

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 L89 >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. Generator

Transfer Device (GTD), emergency transfer switches and other emergency 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.



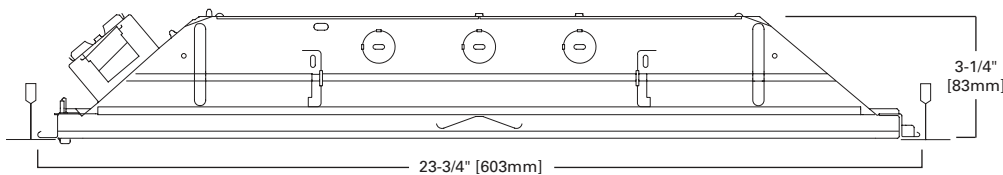
24GR LED LED

2' X 4' LED TROFFER

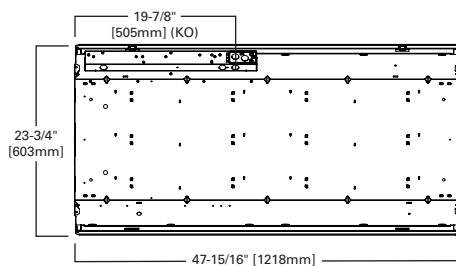
General Recessed LED Troffer
For Use in Insulated Ceilings



Connected Systems
[CLICK HERE](#)



MOUNTING DATA



DOOR FRAMES

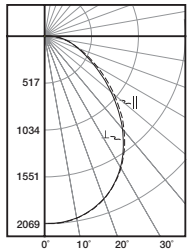
GC	GCAFA	GCRA
Flat, White Steel Aluminum	Flat, Extruded White Aluminum	Deep, Regressed, Extruded Natural

CEILING COMPATIBILITY

G	G	G	Ceiling Type	Trim Type
Grid/Lay-in Standard	Concealed T	Slot Grid	Exposed Grid	G
			Concealed T	G
			Slot Grid	G

(Verify compatibility/consult factory.)

PHOTOMETRICS

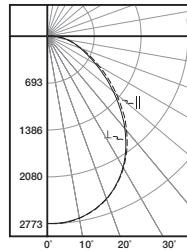


24GR-LD5-48-F1-UNV-L835-CD1-U

Electronic Driver
 Linear LED 3500K
 Spacing criterion:
 (H) 1.19 x mounting
 height, (L) 1.18 x
 mounting height
 Lumens: 4821
 Input Watts: 37W
 Efficacy: 128.6 lm/W
 Test Report: 24GR-
 LD5-48-F1-UNV-
 L835-CD1-U.IES

Candlepower

Angle	Along H	45°	Across L
0	2064	2064	2064
5	2061	2052	2057
10	2028	2019	2026
15	1972	1963	1968
20	1890	1879	1887
25	1779	1773	1774
30	1648	1638	1635
35	1493	1481	1467
40	1316	1299	1286
45	1128	1108	1087
50	946	921	893
55	767	740	717
60	606	574	563
65	468	437	440
70	349	329	344
75	256	243	265
80	172	168	190
85	95	90	105
90	0	0	0



24GR-LD5-64-F1-UNV-L835-CD1-U

Electronic Driver
 Linear LED 3500K
 Spacing criterion:
 (H) 1.19 x mounting
 height, (L) 1.18 x
 mounting height
 Lumens: 6462
 Input Watts: 48W
 Efficacy: 134.2 lm/W
 Test Report: 24GR-
 LD5-64-F1-UNV-
 L835-CD1-U.IES

Candlepower

Angle	Along H	45°	Across L
0	2767	2767	2767
5	2763	2750	2758
10	2718	2706	2716
15	2643	2631	2637
20	2534	2519	2529
25	2384	2376	2378
30	2209	2196	2192
35	2001	1985	1967
40	1764	1741	1724
45	1512	1486	1458
50	1267	1234	1198
55	1028	992	961
60	812	769	755
65	627	586	590
70	467	440	461
75	344	326	356
80	231	225	254
85	128	121	141
90	0	0	0

Coefficients of Utilization

rc rw RCR	Effective floor cavity reflectance																	
	80%			70%			50%			30%			10%			0%		
	70	50	30	70	50	30	70	50	30	70	50	30	70	50	30	0		
0	119	119	119	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	94	92	90	91	89	87	85
2	100	92	86	80	98	90	85	80	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	85	73	65	58	82	72	64	58	69	63	57	67	61	57	65	60	56	54
5	78	66	57	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	72	60	51	45	71	59	51	45	57	50	44	55	49	44	54	48	44	42
7	67	54	46	40	66	54	46	40	52	45	40	51	44	39	49	44	39	37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	33
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	33	29	28

Coefficients of Utilization

rc rw RCR	Effective floor cavity reflectance																	
	80%			70%			50%			30%			10%			0%		
	70	50	30	70	50	30	70	50	30	70	50	30	70	50	30	0		
0	119	119	119	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	94	92	90	91	89	87	85
2	100	92	86	80	98	90	85	80	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	85	73	65	58	82	72	64	58	69	63	57	67	61	57	65	60	56	54
5	78	66	57	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	72	60	51	45	71	59	51	45	57	50	44	55	49	44	54	48	44	42
7	67	54	46	40	66	54	46	40	52	45	40	51	44	39	49	44	39	37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	33
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	33	29	28

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	1564	32.4
0-40	2486	51.6
0-60	4001	83.1
0-90	4821	100.0
0-180	4821	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2444	2401	2355
55	2048	1977	1915
65	1697	1584	1595
75	1517	1439	1571
85	1671	1580	1842

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	2097	32.4
0-40	3333	51.6
0-60	5370	83.1
0-90	6462	100.0
0-180	6462	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	3276	3218	3157
55	2746	2650	2567
65	2275	2123	2138
75	2034	1928	2105
85	2241	2119	2469

ENERGY AND PERFORMANCE DATA BY CATALOG NUMBER

Stock or MTO*	Catalog Logic	Delivered Lumens	Watts	Efficacy (LPW)
MTO	24GR-LD5-30-F1-UNV-L835-CD1-U	3074	23.4	131
MTO	24GR-LD5-34-F1-UNV-L835-CD1-U	3459	26.7	129
Stock	24GR-LD5-38-F1-UNV-L835-CD1-U	3880	30.6	127
MTO	24GR-LD5-42-F1-UNV-L835-CD1-U	4294	34.6	124
Stock	24GR-LD5-48-F1-UNV-L835-CD1-U	4821	37.4	129
MTO	24GR-LD5-56-F1-UNV-L835-CD1-U	5618	45.1	124
Stock	24GR-LD5-64-F1-UNV-L835-CD1-U	6462	48.1	134
MTO	24GR-LD5-72-F1-UNV-L835-CD1-U	7257	56.0	129
MTO	24GR-LD5-85-F1-UNV-L835-CD1-U	8567	70.3	122
MTO	24GR-LD5-90-F1-UNV-L835-CD1-U	9092	69.1	132
MTO	24GR-LD5-100-F1-UNV-L835-CD2-U	10030	71.7	140
MTO	24GR-LD5-120-F1-UNV-L835-CD2-U	12260	90.1	136
MTO	24GR-LD5-130-F1-UNV-L835-CD2-U	13290	90.2	134
MTO	24GR-LD5-150-F1-UNV-L835-CD2-U	15340	120.3	128
MTO	24GR-LD5-180-F1-UNV-L835-CD2-U	18050	144.2	125

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

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

ORDERING INFORMATION

SAMPLE NUMBER: 24GR-LD5-48-F1-UNV-L835-CD1-U

<p>Rating [Blank]= Standard ATW-SW4= Chicago Rated</p> <p>Width / Length 24=2' x 4'</p> <p>Trim Type G=Grid/Lay-in (Standard)⁽¹⁾ G=Concealed T G=Slot Grid</p> <p>Series⁽¹³⁾ R=General Purpose Troffer</p> <p>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</p>	<p>LED Type LD5=LED 5.0</p> <p>LED Lumen Output⁽¹¹⁾ 30=3000 100=10000 34=3400 120=12000 38=3800 130=13000 42=4200 150=15000 48=4800 180=18000 56=5600 64=6400 72=7200 85=8500 90=9000</p> <p>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</p>	<p>Voltage⁽²⁾ 347V=347 Volt^{(15), (16)} UNV=Universal Voltage 120-277⁽³⁾ 48V=48 Volt Low-voltage (Class 2)</p> <p>Options GL=Single Element Fuse GM=Double Element Fuse</p> <p>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⁽⁵⁾ ELV14W=14-watt DLVP-compatible low voltage emergency battery pack installed⁽⁵⁾ GTD2=Bodine Generator Transfer Device⁽¹⁰⁾ ETS2=IOTA Emergency Transfer Switch⁽¹⁰⁾ ETS-DR=IOTA Emergency Transfer Switch for Dimming Application⁽¹⁴⁾</p> <p>CCT L830=3000K L835=3500K L840=4000K L850=5000K</p> <p>Flex A3/8-4/18GDIM=3/8" Flex with 0-10V Dimming Leads Multiple other configurations available. See below for details.</p>	<p>Driver Type CD=0-10V Dimming Driver (10%-100% Dimming)⁽⁹⁾ HCD=0-10V Dimming Driver (1%-100% Dimming)⁽⁹⁾ SR=Sensor-ready Dimming Driver for LWIPD1 option (1%-100% Dimming)^{(12), (8)} 5LTD=Fifth Light DALI Driver (10%-100% Dimming)^{(8), (6)} 5LTHD=Fifth Light Dimming Driver (1%-100% Dimming)^{(8), (6)} LV1=DLVP Dimming Driver (0%-100% Dimming)⁽²⁾ 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⁽⁷⁾ L5=Lutron 5 Series (LDE5-Series) 5%-100% EcoSystem Driver⁽⁷⁾ LU=Lutron HiLume (L3D series) 1%-100% EcoSystem/3-wire Driver⁽⁷⁾</p> <p>Number of Drivers 1=1 Driver 2=2 Drivers</p> <p>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)} XFMR=Transformer</p>
<p>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^(B)</p>	<p>Packaging U=Unit Pack PALC=Job Pack, in carton</p>	<p>ACCESSORIES EQ-CLIP-U=T-BAR Safety Earthquake Clips⁽¹⁾ DF-24-W=2' x 4' Drywall Frame Kit ISHH-01=Programming Remote for Integrated Sensor^(D) ISHH-02=Personal Control Remote for Integrated Sensor^(D)</p>	



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 dimming (bi-level) 1 driver, 4200 - 10000, 2 driver, 12000 and up lumen model. ⁽⁸⁾ DALI available from 4200 - 9000 lumen models. Two drivers required for 10000 lumen models and up. ⁽⁹⁾ Requires two drivers for 10000 lumens and above. ⁽¹⁰⁾ Used to transfer fixture to secondary power source for life-safety operation. When used with a dimming fixture, two devices are required to ensure control is disabled while operating under emergency power. ⁽¹¹⁾ Nominal lumen output. See table for actual values ⁽¹²⁾ SR driver required for LWIPD1 only. PDR required for 120 lumens and up. ⁽¹³⁾ DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details. ⁽¹⁴⁾ For dimming applications only one is required. ⁽¹⁵⁾ XFMR required for 15000 lumens and up. ⁽¹⁶⁾ 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
24GR-LD5-48	20 lbs.	28



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www.eaton.com/lighting

Specifications and dimensions subject to change without notice.

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