

COOPER LIGHTING - METALUX®

DESCRIPTION

The GR8 is a T8-dedicated lensed troffer designed to offer premium performance in a low profile housing. T8 dedication and optimized lamp to lens spacing provides the best in energy efficiency and optical control. The GR8's shallow, low profile housing is compatible with even highly restrictive plenums. Luminaires are compatible with today's popular ceiling systems. The GR8 offers great performance and great quality. The series is an excellent choice for commercial offices, schools, hospitals, retail merchandising and many other applications.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Unitized low profile recessed housing is die formed of code gauge prime cold rolled steel with full length stiffeners and unibody endplate for added strength. Ballast cover is easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring for easy lampholder replacement. Ample KO's are provided for continuous row wiring. Built-in grid-lock feature for safety and convenience.

Electrical**

Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Rotor-lock lampholders. UL/CUL listed. Suitable for damp locations.

Finish

Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibition. Lighting grade baked white enamel finish with premium reflectance for high efficiency.

Hinging/Latching

Positive spring loaded steel latches and safety lock T-hinges provide secure, high quality door fit and allow hinging and latching from either side.

Frame/Shielding

Heavy gauge flat steel door is die formed with reinforced mitered corners. Housing and door frame assemblies incorporate full width mechanical light traps. Light stabilized, acrylic prismatic lens.

Controls

Fifth Light ballast options are offered for both 0-10V continuous dimming and DALI applications. Combine with energy-saving products like occupancy sensors, daylighting controls, and lighting relay panels from Cooper Controls (www.coopercontrol.com) to maximize energy savings.



2GR8
228T8, 232
428T8, 432

2' X 4' TROFFER
2 OR 4 LAMP

General Purpose
T8 Commercial Troffer



ENERGY DATA

Input Watts:

EB Ballast & STD Lamps

228T8 (49), 232 (61)

428T8 (98), 432 (122)

Luminaire Efficacy Rating

LER = FL-82

Catalog Number: 2GR8-232A

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$2.93

Catalog Number: 2GR8-432A
LER = FL-76

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$3.16

*Standard G (Grid) Type Fixtures can be field converted by adding trim kits. See Compatibility Section or Consult Factory.

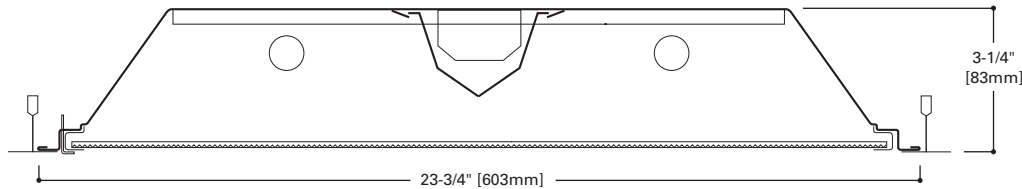
**Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements.

***When ordering Flange Kit for installation in drywall ceilings, see options and accessories compatibility section and ordering logic.

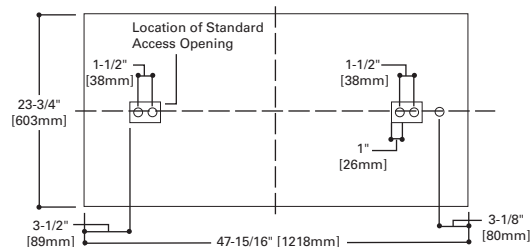
LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO LOCAL, STATE OR FEDERAL LAWS

LINEAR DISCONNECT

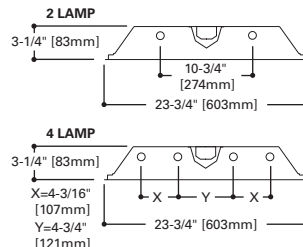
Safe and convenient means of disconnecting power.



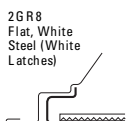
MOUNTING DATA



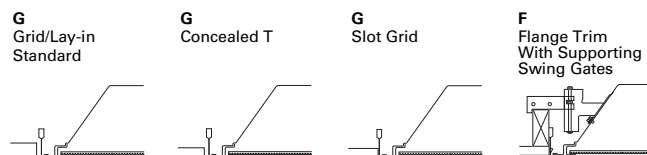
LAMP CONFIGURATIONS



DOOR FRAMES



CEILING COMPATIBILITY

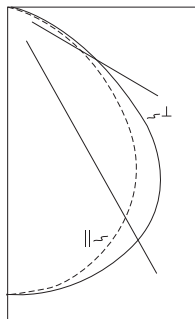


Ceiling Type	Trim Type
Exposed Grid	G
Concealed T	G
Slot Grid	G
Flange	G***

COOPER LIGHTING

ADF012707

PHOTOMETRICS

**2GR8-232A**

Electronic Ballast

(2) F32T8 lamps

3100 lumens

Spacing criterion:

(H) 1.2 x mounting

height, (L) 1.4 x

mounting height

Efficiency 79.4%

Test Report:

2GR8-232A.IES

LER = FL-82

Yearly Cost of 1000

lumens, 3000 hrs at

.08 KWH = \$2.93

Candela

Angle	Along H	45°	Across L
0	1851	1851	1851
5	1855	1846	1851
10	1830	1830	1845
15	1790	1806	1834
20	1731	1768	1813
25	1653	1714	1776
30	1554	1643	1720
35	1434	1551	1650
40	1297	1424	1551
45	1127	1251	1400
50	922	1060	1182
55	731	851	924
60	570	619	675
65	430	413	476
70	316	261	343
75	224	179	262
80	162	142	198
85	87	89	114
90	0	0	0

Coefficients of Utilization

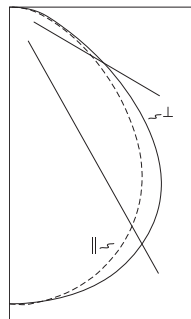
Effective floor cavity reflectance												20%									
rc	80%				70%				50%				30%				10%				0%
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0			
RCR																					
0	95	95	95	95	92	92	92	92	88	88	88	84	84	84	81	81	81	79			
1	87	83	80	77	85	82	79	76	78	76	74	75	73	71	72	71	69	68			
2	80	73	68	64	77	72	67	63	69	65	62	66	63	60	64	61	59	57			
3	73	65	59	54	71	64	58	53	61	56	52	59	55	52	57	54	51	49			
4	67	58	51	46	65	57	51	46	55	49	45	53	48	45	51	47	44	42			
5	62	52	45	40	60	51	45	40	49	44	39	48	43	39	46	42	38	37			
6	57	47	40	35	56	46	40	35	45	39	35	43	38	34	42	38	34	32			
7	53	43	36	31	52	42	36	31	41	35	31	40	34	31	39	34	30	29			
8	49	39	32	28	48	38	32	28	37	32	28	36	31	27	35	31	27	26			
9	46	36	29	25	45	35	29	25	34	29	25	33	28	25	33	28	25	23			
10	43	33	27	23	42	33	27	23	32	26	23	31	26	22	30	26	22	21			

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1476	23.8	30.0
0-40	2440	39.4	49.6
0-60	4149	66.9	84.3
0-90	4924	79.4	100.0
0-180	4924	79.4	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2556	2838	3176
55	2044	2380	2594
65	1632	1567	1807
75	1388	1109	1624
85	1601	1638	2098

**2GR8-432A**

Electronic Ballast

(4) F32T8 lamps

3100 lumens

Spacing criterion:

(H) 1.2 x mounting

height, (L) 1.3 x

mounting height

Efficiency 77.1%

Test Report:

2GR8-432A.IES

LER = FL-76

Yearly Cost of 1000

lumens, 3000 hrs at

.08 KWH = \$3.16

Candela

Angle	Along H	45°	Across L
0	3662	3662	3662
5	3664	3647	3657
10	3613	3614	3640
15	3531	3560	3610
20	3413	3480	3555
25	3260	3365	3461
30	3067	3206	3327
35	2829	2998	3155
40	2538	2723	2918
45	2188	2383	2591
50	1816	2023	2176
55	1457	1630	1729
60	1138	1212	1304
65	859	827	950
70	626	530	687
75	447	359	517
80	314	272	380
85	172	167	214
90	14	33	47

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	92	92	92	92	90	90	90	90	86	86	86	82	82	82	79	79	79	77			
1	84	81	78	75	82	79	76	74	76	74	71	73	71	69	70	69	67	66			
2	77	71	66	62	75	70	65	61	67	63	60	65	61	59	62	60	57	56			
3	71	63	57	52	69	62	56	52	60	55	51	57	53	50	56	52	49	48			
4	65	56	50	45	63	55	49	44	53	48	44	52	47	43	50	46	43	41			
5	60	50	44	39	58	50	43	39	48	42	38	46	42	38	45	41	37	36			
6	56	46	39	34	54	45	39	34	43	38	34	42	37	33	41	37	33	32			
7	52	41	35	30	50	41	35	30	40	34	30	39	33	30	37	33	30	28			
8	48	38	31	27	47	37	31	27	36	31	27	35	30	27	34	30	27	25			
9	45	35	29	24	44	34	28	24	33	28	24	33	28	24	32	27	24	23			
10	42	32	26	22	41	32	26	22	31	26	22	30	25	22	30	25	22	21			

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2902	23.4	30.3
0-40	4769	38.5	49.9
0-60	8035	64.8	84.0
0-90	9566	77.1	100.0
0-180	9566	77.1	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	4963	5406	5877
55	4074	4558	4835
65	3260	3139	3606
75	2770	2225	3204
85	3165	3073	3938

ORDERING INFORMATION

SAMPLE NUMBER: 2GR8-232A-UNV-EB81-U

Rating⁽⁴⁾ Blank = Standard ATW-SW4 = Chicago Rated	Number of Lamps 2 =2 Lamps 4 =4 Lamps (Not included)	Voltage⁽²⁾ 347V =347 Volt UNV =Universal Voltage 120-277 ⁽³⁾	Ballast Type EB8 _ =T8 Electronic Start. Total Harmonic Distortion < 10% EB8 _ / PLUS = T8 Electronic Start. Total Harmonic Distortion < 10%. High Ballast Factor > 1.15. ER8 _ = T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10% High Performance T8 Ballasts HB8 _ =T8 Electronic Instant Start. Total Harmonic Distortion < 10%. Standard Ballast Factor .86 – .88 HB8 _ L =T8 Electronic Instant Start. Total Harmonic Distortion < 10%. Low Ballast Factor .77 – .82 HB8 _ N =T8 Electronic Instant Start. Total Harmonic Distortion < 10%. Normal Ballast Factor 1.0 HB8 _ H =T8 Electronic Instant Start. Total Harmonic Distortion < 10%. High Ballast Factor 1.15 – 1.20 HR8 _ =T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Standard Ballast Factor .86 – .88 HR8 _ DIM =T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Step Dimming. Ballast Factor .88 HR8 _ L =T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Low Ballast Factor .71 – .79 HR8 _ H =T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. High Ballast Factor 1.15 – 1.20 0-10V Dimming Ballasts⁽⁷⁾ 5LTV8 _ =T8 0-10V Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 0.87 ^{(10), (11)} 5LTVS8 _ =T8 0-10V Spec Grade Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 0.87 ^{(8), (9)} Fifth Light DALI Ballasts⁽⁶⁾ 5LT8 _ =T8 DALI Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 1.0	Options FR =Fire Label	Packaging U =Unit Pack PAL =Job Pack, out of carton PALC =Job Pack, in carton	
Width 2 =2' Width	Wattage 28T8 =28W T8 (48") 32 =32W T8 (48") ⁽⁵⁾	Options GL =Single Element Fuse GM =Double Element Fuse Flex =Flex Installed (Reference Flex ordering information) EL =Emergency Installed ⁽¹³⁾	ACCESSORIES EQ-CLIP-U =T-BAR Safety Earthquake Clips ⁽¹⁾ FCTKA-24W-U =Field Installed Flange Kit	FCTK Trim Kit Field Convertible Aluminum	A - 24 22 =2' x 2' 24 =2' x 4' Blank =Single R =In Row E =End Row	R W - U N =Natural W =White U =Unit Pack
Trim Type G =Grid/Lay-in (Standard)	Shielding A =#12 Acrylic Pattern A125 =#12 Pattern Acrylic (.125" Thick) A19/156 =#19 Pattern Acrylic (.156" Thick)	Lamps Installed Blank =No Lamps Installed L8935 =T8 Lamp, 28W and 32W, 3500K ⁽¹²⁾ L8941 =T8 Lamp, 28W and 32W, 4100K ⁽¹²⁾ L8835HL =T8 Lamp, 32W, 3500K, 3100 Lumens L8841HL =T8 Lamp, 32W, 4100K, 3100 Lumens	Number of Ballasts 1 =1 Ballast 2 =2 Ballasts 3 =3 Ballasts			

NOTES: ⁽¹⁾An EQ Grid Clip is recommended for all 9/16" ceiling systems. Four required per fixture. ⁽²⁾Products also available in non-US voltages and frequencies for international markets. ⁽³⁾Not available when specifying emergencies, voltage must be specific. ⁽⁴⁾For NYC rated product, see separate specification sheets. ⁽⁵⁾Ballast Factor is 0.88 for 4 lamp 32W T8 fixtures. ⁽⁶⁾For a complete listing of Fifthlight Technology products and other solutions from Cooper Controls, visit www.coopercontrol.com. ⁽⁷⁾0-10V ballast do not include DALI feature. Please select DALI ballast for use with Fifth Light system. ⁽⁸⁾Specification grade 0-10V dimming ballast are NEMA premium and CEE listed. They are compatible with low mercury and energy saving lamps. ⁽⁹⁾Specification Grade 0-10V ballast not offered in 3 or 4-lamp versions. ⁽¹⁰⁾Standard 0-10V ballast not available for 28W T8 lamps. ⁽¹¹⁾Voltage must be specified for Standard 0-10V 32W 3 and 4-lamp ballast. 4-lamp ballast versions must be 277V. ⁽¹²⁾32W lamps are 90 CRI only. ⁽¹³⁾Please specify required voltage, 120V or 277V.

For complete product data, reference the Fluorescent Specification binder. Specifications & dimensions subject to change without notice. Consult your Cooper Lighting Representative for availability and ordering information.

SHIPPING INFORMATION

Catalog No.	Wt.
2GR8-228T8A	20 lbs.
2GR8-232A	20 lbs.
2GR8-428T8A	20 lbs.
2GR8-432A	20 lbs.