES Type	Glass Cat. #
50-175	VMVC,	I	G241✓
	VMVM,	V	G245✓
	VMVS }		

Optional stainless steel wire guard

P241✓

Safety Lighting Options

Quartz Auxiliary Lamp



The quartz auxiliary lamp comes to full brightness instantly and remains lit until the H.I.D. lamp attains 60-70% of full illumination. Quartz auxiliary lamps can be used with all DMV, VMV and VMV high wattage series *Champ*® luminaires. Use for non-hazardous applications ONLY.

(NOTE: VMV luminaires (50-175W) ordered with this option must use large glass refractor optics, not compact refractors).

Quartz auxiliary lamp (100W single ended lamp – Q100CL/DC, Q100DC or 100Q/CL/DC NOT furnished)

Add suffix **QTZ** to Cat. No.

Instant Restrike

Factory installed instant restrike device will restart a hot high pressure sodium lamp (50-150W LX) after a momentary power interruption, without the typical delay for cooling.

Instant restrike for use in 50-150W "LX" HPS luminaires.

Add suffix **IR** to Cat. No.

Ballast-gard™

Ballast-gard starter cut-out switch prevents starter pulsing after a time delay of approximately two minutes if the lamp fails to start. For use in 50-400 watt HPS luminaires only. Add suffix **BG** to Cat. No.

✓ – available with Lightning Service™ delivery.
See Section G for complete details

The only UL recognized photocell for Class I, Division 2 areas eliminates the need for an explosionproof box.

When mounting in EIH enclosures for Class I, Division 1 applications (EV21H Series) seals are not required for Groups C & D.

Cooper Crouse-Hinds V2PC factory-sealed, field installed photocell offers reliable, dusk-to-dawn lighting control in Class I, Division 2 locations. The V2PC is ideal for walkways, security lighting, and any other outdoor lighting application that utilizes Champ® H.I.D. lighting luminaires.

Applications:

The V2PC is designed:

- to provide control for automatic dusk-to-dawn lighting.
- for use with LMV, DMV, VMV, VMV High Wattage, N2MV and FMV Series Champ® lighting luminaires.
- for use on 35-400 watt H.I.D., incandescent, or fluorescent lighting luminaires.
- to save energy by operating luminaires only when necessary.
- for safety by turning on outdoor luminaires in critical passageways at night.
- for walkways, parking areas, outdoor process areas, security lighting, or any outdoor lighting application in Class I, Division 2 locations and corrosive environments.
- for remote mounting in FS boxes (D2S Series).
- for mounting in EIH enclosures for Class I, Division 1 applications (EV21H Series).

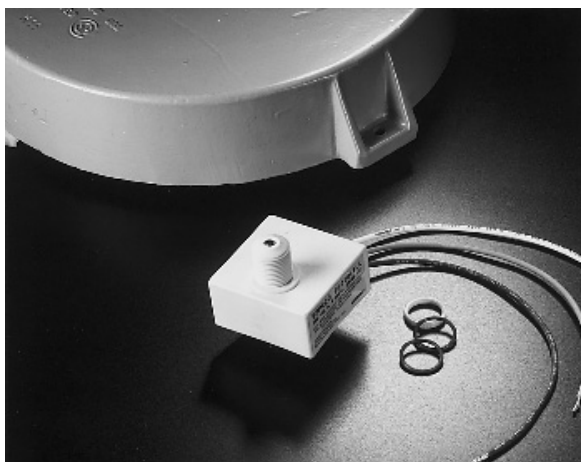
Features:

- Field-installable.
 - Solid-state design for performance and dependability.
 - Factory sealed components.
- Explosionproof enclosure not required for Class I, Division 2 locations.
- Luminaires turn on at 3 footcandles, off at 8 footcandles insuring that the luminaires are operating only when needed.
 - Built-in 10 second time delay to eliminate nuisance tripping.
 - Eight-year operating life.
 - Furnished with 6" stranded 600 volt color coded wire leads.
 - Constructed from corrosion-resistant thermoplastic polyester.
 - Available on a DS cover for use with any FS/FD box (D2S Series).
 - Available in an EIH enclosure for use in Class I, Division 1, Groups B†, C, and D locations (EV21H Series). No seals required.

Electrical Rating Ranges:

- 120, 208, 220, 240, 277 VAC
- 50/60 Hz
- 35-400 watt H.I.D., incandescent, or fluorescent
- V2PC20 – 3.3A max. current rating
- V2PC22 – 1.8A max. current rating
- V2PC27 – 1.4A max. current rating

† For Group B applications, seal within 1½" of enclosure in accordance with Section 501-5 of the National Electric Code®.



Certifications and Compliances:

V2PC and D2S

- NEC/CEC: Class I, Division 2, Groups A, B, C, D

- UL Standard: 844 – Hazardous (Classified) Locations

- CSA: C22.2 No. 55

EV21H

- NEC/CEC:

Class I, Division 1 and 2, Groups B, C, D

Class II, Division 1, Groups E, F, G

Class II, Division 2, Groups F, G

Class III

- NEMA: 3, 4, 7BCD, 9EFG

- UL Standard: 844 – Hazardous (Classified) Locations

- CSA: C22.2 No. 30, 55

Options:

To order luminaire with **photocell factory installed**:

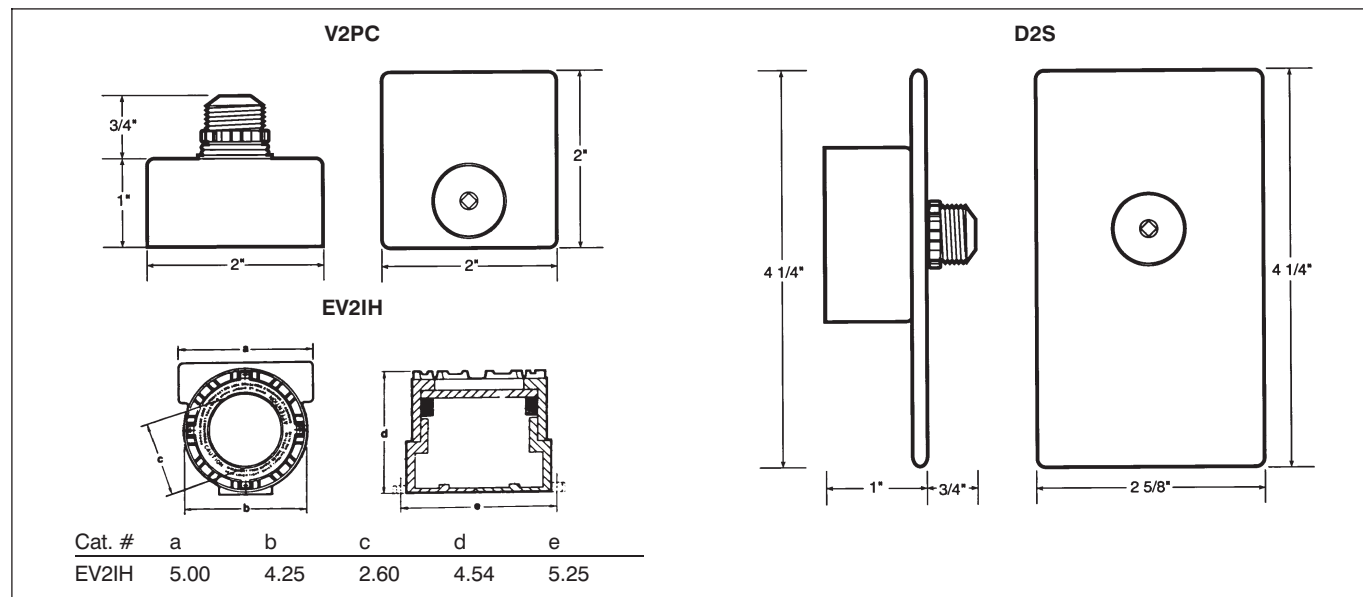
1. Specify luminaire dedicated supply voltage (not MT, DT, or TT)
2. Add photocell Cat. No. to fixture Cat. No. as follows:
V2PC20
V2PC22
V2PC27

Example: VMVSJ070GP/120-V2PC20 is a 120V 60Hz luminaire with a factory installed photocell.

Dimensions Ordering Information

- Cl. I, Div. 2, Groups A,B,C,D
- Maintains Cl.I, Div. 2
Suitability of Cooper Crouse-Hinds
Champ® Series Luminaires

Dimensions:



Ordering Information



Photocell for field installation*

Catalog #	Voltage Range
V2PC20	120V, 50/60 Hz
V2PC22	208-240V, 50/60 Hz
V2PC27	277V, 50/60 Hz

* Must be factory installed in Canada — see page 777.



Photocell in DS cover for use with FS/FD box

Catalog #	Voltage Range
D2S20	120V, 50/60 Hz
D2S22	208-240V, 50/60 Hz
D2S27	277V, 50/60 Hz

Photocell in EIH enclosure for use in Class I, Division 1, Groups B, C, and D; Class II, Division 1, Groups E, F, and G; and Class III locations

Catalog #	Voltage Range
EV2IH20	120V, 50/60 Hz
EV2IH22	208-240V, 50/60 Hz
EV2IH27	277V, 50/60 Hz



High Intensity Discharge (H.I.D.) Luminaires Hazardous

4L

Description	Page No.
Application/Selection	780
Class I Hazardous Area Lighting	
Integrally Ballasted Luminaires	
EVLP Lo-Pro™ Hazard•Gard® Series	781-791
EVM Hazard•Gard® Series	792-800
HPS, Pulse Start MH, MH, MV	
Class II Hazardous Area Lighting	
Integrally Ballasted Luminaires	
EVLP Lo-Pro™ Hazard•Gard® Series	781-791
EVM Hazard•Gard® Series	792-800
HPS, Pulse Start MH, MH, MV	

H.I.D.
4L
Fixtures

High Intensity Discharge (H.I.D.) Luminaires

Hazardous Application and Selection Quick Selector Chart

Application:

Luminaires contained in this section are for use:

- in indoor or outdoor hazardous locations
- as general area or spot lighting applications
- where longer lamp life provides desirable maintenance cost savings and return on investment through use of fewer luminaires, circuits and ancillary apparatus
- where relamping and maintenance difficulties require longer lamp life

Table 500-3(d) Identification Numbers.

Maximum Temperature		Identification Number
Deg. C	Deg. F	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

Considerations for Selection:

Environmental:

- Make sure luminaire meets NEC/CEC requirements for area in which it will be used

Lighting levels required:

- Can luminaire accept lamp of sufficient size to yield desired light level (see Lighting Selector Guide to determine the number and location of luminaires required)

NOTE: For details on luminaire selection and methods for determining number and location luminaires, see Lighting Selector Guide, pages 665 to 689.

Quick Selector Chart

Series	NEC Compliance	Electrical Characteristics		Ballast
		Watts	Volts	
EVM <i>Hazard•Gard™</i>	Cl. I, Groups B, C, D	50, 70, 100, 150, 175, 200, 250, 320, 400 (Mogul base)	120, 208, 240, 277, 347, 480, 600, MT	High power factor, constant wattage, reactor or autotransformer integral
	Cl. II, Groups E, F, G	50, 70, 100, 150, 175 (Mogul base)	120, 208, 240, 277, 347, 480, 600, MT	
Champ® Series (see Section 3L)	Cl. II, Groups E, F, G	70, 100, 150, 175 (Mogul base)	120, 208, 240, 277, 347, 480, 600, MT	High power factor, constant wattage integral
EVLP <i>Hazard•Gard™</i>	Cl. I, Groups B, C, D	70, 100, 150, 175 (Medium base) 70, 100, 150, 175, 200, 250 (Mogul base)	120, 208, 240, 277, 347, 480, MT, TT	High power factor, constant wattage, reactor or autotransformer, integral.
	Cl. II, Groups E, F, G Cl. III	70, 100 (Medium base) 70, 100, 150, 175 (Mogul base)	120, 208, 240, 277, 347, 480, MT, TT	

EVLP Low Profile Hazard•Gard® (H.I.D.) Luminaires

Medium and Mogul Base

- Cl. I, Div. 1, Groups B (GB suffix), C, D
- Cl. I, Zone 1 Groups IIB + H2
(with suffix – GB), IIB, IIA
- Cl. II, Div. 1 Groups E, F, G; Class III,
Simultaneous Presence (175W max)
- Marine & Wet
Locations
- 3,3R, 4,4X; IP66

4L

Application:

Cooper Crouse-Hinds Low Profile Hazard•Gard® luminaires are used in:

- areas where flammable or explosive vapors or gases are present
- hazardous areas, both indoors and outdoors, where long life and low maintenance costs are desired
- petroleum refineries, chemical, petrochemical and pharmaceutical plants, oil terminals, gas plants and other heavy process industry facilities
- waste treatment facilities
- drilling platforms and other coastal and offshore hazardous areas

Features - Benefits:

- Small compact size is perfect where low mounting restrictions are a concern.
- Two start Acme threaded construction allows for easier assembly, installation and maintenance.
- Light weight copper-free aluminum housing with powdered epoxy finish for superior corrosion resistance.
- All exterior hardware is corrosion-resistant stainless steel.
- Four mounting arrangements; pendant, ceiling, wall bracket and stanchion suit any lighting layout.
- Wide range of light sources and wattages to meet specific lighting needs.
- Marine and Nema 4X construction suitable for outdoor, hose down, marine and corrosive environments.
- Integral ballast for lowest installed cost.
- High power factor (90%+) ballasts allows more fixtures per circuit.
- Uses same mounting modules as the standard Hazard•Gard® for easy retrofitting when the Lo-Pro™ is the preferred choice.
- Internally fluted glass globe reduce glare and distributes light evenly – ideal for adverse environments typical of industrial facilities.
- Krydon® construction dome and angle reflectors – won't rust, corrode, dent, chip or peel
- Now available in components – luminaire body, mounting module, guard, reflectors – allowing for easy stocking for Quick Ship requirements.

Standard Materials:

- Mounting modules, cover, ballast housing, globe holder – copper free aluminum
- Globe – heat and impact resistant glass
- Exterior hardware – stainless steel
- Reflectors (dome & angle) – Krydon™ fiberglass-reinforced polyester

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.



Standard Finishes:

- Copper-free aluminum – *Corro-free™*
powdered epoxy
- Krydon – *white*
 - Stainless steel guard

Ratings (Electrical/Size):

- Sources/wattage:
- Medium Base 70-150W HPS, 70-175W MH
 - Mogul Base 70-150W HPS, 70-250W MH
- Voltages:
- Medium & Mogul H.I.D.
120V 60Hz
Multi-tap (120, 208, 240, 277V 60Hz)
Tri-tap (120, 277, 347V 60Hz)
480V 60Hz
Other voltages – consult Cooper Crouse-Hinds
- Conduit entries:
- 3/4", 1" NPT – pendant, wall bracket, ceiling
 - 1 1/4" NPT – stanchion

Options:

Description	Suffix to be added to Cat. #
Group B suitability	GB
BallastGard (HPS only)	BG
Instant restrike (Mogul Base only)	IR
70-150W LX HPS	
Cannot use with BG Option	
Fused	S658*
Quartz auxiliary lighting (Mogul Base only)	QTZ
Cannot use with IR option	
Uses 100W single ended double contract lamp	
Quartz lamp not included	
Factory assembled with lamps	FA

Accessories:

Description	Cat. #
Dome reflector	RD739
Angle reflector	RA739

Certification & Compliances:

- NEC and CEC:
 - Class I, Division 1, Groups B (with suffix GB), C, D – All Wattages
 - Class I, Zone 1 Groups IIB + H2 (with suffix GB), IIB, IIA – All Wattages
 - Class II, Class III & Simultaneous Presence – (medium base 100 watt max., Mogul Base 175 watt max.)
- UL Standards:
 - 844, Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137

4L
H.I.D.
Fixtures

4L

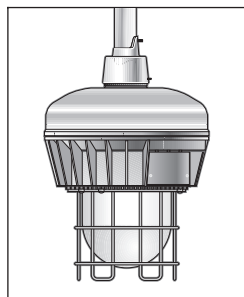
EVLP Low Profile Hazard•Gard®

Medium Base

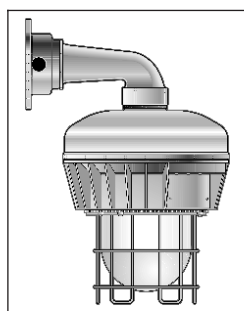
- Cl. I, Div. 1, Groups B(GB suffix),C,D
- Cl. I, Zone 1 Groups IIB + H2 (With Suffix GB), IIB, IIA
- Cl. II, Div. 1, Groups E, F, G; Class III, Simultaneous Presence (100W max)

- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

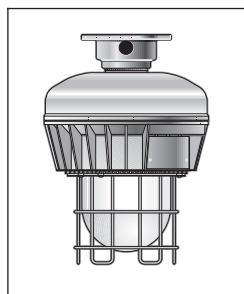
Medium Base Ordering Information



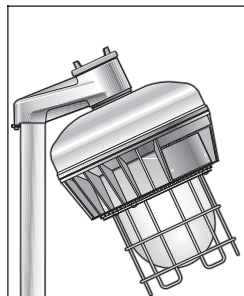
Pendant Mount



†Wall Bracket Mount



†Ceiling Mount



Stanchion Mount

†Ceiling and bracket mounts have 4 hubs: 3 are plugged.

Luminaire Body Less Mounting Module & Guard					
	Pendant	Wall Brckt	Ceiling	Stanchion	
Watt	Hub Size	With Guard Catalog #	With Guard Catalog #	With Guard Catalog #	Catalog #
High Pressure Sodium					
70W	¾	EVLPA142071	EVLPBX142071	EVLPCX142071	EVLPA14070
	1	EVLPA143071	EVLPBX143071	EVLPCX143071	
	1¼			EVLJP144071	
100W	¾	EVLPA142101	EVLPBX142101	EVLPCX142101	EVLPA14100
	1	EVLPA143101	EVLPBX143101	EVLPCX143101	
	1¼			EVLJP144101	
150W	¾	EVLPA142151	EVLPBX142151	EVLPCX142150	EVLPA14151
	1	EVLPA143151	EVLPBX143151	EVLPCX143151	
	1¼			EVLJP144151	
Pulse Start Metal Halide					
150W	¾	EVLPA192151-S828	EVLPBX192151-S828	EVLPCX192151-S828	EVLPA19150-S828
	1	EVLPA193151-S828	EVLPBX193151-S828	EVLPCX193151-S828	
	1¼			EVLJP194151-S828	
175W	¾	EVLPA192171-S828	EVLPBX192171-S828	EVLPCX192171-S828	EVLPA19175-S828
	1	EVLPA193171-S828	EVLPBX193171-S828	EVLPCX193171-S828	
	1¼			EVLJP194171-S828	
Metal Halide					
70W	¾	EVLPA192071	EVLPBX192071	EVLPCX192071	EVLPA19070
	1	EVLPA193071	EVLPBX193071	EVLPCX193071	
	1¼			EVLJP194071	
100W	¾	EVLPA192101	EVLPBX192101	EVLPCX192101	EVLPA19100
	1	EVLPA193101	EVLPBX193101	EVLPCX193101	
	1¼			EVLJP194101	
175W	¾	EVLPA192171	EVLPBX192171	EVLPCX192171	EVLPA19175
	1	EVLPA193171	EVLPBX193171	EVLPCX193171	
	1¼			EVLJP194171	

Complete Catalog Number as follows:

1.		Standard Voltage Ballasts – 60HZ NEC/UL				CEC/CSA (cUL)		
Voltage Suffix		Multi-tap /MT		120V /120	480V /480	Tri-tap /TT		120V /120
Optional Voltage Ballasts– 50 Or 60HZ								
*CEC/CSA (cUL)– CWI Isolated Ballasts					Export			
Voltage Suffix	208V CWI /208CWI	240V CWI /240CWI	600V CWI /600CWI	220V 60HZ /220	220V 50HZ /220 50	230V 50HZ /230 50	240V 50HZ /240 50	

2. 150W HPS Luminaires Only
- 55V lamps – add suffix "LX"
 - 100V lamps – add suffix "CE"

* CWI Isolated Ballasts are only available for high pressure sodium and 175W metal halide (non pulse start) luminaires.

H.I.D.
4L Fixtures

EVLP Low Profile Hazard•Gard®

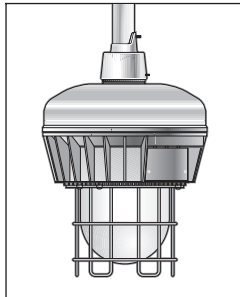
Mogul Base

- Cl. I, Div 1, Groups B (GB suffix), C, D
- Cl. I, Zone 1 Groups IIB + H2 (with suffix GB), IIB, IIA
- Cl. II, Div. 1, Groups E, F, G; Class III, Simultaneous Presence (175W max)

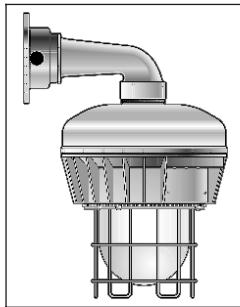
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

4L

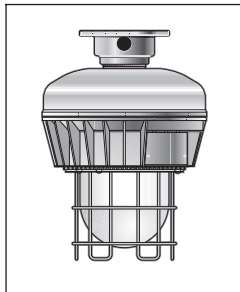
Mogul Base Ordering Information



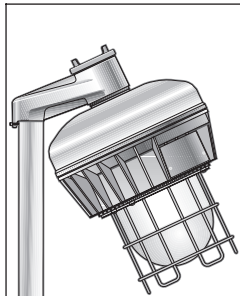
Pendant Mount



†Wall Bracket Mount



†Ceiling Mount



Stanchion Mount

†Ceiling and wall bracket mounts have 4 hubs: 3 are plugged.

Luminaire Body Less Mounting Module & Guard					
	Pendant	Wall Bracket	Ceiling	Stanchion	
Watt	Hub Size	With Guard Catalog #	With Guard Catalog #	With Guard Catalog #	Catalog #
High Pressure Sodium					
70W	¾ 1 1¼	EVLPA042071 EVLPA043071	EVLPBX042071 EVLPBX043071	EVLPCX042071 EVLPCX043071 EVLJP044071	EVLPA04070
100W	¾ 1 1¼	EVLPA042101 EVLPA043101	EVLPBX042101 EVLPBX043101	EVLPCX042101 EVLPCX043101 EVLJP044101	EVLPA04100
150W	¾ 1 1¼	EVLPA042151 EVLPA043151	EVLPBX042151 EVLPBX043151	EVLPCX042151 EVLPCX043151 EVLJP044151	EVLPA04150
Pulse Start Metal Halide					
150W	¾ 1 1¼	EVLPA092151S828 EVLPA093151S828	EVLPBX092151S828 EVLPBX093151S828	EVLPCX092151S828 EVLPCX093151S828 EVLJP094151S828	EVLPA09150S828
175W	¾ 1 1¼	EVLPA092171S828 EVLPA093171S828	EVLPBX092171S828 EVLPBX093171S828	EVLPCX092171S828 EVLPCX093171S828 EVLJP094171S828	EVLPA09170S828
200W	¾ 1 1¼	EVLPA092201S828 EVLPA093201S828	EVLPBX092201S828 EVLPBX093201S828	EVLPCX092201S828 EVLPCX093201S828 EVLJP094201S828	EVLPA09201S828
250W	¾ 1 1¼	EVLPA092251S828 EVLPA093251S828	EVLPBX092251S828 EVLPBX093251S828	EVLPCX092251S828 EVLPCX093251S828 EVLJP094251S828	EVLPA09250S828
Metal Halide					
70W	¾ 1 1¼	EVLPA092071 EVLPA093071	EVLPBX092071 EVLPBX093071	EVLPCX092071 EVLPCX093071 EVLJP094071	EVLPA09070
100W	¾ 1 1¼	EVLPA092101 EVLPA093101	EVLPBX092101 EVLPBX093101	EVLPCX092101 EVLPCX093101 EVLJP094101	EVLPA09100
175W	¾ 1 1¼	EVLPA092171 EVLPA093171	EVLPBX092171 EVLPBX093171	EVLPCX092171 EVLPCX093171 EVLJP094171	EVLPA09170
250W	¾ 1 1¼	EVLPA092251 EVLPA093251	EVLPBX092251 EVLPBX093251	EVLPCX092251 EVLPCX093251 EVLJP094251	EVLPA09250

Complete Catalog Number as follows:

1.		Standard Voltage Ballasts – 60HZ NEC/UL				CEC/CSA (cUL)	
Voltage Suffix		Multi-tap /MT		120V /120	480V /480	Tri-tap /TT	120V /120
Optional Voltage Ballasts– 50 Or 60HZ							
*CEC/CSA (cUL)– CWI Isolated Ballasts				Export			
Voltage Suffix	208V CWI /208CWI	240V CWI /240CWI	600V CWI /600CWI	220V 60HZ /220	220V 50HZ /220 50	230V 50HZ /230 50	240V 50HZ /240 50

2. 150W HPS Luminaires Only
- 55V lamps – add suffix "LX"
 - 100V lamps – add suffix "CE"
- Example: **EVLPA043151/MT-LX**

* CWI Isolated Ballasts are only available for high pressure sodium and 175W–250W metal halide (non pulse start) luminaires.

4L
H.I.D.
Fixtures

EVLP Luminaires are available in components. A complete luminaire consists of:

- Mounting Module
- Luminaire Body
- Guard, Dome Reflector or Angle Reflector

Mounting Modules

Type	Conduit	Catalog Number
Pendant	¾	EVMP2
	1	EVMP3
Ceiling & Wall Box	¾	EV22
	1	EV33
Wall Bracket Arm	Use EV22 or EV33 box with EV87	EV87
Stanchion	1¼	EVMJ4
Guards		
Medium		EV511
Mogul		EV512
Reflectors		
Dome		RD739
Angle		RA739

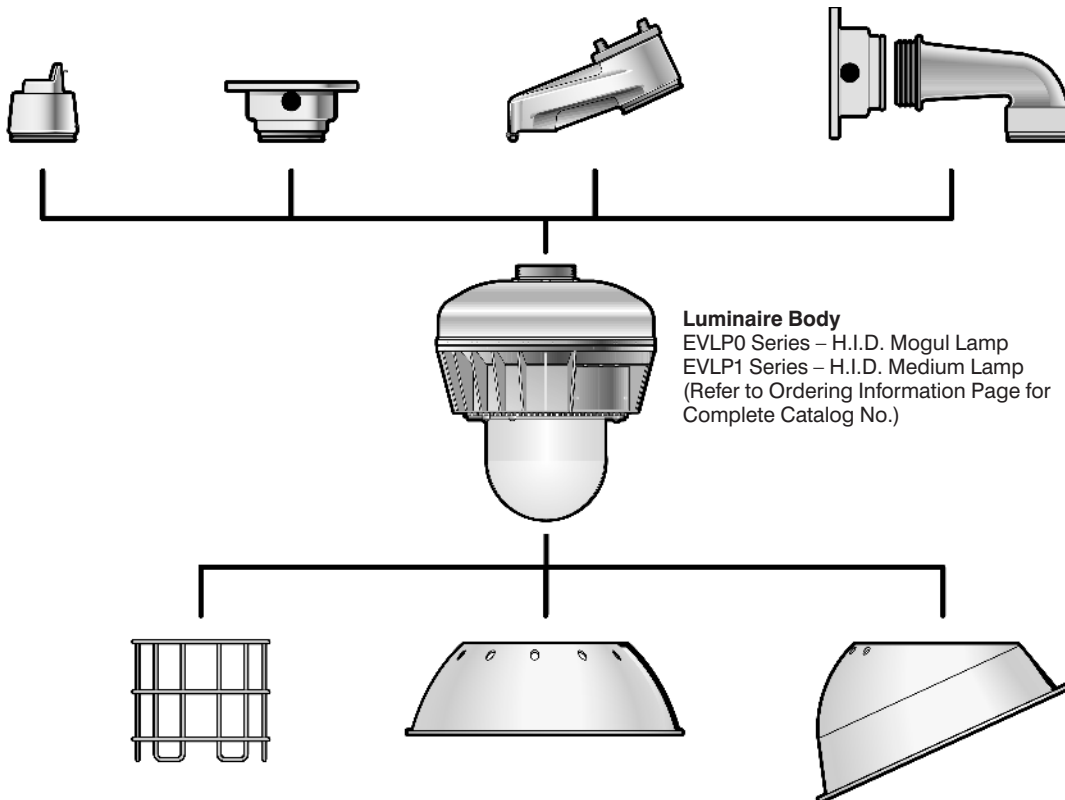
Pendant
EVMP2
EVMP3

Ceiling
EV22
EV33

Stanchion
EVMJ4

Ceiling
EV22
EV33

Wall Bracket
EV87 & EV22 or EV33



Luminaire Body

EVLP0 Series – H.I.D. Mogul Lamp
EVLP1 Series – H.I.D. Medium Lamp
(Refer to Ordering Information Page for Complete Catalog No.)

Guards
EV511
EV512

Dome Reflector
RD739

Angle Reflector
RA739

Medium Base Lamp Luminaires

Maximum Ambient	Watts	Class I, Group B (w/GB suffix) Groups C, D			Class II, Groups E, F, G Class III Simultaneous Presence 40°C	Supply Wire °C
		40°C	55°C	65°C		
High Pressure Sodium	70W	T5	T4A	T4A	T4A	90°C
	100W	T4A	T4A	T4	T4	90°C
	150W	T4	T3C	—	—	90°C
Metal Halide (including pulse start)	70W	T5	T4A	T4A	T4	85°C
	100W	T3C	T3C	—	—	90°C
	150W	T3C	T3B	—	—	90°C
	175W	T3C	T3B	—	—	90°C

Mogul Base Lamp Luminaires

Maximum Ambient	Watts	Class I, Group B (w/GB suffix) Groups C, D			Class II, Groups E, F, G Class III Simultaneous Presence 40°C	Supply Wire °C
		40°C	55°C	65°C		
High Pressure Sodium	70W	T6	T5	T5	T5	90°C
	100W	T5	T4A	—	T4A	90°C
	150W	T4A	T4	—	T4	90°C
Metal Halide (including pulse start)	70W	T6	T5	T5	T5	85°C
	100W	T5	T4A	T4A	T4A	90°C
	150W	T4	T3C	—	T3C	90°C
	175W	T4	T3C	—	T3C	90°C
	200W	T3C	—	—	—	90°C
	250W	T3C	—	—	—	90°C

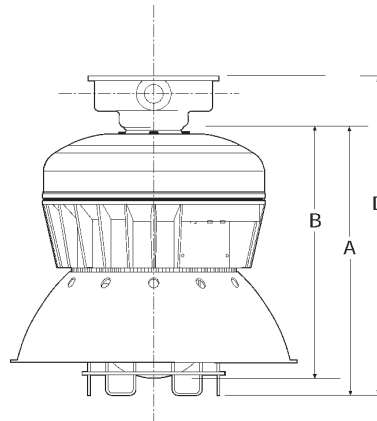
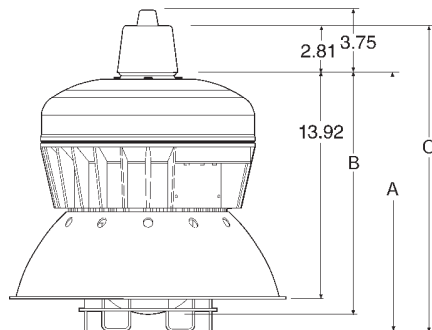
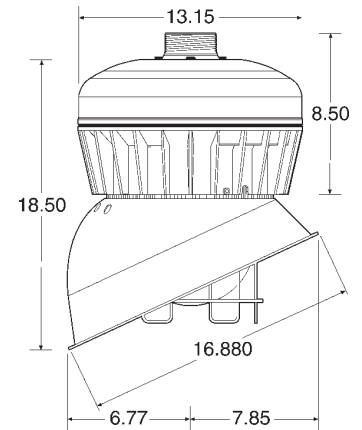
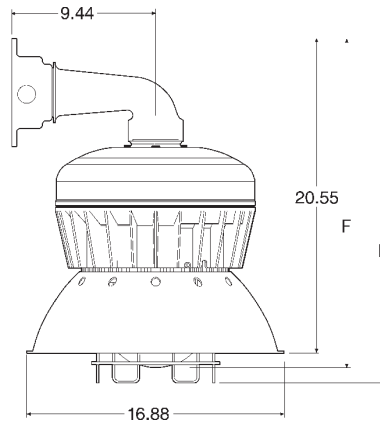
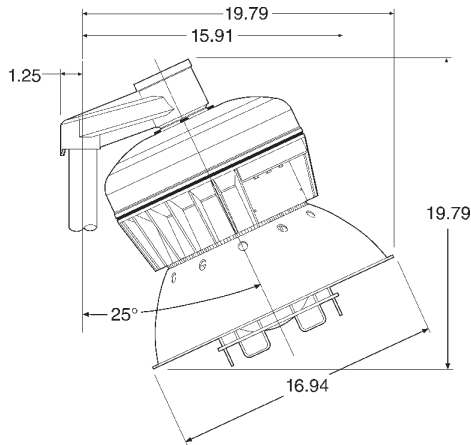
4L

EVLP Low Profile Hazard•Gard®

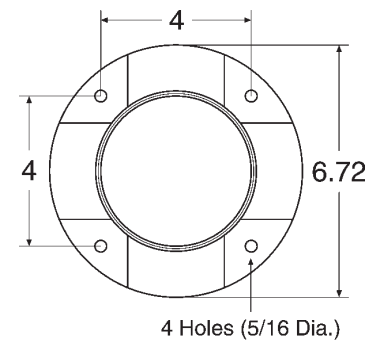
Dimensions and Weights

Dimensions (inches):

	A	B	C	D	E	F
Medium Base	13.92	12.73	16.50	16.71	20.59	19.36
Mogul Base	15.69	14.69	18.25	18.46	22.34	21.30



Mounting Detail



Wall & Ceiling Mount

Weights (lbs)

Source	Watts	Luminaire w/guard	
		Medium	Mogul
High Pressure Sodium	70	34	36.5
	100	36	38.5
	150	36.5	39
Metal Halide	70	33.5	36
	100	34.5	37
	150	36	38.5
	175	36	38.5
	200	—	40.5
	250	—	40.5
Add Mounting Modules:			
Pendant		1	1
Ceiling		2	2
Bracket		4.5	4.5
Stanchion		2.5	2.5
Add For Reflectors			
RA739		1	1
RD739		1	1
Deduct for Wire Guard		0.5	0.5

H.I.D. Fixtures
4L

EVLP Low Profile Hazard•Gard® Medium Base

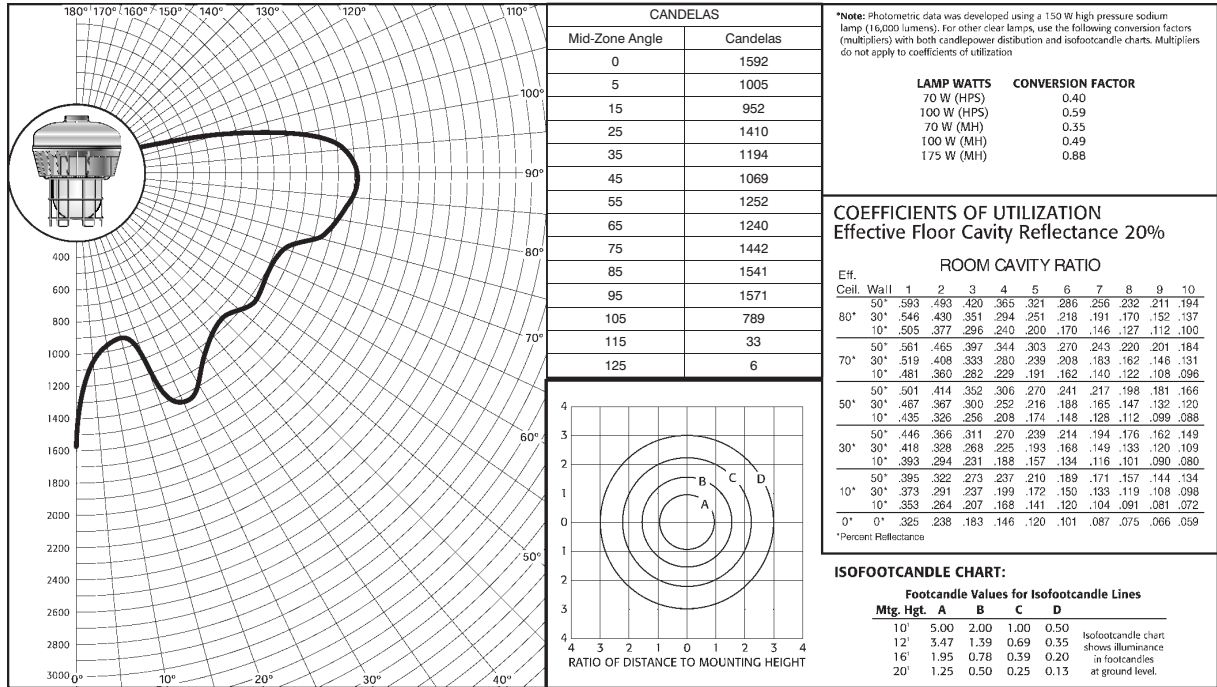
Photometric Data

4L

Medium Base

Luminaire with Globe and Guard

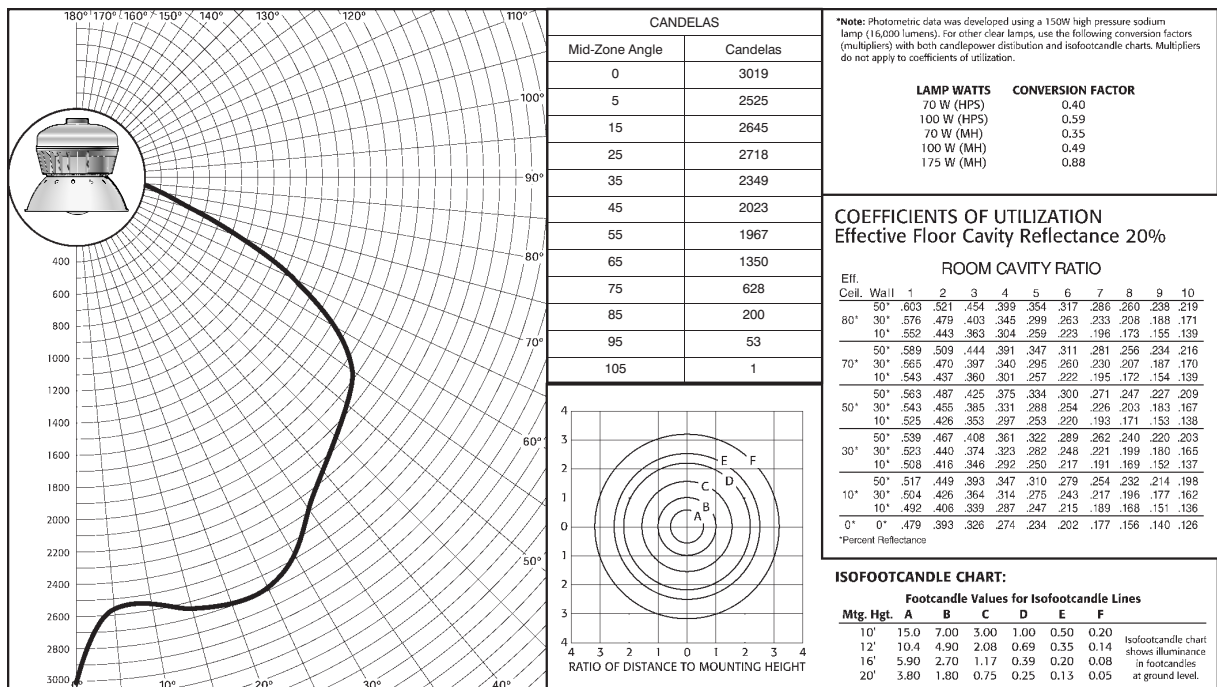
EVLP143151 Lamp: 150W/B17 High Pressure Sodium (HPS)



Medium Base

Luminaire with Globe and Dome Reflector (Less Guard)

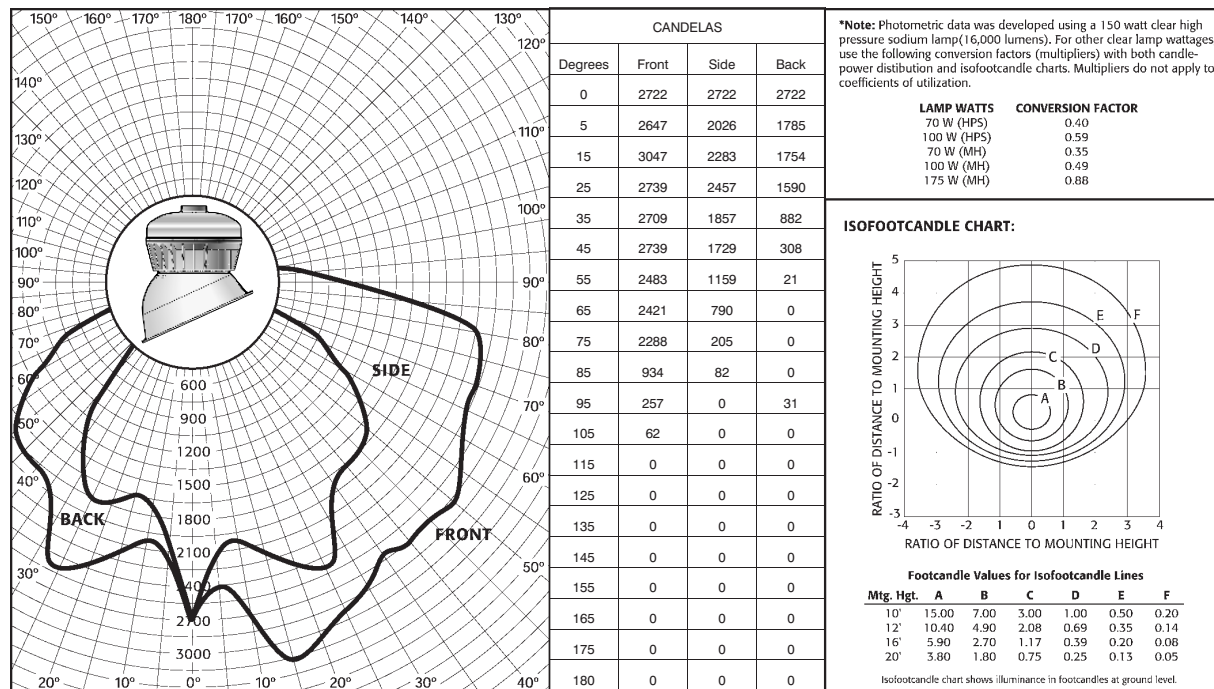
EVLP143150RD Lamp: 150W/B17 High Pressure Sodium (HPS)



EVLP Low Profile Hazard•Gard® Medium and Mogul Base

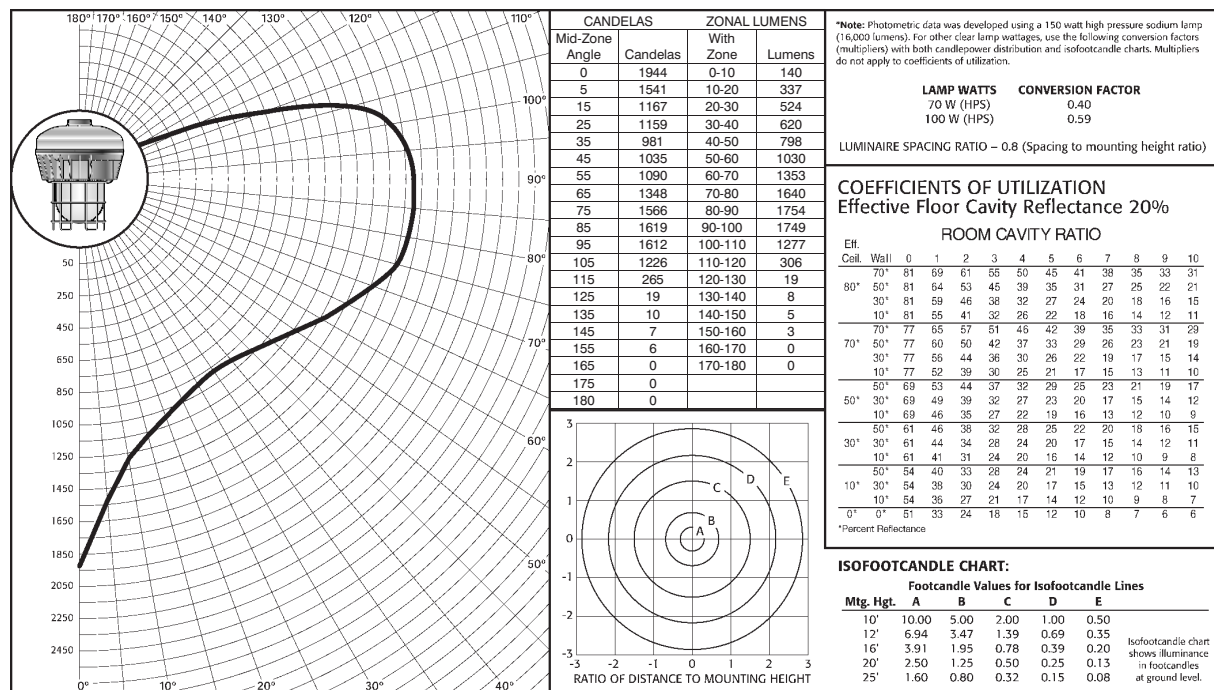
Medium Base

Luminaire with Globe and 30° Angle Reflector (Less Guard)
EVLPA143150RA Lamp: 150W/B17 High Pressure Sodium (HPS)



Mogul Base

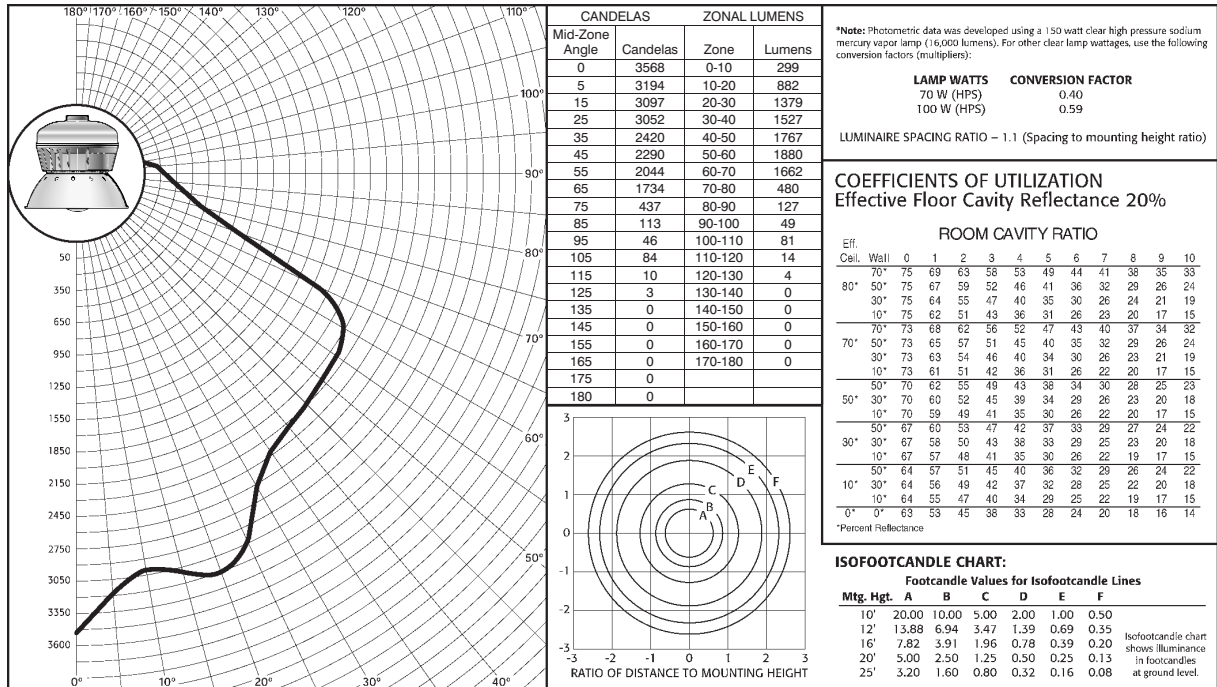
Luminaire with Globe and Guard
EVLPA043151 Lamp: 150W/E23½ High Pressure Sodium (HPS)



Mogul Base

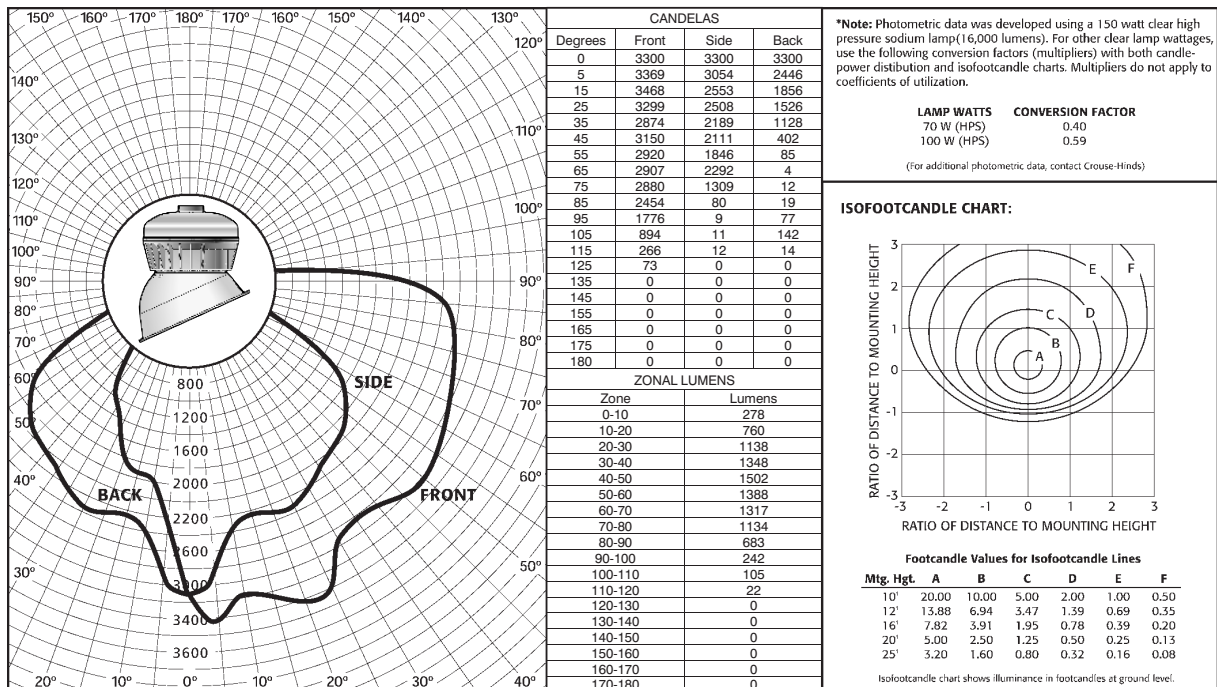
Mogul Base

Luminaire with Globe and Dome Reflector (Less Guard)
EVLP A043150RD Lamp: 150W/E23½ High Pressure Sodium (HPS)



Mogul Base

Luminaire with Globe and 30° Angle Reflector (Less Guard)
EVLP A043150RA Lamp: 150W/E23½ High Pressure Sodium (HPS)

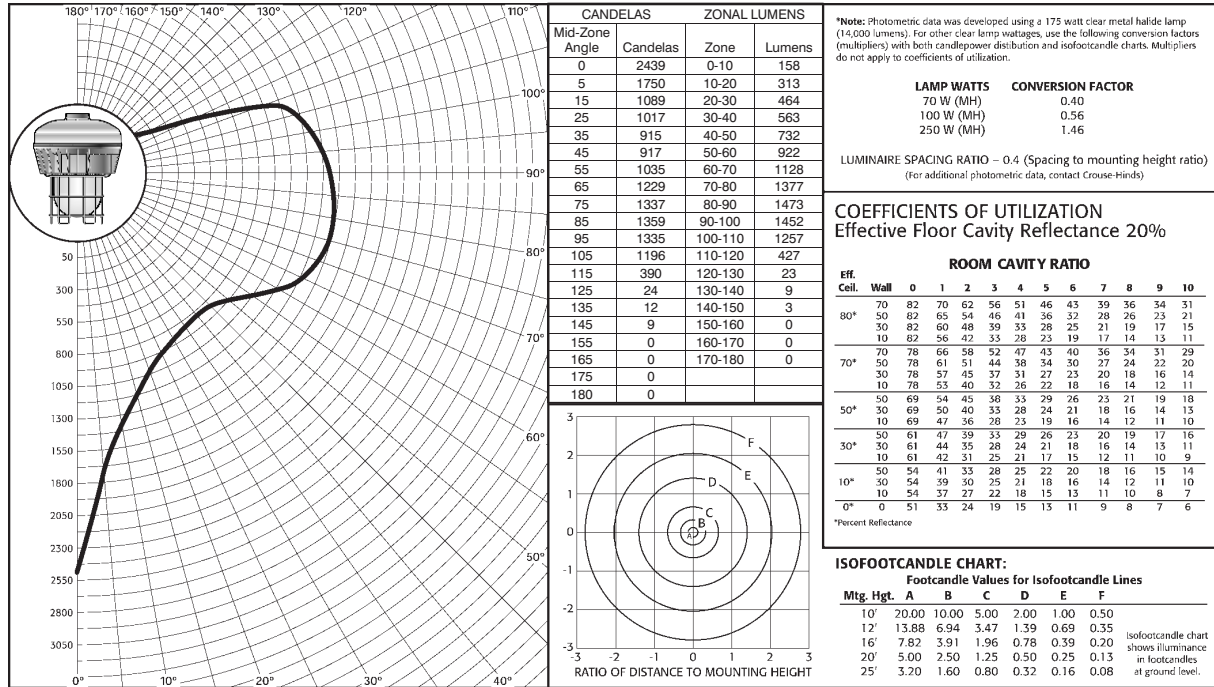


EVLP Low Profile Hazard•Gard® Mogul Base

Mogul Base

Luminaire with Globe and Guard

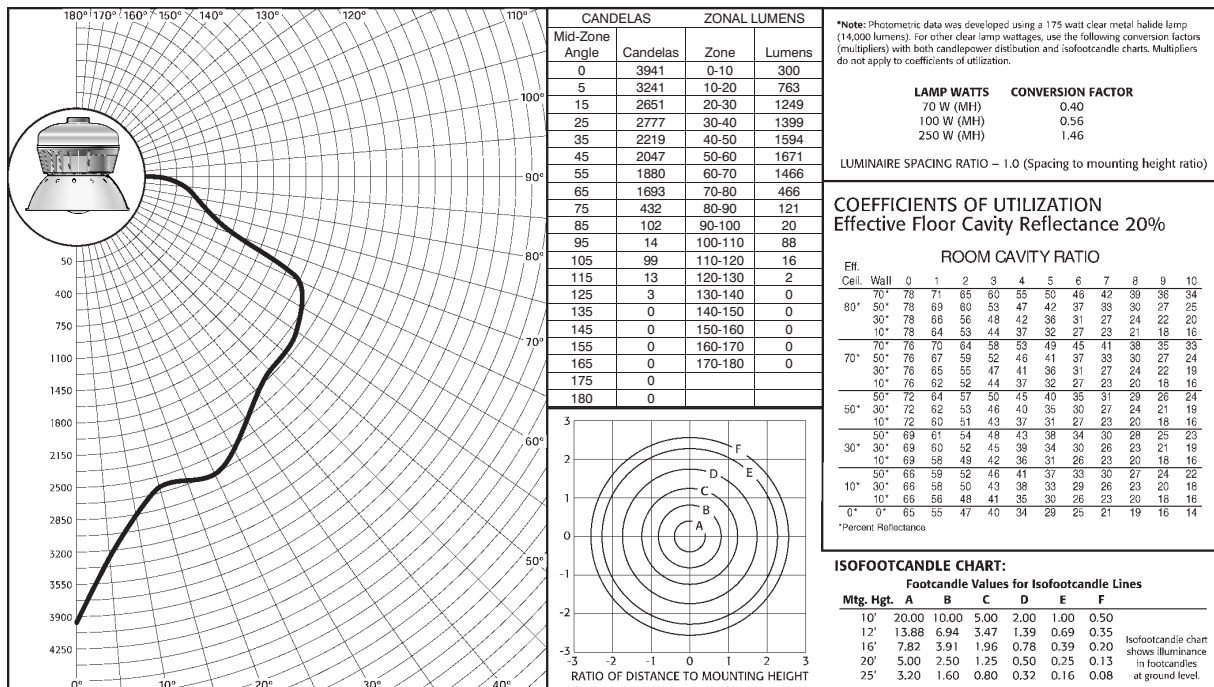
EVLP093171 Lamp: 175W/ED28 Metal Halide (MH)



Mogul Base

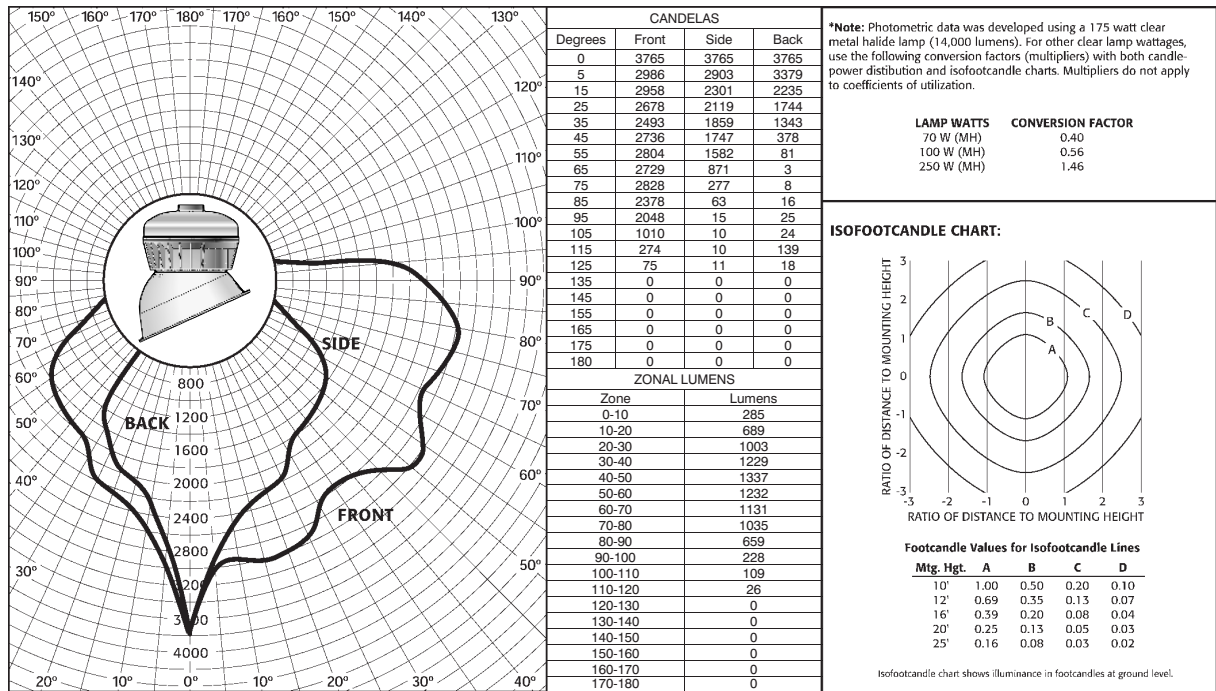
Luminaire with Globe and Dome Reflector (Less Guard)

EVLP093170RD Lamp: 175W/ED28 Metal Halide (MH)



Mogul Base

Luminaire with Globe and 30° Angle Reflector (Less Guard)
EVLP A093170RA Lamp: 175W/ED28 Metal Halide (MH)



EVM Hazard•Gard® H.I.D. Luminaires

Mogul Base

Factory Sealed (Groups C.D)

- Cl. I, Div. 1 Groups B (GB suffix), C, D
- Cl. I, Zone 1 Groups IIB + H2 (with suffix – GB), IIB IIA
- Cl. II, Div. 1, Groups E, F, G; Class III, Simultaneous Presence (175W max)
- Paint Spray (100W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

Application:

Hazard•Gard® luminaires are used in:

- heavy process industries where flammable or explosive vapors, gases or combustible dusts are present
- hazardous areas, both indoors and outdoors where long life and low maintenance costs are desired
- petroleum refineries, chemical, petrochemical and other heavy process industry facilities
- paint spray facilities
- hazardous locations requiring elevated ambient capability

Features:

- Luminaire is factory wired; power is fed through “wireless” connection block which serves as a mechanical seal between conduit and ballast compartments, eliminating the need for an external, field installed seal. The result is fast, easy installation.
- Dome and 30° angle reflectors made of *Krydon*® material – won’t rust, corrode, dent, chip or peel (order separately – page 796).
- High bay reflectors of Alzak® aluminum for high wattage applications
- Internally fluted glass globes reduce glare and provide comfortable viewing light.
- Wide range of light sources and wattages to meet specific lighting needs – 50 – 400W high pressure sodium (HPS); 100 – 400W mercury vapor (MV); 70 – 400W metal halide (MH).
- High power factor (90%+) ballasts reduce power costs – allow more luminaires per circuit.
- Four mounting arrangements to suit any lighting layout – pendant, ceiling, wall bracket and stanchion.
- Paint spray booth suitability on 50 to 100 watt luminaires provides efficient, economical H.I.D. lighting for areas where paint residue may accumulate on luminaires.
- Elevated ambient capability permits reliable operation at high ambient temperature. Selected luminaires are suitable for ambient temperature up to 75°C.
- Integral ballasts – separate ballasts are not required. Lowest installed cost.
- Factory sealed, porcelain, mogul base socket.

Standard Materials:

- Mounting modules, cover, ballast housing, guard, globe ring – copper-free aluminum
- Globe – heat and impact resistant glass
- Exterior hardware – stainless steel
- Lamp socket – porcelain with stainless steel screw shell
- Reflectors – dome and angle: *Krydon* fiberglass-reinforced polyester material; high bay: Alzak aluminum

Alzak is a registered trademark of ALCOA.

* IR and BG options cannot be used together.

** Can be used with BG option.

† CSA Certified luminaires are not available with multi-tap ballast or S658 fuse option.

‡ When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.



Standard Finishes:

- Copper-free aluminum – epoxy powder coat
- *Krydon* – high reflectance white
- Alzak – natural (anodized)

Options:

- Fused – to protect ballast and capacitor against abnormal line conditions. Add suffix **S658** to Cat. No.★ †
- Instant restrike – enables a hot HPS lamp to immediately restrike after a momentary loss of arc due to voltage fluctuation or power outage. It has no effect on the warm-up period of a cold lamp (50-150W LX HPS only). Add suffix **IR** to Cat. No.*
- Quartz auxiliary lighting – quartz lamp comes to full brightness instantly upon restoration of power to provide emergency illumination during the normal restrike period of the H.I.D. lamp (for use with ED28 lamp). Add suffix **QTZ** to Cat. No.** (Note: Quartz lamp not included; use 100 W single-ended lamp – Q100DC, Q100CL/DC, or 100Q/CL/DC.)
- Ballast•Gard – to eliminate the normally continuous high voltage pulsing in the event of a cycling lamp, inoperative lamp, or no lamp in the socket extending the life of the ballast. (For use with 50-400W HPS lamps.) Add suffix **BG** to Cat. No.*
- Group B suitability – luminaires suitable for use in Class I, Group B hazardous (classified) locations. Add suffix **GB** to Cat. No.

- Hazard•Gard® supplied with trunnion arm for floodlighting applications. For use on pendant mount luminaires only. Add suffix **S812** to Cat. No. – See Floodlight Section

Size Ranges:

- ¾", 1" and 1¼" hubs (see ordering information – pages 793 to 795)

Electrical Rating Ranges:

- 120, 208, 240, 277, 347, 480, 600, multi-tap★.
- 50 to 400 watts

Certifications and Compliances:

- NEC and CEC:
Class I, Division 1, Groups B (with suffix GB), C, D
Class I, Zone 1, Groups IIB + H2 (with suffix GB), IIB, IIA
100W max – Paint Spray Suitability
175W max – Class II, Class III, + Simultaneous Presence
- UL Standards:
844 Hazardous (Classified) Locations
1598 Luminaires
1598A Marine Locations
- CSA Standards:
C22.2 No. 137

50-400W EVM
Hazard•Gard® H.I.D.
Luminaires
Mogul Base
Factory Sealed (Groups C,D)

- Cl. I, Div. 1, Groups B(GB suffix),C,D
- Cl. I, Zone 1 Groups IIB + H2 (with suffix GB), IIB, IIA
- Cl. II, Div. 1, Groups E,F,G; Class III, Simultaneous Presence (175W max)

- Paint Spray (100W max)
- Marine & Wet Locations
- 3,3R,4,4X; IP66

4L



Watts	Hub Size	Pendant Luminaires		Wall Bracket Luminaires		Ceiling Luminaires		Stanchion Luminaires (25°)	
		Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #
High Pressure Sodium									
50	¾	EVMA42050	EVMA42051	EVMBX42050	EVMBX42051	EVMCX42050	EVMCX42051	EVMJ44050	EVMJ44051
	1	EVMA43050	EVMA43051	EVMBX43050	EVMBX43051	EVMCX43050	EVMCX43051		
	1¼								
70	¾	EVMA42070	EVMA42071	EVMBX42070	EVMBX42071	EVMCX42070	EVMCX42071	EVMJ44070	EVMJ44071
	1	EVMA43070	EVMA43071	EVMBX43070	EVMBX43071	EVMCX43070	EVMCX43071		
	1¼								
100	¾	EVMA42100	EVMA42101	EVMBX42100	EVMBX42101	EVMCX42100	EVMCX42101	EVMJ44100	EVMJ44101
	1	EVMA43100	EVMA43101	EVMBX43100	EVMBX43101	EVMCX43100	EVMCX43101		
	1¼								
150	¾	EVMA42150	EVMA42151	EVMBX42150	EVMBX42151	EVMCX42150	EVMCX42151	EVMJ44150	EVMJ44151
	1	EVMA43150	EVMA43151	EVMBX43150	EVMBX43151	EVMCX43150	EVMCX43151		
	1¼								
200	¾	EVMA42200	EVMA42201	EVMBX42200	EVMBX42201	EVMCX42200	EVMCX42201	EVMJ44200	EVMJ44201
	1	EVMA43200	EVMA43201	EVMBX43200	EVMBX43201	EVMCX43200	EVMCX43201		
	1¼								
250	¾	EVMA42250	EVMA42251	EVMBX42250	EVMBX42251	EVMCX42250	EVMCX42251	EVMJ44250	EVMJ44251
	1	EVMA43250	EVMA43251	EVMBX43250	EVMBX43251	EVMCX43250	EVMCX43251		
	1¼								
400	¾	EVMA42400	EVMA42401	EVMBX42400	EVMBX42401	EVMCX42400	EVMCX42401	EVMJ44400	EVMJ44401
	1	EVMA43400	EVMA43401	EVMBX43400	EVMBX43401	EVMCX43400	EVMCX43401		
	1¼								

Complete the Catalog Number by Adding Voltage and Options Suffixes as Follows:

1. Standard Voltage Ballasts – 60HZ								
NEC/UL					CEC/CSA (cUL)			
Voltage Suffix	Multi-tap /MT	120V /120	480V /480		Tri-tap /TT	120V /120		
Optional Voltage Ballasts – 50 or 60HZ								
CEC/CSA (cUL)– CWI Isolated Ballasts					Export			
Voltage Suffix	208V CWI /208CWI	240V CWI /240CWI	480V CWI /480CWI	600V CWI /600CWI	220V 60HZ /220	220V 50HZ /220 50	230V 50HZ /230 50	240V 50HZ /240 50

2. 150W HPS Luminaires, 55V Lamps is Standard, for 100V lamps - Add suffix "CE"
3. Options - Add the Required Options Suffixes from page 792, in Alpha-numeric Order

4L
H.I.D.
Fixtures

4L

70-400W EVM Hazard•Gard® H.I.D. Luminaires Factory Sealed (Groups C,D)

- Cl. I, Div. 1, Groups B (GB suffix), C, D
- Cl. I, Zone 1 Groups IIB + H2
(with suffix GB), IIB, IIA
- Cl. II, Div. 1, Groups E, F, G; Class III,
Simultaneous Presence (175W max)

- Paint Spray (100W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66



Watts	Hub Size	Pendant Luminaires		Wall Bracket Luminaires		Ceiling Luminaires		Stanchion Luminaires (25°)	
		Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #
Pulse Start Metal Halide									
150	¾	EVMA92150-S828	EVMA92151-S828	EVMBX92150-S828	EVMBX92151-S828	EVMCX92150-S828	EVMCX92151-S828	EVMJ94150-S828	EVMJ94151-S828
	1	EVMA93150-S828	EVMA93151-S828	EVMBX93150-S828	EVMBX93151-S828	EVMCX93150-S828	EVMCX93151-S828		
	1¼								
175	¾	EVMA92170-S828	EVMA921701-S828	EVMBX92170-S828	EVMBX921701-S828	EVMCX92170-S828	EVMCX921701-S828	EVMJ94170-S828	EVMJ94171-S828
	1	EVMA93170-S828	EVMA931701-S828	EVMBX93170-S828	EVMBX931701-S828	EVMCX93170-S828	EVMCX931701-S828		
	1¼								
200	¾	EVMA92200-S828	EVMA92201-S828	EVMBX92200-S828	EVMBX92201-S828	EVMCX92200-S828	EVMCX92201-S828	EVMJ94200-S828	EVMJ94201-S828
	1	EVMA93200-S828	EVMA93201-S828	EVMBX93200-S828	EVMBX93201-S828	EVMCX93200-S828	EVMCX93201-S828		
	1¼								
250	¾	EVMA92250-S828	EVMA92251-S828	EVMBX92250-S828	EVMBX92251-S828	EVMCX92250-S828	EVMCX92251-S828	EVMJ94250-S828	EVMJ94251-S828
	1	EVMA93250-S828	EVMA93251-S828	EVMBX93250-S828	EVMBX93251-S828	EVMCX93250-S828	EVMCX93251-S828		
	1¼								
320	¾	EVMA92320-S828	EVMA92321-S828	EVMBX92320-S828	EVMBX92321-S828	EVMCX92320-S828	EVMCX92321-S828	EVMJ94320-S828	EVMJ94321-S828
	1	EVMA93320-S828	EVMA93321-S828	EVMBX93320-S828	EVMBX93321-S828	EVMCX93320-S828	EVMCX93321-S828		
	1¼								
400	¾	EVMA92400-S828	EVMA92401-S828	EVMBX92400-S828	EVMBX92401-S828	EVMCX92400-S828	EVMCX92401-S828	EVMJ94400-S828	EVMJ94401-S828
	1	EVMA93400-S828	EVMA93401-S828	EVMBX93400-S828	EVMBX93401-S828	EVMCX93400-S828	EVMCX93401-S828		
	1¼								
Metal Halide									
70	¾	EVMA92070	EVMA92071	EVMBX92070	EVMBX92071	EVMCX92070	EVMCX92071	EVMJ94070	EVMJ94071
	1	EVMA93070	EVMA93071	EVMBX93070	EVMBX93071	EVMCX93070	EVMCX93071		
	1¼								
100	¾	EVMA92100	EVMA92101	EVMBX92100	EVMBX92101	EVMCX92100	EVMCX92101	EVMJ94100	EVMJ94101
	1	EVMA93100	EVMA93101	EVMBX93100	EVMBX93101	EVMCX93100	EVMCX93101		
	1¼								
175	¾	EVMA92170	EVMA92171	EVMBX92170	EVMBX92171	EVMCX92170	EVMCX92171	EVMJ94170	EVMJ94171
	1	EVMA93170	EVMA93171	EVMBX93170	EVMBX93171	EVMCX93170	EVMCX93171		
	1¼								
250	¾	EVMA92250	EVMA92251	EVMBX92250	EVMBX92251	EVMCX92250	EVMCX92251	EVMJ94250	EVMJ94251
	1	EVMA93250	EVMA93251	EVMBX93250	EVMBX93251	EVMCX93250	EVMCX93251		
	1¼								
400	¾	EVMA92400	EVMA92401	EVMBX92400	EVMBX92401	EVMCX92400	EVMCX92401	EVMJ94400	EVMJ94401
	1	EVMA93400	EVMA93401	EVMBX93400	EVMBX93401	EVMCX93400	EVMCX93401		
	1¼								

Complete the Catalog Number by Adding Voltage and Options Suffixes as Follows:

1. Standard Voltage Ballasts – 60HZ							
NEC/UL				CEC/CSA (cUL)			
Voltage Suffix	Multi-tap /MT	Dual-Tap /DT	120V /120	480V /480	Tri-tap /TT	Dual-Tap /DT	120V /120
Optional Voltage Ballasts – 50 or 60HZ							
CEC/CSA (cUL)– CWI Isolated Ballasts				Export			
Voltage Suffix	208V CWI /208CWI	240V CWI /240CWI	600V CWI /600CWI	220V 60HZ /220	220V 50HZ /220 50	230V 50HZ /230 50	240V 50HZ /240 50

2. 150W HPS Luminaires, 55V Lamps is Standard, for 100V lamps - Add suffix "CE"

3. Options - Add the Required Options Suffixes from page 792, In Alpha-numeric Order

* CWI Isolated Ballasts are only available for 175W–400W metal halide (non pulse start) luminaires.

70-400W EVM Hazard•Gard® H.I.D. Luminaires

Factory Sealed (Groups C,D)

- Cl. I, Div. 1, Groups B (GB suffix), C, D
- Cl. I, Zone 1 Groups IIB + H2 (with suffix GB), IIB, IIA
- Cl. II, Div. 1, Groups E, F, G; Class III, Simultaneous Presence (175W max)
- Paint Spray (100W max)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

4L



Watts	Hub Size	Pendant Luminaires		Wall Bracket Luminaires		Ceiling Luminaires		Stanchion Luminaires (25°)	
		Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #	Without Guard Cat. #	With Guard Cat. #
Mercury Vapor									
100	¾	EVMA82100	EVMA82101	EVMBX82100	EVMBX82101	EVMCX82100	EVMCX82101	EVMJ84100	EVMJ84101
	1	EVMA83100	EVMA83101	EVMBX83100	EVMBX83101	EVMCX83100	EVMCX83101		
	1¼								
175	¾	EVMA82170	EVMA82171	EVMBX82170	EVMBX82171	EVMCX82170	EVMCX82171	EVMJ84170	EVMJ84171
	1	EVMA83170	EVMA83171	EVMBX83170	EVMBX83171	EVMCX83170	EVMCX83171		
	1¼								
250	¾	EVMA82250	EVMA82251	EVMBX82250	EVMBX82251	EVMCX82250	EVMCX82251	EVMJ84250	EVMJ84251
	1	EVMA83250	EVMA83251	EVMBX83250	EVMBX83251	EVMCX83250	EVMCX83251		
	1¼								
400	¾	EVMA82400	EVMA82401	EVMBX82400	EVMBX82401	EVMCX82400	EVMCX82401	EVMJ84400	EVMJ84401
	1	EVMA83400	EVMA83401	EVMBX83400	EVMBX83401	EVMCX83400	EVMCX83401		
	1¼								

Complete the Catalog Number by Adding Voltage and Options Suffixes as Follows:

1. Standard Voltage Ballasts – 60HZ								
NEC/UL								
			CEC/CSA (cUL)					
Voltage Suffix	Multi-tap /MT	Dual-Tap /DT	120V /120	480V /480	Tri-tap /TT	Dual-Tap /DT	120V /120	
Optional Voltage Ballasts – 50 or 60HZ								
CEC/CSA (cUL)– CWI Isolated Ballasts					Export			
Voltage Suffix	208V CWI /208CWI	240V CWI /240CWI	480V CWI /480CWI	600V CWI /600CWI	220V 60HZ /220	220V 50HZ /220 50	230V 50HZ /230 50	240V 50HZ /240 50

2. Options - Add the Required Options Suffixes from page 792, in Alpha-numeric Order

Reflectors



Dome



30° Angle



High Bay

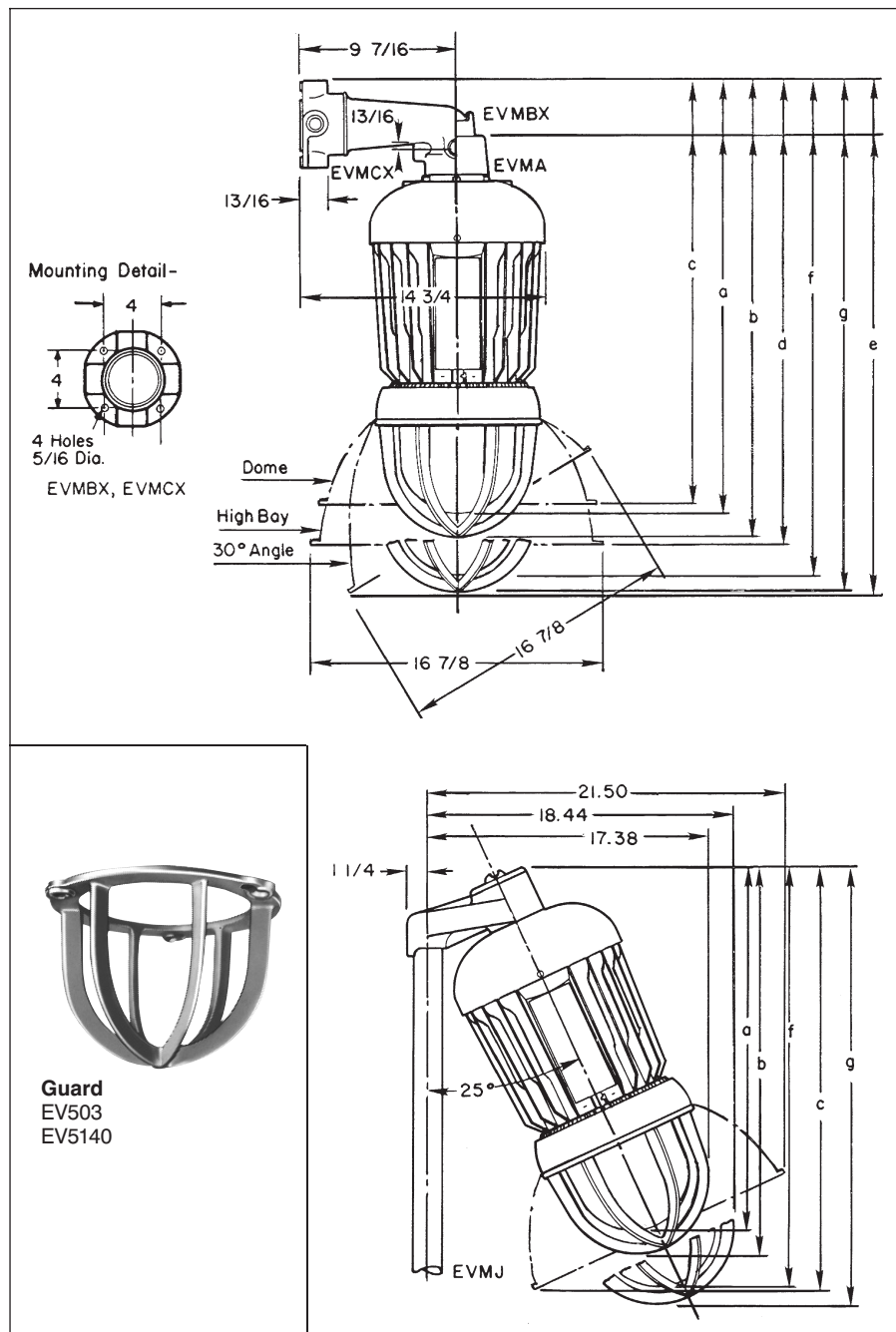
Type	Cat. #
Dome	RD739
30° Angle	RA739
High Bay	EV3912

Temperature Performance Data

Maximum Ambient						Simultaneous Presence 40°C	Paint Spray Booth 40°C	Supply Wire °C
Watts	40°C	Class I		Class II (E,F,G) 40°C				
		55°C	65°C		75°C			
High Pressure Sodium								
50	T6	T6	T6	T5	T4	T4	T4A	90
70	T6	T6	T5	T4A	T4	T4	T4A	90
100	T5	T5	T4A	T4A	T4	T4	T4A	90
150	T4A	T4A	T4	—	T3C	T3C	—	90
200	T4A	T4A	T4	—	—	—	—	90
250	T4	T3C	—	—	—	—	—	90
400	T3C	—	—	—	—	—	—	90
Mercury Vapor								
100	T5	T5	T4A	T4A	T3C	T3C	T4A	90
175	T4A	T4	T4	—	T3C	T3C	—	90
250	T3C	T3B	—	—	—	—	—	90
400	T3	—	—	—	—	—	—	90
Metal Halide (Including Pulse Start)								
70	T6	T6	T5	T3	T3C	T3C	T4A	90
100	T5	T5	T4A	T3	T3C	T3C	T4A	90
150	T4A	T4	T4	—	T3C	T3C	—	90
175	T4A	T4	T4	—	T3C	T3C	—	90
200	T4	T3C	—	—	—	—	—	90
250	T4	T3C	—	—	—	—	—	90
320	T3A	—	—	—	—	—	—	90
400	T3A	—	—	—	—	—	—	90

Dimensions and Weights

Dimensions



Luminaire Net Weights:

H.I.D. Source	Lamp Watts	Luminaire Only with Globe and Guard (Lbs.)
	50	40
	70	40
	100	44
High Pressure Sodium	150 (55V)	45
	150 (100V)	44
	200	46
	250	46
	400	55
Mercury Vapor	100	38
	175	41
	250	43
	400	49
Metal Halide	70	39
	100	39
	175	42
	250	43
	400	51

Add for Mounting Modules:

Pendant	1 lb.	Bracket	4 1/4 lbs.
Ceiling	2 lbs.	Stanchion	2 1/4 lbs.

Deduct:

Guard	1 1/2 lbs.
-------	------------

Add for Reflectors:

RD739	1 1/4 lbs.
RA739	2 lbs.
EV3912	2 1/2 lbs.

Type	100, 175, 250W MV 50, 70, 100, 150W HPS 70, 100, 175, 250W MH	100, 175, 250W MV 50, 70, 100, 150W HPS 70, 100, 175, 250W MH	All luminaires with QTZ option and 200, 250, 400W HPS 400W MV & MH	All - Reflectors	Dome - c	High Bay - d	30° Angle - e
EVMA	25 1/16	26	27 5/16	28 1/4	23 7/8	26 7/16	28 9/16
EVMBX	27 7/8	28 13/16	30 1/8	31 1/16	26 1 1/16	29 3/4	31 3/8
EVMCX	24	24 15/16	26 1/4	27 3/16	22 3/4	25 3/8	27 1/2
EVMJ	22 11/16	24 1/8	25 1/4	26 1/8	25 3/8	27 1 1/16	28 3/4

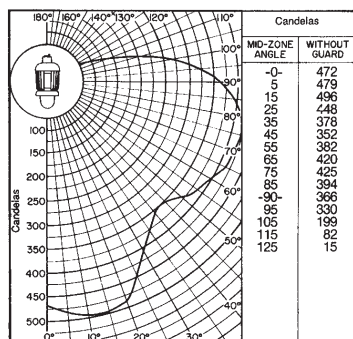
† Suitable for Class III when listed for Class II, Group G.

♦ See Options listing.

Lamp: 100W/E-23½ mercury vapor – (MV)
Total bare lamp lumens: 4200

To determine number and placement of luminaires, see Lighting Selector guide, pages 665 to 689

Luminaire With Globe and Without Guard



NOTE: Photometric data was developed using a 100 watt diffuse mercury vapor lamp (4,200 lumens). For other diffuse lamps, use the following conversion factors (multipliers): 175W MV – 2.05; 70W MH – 1.33; 100W MH – 1.85; 175W MH (metal halide) – 3.33. Multipliers are for use with candela curve only.

Luminaire spacing ratio is 1.30.

Coefficient of Utilization

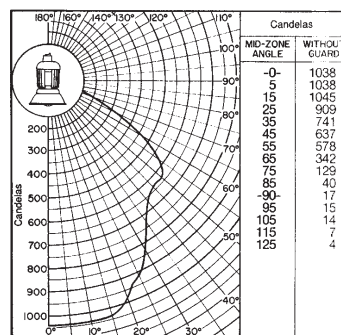
Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.694	.584	.503	.439	.386
	30	.644	.516	.428	.361	.311
	10	.600	.459	.369	.302	.253
70	50	.660	.556	.479	.418	.368
	30	.615	.493	.410	.347	.297
	10	.572	.441	.355	.291	.244
50	50	.596	.501	.432	.377	.334
	30	.559	.450	.375	.317	.274
	10	.526	.405	.328	.270	.227
30	50	.538	.451	.389	.339	.302
	30	.509	.410	.342	.290	.250
	10	.481	.373	.302	.249	.210
10	50	.485	.405	.349	.305	.271
	30	.461	.371	.310	.263	.223
	10	.439	.341	.277	.228	.193
0	0	.410	.313	.251	.204	.171
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.347	.312	.282	.259	.230
	30	.273	.241	.214	.192	.166
	10	.220	.192	.165	.147	.125
70	50	.331	.298	.270	.248	.220
	30	.262	.231	.206	.185	.162
	10	.211	.184	.160	.143	.121
50	50	.300	.272	.246	.227	.203
	30	.241	.212	.190	.172	.150
	10	.197	.171	.149	.134	.113
30	50	.272	.245	.225	.207	.185
	30	.222	.196	.175	.158	.138
	10	.183	.158	.139	.124	.105
10	50	.246	.224	.203	.188	.169
	30	.202	.180	.160	.146	.127
	10	.168	.147	.129	.115	.096
0	0	.148	.128	.111	.099	.082

Lamp: 100W/E23½ mercury vapor – (MV)
Total bare lamp lumens: 4200

To determine number and placement of luminaires, see Lighting Selector guide, pages 665 to 689

Luminaire With Globe, Dome Reflector and Without Guard



NOTE: Photometric data was developed using a 100 watt diffuse mercury vapor lamp (4,200 lumens). For other diffuse lamps, use the following conversion factors (multipliers): 175W MV – 2.05; 70W MH – 1.33; 100W MH – 1.85; 175W MH (metal halide) – 3.33. Multipliers are for use with candela curve only.

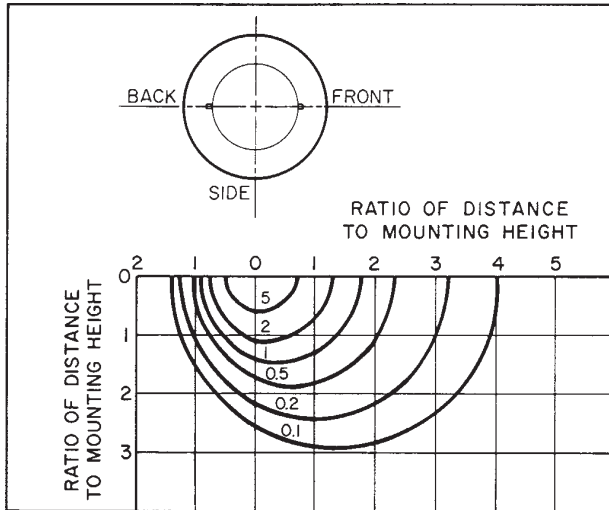
Luminaire spacing ratio is 1.25.

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.715	.637	.570	.509	.458
	30	.688	.596	.521	.455	.401
	10	.665	.562	.483	.413	.359
70	50	.699	.624	.560	.500	.448
	30	.675	.586	.514	.450	.396
	10	.652	.556	.478	.410	.356
50	50	.668	.598	.539	.481	.434
	30	.648	.568	.500	.438	.388
	10	.631	.540	.468	.404	.353
30	50	.640	.576	.519	.465	.420
	30	.624	.550	.487	.428	.379
	10	.609	.527	.459	.398	.348
10	50	.615	.554	.502	.450	.407
	30	.602	.533	.474	.418	.372
	10	.589	.514	.450	.391	.343
0	0	.575	.500	.436	.377	.329
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.414	.375	.340	.313	.275
	30	.358	.319	.286	.259	.222
	10	.318	.282	.247	.222	.187
70	50	.407	.369	.335	.308	.271
	30	.354	.315	.283	.256	.222
	10	.315	.278	.246	.221	.187
50	50	.394	.358	.325	.299	.264
	30	.347	.309	.278	.252	.217
	10	.312	.275	.244	.219	.185
30	50	.383	.346	.316	.292	.257
	30	.340	.304	.273	.248	.214
	10	.308	.272	.242	.217	.183
10	50	.371	.338	.307	.284	.251
	30	.333	.299	.268	.244	.210
	10	.304	.269	.240	.215	.181
0	0	.292	.257	.227	.204	.170

Isofootcandle Chart: Luminaire With Globe and 30° Angle Reflector, Without Guard



Lamp: 100W/E-23½ diffuse mercury vapor (MV)

Total bare lamp lumens: 4200

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

Illumination in footcandles on work plane 10 feet below light center. Multiply by factor shown to convert to other mounting heights.

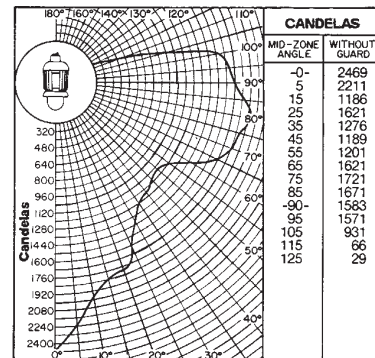
Height (Ft.)	Factor	Height (Ft.)	Factor
6	2.78	9	1.23
7	2.04	11	0.83
8	1.56	12	0.70

Lamp: 150W/E-23½ high pressure sodium (HPS)

Total bare lamp lumens: 16,000

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

Luminaire With Globe and Without Guard



NOTE: Photometric data was developed using a 150 watt clear high pressure sodium lamp (16,000 lumens). For other clear lamps, use the following conversion factors (multipliers): 50W HPS - .25; 70W HPS - .40; 100W HPS - .59. Multipliers are for use with candela curve only.

Luminaire spacing ratio is 0.80.

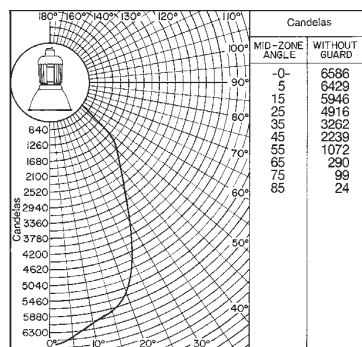
Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.695	.579	.494	.410	.382
	30	.644	.509	.417	.326	.305
	10	.599	.450	.356	.262	.246
70	50	.659	.549	.469	.387	.363
	30	.613	.484	.397	.311	.291
	10	.570	.431	.341	.251	.236
50	50	.592	.491	.419	.344	.327
	30	.555	.439	.360	.279	.265
	10	.522	.393	.312	.229	.218
30	50	.531	.438	.373	.304	.292
	30	.502	.396	.325	.250	.240
	10	.474	.358	.284	.207	.200
10	50	.476	.390	.331	.267	.260
	30	.451	.355	.291	.222	.217
	10	.429	.325	.257	.184	.181
0	0	.399	.295	.230	.159	.159
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.342	.306	.278	.265	.233
	30	.266	.234	.209	.198	.168
	10	.212	.184	.160	.153	.127
70	50	.324	.292	.265	.253	.222
	30	.254	.223	.201	.191	.163
	10	.202	.176	.155	.149	.123
50	50	.292	.263	.240	.231	.203
	30	.232	.203	.184	.177	.150
	10	.187	.162	.143	.139	.114
30	50	.262	.236	.218	.210	.185
	30	.211	.186	.167	.162	.138
	10	.172	.148	.132	.129	.105
10	50	.234	.213	.195	.191	.167
	30	.190	.169	.152	.149	.125
	10	.156	.135	.121	.118	.096
0	0	.135	.116	.103	.103	.081

Lamp: 150W/E-23½ high pressure sodium (HPS)
Total bare lamp lumens: 16000

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

Luminaire With Globe, Hi-Bay Reflector and Without Guard


NOTE: Photometric data was developed using a 150 watt clear high pressure sodium lamp (16,000 lumens). For other clear lamps, use the following conversion factors (multipliers): 50W HPS – .25; 70W HPS – .40; 100W HPS – .59. Multipliers are for use with candela curve only.

Luminaire spacing ratio is 1.00.

Coefficient of Utilization

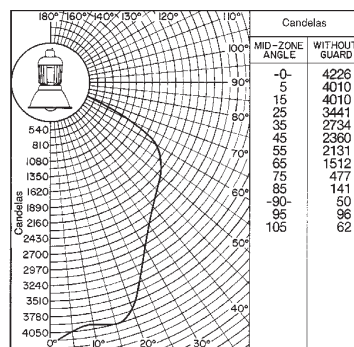
Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.668	.618	.573	.531	.494
	30	.651	.592	.542	.495	.455
	10	.636	.569	.517	.468	.427
70	50	.655	.608	.566	.525	.487
	30	.639	.583	.536	.491	.452
	10	.625	.564	.513	.464	.425
50	50	.629	.587	.550	.511	.476
	30	.616	.568	.525	.482	.446
	10	.606	.550	.505	.459	.422
30	50	.606	.569	.535	.498	.466
	30	.597	.554	.514	.474	.438
	10	.588	.539	.497	.454	.418
10	50	.586	.553	.522	.487	.457
	30	.578	.539	.504	.466	.433
	10	.570	.528	.489	.449	.413
0	0	.560	.517	.479	.439	.404

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.460	.427	.396	.369	.328
	30	.420	.388	.358	.330	.288
	10	.394	.361	.330	.303	.262
70	50	.455	.423	.392	.366	.325
	30	.418	.385	.356	.328	.288
	10	.391	.359	.329	.303	.262
50	50	.444	.414	.385	.360	.320
	30	.412	.380	.352	.325	.285
	10	.388	.357	.328	.301	.261
30	50	.436	.406	.379	.354	.315
	30	.407	.377	.348	.322	.282
	10	.385	.354	.326	.300	.259
10	50	.428	.400	.373	.348	.311
	30	.402	.373	.345	.319	.280
	10	.382	.352	.324	.298	.258
0	0	.373	.343	.315	.290	.249

Lamp: 150W/E-23½ high pressure sodium (HPS)
Total bare lamp lumens: 16000

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.

Luminaire With Globe, Dome Reflector and Without Guard


NOTE: Photometric data was developed using a 150 watt clear high pressure sodium lamp (16,000 lumens). For other clear lamps, use the following conversion factors (multipliers): 50W HPS – .25; 70W HPS – .40; 100W HPS – .59. Multipliers are for use with candela curve only.

Luminaire spacing ratio is 1.20.

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.716	.637	.568	.507	.455
	30	.689	.596	.519	.452	.398
	10	.666	.561	.480	.410	.355
70	50	.700	.624	.559	.498	.446
	30	.675	.585	.512	.447	.393
	10	.653	.555	.476	.407	.353
50	50	.668	.598	.538	.479	.432
	30	.648	.567	.498	.435	.385
	10	.631	.539	.466	.400	.349
30	50	.640	.575	.518	.463	.417
	30	.625	.549	.485	.425	.376
	10	.610	.526	.457	.394	.344
10	50	.615	.554	.500	.447	.404
	30	.602	.532	.472	.415	.369
	10	.590	.513	.448	.388	.339
0	0	.575	.498	.434	.373	.326

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.413	.373	.339	.312	.275
	30	.355	.318	.285	.258	.222
	10	.316	.280	.246	.221	.187
70	50	.405	.368	.334	.308	.271
	30	.352	.314	.283	.256	.222
	10	.312	.277	.245	.221	.187
50	50	.392	.356	.324	.299	.264
	30	.345	.307	.277	.252	.217
	10	.309	.274	.243	.219	.185
30	50	.380	.345	.316	.291	.257
	30	.338	.303	.272	.247	.214
	10	.306	.270	.241	.217	.183
10	50	.369	.337	.307	.283	.251
	30	.331	.298	.267	.244	.210
	10	.301	.267	.238	.215	.181
0	0	.289	.255	.226	.203	.170

Luminaires with Induction Lighting System

5L

Hazardous and Non-Hazardous

Description	Page No.
VMVIG Series	802-808
DMVIG Series	802-808

Note: Induction Lighting is also available with our Champ-Pak™ Wall Pack Luminaires.
Please see page 867 in Section 7L for more details.



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

Class I, Zone 2, Group IIC

Restricted Breathing Suffix S826 for Cl.I, Div 2 & Zone 2

Enclosure Type 4X, IP66 • Marine Locations

Wet Locations • UL and cUL Listed

Get uninterrupted light for up to 11 years, without changing a lamp.

Cooper Crouse-Hinds® Champ Luminaire with Induction Light Source delivers up to 100,000 hours of white light in a hazardous location, corrosion-resistant watertight package. That's 5 to 8 times the typical life of conventional fluorescent or HID lamps. And, with no maintenance required for up to 11 years, you'll reduce your maintenance and lamp replacement costs.

Compelling reasons to choose the new Champ Induction luminaire as the light source for industrial and hazardous locations include:

- Crisp white light (80+ color rendering index) provides increased safety by clearly illuminating signs, instrument panels, equipment and more with vibrant natural colors.
- Up to 100,000 hours of lamp life minimizes routine maintenance costs. If you operate this luminaire for 24 hours, 7 days a week, you will not need to change the lamp for up to 11 years!
- Instant illumination — no waiting for lamp warm-up time. Increases productivity and safety.
- Delivers the best possible luminaire temperature rating — T6 (85°C) when used with the Champ restricted breathing option. Ideal for hazardous areas where a low ignition temperature is required.
- Starts in low temperatures — as low as -40°C.



165W Champ Induction provides as much light as a 175W Metal Halide but lasts 7 times longer!

ADDITIONAL FEATURES & BENEFITS:

The Champ Induction luminaire is suitable for Class I, Division 2 and Zone 2 areas with the assurance of Cooper Crouse-Hinds quality and reliability. They are ideal for use in hard-to-reach applications and where process requirements demand continuous luminaire operation.

Features:

- High lumens per watts (72 lpw for the 165W Champ) will save energy
- Retains strong light output (retains more than 70% output) throughout the life of the lamp
- Will not add electrical noise to the circuits — Total Harmonic Distortion is less than 10%
- Excellent power factor of .96 increases useable watts to an excellent level and reduces energy consumption
- Internal electronics are enclosed to ensure that there is no interference with external instrumentation

Luminaires with Induction Lighting System

VMVIG and DMVIG Series

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

Class I, Zone 2, Group IIC

Restricted Breathing Suffix S826 for Cl.I, Div 2 & Zone 2

Enclosure Type 4X, IP66 • Marine Locations

Wet Locations • UL and cUL Listed

5L



APPLICATIONS:

Champ Induction luminaires are ideal:

- Where an extra long life lamp source (up to 100,000 hrs) is required.
- In areas that require lamps to reach full illumination immediately.
- Where cool temperature ratings on the luminaire globe are needed to ensure safe operation in hazardous areas.
- In hard-to-reach applications where relamping is costly.
- Where luminaire maintenance is difficult due to continuous process operation requirements that restrict or prohibit shut down except in emergency situations.
- To provide a cost-effective lighting system (low installed/life cost) by minimizing or even eliminating routine luminaire maintenance.
- In cold environment applications.

CERTIFICATIONS AND COMPLIANCES:

NEC & CEC:

- Class I, Division 2 and Zone 2
- Class I, Division 2 Groups A, B, C, D
- Class I, Zone 2 Group IIC
- Restricted Breathing Suffix S826 for Class I, Division 2 & Zone 2
- Marine Locations, Wet Locations, Enclosure Type 3, 3R, 4, 4X; IP66
- UL and cUL Listed

UL Standards: 844, 60079-15, 1598, 1598A

CSA Standards: C22.2 No.137, E79 Series

Compliances and approvals for the lamp system

- | | |
|--------------------------|----------------------|
| • RFI < 30 MHz | EN 55015 |
| • RFI > 30 MHz | EN 55022 |
| • Harmonics | EN 61000-3-2 |
| • Immunity | EN 61547 |
| • Safety | EN 61347-2-3 & UL935 |
| | EN 60928 |
| • Performance | EN 60929 |
| • Vibration & bump tests | IEC 68-2-6-Fc |
| | IEC 68-2-29-Eb |
| • Quality standards | ISO 9001 |
| • Environmental standard | ISO 14001 |

STANDARD MATERIALS:

- Ballast housings and mountings — copper-free aluminum (less than 0.4 of 1%)
- Exterior hardware — stainless steel
- Reflectors (dome and angle) — Krydon fiberglass-reinforced polyester material
- Globes — heat and impact-resistant internally fluted glass
- Guards — copper-free aluminum (55W), stainless steel (85W).

STANDARD FINISHES:

- Copper-free aluminum — epoxy powder coat
- Krydon® material — high reflectance white
- Stainless steel — natural

OPTIONS:

DESCRIPTION	SUFFIX TO ADD TO CATALOG NO.
Restricted Breathing Construction	
Class I, Division 2 & Zone 2 suitability	
Cooler operating temperatures (T-Codes)	S826

ACCESSORIES:

MOUNTING MODULES	CAT. NO.
¾ NPT Pendant	APM2
1 NPT Pendant	APM3
¾ NPT Flexible Pendant	HPM2
¾ NPT Ceiling Mount	CM2
1 NPT Ceiling Mount	CM3
¾ NPT Wall Mount	TWM2
1 NPT Wall Mount	TWM3
¾ NPT Quad Mount	QM25
1 ½ NPT Stanchion Mount — 25 Degree Angle	JM5
1 ½ NPT Stanchion Mount — Straight	PM5

WATTAGE	DOME REFLECTOR CATALOG NO.	ANGLE REFLECTORS CATALOG NO.
55W	RD70	RA70
85W	RD739	RA739
165W	RD739	RA739

DIMENSIONS:

See Catalog 6000 Section 3L for dimensional information on VMV and DMV Series

AMPERAGE:

Power consumption for specific voltages as follows:

55W LUMINAIRES

- a. 120VAC x .460mA = 55.70 watts
- b. 230VAC x .260mA = 59.80 watts

85W LUMINAIRES

- c. 120VAC x .710mA = 85.20 watts
- d. 230VAC x .400mA = 92.00 watts

165W LUMINAIRES

- e. 230VAC x .700mA = 161.00 watts

5L

Luminaires with Induction Lighting System

VMVIG and DMVIG Series



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

Class I, Zone 2, Group IIC

Restricted Breathing Suffix S826 for Cl.I, Div 2 & Zone 2

Enclosure Type 4X, IP66 • Marine Locations

Wet Locations • UL and cUL Listed

LAMP DATA:

	SYSTEM Power (W)	LUMEN (LM)		EFFICACY (LM/W)		COLOR RENDERING INDEX*	LUMEN MAINTENANCE AFTER 60,000 HRS (%)
		INITIAL	MEAN	INITIAL	MEAN		
VMV	55	3500	2800	65	51	80	75
DMV	85	6000	4800	70	57	80	75
DMV	165	12000	9600	72	58	80	70

* Lamp sources with 80+ CRI provide excellent color rendering. CRI scale is 0-100 with 100 considered as ideal.

TEMPERATURE PERFORMANCE DATA:

CATALOG #	WATTS	AMBIENT TEMP °C	SUPPLY WIRE TEMP °C	CLASS I, DIV. 2 TEMP. RATING	CLASS II, DIV. 1, CLASS III TEMP. RATING	SIMULTANEOUS PRESENCE CLASS I, DIV. 2	RESTRICTED BREATHING (SUFFIX S826)
							Aex nR IIC, Ex nR IIC CLASS I, DIV. 2/Zone 2
VMVIG055	55	40	60	T2C	—	—	T6
VMVIG055	55	55	75	T2C	—	—	T5
DMVIG085	85	40	60	T2D	T2D	T2D	T6
DMVIG085	85	55	75	T2D	—	—	T6
DMVIG165	165	40	75	T3	—	—	T5

Champ Induction DMV 85-watt is now Class II Div.1 – suitable for dust environments

ORDERING INFORMATION:

To complete Catalog Number, add Voltage and Option suffix(es).

MOUNTING STYLE	HUB SIZE (INCHES)	55W INDUCTION CATALOG NUMBER (WITH G24 GLOBE & P21 GUARD)	85W INDUCTION CATALOG NUMBER (WITH G303 GLOBE & P33 GUARD)	165W INDUCTION CATALOG NUMBER (WITH G303 GLOBE & P33 GUARD)
Pendant	3/4 1	VMVIG2A055GP VMVIG3A055GP	DMVIG2A085GP DMVIG3A085GP	*DMVIG2A165GP *DMVIG3A165GP
Flexible Pendant	3/4	VMVIG2HA055GP	DMVIG2HA085GP	*DMVIG2HA165GP
Ceiling Mount	3/4	VMVIG2C055GP	DMVIG2C085GP	*DMVIG2C165GP
	1	VMVIG3C055GP	DMVIG3C085GP	*DMVIG3C165GP
Wall Mount	3/4	VMVIG2TW055GP	DMVIG2TW085GP	*DMVIG2TW165GP
	1	VMVIG3TW055GP	DMVIG3TW085GP	*DMVIG3TW165GP
Quad Mount	3/4	VMVIG25Q055GP	DMVIG25Q085GP	*DMVIG25Q165GP
Stanchion Mount 25° Angle	1 1/2	VMVIGJ055GP	DMVIGJ085GP	*DMVIGJ165GP
Stanchion Mount Straight	1 1/2	VMVIG2P055GP	DMVIG2P085GP	*DMVIG2P165GP
Luminaire with Globe and Guard less Mounting Module	—	VMVIG055GP	DMVIG085GP	*DMVIG165GP

Standard Voltage

120V, 50/60 Hz
200V-277V, 50/60 Hz

Suffix

/120
/200 277

Operative range of 108-132 VAC
Operates on 208, 220, 230, 240, 277 VAC

Add the voltage suffix to the

above catalog number.
Ex. - DMVIG2A085GP/120

* 165W Champ Induction Luminaires are only available in 200-277VAC

Luminaires with Induction Lighting System

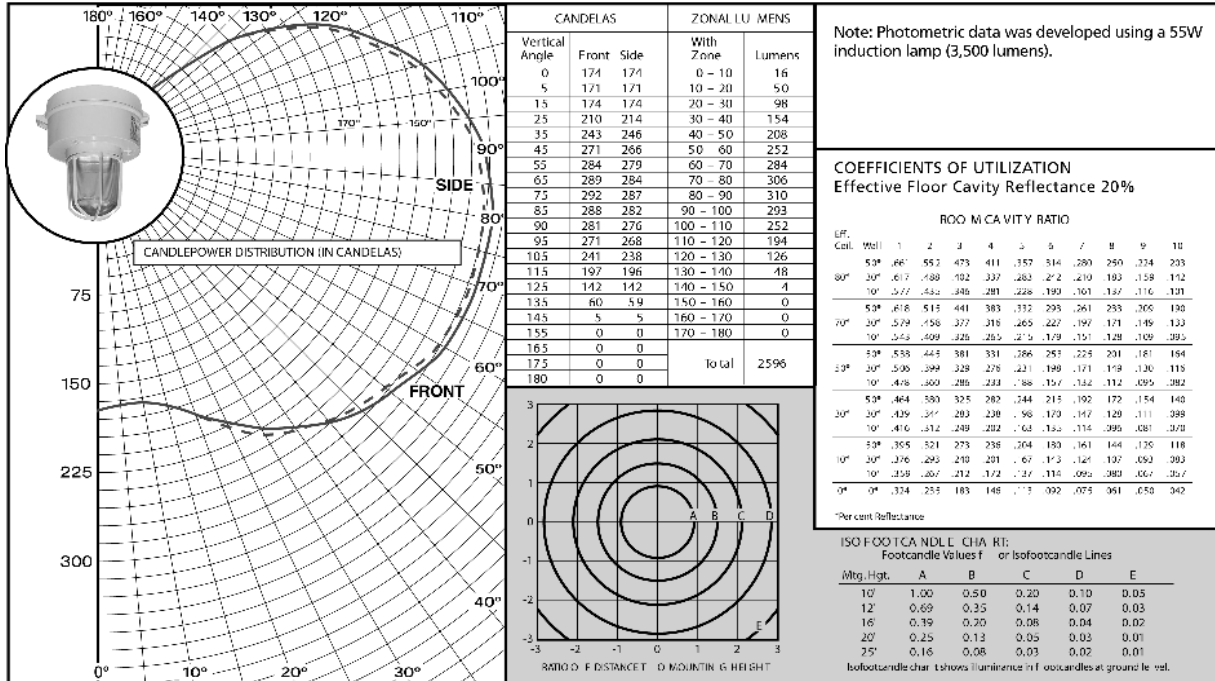
VMVIG and DMVIG Series

Photometric Data

5L

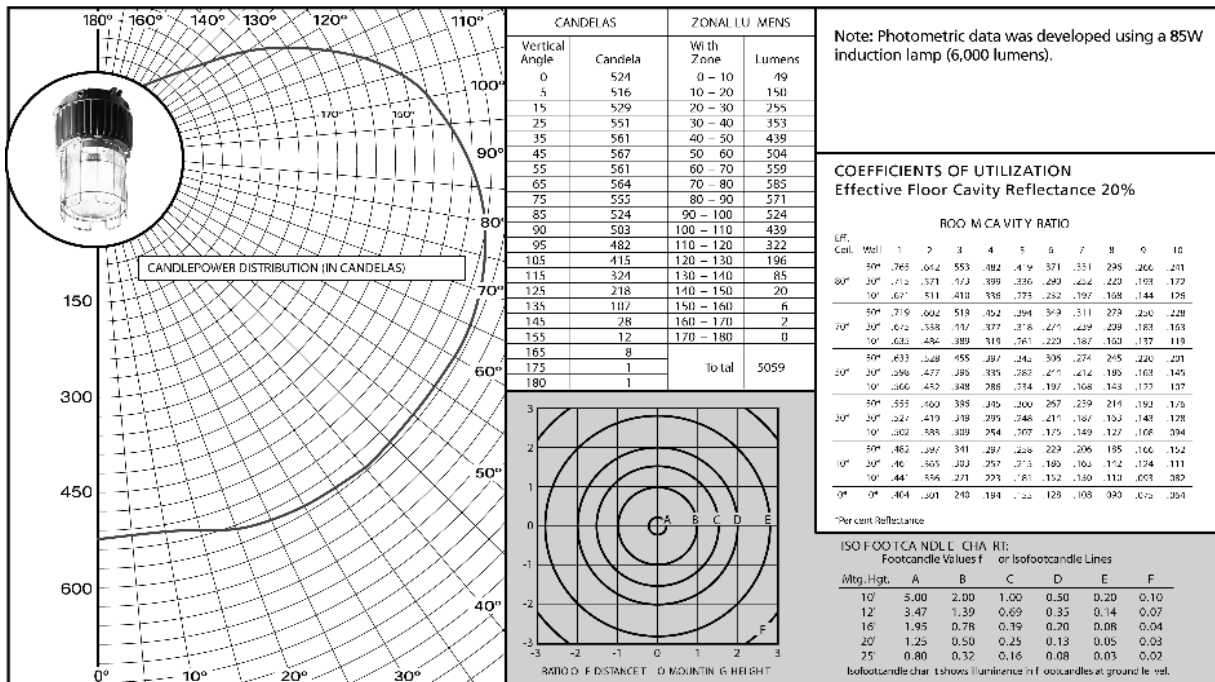
55 WATT INDUCTION

LUMINAIRE WITH GLOBE AND GUARD
VMVIG055GP LAMP: 55W INDUCTION



85 WATT INDUCTION

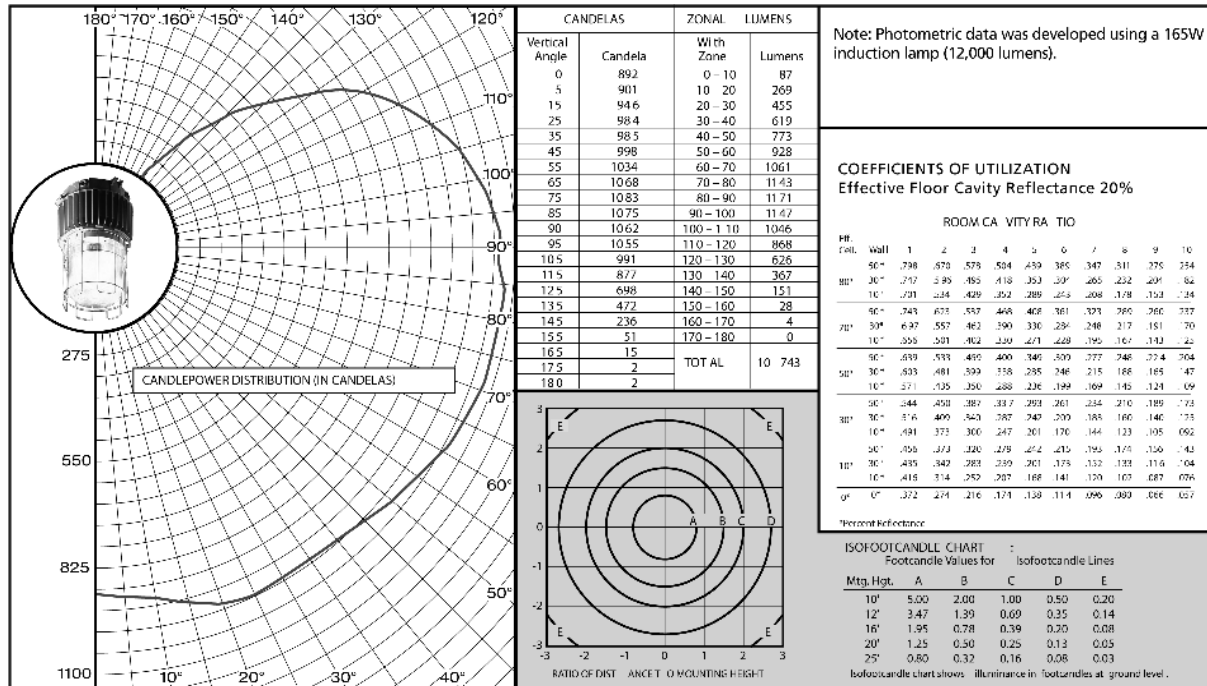
LUMINAIRE WITH GLOBE AND GUARD
DMVIG085GP LAMP: 85W INDUCTION



Photometric Data: For additional photometric information, see the Resources area of our website. Photometric .ies files for use with our Luxicon Lighting Layout Software are available to download

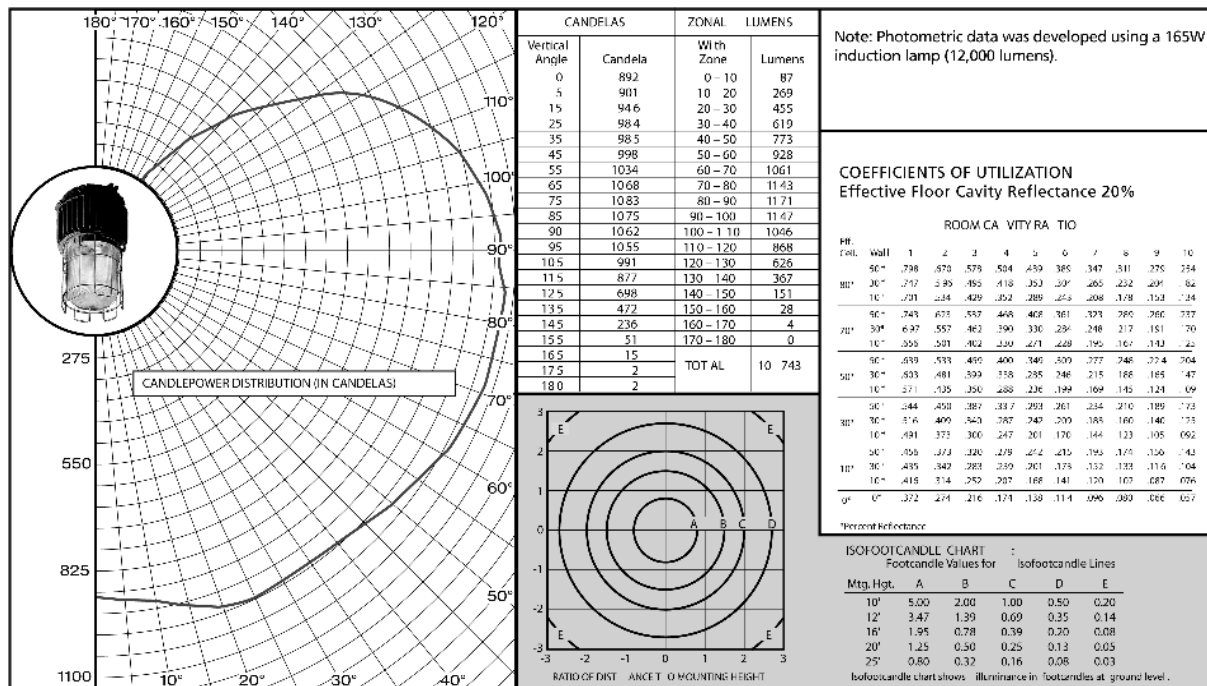
165 WATT INDUCTION

LUMINAIRE WITH GLOBE
DMVIG165G LAMP: 165W INDUCTION



165 WATT INDUCTION

LUMINAIRE WITH GLOBE AND GUARD
DMVIG165GP LAMP: 165W INDUCTION



Photometric Data: For additional photometric information, see the Resources area of our website. Photometric .ies files for use with our Luxicon Lighting Layout Software are available to download

Luminaires with Induction Lighting System

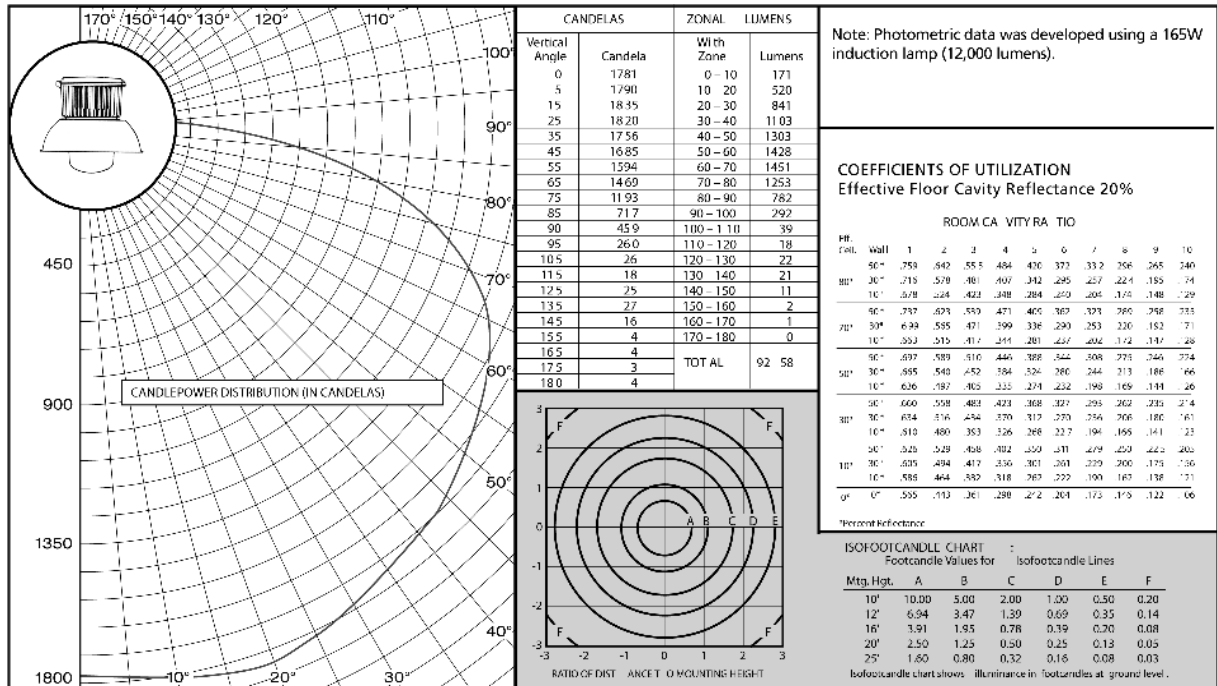
VMVIG and DMVIG Series

Photometric Data

5L

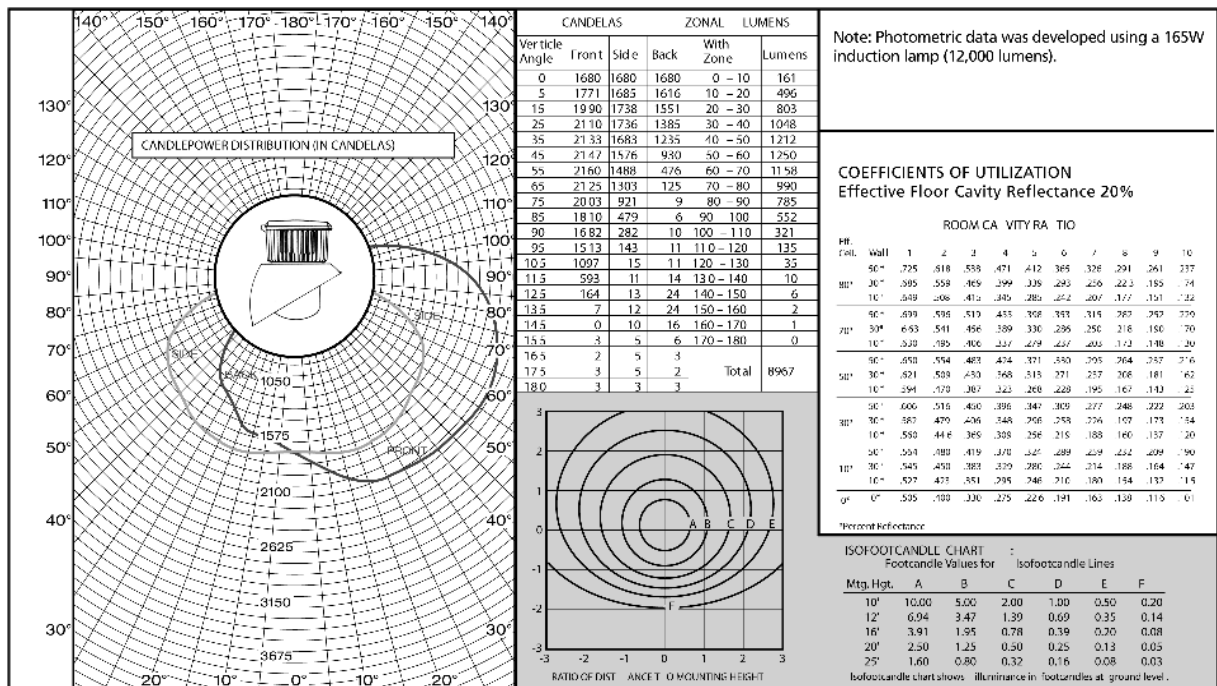
165 WATT INDUCTION

LUMINAIRE WITH GLOBE AND RD739 DOME REFLECTOR
DMVIG165G LAMP: 165W INDUCTION



165 WATT INDUCTION

LUMINAIRE WITH GLOBE AND RA739 (30° ANGLE) REFLECTOR
DMVIG165G LAMP: 165W INDUCTION



Photometric Data: For additional photometric information, see the Resources area of our website. Photometric .ies files for use with our Luxicon Lighting Layout Software are available to download

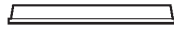
COVERS:

PENDANT

APM2 3/4 IN.

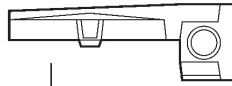
APM3 1 IN.

HPM2 3/4 IN.

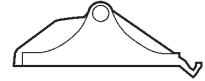
WALL

TWM2 3/4 IN.

TWM3 1 IN.

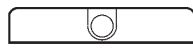
QUAD—MOUNT

QM25 3/4 IN.

CEILING

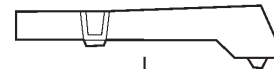
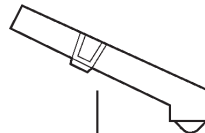
CM2 3/4 IN.

CM3 1 IN.

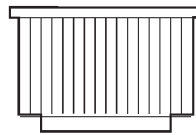
STANCHION

JM5 1 1/2 IN.

PM5 1 1/2 IN.

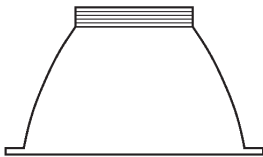
HOUSING

DMV

GLOBE

G303

G303 S808

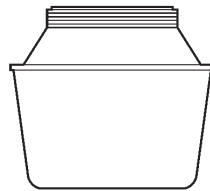

REFLECTOR/LENS
GRD4
REFRACTOR

GR302

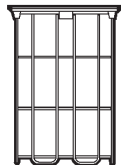
GR305

PGR302

PGR305

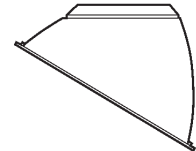
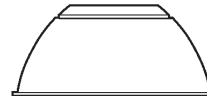
GUARD

P33

REFLECTOR

RA79 RA739

RD79 RD739



Description	Page No.
Application/Selection	810
General Purpose Luminaires VF Vaporgard™ Series	811-813
Non-Metallic Luminaires NFL Series N2MVF	843-845 823-828
Hazardous Area Luminaires CPMVF DMVF eLLB20 Series eLLK Series EVLPF EVF Series EVFDR Series EVFT Illuminator™ Series FVN Series FVS Series nLLK Series	814, 815 816-822 855-857 846-848 829-835 858-861 862, 863 839-842 852-854 836-838 849-851

6L Fluorescent Lighting Luminaires

Hazardous and Non-Hazardous Application and Selection Quick Selector Chart

Application:

- for use in hazardous or non-hazardous areas (as shown in the Quick Selector Chart below)
- low operating cost
- high light output per watt
- low brightness
- low glare
- uniform light
- instant illumination

Considerations for Selection:

Having made the determination that a fluorescent luminaire is required, the remaining selection is the type of luminaire (i.e., number and kind of lamps) and placement of luminaire. To determine the number of luminaires:

1. Determine Cavity Ratios for room, ceiling and floor.
2. Determine Coefficient of Utilization
3. Determine Light Loss
4. Determine Lamp Lumens required = $\frac{\text{Footcandles} \times \text{Area}}{\text{Coefficient of Utilization} \times \text{Light Loss Factor}}$
5. Determine number of luminaires required = $\frac{\text{Total Lamp Lumens Required}}{\text{Lamp Lumens per Luminaire}}$

A more complete explanation of the steps to be followed can be found in the Lighting Selector Guide, pages 665 through 689.

Table 500-3(d) Identification Numbers.

Maximum Temperature		Identification Number
Deg. C	Deg. F	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

Quick Selector Chart

Series	NEC – Hazardous Area Compliance	Lamp Watts	Volts	No. of Lamps
VF	Cl. I, Division 2, Groups A,B,C,D	5, 7, 9	120	2
NFL	Cl. I, Division 2, Groups A,B,C,D	32, 40	120-277V 50-60Hz	1, 2
FVN	Cl. I, Division 2, Groups A,B,C,D; Cl. II, Groups F,G; Cl. III	32, 40, 60	120, 277, 220/240 50 or 60 Hz	2, 3
EVF	Cl. I, Groups C,D; Cl. II, Groups E,F,G	32, 40, 60, 110	120, 277, 347, 220/240 50 or 60 Hz	1, 2, 3, 4
EVFDR	Cl. I, Groups C,D; Cl. II, Groups E,F,G	32, 40, 60, 110	120, 277, 220/240 50 or 60 Hz	2
EVFT	Cl. I, Groups B,C,D; Cl. II, Groups E,F,G; Cl. III	39	120, 277, 220/240 50 or 60 Hz	2, 4
FVS	Cl. I, Division 2, Groups B,C,D; Cl. II, Groups E,F,G; Cl. III	40	120-277V, 50-60Hz or 347V, 60Hz	2
DMVF	Cl. I, Division 2, Groups A,B,C,D; Cl. II, Groups E,F,G; Cl. III; Simultaneous Presence	26, 32	120-277V, 50-60Hz or 347V, 60Hz	2, 3
N2MVF	Cl. I, Div. 2, Groups A,B,C,D Class II, Groups F,G Class III; Simultaneous Presence	26, 32	120-277V, 50-60Hz or 347V, 60Hz	2
EVLP	Cl. I, Div.1, Groups (B), C, D Cl. II, Groups E, F, G Cl. III; Simultaneous Presence	26, 32	120-277V, 50-60Hz or 347V, 60Hz	2
CPMVF	Cl. I, Div. 2, Groups A, B, C, D	26, 32, 42	120-277V, 50-60Hz, 347V 60Hz	2
eLLB 20	Cl. I, Division 2, Groups A,B,C,D; Cl. I, Zone 1, Group IIC; Cl. II, Division 2, Groups F,G	17, 32	120-240V, 50-60Hz 110-230 VDC	2
ELLK	Cl. I, Zone I & Div 2 Cl. II, Div 2	32	120-254V	2
nLLK	Cl. I, Division 2, Groups A,B,C,D; Cl. I, Zone 2 AEx nA II; Cl. II, Division 2, Groups F,G	17, 32	120-277V, 60Hz	2

VF Series Vaporgard™ Fluorescent Luminaires

- Cl. I, Div. 2, Groups A,B,C,D*
- Cl. I, Zone 2 IIC*
- Wet Locations
- NEMA 3,3R

6L

Application:

VF series *Vaporgard* fluorescent lighting luminaires are used:

- indoors or outdoors in industrial locations where enclosed and gasketed luminaires are required
- where the energy efficiency and long life of single twin-tube compact fluorescent lamps are desired
- where luminaires may be subject to wet, damp, dirty locations
- where vibration and rough usage are a problem
- to retrofit existing *Vaporgard* incandescent luminaires
- in tunnels, building entrances, utility rooms, hallways and similar locations
- with clear or colored globes to illuminate or mark critical locations or processes

Features:

- Compact size and light weight allow adaptation and easy installation in many industrial applications
- Cast copper-free aluminum (less than 0.4 of 1% copper) construction and epoxy powder finish provide excellent resistance to corrosion
- Variety of mounting arrangements to suit any lighting layout – pendant, ceiling, wall bracket, angle stanchion, through feed, box mount
- VFH luminaire components can be installed on existing *Vaporgard* incandescent components and standard stamped metal boxes
- Fixtures available for use with two compact fluorescent lamps. Lamps rated at 5, 7 or 9 watts can be used with all luminaires
- Dome and 30° angle reflectors made of bright white *Krydon*® material provide superior reflectivity. Will not chip, peel, dent, rust or corrode. (Order separately – see page 812)
- Glass globes are internally fluted and stippled to reduce glare and provide even light distribution. Exteriors are smooth to shed dust
- All luminaires 120 VAC only!
- Grounding wire for safety

Standard Materials:

- Bodies and guards – copper-free aluminum (less than 0.4 of 1%)
- Globes – clear or colored, glass or plastic
- Reflectors – *Krydon* fiberglass-reinforced polyester material

Standard Finishes:

- Copper-free aluminum – powder epoxy finish
- *Krydon* material – high reflectance white

Electrical Ratings:

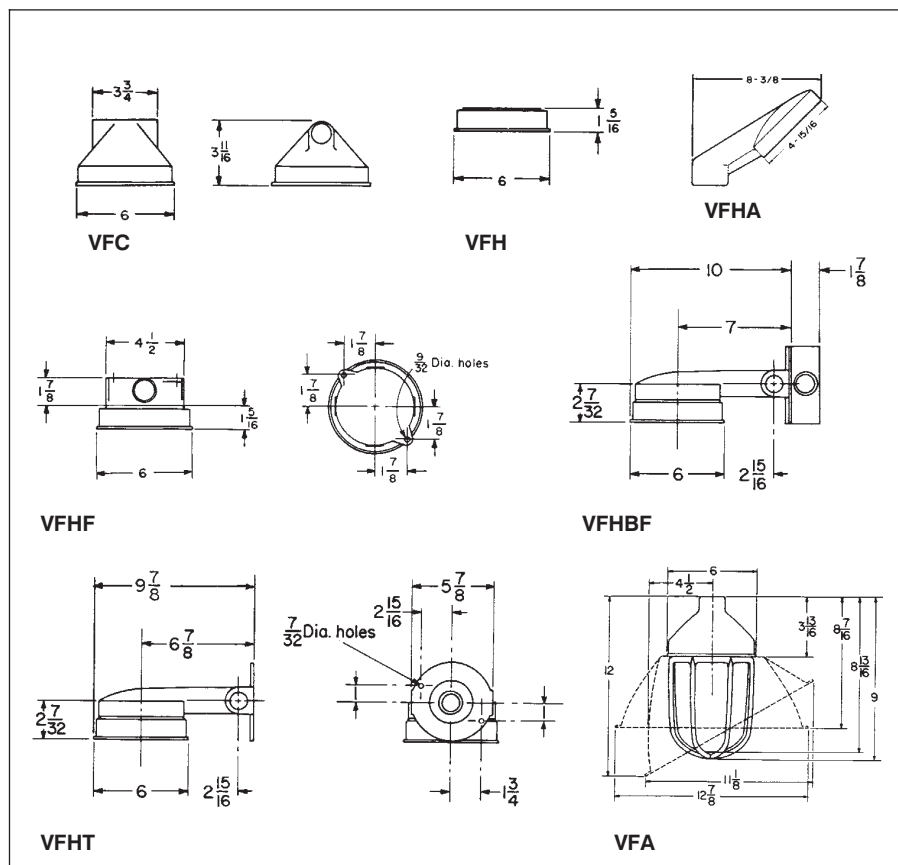
- Input voltage – 120 VAC, 60 hertz
- Wattages: two 5, 7 or 9 watt lamps



Certifications and Compliances:

- UL Standard: 1598, 844
- CSA Standard C22.2 No. 137

Dimensions



Accessories:

- See page 812 for complete listing

Luminaire Net Weights:

Fixture Type	1-Lamp Luminaire With Globe & Guard (lbs.)	2-Lamp Luminaire With Globe & Guard (lbs.)
VFA	4 3/4	5
VFHF	5	5 1/4
VFHBF	7 1/4	7 1/2

Add for Reflectors (lbs.):

Dome	1	30° Angle	1
------	---	-----------	---

Deduct (lbs.): P21 Guard 1/2

Temperature Performance Data:

Lamp	Class I Div. 2	Max. Ambient	Supply Wire °C	Minimum Operating
5, 7W	T3B	40°C	75°C	-18°C (0°F)
9W	T3B	40°C	75°C	-4°C (25°F)

6L
Fluorescents

* All mountings except stanchion.

6L

VF Series Vaporgard™ Fluorescent Luminaires

- Cl. I, Div. 2, Groups A,B,C,D**
- Cl. I, Zone 2 IIC**
- Wet Locations
- NEMA 3,3R

Twin-Tube Fluorescent with G24 Clear Glass Globe and P21 Guard (lamps not included)

Luminaire Watts	Hub Size	Pendant Mount Cat. #	Ceiling Mount Cat. #	Wall Mount (w/Box) Cat. #	Wall Mount (No Box) Cat. #	Angle Stanchion Mount* Cat. #	Through Feed Mount Cat. #	Box Mount & Retrofit Cat. #
2 Lamps, 18 watts max.	1/2	VFA122GP	VFHF122GP✓	VFHBF122GP✓	VFHT122GP✓		VFC122GP	VFH122GP✓
	3/4	VFA222GP✓	VFHF222GP✓	VFHBF222GP✓	VFHT222GP✓		VFC222GP✓	
	1	VFA322GP						
	1 1/4					VFHA422GP✓*		

VF Series with Colored Glass Globes or Plastic Globes.

To obtain:

- Substitute appropriate globe designation for "G" in above Cat. Nos.
- Refer to section 1L for globe designations.

Accessories and Components

Reflectors



Dome
Cat. # RD71✓
(Cannot be used with wall mount luminaires)



30° Angle
Cat. # RA71✓

Globes



Color

Clear
Green
Blue
Red
Amber

Glass Cat.

G24✓
G25
G26
G27
G28

Plastic Cat. *

G63
G65
G67

Guard

For use with glass globes only



Cat. #
P21✓

Junction Boxes and Bracket Bodies



VXF – 4 Hubs, 3 Plugs

Hub Size	Cat. #
1/2	VXF10✓
3/4	VXF20✓



VXT – 3 Hubs, 2 Plugs

Hub Size	Cat. #
1/2	VXT10✓
3/4	VXT20✓



VXA – Stanchion Mount (Non Hazardous Locations)

Hub Size	Cat. #
1 1/4	VXA4✓



VXFT – 5 Hubs, 4 Plugs

Hub Size	Cat. #
1/2	VXFT10✓
3/4	VXFT20✓

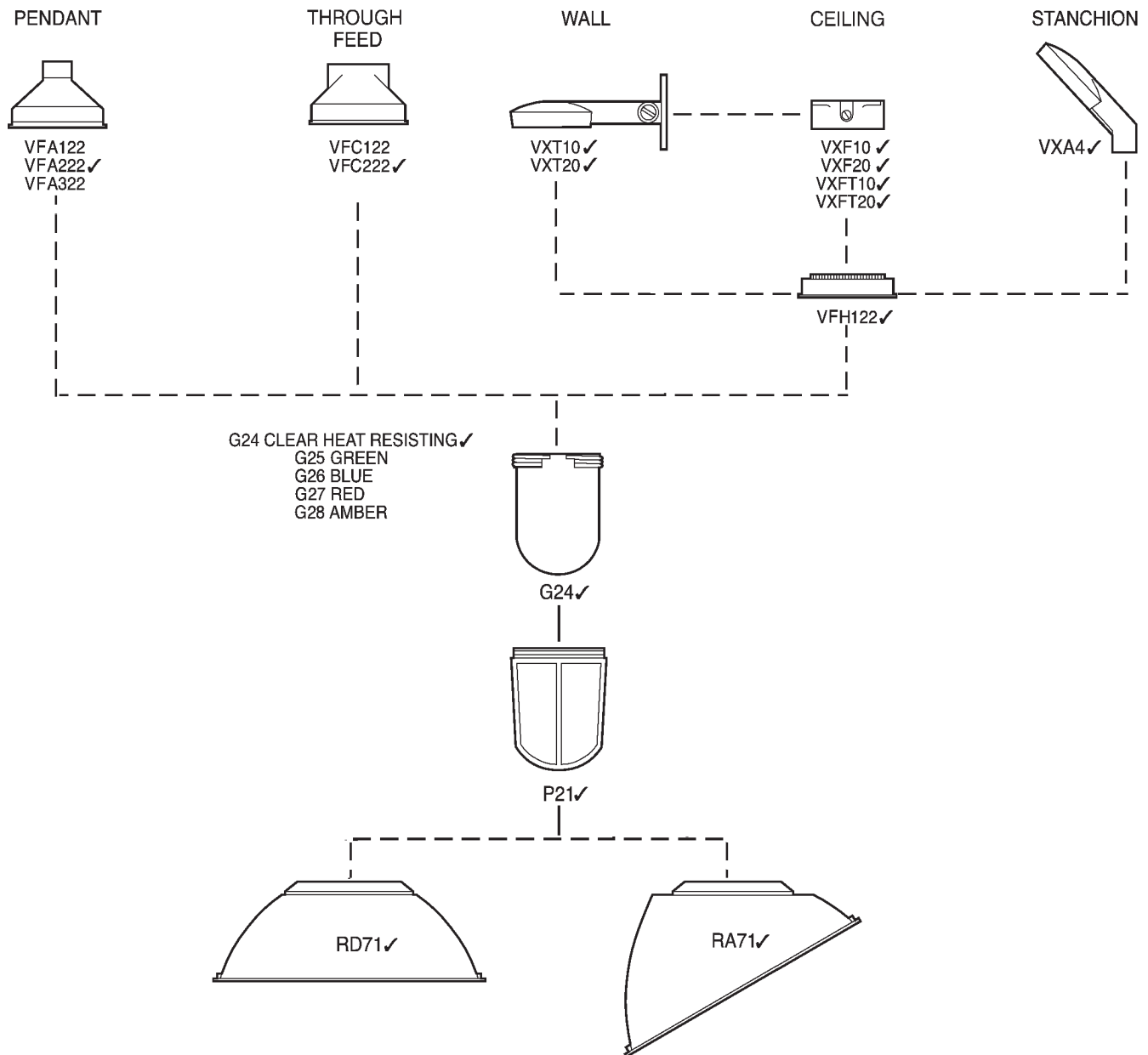


VXB – 3 Hubs, 2 Plugs

Hub Size	Cat. #
1/2	VXB10 (Includes adapter plate and two gaskets for mounting to VXF, GRF or 4" outlet boxes.)✓
3/4	VXB11 (Includes 1 gasket for mounting to VXF or GRF junction boxes.)✓

* For non-hazardous locations.
✓ – available with Lightning Service™ delivery
See Section G for complete details

** All mountings except stanchion.



✓ – available with Lightning Service™ delivery. See Section G for complete details.

CPMVF Champ-Pak™ Compact Fluorescent Luminaires

- Cl. I, Div. 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div. 2 & Zone 2* (Suffix S826)
- Certified for IEC Zone 2* (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence*
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP56

Application:

CPMVF Champ-Pak™ luminaires are used:

- Indoor and outdoor wall mounting or vertical surface mounting where minimal luminaire depth is required in:
 - Manufacturing plants and heavy industrial facilities
 - Industrial process facilities such as refineries, chemical, petrochemical, pharmaceutical and platforms
 - Waste or sewage treatments plants
 - Offshore, dockside and harbor installations
- For security and safety lighting in industrial facilities for lighting of loading docks, tunnels and stairways
- For marine, wet location, hosedown and corrosive environments

Features & Benefits:

- Unique compact shallow-profile design mounts virtually anywhere
- Side hinged cover with two screw closing for easy installation and maintenance
- Gray Corro-free™ epoxy powder coat two-piece housing provides superior corrosion resistance
- Unique stainless steel wire guard accessory attaches without any additional hardware for easy installation and maintenance
- Glass refractor provides uniform light distribution to eliminate glare
- Silicon gaskets make luminaire suitable for NEMA 4X, Marine environments
- High power factor ballasts (+90%) are standard, which allow more luminaires per circuit

Standard Materials:

- Luminaire housing and door frame assembly – copper-free aluminum
- External hardware – stainless steel
- Lens – heat and impact-resistant refractor style glass
- Gaskets – silicon rubber
- Reflector – aluminum light sheet
- Wire guard – stainless steel

Standard Finishes:

- Aluminum – Corro-free™ epoxy powder coat
- Stainless steel – natural

Certificates and Compliances:

- NEC and CEC:
 - Class I, Division 2, Groups A, B, C, D
 - Class II, Class III & Simultaneous Presence (Class I, Division 2 and Class II)*
 - Class I Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards:
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15

Energy Savings:

- Less wattage used with compact fluorescent lamps compared to equivalent incandescent lamps providing the same light output.



Electrical Rating Ranges:

- Wattages: Two 26, 32, or 42 watt lamps.
- 120-277V, 50-60Hz
- 347V, 60Hz
- 12, 24 & 125VDC (Consult Cooper Crouse-Hinds)

Options:

Suffix to add
to Cat. No. #

- Restricted Breathing Construction
 - Class I Division 2 & Zone 2 Suitability **S826***
 - Cooler Operating Temperatures (T-Numbers)
- Certified for IEC Zone 2 (Suffix S826TB) **S826TB***
(Guard Required)
 - Furnished with
 - Terminal Block
 - Crimp Terminals
- Factory Assembled with Lamp **FA**
- Fused - protects ballast and capacitors **S658†**
against abnormal line conditions
(Not for use in Canada)
(Not for Marine use)

Accessories:

	Cat. #
Photocell for Field Installation	
• 120V, 50/60Hz	V2PC20
• 208-240V, 50/60Hz	V2PC22
• 277V, 50/60Hz	V2PC27
Stainless Steel Wire Guard	P55

† When ordering Fuses for luminaires, option S658, you must specify the operating voltage. S658 can not be ordered with /MT in the catalog number.

* Contact Cooper Crouse-Hinds

CPMVF Champ-Pak™ Compact Fluorescent Luminaires

Ordering Information
Temperature Performance Data
Dimensions & Weights

6L

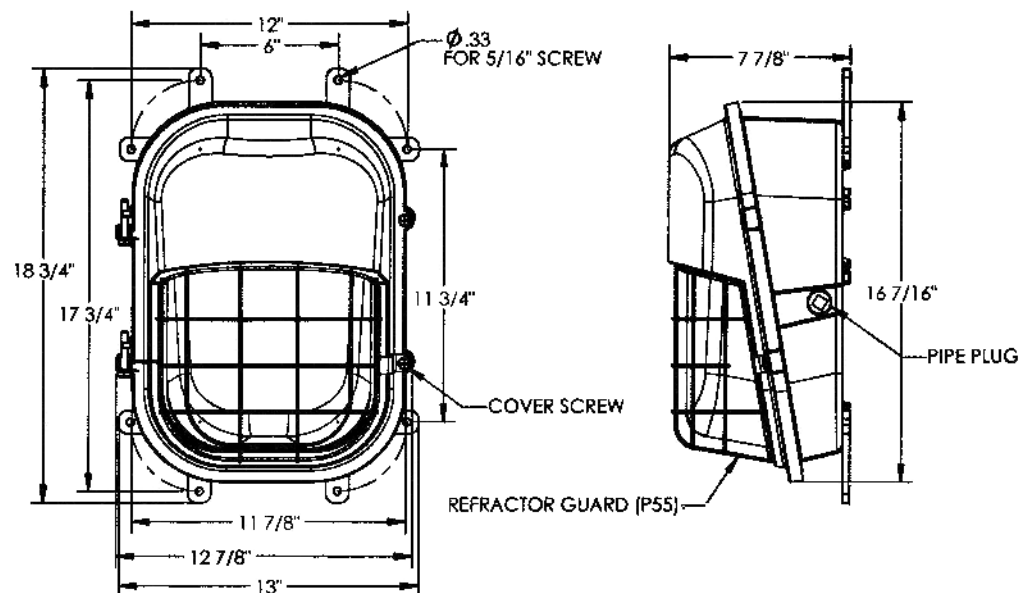
Ordering Information:

Hub Size	Luminaire Watts	Catalog Number
3/4 NPT	52	CPMVF2W052
3/4 NPT	64	CPMVF2W064
3/4 NPT	84	CPMVF2W084

STANDARD VOLTAGE BALLASTS			OPTIONAL BALLASTS		
	NEC/UL & CEC/CSA (cUL)	CEC/CSA (cUL)	(Consult Cooper Crouse-Hinds)		
Voltage Suffix	120-277V 50-60Hz /UNV	347V 60Hz /347	125V DC /125VDC	12V DC /012VDC	24V DC /024VDC

CPMVF Temperature Performance Data – Consult Cooper Crouse-Hinds

Dimensions (Inches)



Net Weight:

CPMVF Less Guard 17 Lbs
P55 Guard 0.5 Lbs

DMVF Series Compact Fluorescent Champ® Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

Application:

DMVF series Champ luminaires are used:

- in areas made hazardous by abnormal conditions resulting in the presence of flammable vapors or gases.
- in areas made hazardous by the presence of combustible dusts.
- where combustible dusts and flammable vapors are present simultaneously.
- in marine applications where water spray and corrosive atmospheres are considerations.
- on installations where vibration and rough usage are problems.
- where a cool, efficient light source is required.
- in areas that require lamps to reach full illumination immediately.
- in refineries, chemical and petrochemical facilities, grain processing, handling or storage facilities, manufacturing plants waste water treatment plants sewage treatment plants, oil terminals, food processing facilities, breweries, and any other manufacturing or processing facility where safe, reliable, hazardous area fluorescent or auxiliary lighting is needed.

Standard Features:

- Housings made of die-cast copper-free aluminum (less than 0.4 of 1% copper) for strength and resistance to corrosion.
- Mounting modules equipped with integral hub set screws for vibration resistance (ceiling, pendant, and quad mounts).
- Hubs are provided with an integral conduit stop and bushing to help prevent damage to field wiring during installation.
- Epoxy powder finish and stainless steel external hardware for resistance to corrosion.
- Long-life gaskets which provide seals between mounting module, housing, and optical assembly.
- Grounding wire for safety.
- Cool operating design.
- Optional stainless steel open bottom guard permits direct access to the globe for easy relamping.
- Optional battery pack ballast for auxiliary lighting.

Energy Savings

- Less wattage used with compact fluorescent lamps compared to equivalent incandescent lamps providing the same light output.

Standard Materials:

- Ballast housings and mountings – copper-free aluminum (less than 0.4 of 1%).
- Exterior hardware and guards – stainless steel.
- Reflectors – Krydon® fiberglass-reinforced polyester material.
- Globe – heat and impact resistant internally fluted glass.

Standard Finishes:

- Aluminum – gray epoxy powder coat.
- Krydon material – high reflectance white.
- Stainless steel – natural.

Electrical Rating Ranges:

- Wattage: Two 26 or 32 watt lamps
- 120-277V, 50-60 Hz
- 347V, 60Hz
- 12, 24, & 125VDC

Certificates and Complies:

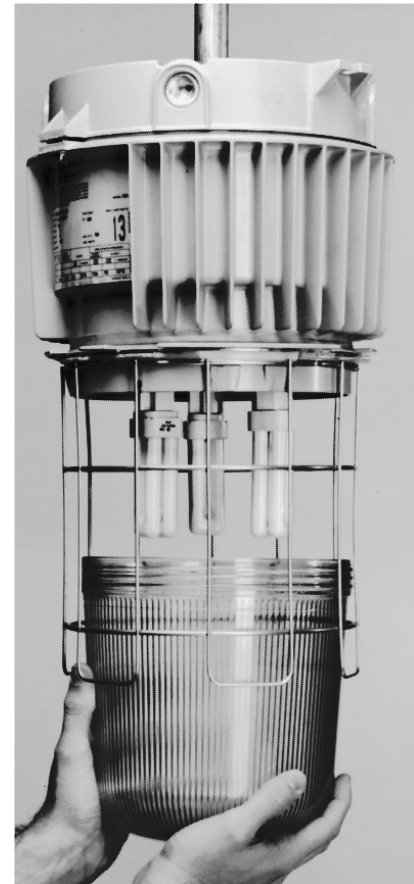
- NEC and CEC:
 - Class I, Division 2, Groups A, B, C, D
 - Class II, Class III & Simultaneous Presence (Class 1, Division 2 and Class II)
 - Class I Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards:
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15

Options:

Description

- | | |
|---|--------|
| • Restricted Breathing Construction
Class I Division 2 & Zone 2 Suitability
Cooler Operating Temperatures (T-Numbers) | S826 |
| • Certified for IEC Zone 2 (Suffix S826TB)
Furnished with
Terminal Block
Crimp Terminals | S826TB |
| • Factory Assembled with lamps installed for additional labor savings. | FA. |
| • Fused – to protect ballast against abnormal line conditions (not available on CSA certified fixtures) | S658* |
| • Lamps supplied with fixture | S714. |
| • Top hat with stainless steel threaded insert to attach ballast housing | S806. |
| • TEFLON® coating on globe for increased shatter protection | S808. |

* When ordering Fuses for luminaires, option S658, you must specify the operating voltage. S658 can not be ordered with /MT in the catalog number.



Accessories:

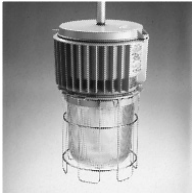
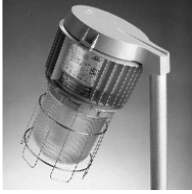
- (Order separately)
- Reflectors (to be used with globe)
 - Dome Cat. # RD739
 - 30° Angle Cat. # RA739

Suffix to add
to Cat. No. #

DMVF Series Compact Fluorescent Champ® Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

6L

				DMVF Series Fluorescent Cat. No. with G303 Globe and P33 Guard	
Mounting Style	Hub Size	Luminaire Watts			
	Pendant Mount		3/4	52	DMVF2A052GP
			1		DMVF3A052GP
			3/4	64	DMVF2A064GP
			1		DMVF3A064GP
	Flexible Pendant Mount		3/4	52	DMVF2HA052GP
			3/4	64	DMVF2HA064GP
	Ceiling Mount Thru-Feed		3/4	52	DMVF2C052GP
			1		DMVF3C052GP
			3/4	64	DMVF2C064GP
			1		DMVF3C064GP
	Wall Mount Thru-Feed		3/4	52	DMVF2TW052GP
			1		DMVF3TW052GP
			3/4	64	DMVF2TW064GP
			1		DMVF3TW064GP
	Quad-Mount		3/4	52	DMVF25Q052GP
	Pendant, Adjustable Thru-Feed, 25° Angle, 12½° Angle		3/4	64	DMVF25Q064GP
	Stanchion Mount 25° Angle		1½	52	DMVFJ052GP
			1½	64	DMVFJ064GP
	Stanchion Mount Straight		1½	52	DMVFP052GP
			1½	64	DMVFP064GP

1. Catalog numbers are basic numbers. Voltages must be specified.

Voltage Suffix	STANDARD VOLTAGE BALLASTS		OPTIONAL BALLASTS		
	NEC/UL & CEC/CSA (cUL)	CEC/CSA (cUL)	125V DC /125VDC	12V DC /012VDC	24V DC /024VDC
	120-277V 50-60Hz /UNV	347V 60Hz /347			

6L
Fluorescents

6L DMVF Series - Ordering by Components

DMVF luminaires are available in components

A complete luminaire consists of:

- I. Champ Cover (Mounting Module)
- II. DMVF Ballast Housing
- III. Globe, Globe Guard, Globe Reflectors

I. Champ Cover (Mounting Module):

Type	Conduit	Cat. No.
Pendant	¾ 1	APM2 APM3
Flexible Pendant	¾	HPM2
Ceiling	¾ 1	CM2 CM3
Wall	¾ 1	TWM2 TWM3
Stanchion - 25 Degree Angle	1½	JM5
Stanchion - Straight	1½	PM5
Quad-Mount	¾	QM25

II. Ballast Housings. Complete catalog number must have the **voltage suffix** (UNV shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Catalog Number
Compact Fluorescent	2 (26W) 2 (32W)	DMVF052/UNV DMVF064/UNV

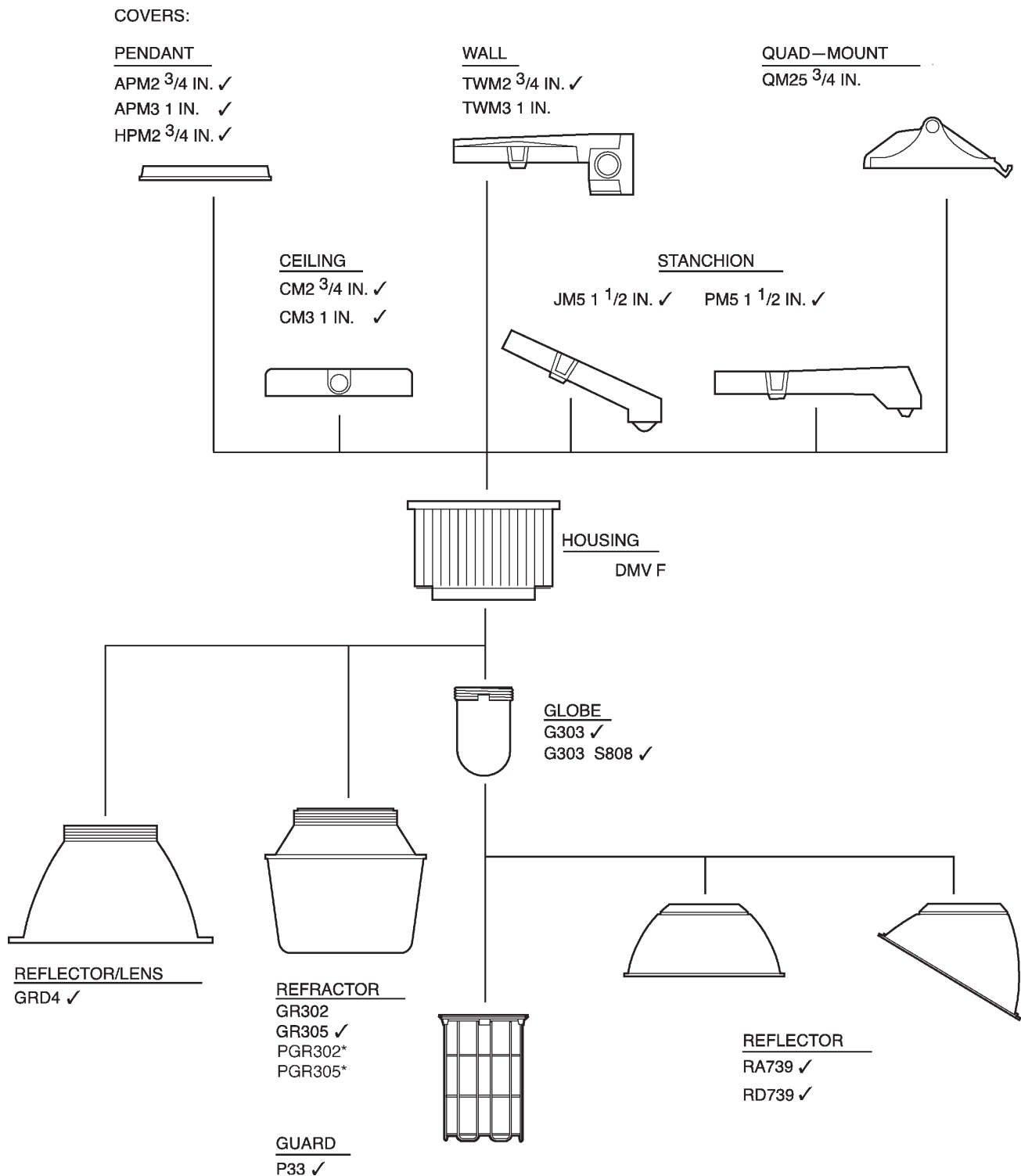
III. Globe, Guards and Reflectors

Type	Catalog Number
Globe	G303
Teflon Coated	G303-S808
Globe Guard	P33
Globe Reflector-Dome	RD739
Globe Reflector-Angle	RA739

DMVF Series Compact Fluorescent Champ® Luminaires

Family Tree

6L



* These plastic reflectors are for non-hazardous areas only (50-100W max.)

✓ – available with Lightning Service™ delivery. See Section G for complete details.

Temperature Performance Data:

Lamp Watts	Minimum Operating Temperature	Maximum Ambient Temp	Class I		Class II	Simultaneous Presence		Supply Wire °C
			Non-Restricted Breathing	Restricted Breathing		Non-Restricted Breathing	Restricted Breathing	
Fluorescent:	DMVF		Div. 2	Zone 2 or Div. 2	Division 1	Cl.I, Div. 2/Cl.II	Cl.I, Zone 2 or Div. 2/Cl.II	
52 & 64 Watt	-20°C (4°F)	40°C (104°F)	T3	T6	T6	T3/T6	T6	60

Net Luminaire Weights (lbs.)

Luminaire Series	Lamp Watts	Luminaire with Globe, Guard (lbs.)
DMVF	52, 64	18¼

Add for mounting modules (lbs.):

Pendant	1¼
Flexible Pendant	1½
Ceiling	2¾
Wall	4½
Quad-Mount	3½
Angle Stanchion	3½
Straight Stanchion	4½

Add for reflectors (lbs.):

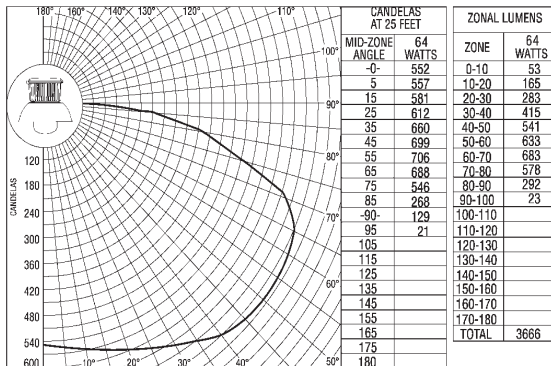
Dome	1¼	30° Angle	1¾
------	----	-----------	----

Deduct: 1 lb. for luminaire with P33 Guard

DMVF Series Compact Fluorescent Champ® Luminaires

Photometric Data

6L



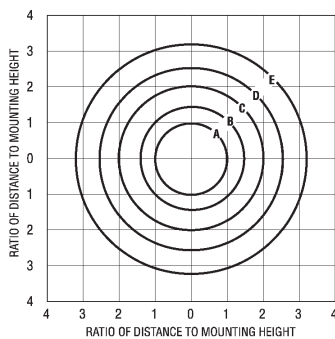
NOTE: For 52 watt DMVF applications, use a .75 multiplier.

DMVF Photometric Data

ISOFOOTCANDLE CHART:

Luminaire with globe and dome reflector

DMVF064GRD Dome Reflector



DMVF064GRD Dome Reflector

Coefficients of Utilization

Effective Floor Cavity Reflectance 20%

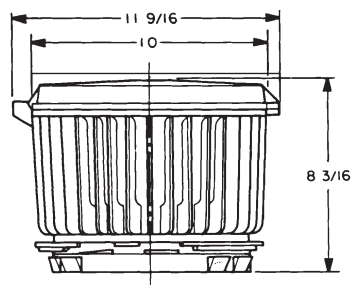
Room Cavity Ratio

Eff. Ceil.	Wall	1	2	3	4	5	6	7	8	9	10
80*	50*	.741	.617	.524	.452	.396	.351	.314	.283	.258	.236
	30*	.694	.548	.445	.370	.314	.271	.237	.210	.188	.169
	10*	.652	.491	.382	.308	.254	.214	.183	.159	.140	.125
70*	50*	.722	.601	.510	.440	.386	.342	.307	.277	.252	.231
	30*	.679	.537	.437	.364	.309	.267	.234	.207	.185	.167
	10*	.640	.483	.378	.305	.252	.212	.182	.158	.139	.124
50*	50*	.686	.570	.484	.418	.367	.326	.293	.265	.242	.223
	30*	.650	.516	.421	.351	.299	.259	.227	.202	.181	.163
	10*	.617	.470	.369	.299	.247	.209	.180	.155	.138	.123
30*	50*	.653	.542	.460	.398	.350	.311	.280	.254	.233	.214
	30*	.623	.497	.406	.340	.290	.251	.221	.197	.176	.160
	10*	.596	.457	.361	.293	.243	.206	.177	.154	.136	.121
10*	50*	.622	.516	.437	.379	.333	.297	.268	.244	.224	.206
	30*	.598	.478	.392	.329	.271	.244	.215	.192	.172	.156
	10*	.576	.444	.352	.287	.239	.203	.175	.152	.135	.120
0*	0*	.557	.424	.332	.267	.220	.184	.157	.136	.119	.105

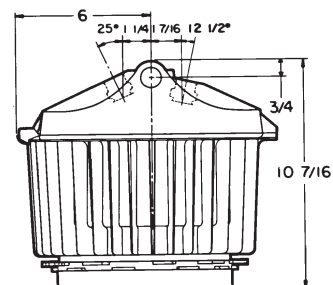
* Percent Reflectance

DMVF Dimensions

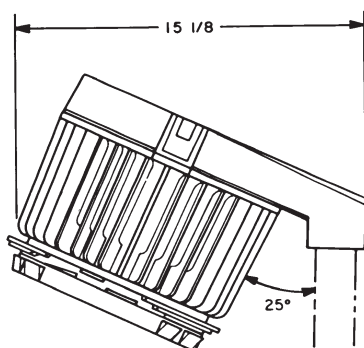
Pendant Mount



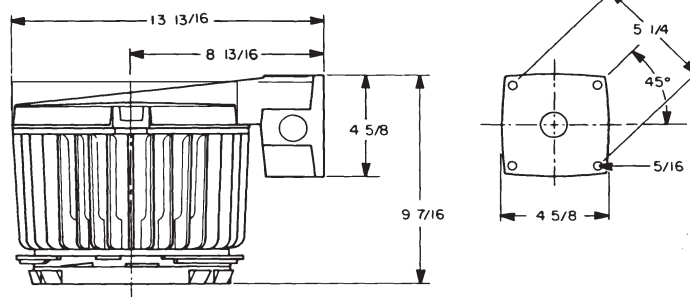
Quad-Mount



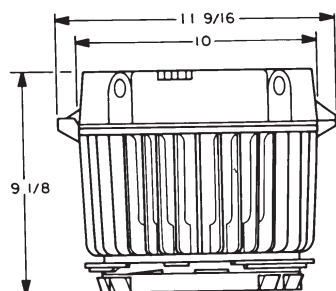
25° Angle Stanchion Mount



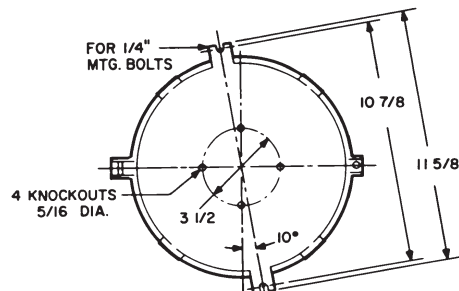
Wall Mount



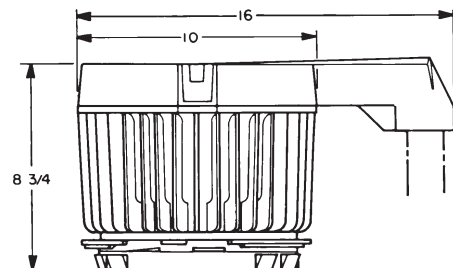
Ceiling Mount



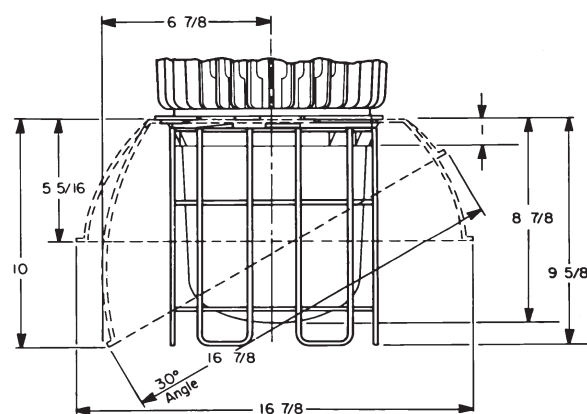
Ceiling Mount – Top View



Straight Stanchion Mount



Luminaire with Globe, Guard, Reflectors



N2MVF Series Compact Fluorescent Champ® Non-metallic Luminaires

- Cl. I, Div. 2, Groups A,B,C,D
- Restricted Breathing Cl. I, Div. 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups F,G, Cl. III & Simultaneous Presence
- Marine & Wet Locations
- 3,3R, 4,4X; IP56

6L

Application:

- N2MVF series Champ luminaires are used:
- in areas in which ignitable concentrations of flammable gases or vapors will be present due to abnormal, unusual or accidental conditions.
 - in installations where moisture, dirt, vibration, corrosion or rough usage are concerns.
 - wherever the damaging effects of water, wind, snow, sleet, hot sun or any combination of these elements are found.
 - ideal for marine use; resists the harmful effects of salt water.
 - withstands the harshest of corrosive environments.
 - to provide low wattage spot and floodlighting.
 - for general area lighting.
 - in manufacturing plants, refineries, chemical, petrochemical and other industrial process facilities, wastewater and sewage treatment facilities, offshore, dockside and harbor installations as well as other heavy industrial applications.

Features and Benefits:

- Housings and mounting modules made of polyphenylene sulfide (PPS) for strength and maximum resistance to corrosion.
- Pendant mounting module equipped with integral hub set screws for vibration resistance.
- Hubs are provided with an integral bushing to help prevent damage to field wiring during installation and ground connection for positive bonding.
- Guard, hub inserts, stanchion elbow and hardware made of stainless steel for maximum resistance to corrosion.
- Grounding wire for safety.
- Stainless steel open bottom guard permits direct access to the globe for easy relamping.
- Hinged assembly allows the luminaire to hang free during installation to permit the use of both hands when wiring.
- One, external captive screw for ease of installation.
- Handle – hinge assembly doubles as a handle for ease of installation, especially when carrying up a ladder.

Additional Features:

FLUORESCENT ENERGY SAVINGS

- Less wattage used with compact fluorescent lamps compared to equivalent incandescent lamps providing the same light output.

Certifications and Compliances:

- NEC and CEC:
 - Class I, Division 2, Groups A,B,C,D
 - Class II, Class III & Simultaneous Presence (Class I Division 2 and II)
 - Class I Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards:
 - 844. 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards:
 - C22.2 No. 137
- IEC Standards:
 - 60079-15

Standard Materials:

- Housing, mounting modules – polyphenylene sulfide (PPS)
- Guard, hub inserts, stanchion elbow, hardware – stainless steel
- Globe – heat & impact resistant, internally fluted glass
- Gaskets – silicone rubber

Electrical Ratings:

- Wattages: Two 26 or 32 watt lamps.
- 120 – 277V, 50-60 Hz
- 347V, 60 Hz
- 12, 24 & 125 VDC



Options:

- | Description | Suffix to be added to Cat. No. |
|---|--------------------------------|
| • Restricted Breathing Construction Class I Division 2 & Zone 2 Suitability Cooler Operating Temperatures (T-Numbers) | S826 |
| • Certified for IEC Zone 2 | S826TB |
| Furnished with Terminal Block Crimp Terminals | |
| Wall-Mount Arm | |
| For converting a ceiling-mount luminaire to a wall mount | N2MV-WM1 |
| Factory Assembled | |
| For a factory assembled luminaire with lamps installed | FA |
| Fusing | |
| To protect ballast against abnormal line conditions | S658 |
| Furnished with Lamps | S714 |
| Teflon Coated Globe | |
| Provides additional protection against shattered glass fragments when subject to thermal shock, etc. | S808 |

Average Luminaire Weight (lbs.)

Body, mounting module, globe, guard and reflector 30 lbs.

6L
Fluorescents

6L

N2MVF Series Compact Fluorescent

Champ® Non-metallic
Luminaires

- Cl. I, Div. 2, Groups A,B,C,D
- Restricted Breathing Cl. I, Div. 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups F,G, Cl. III & Simultaneous Presence
- Marine & Wet Locations
- 3,3R, 4,4X; IP56

N2MVF ORDERING INFORMATION

Mounting Style	Hub Size	Lamp Watts	With G303 Globe and P33 Guard Cat. No.†
Pendant Mount	¾	52	N2MV2A052GP
	1	52	N2MV3A052GP
	¾	64	N2MV2A064GP
	1	64	N2MV3A064GP
Ceiling Mount Thru-Feed	¾	52	N2MV2C052GP
	1	52	N2MV3C052GP
	¾	64	N2MV2C064GP
	1	64	N2MV3C064GP
Stanchion Mount	1½	52	N2MVJ052GP
	1½	64	N2MVJ064GP

STANDARD VOLTAGE BALLASTS

NEC/UL & CEC/CSA (cUL)

CEC/CSA (cUL)

OPTIONAL BALLASTS

Voltage Suffix	120-277V 50-60Hz /UNV	347V 60Hz /347	125V DC /125VDC	12V DC /012VDC	24V DC /024VDC
----------------	-----------------------	----------------	-----------------	----------------	----------------

Temperature Performance Data:

Lamp Watts	Minimum Operating Temperature	Maximum Ambient Temp	Class I		Class II	F & G Simultaneous Presence		Supply Wire °C
			Non-Restricted Breathing	Restricted Breathing		Non-Restricted Breathing	Restricted Breathing	
Fluorescent:	N2MV		Division 2	Zone 2	Division 1	Cl.I, Div 2/Cl.II	Cl.I, Zone 2/Cl.II	
52 & 64 Watt	-18°C (0°F)	40°C (104°F)	T2D	T6	T4	T2B/T4	T4	85

6L Fluorescents

N2MVF Series- Ordering by Components

6L

N2MVF luminaires are available in components

A complete luminaire consists of:

- I. N2MV Cover (Mounting Module)
- II. N2MV Ballast Housing
- III. Globe, Refractors, Guards, Reflectors

I. N2MV Cover (Mounting Module):

Type	Conduit	Cat. No.
Pendant	¾ 1	N2APM2 N2APM3
Ceiling	¾ 1	N2CM2 N2CM3
Wall (Use wall bracket accessory with Ceiling Cover)	¾ 1	N2MV-WM1 and N2CM2 N2MV-WM1 and N2CM3
Stanchion - 25 Degree Angle	1½	N2JM5

II. Ballast Housings. Complete catalog number must have the **voltage suffix** (UNV shown) and any **options suffixes**.

Lamp Type	Lamp Watts	Catalog Number
Compact Fluorescent	2 (26W)	N2MVF052/UNV
	2 (32W)	N2MVF064/UNV

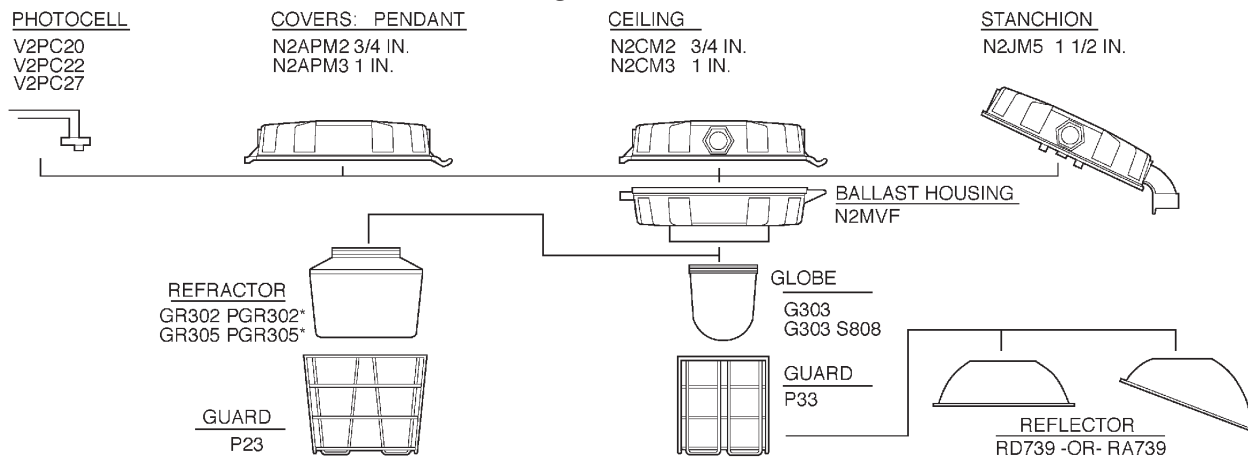
III. Globe, Guard and Reflectors

Type	Catalog Number
Globe	G303
Globe Teflon Coated	G303-S808
Globe Guard	P33
Reflector Dome	RD739
Reflector Angle	RA740

N2MVF Series Compact Fluorescent Champ® Non-metallic Luminaires

Family Tree

A complete luminaire consists of a cover mount, a ballast housing and a globe,
with or without guard, refractor or reflector.



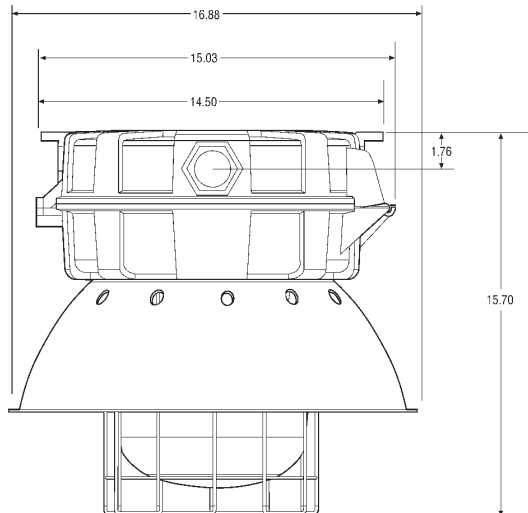
ALL COMPONENTS ARE SUITABLE FOR
USE IN ORDINARY LOCATIONS, CLASS 1,
DIV.2 AND WET LOCATIONS.

N2MVF Series Compact Fluorescent Champ® Non-Metallic Luminaires

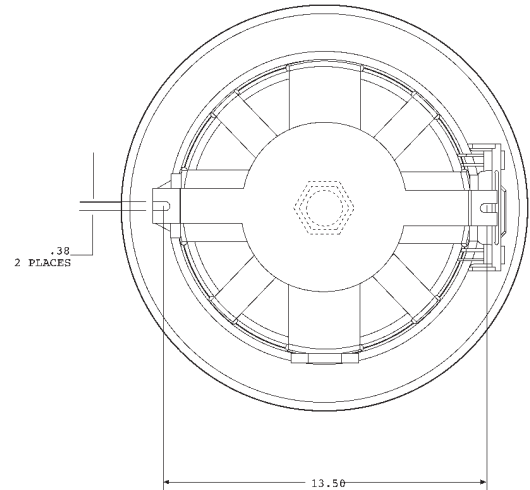
Dimensions
Weights

6L

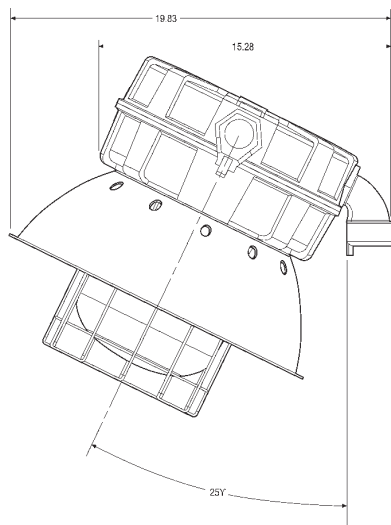
Pendant Mount



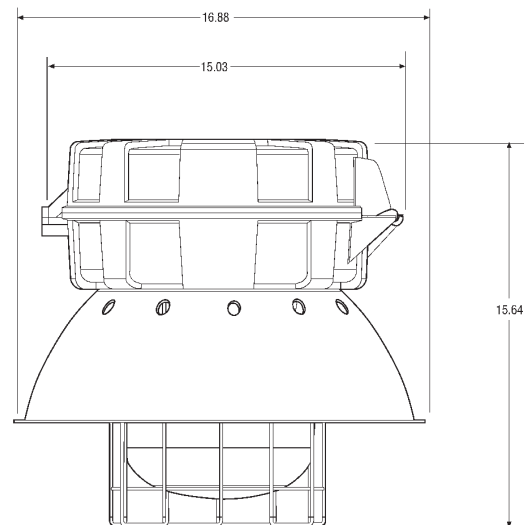
Ceiling Mount – Top View



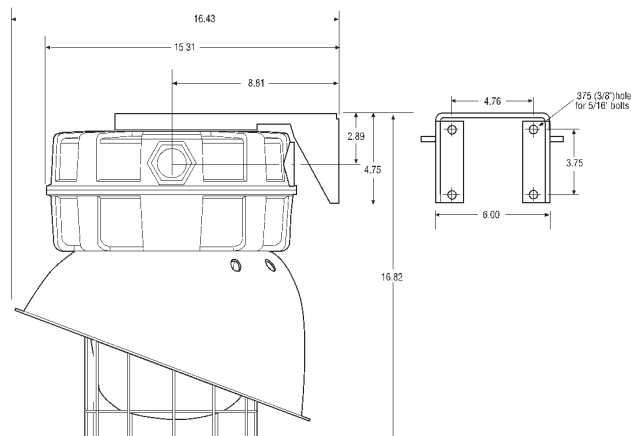
25° Angle Stanchion Mount



Ceiling Mount



Wall Arm Mount



Net Luminaire Weights (lbs.)

Luminaire Series	Lamp Watts	Luminaire with Mounting Module, Globe, Guard & Refractor (lbs.)
N2MVF052	52	30
N2MVF064	64	30

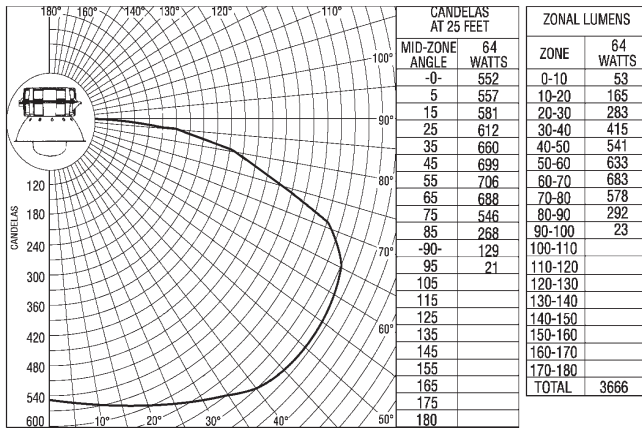
Accessories (Order Separately)

Reflectors (to be used with globe)	
Dome Cat.	RD739 (RD79)
30° Angle Cat.	RA739 (RA79)

6L
Fluorescents

N2MVF Series Compact Fluorescent Champ® Non-Metallic Luminaires

Photometric Data



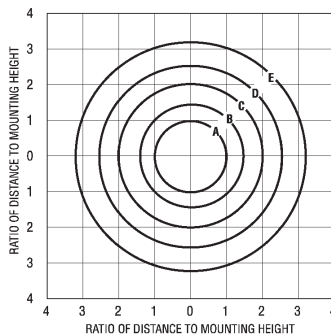
NOTE: For 52 watt N2MVF applications, use a .75 multiplier.

N2MVF Photometric Data

ISOFOOTCANDLE CHART:

Luminaire with globe and dome reflector

N2MVF064GRD Dome Reflector



Footcandle Values for Isofootcandle Lines

MTG. HGT.	A	B	C	D	E
8'	4.00	2.00	1.00	0.50	0.25
10'	2.56	1.28	0.64	0.32	0.16
12'	1.78	0.89	0.44	0.22	0.11
16'	1.00	0.50	0.25	0.13	0.06

N2MVF064GRD Dome Reflector

Coefficients of Utilization

Effective Floor Cavity Reflectance 20%

		Room Cavity Ratio										
Eff.	Ceil.	Wall	1	2	3	4	5	6	7	8	9	10
80*	50*		.741	.617	.524	.452	.396	.351	.314	.283	.258	.236
	30*		.694	.548	.445	.370	.314	.271	.237	.210	.188	.169
	10*		.652	.491	.382	.308	.254	.214	.183	.159	.140	.125
70*	50*		.722	.601	.510	.440	.386	.342	.307	.277	.252	.231
	30*		.679	.537	.437	.364	.309	.267	.234	.207	.185	.167
	10*		.640	.483	.378	.305	.252	.212	.182	.158	.139	.124
50*	50*		.686	.570	.484	.418	.367	.326	.293	.265	.242	.223
	30*		.650	.516	.421	.351	.299	.259	.227	.202	.181	.163
	10*		.617	.470	.369	.299	.247	.209	.180	.155	.138	.123
30*	50*		.653	.542	.460	.398	.350	.311	.280	.254	.233	.214
	30*		.623	.497	.406	.340	.290	.251	.221	.197	.176	.160
	10*		.596	.457	.361	.293	.243	.206	.177	.154	.136	.121
10*	50*		.622	.516	.437	.379	.333	.297	.268	.244	.224	.206
	30*		.598	.478	.392	.329	.271	.244	.215	.192	.172	.156
	10*		.576	.444	.352	.287	.239	.203	.175	.152	.135	.120
0*	0*		.557	.424	.332	.267	.220	.184	.157	.136	.119	.105

* Percent Reflectance

EVLPF Series Compact Fluorescent Low Profile Hazard•Gard® Luminaires

- Cl. I, Div. 1, Groups B (GB Suffix), C, D
- Cl. I, Zone 1, Groups IIB + H2 (GB Suffix), IIB, IIA
- Cl. II, Div 1, Groups E, F, G; Class III, Simultaneous Presence

- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

6L

Application:

Cooper Crouse-Hinds Low Profile Hazard•Gard® luminaires are used in:

- areas where flammable or explosive vapors or gases are present
- hazardous areas, both indoors and outdoors, where long life and low maintenance costs are desired
- petroleum refineries, chemical, petrochemical and pharmaceutical plants, oil terminals, gas plants and other heavy process industry facilities
- waste treatment facilities
- drilling platforms and other coastal and offshore hazardous areas

Features - Benefits:

- Small compact size
- Two start Acme threaded construction
- Light weight copper-free aluminum housing with powdered epoxy finish
- All exterior hardware is corrosion-resistant stainless steel
- Four mounting arrangements pendant, ceiling, wall bracket and stanchion
- Wide range of light sources and wattages
- Marine and Nema 4X construction
- Integral ballast
- High power factor (90%+) ballasts
- Uses same mounting modules as the standard Hazard•Gard®
- Internally fluted glass globes
- Krydon® construction dome and angle reflectors – won't rust, corrode, dent, chip or peel
- Now available in components – luminaire body, mounting module, guard, reflectors
- Three wire construction is standard on Fluorescent Emergency Lighting
- Perfect where low mounting restrictions are a concern
- Easier assembly, installation and maintenance
- Superior corrosion resistance
- Suit any lighting layout
- Meet specific lighting needs
- Outdoor, hose down, marine and corrosive environments suitable
- Lowest installed cost
- Allows more luminaires per circuit
- Easy retrofitting when the Lo-Pro™ is the preferred choice
- Reduces glare and distributes light evenly – ideal for adverse environments typical of industrial facilities
- Ideal for adverse environments typical of industrial facilities
- Easily stocked for quick ship requirements
- For energy conservation, luminaires can be switched off without affecting the emergency operation feature

Standard Materials:

- Mounting modules, cover, ballast housing, globe holder – copper free aluminum
- Globe – heat and impact resistant glass
- Exterior hardware – stainless steel
- Reflectors (dome & angle) – Krydon™ fiberglass-reinforced polyester



Standard Finishes:

Copper-free aluminum – Corro-free™
powdered epoxy

- Krydon – white
- Stainless steel guard

Ratings (Electrical/Size):

Sources/wattage:

- 52W (2-26W lamps) & 64W (2-32W lamps)
- 120-277V, 50-60 Hz
- 347V, 60Hz
- 12, 24, 125 VDC

Conduit entries:

- ¾", 1" NPT – Pendant, Wall Bracket, Ceiling
- 1¼" NPT – Stanchion

Options:

Description	Suffix to be added to Cat. #
Group B suitability	GB
Fused	S658*
Factory assembled with lamps	FA

Accessories:

Description	Cat. #
Dome reflector	RD739
Angle reflector	RA739

* When ordering Fuses for luminaires, option S658, you must specify the operating voltage. S658 can not be ordered with /MT in the catalog number.

Certification & Compliances:

- NEC and CEC:
Class I, Division 1, Groups B (GB suffix), C, D
Class I, Zone 1 Groups IIB + H2 (GB Suffix), IIB, IIA
Class II, Class III & Simultaneous Presence (Class I and Class II)
- UL Standards
844 Hazardous (Classified) Locations
1598 Luminaires
1598A Marine Locations
- CSA Standards
C22.2 No. 137

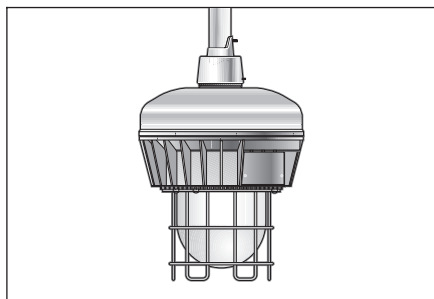
6L
Fluorescents

6L

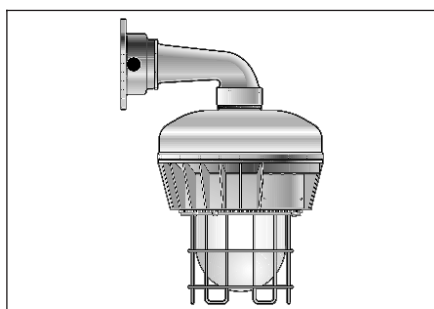
EVLPF Series **Compact Fluorescent** **Low Profile Hazard•Gard®** **Luminaires**

- Cl. I, Div. 1, Groups B (GB Suffix), C, D
- Cl. I, Zone 1, Groups IIB + H2 (GB Suffix), IIB, IIA
- Cl. II, Div 1, Groups E, F, G; Class III, Simultaneous Presence
- Marine & Wet Locations
- 3,3R, 4,4X; IP66

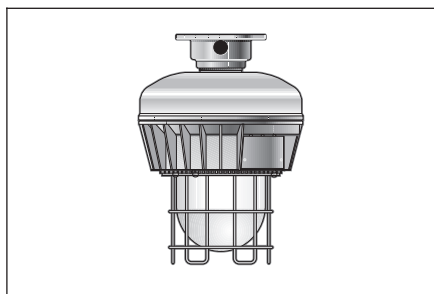
Ordering Information



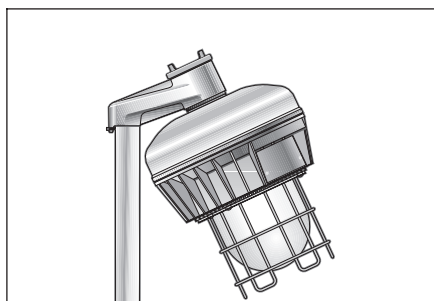
Pendant Mount



†Wall Bracket Mount



†Ceiling Mount



Stanchion Mount

†Ceiling and bracket mounts have 4 hubs: 3 are plugged.

			Pendant	Wall Brckt†	Ceiling†	Stanchion	Luminaire Body Less Mounting Module & Guard
Watt	Hub	Size	With Guard Catalog #	With Guard Catalog #	With Guard Catalog #	With Guard Catalog #	Catalog #
Fluorescent—High Power Factor Ballast (Min. P.F. 90%)							
52W	¾		EVLPPFA02521	EVLPPFBX02521	EVLPPFCX02521		EVLPPF0520
	1		EVLPPFA03521	EVLPPFBX03521	EVLPPFCX03521		
	1¼					EVLPPFJ04521	
64W	¾		EVLPPFA02641	EVLPPFBX02641	EVLPPFCX02641		EVLPPF0640
	1		EVLPPFA03641	EVLPPFBX03641	EVLPPFCX03641		
	1¼					EVLPPFJ04641	

Complete Catalog Number as follows:

1. Voltages - Add Suffix as follows:

Standard Voltage Ballasts - 60Hz			Optional Ballasts		
Voltage Suffix	NEC/UL & CEC/CSA (cUL) 120-277V 50-60Hz /UNV	CEC/CSA (cUL) 347V 60 Hz /347	125V DC /125VDC	12V DC /012VDC	24V DC /024VDC

6L Fluorescents

EVLPF Series Ordering By Components

6L

EVLP Luminaires are available in components.

A complete light fixture consists of:

I. Mounting Module

II. Fixture Body

III. Guard, Dome Reflector, Angle Reflector or Exit Sign

Mounting Modules

Type	Conduit	Catalog Number
Pendant	3/4	EVMP2
	1	EVMP3
Ceiling & Wall Box	3/4	EV22
	1	EV33
Wall Bracket Arm	Use EV22 or EV33 box with EV87	EV87
Stanchion	1 1/4	EVMJ4
Guards Fluorescent		EV512
Reflectors Dome Angle		RD739
		RA739

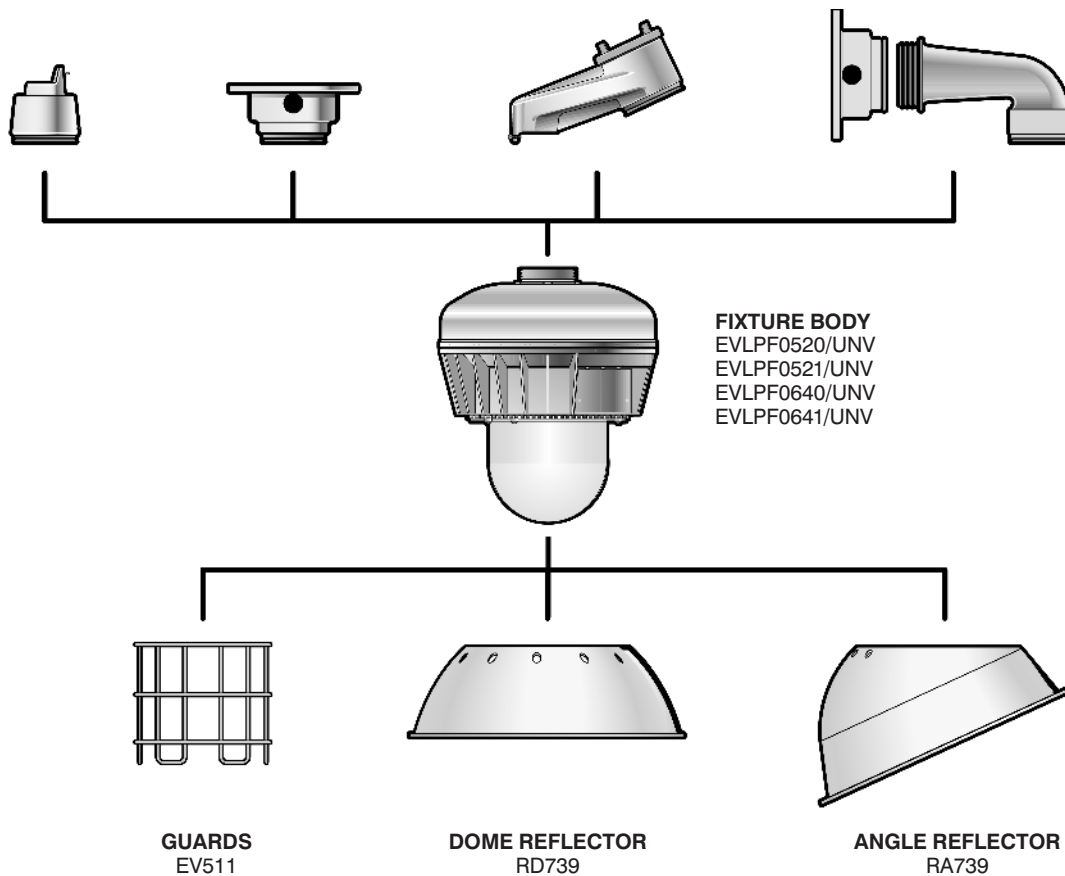
PENDANT
EVMP2
EVMP3

CEILING
EV22
EV33

STANCHION
EVMJ4

CEILING
EV22
EV33

WALL BRACKET
EV87 & EV22 or EV33



6L
Fluorescents

6L

EVLPF Series

Compact Fluorescent

Low Profile Hazard•Gard[®]

Luminaires

Temperature Performance Data

Fluorescent Fixtures		Class I, Group B (w/GB suffix) Groups C, D Class I Zone I 40°C	Class II Groups E, F, G Class III Simultaneous Presence 40°C	Supply Wire °C	Minimum Operating Temperature
Maximum Ambient					
Fluorescent	52W & 64W	T6	T6	75°C	-18°C

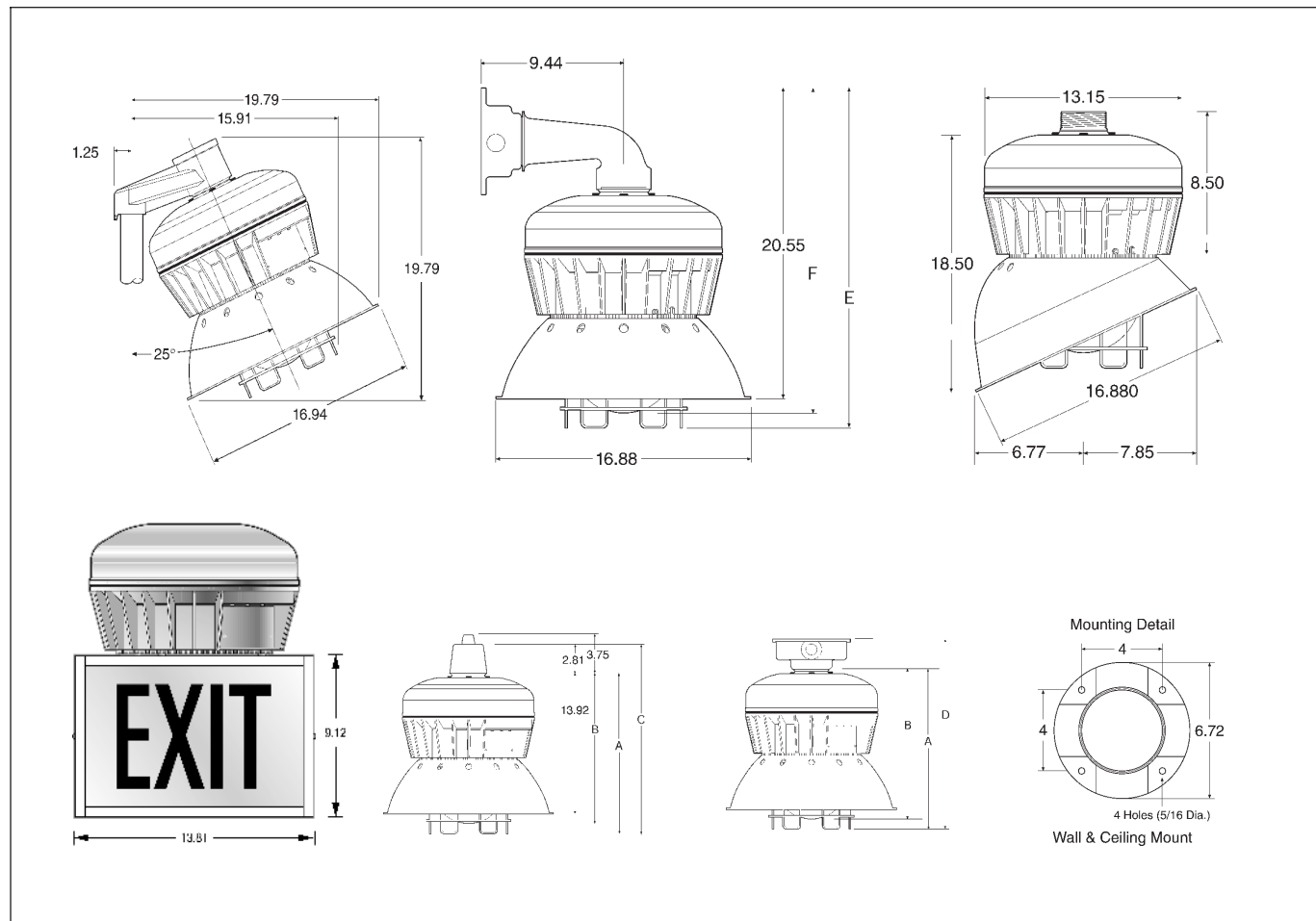
EVLPF Series Compact Fluorescent

Low Profile Hazard•Gard® Luminaires

Dimensions and Weights

6L

	A	B	C	D	E	F
Fluorescent	15.69	14.69	18.25	18.46	22.34	21.30



WEIGHTS (LBS.)

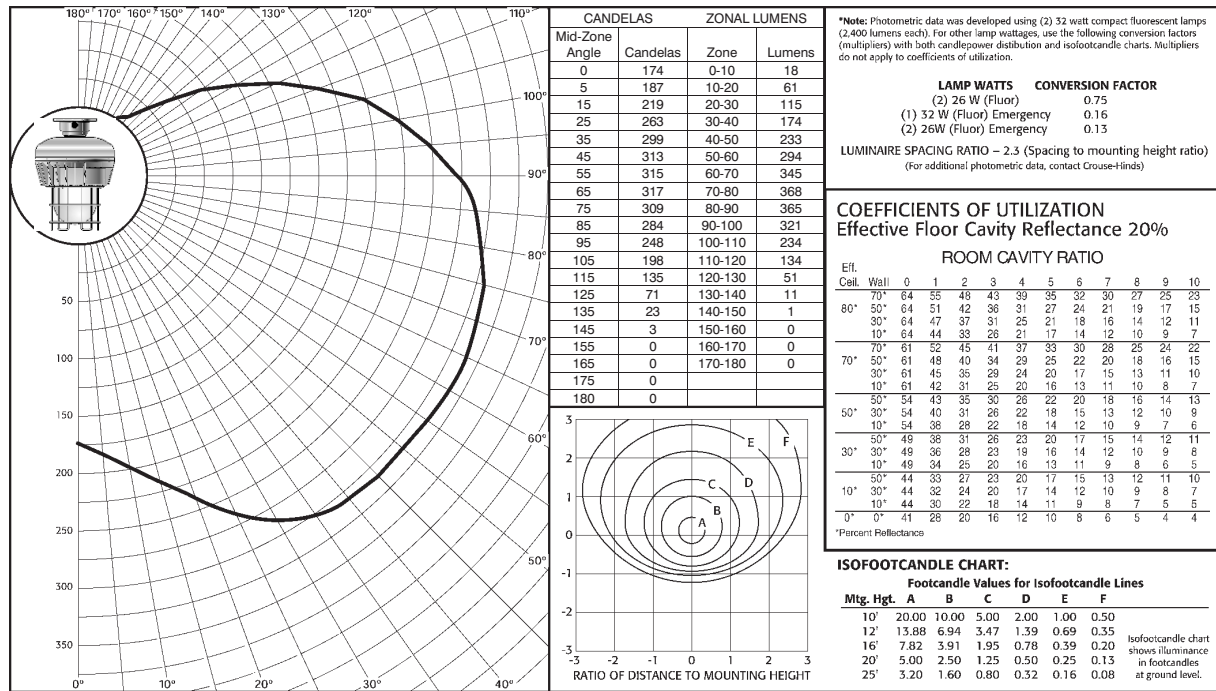
Item	Weights
Fluorescent (EVLPF)	31.5
Add Mounting Modules	
Pendant	1
Ceiling Bracket	2
Stanchion	4.5
Add For Reflectors & Exit Sign	
RA739	1
RD739	1
DMVF-EXD	5
Deduct for Wire Guard	.5

6L
Fluorescents

EVLPF Series Compact Fluorescent Low Profile Hazard•Gard® Luminaires

Photometric Data

Luminaire with Globe and Guard
EVLPFA03641 (2) 32 W Compact Fluorescent

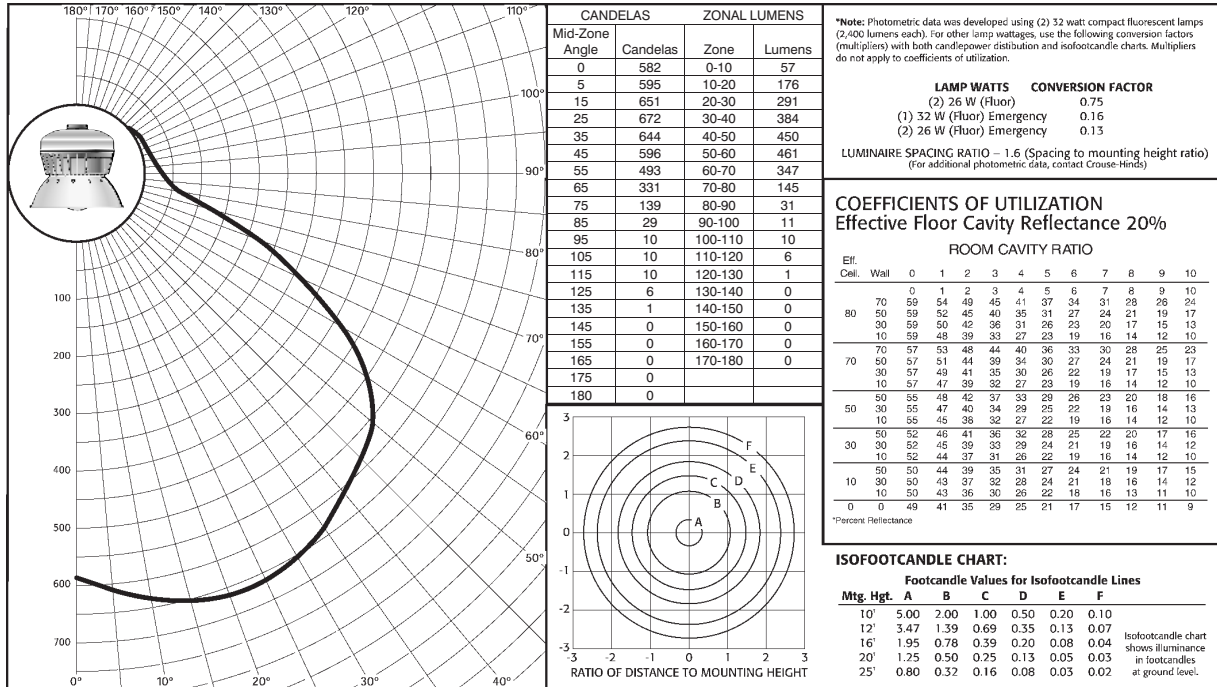


EVLPF Series Compact Fluorescent Low Profile Hazard•Gard® Luminaires

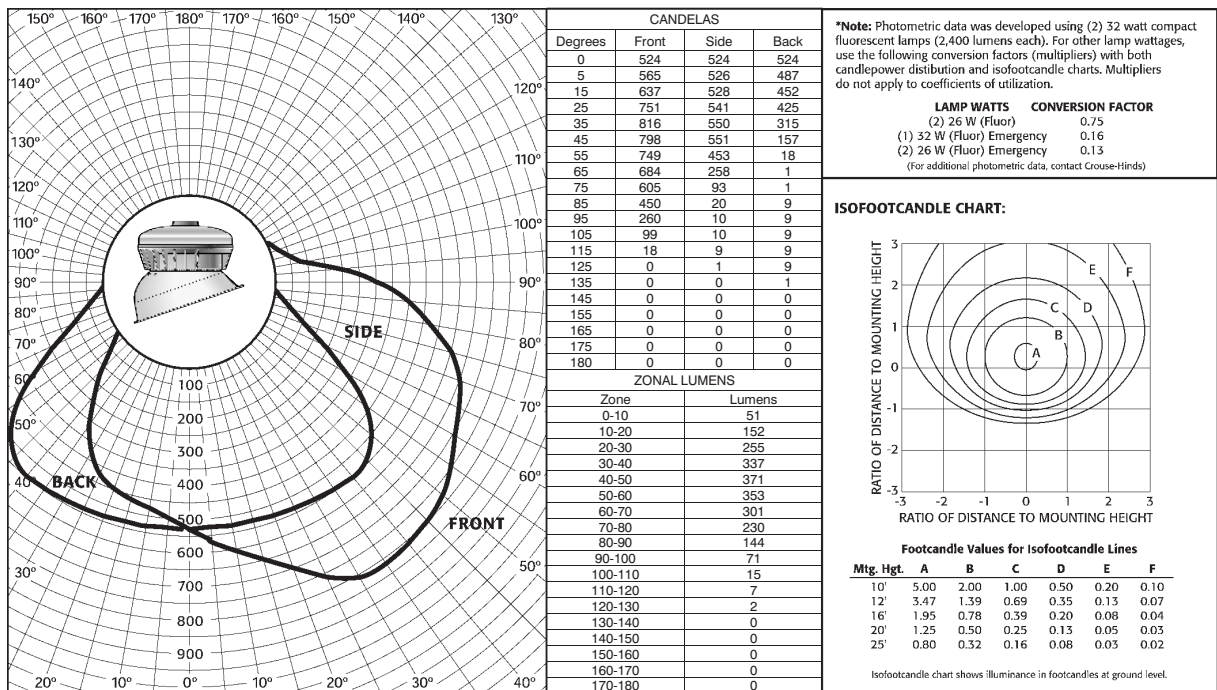
Photometric Data

6L

Luminaire with Globe and Dome (Less Guard)
EVLPPA03640RD Lamp: (2) 32 W Compact Fluorescent



Luminaire with Globe and 30° Angle Reflector (Less Guard)
EVLPPA03640RA Lamp: (2) 32 W Compact Fluorescent



FVS Series Long Twin Tube Fluorescent Luminaires

- Cl. I, Div. 2, Groups B, C, D
- Cl. I, Zone 1, Groups IIC (Suffix S813)
- Cl. II, Div 1, Groups E, F, G (Suffix S813)
- Cl. II, Div 2, Groups F, G
- Cl. III, Simultaneous Presence
- Marine & Wet Locations
- 3,3R, 4,4X; IP66

Application:

FVS compact fluorescent luminaires are used:

- where low mounting heights or limited mounting room exists.
- for task oriented lighting.
- where a cool, efficient light source is required.
- in areas that require lamps to reach full illumination immediately.
- in industrial and chemical processing.
- in pulp and paper facilities.
- in waste or sewage treatment facilities.
- in non-hazardous commercial and industrial areas.
- in food and pharmaceutical plants where a non-glass lens is required.
- where fluorescent lighting has been preferred, but unavailable due to limited space and practicality.

Features:

- Compact, lightweight, low profile design is ideal for confined areas and tight corners.
- Reaches full illumination immediately and delivers light output equivalent to fixtures twice its size.
- Fast-Latch™ closure provides quick and easy access for relamping and maintenance – no tools necessary.
- Silicone sealing gasket provides exceptional watertight and dust-tight bond, providing excellent performance in wet and corrosive environments.
- Power disconnect switch (Cooper Crouse-Hinds ESWP) automatically cuts power to the lamps and ballast when the lens is opened.
- Shatter-resistant polymeric lens (.125 thick) provides environmental and corrosion protection.
- Available in 120, 277, 220/240 and 347 50/60hz voltages.
- 2 lamp fixture, uses single-ended 40 watt lamps.
- Multiple mounting capability.
- Energy saving electronic ballast is standard.

Standard Materials:

- Corrosion-resistant die cast copper-free aluminum housing.
- Shatter-resistant nylon lens.
- Polycarbonate lens (suffix-S813)
- Silicone rubber gasket.
- Extruded aluminum hinges and closure hardware with stainless steel pivots.

Standard Finishes:

- Epoxy powder coated housing.
- Anodized hinges and closure hardware.
- Highly specular aluminum reflector.

Size Ranges:

- All luminaires are 24"L x 12"W x 3.12"H.
- Conduit entrances are 3/4".

Electrical Ratings:

- 120-277V, 50-60 Hz
- 347V, 60Hz
- Two 40 watt long twin tube lamps



Certifications and Complies:

- NEC and CEC:
Class I, Division 2, Groups B,C,D
Class I, Zone 1 Group IIC (suffix S813)
Class II, Division 1, Groups E, F, G (Suffix S813)
Class II Division 2 Groups F, G
Class III & Simultaneous Presence (Cl. I and Cl. II)

Note: Aiming Limitations

Cl. II, Cl. III & Simultaneous Presence

Aim down to Horizontal
Cannot aim up

- UL Standards
844 Hazardous (Classified) Locations
1598 Luminaires
1598A Marine Locations
- CSA Standards
C22.2 No. 137

Options:

Suffix to be added to
Description Cat. No.

- Fused to protect ballast under abnormal line conditions. Not available on CSA certified fixtures. S658*
- Fixture supplied with two F40BX/SPX35 lamps S714
- Corro-free™ epoxy finish inside and out S753
- Class I, Zone 1, Group IIC and Class II, Div. 1, Groups E, F, G suitability. S813
- Tamperproof . . . consult Cooper Crouse-Hinds

Temperature Performance Data:

Style	Ambient Temp °C	Class I Div. 2	Class I Zone I	Class II See Aiming	Simultaneous Presence Limitations	Supply Wire	Minimum Operating Temperature
All	40°C	T3C	T3	T6	T3C/T6	75°C	-18°C (0°F)
All	55°C	T3C	—	—	—	75°C	-18°C (0°F)

Luminaire Weight (lbs.)

without lamps

- Standard 2 lamp FVS 12.0

* When ordering Fuses for luminaires, option S658, you must specify the operating voltage. S658 can not be ordered with /MT in the catalog number.

Accessories

FVS Trunnion Mount Kit (FVS-K5)

- Permits vertical mounting of luminaire on a beam when used with a standard beam clamp.
- Can be mounted directly to a wall or ceiling.
- Can be pole mounted when used in conjunction with a SFA6 slipfitter adapter (ordered separately).
- Constructed from copper-free aluminum.
- Supplied with a CGB cord connector.



FVS with Trunnion Arm and Slipfitter

FVS Series Long Twin Tube Fluorescent Luminaires

- Cl. I, Div 2, Groups B,C,D
- Cl. I, Zone 1 Group IIC (suffix S813)
- Cl. II, Div 1, Groups E,F,G (suffix S813)
- Cl. II, Div 2, groups F,G
- Cl. III, Simultaneous Presence

- Marine & Wet Locations
- 3,3R, 4,4X; IP66

6L

Luminaire includes all necessary provisions for these installations:



Ceiling Mount



Pendant Mount



Corner Mount



Horizontal Wall Mount



Vertical Wall Mount

FVS compact fluorescent (2 lamp luminaire):

Voltage	Wattage/ Lamp	Hub Size (4)	Cat. Number	Cat. # with Class I, Zone 1 and Class II, Div. 1 Suitability
120 (50 or 60 Hz)	40	3/4"	FVS20	FVS20-S813
277 (50 or 60 Hz)	40	3/4"	FVS27	FVS27-S813
120-277 (50 or 60 Hz)	40	3/4"	FVS20UNV	FVS20UNV-S813
347 (50 or 60 Hz)	40	3/4"	FVS23	FVS23-S813

Accessories Separately

Ordered

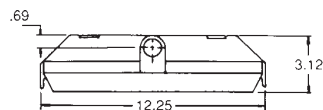
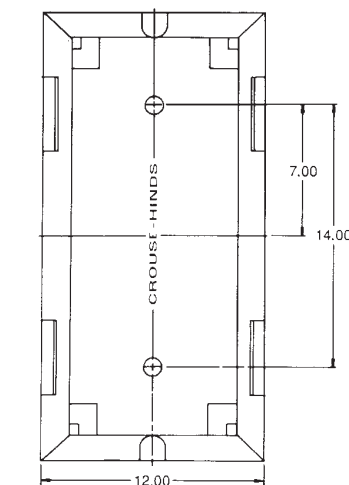
- Trunnion arm kit FVS-K5
- Slipfitter adapter to be used with
trunnion arm SFA6

Dimensions:

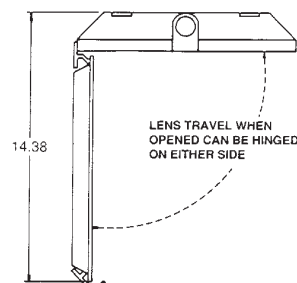
FVS with Trunnion Arm: 26 1/4" x 13.5"W x 3.12"H

Top View

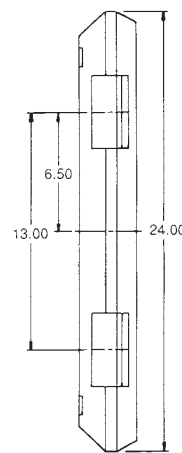
Top View



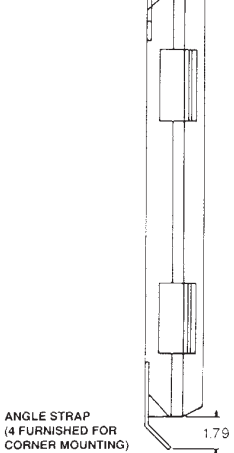
FVS With Lens Open



Side View

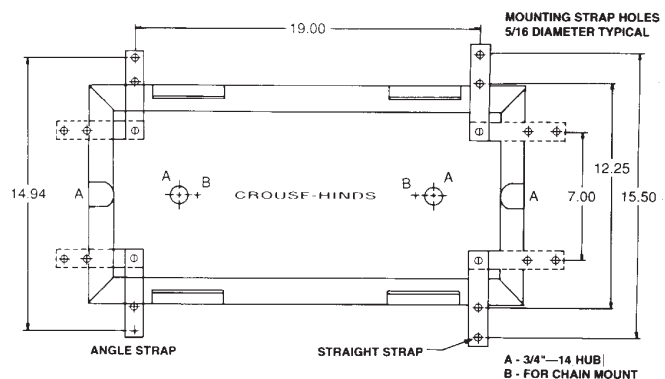


STRAIGHT STRAP
(2 FURNISHED FOR
WALL OR CEILING
MOUNTING)



ANGLE STRAP
(4 FURNISHED FOR
CORNER MOUNTING)

FVS Showing
Mounting Strap Positioning



6L Fluorescents

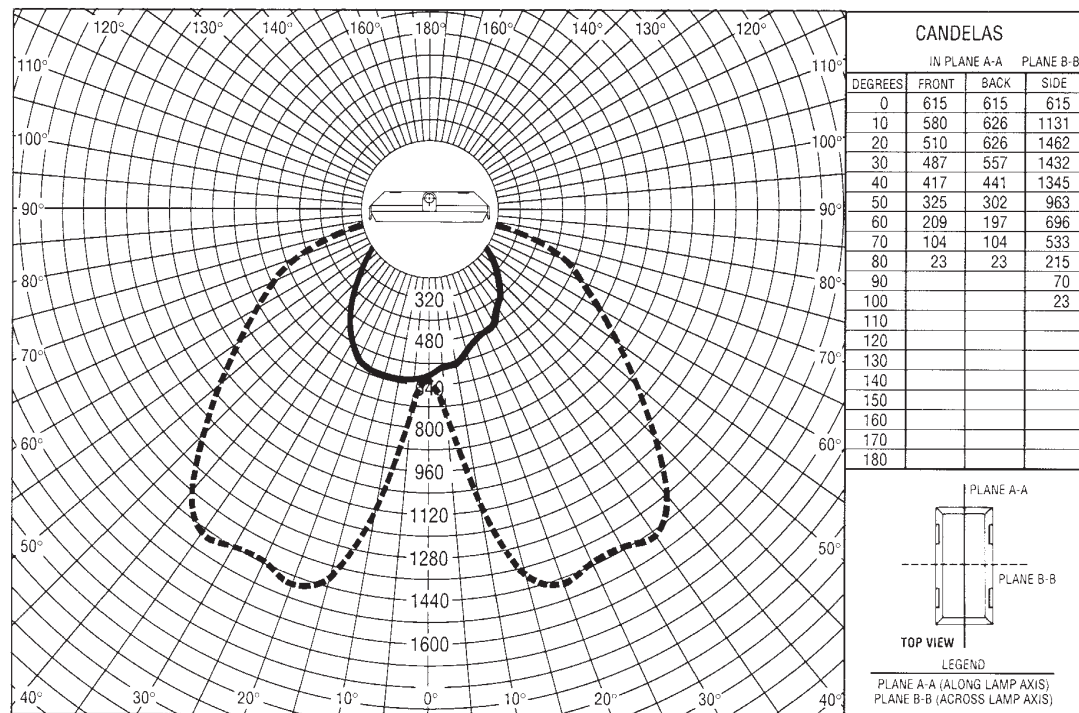
FVS Series Long Twin Tube Fluorescent Luminaires

Photometric Data

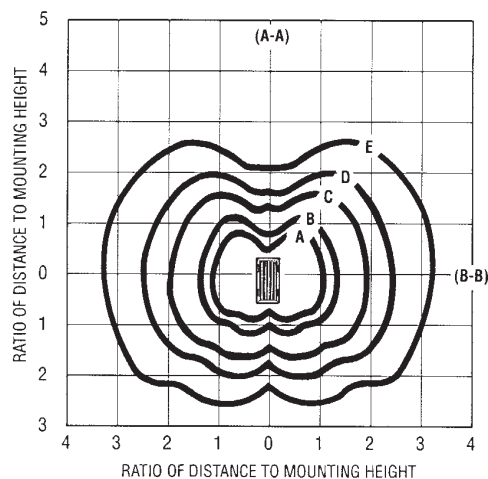
Luminaire: **FVS**

Lamp: (2) F40BX/SPX35/RS single-ended fluorescent.

Total initial lumens: 6300



Isofootcandle Chart



Footcandle Values for Isofootcandle Lines

Mtg. Hgt.	A	B	C	D	E
8'	5.00	3.00	1.00	0.50	0.20
10'	3.20	1.92	0.64	0.32	0.13
12'	2.22	1.33	0.44	0.22	0.09
16'	1.25	0.75	0.25	0.13	0.05

Spacing to Mounting Height Ratio

Along lamp axis (A-A)	0.6
Across lamp axis (B-B)	1.1

Coefficients of Utilization

Effective Floor Cavity Reflectance 20%

Eff. Ceil.	Room Cavity Ratio	1	2	3	4	5	6	7	8	9	10
80*	50*	.621	.538	.469	.414	.367	.329	.297	.269	.246	.225
	30*	.594	.495	.419	.359	.312	.273	.242	.216	.195	.176
	10*	.569	.459	.378	.317	.270	.234	.204	.180	.160	.144
70*	50*	.606	.526	.459	.405	.360	.323	.291	.265	.242	.222
	30*	.582	.487	.412	.354	.308	.270	.240	.214	.193	.175
	10*	.560	.453	.374	.314	.268	.232	.203	.179	.160	.143
50*	50*	.580	.503	.441	.389	.347	.311	.281	.256	.234	.216
	30*	.560	.470	.400	.345	.300	.265	.235	.210	.190	.172
	10*	.541	.442	.367	.310	.265	.230	.201	.178	.159	.143
30*	50*	.555	.483	.423	.374	.334	.301	.272	.248	.227	.210
	30*	.539	.455	.389	.336	.293	.259	.230	.207	.187	.170
	10*	.524	.431	.360	.305	.262	.227	.199	.176	.157	.142
10*	50*	.533	.464	.407	.361	.322	.290	.264	.241	.221	.204
	30*	.520	.441	.378	.327	.287	.254	.226	.203	.184	.167
	10*	.507	.421	.353	.300	.258	.225	.197	.175	.156	.141
0*	0*	.494	.407	.339	.286	.245	.212	.185	.163	.145	.130

* Percent Reflectance

* FVS suitable for Class II, Div. 1, Groups E, F, G when ordered with suffix S813.

EVFT Illuminator™ Long Twin Tube Fluorescent Luminaires

- Cl. I, Div, Groups B & C(suffix GB), D
- Cl. I, Zone 1 Group IIB + H2(suffix GB), IIA
- Cl. II, Div 1, Groups E,F,G
- Cl. III Simultaneous Presence

- Paint Spray
- Marine & Wet Locations
- 3,3R, 4,4X; IP66

6L

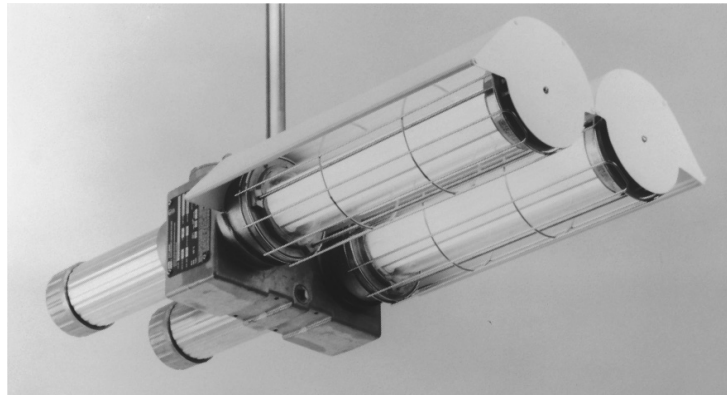
Application:

Illuminator™ compact fluorescent luminaires are used:

- In areas made hazardous by the presence of flammable gases and vapors, combustible dusts, or easily ignitable fibers and flyings.
- In areas where combustible dusts and flammable gases are present simultaneously.
- In applications involving low mounting heights, restricted mounting space, or where luminaire weight must be minimized.
- In areas where corrosion, vibration, moisture, dirt and rough usage are a problem.
- In refineries, chemical and petrochemical facilities, grain processing, handling and storage facilities, manufacturing plants, waste water treatment facilities, airline and mass transit maintenance areas, paint spray facilities, breweries, pharmaceutical plants and other areas where safe, reliable hazardous area lighting is required in a compact, cool operating and efficient light source.

Features:

- Efficient fluorescent light source in 78 and 156 watts.
- Adjustable right and left asymmetrical reflectors provide excellent light "aimability" – ideal for task oriented lighting.
- Compact, light weight and low profile design allows easy installation and broad industrial application.
- Cast copper-free aluminum with epoxy powder finish (less than 0.4 of 1% copper) provides excellent resistance to corrosion.
- Versatile luminaire housing provides choice of pendant, wall or ceiling mount.
- Suitable for paint spray areas. Linear light source provides excellent color rendition for paint spray tasks. Easy to install, disposable, clear tube wrap helps maintain maximum light output during painting operations.
- Threaded construction, factory wiring and sealing help minimize installation time. No external seals are required.
- Fixtures are used with two or four long twin tube single-ended fluorescent lamps.
- Optional stainless steel guard provides extra protection for lamps and lamp tube.
- Optional clear polycarbonate tube provides 360° protection for lamps and lamp tube; ideal for maintenance pit and pharmaceutical applications.
- Grounding connection for safety.
- Available for 120 or 277 VAC.
- Standard electronic ballast.



4 lamp with stainless steel wire guard and adjustable reflectors

Certifications and Complies:

- NEC and CEC:
 - Class I, Division 1 Group D
 - Class I, Division 1 Group B,C,D (suffix GB)
 - Class I, Zone 1 Group IIA
 - Class I, Zone 1 Group IIB + H2 (suffix GB)
 - Class II Groups E,F,G
 - Class III
- Simultaneous Presence (Cl. I and Cl. II)
- Paint Spray

Note: Aiming Limitations

- Cl. II, Cl III & Simultaneous Presence
 - Aim Down to Horizontal
 - Cannot aim up
- UL Standards
 - 844 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137

Standard Materials:

- Center and ballast housings, end caps – copper-free aluminum
- Lamp tube – heat resistant glass.
- Guards – stainless steel or clear polycarbonate material.
- Reflectors – aluminum

Standard Finishes:

- Center and ballast housings, end caps, guards – natural
- Reflectors – white epoxy finish

Temperature Performance Data:

Luminaire Type	Minimum Operating Temp.	Maximum Ambient Temp.	Class I, Division 1 & Zone 1 Class II, Division 1 Simultaneous Presence	Supply Wire
2 and 4 Lamp	10°C (50°F)	40°C (104°F)	T4A	75°C

Electrical Ratings:

- Input voltage – 120 or 277 VAC, 60Hz
- Wattages – 78 – 2-lamp luminaire
156 – 4-lamp luminaire

Options:

Suffix to be added to Catalog Number

- Fused to protect circuit under abnormal conditions (not available on CSA certified luminaires). S658*
- Luminaire supplied with lamps S714
- Class I, Groups B and C suitability
Pendant mount only! GB

Fixture Weights (lbs.):

Illuminator – 2 lamp with guard 19.5
Illuminator – 4 lamp with guards 36.5
RAL1, RAR1 reflectors (each) 3.0
Deduct for luminaire without P51 Guard:
1 lb. for 2 lamp
2 lbs. for 4 lamp

* When ordering Fuses for luminaires, option S658, you must specify the operating voltage. S658 can not be ordered with /MT in the catalog number.

6L

EVFT Illuminator™ Long Twin Tube Fluorescent Luminaires

- Cl. I, Div 1, Groups B & C (Suffix B), D
- Cl. I, Zone 1, Groups IIB + H2 (Suffix B), IIA
- Cl. II, Div 1, Groups E, F, G
- Cl. III, Simultaneous Presence
- Paint Spray
- Marine & Wet Locations
- 3,3R, 4,4X; IP66

EVFT Illuminator

Style	Hub Size	Luminaire Voltage	Class I Cat. No. with Group D Suitability		Class I Cat. No. with Group B, C & D Suitability	
			Without Guard	With P51 Guard†	Without Guard	With P51 Guard†
2 Lamp	3/4	120	EVFT22320	EVFT22321	EVFT22320-GB	EVFT22321-GB
	3/4	277	EVFT22370	EVFT22371	EVFT22370-GB	EVFT22371-GB
4 Lamp	3/4	120	EVFT24320	EVFT24321	EVFT24320-GB	EVFT24321-GB
	3/4	277	EVFT24370	EVFT24371	EVFT24370-GB	EVFT24371-GB

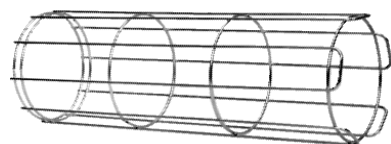
† P51 supplied in separate carton.

Accessories

- Stainless steel wire guard P51
- Reflector right hand RAR1
- Reflector left hand RAL1
- Polycarbonate tube PG1
(not used with optional stainless steel wire guard)
- Disposable clear wrap – 5 pack. PTW1
(for use with optional polycarbonate tube)



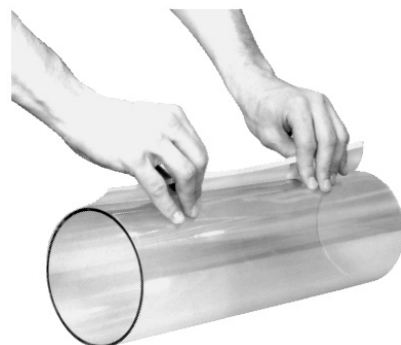
Reflectors (as viewed facing front of fixture).



Stainless steel guard



Polycarbonate tube and retaining plate

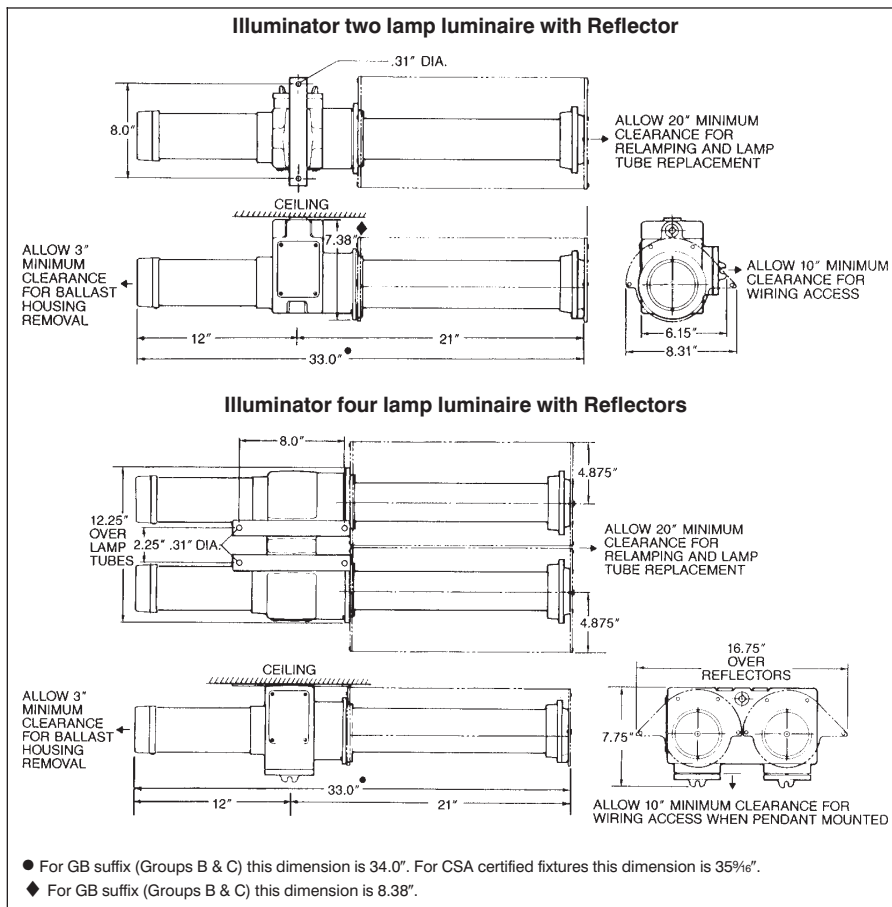


Disposable polyester tube wrap
(used over optional polycarbonate tube)

Note: Aiming Limitations: In Class II, Class III and Simultaneous Presence locations

- Aim down to Horizontal.
- To prevent dust from accumulating in reflector, do not aim up.

Dimensions



EVFT Illuminator™ Long Twin Tube Fluorescent Luminaires

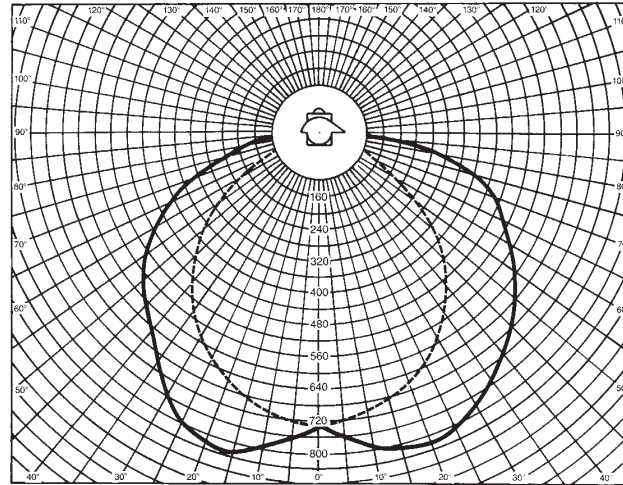
Photometric Data

6L

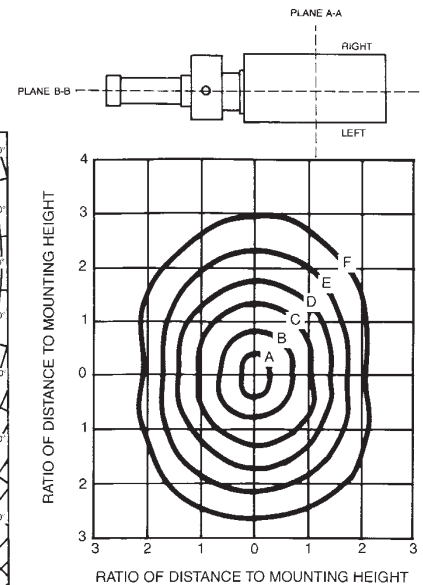
Illuminator two lamp luminaire with Reflector (without Guard)

Lamps: (2) 39 watt BIAX* fluorescent

CANDELAS in Plane A-A			
DEGREES	LEFT	RIGHT	Plane B-B SIDE
0	729	729	729
10	792	797	703
20	820	821	658
30	757	777	582
40	648	709	488
50	567	632	370
60	474	535	239
70	340	469	109
80	201	312	21
90	102	116	
100	9	7	
110			
120			
130			
140			
150			
160			
170			
180			



LEGEND
 — PLANE A-A ACROSS LAMP AXIS
 --- PLANE B-B ALONG LAMP AXIS



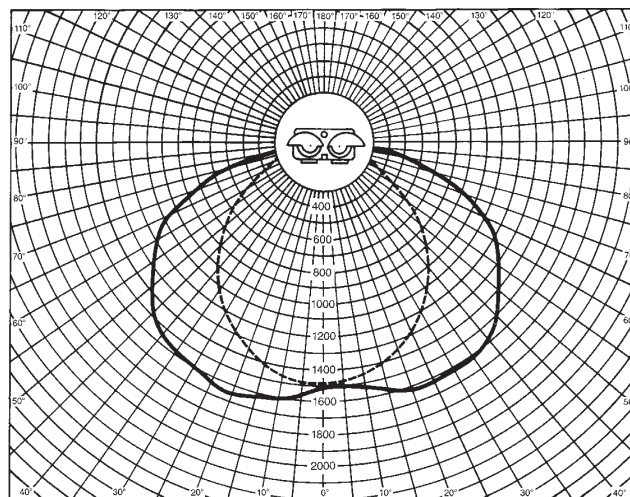
Footcandle Values for Isofootcandle Lines
MTG. HT

(FT)	A	B	C	D	E	F
8	10.0	5.00	2.00	1.00	0.50	0.25
10	6.4	3.20	1.28	0.64	0.32	0.16
12	4.4	2.22	0.89	0.44	0.22	0.11
16	2.5	1.25	0.50	0.25	0.13	0.06

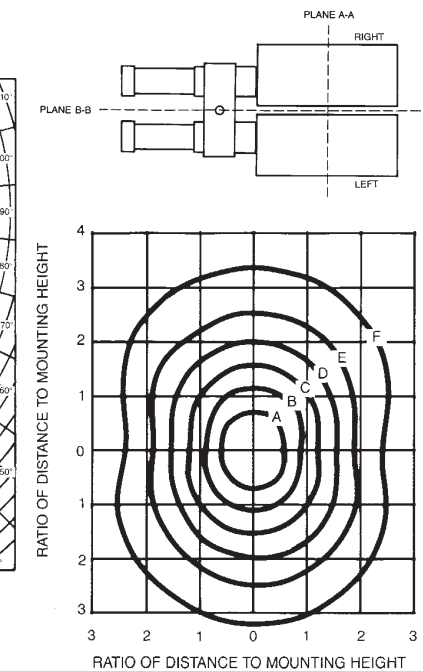
Illuminator four lamp luminaire with Reflectors (without Guards)

Lamps: (4) 39 watt BIAX* fluorescent

CANDELAS in Plane A-A			
DEGREES	LEFT	RIGHT	Plane B-B SIDE
0	1486	1486	1486
10	1601	1520	1448
20	1633	1615	1346
30	1570	1602	1199
40	1530	1558	1000
50	1343	1390	763
60	1162	1208	492
70	803	921	225
80	375	488	45
90	136	168	2
100	13	18	1
110	2	6	
120	1	4	
130			
140	2		1
150		1	1
160			1
170	2	1	1
180	2	2	2



LEGEND
 — PLANE A-A ACROSS LAMP AXIS
 --- PLANE B-B ALONG LAMP AXIS



Footcandle Values for Isofootcandle Lines
MTG HT

(FT)	A	B	C	D	E	F
10	8.0	4.00	2.00	1.00	0.50	0.20
12	5.6	2.78	1.39	0.69	0.35	0.14
16	3.1	1.56	0.78	0.39	0.20	0.08
20	2.0	1.00	0.50	0.25	0.13	0.05

* BIAX is a trademark of the General Electric Company.

EVFT Illuminator™ Long Twin Tube Fluorescent Luminaires

LUMINAIRE: EVFT 22320 with RAR1 Reflector
Lamps: Two (2) F39BX/SPX35/RS
Lumen Rating: 2900 Lumens/Lamp

Effective Floor Cavity Reflectance 20%
% Reflectance

Eff. Ceil.	Wall	Room Cavity Ratio										
		0	1	2	3	4	5	6	7	8	9	10
80	70	.51	.46	.41	.38	.34	.31	.29	.26	.24	.22	.21
	50	.51	.44	.38	.33	.29	.25	.23	.20	.18	.16	.15
	30	.51	.41	.35	.29	.25	.21	.19	.16	.14	.13	.11
	10	.51	.40	.32	.26	.22	.18	.16	.14	.12	.10	.09
70	70	.49	.45	.40	.37	.33	.30	.28	.26	.24	.22	.20
	50	.49	.43	.37	.32	.28	.25	.22	.20	.18	.16	.14
	30	.49	.41	.34	.29	.25	.21	.18	.16	.14	.12	.11
	10	.49	.39	.31	.26	.22	.18	.16	.14	.12	.10	.09
50	50	.47	.41	.35	.31	.27	.24	.21	.19	.17	.15	.14
	30	.47	.39	.33	.28	.24	.21	.18	.16	.14	.12	.11
	10	.47	.38	.31	.26	.22	.18	.16	.13	.12	.10	.09
30	50	.45	.39	.34	.30	.26	.23	.21	.19	.17	.15	.14
	30	.45	.38	.32	.27	.24	.20	.18	.16	.14	.12	.11
	10	.45	.37	.30	.25	.21	.18	.15	.13	.11	.10	.09
10	50	.43	.37	.33	.29	.25	.22	.20	.18	.16	.14	.13
	30	.43	.36	.31	.27	.23	.20	.17	.15	.13	.12	.10
	10	.43	.35	.29	.25	.21	.18	.15	.13	.11	.10	.08
0	0	.43	.35	.28	.24	.20	.17	.14	.12	.10	.09	.08

DETERMINED IN ACCORDANCE WITH CURRENT IES PUBLISHED PROCEDURES

LUMINAIRE: EVFT 24320 with RAR1 & RAL1 Reflectors
Lamps: Four (4) F39BX/SPX35/RS
Lumen Rating: 2900 Lumens/Lamp

Effective Floor Cavity Reflectance 20%
% Reflectance

Eff. Ceil.	Wall	Room Cavity Ratio										
		0	1	2	3	4	5	6	7	8	9	10
80	70	.48	.44	.40	.37	.33	.30	.28	.26	.24	.22	.20
	50	.48	.42	.37	.32	.29	.25	.22	.20	.18	.16	.15
	30	.48	.40	.34	.29	.25	.21	.19	.16	.14	.13	.11
	10	.48	.39	.31	.26	.22	.19	.16	.14	.12	.10	.09
70	70	.47	.43	.39	.36	.33	.29	.27	.25	.23	.21	.20
	50	.47	.41	.36	.32	.28	.25	.22	.20	.18	.16	.14
	30	.47	.40	.33	.29	.25	.21	.18	.16	.14	.12	.11
	10	.47	.38	.31	.26	.22	.18	.16	.14	.12	.10	.09
50	50	.45	.39	.34	.30	.27	.24	.21	.19	.17	.15	.14
	30	.45	.38	.32	.28	.24	.21	.18	.16	.14	.12	.11
	10	.45	.37	.30	.26	.22	.18	.16	.14	.12	.10	.09
30	50	.43	.38	.33	.29	.26	.23	.20	.18	.17	.15	.14
	30	.43	.37	.31	.27	.23	.20	.18	.16	.14	.12	.11
	10	.43	.36	.30	.25	.21	.18	.16	.13	.12	.10	.09
10	50	.41	.36	.32	.28	.25	.22	.20	.18	.16	.14	.13
	30	.41	.35	.30	.26	.23	.20	.17	.15	.13	.12	.11
	10	.41	.35	.29	.25	.21	.18	.15	.13	.12	.10	.09
0	0	.41	.34	.28	.24	.20	.17	.15	.13	.11	.09	.08

DETERMINED IN ACCORDANCE WITH CURRENT IES PUBLISHED PROCEDURES

NFL Series Fluorescent Luminaires

- Higher Ambient Suitability: 55°C
- Cold Weather Start (32W T8 Lamps)
- Cl. I, Div 2, Groups A, B, C, D
- Cl. I, Zone 2 Group IIC
- Wet Locations
- 3, 3R, 4, 4X

6L



Application:

The NFL light luminaires are used:

- In non-hazardous locations where dust, dirt, combustible vapors, smoke, fumes, moisture, corrosive & wet conditions are present.
- Where lamps may be broken due to physical abuse or movable equipment, such as in manufacturing areas or warehouses.
- Where cleanliness and sanitation are prime factors such as in dairies, canneries, food processing plants, bottling plants & laboratories.
- In dock areas for protection against salt spray.
- In areas where low mounting height and the even light distribution associated with a line type light source are required.

Standard Materials:

- Housing – Non-metallic, one piece fiberglass reinforced polyester
- Latches – Celcon™ acetal plastic
- Crepe Pattern Lens – Acrylic plastic
- Gasket – Seamless thermoset polyurethane
- Mounting Bracket – Stainless steel

Standard Finishes:

- Fiberglass housing – White
- Acrylic Plastic lens – Clear

Certifications and Compliances:

- UL Listed 844
- cUL
- Wet locations
- 4X

Ratings (Electrical/Size):

Sources/Wattage: Luminaires are for use with the following lamps

- NFL2140
 - one 40 W long twin tube
- NFL4232
 - two 32W T8 lamps
- NFL4240
 - two 34W “F40 Style” T12 lamps

Voltages

- 120V 60Hz
- 120 - 277V, 50 - 60 Hz
- 347V 60Hz

Conduit Entries

- Two 1/2" inch Myers hubs, one on each end.

Options:

Description

**Suffix to be
added to Cat. No.**

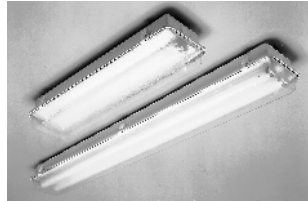
- Fused **S658†**
- Factory assembled with lamps installed **FA**
- Battery Backup Emergency Ballast †
(NFL 2140 and NFL 4232 only) **S799***
- Increased Impact-Resistant Acrylic Lens **DR1295046***
- Polycarbonate Lens **DR1295306***
- Stainless Steel Latches **S863***
- Tamperproof Latches **S861***

✓ – available with Lightning Service™ delivery See Section G for complete details

† For non-hazardous locations

‡ When ordering Fuses for luminaires, option S658, you must specify the operating voltage. S658 can not be ordered with /MT in the catalog number.

* UNV voltages: 120, 208, 230, 240, 277, 50-60 Hz



Key Features

- UL, cUL Listed for Class I, Division 2, Groups A, B, C, D areas with ambient suitability of 40°C (104°F) and 55°C (131°F) Ambient suitability
- NEMA 4X with Myers Hubs and threaded metal plug (furnished)
- Non-metallic construction enclosure
- Continuous form in place gasket
- Molded in place mounting studs – eliminate the need of bracket gaskets
- Standard construction includes:
S.S. mounting brackets
Electronic ballast
Cold weather ballast (4' F32 T8)
- S.S. mounting bracket
Combination ceiling & chain
- S.S. mounting brackets
- Electronic Ballast
- Cold Weather Ballast (4' F32 T8)
- Two 1/2" conduit Myers hubs for end and feed through wiring
- Full metal fixture interior
- Provisions (drill mark) on 4 ft. unit to field drill for pendant mounting

Benefits

Suitable for higher ambients found in industrial environments. Exceeds the 25°C (77°F) ambient suitability of ordinary location lighting fixtures.

Outdoor locations, hose down and corrosive environments suitable.

Corrosion resistant.

Insure dust tight, moisture tight, & wet locations integrity.

Wet locations, and dust tight integrity is not compromised by aging or deteriorated bracket gaskets.

Eliminates the need to order options with associated long lead times.

Standard bracket not only surface mounts fixture, but also is for chain mounting using standard commercially available fixture chain.

Superior corrosion resistance.

Energy efficiency.

Cold weather start up requirements.

Simplify installation and wiring.

Provides improved photometrics as well as access to & concealment of ballast and wiring.

Application and installation flexibility.

Temperature Performance Data:

Ambient temperature range suitability:

- Two lamp, 32W T8, 4 ft luminaire –18°C to 55°C
- ALL others 0°C to 55°C
- Supply wire 75°C min.

Celecon™ is a trade name of Hoechst Celanese

Ordering Information:

Luminaire Cat #	Size/# of lamp(s)	Wattage/Lamp type	Voltage/Hz
NFL2140/UNV	2 ft/ 1-lamp	40W T5 compact single ended	120/60
NFL2140/347			120-277/50-60
NFL4232/UNV✓	4 ft/2-lamp	32W T8 rapid start	120/60
			120-277/50-60
NFL4240/120	4ft/2-lamp	34W T12	120/60
NFL4240/277		“F40 Style”	277/60
NFL4240/347		rapid start	347/60
N2FL4232/UNV			
N2FL4232/347	4ft/2-lamp	32W T8 rapid start	347/60

6L
Fluorescents

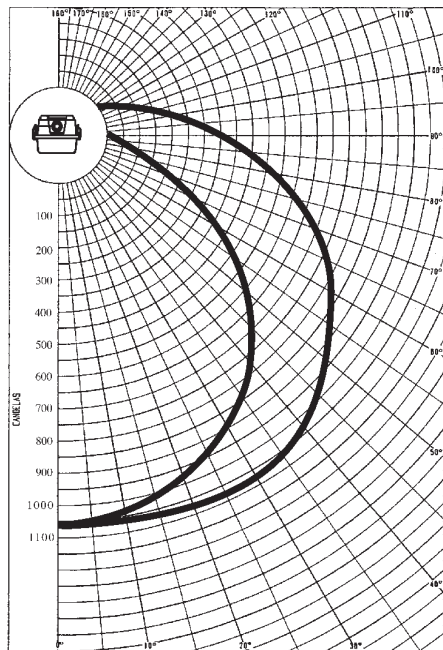
6L NFL Series Fluorescent Luminaires

Photometric Data

Luminaire: All NFL Luminaires

To determine number and placement of luminaires, see Lighting Selector Guide in Section L

Candlepower Distribution Curve (in Candelas)



CANDELAS		
Angle	Along	Across
0°	1049	1049
10°	1034	1056
20°	978	1071
30°	866	1075
40°	762	1027
50°	606	939
60°	416	838
70°	228	723
80°	92	549
90°	17	363
100°	19	243
110°	10	131
120°	5	46
130°	4	20
140°	4	9
150°	4	3
160°	4	0
170°	0	0
180°	0	0

ZONAL LUMENS	
Zone	Lumens
0-30	862
0-40	1462
0-60	2778
0-90	4130
0-180	4499

Photometric data, developed using two (2) F32T8/35K 2850 lumen lamps, represents the performance of all NFL series luminaires.

- Coefficient of Utilization – These values are for all NFL series luminaires (Do not use multipliers).
- Candlepower Distribution Curve (in candelas) and Zonal Lumens – These values are for all NFL series luminaires, adjusted by conversion factors (multipliers) below.

Luminaire Series	Lamp Qty	Watts	Type (Lumens ea.)	Conversion Factor (multipliers)
NFL4232	2	32	F32T8/35K (2850)	1.0
NFL4240	2	34	F40T12/RS (2650)	0.93
NFL2140	1	40	T5 Compact (3150)	0.55

Example:

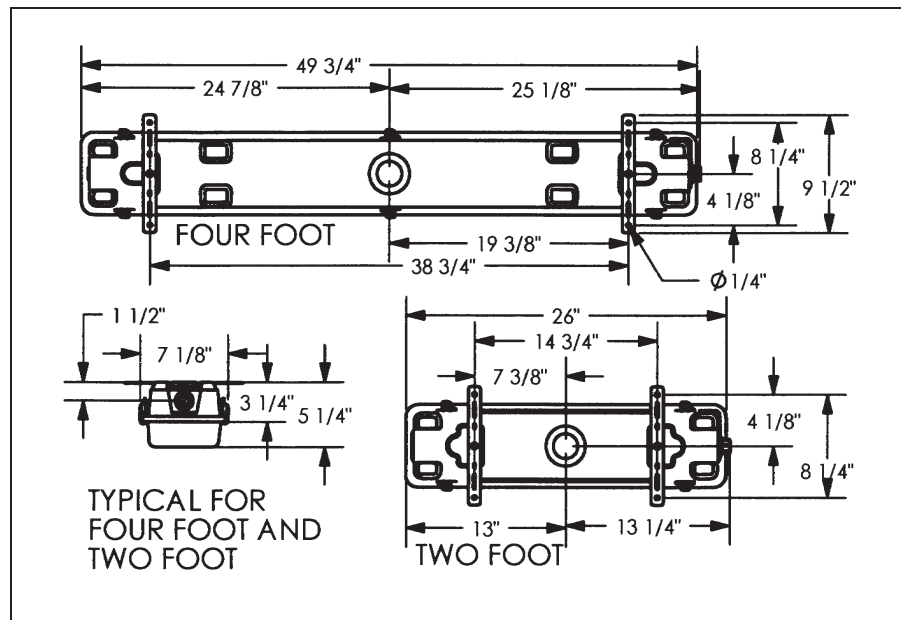
- Candlepower at 20° across for NFL4232 using 2-F32T/35K lamps (5700 lumen total) is 1071 candelas.
- Candlepower at 20° across for NFL2140 using 1 T5 compact lamp (3100 lumen total) is 1071 x .55 = 589 candelas.

Coefficient of Utilization: For all NFL Series Light Luminaires

Effective Floor Cavity Reflectance 20%

% REFLECTANCE		ROOM CAVITY RATIO									
Eff. Ceiling	Wall	1	2	3	4	5	6	7	8	9	10
80	70	.83	.75	.68	.62	.56	.51	.47	.44	.40	.37
	50	.78	.67	.59	.52	.45	.40	.36	.32	.29	.26
	30	.74	.61	.52	.44	.38	.33	.29	.25	.22	.20
	10	.71	.56	.46	.39	.32	.28	.24	.20	.17	.15
70	70	.80	.72	.65	.59	.54	.49	.46	.42	.39	.36
	50	.76	.65	.57	.50	.44	.39	.35	.31	.28	.26
	30	.72	.60	.51	.43	.37	.32	.28	.25	.22	.19
	10	.69	.55	.46	.38	.32	.27	.23	.20	.17	.15
50	50	.71	.61	.54	.47	.42	.37	.33	.30	.27	.24
	30	.68	.57	.48	.42	.35	.31	.27	.24	.21	.19
	10	.66	.53	.44	.37	.31	.26	.23	.20	.17	.15
30	50	.67	.58	.51	.45	.39	.35	.32	.28	.25	.23
	30	.65	.54	.46	.40	.34	.30	.26	.23	.20	.18
	10	.62	.51	.42	.36	.30	.26	.22	.19	.16	.14
10	50	.63	.54	.48	.42	.37	.33	.30	.27	.24	.22
	30	.61	.51	.44	.38	.33	.29	.25	.22	.19	.17
	10	.59	.48	.41	.35	.29	.25	.22	.18	.16	.14
0	0	.57	.46	.39	.33	.27	.23	.20	.17	.14	.12

Dimensions:



Net Luminaire Weights (lbs)

Luminaire Series	Weight (lbs.)
NFL2140	9.1
NFL4232	14.3
NFL4240	14.3

Temperature Performance Data

Basic Cat #	Watts	Ambient Temp °C	Lamp Type	Supply Wire Temp °C	Class I, Div. 2 Temp. Rating	Class II Temp. Rating	Simultaneous Presence Class 1, Div. 2
NFL4232	32	40	T8	60	T6	-	-
NFL4232	32	55	T8	75	T5	-	-
NFL4240	34	40	T12	60	T6	-	-
NFL4240	34	55	T12	75	T5	-	-
NFL2140	40	40	T12	60	T6	-	-
NFL2140	40	55	T12	75	T5	-	-

- Cl. I, Div 2, Groups B,C,D
- Cl. I, Zone 1 Group IIC
- Cl. II, Div Groups E,F,G(Canada)
- Cl. II, Div 2, Groups F,G (US)
- Cl. III, Simultaneous Presence

- Wet Locations
- 3,3R,4,4X; IP66
- ATEX Certified

Application:

- eLLK fixtures are used in hazardous area where moisture or corrosion may be a problem.
- Offshore oil platforms, Pharmaceuticals, plants, Oil refineries.
- Where battery backup is critical.
- In non-hazardous and industrial locations.

Features:

- IEC: Zone 1 and 2 areas.
- NEC/CEC: Zone 1, Division 2 areas.
- Electronic Ballast:
- Operates at Voltage range of 110-254 VAC $\pm 10\%$, 50-60Hz.
- Lower ambient temperature suitability to -25°C .
- Lamps operate independently - one lamp failure will not effect remaining lamp operation.
- Standard Bi-pin Lamps - Most common lamp used in office environments. Energy efficient and cost effective.
- Interlocked Switch - Automatically cuts power to both lamps and ballast when the lens is opened.
- Removable Lens - Hinged on both sides for easy installation and maintenance.
- Dual entries - Extra large wire well eliminates need for separate junction boxes. (Own with cable gland and conduit hub).
- Corrosion-Resistant Construction - Non-metallic body, gasketed lenses, and lens locking system for an IP 66, NEMA 4X rating.
- Battery Backup Features:
- Operates one lamp for 1½ hours should power go out.
- Microprocessor monitors the charging functions of the battery.
- LEDs provide visual indication of battery life.



Certifications and Compliances:

- NEC and CEC:
 - Class I, Division 2 Group B, C, D
 - Class I, Zone 1 Group IIC
 - Class II Division 1, Groups E,F,G (Canada)
 - Class II Division 2, Groups F, G (US)
 - Class III, Simultaneous Presence (Cl. I and Cl. II)
- UL Standards
 - 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
- CSA Standards
 - E79 Series
- ATEX Directive 94/9/EC
 - II 2 G
 - II 2 D T80°C
 - EEx edm ib IIC T4
 - PTB 96 ATEX 2144
- Type of Protection
- EC-Type Examination Certificate

Ordering Information:

Type - 2 Lamp	Length & Type	Conduit Hub Size*	Rated Current	Rated Voltage $\pm 10\%$, 47-63Hz	Order Number	Description
18W	2-foot T8	M25 metric hub	0.18A	110-254	1 2265 875 103	eLLK92018/UNV
36W	4-foot T8	M25 metric hub	0.34A	110-254	1 2266 875 103	eLLK92036/UNV
18W	2-foot T8	3/4" Myers hub	0.18A	110-254	1 2265 875 311	eLLK92018/UNV
18W (with battery)	2-foot T8	3/4" Myers hub	0.23A	110-120	1 2260 879 333	eLLK92018/18/NIB
18W (with battery)	2-foot T8	3/4" Myers hub	0.23A	220-254	1 2260 879 311	eLLK92018/18/NIB WH
36W	4-foot T8	3/4" Myers hub	0.34A	110-254	1 2266 875 311	eLLK92032/UNV
36W (with battery)	4-foot T8	3/4" Myers hub	0.40A	110-120	1 2261 879 333	eLLK92036/36/NIB
36W (with battery)	4-foot T8	3/4" Myers hub	0.40A	220-254	1 2261 879 311	eLLK92036/36/NIB

* 2 hubs provided. May be connected throughfeed or tandem. Cable glands ordered separately for 3/4" (remove hubs) or M 25 openings (remove hubs).

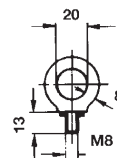
Lamp Selection:

	17W	32W
Phillips	F17T8/TI841	F32T8/TL841
GE	F17T8/SPX41	F32T8/SPX41
Osram/Sylvania	F017/841	F032/841

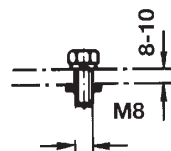
Weight

17 W	4.6 Kg (10 lb)
17 W (battery)	10 Kg (22 lb)
32 W	6.7 Kg (14 lb)
32 W	12 Kg (26 lb)

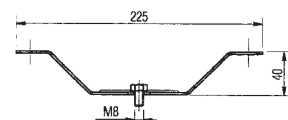
Accessories



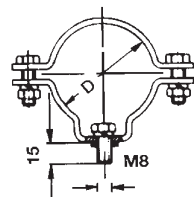
Eyebolt



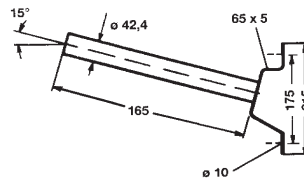
Hexagonal Screw



Ceiling Mounting Bracket



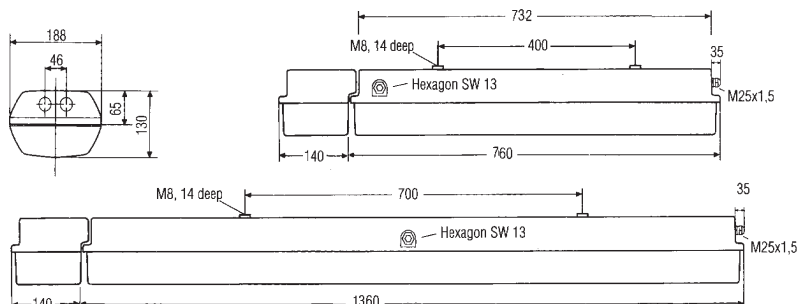
Pipe Clamp



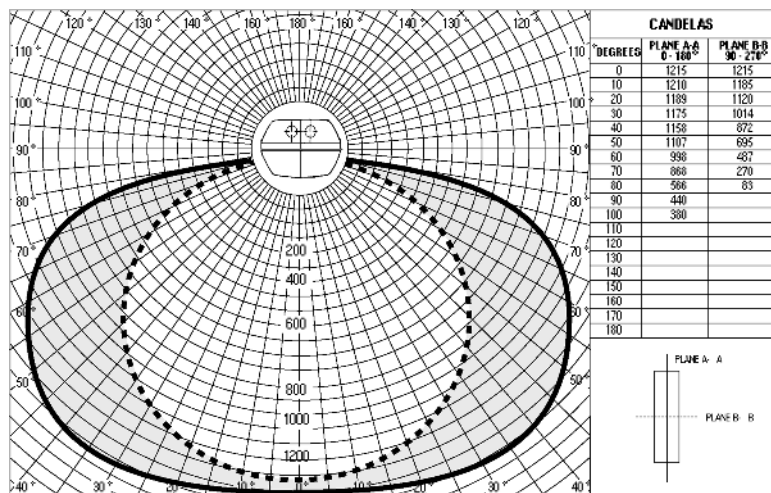
Wall Bracket

Dimensions: (mm)

Standard Luminaire with Backup



Type	Corrosion Protection	Pipe Din	Outer OD (mm)	Quantity per Luminaire	Order Number
Eyebolt	Galvanized	—	—	2	2 2480 002 000
Hexagon Screw S4	Cr Ni	—	—	2	2 2480 054 000
Ceiling Mounting	Cr Ni	—	—	2	2 2480 092 000
D92 Bracket	R12 Hot Galvanized	1 1/4"	38-42	2	2 2480 462 000
Pipe Clamp	R14 CrNi	1 1/4"	38-42	2	2 2480 464 000
	R22 Hot Galvanized	1 1/2"	47-51	2	2 2480 472 000
	R32 Hot Galvanized	2"	56-60	2	2 2480 482 000
Hexagon Key SW13	—	—	—	—	3 2485 000 005
eLLK 92	—	—	—	—	—



Photometric data developed
using 2 – F32T8 3350
lumen lamps.
For the 17 W eLLK, use a
0.45 multiplier.

Coefficients of Utilization

Effective Floor Cavity Reflectance 20%

			Room Cavity Ratio								
Eff. Ceil.	Wall	Work	1	2	3	4	5	6	7	8	9
80*	70*	20*	41	49	55	61	65	70	74	77	80
	50*	20*	30	38	44	50	55	62	67	71	75
	30*	20*	23	30	36	43	48	55	61	65	70
	10*	20*	18	25	30	37	42	50	56	61	66
70*	70*	20*	40	47	53	58	62	68	71	74	77
	50*	20*	29	37	42	49	54	60	65	68	72
	30*	20*	22	30	35	42	47	54	59	64	68
	10*	20*	18	24	30	36	42	49	54	59	64
50*	50*	20*	27	35	40	46	50	56	61	64	68
	30*	20*	21	28	34	40	45	51	56	60	64
	10*	20*	17	24	29	35	40	47	52	57	61
30*	50*	20*	26	38	37	43	47	58	57	60	64
	30*	30*	20	27	32	38	43	49	53	57	61
	10*	20*	17	23	28	34	39	45	50	54	58
10*	50*	20*	24	31	35	41	45	50	54	57	60
	30*	20*	20	26	31	36	41	46	51	54	68
	10*	20*	16	22	27	33	37	43	48	52	55
0*	0*	20*	14	20	25	31	35	41	46	49	53

* Percent Reflectance

nLLK Series Nonmetallic Fluorescent Luminaires

CL.I, Div. 2, Groups A,B,C,D
CL.I, Zone 2 Aex nA II
CL.II, Division 2, Groups F,G
Enclosure Type 4X

Wet Locations
UL and cUL Listed
ATEX Certified

6L



The Cooper Crouse-Hinds SpecOne™ nLLK Series Fluorescent Luminaire is an ideal source of general illumination indoors or out, in ordinary or hazardous environments. Its heavy-duty, nonmetallic construction stands up to tough physical and environmental demands, making it an excellent choice where dust, dirt, gas, vapor, smoke, fumes, moisture, corrosive and wet conditions are present. As with all SpecOne products, the nLLK luminaire meets the standards and codes of regulating agencies throughout the world, which simplifies product specifying for multinational users.



APPLICATIONS

nLLK series luminaires are used:

In indoor or outdoor, ordinary or hazardous areas

Where a heavy-duty, nonmetallic luminaire is required to hold up to tough physical and environmental demands including corrosives, water, dust and extreme temperatures

- manufacturing plants
- heavy industrial facilities
- industrial process facilities
- refineries
- chemical
- petrochemical
- pharmaceutical
- waste water and sewage treatment plants

In areas where low mounting height, immediate full illumination, and the even light distribution associated with a linetype light source are required

- loading docks
- tunnels
- stairways

Where wet location or Type 4X protection is required

- dock areas
- production platforms

In hosedown areas where cleanliness and sanitation are prime factors

- dairies
- canneries
- food processing plants
- bottling plants
- laboratories

CERTIFICATIONS & COMPLIANCES

NEC

- Class I, Division 2, Groups A, B, C, D
- Class I, Zone 2 AEx nA II
- Class II, Division 2, Groups F, G
- Wet Locations
- UL Listed

CEC

- Class I, Zone 2 Ex nA II
- Class I, Division 2, Groups A, B, C, D
- Class II, Division I, Groups E, F, G
- cUL Listed (certified by UL)

Enclosure

- Type 4X
- IP65

UL Standards

- 2279 Hazardous (Zones Classified) Locations
- 1598 Luminaires

CSA Standards

- C22.2 No. 9
- CAN/CSA-E79-15

ATEX

- ATEX Directive 94/9/EC

- Type of Protection
- EC-Type Examination Certificate
- EC-Type Examination Certificate

Ex II 3 G
Ex II 2 D/II 3 D T80°C
EEx nA II T4 nach EN 50021
PTB 96 ATEX 2208

DMT 02 ATEX E116

STANDARD MATERIALS

- one-piece housing—fiber-glass reinforced polyester
- lens—polycarbonate
- gasket—silicone

STANDARD FINISHES

- fiberglass housing—natural (white)
- lens—natural (clear)

RATINGS (ELECTRICAL/ SIZE)

Sources/Wattages

- two 17 W or two 32 W linear fluorescent

Voltages

- 120–277 V, 50–60 Hz.
- 347 V, 60 Hz.—consult factory

Hub Size

- four 25 mm entries, two on each end, three plugged
- two Myers® STM2 25 mm to ¾" NPT adapter hubs provided standard for through-feed or tandem wiring

6L

nLLK Series Nonmetallic Flourescent Luminaires

CL.I, Div. 2, Groups A,B,C,D
CL.I, Zone 2 Aex nA II
CL.II, Division 2, Groups F,G
Enclosure Type 4X

Wet Locations
UL and cUL Listed



IP65, Type 4X heavy-duty construction

- nonmetallic body, gasketed lens and unique labyrinth lens locking system
- dust-tight, water-tight and moisture-tight
- corrosion and impact-resistant
- ideal for outdoor applications

Electronic ballast

- lower ambient temperatures suitability to -18°C
- high-power factor ballast (+90%) allows for more luminaires per circuit

Standard T8 bi-pin lamps—most common lamp used; energy-efficient and cost-effective

Removable lens—hinged on both sides for easy installation and maintenance

Easy wiring and installation—

- four 25 mm entries. Two Myers® ¾" NPT adapter hubs supplied standard
- suitable for through-feed or tandem applications
- extra-large wire well eliminates need for separate junction boxes

Worldwide suitability

- NEC/CEC: Class I, Zone 2 and Division 2 areas
- IEC/CENELEC certified luminaires available. Consult factory.



ORDERING INFORMATION

HUB SIZE*	LAMP DESCRIPTION	VOLTAGE/HZ.	CATALOG NO.
¾" NPT	17 W T8, Rapid Start—2 lamps	120–277 V, 60 Hz.	nLLK98 2217/UNV
¾" NPT	32 W T8, Rapid Start—2 lamps	120–277 V, 60 Hz.	nLLK98 4232/UNV

* 25 mm entries—supplied with two Myers® STM2 25 mm to ¾" NPT adapter hubs.

ACCESSORIES

DESCRIPTION	CATALOG NO.
SW13 hexagon key (for maintenance and lamp replacement)	3 2485 000 005
Myers® 25 mm to ¾" NPT adapter hub	STM2

MOUNTING ACCESSORIES

TYPE	CORROSION PROTECTION	PIPE DIN	OUTER DIA.	QTY. PER LUMINIAIRE	CATALOG NO.
Eyebolt A2	Galvanized			2	2 2480 002 000
Hexagon Screw S4 (to attach ceiling mounting bracket or pipe clamp to luminaire)	Nickel Chromium			2	2 2480 054 000
Ceiling Mounting Bracket D92	Nickel Chromium			2	2 2480 092 000
Pipe Clamp R12	Hot Galvanized	1¼"	38–42 mm	2	2 2480 462 000
Pipe Clamp R14	Nickel Chromium	1¼"	38–42 mm	2	2 2480 464 000
Pipe Clamp R22	Hot Galvanized	1½"	47–51 mm	2	2 2480 472 000
Pipe Clamp R32	Hot Galvanized	2"	56–60 mm	2	2 2480 482 000

6L Fluorescents

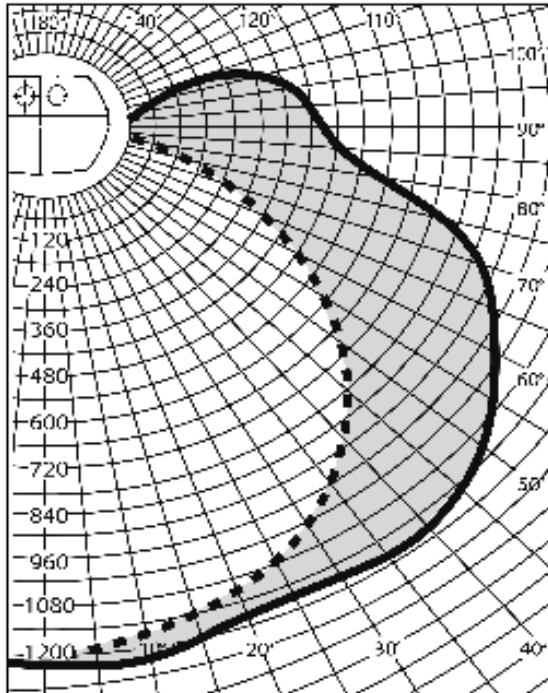
nLLK Series Nonmetallic Flourescent Luminaires

CL.I, Div. 2, Groups A,B,C,D
CL.I, Zone 2 Aex nA II
CL.II, Division 2, Groups F,G
Enclosure Type 4X

Wet Locations
UL and cUL Listed

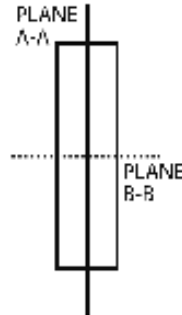
6L

PHOTOMETRIC DATA



CANDELAS

DEGREES	PLANE A-A E 180°	PLANE B-B 90° 240°
0	1215	1215
10	1215	1195
20	1189	1120
30	1175	1014
40	1158	877
50	1107	695
60	958	487
70	868	270
80	556	83
90	440	
100	390	
110		
120		
130		
140		
150		
160		
170		
180		



TEMPERATURE PERFORMANCE

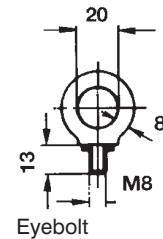
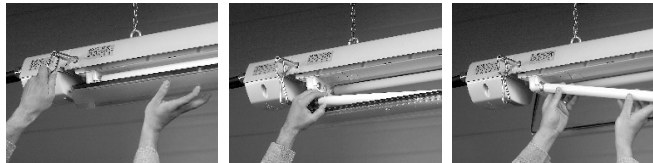
Minimum Starting Temperature: -18°C

WATTS	AMBIENT	CLASS I, DIV. 2 (CLASS I, ZONE 2)	CLASS II, DIV. 1 (CEC) CLASS II, DIV. 2 (NEC)	SUPPLY WIRE TEMP °C
Two 17 W T8 lamps	40°C	T4	T6	60
Two 32 W T8 lamps	40°C	T4	T6	60

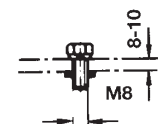
MAINTENANCE AND RELAMPING

(eLLK Series Div. 1/Zone 1 luminaire is shown. Maintenance procedures are the same for the nLLK.)

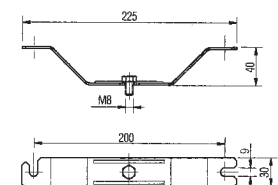
1. **One quarter turn** with the SW13 hexagon key or a 5/16" (M8) Allen hex head wrench releases multiple locking points.
2. **Lamps can be stored** in open lens, freeing up hands for easy relamping.
3. **Replace the bi-pin lamp**, lock with one quarter turn of the wrench for an IP65, Type 4X seal.



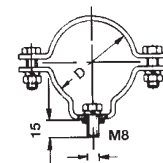
Eyebolt



Hexagon Screw



Ceiling Mounting Bracket



Pipe Clamp

DIMENSIONS (mm) & WEIGHT

Weight: 8.8 lbs. (4.0 kg.)—17 W 13.2 lbs. (6.0 kg.)—32 W





FVN Luminaires are ideal for use:

- In areas made hazardous by the abnormal conditions resulting in the presence of flammable vapors or gases and combustible dusts as defined by the National Electrical Code®.
- Where broken lamps would damage machinery or processes, or harm people working in the area.
- In areas where stringent sanitation requirements exist.

Features

- One-piece seamless sheet steel housing with welded end caps keeps dirt, dust and moisture away from ballast and lamps. Easy to clean.
- A silicone rubber gasket provides a dust-tight seal between the lens/frame assembly and housing.
- Lens/frame assembly is hinged and wireway cover is held by safety chain for ease of lamp replacement and maintenance.
- Polyester powder coat finish provides high reflectance and corrosion resistance for long life and dependable service.
- Two ½" NPT pendant hubs and two ½" NPT thru-feed end hubs are standard.
- Electronic ballast is standard on 32, 40/(UNV only) and 54 watt luminaires.

FVN Fluorescent Luminaires with T5 HO lamps offer...

- High lumen output per watt - provides energy savings versus other higher wattage fluorescent luminaires with similar lumen output.
- Longer lamp life and good lumen maintenance - reduced maintenance and lamp replacement costs.

Certifications and Compliances:

NEC and CEC:

- Class I, Division 2 Groups A, B, C & D
- Class I, Zone 2 Groups IIC
- Class II, Division 1 Groups F, G
- Class III
- Simultaneous Presence (Cl. I and Cl. II)

UL Standards:

- 844 Hazardous (Classified) Areas
- 1598 Luminaires

CSA Standards:

- C22.2 NO. 137

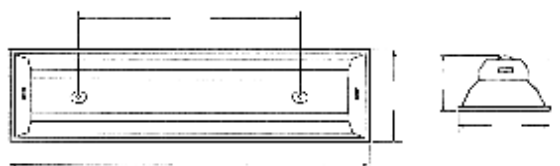
Standard Materials:

- Luminaire housing - 20-gauge seamless sheet steel
- Lens/Frame Assembly - stainless steel
- Glass - 3/16" tempered
- Suspension flanges - seamless sheet steel
- Gaskets - silicone
- Lampholders - white thermoset plastic
- Clamps - stainless steel

Standard Finishes:

- Reflector housings - corrosion resistant white polyester powder coat
- Lens/Frame - natural

Dimensions:



Ordering Information (Lamps not supplied): Supercedes ordering information in Catalog 6000, Section 5L.

Lamp Watts	Line Voltage/Hertz	Lamp Type	Hub Size	2-Lamp Cat. No.	3-Lamp Cat. No.
32	120-277/50-60	T8	1/2 NPT	FVN4232TG/UNV	FVN4332TG/UNV
32	347/60	T8	1/2 NPT	FVN4232TG/347	FVN4332TG/347
40	120-277/50-60	T12	1/2 NPT	FVN4240TG/UNV	FVN4340TG/UNV
40	347/60	T12	1/2 NPT	FVN4240TG/347	FVN4340TG/347
60	120/60	T12HO	1/2 NPT	FVN4260TG/120	—
60	277/60	T12HO	1/2 NPT	FVN4260TG/277	—
60	347/60	T12HO	1/2 NPT	FVN4260TG/347	—
60	220/50	T12HO	1/2 NPT	FVN4260TG/200-50	—
FVN Fluorescent Luminaires with T5 HO Lamps (Lamps not supplied)					
54	120-277/50-60	T5HO	1/2 NPT	FVN4254TG/UNV	—
54	347/60	T5HO	1/2 NPT	FVN4254TG/347	—

FDN Series Flourescent Luminaires

CI.I, Div. 2, Groups A,B,C,D
 CI.I, Zone 2 Group IIC
 CI.II, Div. 1, Groups F,G
 CI.III & Simultaneous Presence

Wet Locations
 NEMA 3,3R

6L

Options:

The following special options are available from the factory by adding suffix to luminaire Cat. No.

Description	Suffix
• Low temperature electromagnetic ballast, 40W rated 0°F (-18°C), 60W rated -20°F (-29°C)	BY
• 45° angle brackets (field installed)	AG
• Adjustable angle brackets (field installed)	KH
• Angle bars for chain suspension (field installed)	CX
• Individually fused balast (internal)	FB
• Emergency lighting battery unit (Class I, Division 2 only). Also available for use with T5 lamps Supplied with charging indicator light and instructions for use with a remote push-to-test station.	S799†

† If push-to-test operator installed in the luminaire is required, consult factory.

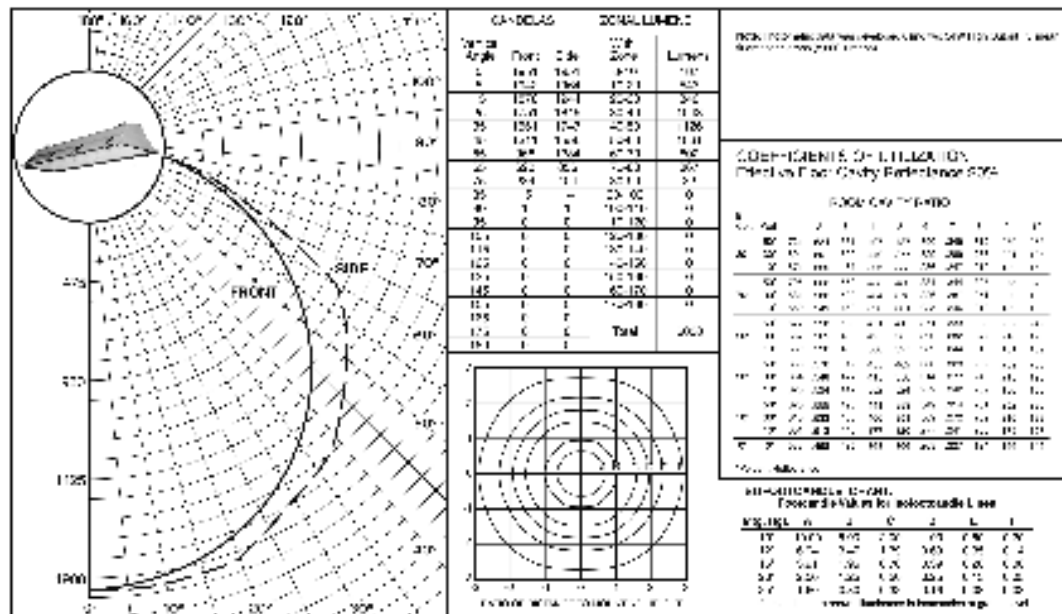
Temperature Performance Data: (Based on 40°C ambient)

Lamp	CI. I, Div. 2 & Zone 2		Class II		Simultaneous Presence		Supply Wire
	Supply2-Lamp	3-Lamp	2-Lamp	3-Lamp	2-Lamp	3-Lamp	
32W	T5	T5	T6	T6	T4	T4	60°C
40W	T5	T5	T6	T6	T4	T4	60°C
54W	T3C	—	T6	—	T3C/T6	—	75°C
60W	T4	—	T6	—	T4	—	90°C

Photometric Data:

Luminaire with two 54W High Output T5 Linear Fluorescent Lamps
 FVN4254

Luminaire with two 54W High Output T5 Linear Fluorescent Lamps
 FVN4254



FVN .ies photometric files for use with our Luxicon® Lighting Layout Software are available from the Resources area of our website.

6L **FVN Series** Fluorescent Luminaires

Photometric Data

Luminaire: FVN with 2-40W lamps (tempered lens)

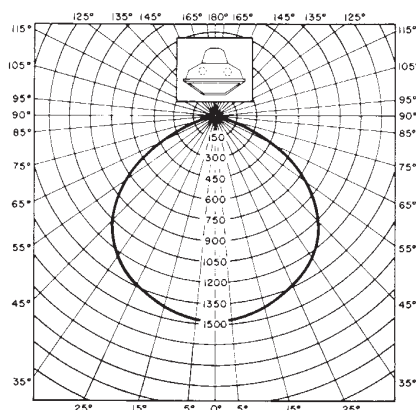
Lamp: 2-40/T-12

Zonal Degrees: 0-30 0-40 0-60 0-90

Zonal Lumens: 1182 1971 3555 4284

Total Bare Lamp Lumens: 6300

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.



NOTE: All data provided is for 2-lamp 40W RS cool white luminaires with tempered glass. Use 1.37 multiplier for 2-lamp 60W luminaires with tempered glass. Use .92 multiplier for 2-lamp 32W luminaires with tempered glass.

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.721	.643	.575	.513	.461
	30	.695	.603	.527	.459	.404
	10	.673	.569	.489	.418	.362
70	50	.706	.631	.566	.505	.452
	30	.683	.594	.520	.455	.399
	10	.661	.564	.485	.415	.359
50	50	.677	.607	.547	.488	.439
	30	.657	.577	.508	.444	.392
	10	.641	.549	.476	.410	.357
30	50	.650	.586	.528	.473	.426
	30	.636	.561	.496	.435	.384
	10	.621	.538	.468	.405	.353
10	50	.627	.568	.512	.459	.414
	30	.614	.544	.484	.426	.378
	10	.602	.526	.460	.399	.349
0	0	.589	.512	.447	.385	.336
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.416	.375	.338	.309	.269
	30	.359	.319	.283	.254	.215
	10	.319	.281	.244	.217	.180
70	50	.409	.370	.333	.305	.265
	30	.356	.315	.281	.252	.215
	10	.316	.278	.244	.217	.180
50	50	.397	.359	.324	.297	.259
	30	.350	.309	.277	.249	.211
	10	.314	.276	.242	.215	.179
30	50	.386	.348	.316	.289	.253
	30	.344	.306	.272	.244	.208
	10	.311	.273	.240	.214	.177
10	50	.376	.341	.308	.282	.247
	30	.338	.301	.268	.242	.205
	10	.308	.271	.239	.212	.175
0	0	.295	.258	.226	.200	.164

Luminaire: FVN with 3-40W lamps (tempered lens)

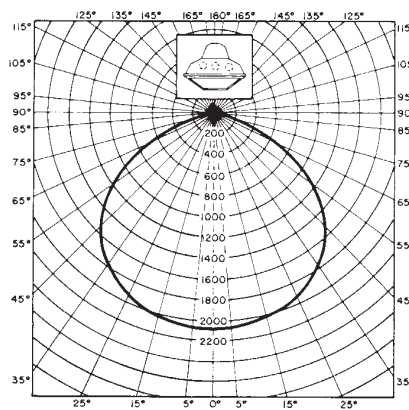
Lamp: 3-40/T-12

Zonal Degrees: 0-30 0-40 0-60 0-90

Zonal Lumens: 1695 2834 5099 6079

Total Bare Lamp Lumens: 9450

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.



NOTE: All data provided is for 2-lamp 40W RS cool white luminaires with tempered glass. Use 1.37 multiplier for 2-lamp 60W luminaires with tempered glass. Use .92 multiplier for 2-lamp 32W luminaires with tempered glass.

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.682	.610	.546	.488	.439
	30	.658	.572	.501	.438	.385
	10	.637	.540	.466	.399	.346
70	50	.668	.599	.538	.480	.430
	30	.646	.563	.495	.433	.381
	10	.625	.535	.462	.396	.343
50	50	.640	.576	.520	.464	.418
	30	.622	.547	.454	.423	.374
	10	.606	.521	.433	.391	.341
30	50	.615	.556	.502	.450	.406
	30	.601	.532	.472	.415	.367
	10	.587	.511	.446	.386	.337
10	50	.594	.537	.487	.437	.394
	30	.581	.517	.461	.406	.361
	10	.570	.499	.439	.381	.333
0	0	.557	.487	.426	.368	.321
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.396	.357	.322	.294	.256
	30	.343	.304	.270	.242	.205
	10	.305	.268	.234	.207	.172
70	50	.390	.352	.317	.290	.252
	30	.340	.301	.268	.240	.205
	10	.302	.266	.233	.207	.172
50	50	.378	.342	.309	.282	.247
	30	.334	.295	.264	.237	.201
	10	.300	.264	.231	.206	.171
30	50	.368	.332	.301	.276	.241
	30	.328	.292	.259	.233	.199
	10	.298	.261	.230	.204	.169
10	50	.358	.325	.294	.269	.235
	30	.322	.288	.256	.231	.196
	10	.294	.259	.228	.202	.168
0	0	.283	.247	.217	.192	.157

eLLB20 Series

Recessed Mount Fluorescent Luminaires

Class I, Div.2, Groups A,B,C,D
Class I, Zone 1, Groups IIC
ATEX Certified

Cl. II, Div 2, Groups F,G
Cl. II, Div 1, Groups E,F,G (Canada)
Wet Locations
Enclosure Type 4X and IP66

6L



Features & Benefits:

- One piece welded housing with fitted cover frame. The cover frame is an integral part of the housing to seal out dust & moisture.
- Adjustable mounting clamps:
 - permanently attached and adjustable through the cover frame for easy installation.
 - allow recess mounting in ceilings from 25mm to 100mm (1" to 4" approx) thick for maximum mounting flexibility.
- Support lugs (M8 x .6) to secure the luminaire to ceiling structural support members for safety.
- Frameless tempered glass lens:
 - 6mm (1/4") thick for added safety.
 - interior hinge for maximum dust shedding.
 - fitted with captive screws for ease of lamp replacement and maintenance.
- Isolating switch turns off power to the ballast and lamps when the lens is opened for added safety.
- 4 entries (2 on each end) supplied with (2) 3/4" NPT adapter hubs and extra large wire well for feedthrough and tandem applications without the need for separate junction boxes.
- Electronic ballast:
 - high power factor (95%) for energy efficiency, more luminaires per circuit and supply voltage flexibility.
 - features 2 channel circuitry for safety - if one lamp fails the 2nd lamp remains in operation.
- Uses T8 linear fluorescent lamps for high efficiency and reduced operating costs.
- 5 wire terminal block and through wiring are standard for quick and easy balancing of lighting loads on 3 phase systems.

Applications:

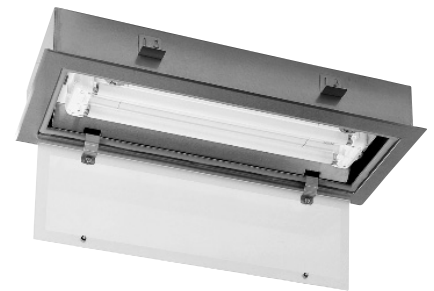
eLLB series luminaires are used:

- For flush or surface ceiling mounting.
- In cleanroom areas where it is important to have smooth, flush surfaces.
- Where extreme cleanliness is required as in pharmaceutical, chemical and electronics manufacturing facilities, as well as in paint shops and spray booths.
- For tough environmental conditions involving corrosives, water, dust and extreme temperatures.
- In areas that require lamps to reach full illumination immediately.
- Indoor & outdoor ordinary or hazardous areas.
- For Wet locations and areas with hose down / wash down requirements.

Adjustable Mounting Clamps



Hinged Glass Lens



Certifications & Compliances:

NEC :

- Class I, Division 2, Groups A,B,C,D
- Class I, Zone 1 AEx ed IIC
- Class II, Division 2, Groups F, G
- UL Listed

CEC:

- Class I, Division 2, Groups A,B,C,D
- Class I, Zone 1 Ex eds IIC
- Class II, Division 1 Groups E,F,G
- cUL Listed

Enclosure

- Type 4X
- IP66

UL Standards

- 2279 Hazardous (Classified) Locations
- 1598 Luminaires

CSA Standards

- C22.2 No. 9
- CAN/CSA-E60079-0:02
- CAN/CSA-E60079-1:02
- CAN/CSA-E60079-7
- CAN/CSA-E61241-1-1:02

ATEX

- ATEX Directive 94/9/EC
- Type of Protection
- EC-Type Examination Certificate
- II 2 G
- II 2 D T80°C
- EEx ed IIC T4
- EEx ed ib IIC T4 (CG-variant)
- DMT 02 ATEX E 069

Standard Materials:

- One piece welded housing and cover frame - sheet steel or stainless steel
- Lens - 6mm (1/4") thick tempered glass
- Gaskets - Silicone
- External hardware - stainless steel

Standard Finishes:

- Sheet steel - White epoxy coat
- Lens - Clear
- Stainless steel - Natural

6L
Fluorescents

6L**eLLB20 Series****Recessed Mount
Fluorescent Luminaires**Class I, Div.2, Groups A,B,C,D
Class I, Zone 1, Groups IIC
ATEX CertifiedCl. II, Div 2, Groups F,G
Cl. II, Div 1, Groups E,F,G (Canada)
Wet Locations
Enclosure Type 4X and IP66**Ratings (Electrical / Size):****Sources/Wattages**

- Two 32W or 17W T8 Linear Fluorescent

Voltages

- 120-240V, 50-60 Hz.
- 110-230VDC

Hub Size

- Four 25mm entries, 2 on each end, 3 plugged.
- Two 3/4" NPT adapter hubs provided standard, for feed-through or tandem wiring.

Terminals

- 5 wire terminal block, one on each end (L1, L2, L3, N, Ground)
- Two 6mm2 (#10 AWG) maximum per terminal

Temperature Performance Data:

Minimum Starting Temperature: -20°C

Watts	Ambient Temp.	Cl. I, Div. 2 Cl. I, Zone 1 & 2	Class II	Supply Wire Temp
Two 17W T8 lamps	50°C	T4	T6	60°C
Two 32W T8 lamps	50°C	T4	T6	60°C

Accessories:

- 3/4" NPT adapter hub

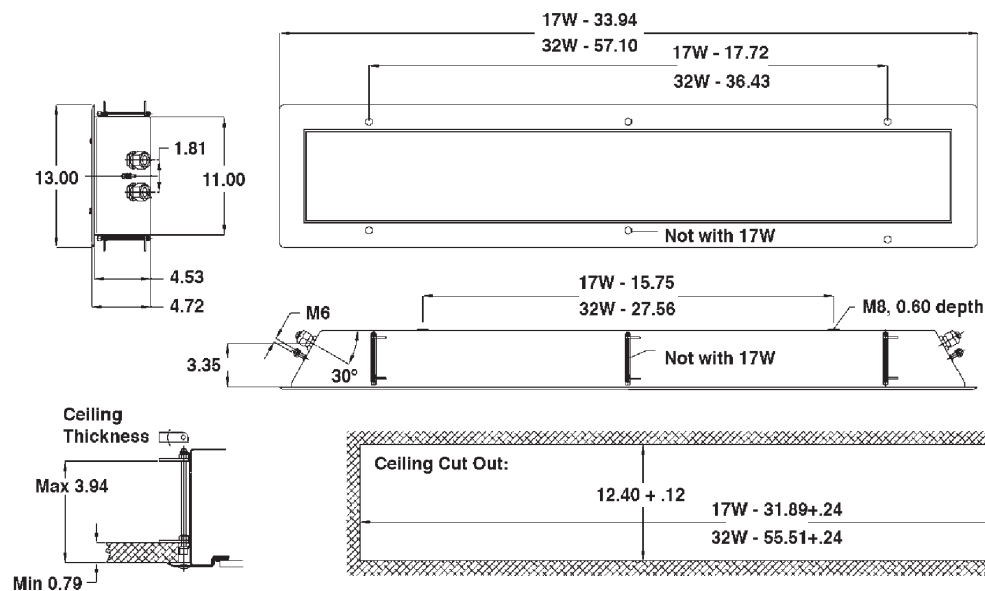
STM2**Mounting Accessories:**

- Eye Bolt for Support Lugs
- Hexagon Screw for Support Lugs

2 2480 002 000**2 2480 054 000****Ordering Information:**

Hub Size	Wattage/Lamp	Voltage/Hz	Operating Current	Catalog Number	
				Epoxy Coated Steel Enclosure	Stainless Steel Enclosure
3/4" NPT	Two 17 Watt T8 Rapid Start	120-240V, 50-60 Hz 110-230 VDC	.18A	eLLB20 2217/U240	eLLB20 2217SS/U240
3/4" NPT	Two 32 Watt T8 Rapid Start	120-240V, 50-60 Hz 110-230 VDC	.34A	eLLB20 4232/U240	eLLB20 4232SS/U240

IEC / CENELEC certified luminaires are available. Consult factory.

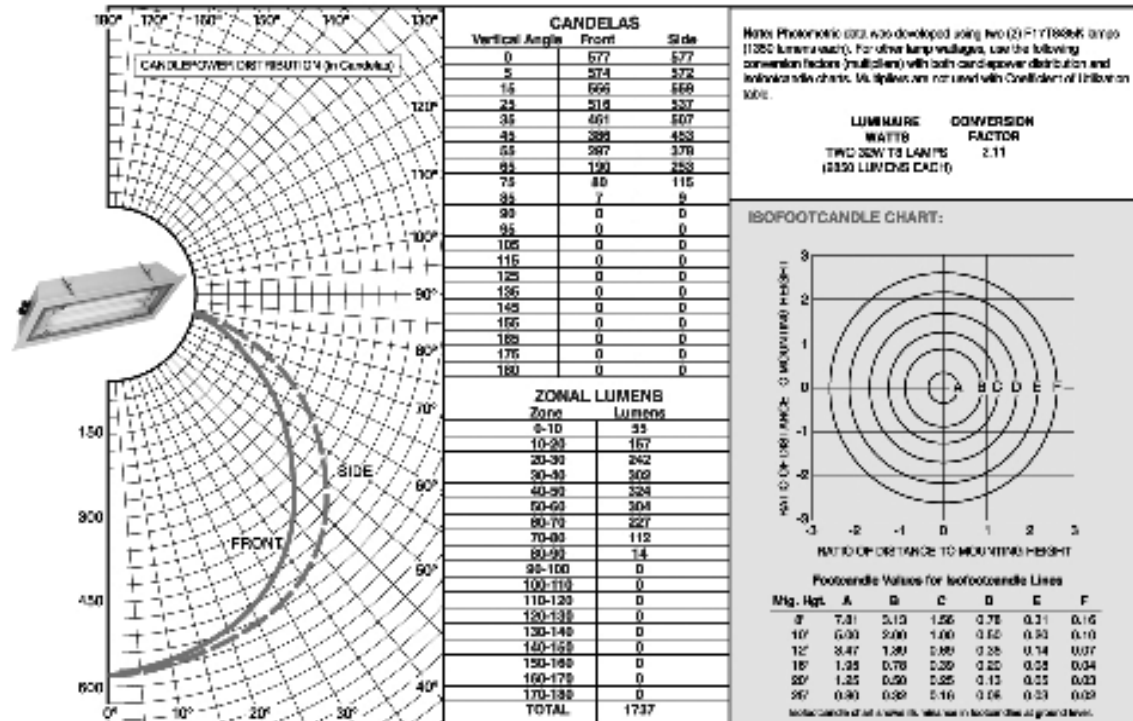
Dimensions (Inches) and Weights:

Item	Weight
eLLB20 2217	33 lbs.
eLLB20 4232	48 lbs.

6L Fluorescents

Photometric Data:

LUMINAIRE: eLLB20 2217 LAMP: TWO F17T8 LINEAR FLUORESCENT



COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD EFFECTIVE FLOOR CAVITY REFLECTANCE 20%

		ROOM CAVITY RATIO									
EFF. CEIL.	WALL	1	2	3	4	5	6	7	8	9	10
80°	50°	0.679	0.597	0.528	0.468	0.412	0.368	0.329	0.294	0.263	0.239
	30°	0.654	0.556	0.478	0.414	0.355	0.310	0.272	0.239	0.209	0.186
	10°	0.631	0.522	0.439	0.372	0.313	0.269	0.233	0.200	0.172	0.151
70°	50°	0.664	0.585	0.518	0.459	0.405	0.632	0.324	0.290	0.259	0.235
	30°	0.641	0.547	0.472	0.409	0.351	0.307	0.270	0.237	0.207	0.185
	10°	0.621	0.516	0.435	0.369	0.311	0.268	0.232	0.200	0.172	0.151
50°	50°	0.637	0.562	0.499	0.443	0.391	0.350	0.314	0.281	0.252	0.229
	30°	0.618	0.531	0.460	0.399	0.344	0.302	0.265	0.233	0.204	0.182
	10°	0.601	0.504	0.427	0.364	0.308	0.266	0.230	0.198	0.171	0.150
30°	50°	0.612	0.542	0.482	0.429	0.379	0.339	0.305	0.273	0.245	0.223
	30°	0.597	0.515	0.448	0.390	0.337	0.296	0.261	0.229	0.201	0.180
	10°	0.583	0.492	0.420	0.360	0.304	0.263	0.228	0.197	0.170	0.149
10°	50°	0.589	0.522	0.465	0.415	0.367	0.329	0.296	0.265	0.238	0.217
	30°	0.577	0.501	0.437	0.382	0.330	0.291	0.257	0.226	0.198	0.177
	10°	0.566	0.481	0.413	0.355	0.301	0.261	0.257	0.196	0.169	0.149
0°	0°	0.553	0.468	0.400	0.341	0.288	0.248	0.214	0.183	0.156	0.137

* PERCENT REFLECTANCE

- Cl. I, Div 1, Groups C,D
- Cl. I, Zone 1 Group IIB
- Cl. II, Div 1, Groups E,F,G
- Cl. III, Simultaneous Presence

- Paint Spray (Suffix S718)
- Wet Locations (Suffix S718)
- 3,3R, IP54 (Suffix S718)

Application:

EVF luminaires are used in areas where hazardous fumes, gases, or dusts are present.

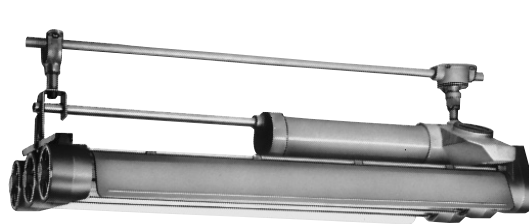
EVF luminaires with S718 option are designed specifically for use inside paint spray booths where hazardous fumes, gases, and paint residue are present. This includes powder paint process areas.

EVF luminaires with S718 option are also suitable for use in wet locations.

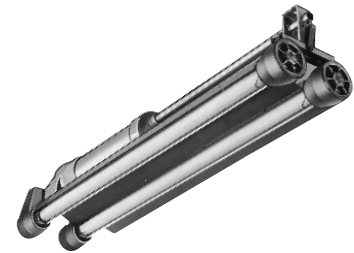
Features:

All EVF luminaires

- Provide cool, even light with natural color rendition
- Reduce relamping schedule (long lamp life)
- Continuous and uniform illumination made possible by mounting end to end (no space needed between luminaires for relamping)
- No special tools required for relamping. Threaded lamp tube cover provides quick and easy access for relamping
- Threaded joints on lamp tube and wiring chamber covers permit easy access for lower maintenance costs
- Reflectors can be removed or replaced with only a screwdriver
- Easy to install. Factory sealed and wired luminaire facilitates installation
- Standard electronic ballast for 32 watt and 40 watt rapid start luminaires.
- Standard energy efficient ballast for 40 watt slimline, 60 watt and 110 watt luminaires.
- Low temperature ballast is supplied as standard on 32 watt T8 (0°F), 40 watt slimline (0°F); 60 watt and 110 watt luminaires (-20°F).
- All exposed hardware is stainless steel for maximum protection against corrosion, and for longer luminaire life
- Copper-free aluminum construction throughout means lighter luminaire weight, easier installation, and excellent corrosion resistance
- All exterior materials are non-sparking
- Type P ballasts furnished in compliance with NEC
- Heavy-duty glass lamp tubes provide maximum strength and impact resistance to protect lamps



3-lamp



2-lamp with angle reflector

EVF

Furnished For Use With	Hub Size	Line Volts 60 Hz.*	1-Lamp Cat. #	2-Lamp Cat. #	3-Lamp Cat. #	4-Lamp Cat. #
32 watt, T-8 medium Bi-pin 265MA lamps	3/4"	120-277	EVF21029/UNV	EVF22029/UNV	EVF23029/UNV	EVF24029/UNV
	3/4"	347	EVF21029/347	EVF22029/347	EVF23029/347	EVF24029/347
40 watt, T-12 medium Bi-pin rapid start 430MA lamp†	3/4"	110-125	EVF21082	EVF22082	EVF23082	EVF24082
	3/4"	277	EVF21087	EVF22087	EVF23087	EVF24087
	3/4"	347	EVF21089/347	EVF22089/347	EVF23089/347	EVF24089/347
40 watt, T-12 single pin, slimline 425MA lamps	3/4"	110-125	EVF21032	EVF22032	EVF23032	EVF24032
	3/4"	277	EVF21037	EVF22037	EVF23037	EVF24037
	3/4"	347	EVF21039/347	EVF22039/347	EVF23039/347	EVF24039/347
60 watt, T-12 recessed contact, 800MA lamp†	3/4"	110-125	EVF21062	EVF22062	EVF23062	EVF24062
	3/4"	277	EVF21067	EVF22067	EVF23067	EVF24067
	3/4"	347	EVF21069/347	EVF22069/347	EVF23069/347	EVF24069/347
110 watt, T-12 recessed contact, 1500MA lamp†	3/4"	110-125	EVF21072	EVF22072	EVF23072	EVF24072
	3/4"	277	EVF21077	EVF22077	EVF23077	EVF24077
	3/4"	347	EVF21079/347	EVF22079/347	EVF23079/347	EVF24079/347

* For 220 volt 50 hz, 240 volt 50 hz or 240 volt 60 hz operation change the last "2" in the 120 volt 60 hz catalog number to a "9" and add "/220 50", "/240 50" or "/240 60" respectively.

† For a 2 lamp, 40 watt rapid start luminaire for 220 volt 50 hz operation order an EVF22089/220 50.

‡ 50 Hz not available.

EVF luminaires with S718 option

- All joints sealed
- Inside paint booth mounting capabilities provide greater flexibility in luminaire placement, avoids necessity of complicated design and installation work, and improves task lighting control
- Smooth simple design makes it easy to remove any accumulated deposits of paint residue

Mounting

Accessories:

Various hazardous area fittings are used to mount EVF luminaires. The fittings shown on page 859 support the unwired (relamping) end. For the wired (ballast) end any of the luminaire hangers for hazardous locations (listed in Section 7L) can be used. CPS conduit outlet bodies with hub covers (listed in Section 4F) are also suitable

Options:

- For suitability for wet locations and locations having deposits of readily combustible paint residue – add Cat. No. Suffix **S718**
- *Corro-free*™ epoxy powder coat – add Cat. No. Suffix **S752**
- With 45° angle reflectors in lieu of straight down reflectors – add Cat. No. Suffix **S369**
- Clear disposable polyester tube wrap – consult Cooper Crouse-Hinds
- Fused – add suffix **S658**‡
- Furnished with lamps - add suffix **S714**.
- Low temperature electromagnetic ballast for 40 watt T12 rapid start luminaires rated for 0°F - add suffix **BY**.

Size Ranges:

- 1, 2, 3, and 4-lamp

Electrical Rating Ranges:

- 32 to 110 watts

Standard Materials:

- Copper-free aluminum except sheet aluminum reflectors

Standard Finishes:

- Natural except reflectors
- Reflectors – white epoxy powder coat

Certifications and Compliances:

- NEC and CEC: Class I, Division 1 Group C, D Class I, Zone 1 Group IIB Class II Group E, F, G Class III Simultaneous Presence (Cl. I and Cl. II) Paint Spray (S718)
- UL Standards: 844 Hazardous (Classified) Locations 1598 Luminaires
- CSA Standards: C22.2 No. 137

‡ When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

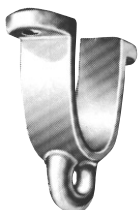
Temperature Performance Data: (Based on 40°C Ambient)

Lamp Type	1 Lamp	Class I/Class II/Zone 1 2 Lamp	3 Lamp	4 Lamp	Supply Wire
32/40W	T5	T5	T5	T5	75°C
60W	T5	T5	T5	T5	75°C
110W	T4	T4	T4	T4	90°C



**Ceiling Saddle for
Conduit Support**

Size $\frac{3}{4}$ Cat. # EVF20



**Ceiling Saddle for
Support Hook**

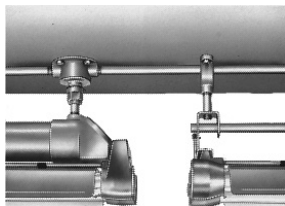
Cat. # EVF021



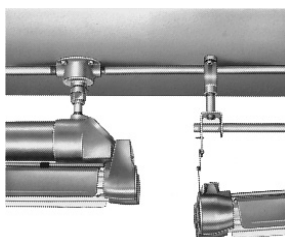
**Support Hook for
Conduit**

Size $\frac{3}{4}$ Cat. # EVF21

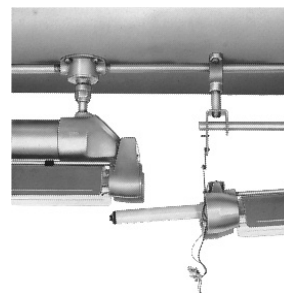
Relamping Information



Adjacent ends of two
fixtures suspended in line
close together



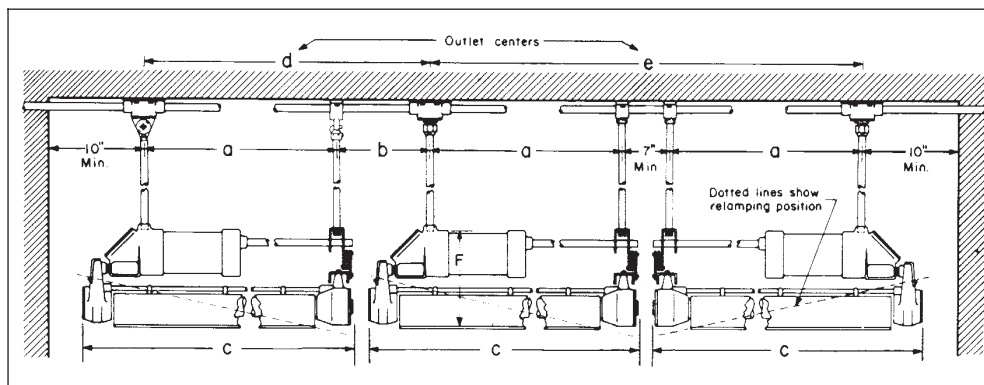
End of one fixture
lowered for relamping



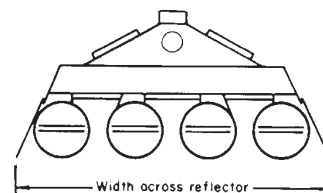
One cover removed and
lamp partly withdrawn

Where fixtures abut, space for relamping is obtained by lowering one end of the tube assembly as shown. Without tools, the lamp receptacle and mounting plate assemblies can be removed and the lamp withdrawn. In inserting, the reverse procedure is followed.

Dimensions



End view



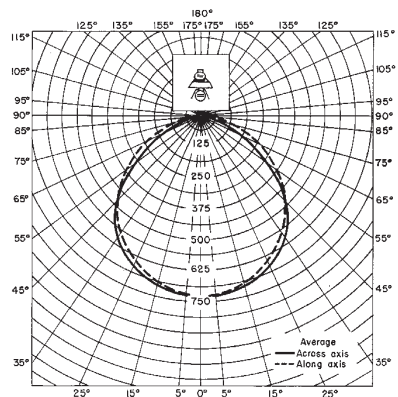
6L
Fluorescents

Fixture Type	No. Lamps	a	b	c	d	e	f
32 watt, T-8 Bi-pin	1 or 2	44	11	53 $\frac{3}{8}$	55	95	10 $\frac{1}{4}$
40 watt, T-12 Bi-pin							
40 watt, T-12 Single pin slimline	3 or 4	46 $\frac{1}{2}$	8 $\frac{1}{2}$	53 $\frac{3}{8}$	55	100	10 $\frac{1}{4}$
60 watt, T-12 Recessed contact							
110 watt, T-12 Recessed contact							

	Width
1-Lamp	6 $\frac{1}{8}$
2-Lamp	11 $\frac{1}{2}$
3-Lamp	18
4-Lamp	24 $\frac{1}{2}$

Luminaire: All 1-Lamp EVF Luminaires**Lamp:** 1-40/T-12, 1-60/T-12**Zonal Degrees:** 0-30 0-40 0-60 0-90**Zonal Lumens:** 580 953 1633 1897**Total Bare Lamp Lumens:** 3100

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.



NOTE: All data provided is for 40W rapid start cool white lamps. Use following candlepower/lumen multipliers for other lamp sizes: 32W 0.90 40W Slimline 0.84 60W Cool white 1.29 110W Cool white 2.19

Example: Zonal lumens of 1-40W lamp for 0-60° is 1633. Zonal lumens of 1-60W lamp for 0-60° is $1633 \times 1.29 = 2107$

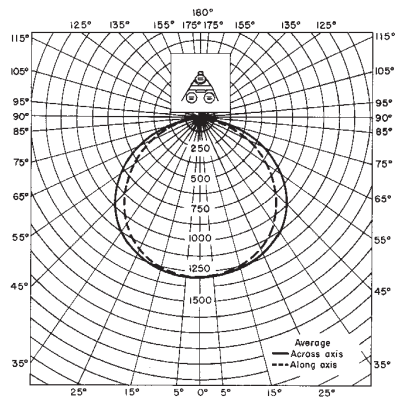
Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.697	.616	.546	.485	.434
	30	.670	.574	.497	.430	.376
	10	.647	.539	.458	.388	.334
70	50	.682	.604	.538	.477	.425
	30	.658	.565	.490	.426	.372
	10	.635	.534	.454	.385	.331
50	50	.653	.580	.518	.460	.412
	30	.633	.549	.478	.416	.365
	10	.616	.520	.446	.380	.329
30	50	.627	.559	.500	.445	.399
	30	.612	.533	.467	.407	.357
	10	.597	.509	.438	.375	.325
10	50	.605	.539	.484	.431	.388
	30	.591	.517	.455	.397	.351
	10	.579	.498	.431	.370	.321
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.391	.351	.316	.289	.252
	30	.334	.295	.262	.235	.198
	10	.294	.257	.223	.197	.164
70	50	.384	.346	.312	.285	.248
	30	.330	.292	.260	.233	.198
	10	.290	.255	.222	.197	.164
50	50	.372	.336	.303	.277	.242
	30	.324	.286	.255	.229	.195
	10	.288	.252	.221	.196	.162
30	50	.361	.325	.295	.270	.236
	30	.319	.283	.251	.225	.192
	10	.286	.249	.219	.194	.161
10	50	.351	.318	.287	.263	.230
	30	.312	.278	.247	.222	.189
	10	.283	.248	.218	.193	.159

Luminaire: All 2-Lamp EVF Luminaires**Lamp:** 2-40/T-12, 2-38/T-12, 2-60/T-12, 2-110/T12**Zonal Degrees:** 0-30 0-40 0-60 0-90**Zonal Lumens:** 1055 1765 3262 4125**Total Bare Lamp Lumens:** 6300

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.



NOTE: All data provided is for 40W rapid start cool white lamps. Use following candlepower/lumen multipliers for other lamp sizes: 32W 0.90 40W Slimline 0.84 60W Cool white 1.29 110W Cool white 2.19

Example: Zonal lumens of 2-40W lamp for 0-60° is 3262. Zonal lumens of 2-60W lamps for 0-60° is $3262 \times 1.29 = 4208$

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	1	2	3	4	5
80	50	.697	.616	.546	.485	.434
	30	.670	.574	.497	.430	.376
	10	.647	.539	.458	.388	.334
70	50	.682	.604	.538	.477	.425
	30	.658	.565	.490	.426	.372
	10	.635	.534	.454	.385	.331
50	50	.653	.580	.518	.460	.412
	30	.633	.549	.478	.416	.365
	10	.616	.520	.446	.380	.329
30	50	.627	.559	.500	.445	.399
	30	.612	.533	.467	.407	.357
	10	.597	.509	.438	.375	.325
10	50	.605	.539	.484	.431	.388
	30	.591	.517	.455	.397	.351
	10	.579	.498	.431	.370	.321
% Reflectance		Room Cavity Ratio				
Eff. Ceil.	Wall	6	7	8	9	10
80	50	.391	.351	.316	.289	.252
	30	.334	.295	.262	.235	.198
	10	.294	.257	.223	.197	.164
70	50	.384	.346	.312	.285	.248
	30	.330	.292	.260	.233	.198
	10	.290	.255	.222	.197	.164
50	50	.372	.336	.303	.277	.242
	30	.324	.286	.255	.229	.195
	10	.288	.252	.221	.196	.162
30	50	.361	.325	.295	.270	.236
	30	.319	.283	.251	.225	.192
	10	.286	.249	.219	.194	.161
10	50	.351	.318	.287	.263	.230
	30	.312	.278	.247	.222	.189
	10	.283	.248	.218	.193	.159

Luminaire: All 3-Lamp EVF Luminaires

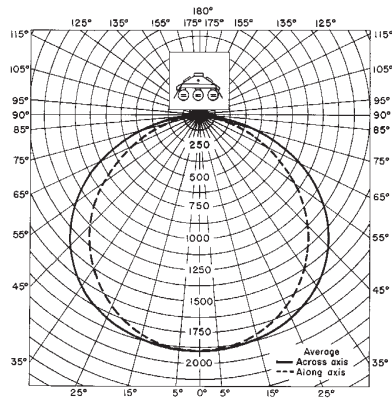
Lamp: 3-40/T-12, 3-38/T-12, 3-60/T-12, 3-110/T-12

Zonal Degrees: 0-30 0-40 0-60 0-90

Zonal Lumens: 1917 3226 6066 7919

Total Bare Lamp Lumens: 9300

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.



NOTE: All data provided is for 40W rapid start cool white lamps. Use following candlepower/lumen multipliers for other lamp sizes:
32W 0.90
40W Slimline 0.84
60W Cool white 1.29
110W Cool white 2.19

Example: Zonal lumens of 3-40W lamps for 0-40° is 3226. Zonal lumens of 3-40W Slimline lamps for 0-40° is $3226 \times 0.84 = 2710$

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio					
Eff. Ceil.	Wall	1	2	3	4	5	
80	50	.712	.626	.553	.489	.436	
	30	.683	.581	.500	.431	.376	
	10	.658	.544	.459	.386	.331	
70	50	.697	.614	.544	.481	.427	
	30	.670	.572	.494	.426	.371	
	10	.646	.539	.455	.383	.328	
50	50	.667	.589	.524	.463	.414	
	30	.645	.555	.481	.416	.364	
	10	.626	.524	.446	.378	.326	
30	50	.640	.567	.505	.447	.400	
	30	.623	.539	.469	.407	.356	
	10	.607	.513	.439	.374	.322	
10	50	.617	.547	.488	.433	.388	
	30	.602	.523	.457	.397	.350	
	10	.589	.502	.431	.368	.318	
% Reflectance		Room Cavity Ratio					
Eff. Ceil.	Wall	6	7	8	9	10	
80	50	.392	.352	.317	.289	.252	
	30	.332	.293	.260	.233	.196	
	10	.290	.254	.219	.194	.160	
70	50	.385	.347	.312	.285	.248	
	30	.329	.290	.258	.230	.196	
	10	.287	.251	.218	.194	.160	
50	50	.372	.336	.303	.277	.242	
	30	.322	.284	.253	.227	.193	
	10	.285	.248	.217	.192	.159	
30	50	.362	.325	.295	.269	.236	
	30	.317	.280	.248	.223	.190	
	10	.282	.245	.215	.191	.157	
10	50	.351	.317	.286	.262	.230	
	30	.310	.276	.244	.220	.187	
	10	.279	.244	.214	.189	.156	

Luminaire: All 4-Lamp EVF Luminaires

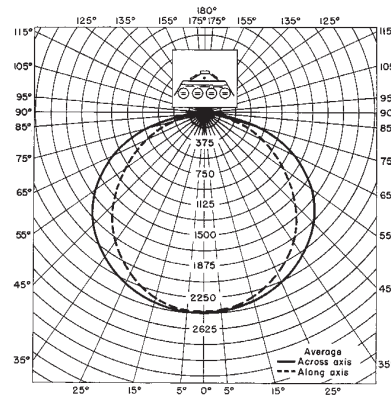
Lamp: 4-40/T-12, 4-38/T-12, 4-60/T-12, 4-110/T-12

Zonal Degrees: 0-30 0-40 0-60 0-90

Zonal Lumens: 1961 3305 6250 8224

Total Bare Lamp Lumens: 12400

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.



NOTE: All data provided is for 40W rapid start cool white lamps. Use following candlepower/lumen multipliers for other lamp sizes:
32W 0.90
40W Slimline 0.84
60W Cool white 1.29
110W Cool white 2.19

Example: Zonal lumens of 4-40W lamps for 0-30° is 1961. Zonal lumens of 4-110W lamps for 0-30° is $1961 \times 2.19 = 4295$

Coefficient of Utilization

Effective Floor Cavity Reflectance 20%

% Reflectance		Room Cavity Ratio					
Eff. Ceil.	Wall	1	2	3	4	5	
80	50	.692	.607	.535	.473	.421	
	30	.664	.563	.484	.416	.362	
	10	.639	.526	.442	.372	.318	
70	50	.678	.595	.526	.465	.412	
	30	.652	.554	.477	.411	.357	
	10	.628	.521	.439	.369	.315	
50	50	.648	.571	.507	.447	.399	
	30	.627	.538	.465	.401	.351	
	10	.609	.507	.431	.364	.313	
30	50	.622	.550	.488	.432	.386	
	30	.606	.522	.453	.392	.343	
	10	.590	.497	.423	.360	.309	
10	50	.600	.530	.472	.418	.374	
	30	.585	.506	.442	.383	.337	
	10	.572	.486	.416	.354	.305	
% Reflectance		Room Cavity Ratio					
Eff. Ceil.	Wall	6	7	8	9	10	
80	50	.379	.340	.306	.279	.243	
	30	.320	.282	.250	.224	.189	
	10	.278	.243	.210	.185	.153	
70	50	.372	.335	.301	.275	.239	
	30	.316	.279	.248	.221	.189	
	10	.275	.240	.209	.185	.153	
50	50	.359	.324	.292	.267	.233	
	30	.310	.273	.243	.218	.185	
	10	.273	.238	.208	.184	.152	
30	50	.349	.313	.284	.260	.227	
	30	.305	.269	.238	.214	.182	
	10	.271	.235	.206	.183	.150	
10	50	.339	.306	.276	.253	.221	
	30	.298	.265	.235	.211	.179	
	10	.268	.234	.205	.181	.149	

- Cl. I, Div. 1, Groups C,D
- Cl. I, Zone 1 Group IIB
- Cl. II, Div 1, Groups E,F,G
- Cl. III, Simultaneous Presence
- Marine & Wet Locations
- 3,3R,4,4X: IP66

Applications:

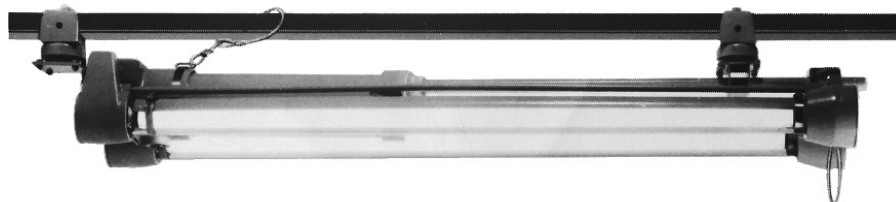
- EVFDR luminaires are suitable for wet locations and marine environments, above and below deck, where hazardous vapors, gases or dusts are present
- Ideally suited for use on offshore drilling/production platforms and on shipboard in hazardous areas
- For mounting where headroom is limited
- For hazardous areas where watertightness and corrosion resistance are required

Features:

- Exterior surfaces finished with gray epoxy enamel for corrosion resistance
- Exterior hardware stainless steel
- All joints sealed and gasketed for watertightness
- Vibration resistant
 - shock mounts
 - sockets are spring loaded for tight lamp contact connection
- Heavy duty glass lamp tubes for maximum strength and impact resistance
- All exterior materials are non-sparking
- C-type beam clamps provide quick and easy mounting
- Luminaire is adjustable 30° either side of fixture axis, allowing for control of light output
- Beam clamp support is adjustable allowing beam clamp to be located to suit structure
- Low profile – luminaire height is 7¹³/₁₆" with standard mounting, 11¹¹/₁₆" with shock mounting option – for maximum clearance where headroom is critical
- Provides cool light with natural color rendition
- Continuous and uniform illumination made possible by mounting end to end (no space needed between luminaires for relamping) – see page 859 for relamping information
- Relamping is accomplished without tools. Quarter-turn fastener allows end of luminaire to be lowered quickly. Cable supports end of luminaire while relamping – both hands are free. Threaded lamp tube cover provides quick and easy access to lamp and receptacle
- Reflectors can be removed or replaced with only a screwdriver
- Ballast housing readily accessible
- Minimum weight – copper-free aluminum construction throughout
- Type P ballast furnished in compliance with NEC
- Standard electronic ballast for 32 watt and 40 watt rapid start.
- Standard energy efficient electromagnetic ballast (40W slimline, 60W and 110W) is standard.
- Low temperature ballasts are standard on 32WT8, 40W slimline, 60W and 110W. 32 watt and 40 watt low temperature ballasts are rated for 0°F. 60 and 100 watt low temperature ballasts are rated for -20°F.

Standard Materials:

- Housing – copper-free aluminum
- Exposed hardware – stainless steel



Options:

- Furnished with lamps – add suffix **S714** to Cat. No.
- Furnished with safety cable for high vibration areas - add suffix **S715** to Cat. No.
- Beam clamps with shock mounts are available for ease of installation and resistance to vibration – add suffix **KIT40** to Cat. No.
- Beam clamps only – add suffix **KIT41** to Cat. No.
- Low Temperature Electromagnetic Ballast: 40W rapid start rated 0°F - add suffix **BY** to Cat. No.
- Emergency lighting battery unit – add suffix **S799** to Cat. No.

Size Ranges:

- 2-lamp only

Electrical Rating Ranges:

- 32, 40, 60 and 110W

Certifications and Complies:

- NEC and CEC:
 - Class I, Division 1 Group C,D
 - Class I, Zone 1 Group IIB
 - Class II Groups E,F,G
 - Class III
 - Simultaneous Presence (Cl. and Cl. II)
- UL Standards
 - 844 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137

Temperature Performance

Data: (Based on 40°C Ambient)

	Class I	Class II	Supply
2-Lamp	Zone 1		Wire
32, 40W	T5		75°C
60W	T5		75°C
110W	T4		90°C

EVFDR

Furnished For Use With

32 watt, T-8 medium	3/4"
Bi-pin 265MA lamps	3/4"
40 watt, T-12 medium	3/4"
Bi-pin rapid start	3/4"
430MA lamps†	
60 watt, T-12 recessed	3/4"
contact, 800MA lamps	3/4"
110 watt, T-12 recessed	3/4"
contact, 1500MA lamps†	3/4"

Hub Size	Line Volts 60 Hz.*
3/4"	120-277
3/4"	347
3/4"	110-125
3/4"	277
3/4"	110-125
3/4"	277
3/4"	110-125
3/4"	277

2-Lamp Cat. #
EVFDR22029/UNV
EVFDR22029/347
EVFDR22082
EVFDR22087
EVFDR22062
EVFDR22067
EVFDR22072
EVFDR22077

* For 220 volt 50 Hz, 240 volt 50 Hz or 240 volt 60 Hz operation change the last "2" in the 120 volt 60 Hz catalog number to a "9" and add "/220 50", "/240 50" or "/240 60" respectively.
ie. For a 2 lamp, 40 watt rapid start fixture for 220 volt 50 Hz operation order an EVFDR22089/220 50.
† 50 Hz. not available.

Standard Finishes:

- All exterior metal components – gray epoxy enamel
- Reflectors – white epoxy powder coat

Luminaire: All EVFDR Luminaires

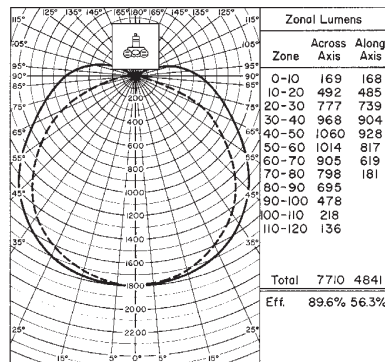
Lamp: 2-40/T-12, 2-60/T-12, 2-110/T-12

Zonal Degrees: 0-30 0-40 0-60 0-90

Zonal Lumens: 1416 2352 4263 5863

Total Bare Lamp Lumens: 8600

To determine number and placement of luminaires, see Lighting Selector Guide, pages 665 to 689.



NOTE: All data provided is for two 60 watt, T-12 recessed contact 800MA cool white lamps (EVFDR22062). For other wattages use the following conversion factors:

32W	.67
40W, Rapid Start	.73
40W, Slimline	.70
110W, Cool White	1.60

Example: Zonal lumens for EVFDR226 fixture, across the axis, for 40-50° is 1,060. Zonal lumens for EVFDR223 fixture, across the axis, is 40-50° is: 1,060 × .70 = 742

Coefficient of Utilization

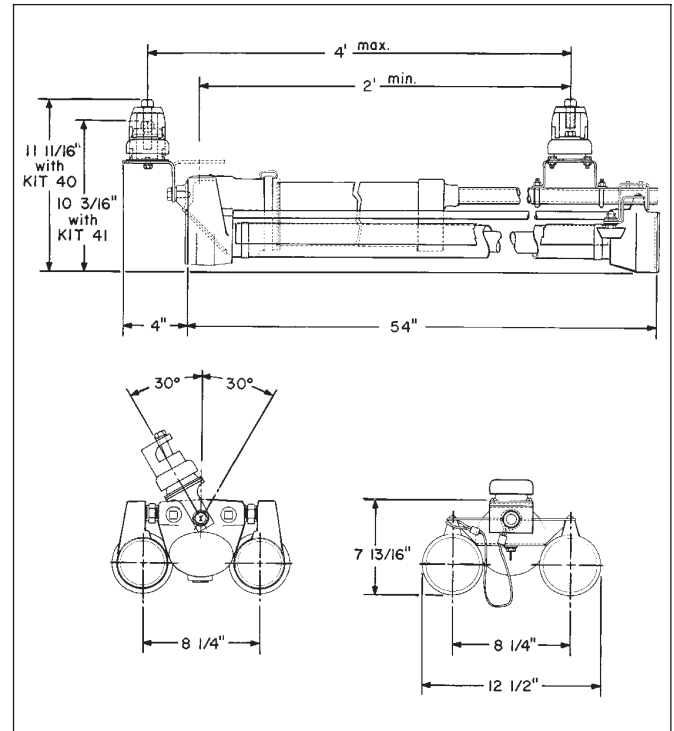
Effective Floor Cavity Reflectance 20%

% Reflectance Room Cavity Ratio

Eff. Ceil.	Wall	1	2	3	4	5
80	50	.735	.645	.570	.506	.452
	30	.700	.594	.512	.442	.387
	10	.670	.551	.466	.394	.339
70	50	.714	.627	.557	.494	.440
	30	.682	.580	.501	.435	.380
	10	.653	.542	.458	.388	.334
50	50	.673	.593	.528	.468	.420
	30	.647	.554	.482	.418	.368
	10	.624	.520	.444	.378	.327
30	50	.636	.562	.501	.446	.401
	30	.616	.530	.463	.403	.354
	10	.596	.502	.430	.368	.319
10	50	.603	.533	.477	.425	.383
	30	.585	.507	.444	.388	.343
	10	.570	.483	.416	.358	.311
0	0	.551	.465	.399	.340	.294

Eff. Ceil.	Wall	6	7	8	9	10
80	50	.408	.368	.332	.304	.266
	30	.344	.305	.271	.243	.207
	10	.298	.262	.228	.202	.169
70	50	.398	.360	.325	.297	.260
	30	.338	.299	.267	.240	.206
	10	.293	.258	.226	.201	.168
50	50	.380	.344	.311	.285	.250
	30	.327	.289	.259	.233	.199
	10	.287	.252	.221	.197	.164
30	50	.364	.328	.299	.274	.240
	30	.317	.282	.251	.226	.193
	10	.281	.246	.217	.193	.160
10	50	.348	.316	.286	.263	.231
	30	.306	.274	.244	.220	.188
	10	.274	.241	.213	.189	.157
0	0	.259	.226	.198	.175	.144

Dimensions



Notes Page

[illegible]

Champ-Pak™ Wall Pack & Floodlight Luminaires Hazardous and Non-Hazardous

7L

Description	Page No.
Application/Selection	866
Floodlights	
Luminaires	
Champ-Pak® CPMV	867-873
H.I.D.	
Voyager nR™ Stainless Steel Series	874-876
F2MV Champ® Series	877-879
FMV Champ® Series	880-882
FMV High Wattage Champ® Series	883-885
EVMA S812 Hazard•Gard with Trunnion Arm	890
FZD Series	887-889
Incandescent	
RCDE Series	891, 892

Application:

- General illumination of hazardous and non-hazardous areas

Table 500-3(d) Identification Numbers.

Maximum Temperature		Identification Number
Deg. C	Deg. F	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

Considerations for Selection:

Environmental:

- What is the hazardous area classification (NEC®/CEC) of the location in which the luminaires will be installed?

Lighting levels required:

- What wattage luminaire(s) will provide the desired light levels? See Lighting Selector Guide, pages 665 to 689, to determine number and location of luminaires required.

Physical arrangement:

- Type of luminaire mounting required, threaded hub or mounting feet.

Quick Selector Chart

Luminaire	NEC Hazardous Area Compliance	Lamp Size (Watts)	Lamp Base
CPMV	Cl. I, Division 2	50-150 HID	Mogul
EVMA-S812	Cl. I, Groups C, D Cl. I, Groups B (suffix GB), C & D	50-400 HID	Mogul
VOYAGER nR (SSFMV)	Cl. I, Division 2 Cl. I, Zone 2	150-400 HID	Mogul
F2MV, FMV, FMV High Wattage	Cl. I, Division 2	70-1500 HID	Mogul
FZD	Cl. I, Division 1 Groups B, C, D	150-400 HID	Mogul
RCDE-6	Cl. I, Groups C, D Cl. I, Group D	150 Incandescent 300 Incandescent	Medium
RCDE-10	Cl. I, Group D	500 Incandescent	Extended Mogul End Prong

Champ-Pak™ Wall Pack Luminaires

Cl. I, Div. 2, Groups A,B,C,D
Restricted Breathing Cl. I, Div. 2 & Zone 2 (Suffix S826)
Certified for IEC Zone 2 (Suffix S826TB)
Cl. II, Groups F & G
Cl. III & Simultaneous Presence
Marine & Wet Locations • Enclosure Type 4X, IP66

7L



The first low-profile wall pack designed specifically for hazardous areas.

The Cooper Crouse-Hinds® Champ-Pak™ wall pack luminaire is ideal for low-profile mounting in hazardous and industrial environments. **In fact, it is suitable for any area with adverse conditions such as dust, dirt, moisture, vibration, high-pressure hosedowns and high thermal ambients.** Its precisely designed glass refractor minimizes fixture depth while providing uniform, glare-free illumination.

- Unique compact shallow-profile design mounts virtually anywhere.
- Side-hinged cover with two-screw closing for easy installation and maintenance.
- Gray Corro-free™ epoxy powder-coated two-piece housing provides superior corrosion resistance.
- Unique stainless steel wire guard accessory attaches without any additional hardware for easy installation and maintenance.
- Glass refractor provides uniform light distribution to eliminate glare.
- Vertical lamp design provides even lamp heat distribution for cooler operation, providing expanded hazardous area suitability.
- Silicone gaskets make luminaire suitable for enclosure Type 4X, Marine and IP66 environments.
- Available in two different conduit entry configurations to permit flexible installation and mounting.
- four ¾" NPT hubs, one on each side
- two ½" NPT hubs on bottom for feed-through applications

APPLICATIONS

- indoor and outdoor wall mounting or vertical surface mounting where minimal fixture depth is required in:
 - manufacturing plants and heavy industrial facilities
 - industrial process facilities such as refineries, chemical, petrochemical, pharmaceutical, and production platforms
 - waste or sewage treatment plants
 - offshore, dockside and harbor installations
- for security and safety lighting in industrial facilities
- for lighting of loading docks, tunnels and stairways
- for marine, wet location, hosedown and corrosive environments

ADDITIONAL FEATURES & BENEFITS

- Variety of lamp types and wattages—HID, fluorescent and induction—to meet specific lighting needs.
- High-power-factor ballasts (+90%) are standard, which allow more luminaires per circuit.
- Up to 65°C ambient suitability on select lamp types and wattages. Ambient suitability of +40°C is standard. Allows for installation in higher ambient environments commonly found in industrial facilities.
- Low ambient starting capability (to -40°C)—perfect for colder climates.
- Shock-absorbing HID mogul base lamp socket cushions lamp, improves lamp life in harsh environments.
- Compact fluorescent emergency luminaire provides 90 minutes of lighting during power outages, meeting UL924 and life safety code.
- Cost-effective induction lamp system provides extra-long lamp life—up to 100,000 hours. Reaches full illumination immediately, providing crisp white light.
- NEC/CEC Restricted Breathing construction is available to provide cooler temperature classes (T codes) for expanded hazardous area suitability.
- Simplified method for compliance to NEC Restricted Breathing conduit sealing requirements makes installation easier.

07L Floodlights



Cl. I, Div. 2, Groups A,B,C,D
 Restricted Breathing Cl. I, Div. 2 & Zone 2 (Suffix S826)
 Certified for IEC Zone 2 (Suffix S826TB)
 Cl. II, Groups F & G
 Cl. III & Simultaneous Presence
 Marine & Wet Locations • Enclosure Type 4X, IP66

STANDARD MATERIALS

- fixture housing and door frame assembly—copper-free aluminum
- external hardware—stainless steel
- refractor lens—borosilicate glass
- gasket—silicone
- reflector—aluminum light sheet
- wire guard—stainless steel

STANDARD FINISHES

- aluminum—Corro-free™ epoxy powder coat
- stainless steel—natural

CERTIFICATIONS & COMPLIANCES

Luminaires For Use With ANSI Lamps (Mogul Base)

- UL/cUL Listed
- NEC and CEC Class I, Division 2 and Class I, Zone 2
- Restricted Breathing Class I, Division 2 and Zone 2 (suffix S826)
- Class II, Groups F and G
- Class III
- Simultaneous Presence
- Certified for IEC Zone 2 (suffix S826TB)
- Wet Locations; Marine Locations; Enclosure Type 4X; IP66

UL Standards

- 844—hazardous (divisions classified) locations
- 2279—hazardous (zones classified) locations
- 1598—luminaires
- 1598A—luminaires for marine vessels
- 924—emergency lighting (fluorescent emergency luminaire)

CSA Standards

- C22.2 No. 9 and 137
- CAN/CSA-E60079-15:02

IEC Standards

- 60079-15

RATINGS (ELECTRICAL/SIZE)

Sources/Wattages

- high-pressure sodium (HPS)—mogul base 50, 70, 100 & 150
- metal halide (MH)—mogul base 70, 100 & 150
- mercury vapor (MV)—mogul base 100
- compact fluorescent 26, 32, 42, 52, 64 & 84
- emergency fluorescent 26
- induction 55 & 85

Voltages

HID STANDARD-VOLTAGE BALLASTS

- Dual tap (120 & 277 V, 60 Hz—for 50 W HPS only)—prewired at 277 V
- Multitap (120, 208, 240 & 277 V, 60 Hz)—prewired at 277 V
- Tritap (120, 277 & 347 V, 60 Hz)—prewired at 347 V
- 120 V, 60 Hz
- 480 V, 60 Hz

FLUORESCENT STANDARD-VOLTAGE BALLASTS

- 120–277 V, 50–60 Hz
- 120 V, 50 Hz (for Canada only)
- 347 V, 60 Hz (for Canada only)

INDUCTION STANDARD-VOLTAGE BALLASTS

- 120 V, 50–60 Hz (also 120 V DC)
- 230 V, 50–60 Hz (also 240 V DC)

HID OPTIONAL VOLTAGE BALLASTS

- 220 V, 50 Hz
- 220 V, 60 Hz
- 240 V, 50 Hz

FLUORESCENT OPTIONAL VOLTAGE BALLASTS (Consult Factory)

- 125 V DC
- 12 V DC
- 24 V DC

ISOLATED BALLASTS AND SPECIALS (Consult Factory)

- 208 V, 60 Hz CWI Isolated Ballast
- 240 V, 60 Hz CWI Isolated Ballast
- 480 V, 60 Hz CWI Isolated Ballast

Conduit Entries

- four 3/4" NPT entries, one on each side, top and bottom (3 plugged)
- two 1/2" NPT entries on bottom for feed-through (1 plugged)
- metric entries—consult factory

Champ-Pak™ Wall Pack Luminaires

Cl. I, Div. 2, Groups A,B,C,D
Restricted Breathing Cl. I, Div. 2 & Zone 2 (Suffix S826)
Certified for IEC Zone 2 (Suffix S826TB)
Cl. II, Groups F & G
Cl. III & Simultaneous Presence
Marine & Wet Locations • Enclosure Type 4X, IP66

7L



ORDERING INFORMATION

To complete Catalog Number, add Voltage and Option suffix(es).

HID Luminaires

HUB SIZE	LAMP WATTS	CATALOG NUMBER FOR USE WITH ANSI LAMPS
HIGH-PRESSURE SODIUM		
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	50	CPMVS2W050 CPMVS1W050
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	70	CPMVS2W070 CPMVS1W070
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	100	CPMVS2W100 CPMVS1W100
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	150 (for 55 V lamp)	CPMVS2W150 CPMVS1W150
METAL HALIDE		
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	70	CPMVM2W070 CPMVM1W070
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	100	CPMVM2W100 CPMVM1W100
METAL HALIDE—PULSE START		
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	150	CPMVM2W150-S828 CPMVM1W150-S828
MERCURY VAPOR		
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	100	CPMVC2W100 CPMVC1W100

VOLTAGE SUFFIXES

NEC (UL)

Voltage (60 Hz) Suffix	Dual Tap /DT	Multitap /MT	120 /120	480 /480
---------------------------	-----------------	-----------------	-------------	-------------

CEC (CSA/cUL)

Voltage (60 Hz) Suffix	Dual Tap /DT	Tritap /TT	120 /120
---------------------------	-----------------	---------------	-------------

50 W HPS is available only with suffix /DT.

Induction Luminaires With Lamp (100,000 hours)

HUB SIZE	LAMP WATTS	CATALOG NUMBER
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	55	CPMVG2W055 CPMVG1W055
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	85	CPMVG2W085 CPMVG1W085

VOLTAGE SUFFIXES

Voltage	120 V (also 120 V DC) (50–60 Hz) /120	230 V (also 240 V DC) (50–60 Hz) /230
Suffix		

Fluorescent Luminaires

HUB SIZE	LAMP WATTS	CATALOG NUMBER
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	26 (one 26 W lamp)	CPMVF2W026 CPMVF1W026
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	32 (one 32 W lamp)	CPMVF2W032 CPMVF1W032
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	42 (one 42 W lamp)	CPMVF2W042 CPMVF1W042
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	52 (two 26 W lamps)	CPMVF2W052 CPMVF1W052
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	64 (two 32 W lamps)	CPMVF2W064 CPMVF1W064
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	84 (two 42 W lamps)	CPMVF2W084 CPMVF1W084

VOLTAGE SUFFIXES

	NEC/CEC (UL, CSA, cUL)	CEC (CSA, cUL)
Voltage	120–277 V (50–60 Hz) /UNV	347 V (60 Hz) /347
Suffix		

Fluorescent Emergency Luminaires —Continuous Operation

HUB SIZE	LAMP WATTS	CATALOG NUMBER
Four 3/4" NPT (one each side) Two 1/2" NPT (on bottom)	26 (one 26 W lamp)	CPMVF2W026 CPMVF1W026

VOLTAGE SUFFIXES

	NEC (UL)	CEC (CSA, cUL)	
Voltage	120–277 V (50–60 Hz)	120 V (60 Hz)	347 V (60 Hz)
Suffix	/UNV	/120 CAN	/347

Compelling reasons to choose the new Champ Induction luminaire as the light source for industrial and hazardous locations include:

- Crisp white light (80+ color rendering index) provides increased safety by clearly illuminating signs, instrument panels, equipment and more with vibrant natural colors.
- Up to 100,000 hours of lamp life minimizes routine maintenance costs. If you operate this luminaire for 24 hours, 7 days a week, you will not need to change the lamp for up to 11 years!
- Instant illumination — no waiting for lamp warm-up time. Increases productivity and safety.
- Delivers the best possible luminaire temperature rating — T6 (85°C) when used with the Champ restricted breathing option. Ideal for hazardous areas where a low ignition temperature is required.
- Starts in low temperatures — as low as -40°C.

7L Floodlights



Cl. I, Div. 2, Groups A,B,C,D
 Restricted Breathing Cl. I, Div. 2 & Zone 2 (Suffix S826)
 Certified for IEC Zone 2 (Suffix S826TB)
 Cl. II, Groups F & G
 Cl. III & Simultaneous Presence
 Marine & Wet Locations • Enclosure Type 4X, IP66

OPTIONS

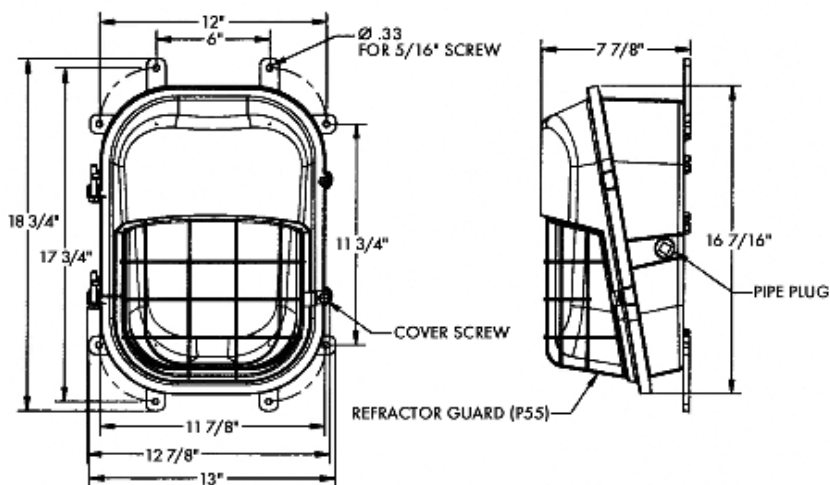
SUFFIX TO ADD TO CATALOG NUMBER	
BALLAST-GARD™ STARTER CUT-OUT SWITCH	BG
- prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life - available for use with HPS only - not available with IR or QTZ options	
FACTORY ASSEMBLED WITH LAMP INSTALLED	FA
INSTANT RESTRIKE	IR
- enables a hot HPS lamp to immediately restrike after a momentary loss of arc due to voltage fluctuation or power outage; it has no effect on the warm-up period of cold lamps - available for use with HPS only - not available with BG or QTZ options	
GUARD—FACTORY INSTALLED ON LUMINAIRE	P
(Guard suffix follows wattage designation, e.g., CPMVS2W100P/MT)	
QUARTZ AUXILIARY	QTZ
- quartz auxiliary lighting comes to full brightness immediately and remains lit until the HID lamp attains 60–70% of full illumination - available for use with HID only - for nonhazardous locations only - quartz lamp not furnished—use 100 W single-ended lamp Q100DC, Q100DL/DC or 100Q/CL/DC	
FUSED	S658*
- protects ballast and capacitors against abnormal line conditions (not for use in Canada or marine locations) - not available with CPMVIG and CPMVFB luminaires	
RESTRICTED BREATHING CONSTRUCTION (AEx nR, Ex nR)	S826

Suitable for NEC/CEC Class I, Division 2 and Zone 2
 • provides cooler temperature classes (T codes)
 • furnished with P55 guard
 TEFLON is a registered trademark of E.I. duPont Co.

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

DIMENSIONS (INCHES)

NOTE: Approximate weight less guard 28 lbs.
 P55 guard 0.5 lbs.



OPTIONS

SUFFIX TO ADD TO CATALOG NUMBER	
CERTIFIED FOR IEC ZONE 2 (Ex nR) (UL CLASSIFIED TO THE IEC STANDARD)	S826TB
Furnished with:	
4 mm², 3-point terminal block - crimp internal wiring connections - P55 guard	
V2PC PHOTOCELL—FACTORY INSTALLED	
120 V, 50–60 Hz 208–240 V, 50–60 Hz 277 V, 50–60 Hz	/V2PC20 /V2PC22 /V2PC27
OPTIONAL VOLTAGE BALLASTS FOR HID LUMINAIRE	
220 V, 50 Hz 220 V, 60 Hz 240 V, 50 Hz	/220 50 /220 60 /240 50
OPTIONAL VOLTAGE BALLASTS FOR FLUORESCENT LUMINAIRE (Consult Factory)	
125 V DC 12 V DC 24 V DC	/125 VDC /12 VDC /24 VDC
ISOLATED BALLAST FOR HID LUMINAIRE (Consult Factory)	
208 V, 60 Hz 240 V, 60 Hz 480 V, 60 Hz	/208CWI /240CWI /480CWI

ACCESSORIES (ORDER SEPARATELY)

CATALOG NUMBER	
PHOTOCELL FOR FIELD INSTALLATION	
120 V, 50–60 Hz 208–240 V, 50–60 Hz 277 V, 50–60 Hz	V2PC20 V2PC22 V2PC27

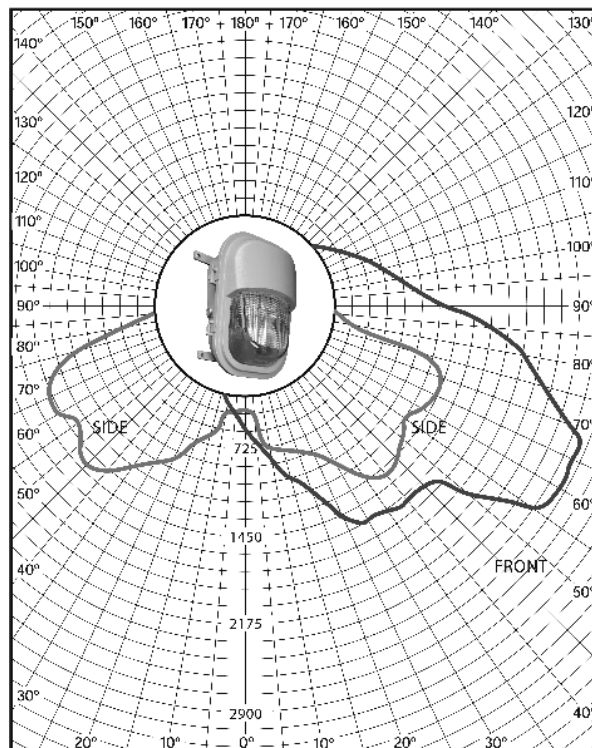
In Canada, use factory-installed photocell only.

STAINLESS STEEL WIRE GUARD	P55
-----------------------------------	------------

CPMV PHOTOMETRIC DATA

LUMINAIRE WITH REFRACTOR LESS WIRE GUARD

CPMVS2W150 Lamp: 150 W/E23-1/2 Clear High Pressure Sodium (HPS)



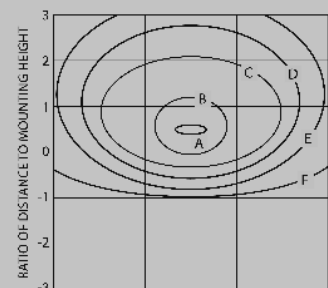
CANDELAS			
Vertical Angle	Front	Side	Back
0	413	413	413
5	470	418	367
15	877	654	265
25	1343	947	169
35	1629	1135	126
45	1614	1369	68
55	2434	1267	17
65	2505	1281	0
75	2084	916	4
85	1555	322	8
90	1148	265	11
95	956	228	8
105	723	156	9
115	527	86	9
125	355	56	8
135	224	40	4
145	150	20	1
155	64	11	1
165	19	9	3
175	0	8	1
180	3	3	3
ZONAL LUMENS			
Zone	Lumens		
0-10	42		
10-20	178		
20-30	371		
30-40	587		
40-50	760		
50-60	1095		
60-70	1277		
70-80	1028		
80-90	666		
90-100	462		
100-110	338		
110-120	236		
120-130	175		
130-140	91		
140-150	31		
150-160	10		
160-170	2		
170-180	0		
Total	7349		

Note: Photometric data was developed using a 150 watt E23-1/2 clear high pressure sodium lamp (16,000 lumens). For other clear lamp wattages, use the following conversion factors (multiplier) with both candlepower distribution and isofootcandle charts. For luminaires with guard use an additional conversion factor (multiplier) of .96.

LAMP WATTS	CONVERSION FACTOR
50 W (HPS)	0.25
70 W (HPS)	0.40
100 W (HPS)	0.59

(For additional photometric data, contact Cooper Crouse-Hinds)

ISOFOOTCANDLE CHART:



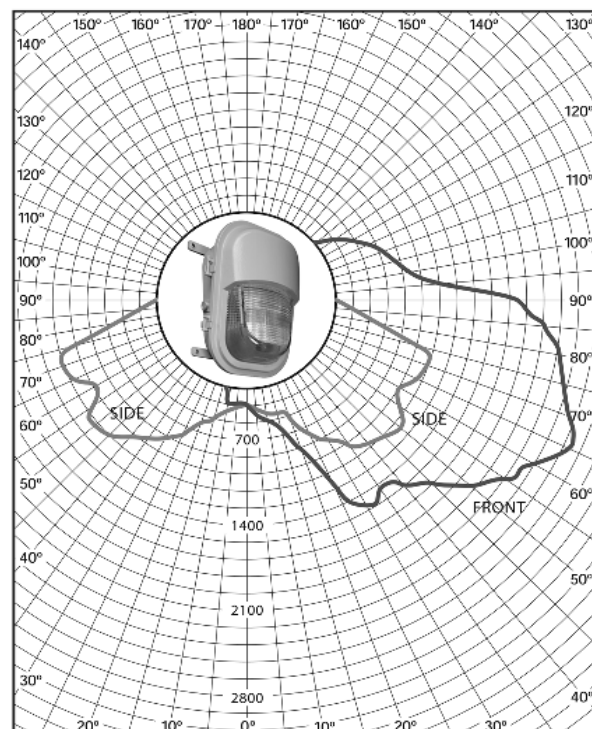
Footcandle Values for Isofootcandle Lines

Mtg. Hgt.	A	B	C	D	E	F
8'	15.63	7.81	3.13	1.56	0.78	0.31
10'	10.00	5.00	2.00	1.00	0.50	0.20
12'	6.94	3.47	1.39	0.69	0.35	0.14
16'	3.91	1.95	0.78	0.39	0.20	0.08
20'	2.50	1.25	0.50	0.25	0.13	0.05
25'	1.60	0.80	0.32	0.16	0.08	0.03

Isofootcandle chart shows illuminance in footcandles at ground level.

LUMINAIRE WITH REFRACTOR LESS WIRE GUARD

CPMVM2W150-S828 Lamp: 150 W/ED28 Clear Pulse Start Metal Halide



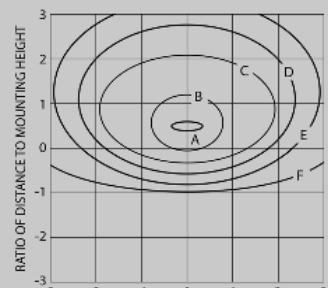
CANDELAS			
Vertical Angle	Front	Side	Back
0	404	404	404
5	442	424	413
15	692	549	238
25	1345	748	136
35	1475	946	99
45	1683	1121	56
55	2105	1095	15
65	2421	1107	3
75	2230	924	0
85	1946	349	0
90	1612	280	0
95	1154	231	0
105	738	164	0
115	535	97	0
125	360	55	0
135	237	39	0
145	139	22	0
155	56	12	0
165	17	8	0
175	0	8	0
180	3	3	0
ZONAL LUMENS			
Zone	Lumens		
0-10	42		
10-20	150		
20-30	320		
30-40	537		
40-50	709		
50-60	921		
60-70	1218		
70-80	1153		
80-90	829		
90-100	492		
100-110	347		
110-120	242		
120-130	167		
130-140	113		
140-150	35		
150-160	10		
160-170	2		
170-180	0		
Total	7287		

Note: Photometric data was developed using a 150 watt ED28 clear metal halide pulse start lamp (14,000 lumens). For other clear lamp wattages, use the following conversion factors (multiplier) with both candlepower distribution and isofootcandle charts. For luminaires with guard use an additional conversion factor (multiplier) of .96.

LAMP WATTS	CONVERSION FACTOR
70 W (MH)	.40
100 W (MH)	.56
100 W (MV)	.30

(For additional photometric data, contact Cooper Crouse-Hinds)

ISOFOOTCANDLE CHART:



Footcandle Values for Isofootcandle Lines

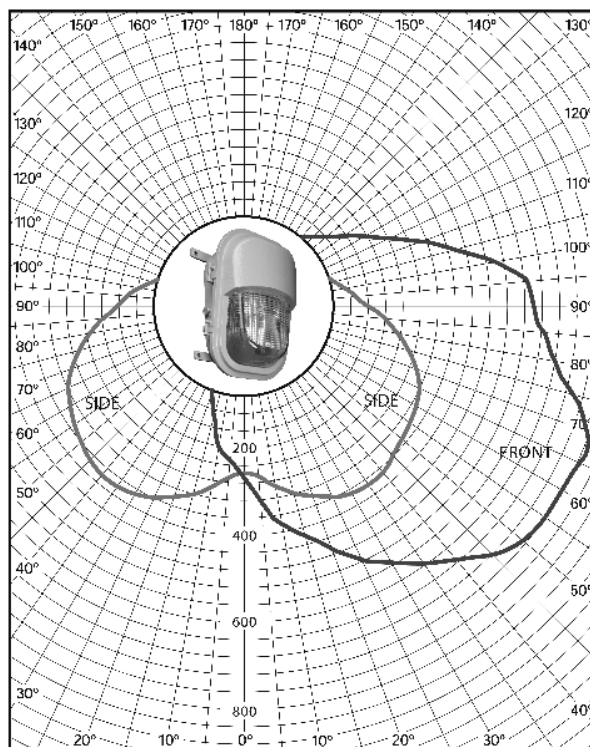
Mtg. Hgt.	A	B	C	D	E	F
8'	15.63	7.81	3.13	1.56	0.78	0.31
10'	10.00	5.00	2.00	1.00	0.50	0.20
12'	6.94	3.47	1.39	0.69	0.35	0.14
16'	3.91	1.95	0.78	0.39	0.20	0.08
20'	2.50	1.25	0.50	0.25	0.13	0.05
25'	1.60	0.80	0.32	0.16	0.08	0.03

Isofootcandle chart shows illuminance in footcandles at ground level.

For additional photometric data, contact Cooper Crouse-Hinds.

LUMINAIRE WITH REFRACTOR LESS WIRE GUARD

CPMVF2W084 Lamps: (2) PL-T 42W/30/4P Compact Fluorescent



CANDELAS			
Vertical Angle	Front	Side	Back
0	258	258	258
5	319	269	227
15	421	316	139
25	516	361	58
35	590	376	33
45	671	362	10
55	720	347	0
65	725	317	0
75	657	264	0
85	566	195	0
90	541	160	0
95	526	132	0
105	409	86	0
115	277	49	0
125	145	31	0
135	97	21	0
145	52	11	0
155	34	3	0
165	8	1	0
175	0	0	0
180	0	0	0

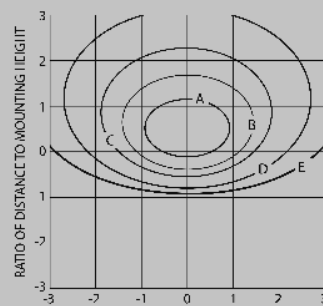
ZONAL LUMENS	
Zone	Lumens
0-10	26
10-20	87
20-30	155
30-40	223
40-50	286
50-60	334
60-70	357
70-80	349
80-90	309
90-100	262
100-110	188
110-120	113
120-130	64
130-140	36
140-150	16
150-160	5
160-170	0
170-180	0
Total	2810

Note: Photometric data was developed using two clear compact fluorescent lamps (3,200 lumens each). For other clear lamp wattages, use the following conversion factors (multiplier) with both candlepower distribution and isofootcandle charts. For luminaires with guard use an additional conversion factor (multiplier) of .96.

LAMP WATTS	CONVERSION FACTOR
32 W (FLUORESCENT)	.56
64 W (FLUORESCENT)	.75

For additional photometric data, contact Cooper Crouse-Hinds.

ISOFOOTCANDLE CHART:



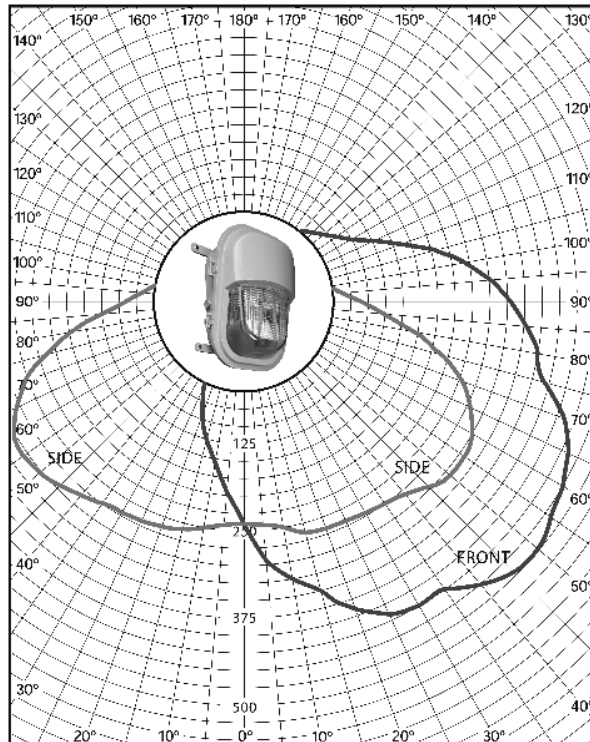
Footcandle Values for Isofootcandle Lines

Mtg. Hgt.	A	B	C	D	E
8'	3.13	1.56	0.78	0.31	0.16
10'	2.00	1.00	0.50	0.20	0.10
12'	1.39	0.69	0.35	0.14	0.07
16'	0.78	0.39	0.20	0.08	0.04
20'	0.50	0.25	0.13	0.05	0.03
25'	0.32	0.16	0.08	0.03	0.02

Isofootcandle chart shows luminance in footcandles at ground level.

LUMINAIRE WITH REFRACTOR LESS WIRE GUARD

CPMVG2W055 Lamp: 55 W Philips Induction Lamp System



CANDELAS			
Vertical Angle	Front	Side	Back
0	241	241	241
5	290	243	199
15	352	259	110
25	414	268	45
35	427	274	28
45	475	295	12
55	462	306	3
65	439	285	0
75	364	214	0
85	330	124	1
90	309	86	2
95	276	63	2
105	206	38	2
115	121	28	1
125	80	20	2
135	55	18	1
145	32	8	1
155	21	5	2
165	5	2	0
175	0	2	0
180	1	1	1

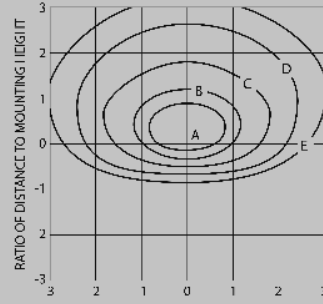
ZONAL LUMENS	
Zone	Lumens
0-10	23
10-20	70
20-30	114
30-40	154
40-50	194
50-60	224
60-70	228
70-80	205
80-90	169
90-100	130
100-110	86
110-120	52
120-130	34
130-140	21
140-150	9
150-160	3
160-170	1
170-180	0
Total	1717

Note: Photometric data was developed using a 55 W Philips QL Series induction lamp system (3,500 lumens). For other lamp wattages, use the following conversion factors (multiplier) with both candlepower distribution and isofootcandle charts. For luminaires with guard use an additional conversion factor (multiplier) of .96.

LAMP WATTS	CONVERSION FACTOR
85 W	1.72

For additional photometric data, contact Cooper Crouse-Hinds.

ISOFOOTCANDLE CHART:



Footcandle Values for Isofootcandle Lines

Mtg. Hgt.	A	B	C	D	E
8'	3.13	1.56	0.78	0.31	0.16
10'	2.00	1.00	0.50	0.20	0.10
12'	1.39	0.69	0.35	0.14	0.07
16'	0.78	0.39	0.20	0.08	0.04
20'	0.50	0.25	0.13	0.05	0.03
25'	0.32	0.16	0.08	0.03	0.02

Isofootcandle chart shows luminance in footcandles at ground level.

For additional photometric data, contact Cooper Crouse-Hinds.

TEMPERATURE PERFORMANCE DATA

WATTS	AMBIENT Temp °C	CLASS I DIVISION 2 and ZONE 2		CLASS II and CLASS III	SIMULTANEOUS PRESENCE CLASS I/CLASS II (Gas and Dust Present in the Same Area)		SUPPLY WIRE TEMP °C
		STANDARD PRODUCT	RESTRICTED BREATHING AEx nR/Ex nR OPTION S826		STANDARD PRODUCT Suitable for Class I. Division 2/Class II	RESTRICTED BREATHING AEx nR/Ex nR OPTION S826 Suitable for Class I, Division 2 or Zone 2 and Class II	
HIGH-PRESSURE SODIUM							
50	40	T3A	T6	T5	T3A/T5	T5	90
	55	T3A	T6	T4A*	T3/T4A*	T4*	105
	65*	T3	T5	—	—	—	105
70	40	T3A	T6	T5	T3A/T5	T5	90
	55	T3A	T6	—	—	—	105
	65*	T3	T5	—	—	—	105
100	40	T2C	T5	Consult Factory for Class II Suitability with			90
	55*	T2C	T4	105°C Supply Wire			105
150	40*	T2B	T4	—	—	—	105
METAL HALIDE							
70	40	T3C	T6	T5	T3C/T5	T5	90
	55	T3C	T6	—	—	—	105
	65*	T3C	T5	—	—	—	105
100	40	T3	T6	—	—	—	90
150PS (S828)	40	T2D	T5	—	—	—	105
MERCURY VAPOR							
100	40	T2C	T5	—	—	—	90
	55*	T2B	T4	—	—	—	105
COMPACT FLUORESCENT							
26 (347 V)	40	T3B	T6	T6	T3B/T6	T6	75
	55	T3A	T6	—	—	—	75
	40	T3	T6	—	—	—	75
32 (347 V)	40	T3B	T6	T6	T3B/T6	T6	75
	55	T3A	T6	—	—	—	75
	40	T3	T6	—	—	—	75
42 (120–277 V) 42 (347 V)	40	T3B	T6	T6	T3B/T6	T6	75
	55	T3A	T6	—	—	—	75
	40	T3	T6	—	—	—	75
52	40	T3	T6	T6	T3/T6	T6	75
	55	T3	T6	—	—	—	90
64	40	T3	T6	T6	T3/T6	T6	75
	55	T3	T6	—	—	—	90
84	40	T2C	T6	—	—	—	90
EMERGENCY FLUORESCENT							
26	40*	T3B	T6	—	—	—	75
INDUCTION							
55	40*	T2D	T6	T6	—	T6	75
	55*	T2D	T6	—	—	—	75
85	40*	T2B	T6	—	—	—	75

*Fuses (suffix S658) are not available for indicated light sources and ambient temperatures.

NOTE: Luminaires requiring 105°C supply wire are furnished with 3 ft. of rated wire for external wiring connection



At last, a hazardous-area luminaire with complete stainless steel exterior, low temperature ratings and standard with the restricted breathing rating (vapor-tight design).

Cooper Crouse-Hinds® Champ Voyager nR stainless steel floodlight offers the industry's coolest temperature ratings—so it can operate below the ignition temperature of vapors and gases in your classified area.

It's also the only mogul-base Class I, Division 2 and Zone 2 stainless steel floodlight with restricted breathing (vapor-tight design) as standard construction.

The Champ Voyager nR Floodlight boasts a wide, powerful beam to deliver more light to your process or pathway. Standard terminal blocks and a removable ballast-component tray bring you the best combination of easy wiring and simple maintenance in one rugged package.

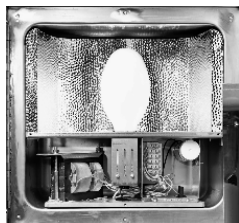
This unique combination of features makes the Champ Voyager nR Floodlight ideal for outdoor, marine, corrosive, and high temperature locations such as:

- offshore platforms and drilling rigs, ship channels and refineries
- chemical, petrochemical and pharmaceutical plants, waste water and sewage treatment plants, pulp and paper mills
- storage tanks and racks, vehicle and pedestrian passageways, outdoor process areas and parking areas

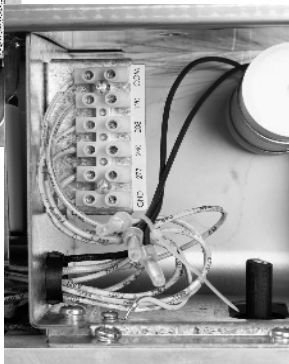
And because the Champ Voyager nR Floodlight meets international standards, you can install it anywhere in the world.

KEY FEATURES AND BENEFITS

- **AEx nR, Ex nR restricted breathing rating is standard**—a hazardous location luminaire with excellent T-3 and T-4 ratings without additional accessories or options.
- **NEMA 7x6 “butterfly beam” floodlight pattern**—wide, uniform and far reaching to reduce the number of luminaires you need providing excellent luminaire efficiency—more light where you need it.
- **easy wiring**—standard terminal block with marked terminals saves time and eliminates wiring errors.
- **removable ballast-component tray**—for capacitor, igniter and terminal block to simplify maintenance and save money.
- **316 stainless steel housing, hinges, door cover and mounting yoke for marine and wet locations**—robust construction suitable for saltwater and corrosive applications.



Removable ballast component tray



Easy wiring with standard terminal blocks

Champ® Voyager nR™ Stainless Steel Floodlight

Cl. I, Div. 2, Groups A,B,C & D
Cl. I, Zone 2, Group IIC
Enclosure Type 4X
IP66
UL and cUL Listed

Wet Locations
Marine Locations

7L



CERTIFICATIONS AND COMPLIANCES

NEC/CEC

- Class I, Division 2
- Class I, Zone 2
- Wet Locations
- Marine Locations
- Enclosure Type 4X, IP66
- UL Listed
- cUL Listed (Certified by UL to CSA Standards)

IEC/NEC/CEC

- Class I, Zone 2, Group IIC
- Class I, Division 2, Group A,B,C,D

UL STANDARDS

- 844 — Hazardous (Divisions Classified) Locations
- 1598 — Luminaires
- 1598A — Supplemental requirements for luminaires for installation on marine vessels.

CSA STANDARDS

- C22.2 No. 137
- CAN/CSAD9 Series

IEC STANDARDS

- 60079-15

STANDARD MATERIALS

- Enclosure (housing & lens frame)—316 Stainless Steel
- Lens—heat and impact resistant tempered glass
- Gaskets—silicone rubber
- Yoke and yoke bracket—316 Stainless Steel
- Reflector—formed specular (dimpled glossy surface) aluminum
- Cable gland cord grip and locknut—polyamide 6, neoprene bushing

STANDARD FINISHES

- 316 Stainless Steel—natural

RATINGS

SOURCES/WATTAGES (MOGUL BASE LAMPS)

- High Pressure Sodium (HPS) 150, 250 & 400 watts
- Metal Halide (MH) 175, 250 & 400 watts

VOLTAGES

Standard Voltage Ballasts

- Multi-tap (120, 208, 240 & 277 V, 60 Hz)
- 480 V, 60 Hz
- Tri-tap (120, 277, 347 V, 60 Hz)

Optional Voltage Ballasts

- 220 V or 240 V, 50 Hz (for export)
- 220 V, 60 Hz (for export)

Isolated Ballasts (consult Cooper Crouse-Hinds)

- 208, 240, or 480 V (for Canada)

HUB SIZE

- Standard: 3/4" NPT with a 3/4" sealing cord grip installed

ORDERING INFORMATION

To complete catalog number, add voltage and option suffix(es)

Example: SSFMVSY150/MT-76 BG-FA

LAMP TYPE	WATTS	CATALOG NUMBER
High-Pressure Sodium	150	SSFMVSY150
	250	SSFMVSY250
	400	SSFMVSY400
Metal Halide	175	SSFMVMY175
	250	SSFMVMY250
	400	SSFMVMY400

VOLTAGE SUFFIXES

VOLTAGE (60 Hz)	SUFFIX	OPTIONAL VOLTAGES	SUFFIX
Tri-tap (120, 277, 347, 60 Hz)	/TT	220 50 Hz	/220 50
Multi-tap (120, 208, 240, 277V, 60 Hz)	/MT	220 60 Hz	/220
480 V, 60 Hz	/480	240 50 Hz	/240 50

OPTIONS

SUFFIX TO ADD TO CAT. NO.

Ballast-Gard™ starter cut-out switch prevents starter pulsing when lamp is cycling or inoperative. Prolongs ballast and igniter life 150 W HPS only. Not available with options IR or QTZ

BG

Factory assembled w/HID lamp installed

FA

Instant restrike—150W HPs only. Not available with options BG or QTZ

IR

Quartz auxiliary (lamp not supplied). For non-hazardous applications only.

Not available with options BG or IR

QTZ

Fused (not for marine or cUL)

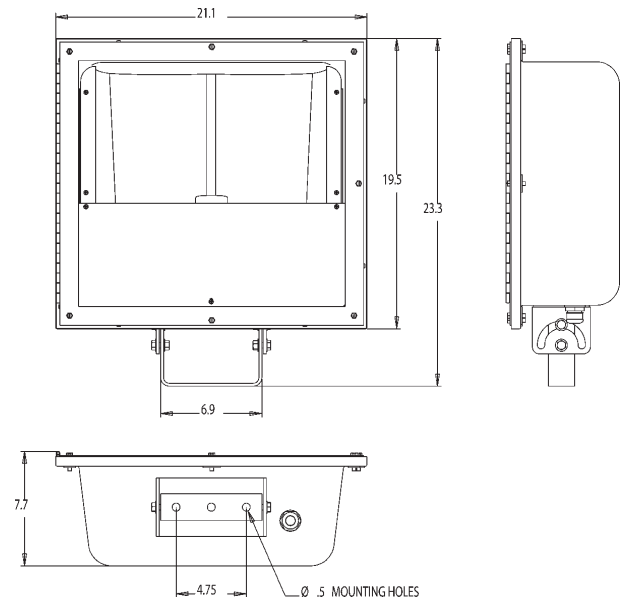
S658

ACCESSORIES (order separately)

CATALOG NO.

Stainless Steel Slipfitter Adapter	SFA6 SS
Stainless Steel Wall Mount Bracket	SWB6 SS
Standard Slipfitter adapter (cast aluminum, epoxy coat)	SFA6
Standard Wall Mount bracket (cast aluminum, epoxy coat)	SWB6

DIMENSIONS (inches)



LUMINAIRE WEIGHTS (lbs.)

LUMINAIRE	HPS	MH
150W	39	—
175W	—	39
250W	43	41
400W	45	43

7L Floodlights

PHOTOMETRICS

HPS Wide Beam Reflector

ISO FOOTCANDLE CHART

Stainless Steel Floodlight 400 W High Pressure Sodium (HPS)

Catalog Number: SSMVSY400/MT

Lamp: 400 W Clear HPS

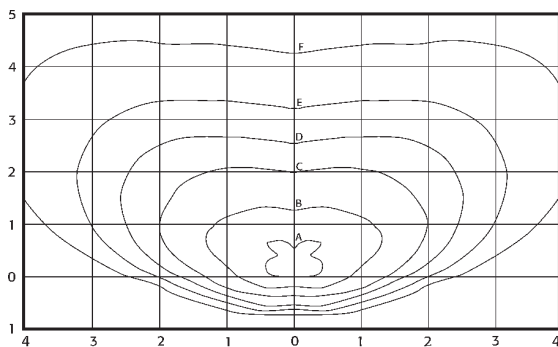
Lumen Rating: 50,000

Luminaire located at 0,0° Aiming Angle at 45° down from horizontal

For 150 W HPS, multiply footcandles by 0.32.

For 250 W HPS, multiply footcandles by 0.57.

MOUNTING HEIGHT	FOOTCANDLE VALUES FOR ISO FOOTCANDLE LINES					
	A	B	C	D	E	F
10'	40.000	20.000	8.000	4.000	2.000	0.800
15'	17.778	8.889	3.555	1.778	0.889	0.356
20'	10.000	5.000	2.000	1.000	0.500	0.200
25'	6.400	3.200	1.280	0.640	0.320	0.128
30'	4.444	2.222	0.889	0.444	0.222	0.089
35'	3.265	1.633	0.653	0.327	0.163	0.065
40'	2.500	1.250	0.500	0.250	0.125	0.050



LUMINAIRE IS LOCATED AT 0,0 AND AIMED 45 DEGREES DOWN FROM HORIZONTAL

MH Wide Beam Reflector

ISO FOOTCANDLE CHART

Stainless Steel Floodlight 400 W Metal Halide (MH)

Catalog Number: SSFMY400/MT

Lamp: 400 W Clear MH

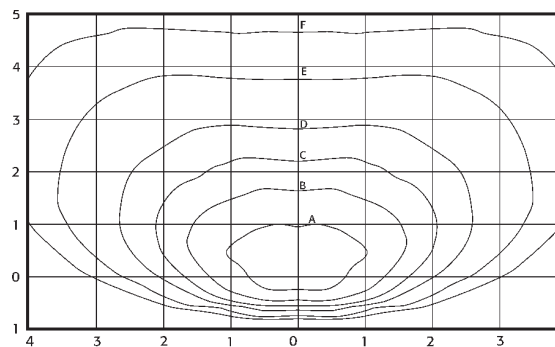
Lumen Rating: 34,000

Luminaire located at 0,0° Aiming Angle at 45° down from horizontal

For 175 W MH, multiply footcandles by 0.42

For 250 W HPS, multiply footcandles by 0.65

MOUNTING HEIGHT	FOOTCANDLE VALUES FOR ISO FOOTCANDLE LINES					
	A	B	C	D	E	F
10'	20.000	8.000	4.000	2.000	0.800	0.400
15'	8.889	3.555	1.778	0.889	0.356	0.178
20'	5.000	2.000	1.000	0.500	0.200	0.100
25'	3.200	1.280	0.640	0.320	0.128	0.064
30'	2.222	0.889	0.444	0.222	0.089	0.044
35'	1.633	0.653	0.327	0.163	0.065	0.033
40'	1.250	0.500	0.250	0.125	0.050	0.025



LUMINAIRE IS LOCATED AT 0,0 AND AIMED 45 DEGREES DOWN FROM HORIZONTAL

TEMPERATURE PERFORMANCE DATA

AMBIENT TEMP.	DIV. 2		ZONE 2		SUPPLY	
	40°C	55°C	40°C	55°C	WIRE 0°C (40°C)	WIRE 0°C (55°C)
150 W HPS	T1(350°C)	T1(350°C)	T4	T3	90°C	105°C
250 W HPS	T1(350°C)	T1(350°C)	T4	T3	90°C	105°C
400 W HPS	T1(400°C)	—	T3	—	90°C	—
175 W MH	T1(325°C)	T1(325°C)	T3	T3	90°C	105°C
250 W HPS	T1(325°C)	T1(325°C)	T3	T3	90°C	105°C
400 W MH	T1(325°C)	—	T3	—	105°C	—

EFFECTIVE PROJECTED AREA (EPA)

• For windloading AIMING ANGLE	• For proper pole selection EPA
0 degrees	2.15 ft²
30 degrees	1.86 ft²
60 degrees	1.07 ft²

50-175W F2MV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

7L

Application:

Champ F2MV floodlights are used:

- on platforms and in refineries, chemical and petrochemical plants, pharmaceutical plants, waste water and sewage treatment plants, pulp and paper mills, and other outdoor as well as indoor industrial locations.
- to light outdoor industrial applications such as storage tanks and racks, vehicle and pedestrian passageways, outdoor process areas, and parking areas in industrial facilities.
- for security & safety lighting in industrial and process facilities.
- in high ambient temperatures.
- in marine and wet locations
- in outdoor locations where the damaging effects of rain, snow, wind, dirt & other contaminants are present
- in Class I, Division 2 hazardous (classified) locations as defined by the NEC & CEC
- in Class I, Zone 2 hazardous (classified) areas as defined by the NEC & CEC
- in Zone 2 hazardous (classified) areas as defined by the IEC

Ratings (Electrical/Size):

Sources/Wattage (Mogul Base Lamps)

- High Pressure Sodium (HPS) 50, 70, 100 & 150
- Metal Halide (MH) 70, 100, & 175
- Mercury Vapor (MV) 100 & 175

Voltages

Standard Voltage Ballasts

- Multi-tap (120, 208, 240 & 277 volts 60 Hz)
- Dual tap (120, 277 volts 60 Hz) — 50W HPS only
- 480 volts 60 Hz
- Tri-tap (120, 277, 347 volts 60 Hz).

Optional Voltage Ballasts (consult Cooper Crouse-Hinds)

- 220 volt or 240 volt 50 Hz (for export)
- 220 volt 60 Hz (for export)
- Isolated Ballasts 208, 240 or 480 volt (For Canada)

Hub Sizes

- Standard — (2) ¾" NPT
- Optional — (2) 25mm (M25x1.5)



Certifications and Compliances:

- NEC/CEC: Class I Division 2, Groups A, B, C, D Class I Zone 2
- IEC: Zone 2 Ex nR IIC
- UL Standards: 844, 2279 Hazardous (Classified) Locations 1598 Luminaires 1598A Marine Locations
- CSA Standards: C22.2 No. 137:
- IEC Standards: 60079-15

Options:

- | Description | Suffix to be Added to Cat. No. |
|---|--------------------------------|
| • Ballast-Gard
-50-150W HPS only
-Cannot use with options IR or QTZ | BG |
| • Factory assembled w/HID lamp installed | FA |
| • Instant Restrike
-50-150W HPS only
-Cannot use with options BG or QTZ | IR |
| • Quartz auxiliary (lamp not supplied)
-For nonhazardous applications only.
-Cannot use with options BG or IR | QTZ |
| • Fused | S658* |
| • Restricted Breathing, (AEx nR, Ex nR) | S826 |
| -For NEC/CEC Class I Zone 2 | |
| • Restricted Breathing (Ex nR)
for IEC Zone 2. Includes:
-3pt. 4mm squared terminal block
-Crimp internal wiring connections
-For use with dedicated voltages only
-(not DT, MT, TT) | S826TB |
| • V2PC Photocell Available
Factory Installed Only | Consult Crouse-Hinds |

Accessories: (Order Separately)

- SFA-6 Slipfitter adapter
- SWB-6 Wall Mount bracket

Description Suffix to be added to Cat. No.

- Restricted Breathing Construction Class I Division 2 & Zone 2 Suitability Cooler Operating Temperatures (T-Numbers) **S826**
- Certified for IEC Zone 2 (Suffix S826TB) **S826TB**
Furnished with

- Terminal Block
- Crimp Terminals
- Dedicated voltage ballasts (no MT, DT or TT).

Key Features

- Copper free aluminum enclosure with stainless steel hardware
- Continuous silicone gasketing
- Small compact size
- Available in a variety of lamp sources and wattages
- NEMA 7x6 standard floodlight pattern with lamp orientation base down
- 40° and 55°C ambient suitability standard with some wattages (less fuses) to 65°C
- Stainless steel chain secures cover to housing
- Low ambient capability to -40°C
- Shock absorbing mogul base lamp socket
- Variety of system voltages available
- Trunnion (yoke) mount design

- For use with other accessories
 - SFA-6 Slip Fitter Adapter
 - SWMB-6 Wall Mount Bracket
- Restricted Breathing sealing compliance

- Severe vibration testing compliance
 - UL 844
 - 3-Axis Resonance Withstand

Benefits

- Robust design, Industrial grade construction
- Insures wet & marine locations integrity
- Easy to install & maintain
- Provides specifiers with the right product for the task at hand.
- Most common for industrial applications
- Addresses high ambients common at industrial facilities
- Ease of maintenance
- Perfect for colder climates
- Cushions lamp, improves lamp life in harsh environments
- Meets global supply voltage requirements
- Standard construction provides the greatest mounting flexibility — can be mounted vertically (wall), horizontally (floor) or any angle in between
- Further enhances mounting flexibility

Complies with the NEC sealing requirements for Class I Zone 2 and Class I Division 2 locations using the standard wiring method of a Cooper Crouse-Hinds CGB 294SA connector with 16/3 SO extra hard usage cord

Exceeds vibration tests as required by UL

Standard Materials:

- Enclosure (housing & lens cover) — copper-free aluminum
- Cover chain and external hardware — stainless steel
- Lens — heat & impact resistant glass
- Gaskets — silicone rubber
- Yoke — galvanized steel
- Reflector — diffuse aluminum lighting sheet

Standard Finishes:

- Enclosure & Yoke — Corro-free epoxy powder coat
- Stainless steel — natural

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

7L

50-175W F2MV Series

Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

Ordering Information

*To complete Catalog Number, add Voltage and Option suffix(s)

Example: F2MVSY150/MT-BG-FA-S658-S826

Lamp Type	Lamp Watts	Base Catalog Number*	
		with 3/4" NPT Hub	with 25MM Hub
High Pressure Sodium	50	F2MVSY050	F2MVS25Y050
	70	F2MVSY070	F2MVS25Y070
	100	F2MVSY100	F2MVS25Y100
	150	F2MVSY150	F2MVS25Y150
Metal Halide	70	F2MVMY070	F2MVM25Y070
	100	F2MVMY100	F2MVM25Y100
	175	F2MVMY175	F2MVM25Y175
Pulse Start Metal Halide	150	F2MVMY150-S828	
	175	F2MVMY175-S828	
Mercury Vapor	100	F2MVCY100	F2MVC25Y100
	175	F2MVCY175	F2MVC25Y175

Voltage Suffixes

Voltage (60Hz)	Dual-Tap (50W HPS)	Tri-Tap	Multi-Tap	480
Suffix	/DT	/TT	/MT	/480

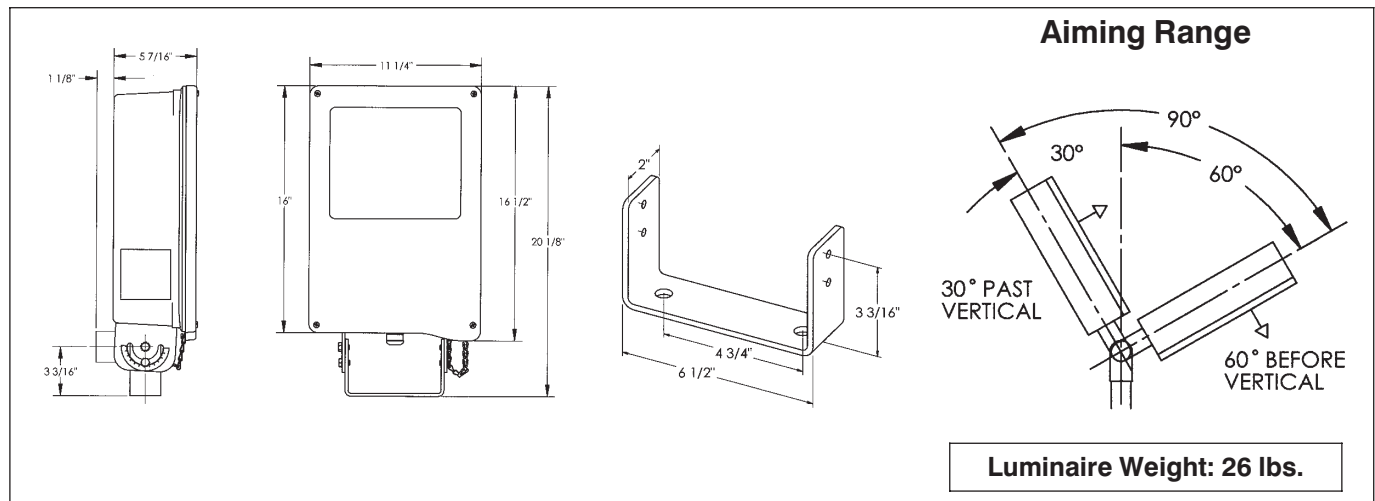
Temperature Performance Data

		Class 1		
	Ambient	Non Restricted Breathing	Restricted Breathing (S826TB)	Supply
Lamp Watts	Temp °C	Division 2	Zone 2	Wire °C
High Pressure Sodium				
50 Watt	40	T3C	T6	75
	55	T3C	T5	75
	65	T3B	T5	75
70 Watt	40	T3A	T6	60
	55	T3A	T5	75
	65	T3	T4	85
100 Watt	40	T2D	T4	75
	55	T2C	T4	90
	65	n/a	n/a	n/a
150 Watt	40	T2A	T4	75
	55	T2A	T4	85
	65**	T2A	T3	110
Metal Halide				
70 Watt	40	T3C	T6	75
	55	T3A	T5	75
	65	T3A	T4	85
100 Watt	40	T2D	T4	75
	55	T2D	T4	75
	65	T2C	T4	85
175 Watt	40	T2A	T3	75
	55	T2A	T3	85
	65**	T2	T3	110
Mercury Vapor				
100 Watt	40	T2B	T4	75
	55	T2B	T4	85
	65	T2A	T4	90
175 Watt	40	T2B	T3	75
	55	T2A	T3	85
	65**	T2A	T3	110

*Restricted breathing explosion protection

**Suitable for use in 65°C ambient without optional fuses

Dimensions and Weights:



7L Floodlights

Champ® H.I.D. Luminaires

Isofootcandle Chart

F2MV 150W High Pressure Sodium

Catalog Number F2MVS150

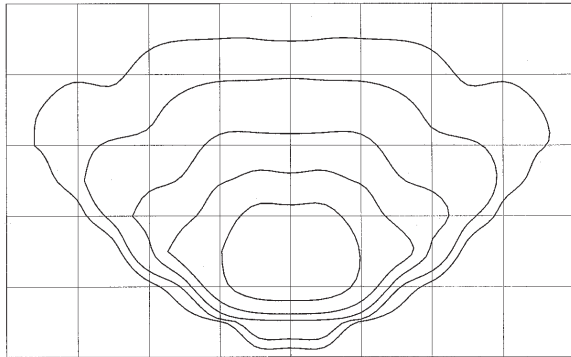
Lamp: 150 watt clear high pressure sodium

Lumen rating: 16,000

For 100W high pressure sodium, multiply footcandles by .55

For 70W high pressure sodium, multiply footcandles by .40

For 50W high pressure sodium, multiply footcandles by .24



Isofootcandle Chart

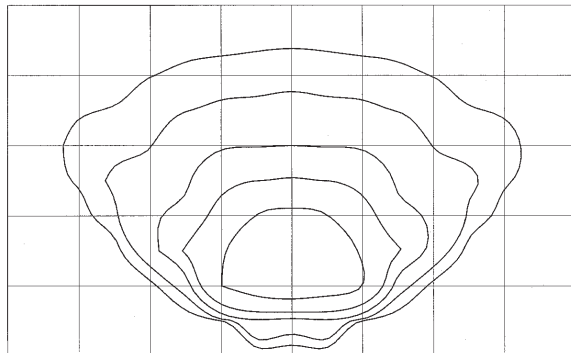
F2MV 175W Mercury Vapor

Catalog Number F2MVCY175

Lamp: 175 watt clear mercury vapor

Lumen rating: 8,600

For 100W mercury vapor, multiply footcandles by .49



Luminaire located at 0°, 0°

Aiming angle 45°

Note: Luminaire aiming angle limited to 30° past vertical through 60° before vertical.

Isofootcandle Chart

F2MV 175W Metal Halide

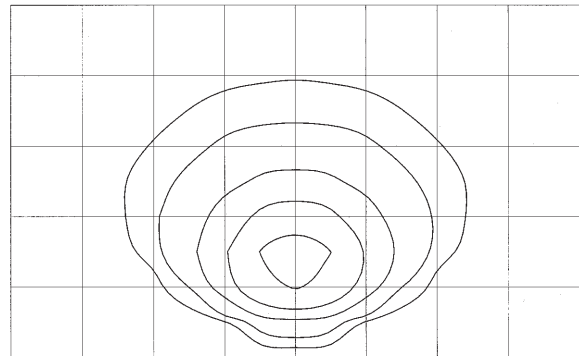
Catalog Number F2MVMY175

Lamp: 175 watt clear metal halide

Lumen rating: 14,000

For 100W metal halide, multiply footcandles by .58

For 70W metal halide, multiply footcandles by .37



Footcandle Table

Mounting Height	Footcandle Values for Isofootcandle Lines				
	A	B	C	D	E
10'	8.00	4.00	2.00	0.80	0.40
15'	3.56	1.78	0.89	0.36	0.18
20'	2.00	1.00	0.50	0.20	0.10
25'	1.28	0.64	0.32	0.13	0.06
30'	0.89	0.44	0.22	0.09	0.04

Effective Projected Area (EPA)

- For windloading
- For proper pole selection

Aiming Angle	EPA
0°	1.6 ft²
30°	1.6 ft²
60°	1.1 ft²

Series Champ® H.I.D. Luminaires

- Cl. I, Div 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP56 to IP66

Application:

Champ FMV Floodlights are used:

- in refineries, chemical and petrochemical plants, waste and sewage treatment plants, pulp and paper mills, and other outdoor industrial locations.
- to light outdoor industrial applications such as storage tanks and racks, vehicle and pedestrian passageways, outdoor process areas, and parking areas in industrial facilities.
- for security and safety lighting in industrial and process facilities.
- in Class I, Division 2 hazardous (classified) locations, as defined by the National Electrical Code.
- in high ambient temperatures
- in wet locations/marine locations
- in outdoor locations where the damaging effects of rain, snow, wind, dirt, and other contaminants are present.

Features:

- Available in a wide variety of light sources and wattages: 70-400 watt high pressure sodium, 175-400 watt metal halide, and 175-400 watt mercury vapor.
- Multi-tap ballasts are standard, offering a choice of 120, 208, 240, and 277 volts. 220V 50 Hz, 240V 50 Hz, Tri-Tap (120, 277 and 347) and 480 volt ballasts are also available.
- All luminaires are high power factor for energy efficient operation and optimal circuit conductor sizing.
- Three mounting styles – yoke (trunnion), slipfitter adapter & wall mount bracket – are available to satisfy all mounting requirements.
- Door frame assembly is hinged and has captive cover screws for ease of relamping.
- Silicone rubber gaskets are standard, ensuring long life and reliable environmental sealing even under adverse conditions.
- All die-cast aluminum components are provided with powder epoxy finish for superior corrosion resistance.
- All external hardware is stainless steel for corrosion resistance and reliability.
- Yoke is aluminum for excellent combination of strength, corrosion resistance and durability.
- All FMV Champ floodlights can be easily adjusted to aim light where it is needed.
- NEMA 7x6 beam spread is ideal for most industrial floodlighting requirements.
- Includes ballast core handle for convenient ballast replacement.
- Wing-type ballast insulators protect personnel during maintenance and relamping and provide quick and easy accessibility to internal components.

Standard Materials:

- Luminaire housing and door frame assembly – die-cast aluminum.
- External hardware – stainless steel.
- Lens – heat and impact-resistant glass.
- Yoke – aluminum.

Standard Finishes:

- Die-cast aluminum – epoxy powder coat
- Stainless steel – natural.

Electrical Rating Ranges:

- 70-150 (HPS), 175, 250, 400 watt
- Multi-tap* (120, 208, 240, 277 volts), 480 volts and 220V, 240V 50 Hz.
- Tri-tap (120, 277, 347 volts)

Certifications and Compliances:

- NEC/CEC:
Class I, Division 2, Groups A,B,C,D
Class I Zone 2
- IEC:
Zone 2 Ex nR IIC
- UL Standards:
844, 2279 Hazardous (classified) locations
1598 Luminaires
1598A Marine locations
- CSA Standards:
C22.2 No. 137
- IEC Standards:
60079-15

Ordering Information:

(For Voltages, See Note 1)

	Lamp Watts	Yoke Mount
High Pressure Sodium	150 (See Note 2)	FMVSY150/MT-76
	250	FMVSY250/MT-76
	400	FMVSY400/MT-76
Metal Halide	175	FMVMY175/MT-76
	250	FMVMY250/MT-76
	400	FMVMY400/MT-76
Pulse Start Metal Halide	250	FMVMY250/MT-76 S828
	320	FMVMY320/MT-76 S828
	400	FMVMY400/MT-76 S828
Mercury Vapor	175	FMVCY175/MT-76
	250	FMVCY250/MT-76
	400	FMVCY400/MT-76

Notes to Ordering Information

1. Catalog numbers shown are for multi-tap ballasts (120, 208, 240, or 277 volt; wired for 277 volt operation). 220 V 50 Hz, 240 V 50 Hz, and 480 volts ballasts also available. To order with other ballasts, change "MT" in catalog number to appropriate voltage. Example: FMVSY400/220-50-76. For Tri-tap ballast (120, 277, 347 volts) change MT to TT.
2. 150 watt HPS luminaires are furnished with ANSI spec./S55 ballasts for 55 volt lamps.
3. Luminaires are furnished with a 3/4" NPT drilled and tapped entrance.

Accessories

- (Order Separately)
- Slipfitter adapter** (To be mounted to yoke mount luminaire) **SFA6**
(Note: SFA6 fits onto 2" pipe/conduit)
- Wall bracket** (use with slipfitter adapter SFA6 for easy wall mounting & increased adjustability.) **SWB6**



Yoke mounted FMV Champ floodlight with SFA6 slipfitter adapter.

Options

- Description** **Suffix to be Added to Cat. No.**
- Fused (not available with IR) **S658***
- Quartz auxiliary **QTZ**
- Non-hazardous locations only.
 - Lamp not furnished
- Instant restrike **IR**
- Cannot be used with BG or QTZ.
 - 50-150W LX HPS only.
- Ballast Guard **BG**
- Restricted Breathing Construction. **S826**
- Class I Division 2 & Zone 2 Suitability
Cooler Operating Temperatures
(T-Numbers)
- Certified for IEC Zone 2 **S826TB**
- Furnished with
- Terminal Block
 - Crimp Terminals
 - Dedicated voltage ballasts (no MT, DT or TT).

* CSA certified luminaires are not available with multi-tap ballasts or fusing option.

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

Isofootcandle Chart

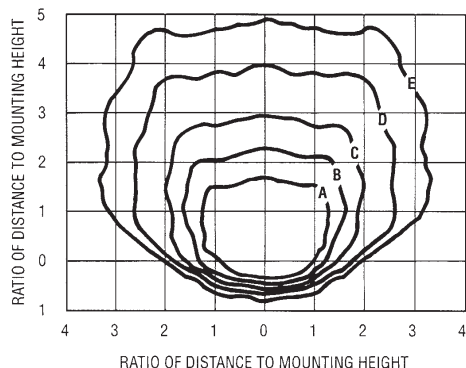
FMV 400W high pressure sodium

Catalog number FMVSY400-76

Lamp: 400 watt clear high pressure sodium

Lumen rating: 50,000

For 150 watt high pressure sodium, multiply footcandles by 0.32. For 250 watt superior high pressure sodium, multiply footcandles by 0.6.



Luminaire located at 0°, 0° (Note: Luminaire aiming angle limited to Aiming angle at 45° 30° past vertical through 60° before vertical.)

Isofootcandle Chart

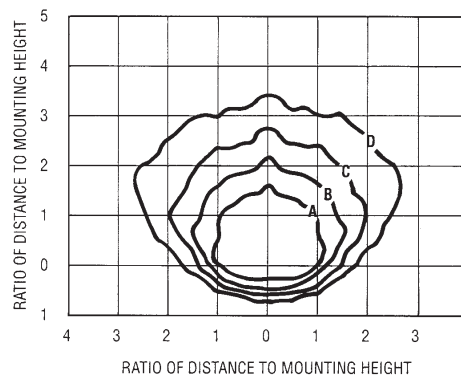
FMV 400W metal halide

Catalog number FMVMY400-76

Lamp: 400 watt clear metal halide

Lumen rating: 34,000

For 250 watt clear metal halide, multiply footcandles by 0.6.



Luminaire located at 0°, 0° (Note: Luminaire aiming angle limited to Aiming angle at 45° 30° past vertical through 60° before vertical.)

EPA Data – Aiming Angle

0°=2.9

30°=2.5

45°=2.1

• 50 hertz ballast – luminaires can be ordered with either 220V 50 hertz or 240V 50 hertz ballasts.

• Ballast-Gard™ starter cut-out switch – prevents starter pulsing when lamp is cycling or inoperative; prolongs ballast and ignitor life.

Available for use with 70-400W HPS only. add suffix BG.

Dimensions

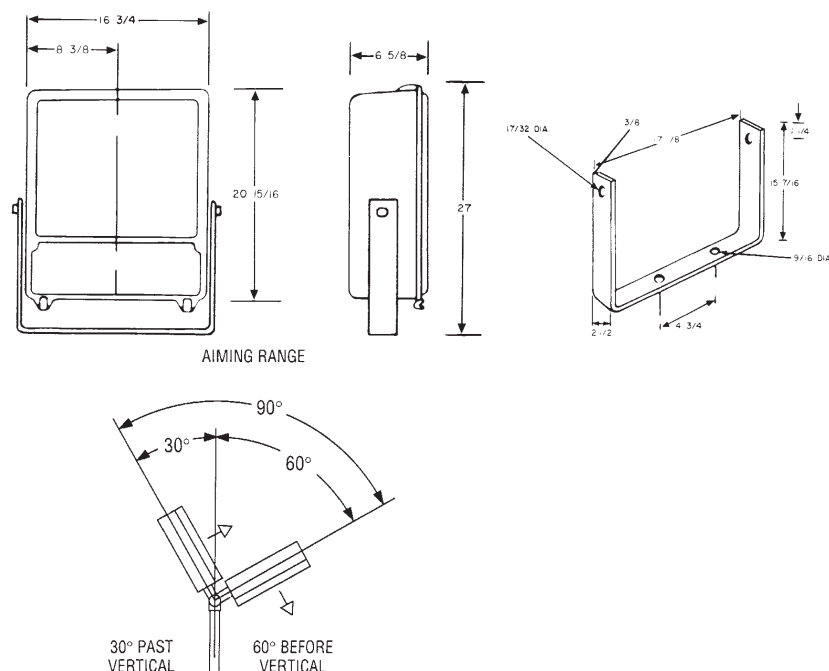


Table of Footcandle Values at Various Mounting Heights FMV 400W

Footcandle Values for both Isofootcandle Charts

Mounting Height	A	B	C	D	E
15'	8.0	4.0	2.0	0.8	0.4
20'	4.5	2.3	1.1	0.5	0.23
25'	2.9	1.4	0.7	0.3	0.14
30'	2.0	1.0	0.5	0.2	0.1
35'	1.5	0.7	0.4	0.15	0.07
40'	1.1	0.6	0.3	0.11	0.06

Temperature Performance Data:

Class 1

Lamp Watts	Ambient Temp °C	Non-restricted Breathing	Restricted Breathing (S826TB)	Supply Wire °C
		Division 2	Zone 2	
High Pressure Sodium				
150 Watt	40	T2C	T6	75
	55	T2C	T5	90
	65	T2B	T4	90
250 Watt	40	T2	T4	75
	55	T2	T4	90
	65	325 °C	T4	90
400 Watt	40	T1	T4	75
	55	T1	T3	90
	65	—	—	—
Metal Halide & Pulse Start				
175 Watt	40	T2	T4	75
	55	T2	T3	90
	65	325 °C	T3	90
250 Watt	40	T2	T4	75
	55	T2	T3	90
	65	325 °C	T3	90
320/400 Watt	40	325 °C	T3	75
	55	T1	T3	90
	65	—	—	—
Mercury Vapor				
175 Watt	40	325 °C	T4	75
	55	325 °C	T3	90
	65	325 °C	T3	90
250 Watt	40	325 °C	T3	75
	55	325 °C	T3	90
	65	325 °C	T3	90
400 Watt	40	325 °C	T3	75
	55	T1	T3	90
	65	—	—	—

Net Weights (lbs.)

Luminaires	FMVS	FMVM	FMVC
70-150W	37	—	—
175-250W	40	42	37
400W	44	44	41

SFA6 (Slipfitter Adapter) – Add 4 lbs.

SWB6 (Wall Bracket) – Add 6 lbs.

1000-1500W FMV

High Wattage Series Champ® H.I.D. Luminaires

- Wet Locations
- 3, 3R

7L

Application:

FMV1000 Series Very High Wattage Floodlights with wet locations suitability are used outdoors:

- at refineries, chemical, pharmaceutical and petrochemical plants, waste and sewage treatment plants, pulp and paper mills and other industrial facilities containing hazardous (classified) areas.
- to light process areas, storage tank and rack areas, loading docks, rail yards, building perimeters, parking areas, vehicle and pedestrian passageways and even sports applications.
- for security and safety lighting in industrial and process facilities.
- in industrial locations where the damaging effects of rain, snow, wind, moisture, dirt, corrosion, vibration and rough usage may be a problem.
- to produce superior light at low cost with great efficiency.

Standard Materials:

- Housing—Copper-free aluminum
- External hardware—stainless steel
- Yoke—Steel
- Lens—Heat and impact-resistant tempered glass
- Gasketing—neoprene

Standard Finishes:

- Aluminum—epoxy powder coat
- Steel (Yoke)—hot dipped galvanized
- Stainless Steel—natural

Ratings (Electrical/Size):

Sources/Wattages (Mogul Base Lamps)

- High Pressure Sodium (HPS) 1000W
- Metal Halide (MH) 1000W & 1500W
- Mercury Vapor (MV) 1000W

Voltages

Standard Voltage Ballasts

Hub Size

- ¾" NPT
- Furnished prewired with cord connector And 3 ft. of 14/3 SO cord

Certifications and Compliances:

- NEC:
Class I, Division 2, Groups A, B, C, D
- UL Standards
844
1598 Luminaires

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.



Key Features

- Heavy duty copper-free aluminum housing with epoxy powder coat finish.
- Unique 3 piece housing design.
- Prewired with 3 ft. of 14/3 SO cord.
- Requires only two bolts to mount
- Easily adjustable to aim light where desired
- Heat and impact resistant tempered glass lens
- Heavy duty neoprene gasketing
- Anodized precision formed aluminum reflector
- NEMA 7x6 beam spread for light pattern
- Removable top plate provides easy access to lamp compartment

Benefits

- Superior performance, life and corrosion resistance
- Provides coolest operation for increased component life
- Simplifies installation
- Allows mounting location flexibility, roof top, wall mount, etc.
- Provides exceptional stability
- Insures a reliable and long life environmental seal
- Superior beam control, distribution and efficiency.
- The ideal light distribution for industrial applications
- Minimizes maintenance. Lens removal is not required for lamp replacement.

Options:

Description	Suffix to be Added to Cat. No.
• Fusing.....	S658*
• Slipfitter adapter (To be mounted to yoke mount luminaire).....	SFA6 (Note: SFA6 fits onto 2" pipe/conduit)
• Wall bracket (use with slipfitter adapter SFA6 for easy wall mounting & increased adjustability.).....	SWB6

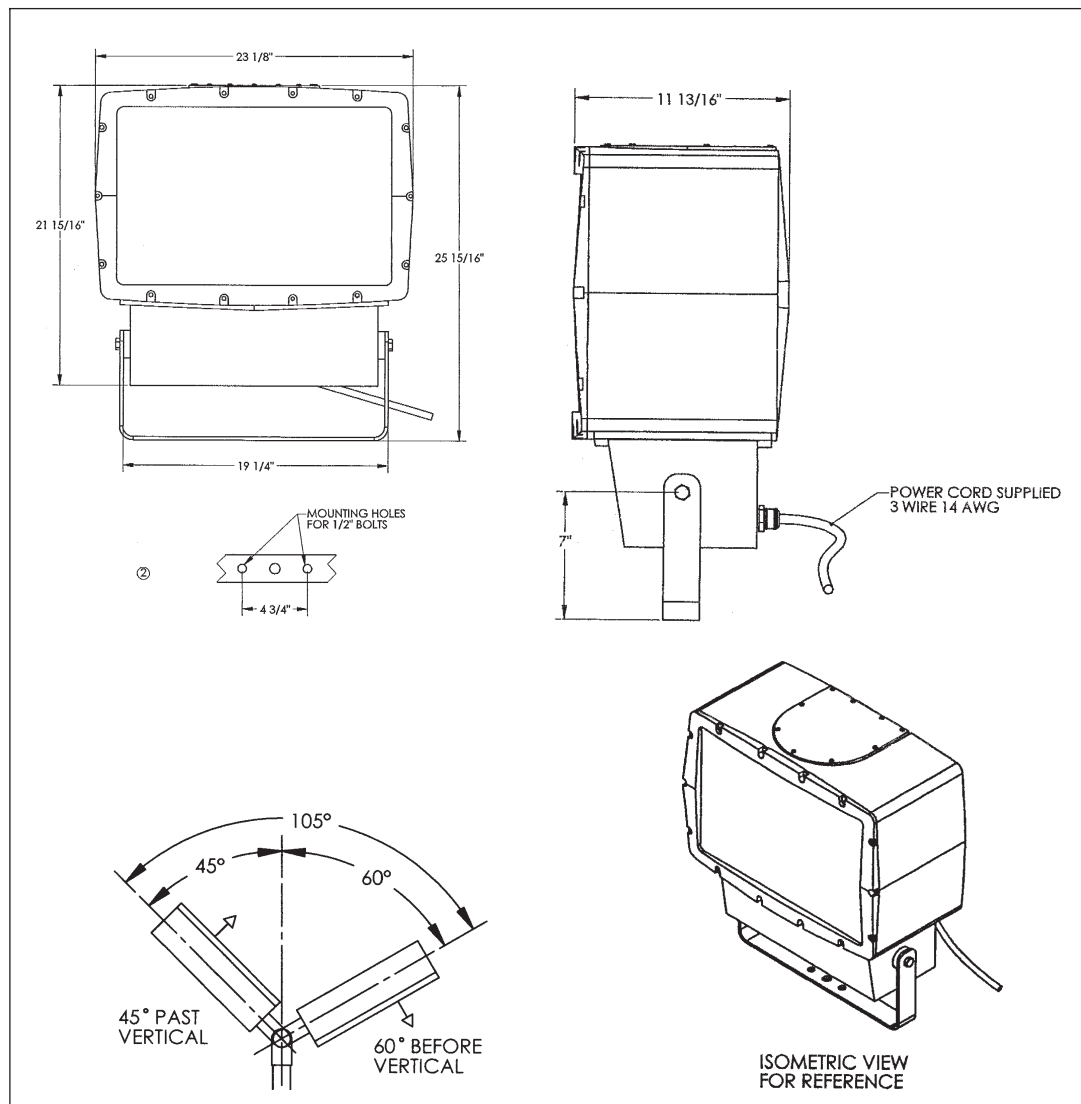
7L Floodlights

7L 1000-1500 FMV

High Wattage Series Champ® H.I.D. Luminaires

Ordering Information
Dimensions and Weights

Dimensions:



Net Luminaire Weights (lbs)

Luminaire Series	Weight (lbs.)
FMVSY1000	95
FMVMY1000	88
FMVMY1500	98
FMVCY1000	92

Ordering Information:

*To complete Catalog Number, add Voltage and Options suffix(es)

Example: FMVSY1000/480-76-S658

Lamp Type	Watts	Base Catalog No.*
High Pressure Sodium	1000	FMVSY1000__-76
Metal Halide	1000	FMVMY1000__-76
	1500	FMVMY1500__-76
Pulse Start Metal Halide	1000	FMVMY1000__-76 S828
Mercury Vapor	1000	FMVCY1000__-76

Complete the Catalog Number by Adding Voltage and Options Suffixes as Follows:

- Standard Voltages - Add one of the following Suffixes (For other Voltages Consult Cooper Crouse-Hinds)

Voltage	120	480	MT	TT
Suffix	/120	/480	/MT	/TT

- Options - Add the Required Options Suffixes from page 883, In Alpha-numeric Order

1000-1500 FMV

High Wattage Series Champ® H.I.D. Luminaires

Photometric Data
Temperature Performance Data

7L

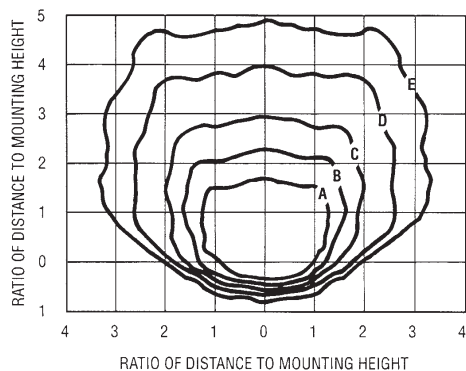
Isofootcandle Chart

FMV1000W High Pressure Sodium

Catalog Number FMVSY1000-76

Lamp: 1000 watt clear high pressure sodium

Lumen rating: 140,000



Luminaire located at 0°, 0°

Aiming Angle at 45°

(Note: Luminaire aiming angle limited to 45° past vertical through 60° before vertical.)

Isofootcandle Chart

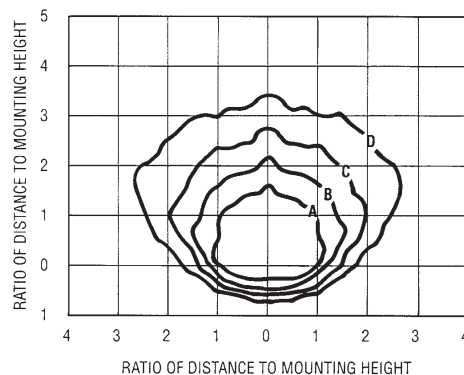
FMV1000W Metal Halide

Catalog Number FMVMY1000-76

Lamp: 1000 watt clear metal halide

Lumen rating: 110,000

For 1500 watt clear metal halide, multiply footcandles by 1.4.



Luminaire located at 0°, 0°

Aiming Angle at 45°

(Note: Luminaire aiming angle limited to 45° past vertical through 60° before vertical.)

Footcandle Table for FMVS1000W

Mounting Height	Footcandle Values for Isofootcandle Lines				
	A	B	C	D	E
20'	12.6	6.4	3.1	1.4	.64
25'	8.1	3.9	2.0	0.8	0.4
30'	5.6	2.8	1.4	0.6	0.2
35'	4.2	2.1	1.0	.42	0.2
40'	3.1	1.6	0.8	.32	.17

Effective Projected Area (EPA)

- For windloading
- For proper pole selection

Aiming Angle	EPA
0°	3.5 ft²
45°	3.6 ft²
60°	2.9 ft²

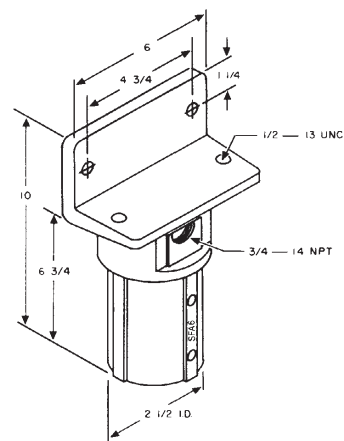
Temperature Performance Data:

Class 1

Lamp	Watts	Non-restricted Breathing	Restricted Breathing	Ambient
		Division 2	Zone 2	
HPS	1000	T1	—	40 °C
Metal Halide	1000	T1	—	40 °C
Mercury Vapor	1000	T1	—	40 °C



**2.5" O.D.
SWB6 Wall Bracket**



SFA6 Slipfitter



Finally, a true floodlight luminaire for hazardous areas.

Cooper Crouse-Hinds® FZD-Series™ Luminaires are the first to deliver NEMA 7x6 floodlight distribution patterns for Class I, Division 1 and Zone 1 environments. That means you'll need fewer of them to illuminate a given area. With their labor-saving features and flexible mounting options, the FZD series is ideal for:

- heavy process industries where flammable or explosive vapors or gases are present
- hazardous areas, both indoors and outdoors, including those requiring elevated ambient capability, where long life and low maintenance costs are desired
- petroleum refineries, chemical, petrochemical and other heavy-process industrial facilities
- mounting to a wall, structure or pole (with pole mount adapter accessory)



FZD with separate ballast enclosure

KEY FEATURES AND BENEFITS

- **NEMA 7x6 floodlight distribution pattern is standard**—ideal light distribution for industrial applications; requires fewer luminaires in general lighting applications than required when using general-area luminaires with high-bay reflectors
- **Internal reflector**—available in wide and narrow-beam options; enclosed in glass tube, reducing maintenance and enhancing light output
- **Heavy-duty, cast copper-free aluminum construction with epoxy powder-coat finish and stainless steel hardware**—provides long life in industrial, abusive environments

- **Explosionproof threaded construction**—suitable for hazardous and industrial applications; easy to maintain with no bolted covers
- **O-ring gaskets on all threaded openings**—allow NEMA Type 4X and Marine Listing for the harshest outdoor environments
- **40°C, 55°C and 65°C ambient suitability**—ideal for use in high ambient temperature areas common in industrial facilities
- **Factory-sealed ballast housing**—keeps ballast isolated from wiring chamber
- **Trunnion (yoke) mount design**—standard construction provides the greatest mounting flexibility; can be vertically (wall) or horizontally (rooftop or floor) mounted

- **Simple installation**—requires only two bolts to mount
- **Mounting flexibility**—pole mount with SFA6-XP pole mount adapter (shown below) or wall or ceiling mount with FZD-KIT1 mounting accessory kit (shown above).



POLE MOUNT ADAPTER

CERTIFICATIONS AND COMPLIANCES

NEC/CEC

- Class I, Division 1, Groups B (with suffix -GB*), C and D
- Class I, Zone 1, Groups IIB+H₂ (with suffix -GB*), IIB
- AEx d IIB+H₂ (with suffix -GB*), IIB
- Ex d IIB+H₂ (with suffix -GB*), IIB
- Marine Locations
- Wet Locations
- Enclosure Type 4X
- IP66
- UL Listed (UL Standards 844, 1598, 1598A, 2279)
- cUL Listed (certified by UL to CSA Standard C22.2 No. 137 and CAN/CSA-E60079-1)

*See options for Group B and IIB+H₂ ordering information

STANDARD MATERIALS

- luminaire housing, covers, socket holder, lamptube end rings—copper-free aluminum
- external hardware—stainless steel
- glass lamp tube—heat and impact-resistant tempered glass
- O-ring gaskets—neoprene/silicone
- yoke—aluminum
- trunnion adapter—brass

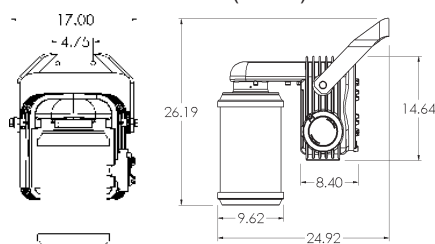
STANDARD FINISHES

- aluminum—Corro-free™ epoxy powder coat
- stainless steel—natural
- brass—natural

LUMINAIRE WEIGHTS (lbs)

LUMINAIRE	FZDS (HPS)	FZDM (MH)
150-watt	72	75
175 to 250-watt	77	77
400-watt	80	80

DIMENSIONS (inches)



RATINGS

SOURCES/WATTAGES (MOGUL BASE LAMPS)

- HPS—150, 250 & 400 watts
- MH—175, 250 & 400 watts

VOLTAGES

- Standard Voltage Ballasts
- Multi-tap (120, 208, 240 & 277 V, 60 Hz)
- 120 V, 60 Hz
- 480 V, 60 Hz
- Tri-tap (120, 277 & 347 V, 60 Hz)
- Optional Voltage Ballasts
- 220 V, 60 Hz
- 220 V, 50 Hz

HUB SIZE

- Standard: Two ¾" NPT entries
- Optional: Two 25 mm (M25) entries (consult Cooper Crouse-Hinds)

EFFECTIVE PROJECTED AREA (EPA)

- For windloading
- For proper pole selection

AIMING ANGLE	EPA
0 degrees	1.8 ft²
45 degrees	2.3 ft²



ORDERING INFORMATION

To complete the catalog number, add option suffix(es) if desired.

Example: FZDS2NY400W/MT-S658

LAMP TYPE	WATTS	CATALOG NUMBER* YOKE MOUNT WITH 3/4" NPT HUBS
WIDE-BEAM REFLECTOR—NEMA 7x6 DISTRIBUTION		
High-Pressure Sodium	150**	FZDS2NY150W/MT
	250	FZDS2NY250W/MT
	400	FZDS2NY400W/MT
Metal Halide	175	FZDM2NY175W/MT
	250	FZDM2NY250W/MT
	400	FZDM2NY400W/MT
Pulse-Start Metal Halide	175	FZDM2NY175W/MT-S828
	250	FZDM2NY250W/MT-S828
	400	FZDM2NY400W/MT-S828
NARROW-BEAM REFLECTOR—SPOTLIGHT DISTRIBUTION		
High-Pressure Sodium	150**	FZDS2NY150N/MT
	250	FZDS2NY250N/MT
	400	FZDS2NY400N/MT
Metal Halide	175	FZDM2NY175N/MT
	250	FZDM2NY250N/MT
	400	FZDM2NY400N/MT
Pulse-Start Metal Halide	175	FZDM2NY175N/MT-S828
	250	FZDM2NY250N/MT-S828
	400	FZDM2NY400N/MT-S828

*All FZD catalog numbers shown above are with multi-tap ballasts (120, 208, 240 & 277 V, 60 Hz).

The "MT" in the catalog number may be changed to any of the voltage suffixes listed below.

**150-watt HPS luminaires are furnished with ANSI spec/S55 ballasts for 55 V lamps.

FZD WITH SEPARATE BALLAST ENCLOSURE

GLASS FIBER REINFORCED POLYESTER BALLAST ENCLOSURE WITH CABLE ENTRY

LAMP TYPE	WATTS	T-CODE	CATALOG NUMBER
WIDE BEAM REFLECTOR – NEMA 7×6 DISTRIBUTION			
HPS/MH	250	T4	NOR 000 005 192 506
Metal Halide	400	T3	NOR 000 005 194 106
High Pressure Sodium	400	T3	NOR 000 005 194 006
NARROW BEAM REFLECTOR – SPOTLIGHT DISTRIBUTION			
HPS/MH	250	T4	NOR 000 005 192 505
Metal Halide	400	T3	NOR 000 005 194 105
High Pressure Sodium	400	T3	NOR 000 005 194 005

STAINLESS STEEL BALLAST ENCLOSURE WITH CABLE ENTRY

WIDE BEAM REFLECTOR – NEMA 7×6 DISTRIBUTION			
HPS/MH	250	T4	NOR 000 005 192 502
Metal Halide	400	T3	NOR 000 005 194 102
High Pressure Sodium	400	T3	NOR 000 005 194 002
NARROW BEAM REFLECTOR – SPOTLIGHT DISTRIBUTION			
HPS/MH	250	T4	NOR 000 005 192 501
Metal Halide	400	T3	NOR 000 005 194 101
High Pressure Sodium	400	T3	NOR 000 005 194 001

VOLTAGE SUFFIXES

STANDARD VOLTAGES	SUFFIX	OPTIONAL VOLTAGES	SUFFIX
Multi-tap (120, 208, 240, 277 V, 60 Hz)	/MT	220 V, 50 Hz	/220 50
Tri-tap (120, 277, 347 V, 60 Hz)	/TT	220 V, 60 Hz	/220
120 V, 60 Hz	/120		
480 V, 60 Hz	/480		

OPTIONS

Ballast-Gard™ starter cut-out switch prevents starter pulsing when lamp is cycling or inoperative. Prolongs ballast and igniter life. HPS only. Not available with IR option.

	SUFFIX TO ADD TO CAT.NO.
Factory Assembled with HID lamp installed for additional labor savings.	-FA
Factory Certified: Class I, Division 1, Group B and Class I, Zone 1, Group IIB+H2	-GB
Instant Restrike enables a hot HPS lamp to immediately restrike after a momentary loss of arc due to voltage fluctuation or power outage. It has no effect on the warm-up period of cold lamps. Available for use with 150-watt HPS only.	-IR
Fusing protects ballast and capacitor against abnormal line conditions.	-S658*

ACCESSORIES (order separately)

FOR POLE MOUNTING	CATALOG NO.
Pole mount adapter	SFA6-XP
• Class I, Division 1, Groups B, C and D	
• Attach to yoke; fits 2" NPT conduit pole	
Flexible explosionproof coupling	ECLK236
Elbow fitting	EL296-SA

FOR WALL OR CEILING MOUNTING

Kit includes:

EABC26-SA conduit outlet box,
ECLK236 flexible explosionproof coupling,
and EL296-SA elbow fitting.

FZD-KIT1

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

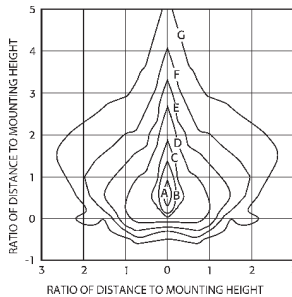
TEMPERATURE PERFORMANCE DATA

LAMP	AMBIENT TEMP °C	CLASS I, DIVISION 1, ZONE 1	SUPPLY WIRE °C
150-watt HPS	40	T3C	75
	55	T3C	75
	65	T3B	90
250-watt HPS	40	T3C	75
	55	T3C	75
	65	T3B	90
400-watt HPS	40	T3C	75
	55	T3C	75
	65	T3B	90
175-watt Metal Halide	40	T3A	75
	55	T3	75
	65	T3	90
250-watt Metal Halide	40	T3A	75
	55	T3	75
	65	T3	90
400-watt Metal Halide	40	T3A	75
	55	T3	75
	65	T3	90

PHOTOMETRICS

Note: There are no aiming angle limitations for the FZD. The only limitations are those encountered by interference of the trunnion arm. The trunnion arm may be mounted on vertical or horizontal surfaces to overcome any limitations.

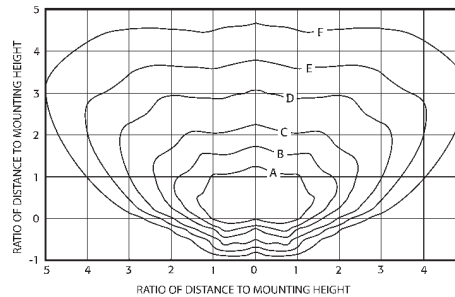
HPS Narrow Beam Reflector



ISO FOOTCANDLE CHART
FZD 400 W High Pressure Sodium (HPS)
Catalog Number FZDS2NY400N
Lamp: 400 W Clear HPS
Lumen rating: 50,000
Luminaire located at 0°, 0° Aiming Angle at 45° down from horizontal
For 150 W HPS, multiply footcandles by 0.32.
For 250 W HPS, multiply footcandles by 0.6.

MOUNTING HEIGHT	FOOTCANDLE VALUES FOR ISO FOOTCANDLE LINES						
	A	B	C	D	E	F	G
10'	200.00	100.00	50.00	20.00	10.00	5.00	2.00
12'	138.89	69.44	34.72	13.89	6.94	3.47	1.39
16'	78.13	39.06	19.53	7.81	3.91	1.95	0.78
20'	50.00	25.00	12.50	5.00	2.50	1.25	0.50
25'	32.00	16.00	8.00	3.20	1.60	0.8	0.32

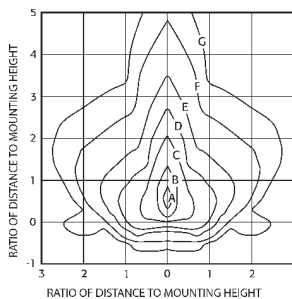
HPS Wide Beam Reflector



ISO FOOTCANDLE CHART
FZD 400 W High Pressure Sodium (HPS)
Catalog Number FZDS2NY400W
Lamp: 400 W Clear HPS
Lumen rating: 50,000
Luminaire located at 0°, 0° Aiming Angle at 45° down from horizontal
For 150 W HPS, multiply footcandles by 0.32.
For 250 W HPS, multiply footcandles by 0.6.

MOUNTING HEIGHT	FOOTCANDLE VALUES FOR ISO FOOTCANDLE LINES					
	A	B	C	D	E	F
10'	20.00	10.00	5.00	2.00	1.00	0.50
12'	13.89	6.94	3.47	1.39	0.69	0.35
16'	7.81	3.91	1.95	0.78	0.39	0.20
20'	5.00	2.50	1.25	0.50	0.25	0.13
25'	3.20	1.60	0.80	0.32	0.16	0.08

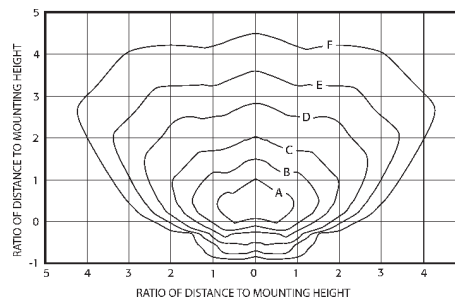
MH Narrow Beam Reflector



ISO FOOTCANDLE CHART
FZD 400 W Metal Halide (MH)
Catalog Number FZDM2NY400N
Lamp: 400 W Clear MH
Lumen rating: 34,000
Luminaire located at 0°, 0° Aiming Angle at 45° down from horizontal
For 175 W MH, multiply footcandles by 0.38.
For 250 W MH, multiply footcandles by 0.6.

MOUNTING HEIGHT	FOOTCANDLE VALUES FOR ISO FOOTCANDLE LINES						
	A	B	C	D	E	F	G
10'	100.00	50.00	20.00	10.00	5.00	2.00	1.00
12'	64.99	34.72	13.89	6.94	3.47	1.39	0.69
16'	39.06	19.53	7.81	3.91	1.95	0.78	0.39
20'	25.00	12.50	5.00	2.50	1.25	0.50	0.25
25'	16.00	8.00	3.20	1.60	0.80	0.32	0.16

MH Wide Beam Reflector



ISO FOOTCANDLE CHART
FZD 400 W Metal Halide (MH)
Catalog Number FZDM2NY400W
Lamp: 400 W Clear MH
Lumen rating: 34,000
Luminaire located at 0°, 0° Aiming Angle at 45° down from horizontal
For 175 W MH, multiply footcandles by 0.38.
For 250 W MH, multiply footcandles by 0.6.

MOUNTING HEIGHT	FOOTCANDLE VALUES FOR ISO FOOTCANDLE LINES					
	A	B	C	D	E	F
10'	20.00	10.00	5.00	2.00	1.00	0.50
12'	13.89	6.49	3.47	1.39	0.69	0.35
16'	7.81	3.91	1.95	0.78	0.39	0.20
20'	5.00	2.50	1.25	0.50	0.25	0.13
25'	3.20	1.60	0.80	0.32	0.16	0.08

Application:

Hazard•Gard luminaires with Trunnion Arm (S812 suffix) and EV912 high bay reflector are used in:

- heavy process industries where flammable or explosive vapors or gases are present
- hazardous areas, both indoors and outdoors where long life and low maintenance costs are desired
- petroleum refineries, chemical, petrochemical and other heavy process industry facilities
- hazardous locations requiring elevated ambient capability
- for mounting to a wall or structure
- mounted on a pole, when used with the SFA6 slipfitter adapter

Features:

- Luminaire is factory wired; power is fed through "wireless" connection block which serves as a mechanical seal between conduit and ballast compartments, eliminating the need for an external, field installed seal. The result is fast, easy installation.
- High bay reflectors of Alzak® aluminum
- Internally fluted glass globes reduce glare and provide comfortable viewing light.
- Wide range of light sources and wattages to meet specific lighting needs – 50, 70, 100, 150, 200, 250 and 400W high pressure sodium (HPS); 100, 175, 250 and 400W mercury vapor (MV); 70, 100, 175, 250 and 400W metal halide (MH).
- High power factor (90%+) ballasts reduce power costs – allow more luminaires per circuit.
- Elevated ambient capability permits reliable operation at high ambient temperature. Selected luminaires are suitable for ambient temperatures up to 65°C.
- Integral ballasts – separate ballasts are not required. Lowest installed cost.
- Factory sealed, porcelain, mogul base socket.
- the trunion arm gives you the ability to offer a Hazard•Gard floodlight with varying degrees of adjustability between -90° and +90°.
- when mounting on a wall, there are numerous mounting arrangements – due to the pre-drilled openings in the wall bracket.

Standard Materials:

- Mounting module, cover, ballast housing, guard, globe ring – copper-free aluminum
- Globe – heat and impact resistant glass
- Exterior hardware – stainless steel
- Lamp socket – porcelain with stainless steel screw shell
- Reflector – high bay: Alzak aluminum

Standard Finishes:

- Copper-free aluminum – epoxy powder coat
- Alzak – natural (anodized)

Options:

- | Description | Suffix to be Added to Cat. No. |
|---|--------------------------------|
| • Fused | S658 |
| • Ballast•Gard | BG |
| • 50-400 HPS only | |
| • Instant Restrike | IR |
| • Cannot be used with BG or QTZ options | |
| • 50-150W LX HPS only | |
| • Quartz Auxiliary Lighting | QTZ |
| • Not available with 400W MH or MV | |
| • Uses 100 watt single ended lamp | |
| • Lamp not included | |
| • Group B Suitability | GB |

Size Ranges:

¾"

Electrical Rating Ranges:

- 120, 208, 240, 277, 347, 480, 600, multi-tap★.
- 50 to 400 watts

Certifications and Compliances:

- NEC/CEC
Class I, Division 1 and 2, Groups B (with GB suffix), C, D
- UL Standard: 844, 595
- CSA Standard: C22.2 No. 137

Ordering Information

- Catalog number includes Guard, Trunnion Arm and High Bay Reflector

Luminaire Cat. No.

NOTE: Replace "volts" with Suffix from Voltage Suffix Table below

HIGH PRESSURE SODIUM

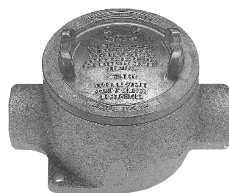
Watts	Hub Size
EVMA42051/volts S812 EV3912	50 ¾"
EVMA42071/volts S812 EV3912	70 ¾"
EVMA42101/volts S812 EV3912	100 ¾"
EVMA42151/volts S812 EV3912	150 ¾"
EVMA42201/volts S812 EV3912	¾"
EVMA42251/volts S812 EV3912	¾"
EVMA42401/volts S812 EV3912	¾"

MERCURY VAPOR

EVMA82101/volts S812 EV3912	100 ¾"
EVMA82171/volts S812 EV3912	175 ¾"
EVMA82251/volts S812 EV3912	250 ¾"
EVMA82401/volts S812 EV3912	400 ¾"

METAL HALIDE

EVMA92071/volts S812 EV3912	70 ¾"
EVMA92101/volts S812 EV3912	100 ¾"
EVMA92171/volts S812 EV3912	175 ¾"
EVMA92251/volts S812 EV3912	250 ¾"
EVMA92401/volts S812 EV3912	400 ¾"



EABC

Hub Size

¾"

Cat. #

EABC26



UNL

90° Angle

Size

¾ to ¾"

Cat. #

UNL205



Temperature Performance Data

Hazard•Gard Luminaire with Trunnion Arm (S812 suffix)

Watts	Maximum Ambient Class I		
	40°C	55°C	65°C
High Pressure Sodium			
50	T4	T4	T3C
70	T4	T4	T3C
100	T4	T4	T3C
150	T4	T4	T3C
200	T3A	—	—
250	T3A	—	—
400	T3A	—	—
Mercury Vapor			
100	T3	T3	—
175	T3	T3	—
250	T3	T3	—
400	T2D	—	—
Metal Halide			
70	T3	T3	—
100	T3	T3	—
175	T3	T3	—
250	T3	T3	—
400	T2D	—	—

NOTE: See Section 4L for additional luminaire information.

Alzak is a registered trademark of ALCOA

★ CSA Certified luminaires are not available with multi-tap ballast or S658 fuse option.



ECGJH

Flexible

Length	Size	Cat. #
30	¾"	ECGJH230

RCDE Series

Incandescent Floodlights

Cl. I, Div. 1 and 2, Groups C,D
Cl. I, Zone 1

7L

Application:

RCDE incandescent lighting luminaires are permanently installed to provide general illumination in locations having hazardous atmospheres, such as:

- oil refineries
- oil and gasoline loading docks
- aircraft servicing docks and shelters
- distilleries
- paint manufacturing plants
- pumping stations
- other Class I, Groups C and D locations

Features:

RCDE incandescent lighting luminaires have fixed mountings as follows:

- RCDE-6 – junction box base with four mounting feet or 2" threaded hub (fill sealing chamber with *Chico*® A after conductors are in place)
- RCDE-6 adjustment allows rotation of 360° horizontally and 75° vertically.
- Locking screws hold housing firmly in position
- RCDE-10 – junction box base with four mounting feet
- door which threads into housing includes heat and impact-resistant lens. Door has notches or holes provided for ease of removing or tightening
- factory wired leads through explosion-proof seal to junction box
- adjustment that allows rotation of 360° horizontally and 135° vertically. Locking bolts or clamps hold housing firmly in position

Standard Materials:

Body – copper-free aluminum;
Lens – glass, heat and impact resistant

Standard Finishes:

- Natural

Size Ranges:

- RCDE – Fixed mounting – 3/4" hubs

Capacity Ranges:

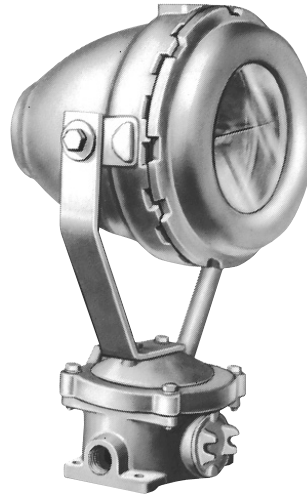
- RCDE-6 – 150 watt, PAR38 or R40; 300 watt, R40 (medium base)
- RCDE-10 – 500 watt, PAR64 (Ext. Mog End Prong)

Certifications and Compliances:

- NEC/CEC:
RCDE – Class I, Division 1 and 2, Groups C,D Class I, Zone 1 (see photometric data listing)
 - UL Standard: 844
 - CSA Standard: C22.2 No. 137 (RCDE6 only)
- Note: CEC/CSA Certified RCDE6- Cooper Crouse-Hinds Canada luminaires only.

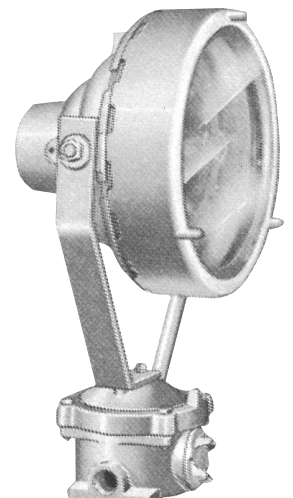
Ordering Information:

After identifying the hazardous area, select the model of lighting luminaire required for that area. Then from the photometric data, select appropriate Cat. No. based on type of mounting desired. Example: RCDE-10 No. 47282



RCDE-6

Description	Cat. #
Junction box base (2" threaded hub)	44978A
Junction box base (4 mtg. feet)	44719B



RCDE-10

Description	Cat. #
Junction box base (4 mtg. feet)	47282A

Temperature Performance Data

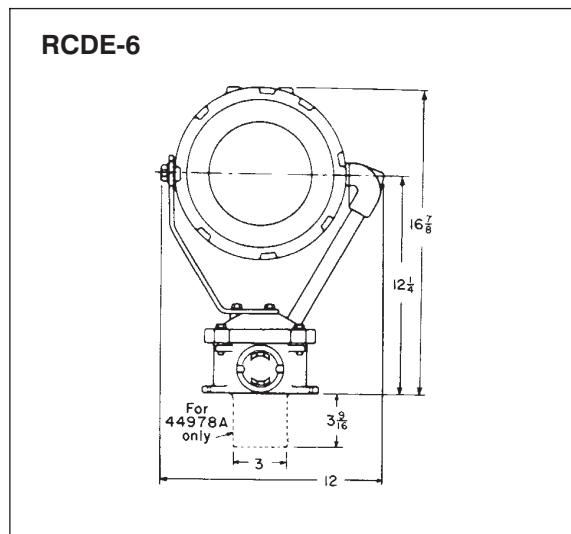
(based on 40°C Ambient)

	150W	300W	500W
RCDE-6	T3B	T2B	
RCDE-10			T3C

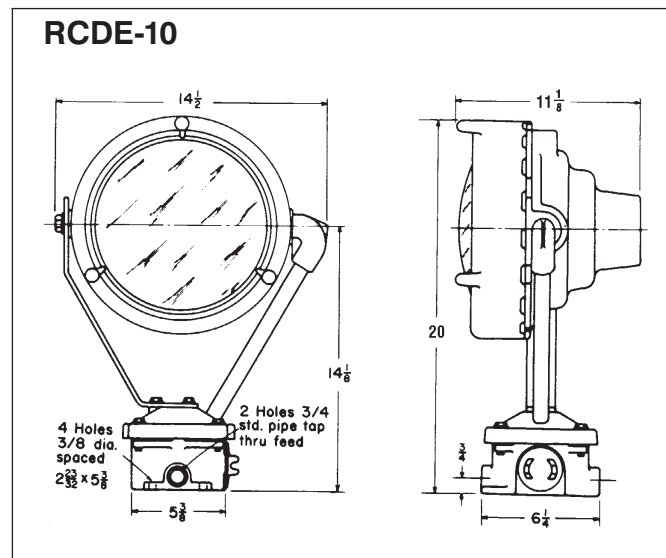
7L RCDE Series Incandescent Floodlights

Dimensions & Weights
Photometric Data
Cl. I, Div. 1 and 2, Group D
Explosionproof

Dimensions (inches)



Dimensions



Fixture Weights

RCDE-6		RCDE-10	
Cat. #	Lbs. (Net)	Cat. #	Lbs. (Net)
44719B	21.0	47282A	26.0
44978A	21.0		

RCDE Photometric Data

Lamp Watts and Type	Location	Beam Spread		Beam Lumens	Av. Max. Candle Power	Model
		Hor.	Vert.			
150 Watt PAR38 Flood	Class I Groups C,D	60°	60°	1690	4000	RCDE-6
150 Watt PAR38 Spot		28°	28°	1200	11500	
300 Watt* R40 Flood	Class I Group D	123°	123°	3200	1950	RCDE-10
300 Watt R40 Spot		60°	60°	3100	8900	
500 Watt, PAR64 (500 PAR64/NSP)	Class I, Group D	19°	14°	3000	110000	
500 Watt, PAR64 (500 PAR64/MFL)		35°	19°	3300	37000	
500 Watt, PAR64 (500 PAR64/WFL)		55°	32°	3400	13000	

* CSA certified fixtures are for 150 watt lamp maximum.

Description	Page No.
Application/Selection	894-897
Hazardous Area Hangers	
Adjustable Type UNR	911
Flexible Type EC Series	905
Locking Coupling COUP Series	911
Outlet Box Type EAHC/EFHC Series GUA/GUF Series CPS Series	906 909, 910 908
Outlet Box Type with Flexible Cushion EFHX Series	907
Non-Hazardous Area Fittings	
Conduit Clamps CHS Series	903
Non-Hazardous Area Hangers – Flexible Type	
Ball and Cushion ARB Series UNJ/UNJC Series	901 899, 900
Cushion – Vaportight AHG Series UNHC Series	899, 900 903
Hooks and Loops UNE, UNH, UNHC Series	902, 903
Outlet Box – Ball and Cushion AL Series	898, 900
Quick Disconnect Type FHM Series	904

8L Luminaire Hangers and Accessories – For Pendant Mount

Application & Selection

Application:

Luminaire hangers listed in this section are used for pendant suspension of incandescent, high intensity discharge and fluorescent industrial luminaires. They are especially suitable for use in locations where moisture, dust, and corrosion are a problem.

Hangers for Non-Hazardous Locations:

- Hangers listed provide a wide variety of mounting means. Luminaires may be suspended from cast outlet boxes, stamped steel outlet boxes, or directly from the conduit system. Also offered are several styles of hook type hangers, used to suspend luminaires by means of conduit stems or support rods from span wires, horizontal conduit and luminaire loops.
- All hangers are flexible, permitting luminaire and supporting stem to swing freely. This feature permits luminaires to hang plumb and prevents damage to the luminaire, stem and outlet box in case of high wind or accidental impact.
- Hangers are constructed so that luminaires cannot be rotated, thereby eliminating wire twisting and possible damage to connections.
- Cushion hangers, listed for most styles, include a spring which carries the weight of the luminaire. This feature prolongs lamp life and protects the luminaire assembly from shock or vibration.
- All hangers are easily installed. With many, the luminaire, stem and support member can be assembled and wired at the work bench before making the final installation. With several, a quick disconnect plug and receptacle feature is either provided or can be easily arranged, to facilitate luminaire installation and removal for maintenance.

Hangers for Hazardous Locations:

- As required by NEC Article 501 and CEC Part I Section 18, rigid conduit luminaire stems longer than 12" must be permanently and effectively braced or flexibility provided in the form of a fitting or flexible support.
- A variety of hangers is offered for both rigid conduit suspension and flexible suspension. Flexible luminaire hangers listed comply with NEC Article 501 and CEC Part I Section 18 and also permit luminaires to hang plumb.

Considerations for Selection:

Location:

- Will it be a hazardous or non-hazardous location?
- Will it require more stringent corrosion protection material?

Lighting luminaire to be used:

- Some hangers can be used with a multitude of luminaires; others are specialized.
- Weight of luminaire is a consideration in selecting cushion hangers.

Typical Luminaire Weights:

Luminaire Type	Weight (lbs.)	Luminaire Type	Weight (lbs.)	Luminaire Type	Weight (lbs.)
Incandescent:		H.I.D.:		Hazard-Gard® Series	
<i>VAPORGARD™ Series</i>		<i>Champ® Series</i>			
VDA12	1½	AMV	20¼	EVMA50W HPS	41
VDA12G	4	DMVC2A100GP	28¾	EVMA70W HPS	41
VDA12GP	4¼	DMVC2A175GP	30	EVMA100W HPS	45
VDA15	1¼	DMVC2A250GP	31¾	EVMA100W MV	39
VDA15G	3	DMVM2A175GP	33	EVMA150W HPS	
VDA15GP	3¼	DMVM2A250GP	33¾	(55V)	46
VDA23	1½	DMVS2A070GP	30¾	EVMA150W HPS	
VDA23G	4	DMVS2A100GP	31¾	(100V)	45
V Series		DMVS2A150GP	34	EVMA175W MV	42
V275	2¾	LMVS2A035GP	10¾	EVMA175W MH	43
V2759	4¼	LMVS2A050GP	11¾	EVMA200W HPS	47
		LMVS2A070GP	11¾	EVMA250W HPS	47
EV Series		LMVS2A100GP	12¼	EVMA250W MV	44
EVA240	7½	VMVC2A100GP	15	EVMA250W MH	44
EVA210	7¾	VMVC2A175GP	17¼	EVMA400W HPS	56
EVA215	8	VMVC2A250GP	31	EVMA400W MV	50
EVA220	10½	VMVC2A250GR305	34	EVMA400W MH	52
EVA230	19	VMVC2A250GRD4	31½	Fluorescent:	
EVA292	18	VMVC2A400GR305	37	DMVF2A026GP	19¼
<i>Corro®Gard® Series</i>		VMVC2A400GRD4	34½	DMVF2A039GP	22¼
NDA32	5½	VMVM2A175GP	17¼	DMVFB2A026GP	19½
NDA32G	7½	VMVM2A250GP	34	DMVFB2A039GP	22½
NDA33	5½	VMVM2A250GR305	37	EVF22062	57
NDA33G	8¼	VMVM2A250GRD4	34½	EVF24062	94
		VMVM2A400GR305	38	EVF22082	52
		VMVM2A400GRD4	35½	FN4240	52
		VMVS2A050GP	15¼	FN4340	54
		VMVS2A070GP	16¼	FN4260	58
		VMVS2A100GP	16¼	NFW4240	21
		VMVS2A150GP	16½	VFA222G	4
		VMVS2A200GP	31	EVFT (2 Lamp)	19½
		VMVS2A200GR305	34	EVFT (4 Lamp)	36½
		VMVS2A200GRD4	31½	FVS	12
		VMVS2A250GP	31	Reflector/Refractor Type	
		VMVS2A250GR305	34	EV3912	1
		VMVS2A250GRD4	31½	RA64, 636	1¼
		VMVS2A400GP	40	RA70, 71, 739, 725	1
		VMVS2A400GR305	43	RD64, 636	1¼
		VMVS2A400GRD4	40½	RD70, 71, 739, 725	1
				PR2, 3, 5	3
				R2	13½
				R5	13
				GRD4	13¾
				G241	2¼
				G245	2¼
				GR305, GR205	14

Luminaire Hangers and Accessories – For Pendant Mount

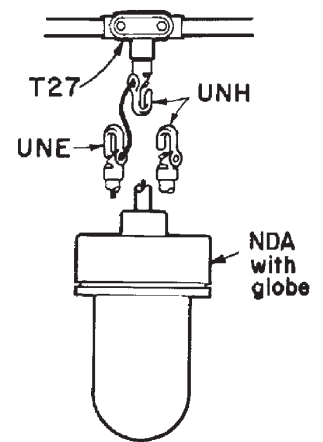
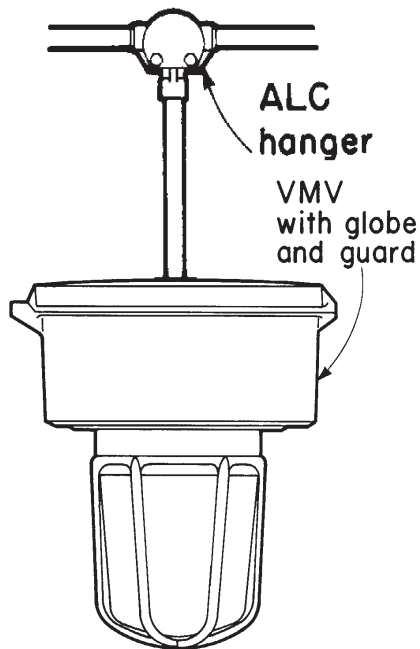
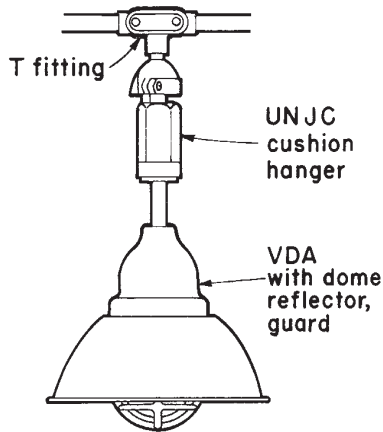
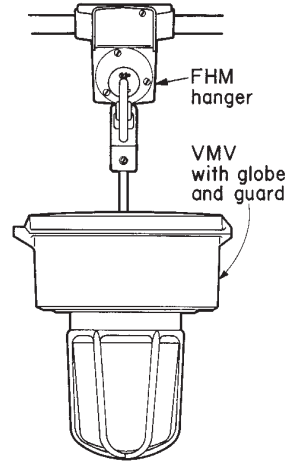
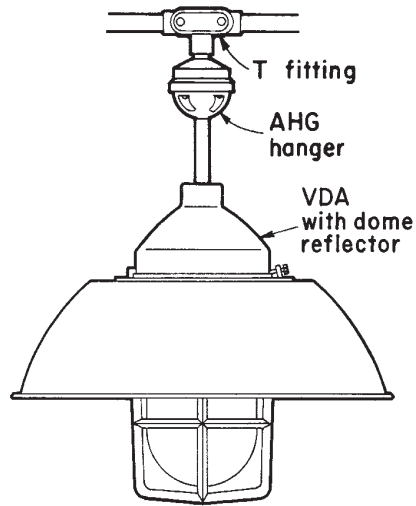
8L

Quick Selector Chart

Quick Selector Chart

Hanger Type	Function	NEC/CEC Hazardous Area Compliances	Use with Luminaire Type	Use with Mtg. Box	Luminaire Weight Capacity (Cushion)	Luminaire Weight Capacity (Ball or Plain Type)	Standard Material
AL	Outlet box and hanger	Class I, Div. 2	Any non-hazardous or Class I, Div. 2	None needed	3-48 lbs.	125 lbs.	Body – Feraloy® iron alloy Nipple – malleable iron Cover – sheet steel
FHM	Quick disconnect between luminaire and outlet box	Not applicable	Any non-hazardous	None needed		125 lbs.	Body – copper-free aluminum Cover – steel Loop and assembly – copper-free aluminum or steel
AHG	Gasketed hanger (vaportight)	Class I, Div. 2; Class II, Div. 2; Class III Wet locations NEMA 3, 3R	Any non-hazardous or Div. 2 luminaires	Any	4-30 lbs.	—	Housing – malleable iron and Feraloy iron alloy Stem support – Feraloy iron alloy
UNJ/UNJC	Ball and cushion hanger	Class I, Div. 2	Any non-hazardous or Class I, Div. 2	Any	6-48 lbs.	125 lbs.	Body – malleable iron Clamp – copper-free aluminum
ARB	Ball or cushion hanger	Class I, Div. 2	Any non-hazardous or Class I, Div. 2	GRF	4-30 lbs.	125 lbs.	Body – Feraloy iron alloy
UNE, UNH, UNHC	Quick disconnect hanger hook	Class I, Div. 2	Any non-hazardous or Class I, Div. 2	Not applicable	12-64 lbs.	125 lbs.	Malleable iron, copper-free aluminum
EC	Explosion-proof flexible hanger	Cl. I, Groups A, B, C, D; Cl. II, Groups E, F, G; Cl. III	Any hazardous	Any	—	—	Body – bronze hose Fittings – steel
GUA, GUJ, GUF	Explosion-proof boxes and hanger covers	Cl. I, Groups C, D; Cl. II, Groups E, F, G; Cl. III	Any hazardous	None needed	—	125 lbs.	Boxes – Feraloy iron alloy Cover – copper-free aluminum
EAHC, EFHC	Explosion-proof hanger	Cl. I, Groups A, B, C, D; Cl. II, Groups E, F, G; Cl. III	Any hazardous	None needed	—	125 lbs.	Body – Feraloy iron alloy Cover – copper-free aluminum
UNR	Explosion-proof adjustable hanger	Cl. I, Groups C, D; Cl. II, Groups E, F, G; Cl. III	Any hazardous or non-hazardous	Any	—	125 lbs.	Feraloy iron alloy
EFH	Explosion-proof boxes and hangers	Cl. I, Groups C, D; Cl. II, Groups E, F, G; Cl. III	Any hazardous	None needed	65 lbs.	—	Feraloy iron alloy

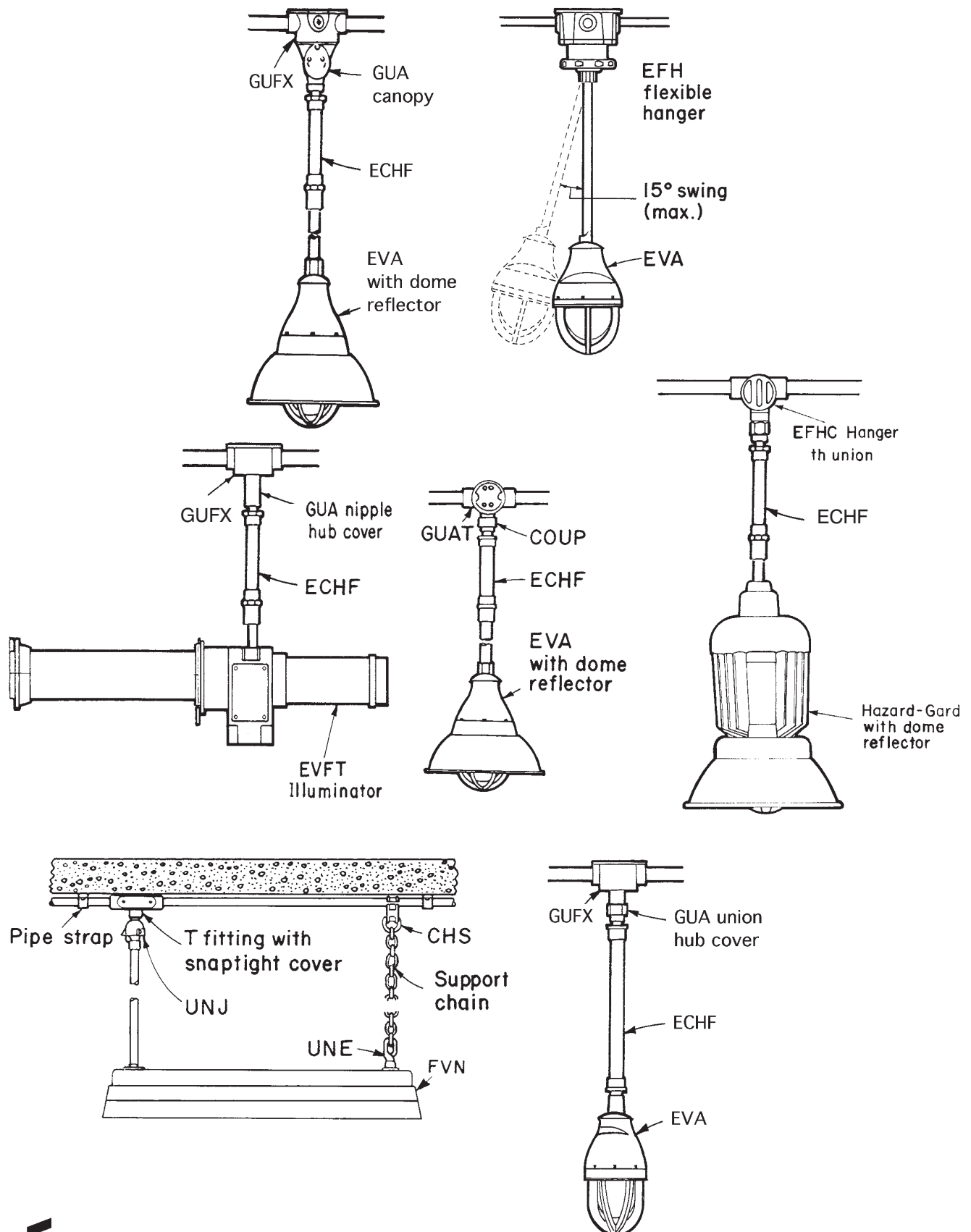
8L Luminaire Hangers and Accessories – For Pendant Mount Typical Installations



Luminaire Hangers and Accessories – For Pendant Mount

Typical Installations

8L



8L Lighting Accessories

8L AL Flexible Luminaire Hangers For Pendant Mount

Class I, Div. 2, Groups A, B, C, D

Features:

Functions as both conduit outlet box and luminaire hanger. Hubs are provided for threading the conduit directly into the hanger body. For use with incandescent, H.I.D. and fluorescent luminaires.

- Supporting nipple, ball or cushion type, is a universal joint permitting luminaire to swing through an angle of 20 degrees in any direction from the perpendicular.
- Cover has one screw hole and one open slot – easily swung aside for wiring without removal and possible loss of cover.
- Luminaire, conduit stem and nipple can be assembled and wired at the work bench. The assembly is then placed in the hanger body and luminaire wires spliced to the circuit wires.
- Provided with a separate grounding wire for ground connections.

Standard Materials:

- Body – Feraloy® iron alloy
- Nipple – malleable iron
- Cover – sheet steel

Standard Finishes:

- Feraloy and malleable iron – zinc electroplate and aluminum acrylic paint
- Sheet steel – electrogalvanized with chromate finish

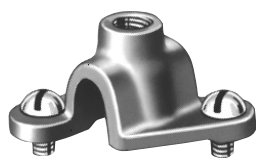
Size Ranges:

- Conduit hubs – 3/4" to 1"
- Luminaire stem – 1/2" and 3/4"
- Luminaire weight – cushion type, 3 to 48 lbs.; ball type, 125 lbs.

Options:

- The following special options are available from factory by adding suffix to Cat. No.:

Description	Suffix to be Added to	
	Cat. #	
Suspension attachment for span wire or threaded rod. See listings	S1	



Suspension Attachment

For horizontal cable or vertical support rod

AL hangers can be furnished with a loop fastened to the top of the body to provide a means for suspending luminaires from vertical support rods or horizontal span wires. The loop will take a wire or cable with a maximum diameter of 3/8". The boss on top of the loop is tapped 3/8"-16 to accept a threaded rod.



Ball



Cushion

ALC

Ball

Luminaire Stem Size	Conduit Size	Cat. #
1/2	3/4	ALC21
3/4	3/4	ALC22
3/4	1	ALC32

Cushion

Luminaire Stem Size	Conduit Size	Luminaire Weight Lbs.	Cat. #
1/2	3/4	3 to 6	ALC214
3/4	3/4		ALC224
3/4	1		ALC324
1/2	3/4	6 to 12	ALC218
3/4	3/4		ALC228
3/4	1		ALC328
1/2	3/4	12 to 24	ALC2116
3/4	3/4		ALC2216
3/4	1		ALC3216
1/2	3/4	24 to 48	ALC2132
3/4	3/4		ALC2232
3/4	1		ALC3232



Ball



Cushion

ALT

Ball

Luminaire Stem Size	Conduit Size	Cat. #
1/2	3/4	ALT21
3/4	3/4	ALT22
3/4	1	ALT32

Cushion

Luminaire Stem Size	Conduit Size	Luminaire Weight Lbs.	Cat. #
1/2	3/4	3 to 6	ALT214
3/4	3/4		ALT224
3/4	1		ALT324
1/2	3/4	6 to 12	ALT218
3/4	3/4		ALT228
3/4	1		ALT328
1/2	3/4	12 to 24	ALT2116
3/4	3/4		ALT2216
3/4	1		ALT3216
1/2	3/4	24 to 48	ALT2132
3/4	3/4		ALT2232
3/4	1		ALT3232

AHG, UNJ and UNJC Flexible Luminaire Hangers

For Pendant Mount

AHG – Class I, Div. 2, Groups A, B, C, D
Class II, Div. 2, F, G
Class III

Wet Locations NEMA 3, 3R

UNJ, UNJC – Class I, Div. 2, Groups A, B, C, D

8L

Features:

- For connection to conduit hub or hub cover of supporting conduit fitting
- For incandescent, H.I.D., and fluorescent luminaires
- Cushion support for conduit stem is a universal joint permitting luminaire to swing through an angle of 8 degrees in any direction from the perpendicular
- Gasketed by means of a durable neoprene diaphragm which excludes moisture and dirt from both luminaire and conduit system

Standard Materials:

- Housing: top cap – malleable iron; bottom cap – *Feraloy*® iron alloy
- Luminaire stem support – *Feraloy* iron alloy

Standard Finishes:

- *Feraloy* iron alloy and malleable iron – electrogalvanized and aluminum acrylic paint

Size Ranges:

- Male nipple – 3/4"
- Luminaire stem – 3/4"
- Luminaire weight – 4 to 30 lbs.



AHG

Cushion Vaportight for Class I, Div. 2; Class II, Div. 2; Class III

Luminaire Stem Size*	Male Nipple Size*	Luminaire Weight Lbs.	Cat. #
3/4	3/4	4 to 8	AHG22103
3/4	3/4	8 to 16	AHG22104
3/4	3/4	16 to 30	AHG22111

Certifications and Compliances:

Class I, Div. 2
Class II, Div. 2
Class III
Wet Locations
NEMA 3,3R

Features:

- For connection to conduit hub or hub cover of supporting conduit fitting
- For incandescent, H.I.D., and fluorescent luminaires
- Supporting nipple, ball or cushion type, is a universal joint permitting luminaires to swing through an angle of 20 degrees in any direction from the perpendicular

Standard Materials:

- Body and nipple – malleable iron
- Clamp – copper-free aluminum

Standard Finishes:

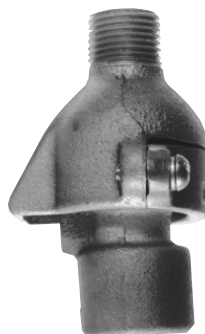
- Malleable iron – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural finish

Size Ranges:

- Male nipple – 1/2" and 3/4"
- Luminaire stem – 1/2" and 3/4"
- Luminaire weight: cushion type – 6 to 48 lbs.; ball type – 125 lbs.

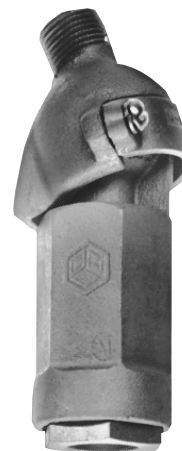
Certifications and Compliances:

- NEC: Class I, Div. 2.



UNJ Ball

Luminaire Stem Size	Male Nipple Size	Cat. #
1/2	1/2	UNJ1
3/4	3/4	UNJ2



UNJC Cushion

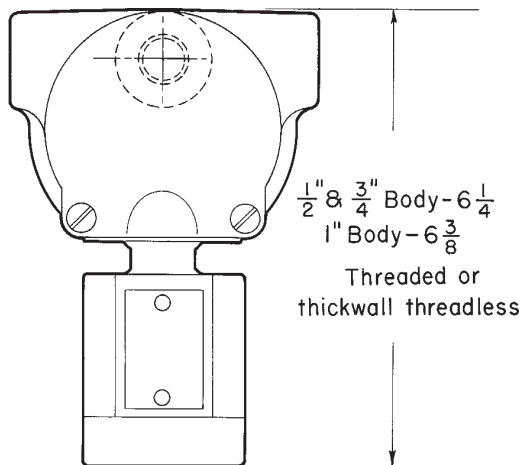
Luminaire Stem Size*	Male Nipple Size*	Luminaire Weight Lbs.	Cat. #
3/4	3/4	6 to 12	UNJC28
3/4	3/4	12 to 24	UNJC216
1/2	1/2	24 to 48	UNJC132
3/4	3/4		UNJC232

* 1/2" connection can be made by using reducers.

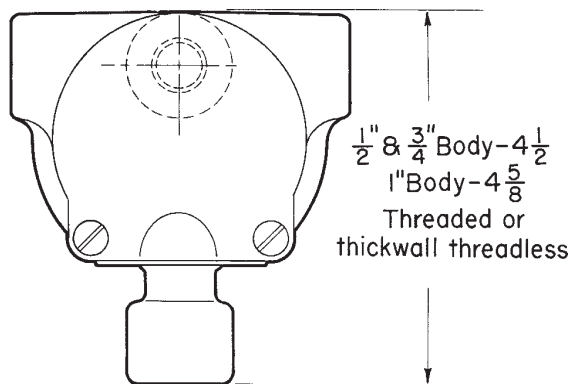
8L Flexible Luminaire Hangers

For Pendant Mount
Dimensions

AL Series

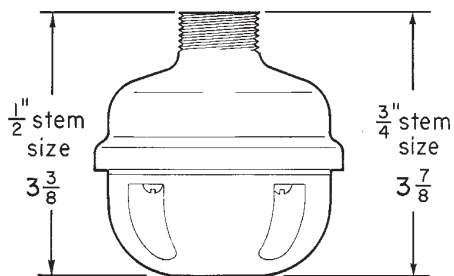


Cushion

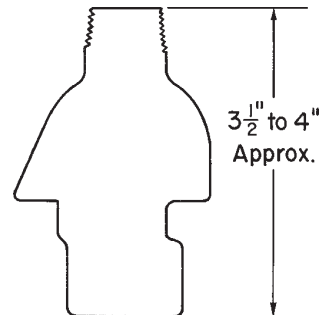


Ball

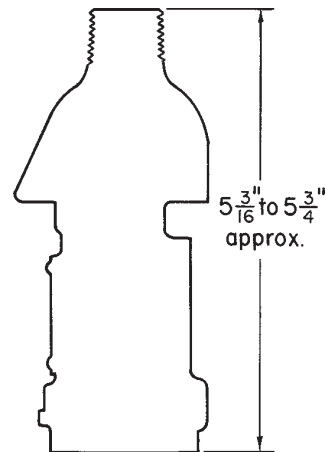
AHG



UNJ



UNJC



ARB and GS Flexible Luminaire Hangers

For Pendant Mount

Class I, Div. 2, Groups A, B, C, D

8L

Features:

- Available in two styles – one for direct attachment to GRF cast outlet boxes by 4 screws, the other for direct attachment to 4" octagonal stamped steel outlet boxes by 2 screws. For incandescent, H.I.D. and fluorescent luminaires
- Both styles available with ball or cushion support for conduit stem to permit luminaire swing in any direction. Ball type provides 11 degree swing, cushion type 8 degree swing from the perpendicular
- Gasketed cushion hangers for GRF are provided with a durable neoprene diaphragm which excludes moisture and dirt from both luminaire and conduit system

Standard Materials:

- Mounting plate: for GRF – *Feraloy*® iron alloy; for 4" outlet boxes – sheet steel
- Hanger body and luminaire stem support – *Feraloy* iron alloy

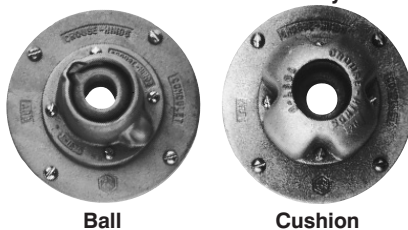
Standard Finishes:

- Feraloy* – electrogalvanized and aluminum acrylic paint
- Sheet steel – electrogalvanized with chromate finish

Size Ranges:

- Luminaire stem – 1/2" and 3/4"
- Luminaire weight: cushion type – 4 to 30 lbs.; ball type – 125 lbs. (ARB6 and ARB2 maximum weight 60 lbs.)

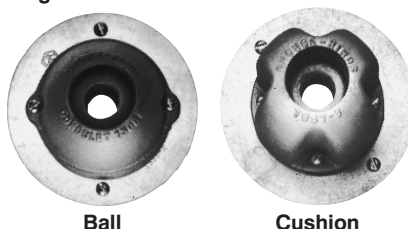
For GRF and VXF outlet boxes only



Ball

Cushion

For GRF and VXF outlet boxes and 4" octagonal outlet boxes



Ball

Cushion

ARB Fits GRF and VXF Outlet Boxes

Ball

Description	Luminaire Stem Size	Luminaire Weight (Max.)	Cat. #
Surface	1/2	125	ARB62
Flush	1/2	125	ARB67
Surface	125	3/4	ARB662

Cushion Surface

Luminaire Stem Size	Luminaire Weight Lbs.	Cat. #
1/2	4 to 8	ARB82
1/2	8 to 16	ARB102
1/2	16 to 30	ARB122

Cushion Surface – Vaportight with Neoprene Diaphragm

Luminaire Stem Size	Luminaire Weight Lbs.	Cat. #
1/2	4 to 8	ARB821
1/2	8 to 16	ARB1021
1/2	16 to 30	ARB1221

ARB Fits GRF, VXF and 4" Outlet Boxes

Ball

Luminaire Stem Size	Luminaire Weight (Max.)	Cat. #
1/2	60	ARB6
3/4	60	ARB2

Cushion

Luminaire Stem Size	Luminaire Weight Lbs.	Cat. #
1/2	4 to 8	ARB8
1/2	8 to 16	ARB10
1/2	16 to 30	ARB12

8L UNE, UNH and UNHC Flexible Luminaire Hangers For Pendant Mount

Cl. I, Div. 2 Groups A, B, C, D

The following applies to all items on this page:

Application:

- Provides a simple, inexpensive, quick disconnect method for hanging pendant luminaires. For incandescent, H.I.D. and fluorescent luminaires
- Permits free swing in any direction to prevent damage to luminaire stem. Cushion style provides additional protection from vibration to prolong lamp life

Features:

- Female hooks and loops are used with rigid conduit luminaire stems to suspend luminaires. They may also be used with male hooks and loops, threaded into a conduit outlet hub.
- All hooks and loops are provided with openings for passage of luminaire wires. Luminaire, conduit stem and hook or loop can be assembled and wired at the work bench. The assembly is then hung on the fixed hook and connection made.
- For ease of relamping and maintenance, the outlet fitting can be equipped with an attachment plug receptacle cover and a matching plug cap used with the luminaire assembly. For permanent wiring a wire hole cover may be used.

Applicable to UNE and UNH (upper listings) only:

Features:

- Shape of hooks is such that accidental disengagement is impossible
- Diameter of wire opening 1/2"

Standard Materials:

- Malleable iron

Standard Finishes:

- Cadmium electrogalvanized and aluminum acrylic paint

Size Ranges:

- Luminaire stem or hub – 1/2" and 3/4"
- Luminaire weight – 125 lbs.



Male



Female



Male



Female

UNH

UNE

UNE and UNH Flexible Luminaire Hangers For Pendant Mount

Type	Style	Luminaire Stem Size	Luminaire Weight Lbs.	Cat. #
UNH	Male	1/2	125	UNH16
		3/4	125	UNH26
	Female	1/2	125	UNH1
		3/4	125	UNH2
UNE	Male	1/2	125	UNE16
		3/4	125	UNE26
	Female	1/2	125	UNE1
		3/4	125	UNE2



Female



Female Cushion

UNH and UNHC Flexible Luminaire Hangers

Type	Style	Luminaire Stem Size	Luminaire Weight Lbs.	Cat. #
UNH	Female	1/2	125	UNH182
UNHC	Female Cushion	3/4	12 to 24	UNHC216
		3/4	24 to 48	UNHC232
		3/4	48 to 64	UNHC264

Applicable to UNH and UNHC (lower listings) only:

Features:

- Hooks are shaped to permit easy installation of large heavy luminaires, such as H.I.D. and fluorescent units
- Diameter of wire opening 5/8"

Standard Materials:

- Copper-free aluminum

Standard Finishes:

- Natural

Size Ranges:

- Luminaire stem – 1/2" and 3/4"
- Luminaire weight: cushion type – 12 to 64 lbs.; plain type – 125 lbs.

For Support Only CHS Conduit Clamp; UNH Conduit Hook; For Pendant Mount Fluorescent Luminaires

Application:

- Used for support of pendant fluorescent luminaires
- UNHC provides cushion support for luminaires suspended by 1/4" or 5/16" threaded rod, and is used with the ring of CHS conduit clamps
- UNH hook provides an extremely simple means of conduit suspension for the unwired end of a fluorescent luminaire, as it merely hooks over the horizontal supporting conduit

Features:

- The bushing in UNHC cushion hangers is tapped for both 1/4" and 5/16" suspension rod, with the lower half tapped 5/16". Either size rod can be used without reversing the bushing
- CHS conduit clamp firmly grips the conduit and the ring at bottom accepts either a hooked rod or the UNHC cushion hanger for threaded rod. Will also accept UNH and UNHC hangers for conduit stem listed on the preceding page.
- The UNH conduit hook fits over conduit up to and including 1" and has a hub for attachment of a 1/2" conduit stem



UNHC Cushion Luminaire Hangers

Luminaire Weight Lbs.	Support Rod Tap	Cat. #
12 to 24	1/4"-20	UNHC2816
24 to 48	and	UNHC2832
48 to 64	5/16"-18	UNHC2864



Clamp



Hook

CHS Conduit Clamp and UNH Hook

Conduit Size	Clamp Cat. #	Hook Cat. #	Hook Hub Size
1/2	CHS1437	UNH13	1/2
3/4	CHS2437		
1	CHS3437		

Standard Materials:

- UNHC – copper-free aluminum
- CHS-body – malleable iron; clamp – copper-free aluminum; ring – steel wire
- UNH – *Feraloy*® iron alloy

Standard Finishes:

- Copper-free aluminum – natural finish
- *Feraloy* and malleable iron – electrogalvanized and aluminum acrylic paint
- Steel wire – electrogalvanized with chromate finish

Size Ranges:

- Luminaire stem (UNH) – 1/2"
- Conduit (CHS): 1/2" to 1"
- Luminaire weight: UNHC cushion – 12 to 64 lbs.; CHS, UNH – 125 lbs.

8L FHM Power Hook Luminaire Hangers

For Pendant Luminaires

Features:

- For mounting H.I.D. type luminaires in non-hazardous locations
- Power hook housing has two $\frac{3}{4}$ " through feed hubs and one $\frac{3}{4}$ " hub on the top for pendant mounting. Through feed hubs are furnished with flush plugs
- Cast mounting lugs are provided for direct ceiling mounting
- Housing contains a roomy 15 cu. in. splicing chamber and interlocking type receptacle with leads
- Plugs and receptacles are interlocking type to prevent accidental disengagement. When plug is inserted, hook is blocked and luminaire assembly cannot be removed. To service the luminaire, pull the plug, unhook the loop luminaire assembly and take it to a convenient servicing area
- Loop can move a maximum of 30° , allowing the power hook to be mounted on a canted ceiling. The luminaire assembly will hang true to the vertical
- Loop and hook are shaped for self alignment and resist twisting of luminaire by gusts of wind or light drafts
- Supporting loop is furnished with 16" of #16-3/C type SO cord and an interlocking type plug

Standard Materials:

- Power hook body – copper-free aluminum
- Access cover – zinc plated cold rolled steel
- Loop – copper-free aluminum

Standard Finishes:

- Copper-free aluminum – natural finish
- Steel – electrogalvanized with chromate finish

Size Ranges:

- Hubs – $\frac{3}{4}$ "
- Luminaire weights: loop – up to 125 lbs.;
- Loop luminaire stem size – $\frac{3}{4}$ "

Electrical Rating Ranges:

- 480 volts, 14 amps, 2 wire, 3 pole

Certifications and Compliances:

- Meet UL and NEMA requirements for the listed electrical ratings

FHM

For H.I.D. Type Luminaires with voltages up to 480 volts

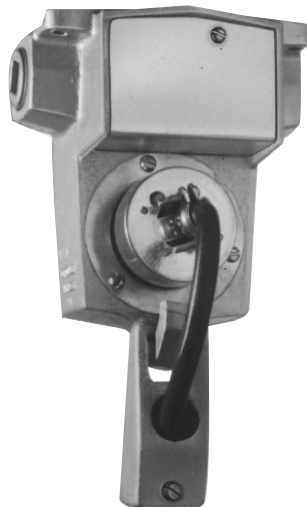
Loop
Plain

Hubs*
 $\frac{3}{4}$

Luminaire
Stem*
 $\frac{3}{4}$

Luminaire
Weight
Lbs.
125

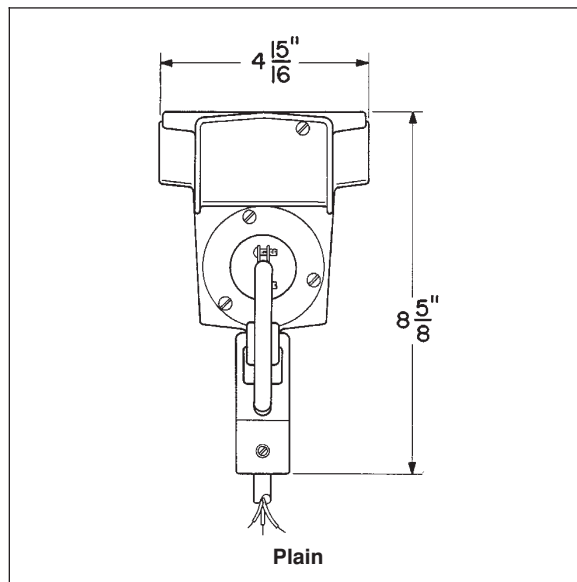
Cat. #
FHM201



Plain

* $\frac{1}{2}$ " connection can be obtained by using reducers

Dimensions



ECHF Flexible Luminaire Supports

For Pendant Mount

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

8L

Application:

ECHF series flexible luminaire supports are used in hazardous locations:

- where a luminaire must hang more than 12" from its supporting junction box (as specified by NEC Article 501 and CEC Part I Section 18)
- to assure that luminaires hang plumb and will swing freely if accidentally struck.
- Prevents damage to luminaire and supporting outlet fitting

Features:

- Complies with NEC Article 501/CEC Part I Section 18
- Free swinging in any direction through a large arc
- Good electrical continuity – no bonding jumpers needed
- Watertight construction
- Insulating liner of asphalt impregnated fiber to protect conductors
- Constructed to reinforced flexible metal hose
- Two female end fittings, each with a removable short nipple
- Nipples fit set screw type luminaire hubs
- Female end fittings are equipped with set screws to prevent turning during relamping and loosening of fitting with vibrations

Standard Materials:

- Inner core – brass
- Outer braid – bronze
- End fittings – bronze
- End fittings – brass (CSA certified units)

Standard Finishes:

- Brass and bronze – natural

Options:

Suffix to be
Added to
Cat. #

Description

Material – stainless steel hose and end fittings S516

Finish – flexible neoprene protective coating S758

Special lengths and sizes available Detailed information on request

Size Ranges:

- Flexible length – 4" to 18"
- Nipple size – 1/2" and 3/4" (see "Options")
- Luminaire weight – up to 125 lbs.

Certifications and Compliances:

- NEC/CEC: Class I, Groups A, B, C, D
Class II, Groups E, F, G
Class III
- UL Standard: 886
- CSA Standard: C22.2 No. 30



ECHF

Description

Flexible Length	Nipple Size	Overall Length	Cat. #
4	1/2	10	ECHF14
	3/4	10	ECHF24
6	1/2	12	ECHF16
	3/4	12	ECHF26
8	1/2	14	ECHF18
	3/4	14	ECHF28
10	1/2	16	ECHF110
	3/4	16	ECHF210
12	1/2	18	ECHF112
	3/4	18	ECHF212
15	1/2	21	ECHF115
	3/4	21	ECHF215
18	1/2	24	ECHF118
	3/4	24	ECHF218

8L EAHC and EFHC Luminaire Hangers For Pendant Mount

Cl. I, Div. 1 & 2, Groups A*, B*, C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

Application:

EAHC and EFHC luminaire hangers are for use in hazardous areas to:

- suspend explosionproof pendant luminaires from the conduit system
- function as both conduit outlet box and luminaire hanger

Features:

- Through feed hubs are provided for threading the conduit directly into the hanger body
- Has large threaded cover for accessibility and ease of wiring
- Bottom hub, threaded or union style, is equipped with set screws to securely lock luminaire stem in place. Takes conduit stem or EC flexible luminaire hanger for stems longer than 12" (in compliance with NEC Article 501 and CEC Part I Section 18)

Standard Materials:

- Bodies – *Feraloy*® iron alloy
- Covers – copper-free aluminum

Standard Finishes:

- *Feraloy* – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural

Options:

Description **Suffix to be Added to Cat. #**
Finish – *Corro-free*™ epoxy enamel S752

Suspension attachment for span wire or threaded rod – see listings S1

Mounting strap – see listings S294

Size Ranges:

- Conduit hubs – 3/4" and 1"
- Luminaire stem – 1/2" and 3/4"
- Luminaire weight – 125 lbs.

Certifications and Compliances:

- NEC/CEC:
EAHC –
Class I, Groups A, B, C, D
Class II, Groups E, F, G
Class III
EFHC –
Class I, Groups C, D
Class II, Groups E, F, G
Class III
- UL Standard: 886
- CSA Standard: C22.2 No. 20



With union hub

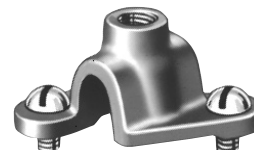


With threaded hub



Mounting Strap

Mounting strap can be furnished to fasten luminaire hangers to mounting surface, independent of conduit straps. To order, add suffix S294 to EAHC or EFHC Cat. No.



Suspension Attachment

EAHC and EFHC hangers can be furnished with a loop fastened to the top of the body to suspend luminaire and conduit from vertical support rods or horizontal span wires. The loop will take a wire or cable with a maximum diameter of 3/8". The boss on top of the loop is tapped 3/8"-16 to accept a threaded rod. To order, add suffix S1 to Cat. No.

EAHC*

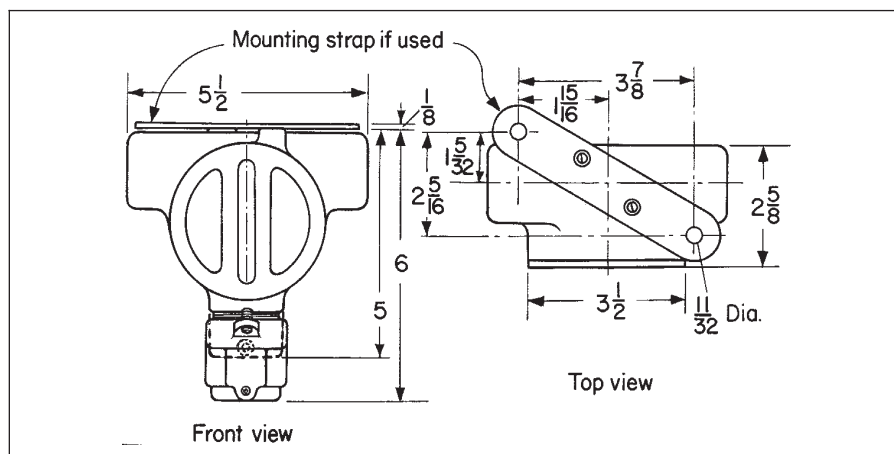
Hub Size	Luminaire Stem Size	Threaded Hub for Luminaire Stem Cat. #	Union Hub for Luminaire Stem Cat. #
3/4	1/2	EAHC2701	EAHC2601
	3/4	EAHC2702	EAHC2602
1	1/2	EAHC3701	EAHC3601
	3/4	EAHC3702	EAHC3602

EFHC

3/4	1/2	EFHC2701	EFHC2601
	3/4	EFHC2702	EFHC2602
1	1/2	EFHC3701	EFHC3601
	3/4	EFHC3702	EFHC3602

*EAHC only

Dimensions



EFH Flexible Cushion Luminaire Hangers

For Pendant Mount

Cl. I, Div. 1 and 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

8L

Application:

EFH flexible cushion luminaire hangers are used in hazardous locations:

- where a luminaire must hang more than 12" from its supporting junction box (as required by NEC Article 501 and CEC Part I Section 18)
- to assure that luminaires hang plumb and will swing freely if accidentally struck. Prevents damage to luminaire, stem and supporting outlet box
- to provide a cushion support, prolonging lamp life and protecting the luminaire from shock and vibration. For luminaires weighing up to 65 lbs.

Features:

- Complies with NEC Article 501 and CEC Part I Section 18
- Free swinging in any direction through an angle of 15 degrees from perpendicular
- Weight of luminaire is supported by a high-strength brass bellows and a stainless steel cushioning spring
- Two part assembly consisting of luminaire hanger cover and CPS12 outlet box. Provides a wide variety of conduit arrangements. A set screw locks the conduit stem in place

Standard Materials:

- Feraloy® iron alloy

Standard Finishes:

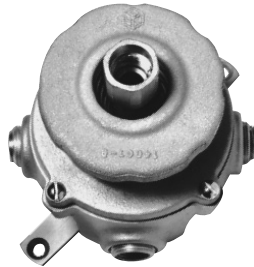
- Electrogalvanized and aluminum acrylic paint

Size Ranges:

- Conduit hubs – 3/4" with 3/4" to 1/2" reducers
- Luminaire stem – 1/2" and 3/4"
- Luminaire weight – 65 lbs. max.

Certifications and Compliances:

- NEC/CEC: Class I, Groups C, D
Class II, Groups E, F, G
Class III
- UL Standard: 886
- CSA Standard: C22.2 No. 30



EFHX

Body Hub Size†	Luminaire Stem Size	With Mtg. Feet Cat. #
1/2 and 3/4	1/2	EFHX111
1/2 and 3/4	3/4	EFHX221

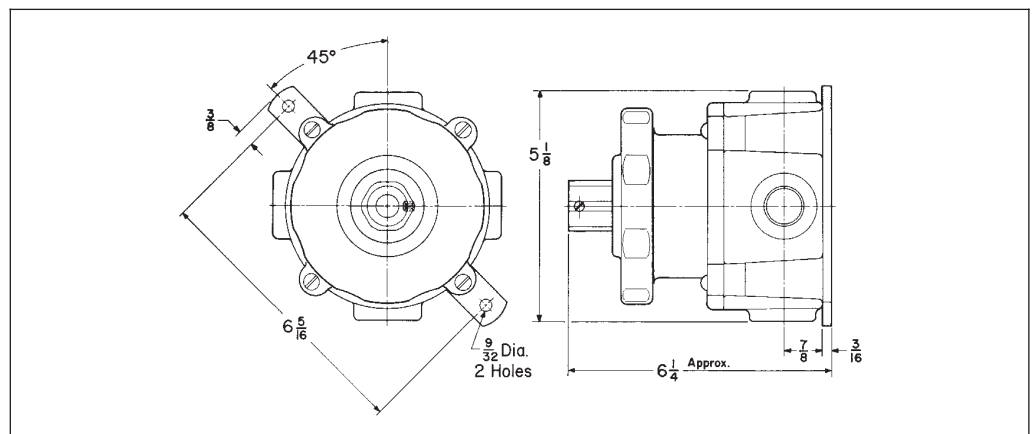


Cushion Luminaire Hanger Only

Stem Size	Cat. #
1/2	EFH01
3/4	EFH02

† Furnished with four 3/4" standard taper tapped, integrally bushed hubs. Each hub as a 3/4" to 1/2" reducer. Three hubs are plugged.

Dimensions



8L Lighting Accessories

Application:

CPS series conduit outlet boxes are installed in conduit systems in hazardous areas to:

- protect conductors in threaded rigid conduit
- act as pull and splice boxes
- change conduit direction
- interconnect lengths of conduit
- act as luminaire hangers with hub covers
- provide access to conductors for maintenance and future system changes

Features:

CPS conduit outlet boxes have:

- two types of cover:
 - blank for splice or pull box use
 - threaded hub for mounting luminaires
- wide, accurately machined body and cover mating surfaces, to insure flamtight joint
- blind tapped holes for cover screws to further insure flamtightness
- removable mounting feet for flush or surface mounting to wall or ceiling

Standard Materials:

- Feraloy® iron alloy

Standard Finishes:

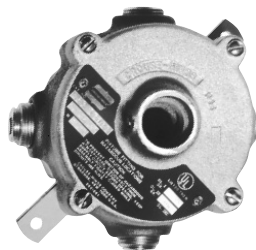
- Electrogalvanized and aluminum acrylic paint

Options:

- Corro-free™ epoxy powder coat
- Information available on request

Certifications and Compliances:

- NEC/CEC: Class I, Groups C, D
Class II, Groups E, F, G
Class III
- UL Standard: 886
- CSA Standard: C22.2 No. 30



Box with Hub Cover

Hub Size

Body†	Cover	Cat. #
1/2 and 3/4	1/2	CPS12021
1/2 and 3/4	3/4	CPS12022

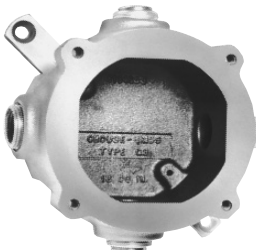


Box with Blank Cover

Hub Size

Cat. #

1/2 and 3/4	CPS12026
-------------	----------



Body

Hub Size†

Cat. #

1/2 and 3/4



Hub Covers

Hub Size

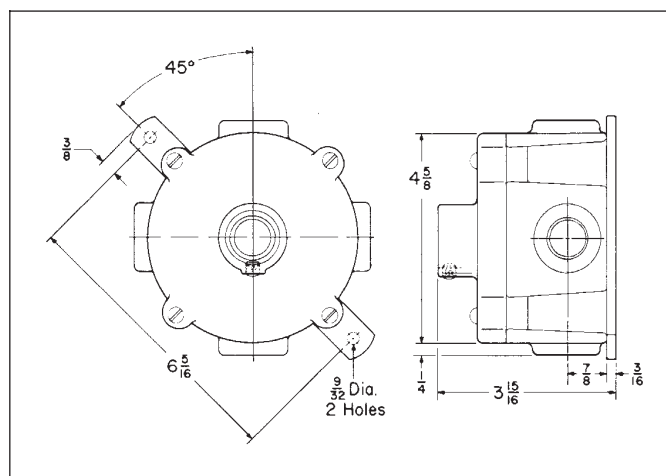
Cat. #

1/2
3/4

CPS021
CPS022

† Furnished with four 3/4" standard taper tapped, integrally bushed hubs. Each hub has a 3/4" to 1/2" reducer. Three hubs are plugged.

Dimensions



GUF Outlet Bodies and Luminaire Hanger Covers

Cl. I, Div. 1 & 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

8L

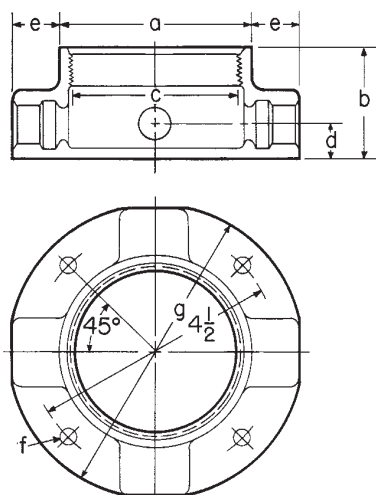


GUFX

Hub Size	Cat. #
1/2	GUFX160
3/4	GUFX260

Dimensions

GUF Series



Hub Size	a	b	c	d	e	f	g
1/2	3 1/2	2	3	5/8	7/8	5/16	5 3/8
3/4	3 1/2	2	3	3/4	7/8	5/16	5 3/8
1	3 1/2	2 3/8	3	7/8	1	5/16	5 3/8

Luminaire Hanger Covers

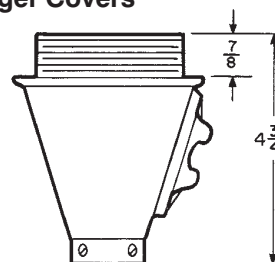
For GUA and GUF Series Junction Boxes



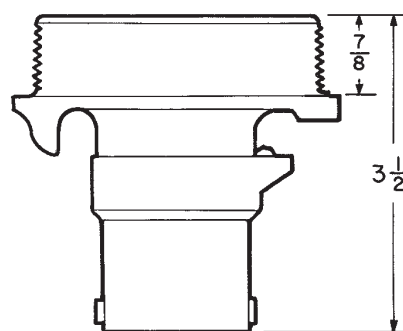
Nom. Dia. Cover Opening	Luminaire Stem Size	Luminaire canopies Cat. #	Luminaire covers union hub Cat. #	Nipple covers Cat. #
3	3/4	GUA068	GUA0687	GUA0672

Dimensions

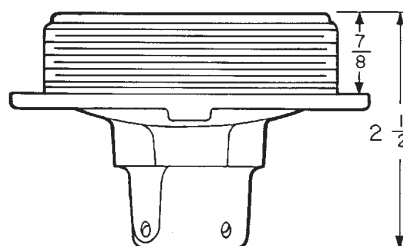
Hanger Covers



GUA 068



GUA 0687



GUA 0671

Application:

GUA, GUF and GUJ outlet bodies are used:

- with luminaire canopies, union hub and nipple covers for mounting EVA, EVM, EVLP, and EVF luminaires

Features:

- A threaded cover opening in the side of the canopy permits access to the interior for making splices or taps
- The luminaire with its conduit stem and canopy is wired before installation, which eliminates wire twisting when the canopy is screwed into the outlet body
- Union hub covers permits the cover to be screwed into the body without twisting wire leads
- All covers have set screws to lock the conduit stem or EC series flexible luminaire support firmly to the cover

Standard Materials:

Outlet bodies:

- GUA Series – *Feraloy* iron alloy
- GUFX – Copper-free aluminum

Luminaire hanger covers:

- GUA068 – *Feraloy* iron alloy
- GUA0687, GUA0672 – Copper-free aluminum

Standard Finishes:

- *Feraloy* iron alloy – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural

Options:

Description

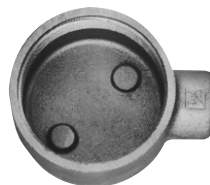
Finish – *Corro-free*™ epoxy enamel S752

Size Ranges:

- Bodies – 1/2" to 1" hubs
- Canopies – 1/2", 3/4" and 1 1/4" luminaire stem
- Union hub and nipple covers – 1/2" and 3/4" luminaire stem

Certifications and Compliances:

- NEC/CEC: Class I, Groups C, D
 Class II, Groups E, F, G
 Class III
- UL Standard: 886
- CSA Standard: C22.2 No. 30



GUA

Hub Size	Cat. #
1/2	GUA160
3/4	GUA260
1	GUA360



GUAC

Hub Size	Cat. #
1/2	GUAC160
3/4	GUAC260
1	GUAC360



GUAL

Hub Size	Cat. #
1/2	GUAL160
3/4	GUAL260
1	GUAL360



GUAT

Hub Size	Cat. #
1/2	GUAT160
3/4	GUAT260
1	GUAT360

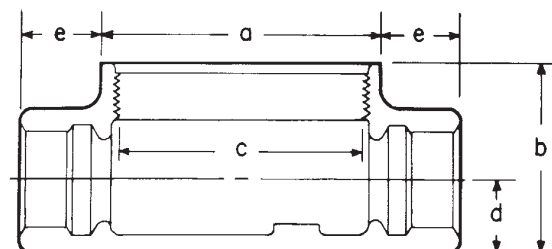


GUAX

Hub Size	Cat. #
1/2	GUAX160
3/4	GUAX260
1	GUAX360

Dimensions

GUA Series



Hub Size	a	b	c	d	e
1/2	3 1/2	2	3	5/8	7/8
3/4	3 1/2	2	3	3/4	7/8
1	3 1/2	2 5/16	3	7/8	1

UNR Adjustable Luminaire Hangers; COUP Locking Couplings

For Pendant Mount

Cl. I, Div. 1 & 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III

Explosionproof
Dust-Ignitionproof

8L

Application:

UNR adjustable luminaire hangers are used in hazardous areas to:

- mount between a luminaire and its outlet box so that the luminaire can be adjusted within the range of 0 degrees to 90 degrees
- permit pendant type luminaires to illuminate vertical surfaces such as a control board
- hang luminaires plumb when the supporting outlet box is not horizontal

Features:

- The luminaire is nipped onto one end of the UNR, and the other end of the UNR is nipped into the support outlet box
- Set screws are located on each end to lock the nipples in place to prevent loosening in relamping or from vibration
- Adjustment of UNR to the angle setting needed provides for the desired angle of the luminaire
- Degree markings are cast into the UNR
- Two set screws and a large stud and nut are provided, which are tightened to clamp the unit rigid

Standard Materials:

- Feraloy® iron alloy

Standard Finishes:

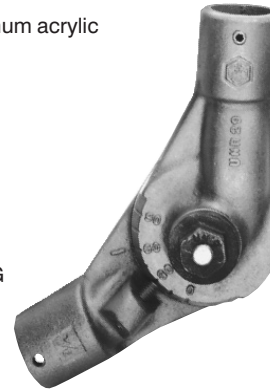
- Electrogalvanized and aluminum acrylic paint

Size Ranges:

- Hub – 3/4"
- Luminaire weight – 125 lbs.

Certifications and Compliances:

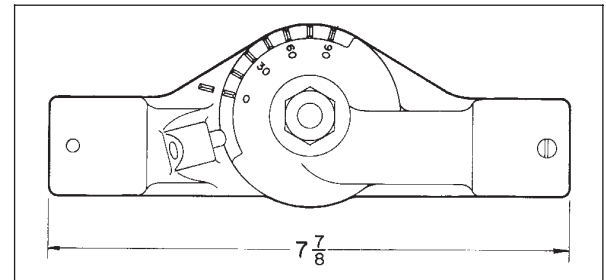
- NEC: Class I, Groups C, D
Class II, Groups E, F, G
Class III
- UL Standard: 886



**UNR
Adjustable
Luminaire Hanger**

Hub Size	Angle Adjustment	Cat. #
3/4"	0° to 90°	UNR29

Dimensions



Application:

COUP locking couplings are used in both hazardous and non-hazardous areas to:

- lock a luminaire conduit stem into a conduit hub to prevent the conduit stem from loosening when the luminaire is relamped and torque transferred to luminaire stem
- prevent loosening of luminaire stem due to vibration
- hang pendant type luminaires from standard cast outlet boxes which do not have set screws in the hub where the luminaire stem is attached

Features:

- The large end is slipped over the cast hub and the set screws tightened. The luminaire stem is slipped through the small end and threaded securely into the cast hub. The set screws in the small end are then tightened, thereby preventing the stem from turning
- Permits support of luminaire from conduit hub of a hazardous location outlet body

Standard Materials:

- Feraloy® iron alloy

Standard Finishes:

- Electrogalvanized and aluminum acrylic paint

Size Ranges:

- Hub size – 1/2" to 1"
- Stem size – 1/2" and 3/4"

Certifications and Compliances:

- UL Standard: 886



**COUP
Locking
Couplings**

Hub Size	Stem Size	Cat. #
1/2"	1/2"	COUP101
3/4"	1/2"	COUP201
3/4"	3/4"	COUP202
1"	3/4"	COUP302

Notes Page

[illegible]

Description	Page No.
Application/Selection	914
Handlamps	
VS Series Incandescent	915
EVH Series Incandescent	916
EVH Series Fluorescent	921, 922
Portable Floodlights	
RCDER Series Incandescent	917, 918
EVP Series H.I.D.	919, 920
Worklights	
EVH Series Fluorescent	921, 922

Hazardous and Non-Hazardous Locations Application and Selection Quick Selector Chart

Applications:

Portable luminaires and accessories can be used:

- in areas made hazardous by the abnormal presence of flammable gases and vapors, combustible dusts or easily ignitable fibers and flyings.
- in areas where combustible dusts and flammable gases are present simultaneously.
- in aircraft manufacturing and maintenance facilities, shipyards, paint spray booths, refueling depots, storage tank cleanings, railcar manufacturing and maintenance facilities, refineries, chemical and petrochemical plants, textile mills, grain elevators, pharmaceutical plants, sewage treatment plants and wastewater treatment plants.
- during plant 'shut downs' for maintenance and installation requirements.
- in any adverse environment where portable lighting is preferred or required.
- in locations where fixed lighting is not practical.
- for task oriented lighting.
- for emergency lighting applications.
- when inspecting aircraft wing tanks, vats, process vessels, fuel tanks, etc. (handlamps).

Considerations for Selection:

Environmental:

- What is the hazardous area classification (NEC/CEC) of the location in which the luminaires will be installed?
- What wattages and light source (ie. fluorescent) will provide the desired light levels?
- Type of luminaire required: handlamp, portable flood or other special requirements.

**Table 500-3(d)
Identification Numbers.**

Maximum Temperature		Identification Number
Deg. C	Deg. F	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

Quick Selector Chart

Luminaire	NEC Hazardous Area Compliances	Lamp Watts	Volts
EVH Handlamp (Incandescent)	Cl. I, Groups C and D Cl. II, Group G Cl. III	100 max.	250 vac
EVH Handlamp (Fluorescent)	Cl. I, Groups C and D Cl. II, Groups E, F, G Cl. III	13, 15	120, 220-50
EVP	Cl. I, Groups C and D Cl. II, Groups F and G Cl. III	35-150	120, 277, 347
RCDER	Cl. I, Groups C and D	150-500	
VS	Non-Hazardous areas	100 max.	

Incandescent Accessories

Application:

The incandescent VS portable hand lamps are used:

- in wet or corrosive locations to exclude moisture, dirt, corrosive chemicals, etc.
- where an incandescent lamp of up to 100 watts is required in a portable hand lamp

Features:

- Enclosed and gasketed
- Flexible cord or cable is attached through a watertight gland in the handle
- Is of rugged construction
- Clamp type guard available
- Provision is made in the lamp receptacle for a third conductor to ground all non-current-carrying metal parts

Standard Materials:

- Handle – molded rubber
- Globe – clear, plain glass
- Guard – cast aluminum or steel wire

Standard Finishes:

- Handle – Natural
- Guard – Zinc plated

Options:

- Materials: heat resistant glass globe; polycarbonate globe

Size Ranges:

- Up to 100 watt, A-23 lamp
- .250 to .625 cord O.D.

Certifications and Compliances:

- Weather resistant
 - UL Standard: 298
- (Note: CEC/CSA Certified VS handlamps - Cooper Crouse-Hinds Canada fixtures only.)



(No Cable Included)

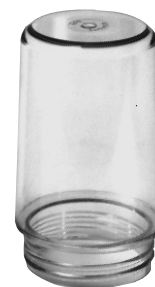
Globe Length	Max Lamp Size	Cord Dia.	Rubber Cat. #
6 $\frac{1}{8}$ "	100 W A-23†	.125 to .625	VS30

Note: Furnished with clear globe, wire guard and 4 rubber bushings.

Glass Globes



Polycarbonate Globes



Description	Maximum Lamp Size	Cat. #
Clear Glass, (Heat Resisting)	100W, A-23 – 6 $\frac{1}{8}$ "†	V63
Clear, Polycarbonate, Plain	75W, A-21"†	V470



Guards

Description	Size	Cat. #
Steel Wire	6 $\frac{1}{8}$ globe	VS97



Lamp Receptacle (medium base)

Description	Size	Cat. #
Composition keyless	660W, 600V	GS156



Cord Gland Bushings

Description	Size	Cat. #
Rubber	.125 to .250 Cord	BUSH92
	.250 to .375 Cord	BUSH93
	.375 to .500 Cord	BUSH 94
	.500 to .625 Cord	BUSH05

† Will take lamps with maximum dimensions of 6 $\frac{1}{2}$ " long and 2 $\frac{1}{8}$ " diameter.

Application:

EVH106 is used:

- as a portable handlamp in hazardous areas
- in inspecting aircraft wing tanks, vats, process vessels, fuel tanks, etc.

Features:

- Pressure connector terminals for portable cord
- Light weight – 4¼ lbs.
- Designed for rough service – swivel hook, ease in relamping

Standard Materials:

- Guard and globe holder – copper-free aluminum
- Handle – molded phenolic composition
- Globe – glass, heat and impact resistant

Standard Finishes:

- Natural

Size Ranges:

- #16 – 3 type SO cord/cable is to be used (not supplied)

Capacity Ranges:

- 50 to 100 watt, A-21
- Max. volts – 250 VAC

Certifications and

Compliances:

- NEC/CEC:
 - Class I, Division 1 and 2, Groups C, D – 100 watts max.
 - Class I, Zone 1 IIB
 - Class II, Division 1 and 2, Group G – 75 watts max.
 - Class III – 75 watts max.
- UL Standard: 781
- CSA Standard: C22.2 No. 137

Temperature Performance

Data: (based on 40°C Ambient)

Class I, Groups C, D
Class II, Group G
Class III

T3C



Cat. #	Cord Dia.
EVH106	.375 to .625
(Model M10)	

Replacement Parts

Description	Cat. #
Guard & globe assembly	EVH606
Handle assembly (including lampholder)	EVH607
Cord connector assembly	EVH605
Lampholder only	20V19-001

Note: See Section 2P of this catalog for suitable male plug.

Application:

RCDER portable incandescent luminaires provide general illumination in locations having hazardous atmospheres, such as:

- oil refineries
- oil and gasoline loading docks
- aircraft servicing docks and shelters
- distilleries
- paint manufacturing plants
- pumping stations
- other Class I, Groups C and D locations

Features:

- Wheel base
- Carrying handle
- Adjustment allows rotation of 75° vertically.
- Locking screws hold housing firmly in position
- Door which threads into housing includes heat and impact-resistant lens. Door has notches or projections for ease of removing or tightening
- Factory sealed

Standard Materials:

- Body – copper-free aluminum;
- Lens – glass, heat and impact resistant

Standard Finishes:

- Natural

Size Ranges:

- Take cable with O.D. of .375" to .500"

Capacity Ranges:

- RCDER-6 – 150 watt, PAR38 or R40; 300 watt, R40 (medium base)
- RCDER-10 – 500 watt, PAR64 (Ext. Mog End Prong)

Certifications and Compliances:

- NEC/CEC:
RCDER – Class I, Division 1 and 2, Groups (C), D Class I, Zone 1 II(B) A (see photometric data listing)
 - UL Standard: 844
 - CSA Standard: C22.2 No. 137 (RCDER-6 only)
- Note: CEC/CSA Certified RCDER6 - Cooper Crouse-Hinds Canada luminaires only.*

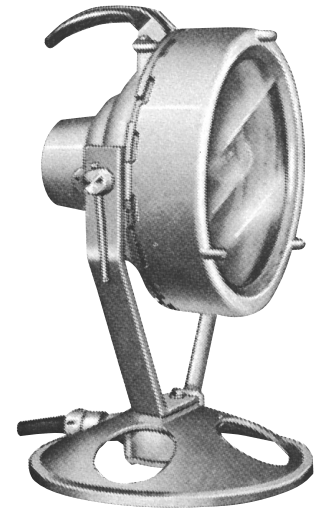
Ordering Information:

After identifying the hazardous area, select the model of luminaire required for that area. Then from the photometric data, select appropriate Cat. No. based on type of mounting desired. Example: RCDER-10 No. 47283A



RCDER-6

Cat. # 44655B



RCDER-10

Cat. # 47283A

Temperature Performance Data (based on 40°C Ambient)

	150W	300W	500W
RCDER-6	T3B	T2B	
RCDER-10			T3C

9L Portable Mounted Lights

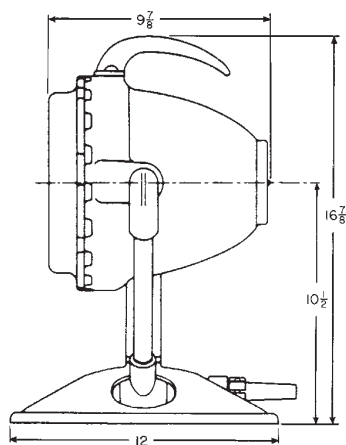
Photometric Data Dimensions and Weights

RCDER Photometric Data

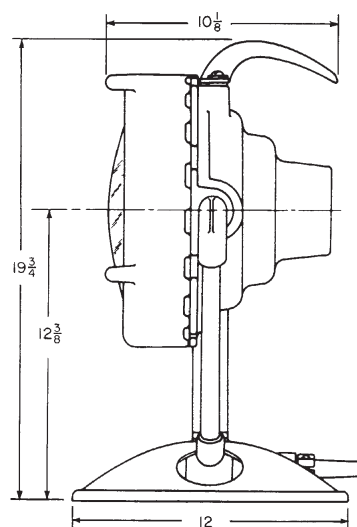
Lamp Watts and Type	Location	Beam Spread		Beam Lumens	Av. Max. Candle Power	Model
		Hor.	Vert.			
150 Watt PAR38 Flood	Class I Groups C, D (Zone 1 IIB)	60°	60°	1690	4000	RCDER-6
150 Watt PAR38 Spot		28°	28°	1200	11500	
300 Watt R40 Flood	Class I Group D (Zone 1 IIA)	123°	123°	3200	1950	
300 Watt R40 Spot		60°	60°	3100	8900	
500 Watt, PAR64 (500 PAR64/NSP)		19°	14°	3000	110000	RCDER-10
500 Watt, PAR64 (500 PAR64/MFL)	Class I, Group D	35°	19°	3300	37000	
500 Watt, PAR64 (500 PAR64/WFL)	(Zone 1 IIA)	55°	32°	3400	13000	

Dimensions

RCDER-6



RCDER-10



Fixture Weights

RCDER-6

Cat. #	Lbs. (Net)
44655	26.0

RCDER-10

Cat. #	Lbs. (Net)
47283	25.0



Applications:

The EVP portable H.I.D. floodlight† is suitable for maintenance or emergency lighting:

- in areas made hazardous by the presence of flammable gases and vapors, combustible dusts, or easily ignitable fibers and flyings.
- in aircraft manufacturing and maintenance facilities, shipyards, refueling depots, storage tank cleaning, railcar manufacturing and maintenance facilities, refineries, chemical and petrochemical plants, textile mills, grain elevators and pharmaceutical plants, printing operations, wastewater and sewage treatment plants.
- in any adverse environment where portable lighting is preferred or required.
- in locations where lighting is not practical.
- for task oriented lighting.

Standard Materials:

- Housing – copper-free aluminum
- Wheel base – spun aluminum
- Handle – plastic rib covered aluminum
- Reflector – aluminum
- O-ring gasket – Nitrile rubber

Certifications and Compliances:

EVP and EVPG

- NEC/CEC:
 - Class I, Division 1 & 2, Groups C, D
 - Class I, Zone 1 IIB
 - Class II, Division 1 and 2, Groups F, G
 - Class III
 - Wet Locations
 - Marine Locations
- UL Standards: 781, 595, 1572
- CSA Standard: C22.2 No. 137, No. 12

Electrical Ratings

High pressure sodium – (medium base)

- 70, 100, & 150 watt
- 120 volt 60Hz

Metal Halide – (double end)

- 70 watt
- 120, 277 & 347 volt; 60Hz

† EVP fixtures are not supplied with plug.

Features and Benefits:

Product Features

- Strong spun aluminum wheel base.
- Sturdy hand knob.
- Plastic rib covered handle.
- Aluminum specular reflector.
- Tempered, 3/4" thick cover glass.
- Nitrile rubber O-ring gasket.
- Strain-relief clamps.
- Pre-wired, factory-sealed 100' of 16/3 type SOW cord supplied.
- Light weight (25 lbs.).
- Fixture housing has a safety yellow finish.

User Benefits

- Provides stability, allows fixture to be hung on a wall or lowered in an inverted position.
- Tightens to hold position for steady illumination and easy aiming.
- Firm, non-slip grip for transporting fixture.
- Directs intense beam for better visibility.
- Heavy duty service.
- Excellent sealing for use in wet locations.
- Provides extra protection against cord damage.
- Saves on installation time and maintenance costs.
- Easy to handle when transporting.
- Highly visible for safety precautions.

Ordering Information:

Cl. I, Div. 1, Groups C, D
Cl. II, Div. 1, Group F

Cat. #

70 watts HPS, 120 volts	EVP4070
100 watts HPS, 120 volts	EVP4100
150 watts HPS, 120 volts	EVP4150*
70 watt MH, 120 volts	EVP9070
70 watt MH, 277 volts	EVP9070/277
70 watt MH, 347 volts	EVP9070/347

* Class II not available.

Cl. I, Div. 1, Groups C, D
Cl. II, Div. 1, Groups F, G
Cl. III

Cat. #

100 watts HPS, 120 volts	EVPG4100
70 watt MH, 120 volts	EVPG9070
70 watt MH, 277 volts	EVPG9070/277
70 watt MH, 347 volts	EVPG9070/347

Fixtures for grain dust applications have a special limiting device to prevent the fixture head from being positioned in an upright position limiting dust buildup.

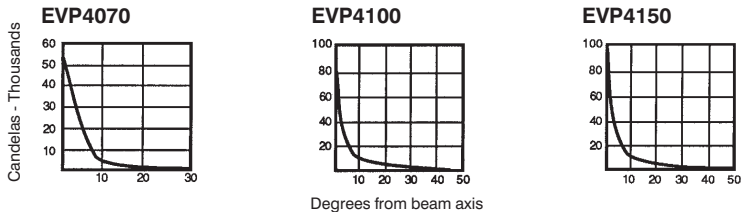
Temperature Performance Data:

Cat. #	Max. Ambient °C	Class I, Division 1		Class II, Division 1	
		T-Rating	Groups	T-Rating	Groups
EVP4070	40	T4A	C, D	T3	F
EVP4100	40	T4A	C, D	T3	F
EVP4150	25	T3C	C, D	—	—
EVP9070	40	T4	C, D	T3	F
EVPG4100	40	T4A	C, D	T3C	F, G
EVPG9070	40	T4	C, D	T4	F, G

Fixture Weight:

25.5 lbs.

Photometric Data:



Dimensions: 12½" D × 13⅛" W × 15⅞" H

EVH Fluorescent Handlamps & Worklights

Cl. I, Div. 1 and 2, Groups C, D
Cl. II, Div. 1, Groups E, F, G
Cl. II, Div. 2, Groups F, G
Cl. III
Cl. I, Zone 1, IIB

9L

Application:

Portable handlamps and worklights can be used:

- in areas made hazardous by the presence of flammable gases and vapors, combustible dusts or easily ignitable fibers & flyings.
- in aircraft manufacturing and maintenance facilities, shipyards, refueling depots, storage tank cleaning, railcar manufacturing and maintenance facilities, refineries, chemical and petrochemical plants, textile mills, grain elevators, pharmaceutical plants, sewage treatment plants and wastewater treatment plants.
- during plant 'shut downs' for maintenance and installation requirements.
- in any adverse environment where portable lighting is preferred or required.
- in locations where fixed lighting is not practical.
- for task oriented lighting.
- for emergency lighting applications.
- when inspecting aircraft wing tanks, vats, process vessels, fuel tanks, etc.

Features:

- built in metal reflector which eliminates glare and blinding, focusing all light on subject.
- protected by patented shock absorbers to withstand rough usage.
- enclosed ballast, remote from light source for easier handling and maneuverability.
- special rubber compound bumper guards and end caps combined with cast guard and metal rods, protecting against damage from falling objects, bumping, or dropping.
- luminaires come complete with lamp(s) and cord.
- The New EVH2625E and EVH2650E incorporate an electronic ballast in the handle for efficiency, cool operation and easy handling.

Standard Materials:

- Body and In line Ballast Unit – aluminum
- Tubeshield – annealed glass
- Bumper guards – rubber

Standard Finishes:

- Aluminum Body – White epoxy (handlamps)
- Aluminum Body – Natural (worklights)
- In Line Ballast Unit – Natural
- Rubber bumper guards – safety yellow

Size Ranges:

- Supplied with 18/3 SOW cord (25 ft or 50 ft)

Electrical Ratings:

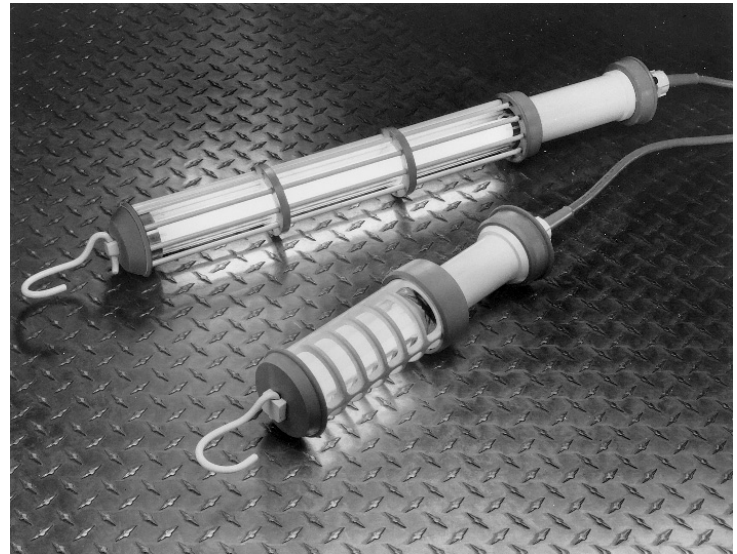
- 13 to 26 Watts
- Max. Volts 220VAC

Certifications and Compliances:

- NEC: Fluorescent Worklights (15 watt units)
Class I, Div. 1 and 2, Group D
Class I, Zone 1 IIB
Class II, Div. 1, Groups E, F, G
Class II, Div. 2, Groups F, G
Class III
- NEC: Fluorescent Handlamps (13 and 26 watt units)
Class I, Div. 1 and 2, Groups C, D
Class II, Div. 1, Groups E, F, G
Class II, Div. 2, Groups F, G
Class III
- FM: Classification 3615
- CSA: C22.2

Options:

- An isolated ballast is available on the EVH 13 Watt handlamps for additional protection, use suffix IB.



Temperature Performance Data: (Based on 40°C Ambient Temperature)

Class I, Div. 1			Class II, Div. 1	
Cat. No.	T-Rating	Groups	T-Rating	Groups
EVH1525	T5	D	T5	E, F, G
EVH1550	T5	D	T5	E, F, G
EVH1325	T5	C, D	T5	E, F, G
EVH1350	T5	C, D	T5	E, F, G
EVH2625	T3	C, D	T3	E, F, G
EVH2650	T3	C, D	T3	E, F, G
EVH1325 IB	T5	C, D	T5	E, F, G
EVH1350 IB	T5	C, D	T5	E, F, G
EVH2625E	T6	C, D	T6	E, F, G
EVH2650E	T6	C, D	T6	E, F, G

Ordering Information:

EVH Fluorescent Worklights

Line Voltage (60 Hz)	Watts	Cord Length (ft)	Lamp Type	Cat. No.
120	15	25 ft.	F15T8	EVH1525
120	15	50 ft.	F15T8	EVH1550

EVH Fluorescent Handlamps (With Magnetic Ballast in Cord)

Line Voltage (60 Hz)	Watts	Cord Length (ft)	Lamp Type	Cat. No.
120	13	25 ft.	F13TT	EVH1325
120	13	50 ft.	F13TT	EVH1350
120	26	25 ft.	F26DTT	EVH2625
120	26	50 ft.	F26DTT	EVH2650
(50 Hz)				
220	13	25 ft.	F13TT	EVH1325/220 50
220	13	50 ft.	F13TT	EVH1350/220 50
220	26	25 ft.	F26DTT	EVH2625/220 50
220	26	50 ft.	F26DTT	EVH2650/220 50

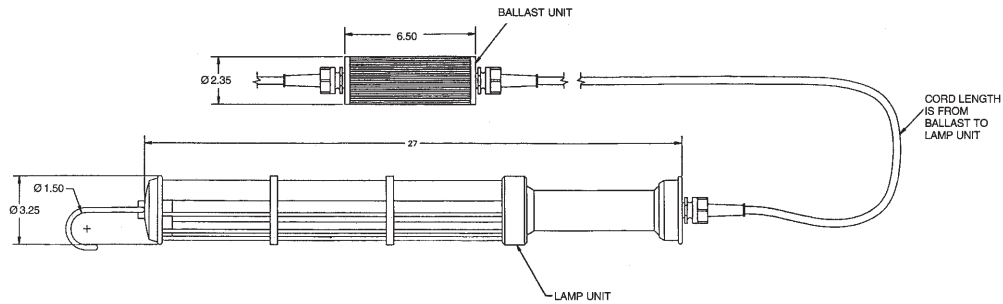
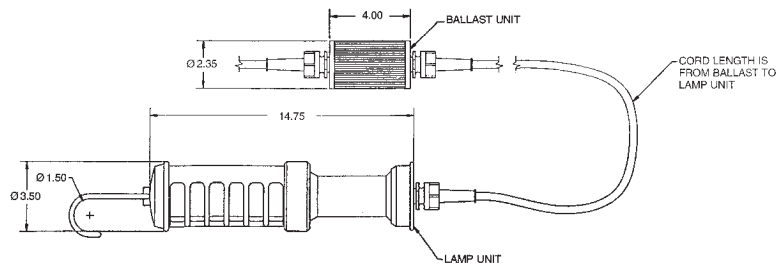
New – EVH Fluorescent Handlamps (With Electronic Ballast in Handle)

Line Voltage (60 Hz)	Watts	Cord Length (ft)	Lamp Type	Cat. No.
120	26	25 ft.	CF26DD/E/841	EVH2625E
120	26	50 ft.	CF26DD/E/841	EVH2650E

9L Portable Lighting

Dimensions (inches)

Work Light

Hand Lamp
(Magnetic Ballast Handlamps Only)

Description	Page No.
Exit Signs	
EXL Series	924, 925
EVLPF(B)-EXD	926
DMVF(B)-EXD	927
Light-Pak™ – Emergency Lighting Systems	
ELPS Series	928, 929
N2LPS Series	930, 931
Remote Luminaire Heads	
EVLA	928, 930
N2RF	930
Compact Fluorescent Emergency Luminaires	
CPMVFB	932, 933
DMVFB	934, 935
EVLFB	936, 937

Table 500-3(d)
Identification Numbers.

Maximum Temperature		Identification Number
Deg. C	Deg. F	
450	842	T1
300	572	T2
280	536	T2A
260	500	T2B
230	446	T2C
215	419	T2D
200	392	T3
180	356	T3A
165	329	T3B
160	320	T3C
135	275	T4
120	248	T4A
100	212	T5
85	185	T6

10L EXL Explosionproof Exit Sign

Factory Sealed

Cl. I, Div. 1 & 2, Groups C, D
Cl. I, Zone 1 IIB
Cl. II, Div. 1, Groups E, F, G

Application:

EXL exit signs are used:

- in locations deemed hazardous due to the presence of flammable vapors or gases, or combustible dusts
- in any building or enclosed area where people work – where illuminated exit signs are required
- to provide distinct, highly visible exit marking
- to indicate the direction of travel to exits

Features:

- Two incandescent lamps (not included) wired in parallel – to provide extra margin of light source reliability
- Solid state circuit for extended lamp life in AC units
- Six inch red letters on white acrylic sign panel make word "exit" stand out boldly and clearly
- Edge lighting characteristic of sign panel makes visibility excellent at all lighting levels
- Factory sealed explosion-proof housing
- Pendant, wall and end bracket mounts provide universal installation options
- Impact-resistant acrylic sign panel needs no guard – makes cleaning easy
- Internal rectifier extends lamp life beyond 1,000-hour rated life – reduces relamping cost
- Relamping tool provided

Standard Materials:

- Body – copper-free aluminum
- Sign panel – acrylic

Conduit Entrance:

- 3/4" hubs

Lamp Wattage:

- Two 60-watt, 60T10 clear lamps for AC units
- Two 25-watt, 25T10 clear lamps for DC units
- Lamps not included with luminaire

Electrical Ratings:

- 120VDC or 120VAC operation.

Certifications and Compliances:

- NEC: Class I, Groups C and D
Class II, Groups E, F, and G
- UL Standard: 844
- NFPA Life Safety Code No. 101-1991

Temperature Performance

Data (for both AC & DC operation):

Ambient Temp (°C)	Class I (C,D) Class II (E,F,G)	Supply Wire °C
25	T3C	150°C
40	T3C	

Ordering Information:

I. When ordering an EXL Series Exit Sign, you will need to specify:

- (A) Voltage (120VAC or 120VDC)
- (B) Mounting (Wall, End Bracket, or Pendant)
- (C) Exit Sign Designation

All units come standard with 3/4" hubs and exit signs with red lettering and white background. Complete catalog numbering is as follows:

EXL (A) 2 (B) (C)

(A) Voltage: 120VAC leave blank
120VDC D

(B) Mounting: Wall 1
End Bracket 2
Pendant 3

(C) Exit Sign Designation:

- A Single Face (Wall Mount)
- AA Double Face (End Bracket & Pendant)
- AB Double Face, one side arrowhead right, the other no arrowhead (End Bracket & Pendant)
- AC Double Face, one side arrowhead left, the other no arrowheads (End Bracket & Pendant)
- AD Double Face, one side arrowhead both ends, the other no arrowheads (End Bracket & Pendant)
- B Single Face, arrowhead right (Wall Mount)
- BC Double Face, one side arrowhead right, the other arrowhead left (End Bracket & Pendant)
- BD Double Face, one side arrowhead both ends, the other arrowhead right (End Bracket & Pendant)
- C Single Face, arrowhead left (Wall Mount)
- CD Double Face, one side arrowhead both ends, the other arrowhead left (End Bracket & Pendant)
- D Single Face, arrowhead both ends (Wall Mount)
- DD Double Face, both sides arrowhead both ends (End Bracket & Pendant)



Pendant Style



End Bracket Style



Wall Style

Ordering Examples Table:

Mounting Type	Sign Panel Description	Hub Size	AC Cat. #	DC Cat. #
Wall	Single face	3/4	EXL21A	EXLD21A
End bracket	Double face	3/4	EXL22AA	EXLD22AA
Pendant	Double face	3/4	EXL23AA	EXLD23AA

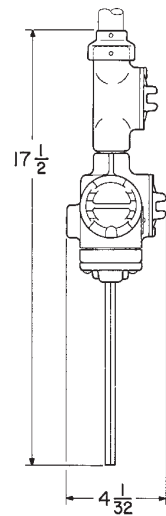
Suffix Options:

Exit Signs with green lettering on white background GN
Unit Provided with Epoxy powder Coat S752
277VAC – (Order ECT413 Transformer Separately)

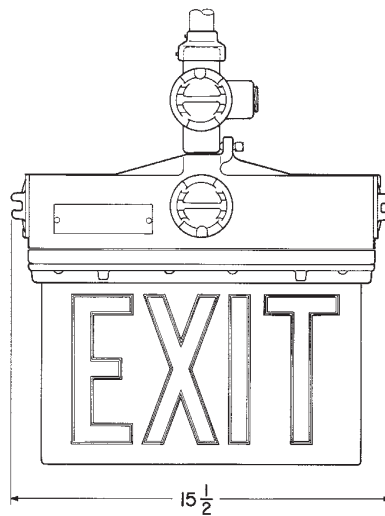
EXL Explosionproof Exit Sign

10L

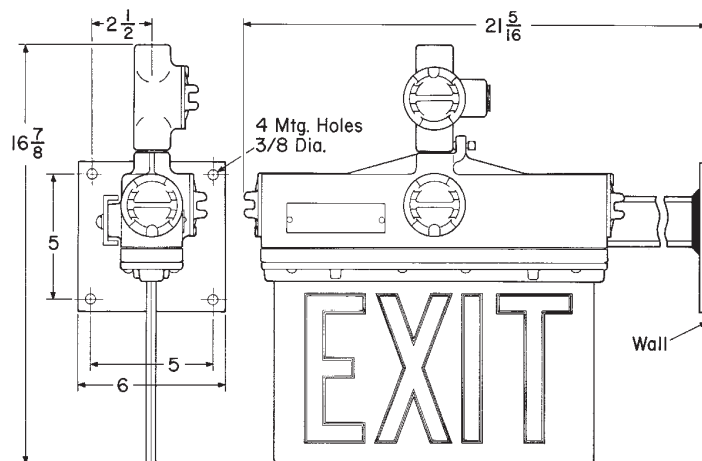
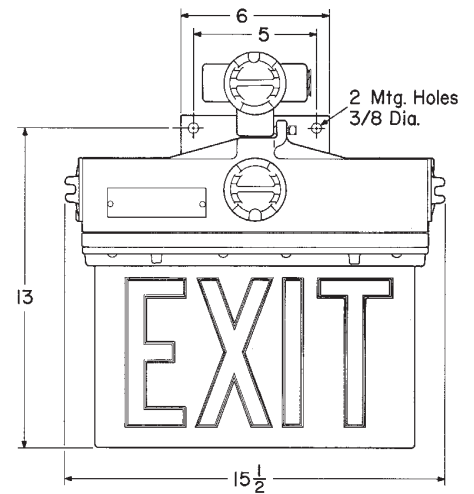
Factory Sealed
Dimensions



Pendant Style



Wall Style



End Bracket Style

EVLPF(B) - Exit Sign Fluorescent Luminaire

- Cl. I, Div 1, Groups B (suffix GB), C, D
- Cl. I, Zone 1, Groups IIB + H2 (GB suffix), IIB
- Cl. II, Div 1, Groups E, F, G; Class III, Simultaneous Presence

- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66

Application:

EVLPF(B)-EXD exit signs are used:

- in any building or enclosed area where people work - where illuminated exit signs are required
- to provide distinct, highly visible exit marking
- to indicate the direction of travel to exits
- in locations deemed hazardous due to the presence of flammable vapours or gases, or combustible dusts

Features - Benefits:

- Six inch red letters on white glass sign panel make the word "EXIT" stand out boldly and clearly
- Light weight copper-free aluminum housing with powdered epoxy finish
- All exterior hardware is corrosion-resistant stainless steel
- Three mounting arrangements pendant, ceiling and wall bracket
- Integral ballast
- High power factor (90%+) ballasts
- Easier assembly, installation and maintenance
- Outdoor, hose down, marine and corrosive environments suitable
- Ideal for adverse environments typical of industrial facilities
- Ground wire for safety
- Optional battery backup for operation during power outage

About the battery:

- Bodine fluorescent battery pack ballasts are UL Component Recognized
- Sealed, maintenance-free, high-temperature nickel-cadmium
- Solid state chargers are sealed inside the ballast case
- 90 minute illumination time
- 10-year life expectancy
- 2-year full warranty
- During emergency use 1 lamp has continuous operation
- A red indicator light indicates the battery is charging
- Wiring instructions for a "Push-to-Test" button is supplied with the luminaire

Standard Materials:

- Mounting modules, cover, ballast housing, globe holder - copper free aluminum
- Globe - heat and impact resistant glass
- Exterior hardware - stainless steel

Standard Finishes:

Copper-free aluminum - *Corro-free™*
powdered epoxy

Ratings (Electrical/Size):

Sources/wattage:

- 52W (2-26W lamps)
 - 120-277V, 50-60Hz
 - 120V, 60Hz
 - 347V, 60Hz
- Conduit entries:
- 3/4", 1" NPT - Pendant, Wall Bracket, Ceiling

Energy Savings

- Less wattage used with compact fluorescent lamps compared to equivalent incandescent lamps providing the same light output



Certification & Compliances:

- NEC and CEC:
 - Class I, Division 1, Groups B (GB suffix), C, D
 - Class I, Zone 1 Groups IIB + H2 (GB Suffix), IIB, IIA
 - Class II, Class III & Simultaneous Presence (Class I and Class II)
- UL Standards
 - 844 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137

Options:

Description	Suffix to be added to Cat. #
Group B suitability	GB
Factory assembled with lamps	FA

Ordering Information:

Mounting Type	Supply Voltage Volts/Hertz	Catalog Number	
		Fluorescent	Fluorescent with Battery Back-up
Pendant	120-277V / 50-60Hz	EVLPFA02520/UNV-EXD	EVLPFBA02520/UNV-EXD
	120V / 60Hz (Canada)		EVLPFBA0520/120CAN-EXD
	347V / 60Hz	EVLPFA02520/347-EXD	EVLPFBA0520/347-EXD
Ceiling	120-277V / 50-60Hz	EVLPCX02520/UNV-EXD	EVLPCBX02520/UNV-EXD
	120V / 60Hz (Canada)		EVLPCBX02520/120CAN-EXD
	347V / 60Hz	EVLPCX02520/347-EXD	EVLPCBX02520/347-EXD
Wall	120-277V / 50-60Hz	EVLFBX02520/UNV-EXD	EVLFBXB02520/UNV-EXD
	120V / 60Hz (Canada)		EVLFBXB02520/120CAN-EXD
	347V / 60Hz	EVLFBX02520/347-EXD	EVLFBXB02520/347-EXD

DMVF(B) - Exit Sign Fluorescent Luminaire

- Cl. I, Div. 2; Groups A, B, C, D
- Restricted Breathing Cl. I, Div. 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II, Groups E, F, G, Cl. III & Simultaneous Presence
- Marine & Wet Locations
- 3, 3R, 4X; IP66

10L

Application:

DMVF(B) exit signs are used:

- in any building or enclosed area where people work.
- where illuminated exit signs are required.
- to provide distinct, highly visible exit markings.
- to indicate the direction of travel to exits.
- in locations deemed hazardous due to the presence of flammable vapors or gases, or combustible dusts.

Features:

- Six inch letters on white glass sign panel make the word "exit" stand out boldly and clearly.
- Housings made of die-cast copper-free aluminum (less than 0.4 of 1% copper) for strength and resistance to corrosion).
- Mounting module equipped with integral hub set screws for vibration resistance (ceiling and pendant mounts).
- Hubs are provided with an integral conduit stop and bushing to help prevent damage to field wiring during installation.
- Epoxy powder finish and stainless steel external hardware for resistance to corrosion.
- Long life gaskets which provide seals between mounting module, housing, and globe assembly.
- Grounding wire for safety.
- Cool operating design.
- Optional emergency battery backup operation during power outage.

About the battery:

- Bodine fluorescent battery pack ballasts are UL Component Recognized.
- Sealed, maintenance-free, high-temperature nickel-cadmium
- Solid state chargers are sealed inside the ballast case.
- 90 minute illumination time.
- 10-year life expectancy.
- 2-year full warranty.
- During emergency use, 1 lamp has continuous operation.
- A red indicator light indicates the battery is charging.
- Wiring instructions for a "Push-to-Test" button is supplied with the fixture.

Energy Savings

- Less wattage used with compact fluorescent lamps compared to equivalent incandescent lamps providing the same light output.

Standard Materials:

- Ballast housings and mountings - copper-free aluminum (less than 0.4 of 1%).
- Exterior hardware - stainless steel.
- Globe - heat and impact resistant internally fluted glass.

Standard Finishes:

- Aluminum - gray epoxy powder coat.
- Krydon material - high reflectance white.
- Stainless steel - natural.

Electrical Rating Ranges:

- 52 Watt.
- 120-277V, 50-60 Hz.
- 120V, 60 Hz.
- 347V, 60 Hz.

Options:

Description

Lamps supplied with exit sign
Top hat with stainless steel threaded insert.
Restricted breathing construction.
Class I Division 2 & Zone 2 suitability.
Cooler operating temperatures (T -Numbers).
Certified for IEC Zone 2 (Suffix S826TB).
Furnished with
Terminal Block.
Crimp Terminals.
Dedicated voltage ballasts (no MT, DT or TT).

Suffix added to Cat. No.

S714
S806
S826

S826TB



Certifications and Compliances:

- **NEC and CEC:**
Class I, Division 2, Groups A, B, C, D
- Class II, Class III & Simultaneous Presence (Class I Division 2 and Class II)
- Class I Zone 2
- **IEC:**
Zone 2 Ex nR IIC
- **UL Standards:**
844, 2279 Hazardous (Classified) Locations.
1598 Luminaires.
1598A Marine Luminaires.
- **CSA Standards:**
C22.2 No. 137
- **IEC Standards:**
60079-15

Ordering Information:

Mounting Type	Supply Voltage Volts/Hertz	Catalog Number	
		Fluorescent	Fluorescent with Battery Back-up
Pendant	120-277V / 50-60Hz	DMVF2A052G/UNV-EXD	DMVFB2A052G/UNV-EXD
	120V / 60Hz (Canada) 347V / 60Hz	DMVF2A052G/347-EXD	DMVFB2A052G/120CAN-EXD DMVFB2A052G/347-EXD
Ceiling	120-277V / 50-60Hz	DMVF2C052G/UNV-EXD	DMVFB2C052G/UNV-EXD
	120V / 60Hz (Canada) 347V / 60Hz	DMVF2C052G/347-EXD	DMVFB2C052G/120CAN-EXD DMVFB2C052G/347-EXD
Wall	120-277V / 50-60Hz	DMVF2TW052G/UNV-EXD	DMVFB2TW052G/UNV-EXD
	120V / 60Hz (Canada) 347V / 60Hz	DMVF2TW052G/347-EXD	DMVFB2TW052G/120CAN-EXD DMVFB2TW052G/347-EXD

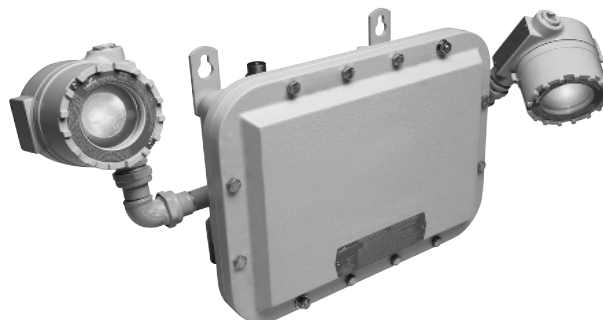
Application:

ELPS series emergency lighting systems are used:

- to provide safe, reliable illumination indoors or outdoors to designated areas during failure or interruption of power to the normal lighting system
- in areas made hazardous by the presence of flammable gases and vapors, combustible dusts or easily ignitable fibers and flyings
- in areas where corrosion, vibration, moisture, dirt and rough usage may be encountered
- where required by the National Electrical Code®, the Life Safety Code or other codes
- in refineries, chemical and petrochemical facilities, grain processing, handling or storage facilities, manufacturing plants, waste water treatment facilities and other areas where safe, reliable, hazardous area emergency lighting is needed

Features:

- Compact factory sealed luminaire assemblies are each furnished with a 12 watt tungsten-halogen lamp and inner reflector for appropriate photometrics in hazardous areas.
- Luminaire assemblies are fully adjustable and lockable on two axes to provide flexible and consistent light aiming capabilities.
- Luminaire lens ring is threaded for easy relamping and locks in place with hex head set screw; will not loosen due to vibration.
- Ground joint cover with external flange design permits large opening and easy access to internal components. Stud bolts in diagonally opposite corners of body ease cover removal and installation.
- Neoprene cover gasket seals out moisture for superior protection of internal components against wetness and corrosion.
- Light weight, compact size, and mounting feet ease installation and allow placement in confined areas.
- Two 1" NPT drilled and tapped conduit openings, with plugs, are standard, for choice of top or bottom feed.
- Factory-installed PUSH-TO-TEST pushbutton enables easy testing of system.
- MAIN POWER ON pilot light indicates AC power is being supplied to the battery charger; pilot light jewel is threaded for easy lamp replacement.
- Stainless steel drain minimizes moisture collection. Stainless steel breather with aluminum cap provides ventilation, minimizes moisture collection.
- CID 101 corrosion inhibitor device is provided with each ELPS system to help protect electrical components and connections.
- Rugged, long-life, maintenance-free, nickel cadmium battery provides 30 watts of power for the required 1½ hours.
- Solid state battery charger for long life and reliable service prevents deep discharge by automatically disconnecting luminaires from battery.



- Terminal block facilitates field wiring connections.
- Instruction sheet and maintenance record card provided with unit in a protective plastic envelope.
- A time delay is standard; time delay is preset at factory for 5 minute delay but can be field set for 5 seconds or 15 minutes, thus allowing HID type lamps time to restrike and reach desired illumination levels.
- Solid state battery charger will accept 120, 220/240 or 277 VAC, 50/60 Hz.

Electrical Ratings:

- Power supply:
Input: 120, 220/240, 277 VAC, 50 or 60 hertz
0.5 Amps Maximum
Output: 12 VDC
UL listed for 28 watts for 1½ hours at 0° – 40°C
- Luminaires:
Voltage: 12 VDC
Lamp Type: #789, miniature Tungsten halogen, G4, 2-pin, 14 watt.

Certifications and Complies:

- NEC: Class I, Groups B, C, D
Class II, Groups E, F, G
Class III
Simultaneous Presence
- NEMA: 3R, 4X*, 12 (ELPS power supply)
- Suitable for wet locations (EVLA fixtures)
- Marine (EVLA fixtures)
- UL Standard:
844 – Electric Luminaire – Hazardous Locations
924 – Emergency Lighting and Power Equipment
1203 – Explosionproof and Dust-Ignition-Proof Electrical Equipment
- Life Safety Code:
Section 5-9 (Emergency Lighting)
- Suitable for Wet Locations
- NEMA 3, 3R, 12
- Marine

* NEMA 4X pending with new ECD 4X breather and drain

Standard Materials:

- Power supply enclosure and luminaire assembly – copper-free aluminum (less than 0.4 of 1% copper)

Standard Finishes:

- Power supply enclosure and fixture assemblies—powder coat epoxy paint finish

Ordering Information:

CATALOG NUMBER	DESCRIPTION
ELPS502*	Standard unit with adjustable heads
ELPS-K50	Replacement power interior, includes circuit board and battery pack
ELPS50*	Power Supply
EVLA12*	Lamphead and arm
ELPS502-EXD	Exit sign, double sided with EVI, red letters
ELPS502-EXD GN	Exit sign, double sided with EVI, green letters
ELPS502-EXD GB	Exit sign, single or double sided with Group B EVA, red letters
ELPS502-EXD GB GN	Exit sign, single or double sided with Group B EVA, green letters
ELPS502-EXS	Exit sign, single sided with EVI, red letters
ELPS502-EXS GN	Exit sign, single sided with EVI, green letters

* Base unit comes standard with Class I, Division 1, Group B.

Options:

- Remote mounted EVLA12 lamp head mounted to a Cooper Crouse-Hinds EABC36 or EABL36 1" NPT outlet box
- S794 key operated disconnect switch as part of the ELPS502 emergency light system
- S854 keyless operated designated disconnect switch as part of the ELPS502 emergency light system

Temperature Performance Data:

EVLA12—Maximum Ambient Temperature 55°C (131°C)

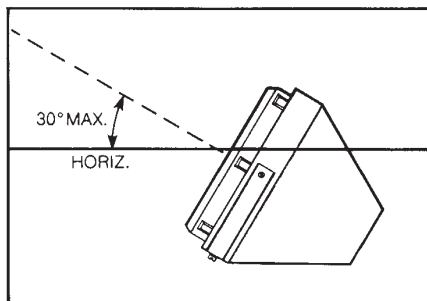
EVLA12 Temperature Codes (T-numbers):

● Class I—T4A ● Class II*—T3B ● Class III*—T3B

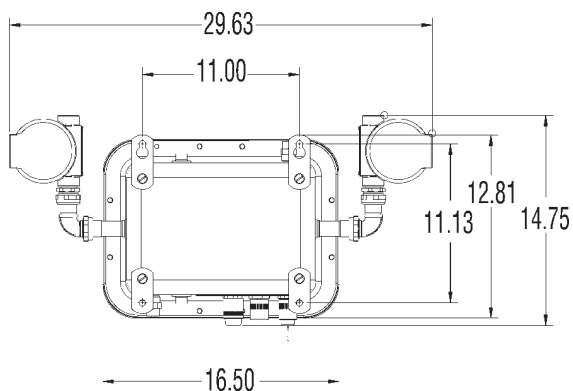
* For Class II and Class III applications, fixtures must not be aimed more than 30° above horizontal (see diagram below).

ELPS EVI & ELPS EVA—Maximum Ambient Temperature 40°C

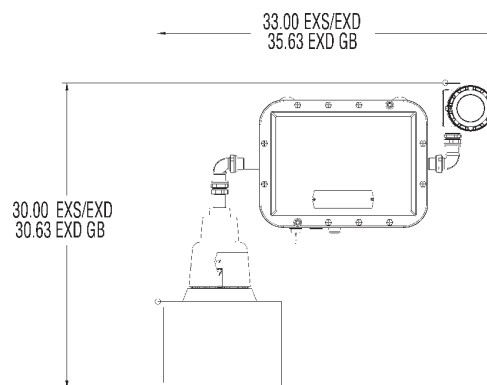
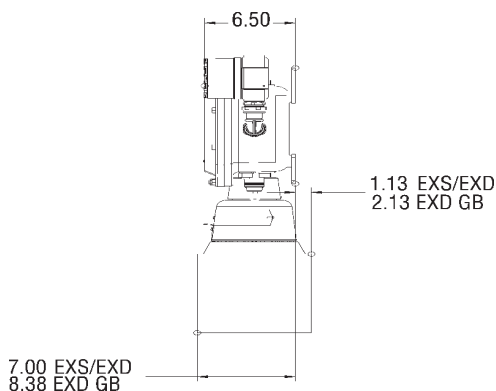
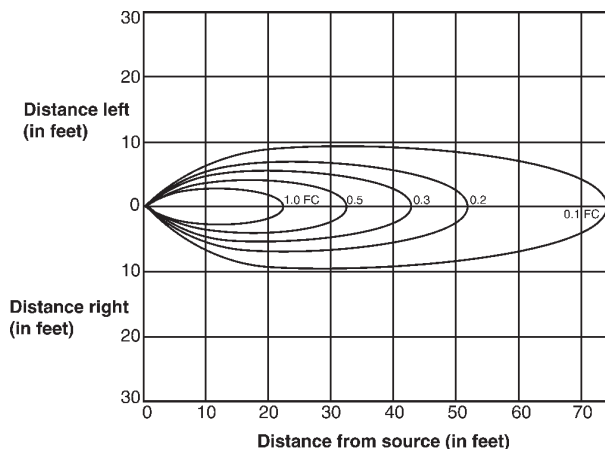
● Class I—T4 ● Class II—T3C



Dimensions



Photometric Data:



Unit Net Weights:

- ELPS502 complete emergency lighting system – 50 lbs.
- ELPS50 power supply – 40 lbs.
- EVLA12 luminaire assembly – 5 lbs.

Status Indication

LED Status	Condition	Meaning of the Indication
	No light	AC power is removed from the circuit
●	Steady light (no blinking)	Fully charged
●	Light blinks once	Charging
●●	Light blinks twice	Battery failure
●●●	Light blinks three times	Circuit failure
●●●●	Light blinks four times	Lamp failure

10L LIGHT-PAK™ N2LPS Emergency Lighting System

Cl. I, Div. 2, Groups B, C, D
Class I, Zone 2
Wet Locations
NEMA 3, 3R

Application:

Light-Pak N2LPS emergency lighting systems are used:

- to provide reliable illumination for egress areas during failure or interruption of power to the normal lighting system
- in areas where flammable gases or vapors may become present due to abnormal, unusual, or accidental conditions
- in manufacturing plants, refineries, petrochemical and chemical plants, waste and sewage treatment facilities, oil terminals, food processing facilities, breweries, and other industrial manufacturing or process industry facilities subject to wet or corrosive conditions
- to illuminate machinery or panels during a loss of AC power
- where moisture, dirt, dust, or corrosion will limit the life and reliability of ordinary emergency lighting systems
- where required by the National Electrical Code®, the Life Safety Code® or other applicable codes
- Outdoor applications

Features:

- Compact factory assembled system with two 8 watt sealed beam halogen lamps.
- Nonmetallic, enclosed and gasketed construction; a CID101 corrosion inhibitor device is also included.
- Solid state battery charger will accept 120, 220, and 277 VAC, 50/60 Hz.
- A time delay is standard; time delay is preset at factory for 5 minute delay but can be field set for 5 seconds or 15 minutes, thus allowing HID type lamps time to restrike and reach desired illumination levels.
- "Push-to-Test" button and "Main Power On" pilot light are conveniently located on side of system.
- Sealed, lead calcium battery(ies); one battery supplies 28 watts of power (two batteries 56 watts) for 1½ hrs.
- Luminaire heads constructed of rugged Noryl® thermoplastic material with nylon and plastic coated hardware.
- Cover has six captive stainless steel screws; factory installed ¾" conduit hub opening is standard, located on top of system.
- Remote luminaire head assemblies (one or two) are available for mounting of luminaire heads away from main power supply system.

Temperature Performance

Data: (based on 40°C ambient)

Cat. #	Class I, Division 2
N2LPS (all)	T4A
N2RF (all)	T5

(NOTE: Ambient temperature at which the Light-Pak system is rated is 0°C (32°F) to 40°C (104°F). Lower ambient temperatures will reduce battery capacity.)

National Electrical Code and Life Safety Code are registered trademarks of the National Fire Protection Association, Inc.

Noryl is a registered trademark of General Electric Company.



Standard Materials:

- Power supply and remote luminaire enclosures – Krydon® fiberglass-reinforced polyester
- Luminaire heads – Noryl® thermoplastic
- Exterior hardware – Nylon, plastic coated, and stainless steel
- Cover gasket – Hypalon® synthetic rubber

Electrical Ratings:

- Power supply –
Input: 120, 220, or 277 VAC, 50 or 60 Hz; 25 watts max.
Output: 6 VDC;
N2LPS6222, N2CPS6220 – 28 watts for 1½ Hrs.
N2LPS6422, N2LPS6420 – 56 watts for 1½ Hrs.
- Luminaires – Voltage: 6 VDC; Lamp type: 8 watt, tungsten halogen PAR36 sealed beam (General Electric #H7551)

Certifications and Compliances:

- NEC – Class I, Division 2, Groups B,C,D
- UL Standards: 924 (Emergency Lighting and Power Equipment); 844 (Electric Luminaires Hazardous Locations)
- Life Safety Code NFPA101® – Section 5-9 (Emergency Lighting)
- Wet Locations Suitability

Unit Net Weights:

- N2LPS6222 – 16 lbs.
- N2LPS6422 – 21 lbs.
- N2LPS6220 – 12 lbs.
- N2LPS6420 – 17 lbs.
- N2RF621 – 6 lbs.
- N2RF622 – 8 lbs.

Ordering Information:

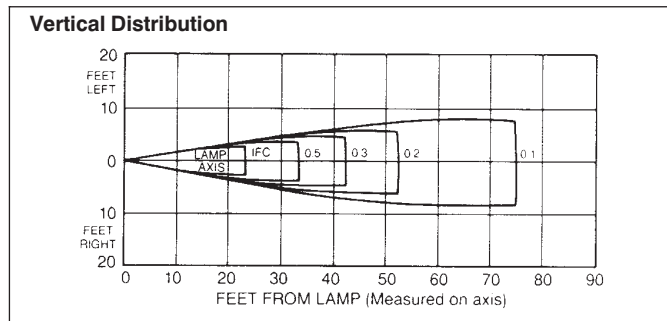
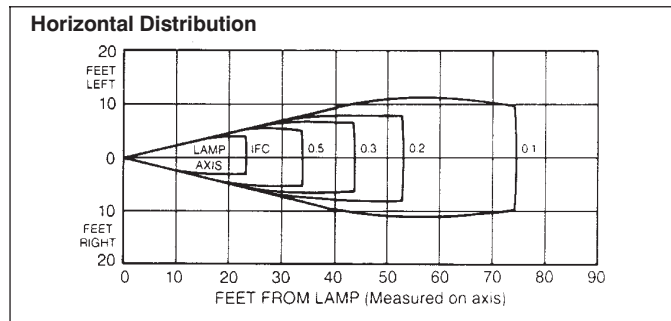
Description	Cat. #
28 watt, 6 volt output power supply with two 8 watt tungsten halogen luminaires	N2LPS6222
56 watt, 6 volt output power supply with two 8 watt tungsten halogen luminaires	N2LPS6422
28 watt, 6 volt output power supply only (less luminaire heads)	N2LPS6220
56 watt, 6 volt output power supply only (less luminaire heads)	N2LPS6420
Remote luminaire assembly with one 8 watt luminaire head	N2RF621
Remote luminaire assembly with two 8 watt luminaire heads	N2RF622
Remote luminaire assembly with one 12 watt 6 volt lamp for mounting in Class 1, Division 1, Group C and D areas	EVLA126
Power supply with two 8 watt tungsten halogen luminaires and single face exit sign. Exit sign operates in emergency mode only.	N2LPS6422-EXS
Power supply with two 8 watt tungsten halogen luminaires and double face exit sign. Exit sign operates in emergency mode only.	N2LRS6422-EXD

Option:

Description	Suffix to be Added to Cat. #
N2LPS6422 with exit sign EXS or EXD that operates in both normal and emergency mode.	S840

Photometric Data:

Isofootcandle Chart



Wire Sizing for Remote Installation:

For Copper Wire –

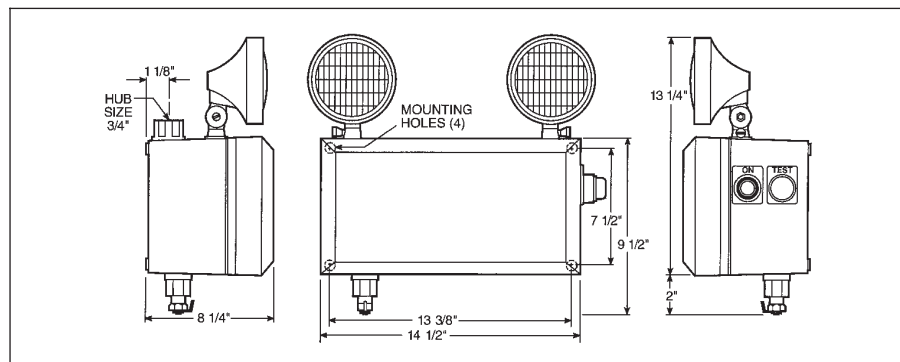
Running Distance* (ft.) Between Power Supply and Remote Luminaire

Wire Size	8	16	24	32
16 AWG	26	13	6	3
14 AWG	42	21	10	5
12 AWG	66	33	16	8

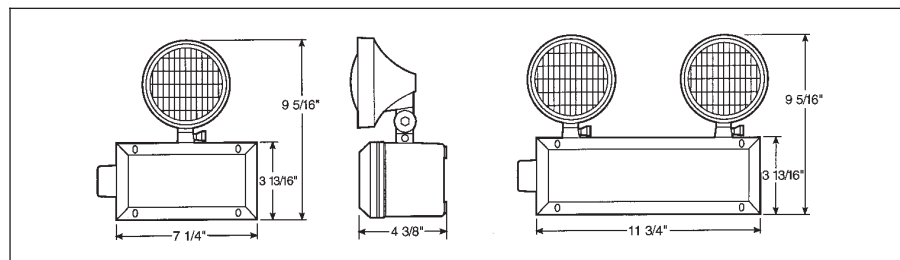
Wire Size	8	16	24	32
10 AWG	106	53	26	13
8 AWG	168	84	42	21
6 AWG	270	135	67	33

* Maximum distance to limit line voltage drop to 5%.

Dimensions (N2LPS):



Dimensions – Remote Luminaires (N2RF621 – N2RF622)



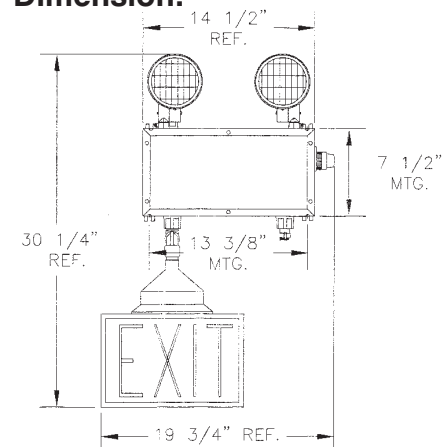
Weights:

Description	Weight
N2LPS6222 (28 watt system)	16 lbs.
N2LPS6422 (56 watt system)	21 lbs.

Weights:

Description	Weight
N2RF621 (8 watt)	6 lbs.
N2RF622 (16 watt)	8 lbs.

Dimension:



CPMVFB Emergency Compact Fluorescent

Continuous Operation
Champ-Pak™ Luminaires

- Cl. I, Div. 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence *
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66
- Emergency Lighting

Application:

- where emergency lighting is required to permit workers in industrial areas to safely encounter their surroundings during power failures
- where emergency egress lighting is required, such as: catwalks, walkways, tunnels, doorways, stairs, stairwells, ramps and aisles
- indoor and outdoor wall mounting or vertical surface mounting where minimal luminaire depth is required in:
 - Manufacturing plants and heavy industrial facilities
 - Industrial process facilities such as refineries, chemical, petrochemical, pharmaceutical and platforms
 - Waste or sewage treatments plants
 - Offshore, dockside and harbor installations
- For security and safety lighting in industrial facilities for lighting of loading docks, tunnels and stairways
- For marine, wet location, hosedown and corrosive environments

Features & Benefits:

- Unique compact shallow-profile design mounts virtually anywhere
- Side hinged cover with two screw closing for easy installation and maintenance
- Gray Corro-free™ epoxy powder coat two-piece housing provides superior corrosion resistance
- Unique stainless steel wire guard accessory attaches without any additional hardware for easy installation and maintenance
- Glass refractor provides uniform light distribution to eliminate glare
- Silicon gaskets make luminaire suitable for NEMA 4X, Marine environments
- High power factor ballasts (+90%) are standard, which allow more luminaires per circuit

Standard Materials:

- Luminaire housing and door frame assembly - copper-free aluminum
- External hardware - stainless steel
- Lens - heat and impact-resistant refractor style glass
- Gaskets - silicon rubber
- Reflector - aluminum light sheet
- Wire guard - stainless steel

Standard Finishes:

- Aluminum - Corro-free™ epoxy powder coat
- Stainless steel - natural

* Consult Cooper Crouse-Hinds

Certifications and Compliances:

- NEC and CEC:
 - Class I, Division 2, Groups A, B, C, D
 - Class II, Class III & Simultaneous Presence (Class I Division 2 and Class II)
 - Class I Zone 2
- IEC:
 - Zone 2 Ex nR IIC
- UL Standards
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15



About the battery:

- Bodine fluorescent battery pack ballasts are UL Component Recognized
- Sealed, maintenance-free, high-temperature nickel-cadmium
- Solid state chargers are sealed inside the ballast case
- 90 minute illumination time
- 10-year life expectancy
- 2-year full warranty
- During auxiliary use 1 lamp has continuous operation
- A red indicator light indicates the battery is charging
- Wiring instructions for a "Push-to-Test" button is supplied with the fixture

Electrical Rating Ranges:

- 52 watts
- 120-277V, 50-60Hz
- 120V, 60Hz
- 347V, 60Hz

Options:

- Restricted Breathing Construction
 - Class I Division 2 & Zone 2 Suitability
 - Cooler Operating Temperatures (T-numbers)
- Certified for IEC Zone 2 (Suffix S826TB)
 - Furnished with
 - Terminal Block
 - Crimp Terminals
 - Dedicated voltage ballasts (no MT, DT or TT)
- Factory Assembled with Lamp installed
- Fused - protects ballast and capacitors against abnormal line conditions
 - (Not for use in Canada)
 - (Not for Marine use)

Suffix to be added
to Cat. #
S826

S826TB

FA
S658†

Accessories:

Stainless Steel Wire Guard

Cat. #
P55

† When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

CPMVFB Emergency Compact Fluorescent

Continuous Operation
Champ-Pak™ Luminaires

Ordering Information
Dimensions & Weights

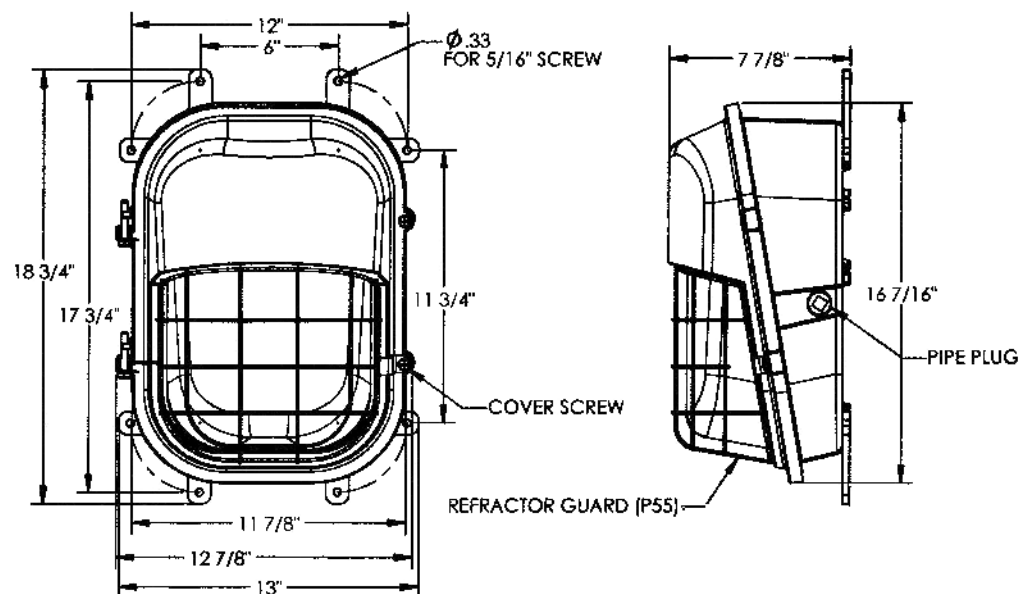
10L

Ordering Information:

Hub Size	Lamp Watts	Catalog Number for use with ANSI Lamps
3/4NPT	26	CPMVFB2W026

	Standard Voltage Ballasts		
	NEC/UL	CEC/CSA (cUL)	
Voltage	120-277V 50-60Hz	120V/60Hz	347V 60Hz
Suffix	/UNV	/120CAN	/347

Dimensions (Inches):



Net Weight:

Luminaire Less Guard
P55 Guard

18.6 Lbs.
0.5 Lbs.

10L
Emergency
Lighting

DMVFB Emergency Compact Fluorescent

Continuous Operation
Champ® Luminaires

- Cl. I, Div. 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div. 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)

- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66
- Emergency Lighting

Application:

DMVF series Champ lighting luminaires are used:

- where emergency lighting is required to permit workers in industrial areas to safely encounter their surroundings during power failures.
- Where emergency egress lighting is required, such as: catwalks, walkways, tunnels, doorways, stairs, stairwells, ramps, and aisles.
- in areas made hazardous by abnormal conditions resulting in the presence of flammable vapors or gases.
- in areas made hazardous by the presence of combustible dusts.
- where combustible dusts and flammable vapors are present simultaneously.
- in marine applications where water spray and corrosive atmospheres are considerations.
- on installations where vibration and rough usage are problems.
- where a cool, efficient light source is required.
- in areas that require lamps to reach full illumination immediately.
- in refineries, chemical and petrochemical facilities, grain processing, handling or storage facilities, manufacturing plants waste water treatment plants sewage treatment plants, oil terminals, food processing facilities, breweries, and any other manufacturing or processing facility where safe, reliable, hazardous area fluorescent or auxiliary lighting is needed.

Standard Features:

- Housings made of die-cast copper-free aluminum (less than 0.4 of 1% copper) for strength and resistance to corrosion.
- Mounting modules equipped with integral hub set screws for vibration resistance (ceiling, pendant, and quad mounts).
- Hubs are provided with an integral conduit stop and bushing to help prevent damage to field wiring during installation.
- Epoxy powder finish and stainless steel external hardware for resistance to corrosion.
- Long-life gaskets which provide seals between mounting module, housing, and optical assembly.
- Grounding wire for safety.
- Cool operating design.
- Optional stainless steel open bottom guard permits direct access to the globe for easy relamping.
- Battery pack ballast for emergency lighting.

Energy Savings

- Less wattage used with compact fluorescent lamps compared to equivalent incandescent lamps providing the same light output.

About the battery: (DMVFB Units)

- Bodine fluorescent battery pack ballasts are UL Component Recognized.
- Sealed, maintenance-free, high-temperature nickel-cadmium
- Solid state chargers are sealed inside the ballast case.
- 90 minute illumination time
- 10-year life expectancy
- 2-year full warranty
- During auxiliary use 1 lamp has continuous operation
- A red indicator light indicates the battery is charging.
- Wiring instructions for a "Push-to-Test" button is supplied with the luminaire.

Standard Materials:

- Ballast housings and mountings – copper-free aluminum (less than 0.4 of 1%).
- Exterior hardware and guards – stainless steel.
- Reflectors – Krydon® fiberglass-reinforced polyester material.
- Globe – heat and impact resistant internally fluted glass.

Standard Finishes:

- Aluminum – gray epoxy powder coat.
- Krydon material – high reflectance white.
- Stainless steel – natural.

Electrical Rating Ranges:

- 52 and 64 watts
- 120-277V, 50-60 Hz
- 347V, 60 Hz

Certifications and Compliances:

- NEC/CEC:
 - Class I, Division 2, Groups A, B, C, D
 - Class II, Class III & Simultaneous Presence (Class I Division 2 and Class II)
 - Class I Zone 2 Emergency Lighting
- IEC
 - Zone 2 Ex nR IIC
- UL Standards
 - 844, 2279 Hazardous (Classified) Locations
 - 1598 Luminaires
 - 1598A Marine Locations
 - 924 Emergency Lighting
- CSA Standards
 - C22.2 No. 137
- IEC Standards
 - 60079-15



Options:

Description

- Restricted Breathing Construction
 - Class I Division 2 & Zone 2 Suitability
 - Cooler Operating Temperatures (T-Numbers)
- Certified for IEC Zone 2 (Suffix S826TB)
 - Furnished with Terminal Block Crimp Terminals

Suffix to be added to Cat. No.

S826

S826TB

- Emergency Operation only

Consult Crouse-Hinds

- Factory Assembled with lamps installed for additional labor savings add suffix **FA**.
- Fused – to protect ballast against abnormal line conditions (not for use in Canada) (not for Marine use) add suffix **S658.***
- Lamps supplied with luminaire . . . add suffix **S714**.
- Top hat with stainless steel threaded insert to attach ballast housing . . . add suffix **S806**.
- TEFLON® coating on globe for increased shatter protection add suffix **S808**.

Accessories:

- (Order separately)
- Dome Cat. # RD739
- 30° Angle Cat. # RA739

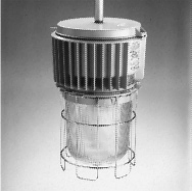
* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

DMVFB Emergency Compact Fluorescent

Continuous Operation Champ® Series Luminaires

- Cl. I, Div. 2, Groups A, B, C, D
- Restricted Breathing Cl. I, Div 2 & Zone 2 (Suffix S826)
- Certified for IEC Zone 2 (Suffix S826TB)
- Cl. II Groups E, F, G, Cl. III & Simultaneous Presence
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66
- Emergency Lighting

10L

DMVFB Series Fluorescent with Battery Back-Up with G303 Globe and P33 Guard Cat. No.			
Mounting Style	Hub Size	Lamp Watts	
	Pendant Mount	3/4	52
		1	
		3/4	64
		1	
	Flexible Pendant Mount	3/4	52
		3/4	64
	Ceiling Mount Thru-Feed	3/4	52
		1	
		3/4	64
		1	
	Wall Mount Thru-Feed	3/4	52
		1	
		3/4	64
		1	
	Quad-Mount	3/4	52
	Pendant, Adjustable Thru-Feed, 25° Angle, 12-1/2° Angle	3/4	64
	Stanchion Mount 25° Angle	1-1/2	52
		1-1/2	64
	Stanchion Mount Straight	1-1/2	52
		1-1/2	64

Note: For technical information on family trees, temperature performance data, dimensions, weights, and photometrics, refer to DMVF Series in Section 6L.

NOTES:
1. Catalog numbers are basic numbers. **Voltage must be specified.**

Standard Voltage Ballasts

	NEC/UL	CEC/CSA (cUL)	
Voltage Suffix	120-277V 50-60Hz /UNV	120V/60Hz /120CAN	347V 60Hz /347

EVLPFB Emergency Compact Fluorescent

Continuous Operation Low Profile Luminaires

- Cl. I, Div. 1, Groups B (GB Suffix), C, D
- Cl. I, Zone 1, Groups IIB + H2 (GB suffix), IIB, IIA
- Cl. II, Div. 1, Groups E, F, G; Class III, Simultaneous Presence

- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66
- Emergency Lighting

Application:

Cooper Crouse-Hinds Low Profile Hazard*Gard® luminaires are used in:

- areas that require lamps to reach full lumination immediately.
- where emergency lighting is required to permit workers in industrial areas to safely encounter their surroundings during power failures.
- where emergency lighting is required such as: catwalks, walkways, tunnels, doorways, stairs, stairwells, ramps and aisles.
- areas where flammable or explosive vapors or gases are present
- hazardous areas, both indoors and outdoors, where long life and low maintenance costs are desired
- petroleum refineries, chemical, petrochemical and pharmaceutical plants, oil terminals, gas plants and other heavy process industry facilities
- waste treatment facilities
- drilling platforms and other coastal and offshore hazardous areas

Features - Benefits:

- Small compact size
- Two start Acme threaded construction
- Easier assembly, installation and maintenance
- Light weight copper-free aluminum housing with powdered epoxy finish
- All exterior hardware is corrosion-resistant stainless steel
- Four mounting arrangements pendant, ceiling, wall bracket and stanchion
- Integral ballast
- High power factor (90%+) ballasts
- Uses same mounting modules as the standard Hazard*Gard®
- Internally fluted glass globes
- Krydon® construction dome and angle reflectors – won't rust, corrode, dent, chip or peel
- Now available in components – luminaire body, mounting module, guard, reflectors
- Three wire construction
- For energy conservation, luminaires can be switched off without affecting the emergency operation feature

Standard Materials:

- Mounting modules, cover, ballast housing, globe holder – copper free aluminum
- Globe – heat and impact resistant glass
- Exterior hardware – stainless steel
- Reflectors (dome & angle) – Krydon™ fiberglass-reinforced polyester

Energy Saving:

- Less wattage used with compact fluorescent lamps compared to equivalent incandescent lamps providing the same light output.



Standard Materials:

- Mounting modules, cover, ballast housing, globe holder – copper free aluminum
- Globe – heat and impact resistant glass
- Exterior hardware – stainless steel
- Reflectors (dome & angle) – Krydon™ fiberglass-reinforced polyester

Standard Finishes:

- Copper-free aluminum – *Corro-free™ powdered epoxy*
- Krydon – *white*
- Stainless steel guard

Ratings (Electrical/Size):

Sources/wattage:

- Fluorescent continuous operation
- Emergency Lighting 52W (2-26W lamps) and 64W (2-32W lamps) Compact fluorescent

Voltages:

- Fluorescent Emergency Lighting
- 120-277V, 50-60 Hz
- 120V, 60 Hz
- 347V 60Hz

Conduit entries:

- 3/4", 1" NPT – pendant, wall bracket, ceiling
- 1/4" NPT – stanchion

Options:

Description	Suffix to be added to Cat. #
Group B suitability	GB
Fused (not for use in Canada) (not for Marine use)	S658*
Factory assembled with lamps	FA
Emergency Operation only	Consult Cooper Crouse-Hinds

Accessories:

Description	Cat. #
Dome reflector	RD739
Angle reflector	RA739

About the Battery

- Bodine fluorescent battery pack ballasts are UL Component Recognized.
- Sealed, maintenance-free, high-temperature nickel-cadmium.
- Solid state chargers are sealed inside the ballast case.
- 90 minute illumination time.
- 10-year life expectancy
- 2-year warranty.
- During emergency use, 1 lamp has continuous operation.
- A red indicator light indicates the battery is charging.
- Wiring instructions for a "Push-to-Test" button is supplied with the fixture.

* When ordering fuses for luminaires, option S658, you must specify the operating voltage. S658 cannot be ordered with /MT in the catalog number.

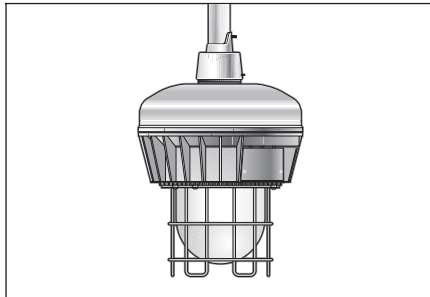
EVL PFB Emergency Compact Fluorescent

Continuous Operation
Low Profile Luminaires

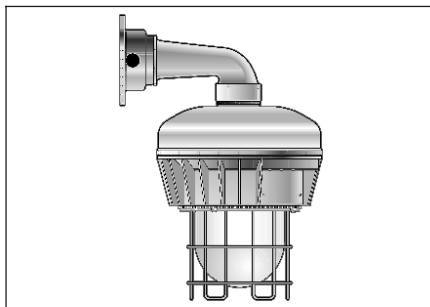
- Cl. I, Div. Groups B (GB suffix), C, D
- Cl. I, Zone 1, Groups IIB + H2 (with Suffix GB), IIB, IIA
- Cl. II, Div 1, Groups E, F, G; Class III, Simultaneous Presence
- Marine & Wet Locations
- 3, 3R, 4, 4X; IP66
- Emergency Lighting

10L

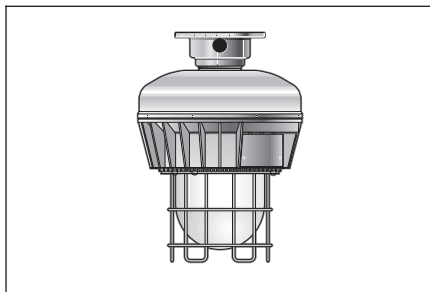
Ordering Information



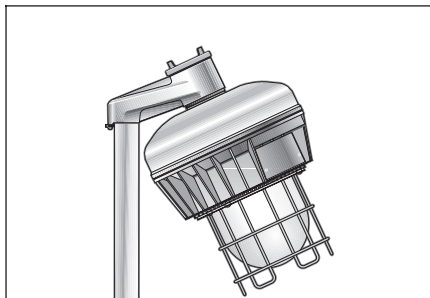
Pendant Mount



†Wall Bracket Mount



†Ceiling Mount



Stanchion Mount

†Ceiling and bracket mounts have 4 hubs: 3 are plugged.

		Pendant	Wall Bracket†	Ceiling†	Stanchion	Luminaire Body Less Mounting Module & Guard
Watt	Hub Size	With Guard Catalog #	With Guard Catalog #	With Guard Catalog #	With Guard Catalog #	Catalog #
Fluorescent with Emergency Ballast – High Power Factor Ballast (Min. P.F. 90%)						
52W	3/4	EVL PFB A02521	EVL PFB BX02521	EVL PFB CX02521		EVL PFB 0520
	1	EVL PFB A03521	EVL PFB BX03521	EVL PFB CX03521		
	1 1/4				EVL PFB J04521	
64W	3/4	EVL PFB A02641	EVL PFB BX02641	EVL PFB CX02641		EVL PFB 0640
	1	EVL PFB A03641	EVL PFB BX03641	EVL PFB CX03641		
	1 1/4				EVL PFB J04641	

Complete Catalog Numbers as follows:

1.	Standard Voltage Ballasts			
	NEC/UL	CEC/CSA (cUL)		
	Voltage Suffix	120-277V 50-60Hz /UNV	120V/60Hz /120CAN	347V 60Hz /347

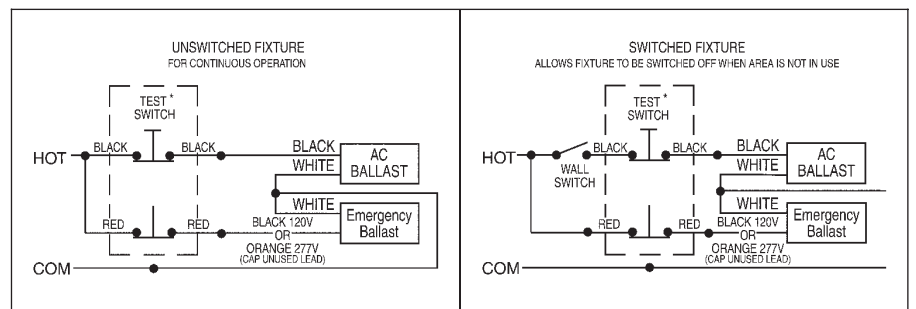
Example: **EVL PFB 02521/UNV**

2. Other Voltages - Consult Cooper Crouse-Hinds

Note: For technical information on family trees, temperature performance data, dimensions, weights, and photometrics, refer to DMVF Series in Section 5L.

EVFPFB Fluorescent Emergency Lighting

- Three wire construction, for switching purposes, is standard on Fluorescent Emergency Lighting.
- For energy conservation, luminaires can be switched off without affecting the emergency operation feature.



* Test Switch is remote mounted.
Use Cooper Crouse-Hinds EDSC218 (Not furnished).

10L
Emergency
Lighting

Notes Page

[illegible]

“Steady On” Beacons, “Rotating” Beacons and “Flashing” Strobe Lights

Luminaires for Hazardous and Non-Hazardous Locations

Description	Page No.
Application	940
VF Beacons Fluorescent “Steady On”	941
EX Fire Alarm Strobe Light	942, 944, 949
EX Strobe Light	943, 944, 949
EX Steady-on Beacon	945, 946, 949
EX Rotating Beacon	947, 948, 949
VDAS Strobe Lights	950

Application:

- for use in hazardous and non-hazardous areas (as shown in the quick selector chart shown below).
- to supplement audible signals, especially in high noise areas.
- as visual signals or warning lights.
- to identify the location of safety equipment such as emergency shower, eye wash stations, and emergency telephones, fire extinguishers and emergency stop switches.
- for status indication of machinery or processes.
- to indicate dangerous areas or areas requiring caution.
- to signal dangerous or hazardous conditions.

Considerations for Selection:**Environmental:**

- What is the hazardous area classification (NEC/CEC) of the location in which the luminaire will be installed?

Signaling Requirements:

- What will the visual signal be used for (Communicating, alerting, warning)?

Physical Arrangements:

- Type of luminaire mounting needed.

Quick Selector Chart:

Series	Hazardous Area Suitability	Lamp Watts	Volts	No. of Lamps
VF - “Steady On” Beacons	CL. I, Div 2, Groups A, B, C, D CL. I, Zone 2, Group IIC Wet Locations - 3, 3R	(2) 9W	120V 60 Hz.	2
EX Strobes, Steady-On Beacons, & Rotating Beacons	CL. I, Div. I, Groups C,D CL. I, Zone 1 & 2, Group IIB CL. II, Div. I, Groups E,F,G Wet Locations - 4X, Marine	Xenon Strobe Halogen Beacon	120 VAC 24 VDC 12-48 VDC 24-28 VDC	
VDAS Strobes	CL. I, Div 2, Groups A, B, C, D CL. I, Zone 2, Group IIC CL. II, Div 2, Groups F, G; Cl. III Wet Locations - 3, 3R, 4, 4X	Xenon Strobe	120V 60 Hz 240V 60 Hz 12-24VDC	1

Warning and Visual Indication Colors Available	Typical Uses
Green	Emergency Shower or Eye Wash Station
Blue	Emergency Telephones
Red	Danger, Equipment Operating
Yellow	Caution
Clear	Equipment end of cycle

VF "Steady On" Beacon

Compact Fluorescent Warning and Visual Indication Light

- Cl. I, Div. 2, Groups A, B, C, D
- Cl. I, Zone 2, Groups IIC
- Wet Locations
- 3, 3R
- Green - Safety Shower
- Blue - Emergency Telephones
- Red - Danger
- Amber - Warning
- Visual Signal

11L

Application:

VF series "Steady On" fluorescent beacons are used indoors or outdoors:

- where the energy efficiency and long life of compact fluorescent lamps are desired
- for continuous signaling requirements.
- where a continuous "Steady-On" fluorescent light signal is required
- where ambient noise makes audible signals difficult to hear.
- as visual signals or warning lights on loading docks; at obstructions, exits or entrances.
- for identifying the location of safety equipment such as safety showers or emergency telephones.
- for call signals.
- for status indication or area lighting on offshore rigs, mines, refineries etc.
- in locations which are hazardous due to the presence of flammable vapors or gases and where dampness or corrosion are present.
- to identify a potentially dangerous obstacle.
- as a continuous source to warn or communicate.

Typical Applications are:

- Green - Identify safety shower locations
- Blue - Identify emergency telephones
- Amber - Caution signal
- Red - Danger signal
- Red & Amber - Emergency situations
- Blue & Red - Security or malfunctioning equipment.
- Green & Clear - Equipment end of cycle.

Features:

- Extremely energy efficient, only 18 watt (2-9 watt compact fluorescent lamps)
- Packs considerable punch for ample visibility even in harsh environments.
- Compact size and light weight allow adaptation and easy installation in many industrial applications
- Cast copper-free aluminum (less than 0.4 of 1% copper) construction and epoxy powder finish provide excellent resistance to corrosion
- Variety of mounting arrangements to suit any lighting layout - pendant, ceiling, wall bracket, angle stanchion.
- Glass globes are internally fluted and stippled to enhance visibility. Exteriors are smooth to shed dust
- Grounding wire for safety

Standard Materials:

- Bodies and guards - copper-free aluminum (less than 0.4 of 1%)
- Globes - glass

Standard Finishes:

- Copper-free aluminum - powder epoxy finish

Electrical Ratings:

- Input voltage - 120 VAC, 60 hertz
- Wattages: 18W (Two 9W lamps)



Options:

Description

- 250 volt Nameplate for export applications

Suffix added to Cat. No.

/250

Weights:

Luminaire Type

VFA
VFHF
VFHBF

2-Lamp Luminaire With Globe & Guard (lbs.)
5
5 1/4
7 1/2

Temperature Performance Data:

Style 1 & 2 Lamp	Class I Div. 2	Max. Ambient	Supply Wire °C	Minimum Operating
9W	T3B	40°C	75°C	-4°C (25°F)

Certifications and Compliances:

NEC and CEC:

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

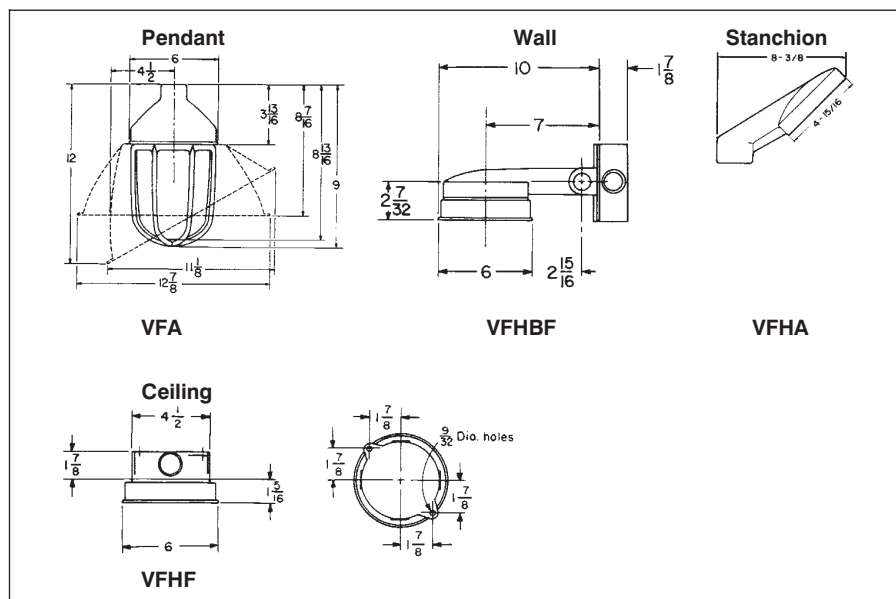
Class I, Zone 2

- UL Standards 844

1598 Luminaires

- CSA standards c22.2 No. 137

Dimensions



Ordering Information:

Style

Pendant VFA222GRP
Wall VFHBF222GRP
Ceiling VFHF222GRP
Stanchion VFHA422GRP

Catalog Number - by Globe Color

Red
VFA222GRP
VFHBF222GRP
VFHF222GRP
VFHA422GRP

Amber
VFA222GAP
VFHBF222GAP
VFHF222GAP
VFHA422GAP

Green
VFA222GGP
VFHBF222GGP
VFHF222GGP
VFHA422GGP

Blue
VFA222GBP
VFHBF222GBP
VFHF222GBP
VFHA422GBP

Clear
VFA222GP
VFHBF222GP
VFHF222GP
VFHA422GP

11L

Hazard•Gard EX Series Visual Signaling Devices

Explosionproof Fire Alarm Strobe Light



Class I, Division 1, Groups C & D
Class I, Zone 1 & 2, Group IIB
Class II, Division 1, Groups E, F, G • Class III
UL 1638, 1203 and 1971 Listed
NEMA 4X watertight, IP 66



The **Hazard•Gard™ EXFASC Series** is a visual fire alarm signaling device for hazardous areas. The EXFASC Series strobes are UL 1971 Listed for indoor signaling applications for the hearing impaired in non-sleeping areas. They are also UL listed for Type 3R, 4X installations. The strobes are available for pendant, wall and ceiling mounts.

The **EXFASC Series Fire Alarm Explosionproof Strobe** contains a supervisory diode for use in fire alarm applications. Under normal operation the diode is reversed biased, meaning it blocks voltage from being applied to the strobe light and prevents it from lighting. When a fire-initiating device such as a smoke alarm is activated, the diode's polarity is reversed through a fire alarm panel. The diode becomes forward biased, allowing voltage to the device and activating the strobe.

Primary Applications

- Visual fire alarm signaling device for hazardous areas

Typical Industries

- Energy exploration
- Utilities
- Wastewater treatment plants
- Pulp & paper plants
- Petrochemical plants
- Petroleum refineries
- Oil rigs

Key Features and Benefits

- Meets NFPA requirements for fire safety warning devices.
- State of the art electronic design (full wave rectified design).
 - Low current draw is efficient.
 - 24VDC regulated full wave rectified
 - Limited in-rush current favorable to other fire alarm system components.
 - Proven, reliable circuitry designed specifically for use with fire alarm control panels.
- Available in pendant, wall and ceiling mount.
- Strobe light produces 65 flashes per minute.
- Factory sealed — no external seals required.
- Quick connect — Strobe fixture threads onto mounting module for easy installation.
- Small compact size — ceiling mount is 13¼-inch long.

Certifications and Compliances

- Class I, Division 1, Groups C & D
- Class I, Zone 1 & 2, Group IIB
- Class II, Division 1, Groups E, F & G
- Class III
- UL 1638 and 1203 Listed
- UL 1971 Listed for indoor visual signaling for the hearing impaired in non-sleeping areas
- cUL Listed C22.2 No. 205
- NEMA 4X watertight, IP 66

Materials & Finishes

- Body, mounting modules and guard — Copper-free aluminum
- Globe — Heat and impact-resistant glass
- Gaskets — Silicone
- External hardware — Stainless steel
- Internal components — Solid-state electronics in a moisture-resistant and heat-dissipating epoxy
- Epoxy powder coated for corrosion resistance

Ratings

- 16-33VDC
- Operating Current: 1.08 - 0.83 amps
- Peak Candlepower: 800,000

Hub Size

- 3/4-inch NPT pendant, ceiling and wall mount

Ordering Information

STEP 1 Order Strobe Type

Catalog Number	Voltage	Lens Color	NEMA Rating
FIRE ALARM RATED EXPLOSIONPROOF STROBES			
EXFASC301/16 33	24VDC regulated full wave rectified	Clear	3R, 4X

Temperature Performance Data

See page 944.

STEP 2 Order Mounting Module

Catalog Number	Hub Size	Mounting Style
EVMP2	3/4"	Pendant
EV22 & EV87	3/4"	Wall
EV22	3/4"	Ceiling
EVMJ4	1 1/4"	Stanchion

Hazard•Gard EX Series Visual Signaling Devices

Explosionproof Strobe Light

Class I, Division 1, Groups C & D
Class I, Zone 1 & 2, Group IIB
Class II, Division 1, Groups E, F, G • Class III
UL 1638, 1203 and 844 Listed
1598A Marine Listed (120VAC and 24VDC only)
NEMA 4X watertight, IP 66

11L



Cooper Crouse-Hinds Hazard•Gard **EXS** and **EXDS** Series Explosionproof Strobe Lights are designed for installation indoors and outdoors in locations which are hazardous due to the presence of flammable vapors or gases, ignitable dusts or ignitable fibers and flyings. The units are UL listed for Type 3R and 4X installations. The 120V and 24VDC models are Marine Rated. The strobes are available for pendant, wall, stanchion and ceiling mounts, and come in six different globe colors.

The **EXDS** Series is diode polarized for use in electrically supervised circuits. Electrically supervised circuits are typically used in life-safety or security applications.

Under normal operation the diode is reversed biased, meaning it blocks voltage from being applied to the strobe and prevents it from lighting. When an initiating device such as a smoke detector is activated, the diode's polarity is reversed through a circuit panel. The diode becomes forward biased, allowing voltage to the device and activating the strobe.

Primary Applications

- Condition signaling
- Security alert
- In areas where audible signals cannot be heard
- Equipment obstruction warning
- Emergency evacuation signaling

Typical Industries

- Utility gas plants
- Wastewater treatment plants
- Mining
- Petroleum refineries
- Chemical & petrochemical
- Pulp & paper

Key Features and Benefits

- Strong strobe signal that produces 65 flashes per minute.
- Compact design will not obstruct in low ceiling or small areas. Ceiling mount is only 13¾-inch long.
- Quick connect — Strobe fixture threads onto mounting module for easy installation.
- Factory sealed — No external seals required.
- Available in pendant, wall, stanchion and ceiling mount.
- Available in six different globe colors — clear, red, blue, amber, green and magenta.
- Silicone gasket seals out dirt and moisture.

Certifications and Compliances

- Class I, Division 1, Groups C & D
- Class I, Zone 1 & 2, Group IIB
- Class II, Division 1, Groups E, F & G
- Class III
- UL and cUL 1638, UL 1203 and UL 844 Listed
- 1598A Marine Listed (120VAC and 24VDC only)
- cUL Listed C22.2 No. 205
- NEMA 4X watertight, IP 66

Materials & Finishes

- Body, mounting modules and guard — Copper-free aluminum
- Globe — Heat and impact-resistant glass
- Gaskets — Silicone
- External hardware — Stainless steel
- Internal components — Solid-state electronics in a moisture-resistant and heat-dissipating epoxy
- Epoxy powder coated for corrosion resistance

Ratings

- 120VAC (EXS), 12–48VDC (EXSNM) and 24VDC nominal, voltage operating range is 16–33VDC (EXDS)
- Operating Current: 0.10 amps at 120VAC
1.2–3.8 amps at 12–48VDC
0.8 amps at 24VDC
- Peak Candlepower: 800,000

Hub Size

- 3/4-inch NPT pendant, ceiling and wall mount
- 1¼-inch NPT stanchion mount

11L
Beacons
and Strobes



Class I, Division 1, Groups C & D
 Class I, Zone 1 & 2, Group IIB
 Class II, Division 1, Groups E, F, G • Class III
 UL 1638, 1203 and 844 Listed
 1598A Marine Listed (120VAC and 24VDC only)
 NEMA 4X watertight, IP 66

Ordering Information

STEP 1 Order Strobe Type

Catalog Number	Voltage	Lens Color	NEMA Rating
EXPLOSIONPROOF STROBES			
EXS301A/120	120VAC	Amber	3R, 4X, Marine
EXS301B/120	120VAC	Blue	3R, 4X, Marine
EXS301C/120	120VAC	Clear	3R, 4X, Marine
EXS301G/120	120VAC	Green	3R, 4X, Marine
EXS301M/120	120VAC	Magenta	3R, 4X, Marine
EXS301R/120	120VAC	Red	3R, 4X, Marine
EXSNM301A/12 48	12-48VDC	Amber	3R, 4X
EXSNM301B/12 48	12-48VDC	Blue	3R, 4X
EXSNM301C/12 48	12-48VDC	Clear	3R, 4X
EXSNM301G/12 48	12-48VDC	Green	3R, 4X
EXSNM301M/12 48	12-48VDC	Magenta	3R, 4X
EXSNM301R/12 48	12-48VDC	Red	3R, 4X
DIODE POLARIZED EXPLOSIONPROOF STROBES			
EXDS301A/24	24VDC	Amber	3R, 4X, Marine
EXDS301B/24	24VDC	Blue	3R, 4X, Marine
EXDS301C/24	24VDC	Clear	3R, 4X, Marine
EXDS301G/24	24VDC	Green	3R, 4X, Marine
EXDS301M/24	24VDC	Magenta	3R, 4X, Marine
EXDS301R/24	24VDC	Red	3R, 4X, Marine

STEP 2 Order Mounting Module

Catalog Number	Hub Size	Mounting Style
EVMP2	3/4"	Pendant
EV22 & EV87	3/4"	Wall
EV22	3/4"	Ceiling
EVMJ4	1 1/4"	Stanchion

Temperature Performance Data

	Ambient Max. Temp.	Supply Wire	Class I Div. 1, 2 Group C, D Class I, Zone 1 Group II B	Class II, Class III Div. 1 Group E, F, G	Class II, Class III Div. 2 Group F, G
EXFASC Series Fire Alarm Voltage 24VDC Regulated Full Wave Rectified (Operating Range 16-33VDC) (Marine Listed)	40°C 55°C	75°C 90°C	T6(85°C) T5(100°C)	T4A(120°C) T4(135°C)	T4A(120°C) T4(135°C)
EXS Series Strobe Light Voltage 120VAC (Marine Listed)	40°C 55°C 65°C	75°C 90°C 105°C	T6(85°C) T6(85°C) T6(85°C)	T4A(120°C) T4(135°C) T4(135°C)	T4A(120°C) T4(135°C) T4(135°C)
EXSNM Series Strobe Light Voltage 12-48 VDC (Not Marine Listed)	40°C 55°C 65°C	75°C 90°C 105°C	T6(85°C) T6(85°C) T6(85°C)	T4A(120°C) T4(135°C) T4(135°C)	T4A(120°C) T4(135°C) T4(135°C)
EXDS Series Strobe Light-Diode Polarized Voltage 24 VDC (Marine Listed)	40°C 55°C	75°C 90°C	T6(85°C) T5(100°C)	T4A(120°C) T4(135°C)	T4A(120°C) T4(135°C)

Hazard•Gard EX Series Visual Signaling Devices

Explosionproof Steady-On Beacons

Class I, Division 1, Groups C & D
Class I, Zone 1 & 2, Group IIB
Class II, Division 1, Groups E, F, G • Class III
UL 1638, 1203 and 844 Listed
1598A Marine Listed
NEMA 4X watertight, IP 66

11L



Cooper Crouse-Hinds Hazard•Gard **EXSO and EXDSO (Diode Polarized) Series Explosionproof Steady On Beacons** are designed for installation in hazardous locations where a visual signal is required for tough environmental conditions involving corrosives, water, dust and extreme temperature.

The units are UL listed for Type 3R, 4X and marine installations. The steady-on beacons are available for pendant, wall, stanchion and ceiling mounts, and come in six different globe colors.

Typical industrial and commercial applications include food processing plants, refineries, mines, tankers, laboratories, sewage treatment plants, off-shore oil rigs, water and filtration plants and chemical plants.

The diode polarized steady-on beacon is used in electrically supervised circuitry for life-safety or security applications.

Primary Applications

- Safety lighting
- Exit or entrance lights
- Obstacle warning
- For identifying the location of safety equipment such as showers or emergency telephones
- Continuous source to communicate

Typical Industries

- Chemical plants
- Storage handling
- Dust conveyor systems
- Energy exploration
- Textile mills
- Flour and feed mills

Key Features and Benefits

- Powerful halogen light source for clear visual indication.
- Available in six different globe colors — amber, blue, clear, green, magenta and red.
- Factory sealed — no external seals required.
- Quick connect — Steady-on beacon fixture threads onto mounting module for easy installation.
- Small compact size — ceiling mount is 13³/₄-inch long.
- Available in pendant, wall, stanchion and ceiling mount.

Certifications and Compliances

- Class I, Division 1, Groups C & D
- Class I, Zone 1 & 2, Group IIB
- Class II, Division 1, Groups E, F & G
- Class III
- UL and cUL 1638, UL 1203 and UL 844 Listed
- 1598A Marine Listed
- NEMA 4X watertight, IP 66

Materials & Finishes

- Body, mounting modules and guard — Copper-free aluminum
- Globe — Heat and impact-resistant glass
- Gaskets — Silicone
- External hardware — Stainless steel
- Internal components — Solid-state electronics in a moisture-resistant and heat-dissipating epoxy
- Epoxy powder coated for corrosion resistance

Ratings

- 120VAC and 24–28VDC
- Operating Current: 0.35 amps at 120VAC (EXSO)
0.8 amps at 24–28VDC (EXDSO, diode polarized)
- Peak Candlepower: 3328

Hub Size

- 3/4-inch NPT pendant, ceiling and wall mount
- 1¹/₄-inch NPT stanchion mount

11L Beacons
and Strobes

11L

Hazard•Gard EX Series Visual Signaling Devices

Explosionproof Steady-On Beacons



Class I, Division 1, Groups C & D
 Class I, Zone 1 & 2, Group IIB
 Class II, Division 1, Groups E, F, G • Class III
 UL 1638, 1203 and 844 Listed
 1598A Marine Listed
 NEMA 4X watertight, IP 66

Ordering Information

STEP 1 Order Steady-On Beacon Type

Catalog Number	Voltage	Lens Color	NEMA Rating
EXPLOSIONPROOF STEADY-ON BEACONS			
EXSO301A/120	120VAC	Amber	3R, 4X, Marine
EXSO301B/120	120VAC	Blue	3R, 4X, Marine
EXSO301C/120	120VAC	Clear	3R, 4X, Marine
EXSO301G/120	120VAC	Green	3R, 4X, Marine
EXSO301M/120	120VAC	Magenta	3R, 4X, Marine
EXSO301R/120	120VAC	Red	3R, 4X, Marine
DIODE POLARIZED EXPLOSIONPROOF STEADY-ON BEACONS			
EXDSO301A/24 28	24–28VDC	Amber	3R, 4X, Marine
EXDSO301B/24 28	24–28VDC	Blue	3R, 4X, Marine
EXDSO301C/24 28	24–28VDC	Clear	3R, 4X, Marine
EXDSO301G/24 28	24–28VDC	Green	3R, 4X, Marine
EXDSO301M/24 28	24–28VDC	Magenta	3R, 4X, Marine
EXDSO301R/24 28	24–28VDC	Red	3R, 4X, Marine

STEP 2 Order Mounting Module

Catalog Number	Hub Size	Mounting Style
EVMP2	3/4"	Pendant
EV22 & EV87	3/4"	Wall
EV22	3/4"	Ceiling
EVMJ4	1 1/4"	Stanchion

Temperature Performance Data

	Ambient Max. Temp.	Supply Wire	Class I Div. 1, 2 Group C, D Class I, Zone 1 Group II B	Class II, Class III Div. 1 Group E, F, G	Class II, Class III Div. 2 Group F, G
EXSO Series Steady-On Beacon Voltage 120VAC	40°C 55°C 65°C	75°C 90°C 105°C	T6(85°C) T5(100°C) T5(100°C)	T4A(120°C) T4(135°C) T4(135°C)	T4A(120°C) T4(135°C) T4(135°C)
EXDSO Series Steady-On Beacon — Diode Polarized Voltage 24-28 VDC	40°C 55°C 65°C	75°C 90°C 105°C	T6(85°C) T6(85°C) T6(85°C)	T4A(120°C) T4(135°C) T4(135°C)	T4A(120°C) T4(135°C) T4(135°C)

Hazard•Gard EX Series Visual Signaling Devices

Explosionproof Rotating Beacons

Class I, Division 1, Groups C & D
Class I, Zone 1 & 2, Group IIB
Class II, Division 1, Groups E, F, G • Class III
UL 1638, 1203 and 844 Listed
1598A Marine Listed
NEMA 4X watertight, IP 66

11L



Cooper Crouse-Hinds Hazard•Gard **EXR Series Explosionproof Rotating Beacons** are designed for installation in hazardous locations, such as manufacturing plants, heavy industrial facilities, refineries, chemical, petrochemical, pharmaceutical and off-shore drilling platforms.

The units are UL listed for Type 3R, 4X and marine installations. The rotating beacons are available for pendant, wall, stanchion and ceiling mounts, and come in six different globe colors.

The **EXDR Series Explosionproof Rotating Beacon** is diode polarized for use in standard 24–28VDC electrical circuits or in electrically supervised circuits. Electrically supervised circuits are typically used in life-safety or security applications.

Under normal operation in an electrically supervised circuit, the diode is reversed biased, meaning it blocks voltage from being applied to the rotating beacon and prevents it from lighting. When a warning detecting device is activated, the diode's polarity is reversed through a circuit panel. The diode becomes forward biased, allows voltage to the device and activates the rotating beacon.

Primary Applications

- Security alert
- Obstacle warning
- Areas under construction or off limits
- Equipment obstruction warning
- Status indication of a process
- Supplement audible signaling

Typical Industries

- Utility gas plants
- Wastewater treatment plants
- Chemical plants
- Pharmaceutical plants
- Refineries
- Mining

Key Features and Benefits

- Powerful halogen rotating beacon emits bright light to provide critical visual warning.
- Available in pendant, wall, stanchion and ceiling mount.
- Available in six different globe colors — amber, blue, clear, green, magenta and red.
- Beacon produces 75 rotations per minute.
- Factory sealed — No external seals required.
- Quick connect — Strobe fixture threads onto mounting module for easy installation.

Certifications and Compliances

- Class I, Division 1, Groups C & D
- Class II, Division 1, Groups E, F & G
- Class I, Zone 1 & 2, Group IIB
- Class III
- UL and cUL 1638, UL 1203 and UL 844 Listed
- 1598A Marine Listed
- NEMA 4X watertight, IP 66

Materials & Finishes

- Body, mounting modules and guard — Copper-free aluminum
- Globe — Heat and impact-resistant glass
- Gaskets — Silicone
- External hardware — Stainless steel
- Internal components — Solid-state electronics in a moisture-resistant and heat-dissipating epoxy
- Epoxy powder coated for corrosion resistance

Ratings

- 120VAC (EXR) and 24–28VDC (EXDR)
- Operating Current: 0.382 amps at 120VAC
0.8 amps at 24–28VDC
- Peak Candlepower: 3328 (EXR)
2838 (EXDR)

Hub Size

- ¾-inch NPT pendant, ceiling and wall mount
- 1¼-inch NPT stanchion mount

11L
Beacons
and Strobes

11L

Hazard•Gard EX Series Visual Signaling Devices

Explosionproof Rotating Beacons



Class I, Division 1, Groups C & D
 Class I, Zone 1 & 2, Group IIB
 Class II, Division 1, Groups E, F, G • Class III
 UL 1638, 1203 and 844 Listed
 1598A Marine Listed
 NEMA 4X watertight, IP 66

Ordering Information

STEP 1 Order Rotating Beacon Type

Catalog Number	Voltage	Lens Color	NEMA Rating
EXPLOSIONPROOF ROTATING BEACONS			
EXR301A/120	120VAC	Amber	3R, 4X, Marine
EXR301B/120	120VAC	Blue	3R, 4X, Marine
EXR301C/120	120VAC	Clear	3R, 4X, Marine
EXR301G/120	120VAC	Green	3R, 4X, Marine
EXR301M/120	120VAC	Magenta	3R, 4X, Marine
EXR301R/120	120VAC	Red	3R, 4X, Marine
DIODE POLARIZED EXPLOSIONPROOF ROTATING BEACONS			
EXDR301A/24 28	24-28VDC	Amber	3R, 4X, Marine
EXDR301B/24 28	24-28VDC	Blue	3R, 4X, Marine
EXDR301C/24 28	24-28VDC	Clear	3R, 4X, Marine
EXDR301G/24 28	24-28VDC	Green	3R, 4X, Marine
EXDR301M/24 28	24-28VDC	Magenta	3R, 4X, Marine
EXDR301R/24 28	24-28VDC	Red	3R, 4X, Marine

STEP 2 Order Mounting Module

Catalog Number	Hub Size	Mounting Style
EVMP2	3/4"	Pendant
EV22 & EV87	3/4"	Wall
EV22	3/4"	Ceiling
EVMJ4	1 1/4"	Stanchion

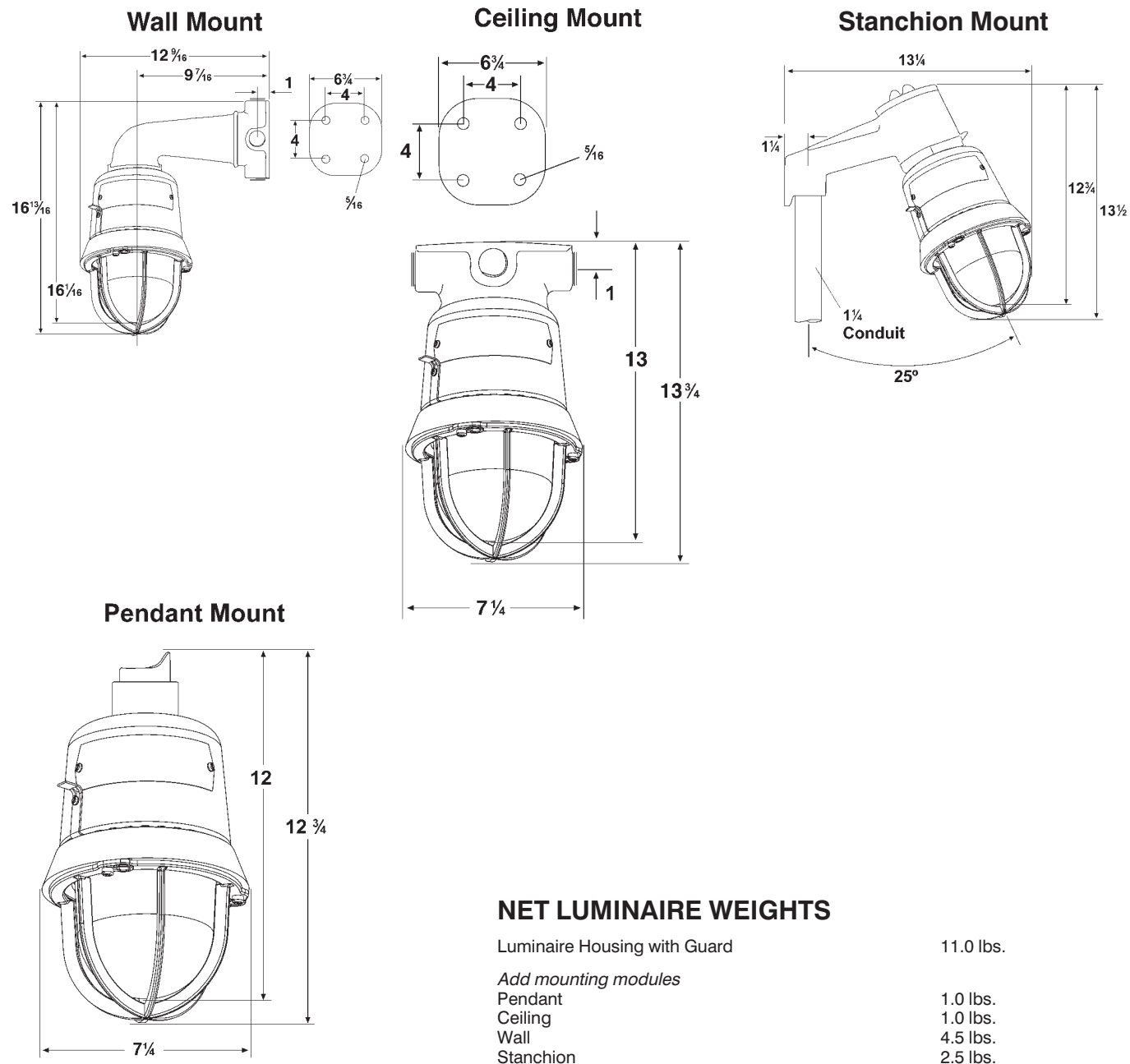
Temperature Performance Data

	Ambient Max. Temp.	Supply Wire	Class I Div. 1, 2 Group C, D Class I, Zone 1 Group II B	Class II, Class III Div. 1 Group E, F, G	Class II, Class III Div. 2 Group F, G
EXR Series Rotating Beacon Voltage 120VAC	40°C	75°C	T6(85°C)	T4A(120°C)	T4A(120°C)
	55°C	90°C	T5(100°C)	T4(135°C)	T4(135°C)
	65°C	105°C	T5(100°C)	T4(135°C)	T4(135°C)
EXDR Series Rotating Beacon — Diode Polarized Voltage 24-28 VDC	40°C	75°C	T6(85°C)	T4A(120°C)	T4A(120°C)
	55°C	90°C	T6(85°C)	T4(135°C)	T4(135°C)
	65°C	105°C	T6(85°C)	T4(135°C)	T4(135°C)

Hazard•Gard EX Series Visual Signaling Devices

Dimensions & Weights

11L



Beacons
11L
and Strobes

11L VDAS Strobe Lights

Warning and Visual Indication

- Cl. I, Div. 2, Groups A, B, C, D
- Cl. I, Zone 2, Group IIC
- Cl. II, Div 2, Groups F, G; Cl. III

- Wet Locations
- 3, 3R, 4, 4X

Application:

VDAS strobe lights are used:

- in areas with high noise levels
- to visually indicate warnings or hazards

Features:

- Reliable solid state components.
- Compact enclosure design provides 60 high intensity flashes per minute.
- Choice of globe colors to meet various requirements.
- Gasketed to seal out dirt and liquids.
- Designed for globe up or globe down applications.
- Easy to install.
- Lightweight corrosion-resistant copper-free aluminum construction.
- Conduit locking hub for increased safety and security.

Standard Materials:

- Body – copper-free aluminum
- Globe – LEXAN® fresnel lens

Standard Finishes:

- Body – gray epoxy

Size Range:

- 3/4" conduit

Certifications and Compliances:

- NEC and CEC:
 - Class I, Division 2, Groups A, B, C, D
 - Class I, Zone 2, IIC
- UL Standards
 - 844
 - 1598 Luminaires
- CSA Standards
 - C22.2 No. 137

Electrical Ratings:

- 120, 240 VAC 50/60 Hz
- 12, 24 VDC

Photometric Data, Clear Globe

- Peak flash – 3.45 million candlepower
- Effective candlepower (light intensity if light is burning steadily) – 201 ECP

Photometric Data:

Globe Color	Output	Intensity
Clear.....	201	ECP
Red.....	46	ECP
Amber.....	152	ECP
Blue.....	38	ECP
Green.....	38	ECP

Operating Current:

Voltage	Operating Current
120 VAC	.3A
240 VAC	.15A
12 VDC	.9A
24 VDC	.45A



CSA Enclosure 3, 4, 5 Replacement Parts

Electronic Strobe Subassembly (includes flash tube):

120 VAC.....	CHTFI-120H
240 VAC.....	CHTFI-240H
12 VDC.....	CHTFI-012
24 VDC.....	CHTFI-024

Flash Tube..... RSTC

Globe Assembly

Clear.....	VDAG/C
Red.....	VDAG/R
Green.....	VDAG/G
Amber.....	VDAG/A
Blue.....	VDAG/B

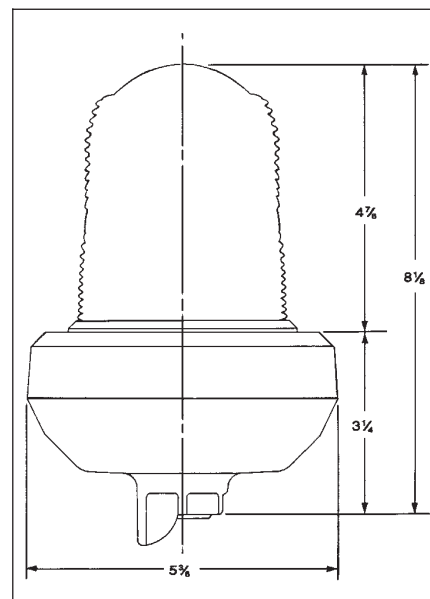
Ordering Information

Globe Color	Pendant Hub Size	Cat. # 120 VAC	Cat. # 240 VAC	Cat. # 12 VDC	Cat. # 24 VDC
Red	3/4"	VDAS/R	VDAS/R/240	VDAS/R/012	VDAS/R/024
Blue	3/4"	VDAS/B	VDAS/B/240	VDAS/B/012	VDAS/B/024
Amber	3/4"	VDAS/A	VDAS/A/240	VDAS/A/012	VDAS/A/024
Green	3/4"	VDAS/G	VDAS/G/240	VDAS/G/012	VDAS/G/024
Clear	3/4"	VDAS/C	VDAS/C/240	VDAS/C/012	VDAS/C/024

Temperature Performance Data:

Ambient °C	Class I Div 2	Class II Div 2, Class III
40°	T3B	T3B
55°	T3A	---
65°	T3	---

Dimensions



Description	Page No.
Application/Selection	952
Gauge Light	958
Tank Light V160 EVA160	953, 954
Task Light EVTL1B50 EVTL1L50	955-957

Tank, Task and Gauge Hazardous and Non-Hazardous Locations Application and Selection

Application:

Specialty lighting luminaires are used:

- for various task lighting requirements in locations that are hazardous (classified) due to the presence of combustible dusts or easily ignitable fibers and flyings
- in areas where conventional lighting is not acceptable due to size and/or location
- in locations where an adequate light source is necessary for tank, instrument, and gauge applications
- in manufacturing plants, refineries, pharmaceutical, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, grain processing and handling facilities and other heavy industrial applications

Considerations for Selection:

Environmental:

- What is the hazardous area classification (NEC)/(CEC) of the location in which the luminaire will be installed?

Lighting levels required:

- What wattage luminaire(s) will provide the desired light level (See lighting Selector Guide, pages 665 through 689, to determine number and location of fixture required).

Physical Arrangement:

- Type of fixture mounting needed.

Product Selection:

- EV Tank Lights are suitable for use in Class I, Groups C, D hazardous (classified) locations. Tank lights are used to light the inside of tanks, vats, process vessels, etc.
- EVTL Explosionproof Task Lights are suitable for use in Class I, Group B, C, D and Class II, Groups E, F, G hazardous (classified) locations. EVTL Lights are ideal for applications in which water spray and corrosive atmospheres are considerations.
- ELG gauge lights are suitable for use in Class I, Groups C, D hazardous (classified) locations. The light is used to illuminate liquid level gauges and to direct the light over the length of the column.

Application:

The incandescent V observation luminaire is used:

- in tanks or kettles where food is processed
- to light the inside of tanks for observation of the contents through a window

Features:

- Watertight
- Supported by a mounting ring which contains holes for riveting when placed around a hole in the tank. It can also be welded or brazed to the tank.
- Heavy heat and impact-resistant glass globe eliminates breakage and resultant contamination of food from glass particles
- Relamping is easily accomplished by removal of the two thumb-screws which fasten the body to the mounting ring
- The flexible cord or cable should be connected by an EC flexible coupling or CG Series connector

Standard Materials:

- Mounting ring – silicon bronze
- Fixture body – *Feraloy*® iron alloy
- Globe – heat-resisting glass

Standard Finishes:

- Feraloy* – electrogalvanized and aluminum acrylic paint
- Bronze – natural

Size Ranges:

- Up to 100 watt, A-21 lamp

Certifications and Compliances:

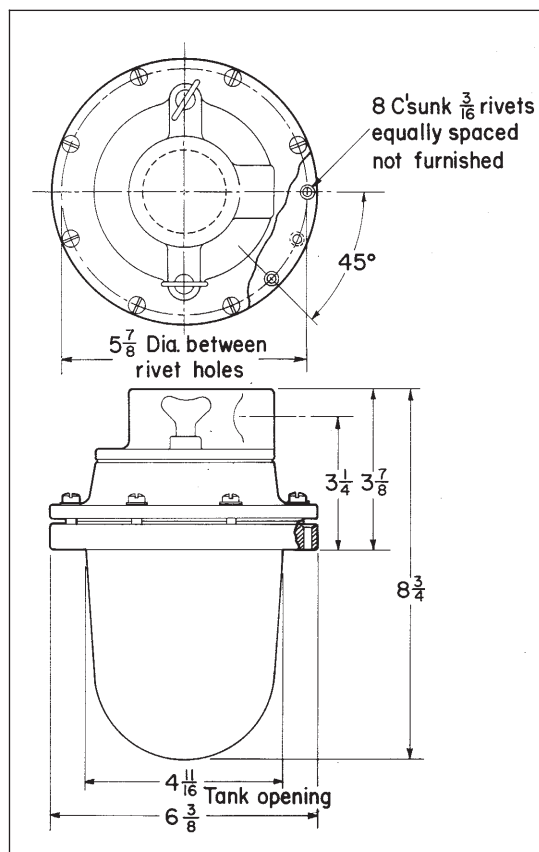
- UL Standard: 1571
- CSA Standard: C22.2



Furnished with EV10 Globe, and C166 Medium Base Lamp Receptacle

Hub Lamp Size	Size	Cat. #
1/2	50, 60, 75 or 100W, A-21	V160

Dimensions



12L EV Tank Luminaires

Cl. I, Div. 1 & 2, Groups C, D
Cl. I, Zone I & 2 IIB
Cl. II, Div. 1, Groups E, F, G – EVO only

Application:

EV tank light luminaires are used:

- to light inside of tanks, vats, process vessels, etc.
- in chemical plants, petrochemical plants and petroleum process industries
- suspended over tank porthole by EC flexible hanger (EVO style)
- mounted directly in tank wall (EVA)

Features:

- High light output
- Compact design

EVA160:

- Furnished with tank ring having eight $\frac{3}{16}$ " holes for riveting to tank
- Can be brazed if desired
- Luminaire ring is attached to the tank ring by eight 1/4-20 Allen Head cap screws
- Luminaire attached to luminaire ring by four wing screws
- EC flexible luminaire support should be used so relamping can be accomplished without disturbing the globe

Standard Materials:

- Bodies – EVA: Receptacle housing and intermediate ring – *Feraloy*® iron alloy. Tank ring – silicon bronze; EVO: copper-free aluminum
- Globes: EVA – glass, heat and impact resistant; EVO – glass, heat strengthened plate glass

Standard Finishes:

- *Feraloy* iron alloy – cadmium electrogalvanized and aluminum acrylic paint; copper-free aluminum – aluminum acrylic paint; silicon bronze – natural

Size Ranges:

- $\frac{1}{2}$ " and $\frac{3}{4}$ " hubs

Capacity Ranges:

- EVO – 75 watt, reflector spot max.
- EVA – 100 watt, A-21 max.

Certifications and Compliances:

- NEC:
Class I, Division 1 and 2, Groups C, D – EVO and EVA
Class II, Division 1, Groups E, F, G – EVO only
- UL Standard: 844

Temperature Performance

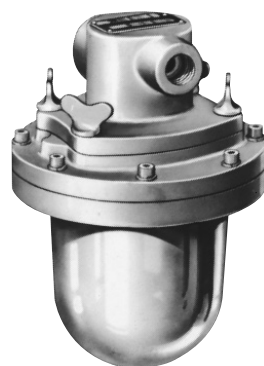
Data: (based on 40°C Ambient)

	Class I Groups C, D	Class II Groups E, F, G	Supply Wire (°C)
EVO2376	T3C	T3C	75
EVA160	T3C*	—	75

*All mounting positions



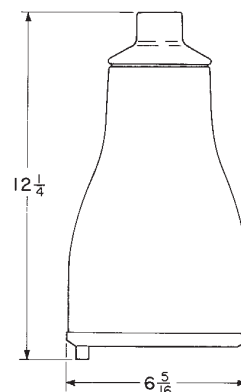
EVO2376



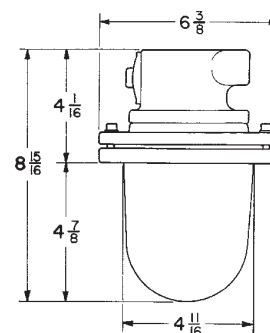
EVA160

Dimensions

EVO2376

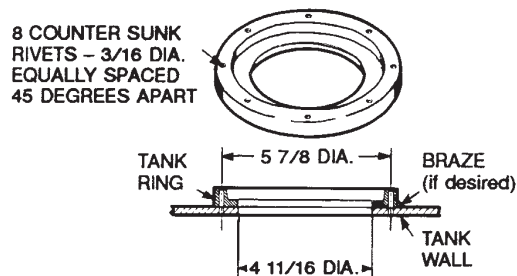


EVA160



Watts	Lamp (not furnished)	Hub Size	Cat. #
75	75R 30/SP reflector spot (medium base)	$\frac{1}{2}$ & $\frac{3}{4}$	EVO2376
100, A-21	Medium base	$\frac{1}{2}$	EVA160

Tank Ring Mounting (EVA160)



EVTL Explosionproof Task Light

Class I Groups B, C, D
Class I Zone I, IIB + H₂
Class II Groups E, F, G
Class III Simultaneous Service

Wet Locations
Marine Locations
NEMA 3, 3R, 4, 4X

12L

Application

EVTL task light luminaires are used:

- For various task lighting requirements in locations that are hazardous (classified) due to the presence of flammable gases or vapors, combustible dusts or easily ignitable fibers & flyings.
- in marine applications where water spray and corrosive atmospheres are considerations.
- in areas where conventional lighting is not acceptable due to size and/or location.
- in locations where an adequate light source is necessary for tank, instrument, and gauge applications.
- in porthole or sightglass applications where a spotlight is required for visibility inside tanks, vats and process vessels.
- in manufacturing plants, refineries, pharmaceutical, chemical, petrochemical, and other industrial process facilities, waste or sewage treatment facilities, grain processing and handling facilities and other heavy industrial applications.

Standard Materials:

- Housing—Copper-free aluminum
- 3/4" NPT hub and plug—Aluminum
- Mounting bracket(s) and External hardware—Stainless Steel
- Gasket—Silicone rubber
- Lens—Heat and impact resistant clear glass

Standard Finishes:

- Aluminum housing (exterior)—Corro-free epoxy powder coat
- Stainless Steel—Natural

Ratings (Electrical/Size)

Source/Wattage (Medium Base Lamps)

- 50PAR20 type—50W 120V halogen parabolic reflector. Lamp life 2000-2500 hrs.
- 130V lamps available to extend lamp life to 5000+ hrs.

Voltage

- 120V 60 Hz

Hub Size

- (1) 1/2" NPT
- For through feed, use EVTL-TF1

Certifications and Compliances:

• NEC/CEC

- Class I Division 1 & 2 Groups B, C, D
- Class II Group E, F, G
- Class III
- Class I Zone 1 & 2 Group IIB + H₂
- Wet locations
- Marine locations
- NEMA 4X

• NEC

- Simultaneous Presence

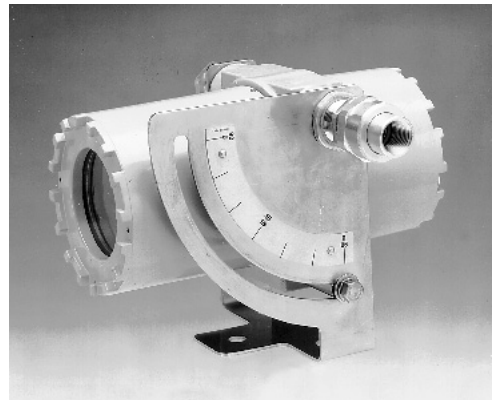
UL Standards

844—Hazardous (Divisions Classified) Locations
1571—Ordinary and Wet Locations, Marine
Outside Type

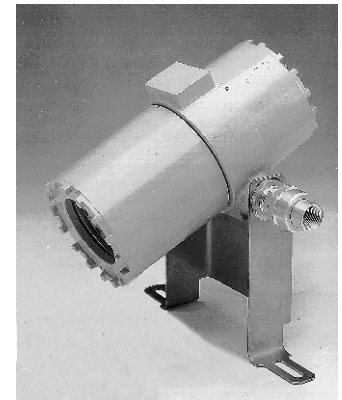
CSA Standards

C22.2 No. 137

Note: Install luminaire within aiming ranges shown on nameplate (See Dimensions)



EVTL1B50



EVTL1L50

Key Features

Class I, II, III, Simultaneous Presence

Class I Group B standard

Wet and Marine (NEMA 4X) Suitability

55° ambient suitability

Cast copper-free aluminum housing with Corro-free™ epoxy powder coat finish.

Stainless steel mounting brackets and hardware.

Two mounting styles bracket and leg

- Bracket (Universal)
- Leg (Site Glass)

Uses standard 50 watt PAR 20 medium base 120V lamps

Uses 50PAR20 130V lamps for added lamp life

50PAR20 lamps available in both flood and spot light patterns

Easy access interior

Seal within 5 ft. (not 18") of luminaire

Benefits

Suitable for most hazardous (classified) areas

Suitable for areas containing hydrogen

Perfect for hose down applications

Addresses higher ambients typical of industrial plants.

Superior corrosion resistance

Superior corrosion resistance

Maximize mounting flexibility

Ceiling, Wall or Base mounting

Site Glass mounting

Improved light output, economical, long life 2000-2500 hour light source

Increase lamp life to 5000+ hours while maintaining 76% lumen output

Vary the illumination characteristics by simply changing lamps

Reduced maintenance and lamp replacement time

Provides greater flexibility in seal location

Ordering Information:

Luminaire Cat. #	Conduit Entry	Mounting Style	Wattage
EVTL1B50	1/2"	Bracket (Universal)	50
EVTL1L50	1/2"	Leg (Site Glass)	50

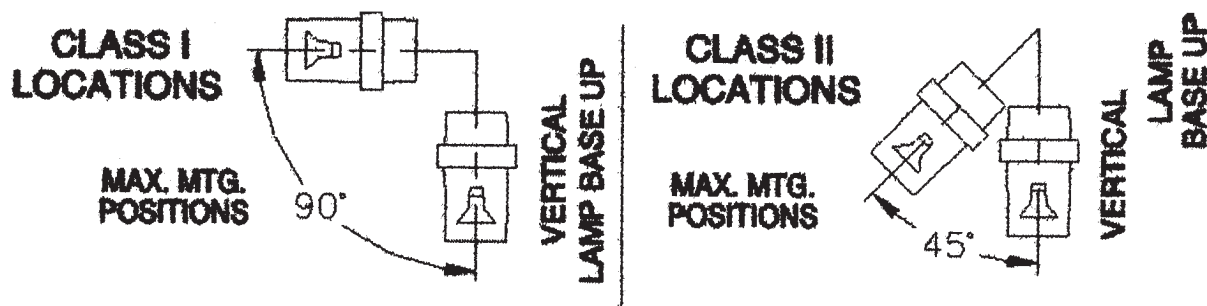
Temperature Performance Data:

Catalog Number	Maximum Ambient °C	Class I, Div. 1, B, C, D Class II, Div. 1, E, F, G Class III Simultaneous Presence	
		Class I, Zone 1, IIB + H ₂	Supply Wire °C
EVTL1B50	40	T3B	85
EVTL1L50	40	T3B	85

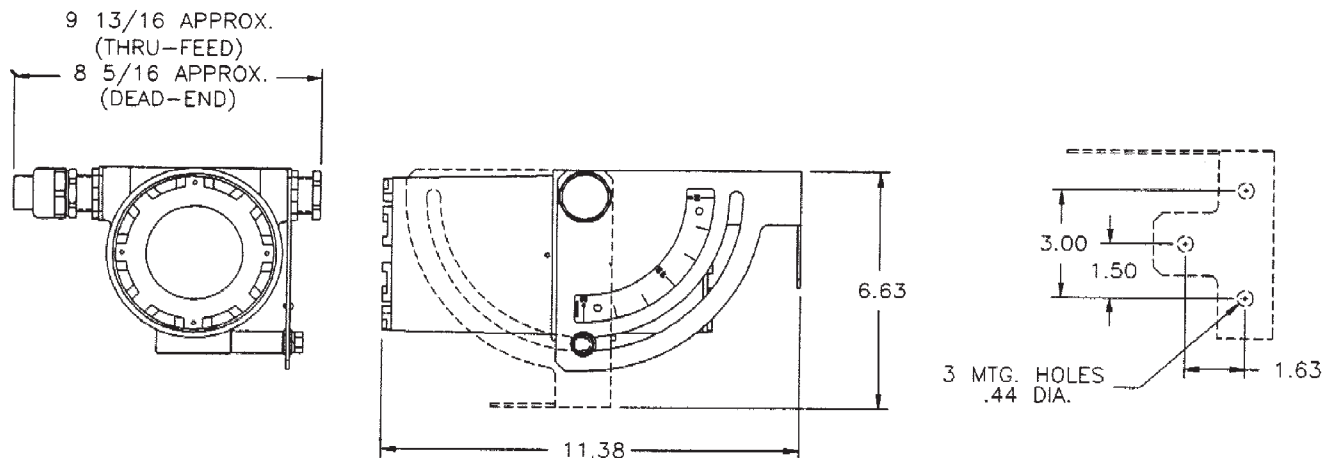
12L EVTL Explosionproof Task Light

Dimensions and Weights

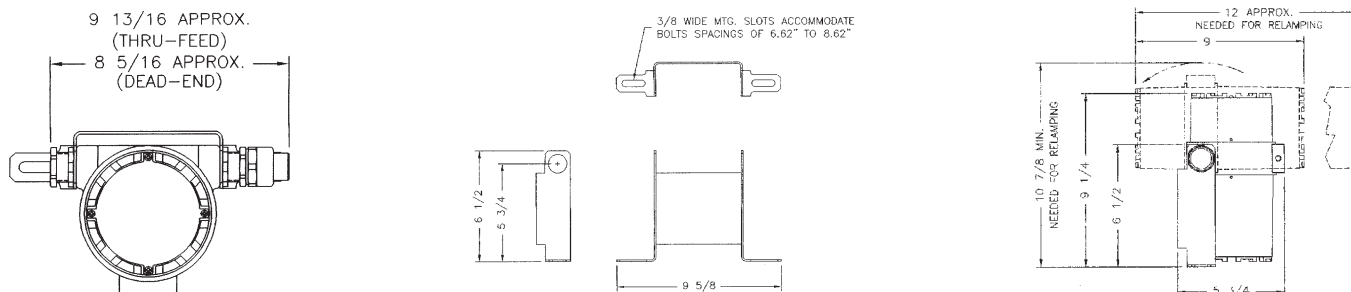
Aiming Range



Dimensions: Bracket Mount



Dimensions: Leg Mount



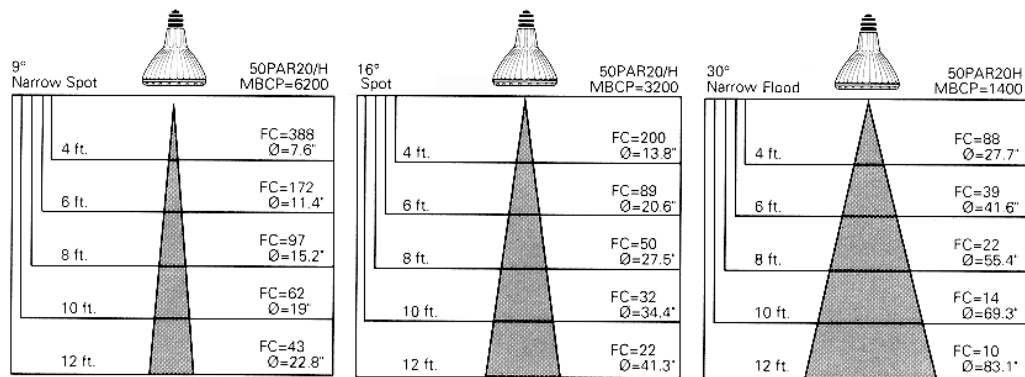
Net Luminaire Weights (lbs)

Luminaire Catalog Weight (lbs.)

EVTL1B50 7

EVTL1L50 7

EVTL-TF1 1/2



MBCP = Maximum Beam Candlepower Ø = Diameter of beam spread in inches FC = Footcandles measured at 0°

Lamp Light Distribution – (Philips lamp data shown. Similar for other manufacturers)

Data shown is for 120 volt lamps

For 130 volt lamps adjust data using a .76 multiplier

12L ELG Gauge Luminaires

Cl. I, Div. 1 & 2, Groups C, D
Cl. 1, Zone 1 & 2 IIB
Explosionproof

Application:

ELG Gauge lights are used:

- in hazardous areas to illuminate liquid level gauges over entire length of gauge
- clamped to **rear** of liquid level gauge and conduit is attached to the ELG hubs. Light is reflected by Lucite reflector along the entire length of the gauge. Liquid level shows on front of gauge. All light is concentrated on liquid column – no spill light.

Features:

- Even illumination over entire length of gauge
- Variety of sizes to fit many gauges
- Several lights can be used in tandem to illuminate long gauge

Standard Materials:

- Body – copper-free aluminum
- Reflectors – plexiglass

Standard Finishes:

- Body – electrogalvanized and aluminum acrylic paint

Size Ranges:

- 1" conduit through feed

Capacity Ranges:

- 120V medium screw base "A19" style incandescent lamp 58W maximum
- 25 watt – medium base – 1000 hour life
- 52 watt – medium base – 2500 hour life
- 58 watt – medium base – 3000 hour life

Certifications and Compliances:

- NEC/CEC:
Class I, Division 1 and 2, Groups C, D

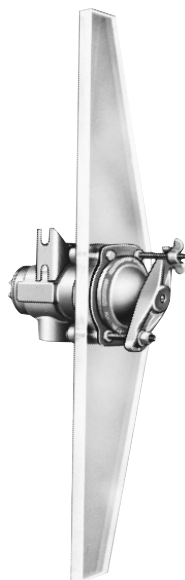
Temperature Performance

Data: (based on 40°C ambient)

58 Watt – T4A
Maximum

Options:

Description	Suffix to be Added to Cat. No.
• Group B suitability	GB



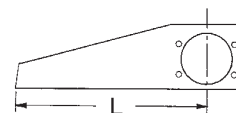
ELG329 with LE49 reflector

Ordering Information:

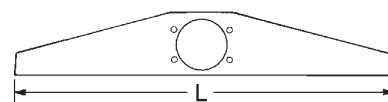
Description	Catalog No.	Length (L) (inches)
Gauge Light (less reflector)	ELG329	—
Reflector – Short style	LE34 LE35	4½ 5½
Reflector – Long style	LE46 LE47 LE48 LE49 LE410 LE412 LE413	13 15 17 19¾ 22 25¼ 26¾

Dimensions

Plexiglass reflectors Short style



Long style



Suggested Lamps (Lamps not furnished)

Manufacturer	Catalog Number			Volts
	25 Watt	52 Watt	58 Watt	
General Electric	25A	60A/52WMP/98		120
Osram/Sylvania	25A	60A/52/SS/XL	58A19/62	120
Philips	25A	60A-52A/99/EW		120