

DESCRIPTION

GRLED is a recessed lensed troffer series which offers a high quality luminaire dedicated 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 commercial office spaces, schools, 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. 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.

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.

Electrical

Long-Life LED system coupled with electrical driver to deliver optimal performance. LED's available in 3000K, 3500K, 4000K or 5000K with typical CRI 85. Projected life

is 60,000 hours at 90% lumen output. cULus listed. Electronic drivers are available for 120-277V applications. A 0-10V dimming driver is standard.

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. See ordering information for details.

Finish

Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibition. Housing and driver cover finished with new 90% reflective white enamel for superior performance. "PAF" Painted After Fabrication option also available.

Hinging/Latching

Positive spring loaded steel latches with baked white enamel finish. Safety-lock T-hinges allow hinging and latching either side.

Frame/Optical Shielding

Die formed, flat steel door with frost #12 pattern acrylic prismatic lens offering the balance of rigidity and light stability. Primary stocking skus come standard with robust - .125 lens.

Compliance

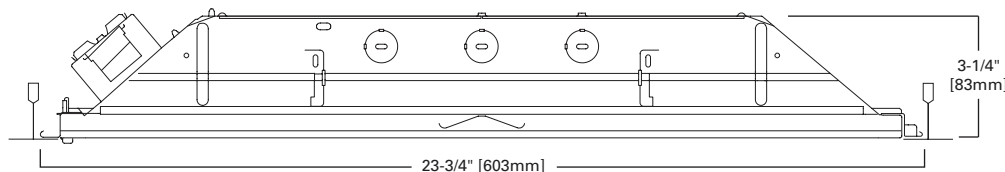
Modules are UL recognized components and indoor luminaires are cULus listed for 25°C ambient environments, RoHS compliant, and LED modules comply with IESNA LM-79 and LM-80 standards. DesignLights Consortium™ Qualified and classified for DLC Standard, refer to www.designlights.org for details.



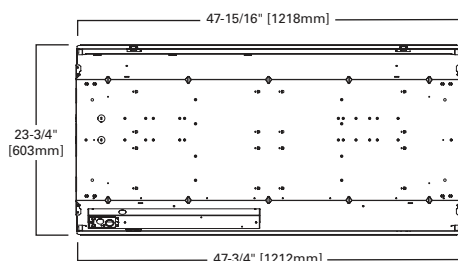
24GR LED LED

2' X 4' LED TROFFER

General Recessed LED Troffer
For Use in Insulated Ceilings



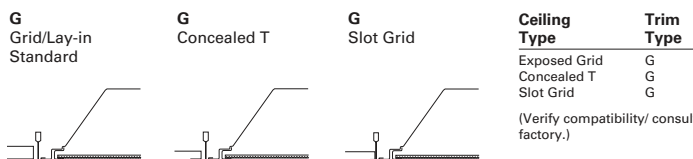
MOUNTING DATA



DOOR FRAMES



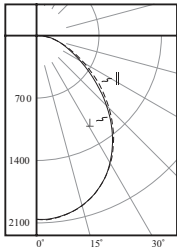
CEILING COMPATIBILITY



WATTAGE

Lumens Package	Wattage
3000	27W
3400	32W
3800	35W
4200	37W
4800	43W
5600	51W
6400	60W
7200	63W
8500	78W
9000	85W

PHOTOMETRICS

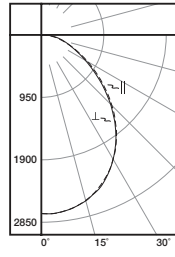


24GR-LD4-48-F1-UNV-L835-U

Dimming Driver
 Linear LED 3500K
 Spacing criterion:
 (||) 1.2 x mounting
 height, (⊥) 1.2 x
 mounting height
 Lumens: 4841
 Input Watts: 43.7W
 Efficacy: 110.8 lm/W
 Test Report:
 24GR-LD4-48-F1-
 UNV-L835-U-IES

Candlepower

Angle	Along	45°	Across ⊥
0	2060	2060	2060
5	2061	2051	2057
10	2028	2020	2026
15	1975	1967	1971
20	1894	1886	1892
25	1786	1780	1785
30	1656	1652	1646
35	1500	1489	1484
40	1328	1313	1304
45	1149	1125	1108
50	966	935	910
55	784	750	729
60	617	585	566
65	469	443	436
70	349	327	334
75	247	236	251
80	162	160	178
85	86	83	96
90	0	0	0



24GR-LD4-64-F1-UNV-L835-CD1-U

Dimming Driver
 Linear LED 3500K
 Spacing criterion:
 (||) 1.2 x mounting
 height, (⊥) 1.2 x
 mounting height
 Lumens: 6398
 Input Watts: 60.8W
 Efficacy: 105.2 lm/W
 Test Report:
 24GR-LD4-64-F1-
 UNV-L835-CD1-U-
 IES

Candlepower

Angle	Along	45°	Across ⊥
0	2719	2719	2719
5	2721	2706	2717
10	2679	2666	2678
15	2607	2593	2609
20	2499	2489	2507
25	2358	2352	2357
30	2182	2178	2173
35	1986	1971	1963
40	1758	1738	1724
45	1518	1490	1472
50	1268	1234	1213
55	1032	994	965
60	817	773	753
65	622	587	577
70	461	431	443
75	326	311	334
80	217	213	234
85	111	112	128
90	0	0	0

Coefficients of Utilization

rc rw RCR	Effective floor cavity reflectance 20%																										
	80%				70%				50%				30%				10%				0%						
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	
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	80	73	68	78	71	66	75	70	65	72	68	64	62									
4	85	73	65	59	82	72	64	58	70	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	73	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	34									
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 20%																											
	80%				70%				50%				30%				10%				0%							
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30
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	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72										
3	92	82	74	68	90	80	73	68	78	71	66	75	70	65	72	68	64	62										
4	85	73	65	59	82	72	64	58	70	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	73	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	1568	32.4
0-40	2499	51.6
0-60	4041	83.5
0-90	4841	100.0
0-180	4841	100.0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0-30	2070	32.4
0-40	3298	51.6
0-60	5338	83.4
0-90	6398	100.0
0-180	6398	100.0

ORDERING INFORMATION

SAMPLE NUMBER: 24GR-LD4-48-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⁽¹⁰⁾ R=General Purpose Troffer</p> <p>Door Frame Standard=Flat White Steel Door (Leave Blank) (.156" Thick) 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 LD4=LED 4.0</p> <p>LED Lumens Output⁽⁵⁾ Stock 38=3800 48=4800 64=6400 MTO 30=3000 34=3400 42=4200 56=5600 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⁾ 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⁽¹¹⁾ ETS2=IOTA Emergency Transfer Switch⁽¹¹⁾</p> <p>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)⁽¹⁰⁾ SD=Step-Dim Driver⁽⁸⁾ SLTD=Fifth Light DALI Driver (10% - 100% Dimming)⁽⁹⁾</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^{(6),(7)}</p>	<p>Packaging U=Unit Pack PALC=Palletized Fixtures In Carton</p>
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ACCESSORIES
 EQ-CLIP-U=T-BAR Safety Earthquake Clips⁽¹¹⁾
 DF-24-W=2' x 4' Drywall Frame Kit

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-former photometry for luminaire under emergency operation available. ⁽⁵⁾ Nominal lumen output. ⁽⁶⁾ Gasketing only available with aluminum door frame. ⁽⁷⁾ Gasketing minimum .125. ⁽⁸⁾ Step dimming (bi-level) 1 driver, 3400, 3800, 4200, 4800, 5600, 6400, 2 driver - 7200 lumen models. ⁽⁹⁾ DALI available from 3800 - 8500 lumen models. ⁽¹⁰⁾ DesignLights Consortium™ Qualified and classified for DLC Standard, refer to www.designlights.org for details. ⁽¹¹⁾ HCD option not available with 6400, 7200, 8500 and 9000 lumen versions. ⁽¹²⁾ 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.

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.	24
24GR-LD4-64	20 lbs.	24

ENERGY AND PERFORMANCE DATA BY CATALOG NUMBER

Stock or MTO*	Catalog Logic	Delivered Lumens	Watts	Efficacy (LPW)
MTO	24GR-LD4-30-F1-UNV-L8XX-CD1-U	3009	27.60	109.02
MTO	24GR-LD4-34-F1-UNV-L8XX-CD1-U	3416	32.00	106.75
Stock	24GR-LD4-38-F1-UNV-L8XX-CD1-U	3766	35.99	104.64
MTO	24GR-LD4-42-F1-UNV-L8XX-CD1-U	4249	37.31	113.88
Stock	24GR-LD4-48-F1-UNV-L8XX-CD1-U	4841	43.71	110.75
MTO	24GR-LD4-56-F1-UNV-L8XX-CD1-U	5553	51.97	106.85
Stock	24GR-LD4-64-F1-UNV-L8XX-CD1-U	6398	60.80	105.23
MTO	24GR-LD4-72-F1-UNV-L8XX-CD1-U	7174	63.7	112.66
MTO	24GR-LD4-85-F1-UNV-L8XX-CD1-U	8513	78.82	108.01
MTO	24GR-LD4-90-F1-UNV-L8XX-CD1-U	9020	85.12	105.97

*Stocked in both 3500K and 4000K. Made to order (MTO) requires a typical four week lead time.