

DESCRIPTION

The GR5 is a T5-dedicated lensed troffer designed to offer premium performance in a low profile housing. The GR5's shallow, low profile housing is compatible with even highly restrictive plenums. Luminaires are compatible with today's popular ceiling systems.

The GR5 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 mechanical endplate attachment for added strength. Ballast cover is easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring for easy lampholder replacement. Ample KOs 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 T5 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 length and width mechanical light traps. Light stabilized, acrylic prismatic lens.

Controls

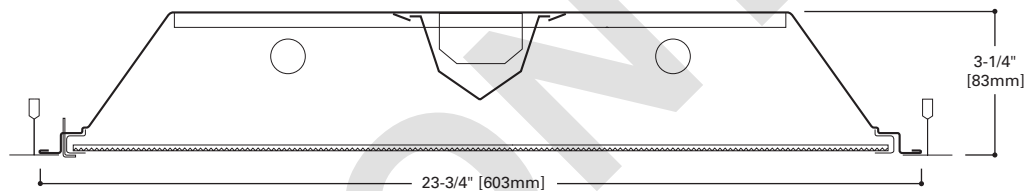
Fifth Light ballast options are offered for both 0-10V continuous dimming and DALI applications. Combine with energy-saving products like occupancy sensors, daylighting controls, and lighting relay panels from Cooper Controls (www.coopercontrol.com) to maximize energy savings.



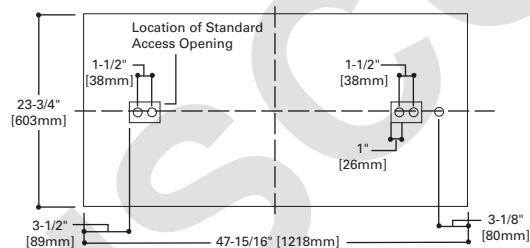
2GR5
228T5
254T5
428T5
454T5

2' X 4' TROFFER
2 OR 4 LAMP T5

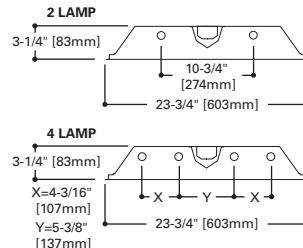
General Purpose
 T5 Commercial Troffer



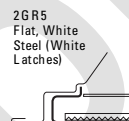
MOUNTING DATA



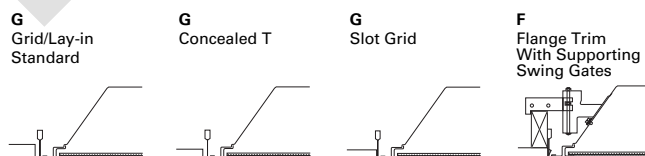
LAMP CONFIGURATIONS



DOOR FRAMES



CEILING COMPATIBILITY



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

ENERGY DATA

Input Watts:
EB Ballast & STD Lamps
 228T5 (66), 254T5 (121)
 428T5 (128), 454T5 (226)

Luminaire Efficacy Rating

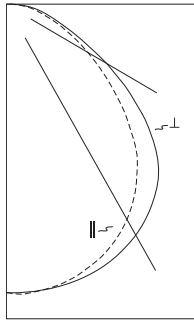
LER = FL-82
Catalog Number: 2GR5-228T5A
Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$2.93

*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.

LINEAR DISCONNECT

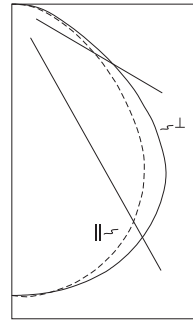
Designed to provide safe and convenient means of disconnecting power

PHOTOMETRICS



2GR5-228T5A
 Electronic Ballast
 (2) F28W/T5/835
 lamps
 2900 lumens
 Spacing criterion:
 (||) 1.3 x mounting
 height, (⊥) 1.3 x
 mounting height
 Efficiency 87%
 Test Report:
 2GR5-228T5A.IES
 LER = FL-82
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.58

Candela				
Angle	Along	45°	Across ⊥	
0	1886	1886	1886	
5	1892	1882	1887	
10	1870	1867	1878	
15	1829	1839	1861	
20	1772	1797	1829	
25	1695	1737	1782	
30	1596	1659	1721	
35	1473	1556	1638	
40	1332	1429	1536	
45	1141	1256	1393	
50	946	1077	1190	
55	763	877	960	
60	597	666	736	
65	454	456	533	
70	338	293	385	
75	241	195	286	
80	172	148	208	
85	93	91	119	
90	0	0	0	



2GR5-254T5A
 Electronic Ballast
 (2) F54W/T5/835
 lamps
 4400 lumens
 Spacing criterion:
 (||) 1.3 x mounting
 height, (⊥) 1.4 x
 mounting height
 Efficiency 93.7%
 Test Report:
 2GR5-254T5A.IES
 LER = FL-68
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.53

Candela				
Angle	Along	45°	Across ⊥	
0	3076	3076	3076	
5	3086	3069	3074	
10	3047	3044	3062	
15	2982	2999	3032	
20	2886	2929	2986	
25	2763	2835	2911	
30	2603	2706	2804	
35	2409	2539	2675	
40	2175	2329	2512	
45	1876	2054	2272	
50	1547	1755	1952	
55	1248	1438	1579	
60	975	1089	1195	
65	745	748	861	
70	549	481	626	
75	399	317	462	
80	281	241	345	
85	157	150	202	
90	0	0	0	

Coefficients of Utilization

rc	Effective floor cavity reflectance																				
	80%				70%				50%				30%				10%				0%
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0			
RCR																					
0	104	104	104	104	101	101	101	101	97	97	97	93	93	93	89	89	89	87			
1	95	91	88	84	93	89	86	83	85	83	80	82	80	78	79	77	76	74			
2	87	80	74	70	85	78	73	69	75	71	67	73	69	66	70	67	64	62			
3	80	71	64	59	78	69	63	58	67	62	57	65	60	56	62	58	55	53			
4	73	63	56	50	71	62	55	50	60	54	49	58	53	48	56	51	48	46			
5	67	57	49	43	66	56	48	43	54	47	43	52	47	42	50	46	42	40			
6	62	51	43	38	61	50	43	38	49	42	38	47	42	37	46	41	37	35			
7	58	46	39	34	56	46	39	34	44	38	33	43	37	33	42	37	33	31			
8	54	42	35	30	53	42	35	30	41	34	30	40	34	30	39	33	29	28			
9	50	39	32	27	49	38	32	27	37	31	27	36	31	27	36	30	27	25			
10	47	36	29	25	46	35	29	25	35	29	24	34	28	24	33	28	24	23			

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1499	25.8	29.7
0-40	2470	42.6	48.9
0-60	4213	72.6	83.5
0-90	5047	87.0	100.0
0-180	5047	87.0	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2588	2849	3160
55	2134	2452	2685
65	1723	1731	2023
75	1494	1208	1772
85	1712	1675	2190

Coefficients of Utilization

rc	Effective floor cavity reflectance																				
	80%				70%				50%				30%				10%				0%
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0			
RCR																					
0	111	111	111	111	109	109	109	109	104	104	104	100	100	100	96	96	96	94			
1	102	98	94	91	100	96	92	89	92	89	87	88	86	84	85	83	81	79			
2	94	86	80	75	91	84	79	74	81	76	72	78	74	71	75	72	69	67			
3	86	76	69	63	83	75	68	62	72	66	61	69	64	60	67	63	59	57			
4	79	68	60	54	77	67	59	53	64	58	53	62	57	52	60	55	51	49			
5	73	61	53	47	71	60	52	46	58	51	46	56	50	45	54	49	45	43			
6	67	55	47	41	65	54	46	41	52	46	40	51	45	40	49	44	40	38			
7	62	50	42	36	61	49	42	36	48	41	36	46	40	36	45	40	35	34			
8	58	46	38	32	57	45	37	32	44	37	32	43	36	32	41	36	32	30			
9	54	42	34	29	53	41	34	29	40	34	29	39	33	29	38	33	29	27			
10	51	39	31	26	50	38	31	26	37	31	26	36	30	26	36	30	26	24			

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2445	27.8	29.7
0-40	4029	45.8	48.9
0-60	6877	78.1	83.4
0-90	8242	93.7	100.0
0-180	8242	93.7	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	4255	4659	5154
55	3490	4021	4416
65	2828	2839	3268
75	2473	1965	2863
85	2889	2761	3718

ORDER INFORMATION

SAMPLE NUMBER: 2GR5-228T5A-UNV-EBT1-U

Rating⁽⁸⁾ 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 EBT__=T5 or T5HO Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Standard Ballast Factor=1.0 Ballast/Factor Type EBT_N=T5 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Normal Ballast Factor=.90 ⁽⁶⁾ EBT_H=T5 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. High Ballast Factor=1.15 ⁽⁶⁾ EBT_NDIM=T5 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Step Dimming, Normal Ballast Factor=.95-1.0 EBT_HDIM=T5 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Step Dimming, High Ballast Factor=1.15 0-10V Dimming Ballasts⁽¹⁰⁾ 5LTV5__=T5 0-10V Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 1.0 ⁽¹³⁾ 5LTV55__=T5 0-10V Spec Grade Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 1.0 ^{(11),(12)} 5LTV5H__=T5HO 0-10V Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 1.0 ⁽¹³⁾ 5LTV55H__=T5HO 0-10V Spec Grade Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 1.0 ^{(11),(12)} Fifth Light DALI Ballasts⁽⁹⁾ 5LT5__=T5 DALI Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 1.0 5LT5H__=T5HO DALI Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 1.0	Options FR=Fire Label	Packaging U=Unit Pack
Width 2=2' Width	Wattage 28T5=28W T5 (48") 54T5=54W T5HO (48") ⁽⁴⁾	Options GL=Single Element Fuse GM=Double Element Fuse Flex=Flex Installed EL=Emergency Installed ⁽¹⁴⁾			
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)				
Series R5=General Purpose T5 Commercial Troffer ⁽¹⁾					

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⁾ High temperature ballast required for 4 lamp T5HO configurations. ⁽⁵⁾ 90 ballast factor available for 2 or 3 14W T5 or 28W T5 lamps only. ⁽⁶⁾ 1-Lamp ballast in a High Ballast factor not available. ⁽⁷⁾ 1-Lamp step dimming ballast in a Normal Ballast factor not available. 2-Lamp ballast will not operate 1-Lamp. ⁽⁸⁾ For NYC rated product, see separate specification sheets. ⁽⁹⁾ For a complete listing of Fifthlight Technology products and other solutions from Cooper Controls, visit www.coopercontrol.com. ⁽¹⁰⁾ 0-10V ballast do not include DALI feature. Please select DALI ballast for use with Fifth Light system. ⁽¹¹⁾ Specification grade 0-10V dimming ballast are NEMA premium and CEE listed. They are compatible with low mercury and energy saving lamps. ⁽¹²⁾ Specification Grade 0-10V ballast not offered in 3 or 4-lamp versions. ⁽¹³⁾ Standard 0-10V ballast not offered in 3 or 4-lamp versions. ⁽¹⁴⁾ Please specify required voltage, 120V or 277V.

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

Number of Ballasts
 1=1 Ballast
 2=2 Ballasts
 3=3 Ballasts

ACCESSORIES

EQ-CLIP-U=T-BAR Safety Earthquake Clips⁽¹⁾
 FCTKA-24W-U=Field Installed Flange Kit

FCTK Trim Kit Field Convertible	A - 24 22=2' x 2' 24=2' x 4'	R W - U N=Natural W=White
Aluminum	Blank=Single R=In Row E=End Row	U=Unit Pack

SHIPPING DATA

Catalog No.	Wt.
2GR5-228T5A	22 lbs.
2GR5-254T5A	22 lbs.
2GR5-428T5A	22 lbs.
2GR5-454T5A	22 lbs.