

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

The GRLED is equipped standard with a 0-10V continuous dimming driver that works with any standard 0-10V control/dimmer. Combine with energy-saving products like occupancy sensors, daylighting controls, and lighting relay panels to maximize energy savings. Fixtures may have integrated Eaton control systems such as the SPVD series and the LumaWatt Pro series.

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. Projected life at 70% lumen maintenance is nearly 200,000 hours with TM21 rating up to L90 >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) 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 .125 lens with other options available for maximum versatility.

Compliance

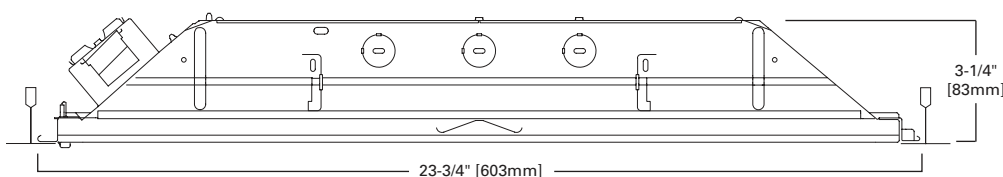
Modules are UL recognized components and indoor luminaires are cULus listed for 25°C ambient environments. Fixtures are suitable for direct insulation contact and are damp location listed. RoHS compliant. LED components comply with IESNA LM-79 and LM-80 standards. DesignLights Consortium™ Qualified and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



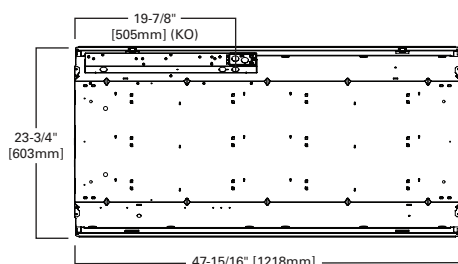
24GR LED LED

2' X 4' LED TROFFER

General Recessed LED Troffer
For Use in Insulated Ceilings



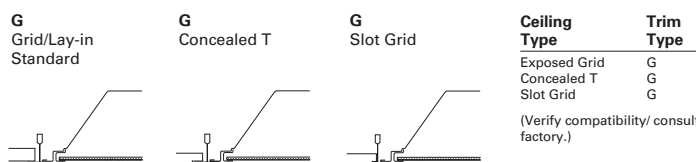
MOUNTING DATA



DOOR FRAMES



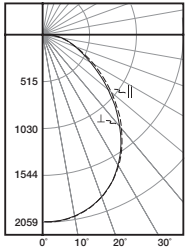
CEILING COMPATIBILITY



WATTAGE

Lumens Package	Watts
3000	22W
3400	25W
3800	29W
4200	30W
4800	35W
5600	42W
6400	51W
7200	57W
8500	66W
9000	70W

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: 4799
 Input Watts: 34.9W
 Efficacy: 137.5 lm/W
 Test Report:
 24GR-LD5-48-F1-
 UNV-L835-CD1-U.
 IES

Candlepower

Angle	Along H	45°	Across L
0	2053	2053	2053
5	2051	2041	2047
10	2018	2009	2014
15	1962	1954	1958
20	1881	1873	1877
25	1772	1765	1771
30	1640	1631	1627
35	1484	1474	1465
40	1312	1293	1277
45	1126	1106	1092
50	942	918	896
55	765	733	715
60	608	575	562
65	463	433	439
70	348	326	341
75	253	242	264
80	173	168	191
85	92	89	107
90	0	0	0

Coefficients of Utilization

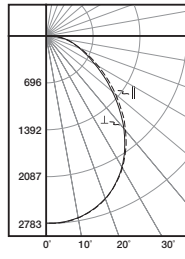
rc rw RCR	Effective floor cavity reflectance 20%																	
	80%			70%			50%			30%			10%			0%		
	70	50	30	70	50	30	50	30	10	50	30	10	50	30	10	50	30	10
0	119	119	119	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100
1	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85
2	100	92	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	1556	32.4
0-40	2475	51.6
0-60	3989	83.1
0-90	4799	100.0
0-180	4799	100.0

Lumiance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2439	2396	2365
55	2043	1957	1909
65	1678	1569	1591
75	1497	1432	1562
85	1617	1564	1880



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: 6486
 Input Watts: 50.2W
 Efficacy: 129.2 lm/W
 Test Report:
 24GR-LD5-64-F1-
 UNV-L835-CD1-U.
 IES

Candlepower

Angle	Along H	45°	Across L
0	2777	2777	2777
5	2773	2760	2768
10	2728	2716	2726
15	2653	2641	2647
20	2543	2528	2538
25	2393	2385	2387
30	2217	2204	2200
35	2008	1992	1974
40	1770	1747	1730
45	1518	1491	1463
50	1272	1239	1202
55	1032	996	965
60	815	772	758
65	630	588	592
70	469	442	463
75	345	327	357
80	232	226	255
85	128	121	141
90	0	0	0

Coefficients of Utilization

rc rw RCR	Effective floor cavity reflectance 20%																	
	80%			70%			50%			30%			10%			0%		
	70	50	30	70	50	30	50	30	10	50	30	10	50	30	10	50	30	10
0	119	119	119	116	116	116	111	111	111	106	106	106	102	102	102	100	100	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	2104	32.4
0-40	3345	51.6
0-60	5390	83.1
0-90	6486	100.0
0-180	6486	100.0

Lumiance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	3288	3230	3169
55	2756	2660	2577
65	2283	2131	2145
75	2042	1935	2113
85	2249	2126	2478

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</p>	<p>LED Type LD5=LED 5.0</p> <p>LED Lumens Output⁽¹¹⁾ 30=3000 34=3400 38=3800 42=4200 48=4800 56=5600 64=6400 72=7200 85=8500 90=9000</p> <p>Shielding F1=A12 .125 HP (Standard) A=A12 .095 A125=A12 .125 A19/156=#19 Pattern Acrylic (.156" Thick)</p>	<p>Voltage⁽²⁾ 347=347 Volts UNV=Universal Voltage 120-277⁽³⁾</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⁾ GTD2=Bodine Generator Transfer Device⁽¹⁰⁾ ETS2=IOTA Emergency Transfer Switch⁽¹⁰⁾ CCT L830=3000K L835=3500K L840=4000K L850=5000K</p> <p>Flex Multiple Configurations Available</p>	<p>Driver Type CD=0-10V Dimming Driver (10% - 100% Dimming) HCD=0-10V Dimming Driver (1% - 100% Dimming)⁽⁸⁾ SD=Step-Dim Driver⁽⁷⁾ 5LTD=Fifth Light DALI Driver (10% - 100% Dimming)⁽⁸⁾ SR=Sensor Ready (1% - 100% Dimming)⁽¹²⁾</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^{(8), (9)}</p>	<p>Packaging U=Unit Palletized PALC=Palletized Fixtures In Carton</p> <p>Sensors SVPD1=Integrated occupancy and daylight dimming sensor, 144 sq. ft. SWPD1=WaveLinX Wireless Connected Lighting (WCL) system LWIPD1=Integrated LumaWatt Pro Wireless sensor system⁽¹²⁾ LWTPD1=Tile mounted LumaWatt Pro Wireless sensor system</p>
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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
 ISHH-02=Personal Control Remote for Integrated Sensor

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, 4800 - 8500, 2 driver, 9000 lumen model. ⁽⁸⁾ DALI available from 4800 - 9000 lumen models. ⁽⁹⁾ Requires two drivers for 8500 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. ⁽¹³⁾ DesignLights Consortium ⁽¹⁴⁾ Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.

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

SHIPPING DATA

Catalog No.	Wt.	Pallet
24GR-LD4-48	20 lbs.	28

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	3024	22.4	135
MTO	24GR-LD5-34-F1-UNV-L835-CD1-U	3375	25.3	134
Stock	24GR-LD5-38-F1-UNV-L835-CD1-U	3839	29.1	132
MTO	24GR-LD5-42-F1-UNV-L835-CD1-U	4204	30.1	140
Stock	24GR-LD5-48-F1-UNV-L835-CD1-U	4799	34.9	138
MTO	24GR-LD5-56-F1-UNV-L835-CD1-U	5598	41.9	134
Stock	24GR-LD5-64-F1-UNV-L835-CD1-U	6486	50.7	128
MTO	24GR-LD5-72-F1-UNV-L835-CD1-U	7203	54.2	133
MTO	24GR-LD5-85-F1-UNV-L835-CD1-U	8500	65.6	130
MTO	24GR-LD5-90-F1-UNV-L835-CD1-U	8963	69.5	129

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