Metalux

DESCRIPTION

GRLED is a recessed lensed troffer series which offers a high quality luminaire designed with the latest solid state lighting and electronic driver technology for optimal performance and energy efficiency. The GRLED is compatible with all of today's popular ceiling systems and is available with a number of shielding options and accessories for application versatility.

The GRLED series features efficiency, quality and performance. The series is an excellent choice for use in a variety of indoor spaces such as offices, schools, residential, hospitals or retail merchandising areas.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Rigid housing is die formed of code gauge prime cold rolled steel and features full length die-formed stiffeners and unibody endplate for added strength. Side flanges are hemmed for safe handling. Innovative design provides superior lens brightness, uniformity and visual comfort. Unibody endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. Endplates have integral Grid-lock feature for safety and convenience. Drivers and internal components are accessible from below the ceiling and LED modules include plug-in low voltage connectors.

Controls

Metalux LED luminaires come standard with 0-10V dimming driver (10% standard, 1% optional).

Options compatible with Eaton's Connected Lighting Systems:

• WaveLinx sensor
• LumaWatt Pro sensor
• SVPD sensor
• DLVP sensor and driver
• Fifth Light DALI driver

Other options include step-dimming and 3rd party drivers. Refer to the Connected Lighting options page and ordering information for more details.

Electrical

Long-Life LED system coupled with electrical driver to deliver optimal performance. LED's available in 3000K, 3500K, 4000K or 5000K with a minimum of 80 CRI. TM21 rating up to L88 >60,000 hours. Electronic drivers are cULus recognized and available for 120-277V and 347V applications. Standard dimming is 0-10V to 10% with 1%, step and Fifth Light DALI dimming options available.

Emergency Battery Pack Option

Optional 120V-277V integral emergency battery pack is available in 7-watts or 14-watts to meet critical life-safety lighting requirements. The 90-minute batteries provide constant power to the LED system, ensuring code-compliance. A test switch/indicator button can be tested safely from the ground using a laser pointer, while the patented EZ Key prevents accidental discharge of the battery during construction. Emergency/generator transfer options available – see ordering information for details.

Frame/Optical Shielding

Die formed, flat steel door with frosted #12 pattern acrylic prismatic lens offering the balance of rigidity and light stability. Primary stocking skus come standard with robust .095 lens with other options available for maximum versatility.

Compliance

Modules are UL recognized components and indoor luminaires are cULus listed for 25°C ambient environments. Fixtures are suitable for direct insulation contact and are damp location listed. RoHS compliant. LED components comply with IESNA LM-79 and LM-80 standards. DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.
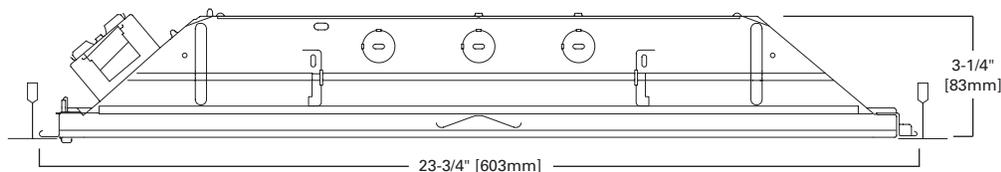
22GR LED

2' X 2' LED TROFFER

General Recessed LED Troffer
For Use in Insulated Ceilings

Connected Systems
CLICK HERE

3-1/4" [83mm]

23-3/4" [603mm]

MOUNTING DATA

23-3/4" [603mm]

23-3/4" [603mm]

DOOR FRAMES

GC
Flat, White Steel Aluminum

GCAFA
Flat, Extruded White Aluminum

GCRA
Deep, Regressed, Extruded Natural
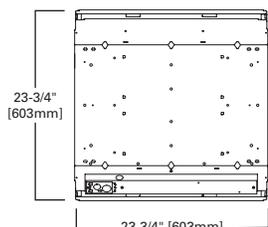
CEILING COMPATIBILITY

G
Grid/Lay-in Standard

G
Concealed T

G
Slot Grid

Ceiling Type	Trim Type
Exposed Grid	G
Concealed T	G
Slot Grid	G

(Verify compatibility/ consult factory.)

LINEAR DISCONNECT

Safe and convenient means of disconnecting power

EATON
Powering Business Worldwide

PHOTOMETRICS
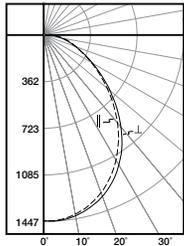
22GR-LD5-32-F1-UNV-L835-CD1-U

Electronic Driver

Linear LED 3500K

Spacing criterion: (II) 1.14 x mounting height, (⊥) 1.18 x mounting height

Lumens: 3268

Input Watts: 29.9W

Efficacy: 109.1 lm/W

Test Report: 22GR-LD5-32-F1-UNV-L835-CD1-U.IES

Candlepower

Angle	Along ‖	45°	Across ⊥
0	1443	1443	1443
5	1435	1432	1441
10	1404	1405	1418
15	1354	1359	1375
20	1288	1296	1318
25	1200	1296	1318
30	1097	1113	1141
35	983	998	1030
40	858	872	899
45	731	745	768
50	604	615	637
55	490	494	509
60	388	385	399
65	301	293	305
70	237	220	228
75	181	163	165
80	130	112	113
85	72	60	59.2
90	0	0	0
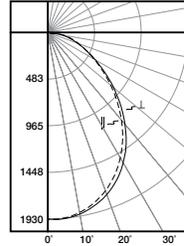
22GR-LD5-43-F1-UNV-L835-CD1-U

Electronic Driver

Linear LED 3500K

Spacing criterion: (II) 1.14 x mounting height, (⊥) 1.18 x mounting height

Lumens: 4360

Input Watts: 40.1W

Efficacy: 108.7 lm/W

Test Report: 22GR-LD5-43-F1-UNV-L835-CD1-U.IES

Candlepower

Angle	Along ‖	45°	Across ⊥
0	1965	1965	1965
5	1915	1910	1923
10	1873	1875	1892
15	1806	1813	1835
20	1718	1729	1759
25	1601	1619	1655
30	1463	1485	1522
35	1312	1331	1374
40	1145	1164	1200
45	975	994	1024
50	806	821	850
55	654	659	679
60	517	513	532
65	402	391	407
70	316	293	304
75	242	217	220
80	173	149	151
85	96	80	79
90	0	0	0

Coefficients of Utilization

Effective floor cavity reflectance 20%

rc	80%				70%				50%			30%			10%			0%
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72
3	92	82	74	68	90	81	73	68	78	72	67	75	70	65	72	68	64	62
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54
5	78	66	58	51	76	65	57	51	63	56	51	61	55	50	59	54	49	47
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42
7	68	55	46	40	66	54	46	40	52	45	40	51	45	40	50	44	39	38
8	63	50	42	36	62	49	42	36	48	41	36	47	41	36	46	40	36	34
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	40	34	30	28

Coefficients of Utilization

Effective floor cavity reflectance 20%

rc	80%				70%				50%			30%			10%			0%
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74	72
3	92	82	74	68	90	81	73	68	78	72	67	75	70	65	72	68	64	62
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54
5	78	66	58	51	76	65	57	51	63	56	51	61	55	50	59	54	49	47
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42
7	68	55	46	40	66	54	46	40	52	45	40	51	45	40	50	44	39	38
8	63	50	42	36	62	49	42	36	48	41	36	47	41	36	46	40	36	34
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	40	34	30	28

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	1079	33.0
0-40	1704	52.1
0-60	2724	83.4
0-90	3268	100.0
0-180	3268	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	3310	3374	3476
55	2737	2758	2841
65	2283	2221	2312
75	2245	2012	2040
85	2646	2205	2175

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	1439	33.0
0-40	2273	52.1
0-60	3634	83.4
0-90	4360	100.0
0-180	4360	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	4416	4502	4638
55	3652	3679	3791
65	3046	2963	3084
75	2994	2685	2722
85	3527	2940	2903

ENERGY AND PERFORMANCE DATA BY CATALOG NUMBER

Stock or MTO*	Catalog Logic	Delivered Lumens	Watts	Efficacy (LPW)
MTO	22GR-LD5-20-F1-UNV-L835-CD1-U	2068	16.1	128
Stock	22GR-LD5-24-F1-UNV-L835-CD1-U	2459	19.2	128
MTO	22GR-LD5-28-F1-UNV-L835-CD1-U	2898	22.9	126
Stock	22GR-LD5-32-F1-UNV-L835-CD1-U	3268	29.9	109
MTO	22GR-LD5-36-F1-UNV-L835-CD1-U	3642	34.5	105
MTO	22GR-LD5-40-F1-UNV-L835-CD1-U	4098	38.8	106
Stock	22GR-LD5-43-F1-UNV-L835-CD1-U	4360	40.1	109
MTO	22GR-LD5-50-F1-UNV-L835-CD1-U	4929	40.4	122
MTO	22GR-LD5-60-F1-UNV-L835-CD1-U	5931	49.6	120
MTO	22GR-LD5-70-F1-UNV-L835-CD1-U	6991	64.2	109
MTO	22GR-LD5-85-F1-UNV-L835-CD1-U	8554	81.1	106
MTO	22GR-LD5-90-F1-UNV-L835-CD1-U	8991	86.0	105

*Stocked in 3500K and 4000K others are MTO.

LENS TABLE

Approximate Lumen Multiplier	
F1	1.0
F125	1.0
A125	1.01
A	1.01
A19/156	.975
FGW080	.85

CCT TABLE

Approximate Color Temperature Multiplier	
5000K	1.016
4000K	1.016
3500K	1.0
3000K	.982
2700K	.930

ORDERING INFORMATION

SAMPLE NUMBER: 22GR-LD5-27-F1-UNV-L835-CD1-U

Rating
[Blank]= Standard
ATW-SW4= Chicago Rated

Width / Length
22=2' x 2'

Trim Type
G=Grid/Lay-in (Standard) [1]
G=Concealed T
G=Slot Grid

Series [11]
R=General Purpose Troffer

Door Frame
Standard=Flat White Steel Door (Leave Blank)
FA=Flush White Extruded Aluminum c/w Spring Latch
RA=Regressed White Extruded Aluminum
FAN=Flush Natural Anodized Extruded Aluminum
RAN=Regressed Natural Anodized Extruded Aluminum
FAB=Flush Black Extruded Aluminum
RAB=Regressed Black Extruded Aluminum
A/WG=Prismatic Acrylic Lens, Wireguard & Doorframe
F1/WG=Frosted Prismatic Acrylic Lens, Wireguard & Doorframe

LED Type
LD5=LED 5.0

LED Lumen Output [9]
20=2000   **50**=5000
24=2400   **60**=6000
28=2800   **70**=7000
32=3200   **85**=8500
36=3600   **90**=9000
40=4000
43=4300

Shielding
F1=A12 .095 HP (Standard)
F125=A12 .125 HP
A=A12 .095
A125=A12 .125
A19/156=#19 Pattern Acrylic (.156" Thick)
FGW080=Frosted Glazed Lens .080

Voltage [2]
347V=347 Volt [12], [13]
UNV=Universal Voltage 120-277 [3]
48V=48 Volt Low-voltage (Class 2)

Options
GL=Single Element Fuse
GM=Double Element Fuse

Emergency
EL7W=7-watt, 120V-277V emergency battery pack installed [4]
EL14W=14-watt 120V-277V emergency battery pack installed [4]
ELV7W=7-watt, DLVP-compatible low voltage emergency battery pack installed [C]
ELV14W=14-watt DLVP-compatible low voltage emergency battery pack installed [C]
GTR2=Bodine Generator Transfer Relay [8]
ETR2=Iota Emergency Transfer Relay [8]
ETRD=Iota Emergency Transfer Relay with dimming control [8]

CCT
L830=3000K
L835=3500K
L840=4000K
L850=5000K

Flex
A3/8-4/18GDIM=3/8" Flex with 0-10V Dimming Leads
Multiple other configurations available. See below for details.

Driver Type
CD=0-10V Dimming Driver (10%-100% Dimming)
HCD=0-10V Dimming Driver (1%-100% Dimming)
SR=Sensor-ready Dimming Driver for LWIPD1 option (1%-100% Dimming) [10], [B]
5LTD=Fifth Light DALI Driver (10%-100% Dimming) [7], [E]
5LTHD=Fifth Light Dimming Driver (1%-100% Dimming) [E]
LV1=DLVP Dimming Driver (0%-100% Dimming) [C]
SD=Step Dimming Driver (50% or 100% Dimming) [7]
LH=Lutron HiLume (LDE1 series) 1%-100% EcoSystem Driver with Soft-on Fade to Black dimming [F]
L5=Lutron 5 Series (LDE5-Series) 5%-100% EcoSystem Driver [F]
LU=Lutron HiLume (L3D series) 1%-100% EcoSystem/3-wire Driver [F]

Number of Drivers
1=1 Driver
2=2 Drivers

Options
PAF=Painted After Fabrication
G1=Gasket, Door Frame and Housing
G2=G1 plus Gasket between Lens and Door
G3=G1 and G2 plus Gasketing on Mounting Surface of Fixture Trims [5], [6]

Integrated Sensing Systems
SWPD1=WaveLinx Wireless Integrated Sensor [A]
LWIPD1=LumaWatt Pro Wireless Integrated Sensor [B]
LWTPD1=LumaWatt Pro Wireless Tile-mount Sensor [B]
SLVPD1=DLVP Low-voltage Integrated Sensor [C]
SVPD1=0-10V Stand-alone Integrated Sensor [D]

Connected Systems CLICK HERE

Packaging
U=Unit Pack
PALC=Job Pack, in carton

ACCESSORIES
EQ-CLIP-U=T-BAR Safety Earthquake Clips [1]
DF-22-W=2' x 2' Drywall Frame Kit
ISHH-01=Programming Remote for Integrated Sensor [D]
ISHH-02=Personal Control Remote for Integrated Sensor [D]

NOTES: [1] An EQ Grid Clip is recommended for all 9/16" ceiling systems. [2] Products also available in non-US voltages and frequencies for international markets. [3] Not available when specifying emergencies, voltage must be specific. [4] With integral test switch/indicator/laser test. For approximate delivered lumens multiply the lumens per watt of the desired fixture by the wattage of the emergency battery pack (100 lm/W x 7=700 lumens). IES-format photometry for luminaire under emergency operation available. [5] Gasketing only available with aluminum door frame. [6] Gasketing minimum .125. [7] Step-Dim (Bi-Level) and Fifth Light (DALI) only available for 3600 lumen and up. Requires two drivers for 8500 lumens and up [8] Used to bypass local control during outage. Must be used in conjunction with UL 1008 device (provided by others). GTR2 and ETR2 options include 2 relays on fixtures with dimming drivers. ETRD option only requires one relay when used on a dimming fixture. Must specify voltage as 120V or 277V when ordering these devices. [9] Nominal lumen output. See table for actual values. [10] SR driver required for LWIPD1 only. PDR required for 8500 lumens and up. [11] DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details. [12] Requires 2 drivers for 7000 lumens and up. [13] 347V versions are not available with emergency options. SD, 5LTD, and SR drivers with 347V are available but not DLC qualified.

Integrated Sensing and Control System Options
NOTES: Integrated options must be used in conjunction with the associated system and may not be compatible with other options or accessories. Please refer to the following: [A] Consult WaveLinx system pages for additional details and compatibility. [B] Consult LumaWatt Pro system pages for additional details and compatibility. [C] Consult DLVP system pages for additional details and compatibility. [D] Consult SVPD series system pages for additional details and compatibility. [E] Consult Fifth Light system pages for additional details and compatibility. [F] Consult Marketplace Options - Lutron system pages for additional details and compatibility. Compatible only with driver series shown, and may require two or more drivers. Requires field commissioning to operate or dim. Contact Lutron at www.lutron.com.

Flexible Metal Conduit Options
Flex options available for 0-10V dimming control, DALI dimming control, emergency and night light functions. 72-inch factory-installed and pre-wired to driver, fitted to luminaire housing access plate with 90° enclosed FMC connector. Not all options may be combined and installation ratings vary by type.
A3/8-4/18GDIM series notes: Factory installed dimming option 3/8" flexible metal conduit with 2-#18 power and ground wires and 2-#18 UL-listed jacketed 0-10V +/- control wires. Meets UL 66, 83, 1479, 1569, 1581, 2556. NEC® 250.118, 300.22(C), 392, 396, 330, 501, 502, 503, 530, 504, 505, 518, 520, 530, 645, 72; Federal Specification A-A-59544 (formerly J-C-30B); all applicable OSHA and HUD Requirements. UL Classified 1-, 2-, and 3-hour through penetration with applicable fire stop product (not included). May be surface mounted, fished and/or embedded in plaster. Cable tray and approved raceway rated, install per NEC®; Environmental Air-Handling Space Installation per NEC® 300.22(C).

Specifications & dimensions subject to change without notice. Consult your Eaton Representative for availability and ordering information.

SHIPPING DATA

Catalog No.	Wt.	Pallet
22GR-LD5-32	10 lbs.	56