

COOPER LIGHTING - METALUX®

DESCRIPTION

The GR8-IC 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-IC's shallow, low profile housing is compatible with even highly restrictive plenums. Luminaires are compatible with today's popular ceiling systems.

The GR8-IC 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. IC recessed luminaire for direct contact with insulation. 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

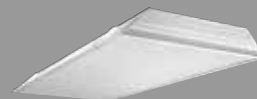
Positive spring loaded steel latches and safety lock T-hinges provide secure, high quality door fit and allow hinging and latching from either side.

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-IC
228T8, 232
428T8, 432

2' X 4' TROFFER
2 OR 4 LAMP

General Purpose
T8 Commercial Troffer
For Use in Insulated Ceilings



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.

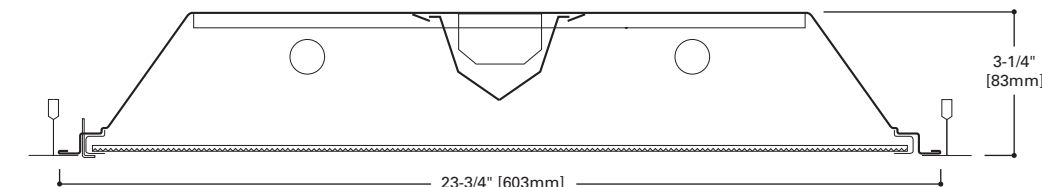
**Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements.

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

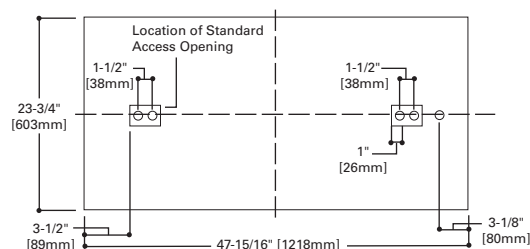
LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO LOCAL, STATE OR FEDERAL LAWS

LINEAR DISCONNECT

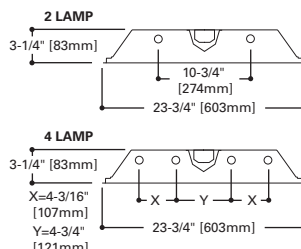
Safe and convenient means of disconnecting power.



MOUNTING DATA

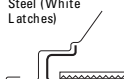


LAMP CONFIGURATIONS

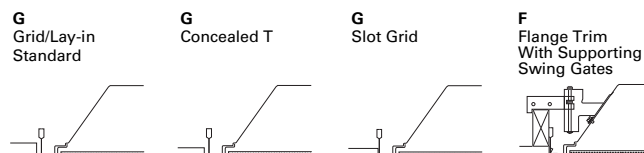


DOOR FRAMES

2GR8
Flat, White
Steel (White
Latches)



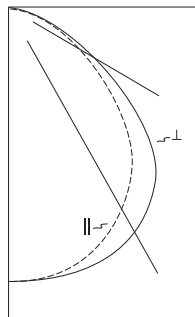
CEILING COMPATIBILITY



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



PHOTOMETRICS



2GR8IC-232A
 Electronic Ballast
 F32T8/35K lamps
 2800 lumens
 Spacing criterion:
 (H) 1.2 x mounting
 height, (L) 1.4 x
 mounting height
 Efficiency 79.8%
 Test Report:
 2GR8IC232A.IES
 LER = FL-67
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.58

Candela			
Angle	Along H	45°	Across L
0	1697	1697	1697
5	1689	1696	1705
10	1669	1685	1703
15	1636	1665	1694
20	1586	1632	1673
25	1518	1582	1634
30	1430	1512	1582
35	1320	1427	1517
40	1188	1318	1422
45	1031	1162	1271
50	843	964	1046
55	657	740	796
60	501	528	581
65	378	353	405
70	277	232	294
75	196	172	231
80	143	144	176
85	77	85	97
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	50	30	10	50	30	10		
RCR	0	95	95	95	93	93	93	93	89	89	89	85	85	85	81	81	81	80							
	1	88	85	82	79	86	83	80	78	79	77	75	76	74	73	73	72	71	69						
	2	81	75	70	66	79	74	69	66	71	67	64	68	65	63	66	64	61	60						
	3	75	67	62	57	73	66	61	56	64	59	55	62	58	55	60	56	54	52						
	4	69	60	54	49	67	59	53	49	57	52	48	56	51	47	54	50	47	45						
	5	63	54	47	42	62	53	47	42	51	46	42	50	45	41	48	44	41	39						
	6	58	48	42	37	57	48	41	37	46	41	36	45	40	36	44	39	36	34						
	7	54	44	37	32	53	43	37	32	42	36	32	41	35	32	40	35	31	30						
	8	50	39	32	28	48	39	32	28	38	32	28	37	31	28	36	31	27	26						
	9	46	35	29	24	45	35	28	24	34	28	24	33	28	24	32	27	24	22						
	10	42	32	26	21	41	31	25	21	31	25	21	30	25	21	29	24	21	20						

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1360	24.3	30.4
0-40	2249	40.2	50.3
0-60	3788	67.6	84.7
0-90	4471	79.8	100.0
0-180	4471	79.8	100.0

Typical VCP Percentages

Room Size (Ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	73	77	71	75
30 x 30	68	72	65	69
30 x 60	60	63	56	59
60 x 30	69	73	68	71
60 x 60	60	63	57	60

ORDERING INFORMATION

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

<p>Rating Blank= Standard ATW-SW4= Chicago Rated</p>	<p>Number of Lamps 2=2 Lamps 4=4 Lamps (Not included)</p>	<p>Voltage ⁽²⁾ 347V=347 Volt UNV=Universal Voltage 120-277 ⁽³⁾</p>
<p>Width 2=2' Width</p>	<p>Wattage 28T8=28W T8 (48") 32=32W T8 (48") ⁽⁴⁾</p>	<p>Options GL=Single Element Fuse GM=Double Element Fuse Flex=Flex Installed (Reference Flex ordering information) EL=Emergency Installed</p>
<p>Trim Type G=Grid/Lay-in (Standard)</p>	<p>Shielding A=#12 Acrylic Pattern A125=#12 Pattern Acrylic (.125" Thick) A19/156=#19 Pattern Acrylic (.156" Thick) PB1S=Silver Parabolic Louver (1/2" x 1/2" x 1/2")</p>	
<p>Series R8=General Purpose T8 Commercial Troffer ⁽¹⁾</p>		
<p>Type IC=IC Rated</p>		

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⁾ Ballast Factor is 0.88 for 4 lamp 32W T8 fixtures. ⁽⁵⁾ For a complete listing of Fifth Light Technology products and other solutions from Cooper Controls, visit www.coopercontrol.com. ⁽⁶⁾ 0-10V ballast do not include DALI feature. Please select DALI ballast for use with Fifth Light system. ⁽⁷⁾ Specification grade 0-10V dimming ballast are NEMA premium and CEE listed. They are compatible with low mercury and energy saving lamps. ⁽⁸⁾ Specification Grade 0-10V ballast not offered in 3 or 4-lamp versions. ⁽⁹⁾ Standard 0-10V ballast not available for 28W T8 lamps. ⁽¹⁰⁾ Voltage must be specified for Standard 0-10V 32W 3 and 4-lamp ballast. 4-lamp ballast versions must be 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.

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 ⁽⁶⁾
5LTV8_=T8 0-10V Program Rapid Start.
 Total Harmonic Distortion < 10%.
 Ballast Factor 0.87 ^{(8), (10)}
5LTVS8_=T8 0-10V Spec Grade Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 0.87 ^{(7), (8)}
Fifth Light DALI Ballasts ⁽⁵⁾
5LT8_=T8 DALI Program Rapid Start.
 Total Harmonic Distortion < 10%.
 Ballast Factor 1.0

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

Packaging
 U=Unit Pack

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

FCTK A - 24 R W - U

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

SHIPPING INFORMATION

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



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Project		
Comments		Date
Prepared by		

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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. IC recessed luminaire for direct contact with insulation. 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

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228T8, 232
428T8, 432

2' X 4' TROFFER
2 OR 4 LAMP

General Purpose
T8 Commercial Troffer
For Use in Insulated Ceilings



ENERGY DATA

Input Watts:
EB Ballast & STD Lamps
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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.

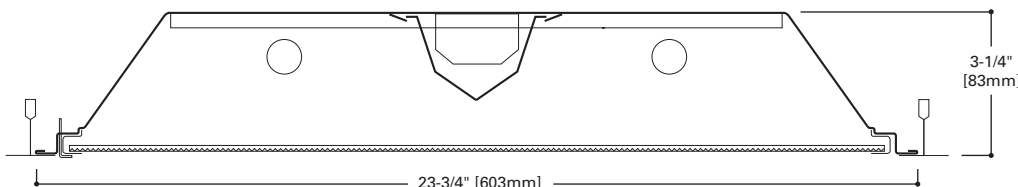
LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO LOCAL, STATE OR FEDERAL LAWS

LINEAR DISCONNECT

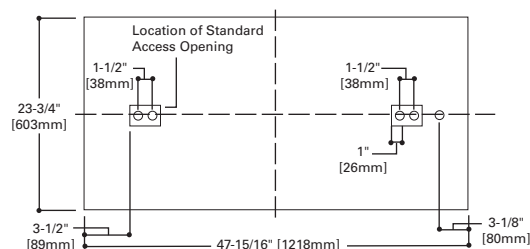
Safe and convenient means of disconnecting power.



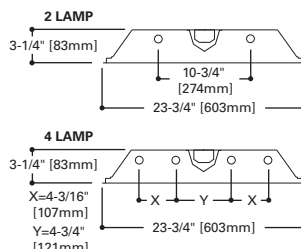
ADF122070



MOUNTING DATA

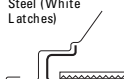


LAMP CONFIGURATIONS

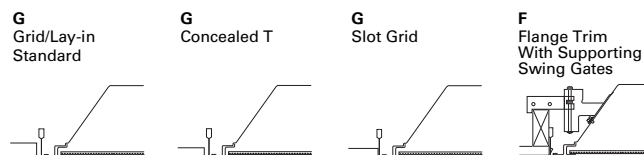


DOOR FRAMES

2GR8
Flat, White
Steel (White
Latches)



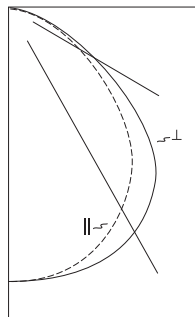
CEILING COMPATIBILITY



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

COOPER LIGHTING

PHOTOMETRICS



2GR8IC-232A
 Electronic Ballast
 F32T8/35K lamps
 2800 lumens
 Spacing criterion:
 (||) 1.2 x mounting
 height, (⊥) 1.4 x
 mounting height
 Efficiency 79.8%
 Test Report:
 2GR8IC232A.IES
 LER = FL-67
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.58

Candela			
Angle	Along	45°	Across ⊥
0	1697	1697	1697
5	1689	1696	1705
10	1669	1685	1703
15	1636	1665	1694
20	1586	1632	1673
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30	1430	1512	1582
35	1320	1427	1517
40	1188	1318	1422
45	1031	1162	1271
50	843	964	1046
55	657	740	796
60	501	528	581
65	378	353	405
70	277	232	294
75	196	172	231
80	143	144	176
85	77	85	97
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	50	30	10	50	30	10			
RCR	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	95	95	95	95	93	93	93	93	89	89	89	85	85	85	81	81	81	80	80	80	80	80	80	80		
1	88	85	82	79	86	83	80	78	79	77	75	76	74	73	73	72	71	69	69	69	69	69	69	69		
2	81	75	70	66	79	74	69	66	71	67	64	68	65	63	66	64	61	60	60	60	60	60	60	60		
3	75	67	62	57	73	66	61	56	64	59	55	62	58	55	60	56	54	52	52	52	52	52	52	52		
4	69	60	54	49	67	59	53	49	57	52	48	56	51	47	54	50	47	45	45	45	45	45	45	45		
5	63	54	47	42	62	53	47	42	51	46	42	50	45	41	48	44	41	39	39	39	39	39	39	39		
6	58	48	42	37	57	48	41	37	46	41	36	45	40	36	44	39	36	34	34	34	34	34	34	34		
7	54	44	37	32	53	43	37	32	42	36	32	41	35	32	40	35	31	30	30	30	30	30	30	30		
8	50	39	32	28	48	39	32	28	38	32	28	37	31	28	36	31	27	26	26	26	26	26	26	26		
9	46	35	29	24	45	35	28	24	34	28	24	33	28	24	32	27	24	22	22	22	22	22	22	22		
10	42	32	26	21	41	31	25	21	31	25	21	30	25	21	29	24	21	20	20	20	20	20	20	20		

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1360	24.3	30.4
0-40	2249	40.2	50.3
0-60	3788	67.6	84.7
0-90	4471	79.8	100.0
0-180	4471	79.8	100.0

Typical VCP Percentages

Room Size (Ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	73	77	71	75
30 x 30	68	72	65	69
30 x 60	60	63	56	59
60 x 30	69	73	68	71
60 x 60	60	63	57	60

ORDERING INFORMATION

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

Rating 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⁾
Width 2=2' Width	Wattage 28T8=28W T8 (48") 32=32W T8 (48") ⁽⁴⁾	Options GL=Single Element Fuse GM=Double Element Fuse Flex=Flex Installed (Reference Flex ordering information) EL=Emergency Installed
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) PB1S=Silver Parabolic Louver (1/2" x 1/2" x 1/2")	
Series R8=General Purpose T8 Commercial Troffer ⁽¹⁾		
Type IC=IC Rated		

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⁾ Ballast Factor is 0.88 for 4 lamp 32W T8 fixtures. ⁽⁵⁾ For a complete listing of Fifth Light Technology products and other solutions from Cooper Controls, visit www.coopercontrol.com. ⁽⁶⁾ 0-10V ballast do not include DALI feature. Please select DALI ballast for use with Fifth Light system. ⁽⁷⁾ Specification grade 0-10V dimming ballast are NEMA premium and CEE listed. They are compatible with low mercury and energy saving lamps. ⁽⁸⁾ Specification Grade 0-10V ballast not offered in 3 or 4-lamp versions. ⁽⁹⁾ Standard 0-10V ballast not available for 28W T8 lamps. ⁽¹⁰⁾ Voltage must be specified for Standard 0-10V 32W 3 and 4-lamp ballast. 4-lamp ballast versions must be 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.

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 ⁽⁶⁾

5LTV8_=T8 0-10V Program Rapid Start.
Total Harmonic Distortion < 10%.
Ballast Factor 0.87 ^{(8), (10)}

5LTVS8_=T8 0-10V Spec Grade Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 0.87 ^{(7), (8)}

Fifth Light DALI Ballasts ⁽⁵⁾

5LT8_=T8 DALI Program Rapid Start.
Total Harmonic Distortion < 10%.
Ballast Factor 1.0

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

Packaging
 U=Unit Pack

ACCESSORIES

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

FCTK A - 24 R W - U

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

SHIPPING INFORMATION

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

