



Bandwen-Williams-Kindbom
Consulting Engineers

3475 Forest Lake Drive, Suite 300
Akron, OH 44315
330.899.9633

SHOP DRAWING SUBMITTAL REVIEW

Project:

Summa Green ED

Submittal:

Lighting Fixtures

Date Received:

10/19/11

Approved

Date Returned:

10/25/11

Approved with Corrections

X

Reviewed By:

Tom Bandwen

Rejected - Resubmit

COMMENTS:

1. Types H, J, K, & N = 4000K LED
2. Type SF with integral ballast box
3. Submit type M
4. Color for Wattstopper devices to be selected by architect

Review is for compliance with the design concept and contract documents only. Under the Contract, the Contractor is responsible for dimensions, quantities and coordination of installation at the actual site and with the other trades. Review does not authorize changes to the contract requirements unless stated in separate letter or change order.

SHOP DRAWING SUBMITTAL

Job Name: Summa Green Emergency Department

Submitted To: Bob Galbraith, CAM, Inc.

Item: Light Fixtures rev

Date Submitted: 11/13/11

Copies Submitted: 1PDF

Return Date:

Drawing Number:

Contractor Stamp:

Approval Stamp:

SUBMITTAL REVIEW	
REVIEW IS ONLY FOR GENERAL CONFORMANCE W/PLANS & SPECS. THOMPSON ELECTRIC, INC.	
<u> X </u>	REVIEWED
<u> </u>	REVIEWED AS NOTED
<u> </u>	REVISE & RESUBMIT
Date: 11/13/11	By: DE

LIGHTING & CONTROLS

4503 Brookpark Road • Parma, Ohio 44134
(216) 741-4545 • Fax: (216) 741-7555
e-lightingcontrols.com

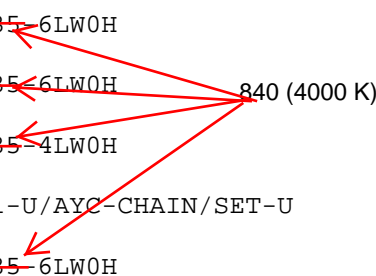
SUMMA ER GREEN

SCHEDULE

Date: 10-12-2011

Page 1

A	COOP	2GC8-232K12/125-UNV-L8841-ER81-PAF-U
B	COOP	2GC8-332K12/125-UNV-L8841-ER81-PAF-U
C	COOP	2GC8-432K12/125-UNV-L8841-ER82-PAF-U
D	COOP	2GC8-2BX40K12/125-UNV-TU-C240PUNVHPB-PAF-U
E1	COOP	CX61
E2	COOP	CX62
F	COOP	2RDI-332RP-UNV-L8841-ER81-U
G	COOP	2RDI-2BX40RP-UNV-TU-C240PUNVHPB-U
H	COOP	LD610D120-ERW6835-6LW0H
J	COOP	LD615D010-ERW6835-6LW0H
K	COOP	LD409D120-ERW4835-4LW0H
L	COOP	SSF-232-UNV-ER81-U/AYC-CHAIN/SET-U
N	COOP	LD615DLUT-ERW6835-6LW0H
P	COOP	MD770E-7750H
PE	COOP	MD770EQ-7750XH
Q	COOP	MD7100E-7750H
QE	COOP	MD7100EQ-7750XH
R	COOP	CFR-24-332-UNV-IK12-ER81-PAF-GLR
SA	COOP	TLM-B06-LED-E1-5WQ-AP
SA	HAPCO	SSA24D5-4-GY
SB	COOP	TLM-B06-LED-E1-5WQ-AP
SB	HAPCO	SSA22.5D5-4-GY



840 (4000 K)

SC	COOP	TLM-B06-LED-E1-T3-AP
SC	HAPCO	SSA24D5-4-GY
SD	COOP	TLM-B06-LED-E1-T2-AP
SD	HAPCO	SSA24D5-4-GY
SE	COOP	VFS-K-70-MP-MT-WF-AP-L/VFS-TV-AP/JB-AP
SF	COOP	PHH-70-MP-DT-MB-VNF- XXX -AP-L GIB
T	COOP	ENV-B01-LED-E1-BL2-AP
V	COOP	MAS-32-UNV-IK12-ER81
W	COOP	MAS-17-UNV-IK12-ER81
X	COOP	2VRFC-432ACTF187-UNV-ER82/VRSD

DESCRIPTION

GC8 is a premium grade specification lensed troffer series. This innovative, high quality luminaire is dedicated to the latest T8 lamp and micro electronic ballast technology for optimal performance and energy efficiency. The GC8 is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

The GC8 series features efficiency, quality and performance. The series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

Catalog #	2GC8-232K12/125-UNV-L8841	Type
Project	SUMMA ER GREEN EMERGENCY	A
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. Micro ballast cover*** reduces ballast shadow for superior lens brightness uniformity and is easily removed without tools. Die formed captive lampholder brackets fully enclose lampholder wiring permitting easy lampholder replacement. Unibody endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KOs for continuous row wiring. Endplates have integral 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. Housing and ballast 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/Shielding

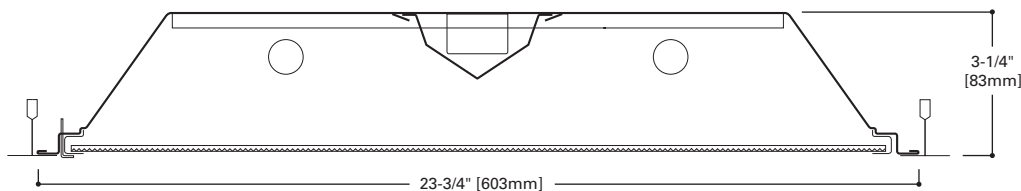
Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Flat and regressed aluminum doors also available. Positive light seals. Light stabilized, acrylic prismatic lens. Standard #12 pattern. Numerous additional shielding options available.



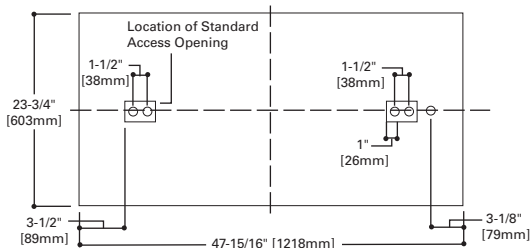
2GC8
228T8
232
428T8
432

2' X 4' TROFFER
2 OR 4 LAMP

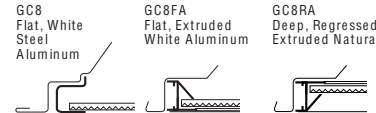
Specification T8 Troffer



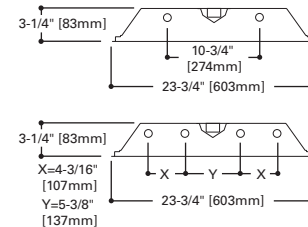
MOUNTING DATA



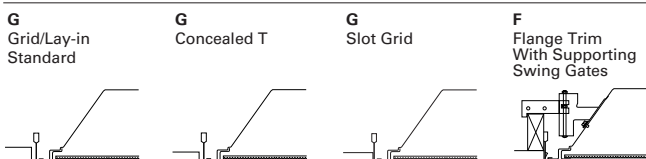
DOOR FRAMES



LAMP CONFIGURATIONS



CEILING COMPATIBILITY



COOPER LIGHTING

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

(Verify compatibility/ consult factory.)

ENERGY DATA

Input Watts:
HB Ballast & STD Lamps
228T8 (48), 232 (53)
428T8 (96), 432 (107)

Luminaire Efficacy Rating
LER = FL-80
Catalog Number: 2GC8-232A

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$3.00

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

**Consult Pre Sales Technical Support.

***Full sized ballast cover for biaxial lamps and emergency option may apply.

****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

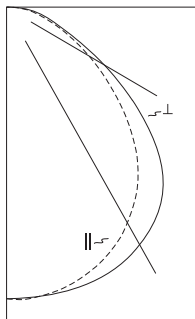
LINEAR DISCONNECT

Safe and convenient means of disconnecting power.



ADF091407

PHOTOMETRICS

**2GC8-232A**

Electronic Ballast

(2) F032/35K

T8 lamps

3100 lumens

Spacing criterion:

(H) 1.2 x mounting

height, (L) 1.4 x

mounting height

Efficiency 84.7%

Test Report:

2GC8-232A.IES

LER = FL-80

Yearly Cost of 1000

lumens, 3000 hrs at

.08 KWH = \$3.00

Candela

Angle	Along H	45°	Across L
0	1963	1963	1963
5	1966	1957	1962
10	1940	1941	1956
15	1895	1914	1944
20	1834	1876	1924
25	1753	1820	1883
30	1646	1741	1822
35	1525	1640	1745
40	1373	1502	1635
45	1186	1323	1463
50	986	1131	1235
55	795	917	974
60	623	677	734
65	471	460	528
70	347	295	383
75	247	198	288
80	175	151	212
85	93	92	118
90	7	16	23

Coefficients of Utilization

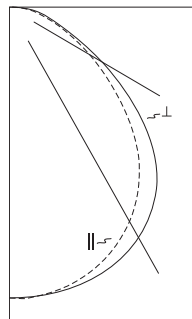
Effective floor cavity reflectance																20%						
rc rw RCR	80%				70%				50%				30%				10%				0%	
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
0	101	101	101	101	99	99	99	99	94	94	94	90	90	90	86	86	86	85				
1	93	89	85	82	90	87	84	81	83	81	78	80	78	76	77	75	74	72				
2	85	78	73	68	83	77	71	67	74	69	66	71	67	64	68	65	63	61				
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9	49	38	31	27	48	37	31	26	37	31	26	36	30	26	35	30	26	25				
10	46	35	28	24	45	35	28	24	34	28	24	33	28	24	32	27	24	22				

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1565	25.2	29.8
0-40	2585	41.7	49.2
0-60	4403	71.0	83.8
0-90	5254	84.7	100.0
0-180	5254	84.7	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2690	3001	3319
55	2223	2564	2724
65	1788	1746	2004
75	1531	1227	1785
85	1712	1693	2172

**2GC8-432A**

Electronic Ballast

(4) F032/35K

T8 lamps

3100 lumens

Spacing criterion:

(H) 1.2 x mounting

height, (L) 1.3 x

mounting height

Efficiency 81.6%

Test Report:

2GC8-432A.IES

LER = FL-85

Yearly Cost of 1000

lumens, 3000 hrs at

.08 KWH = \$2.82

Candela

Angle	Along H	45°	Across L
0	3892	3892	3892
5	3891	3875	3885
10	3838	3839	3865
15	3750	3777	3826
20	3626	3687	3758
25	3460	3561	3654
30	3256	3388	3510
35	3001	3164	3321
40	2700	2878	3071
45	2329	2520	2728
50	1924	2136	2295
55	1543	1724	1825
60	1203	1288	1386
65	907	877	1004
70	669	563	729
75	472	378	547
80	335	287	405
85	182	175	228
90	15	32	48

Coefficients of Utilization

Effective floor cavity reflectance																			20%			
rc rw RCR	80%				70%				50%				30%				10%				0%	
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0				
0	97	97	97	97	95	95	95	95	91	91	91	87	87	87	83	83	83	82				
1	89	86	82	79	87	84	81	78	80	78	76	77	75	73	74	73	71	69				
2	82	75	70	66	80	74	69	65	71	67	63	68	65	62	66	63	61	59				
3	75	67	60	55	73	65	60	55	63	58	54	61	57	53	59	55	52	50				
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9	48	37	30	26	46	36	30	26	35	30	26	35	29	26	34	29	25	24				
10	45	34	28	23	44	34	28	23	33	27	23	32	27	23	31	27	23	22				

Zonal Lumen Summary

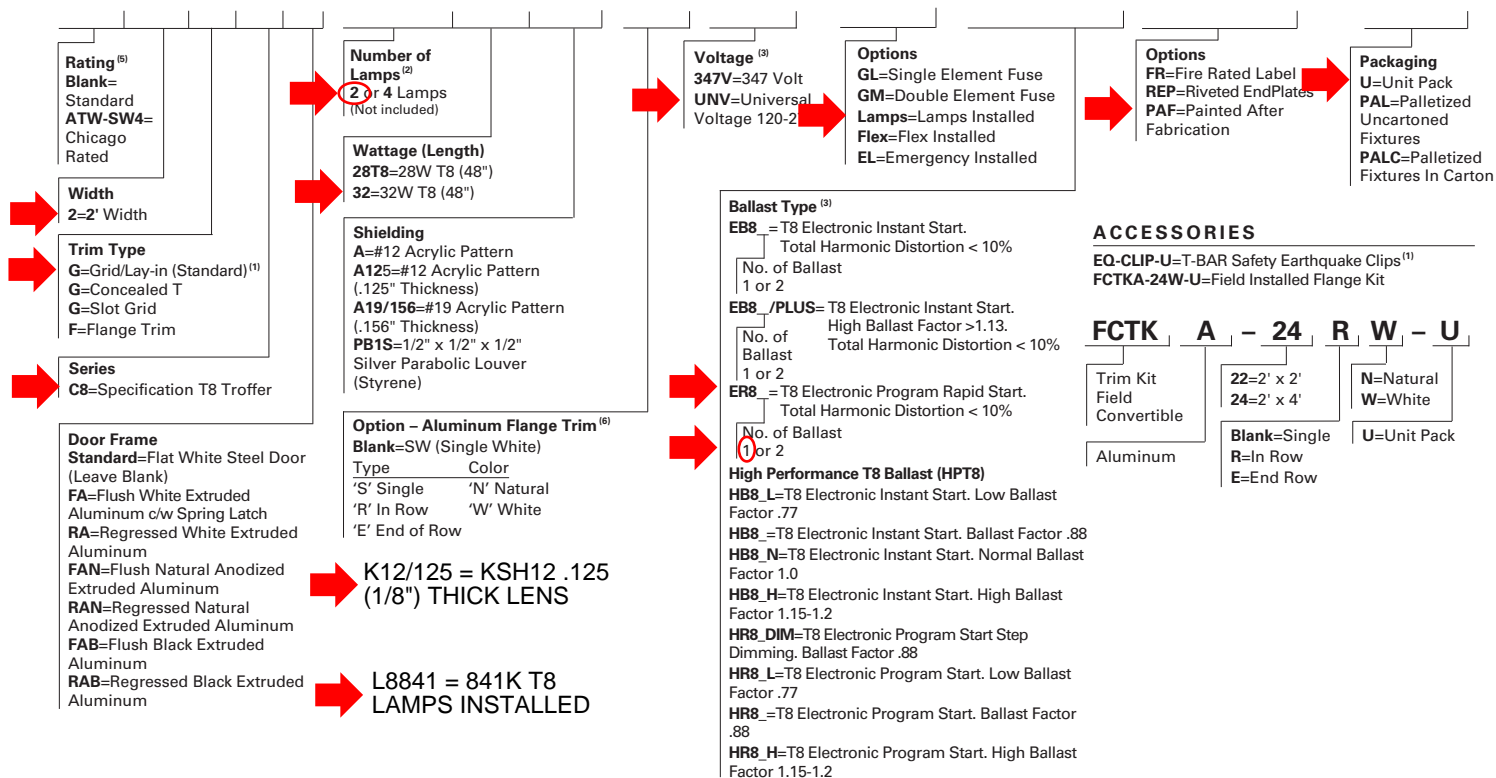
Zone	Lumens	%Lamp	%Fixture
0-30	3075	24.8	30.4
0-40	5048	40.7	49.9
0-60	8502	68.6	84.0
0-90	10124	81.6	100.0
0-180	10124	81.6	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	5283	5716	6188
55	4315	4821	5104
65	3442	3329	3811
75	2925	2343	3390
85	3349	3221	4196

ORDERING INFORMATION

SAMPLE NUMBER: 2GC8-232A-UNV-HB81-U



NOTES: ⁽¹⁾An EQ Grid Clip is recommended for all 9/16" ceiling systems. ⁽²⁾Standard off-center ballast on 3-lamp fixtures. ⁽³⁾Products also available in non-US voltages and frequencies for international markets. ⁽⁴⁾Not available when specifying emergencies, voltage must be specific. ⁽⁵⁾For NYC rated product, see separate specification sheets. ⁽⁶⁾Specify row configuration, type in catalog number when ordering complete fixture.

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

SHIPPING INFORMATION

Catalog No.	Wt.
2GC8-228T8A	20 lbs.
2GC8-232A	20 lbs.
2GC8-428T8A	20 lbs.
2GC8-432A	20 lbs.

DESCRIPTION

GC8 is a premium grade specification lensed troffer series. This innovative, high quality luminaire is dedicated to the latest T8 lamp and micro electronic ballast technology for optimal performance and energy efficiency. The GC8 is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

The GC8 Series features efficiency, quality and performance. The series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

Catalog #	2GC8-332K12/125-UNV-L8841	Type	
Project	SUMMA ER. GREEN EMERGENCY DEPT	Date	
Comments			
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. Micro ballast cover*** reduces ballast shadow for superior lens brightness uniformity and is easily removed without tools. Die formed captive lampholder brackets fully enclose lampholder wiring permitting easy lampholder replacement. Unibody endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. Ample KOs are provided for continuous row wiring. Endplates have integral Grid-lock feature for safety and convenience.

Electrical

Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Roto-lock lampholders ensure positive lamp retention. UL/CUL listed. Suitable for damp locations.**

Finish

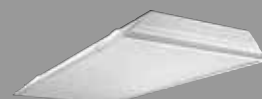
Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibition. Housing and ballast cover finished with new 90% reflective white enamel for superior performance. "PAF" Painted After Fabrication option also available.

Hinging/Latching

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

Frame/Shielding

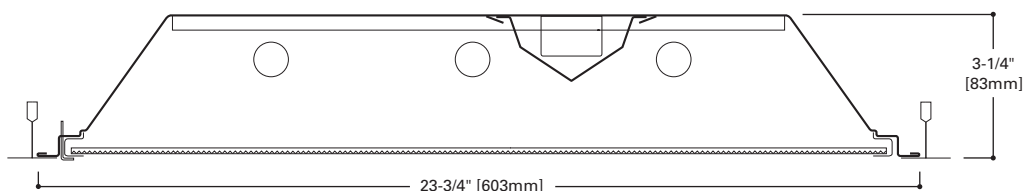
Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Flat and regressed aluminum doors also available. Positive light seals. Light stabilized, acrylic prismatic lens. Standard #12 pattern. Numerous additional shielding options available.



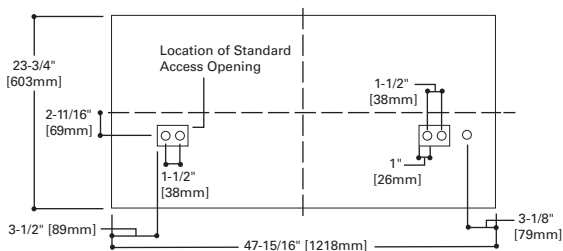
2GC8
328T8
332

2' X 4' TROFFER
3 T8 LAMPS

Specification T8 Troffer



MOUNTING DATA



CEILING COMPATIBILITY

G
Grid/Lay-in
Standard



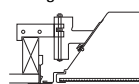
G
Concealed T



G
Slot Grid



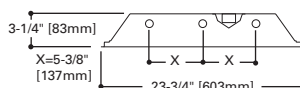
F
Flange Trim
With Supporting
Swing Gates



DOOR FRAMES



LAMP CONFIGURATIONS



**Ceiling
Type**

Exposed Grid
Concealed T
Slot Grid
Flange

(Verify compatibility/ consult factory.)

**Trim
Type**

G
G
G
F

ENERGY DATA

Input Watts:
EB Ballast & STD Lamps
328T8 (67)
332 (91)

Luminaire Efficacy Rating

LER = FL-83

Catalog Number: 2GC8-332A

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$2.89

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

**Consult Pre Sales Technical Support.

***Full sized ballast cover for biaxial lamps and emergency option may apply.

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

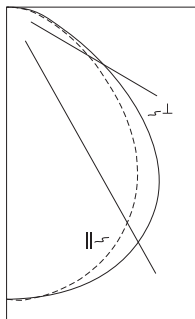
LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO LOCAL, STATE OR FEDERAL LAWS

LINEAR DISCONNECT

Safe and convenient means of disconnecting power.



PHOTOMETRICS

**2GC8-332A**

Electronic Ballast

(3) F32T8 lamps

3100 lumens

Spacing criterion:

(H) 1.2 x mounting

height, (L) 1.4 x

mounting height

Efficiency 85%

Test Report:

2GC8-332A.IES

LER = FL-83

Yearly Cost of 1000

lumens, 3000 hrs at

.08 KWH = \$2.89

Candela

Angle	Along H	45°	Across
0	2985	2985	2985
5	2987	2971	2981
10	2947	2946	2971
15	2881	2906	2950
20	2785	2840	2907
25	2659	2753	2837
30	2500	2628	2737
35	2309	2470	2603
40	2074	2253	2424
45	1797	1979	2166
50	1491	1683	1839
55	1194	1368	1471
60	935	1023	1109
65	711	692	800
70	520	441	576
75	370	296	433
80	263	227	319
85	141	139	184
90	11	26	37

Coefficients of Utilization

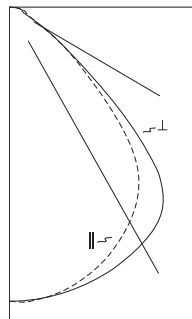
Effective floor cavity reflectance												20%											
rc	80%				70%				50%				30%				10%				0%		
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																							
0	101	101	101	101	99	99	99	99	94	94	94	90	90	90	87	87	87	85					
1	93	89	86	83	91	87	84	81	84	81	79	80	78	76	77	76	74	72					
2	85	78	73	68	83	77	72	67	74	70	66	71	68	64	69	66	63	61					
3	78	69	63	57	76	68	62	57	66	60	56	63	59	55	61	57	54	52					
4	72	62	55	49	70	61	54	49	59	53	48	57	52	48	55	50	47	45					
5	66	55	48	43	64	55	48	42	53	47	42	51	46	41	50	45	41	39					
6	61	50	43	37	59	49	42	37	48	42	37	46	41	37	45	40	36	35					
7	57	45	38	33	55	45	38	33	44	37	33	42	37	33	41	36	32	31					
8	53	42	34	30	51	41	34	30	40	34	29	39	33	29	38	33	29	27					
9	49	38	31	27	48	38	31	27	37	31	27	36	30	26	35	30	26	25					
10	46	35	29	24	45	35	28	24	34	28	24	33	28	24	32	27	24	22					

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2371	25.5	30.0
0-40	3907	42.0	49.4
0-60	6627	71.3	83.8
0-90	7909	85.0	99.9
0-180	7909	85.0	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	4706	4489	4913
55	3339	3826	4114
65	2698	2626	3036
75	2293	1834	2683
85	2595	2558	3386

**2GC8-332A156**

Electronic Ballast

(3) F32T8 lamps

3100 lumens

Spacing criterion:

(H) 1.2 x mounting

height, (L) 1.4 x

mounting height

Efficiency 82.5%

Test Report:

2GC8-

332A19_156.IES

LER = FL-80

Yearly Cost of 1000

lumens, 3000 hrs at

.08 KWH = \$3.00

Candela

Angle	Along H	45°	Across
0	3509	3509	3509
5	3509	3490	3501
10	3454	3451	3474
15	3362	3388	3433
20	3241	3301	3379
25	3086	3189	3306
30	2908	3045	3223
35	2683	2848	3105
40	2321	2496	2839
45	1704	1907	2163
50	1126	1373	1281
55	734	1028	742
60	408	697	422
65	271	448	235
70	212	284	170
75	196	146	159
80	150	79	132
85	77	73	81
90	5	17	16

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	98	98	98	98	96	96	96	96	92	92	92	88	88	88	84	84	84	82					
1	91	88	85	82	89	86	83	81	83	80	78	79	78	76	77	75	74	72					
2	84	79	74	70	82	77	73	69	74	70	67	72	68	66	69	67	64	63					
3	78	70	65	60	76	69	64	59	67	62	58	65	61	57	63	59	56	55					
4	72	63	57	52	70	62	56	52	60	55	51	59	54	50	57	53	50	48					
5	67	57	51	46	65	57	50	46	55	49	45	53	48	45	52	48	44	43					
6	62	52	46	41	61	51	45	41	50	44	40	49	44	40	47	43	40	38					
7	58	48	41	36	57	47	41	36	46	40	36	45	40	36	44	39	36	34					
8	54	44	37	33	53	43	37	33	42	37	33	41	36	32	40	36	32	31					
9	51	40	34	30	50	40	34	30	39	33	30	38	33	29	37	33	29	28					
10	48	37	31	27	47	37	31	27	36	31	27	35	30	27	35	30	27	25					

Zonal Lumen Summary

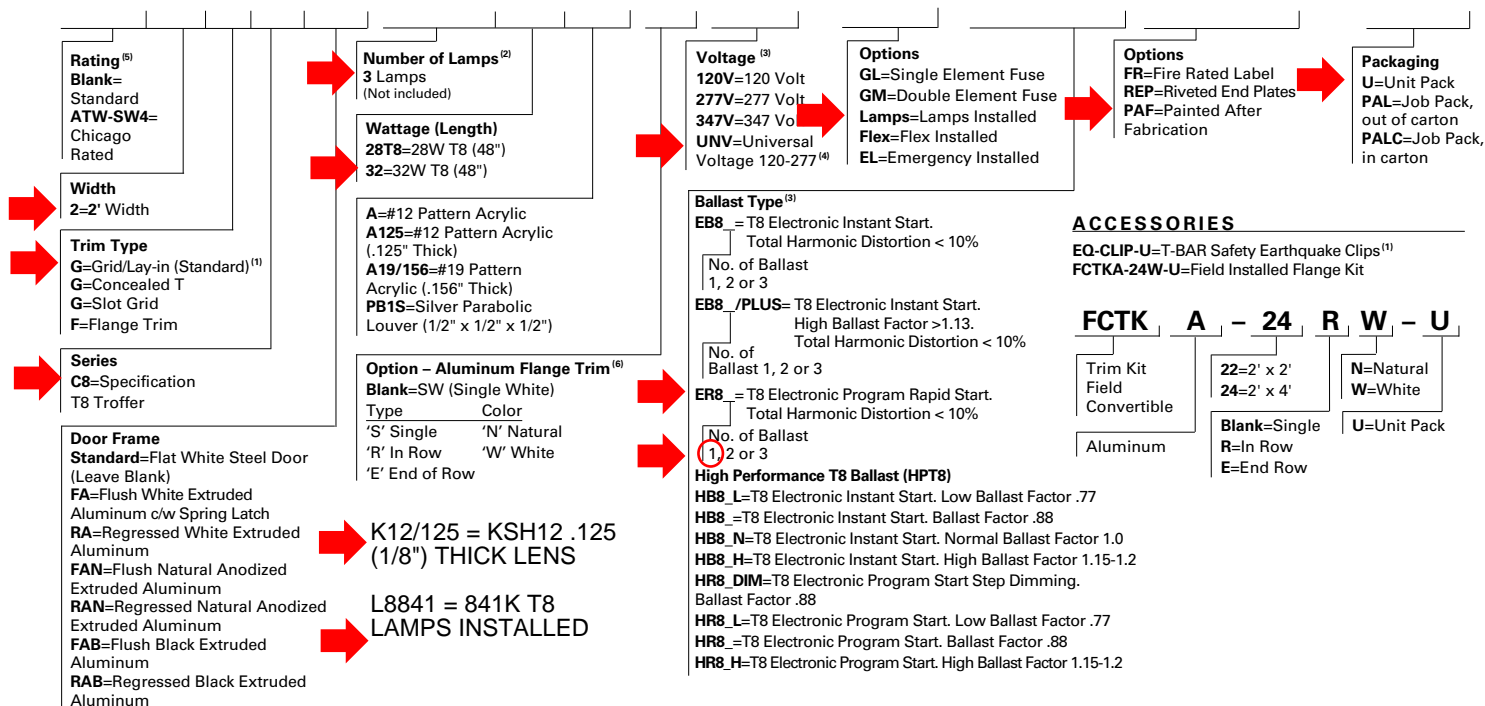
Zone	Lumens	%Lamp	%Fixture
0-30	2762	29.7	36.0
0-40	4546	48.9	59.3
0-60	6894	74.1	89.9
0-90	7671	82.5	100.0
0-180	7671	82.5	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	3865	4326	4906
55	2053	2875	2075
65	1029	1700	892
75	1215	905	985
85	1417	1343	1491

ORDERING INFORMATION

SAMPLE NUMBER: 2GC8-332A-UNV0V-EB81-U



NOTES: ⁽¹⁾ An EQ Grid Clip is recommended for all 9/16" ceiling systems. ⁽²⁾ Standard off-center ballast compartment on 3-lamp fixtures. ⁽³⁾ Products also available in non-US voltages and frequencies for international markets. ⁽⁴⁾ Not available when specifying emergencies, voltage must be specific. ⁽⁵⁾ For NYC rated product, see separate specification sheets. ⁽⁶⁾ Specify row configuration, type in catalog number when ordering complete fixture.

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

SHIPPING INFORMATION

Catalog No.	Wt.
2GC8-328T8A	20 lbs.
2GC8-332A	20 lbs.

DESCRIPTION

GC8 is a premium grade specification lensed troffer series. This innovative, high quality luminaire is dedicated to the latest T8 lamp and micro electronic ballast technology for optimal performance and energy efficiency. The GC8 is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

The GC8 series features efficiency, quality and performance. The series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

Catalog #	2GC8-432K12/125-UNV-L8841	Type	C
Project	SUMMA ER GREEN EMERGENCY DEPT	Date	
Comments			
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. Micro ballast cover*** reduces ballast shadow for superior lens brightness uniformity and is easily removed without tools. Die formed captive lampholder brackets fully enclose lampholder wiring permitting easy lampholder replacement. Unibody endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KOs for continuous row wiring. Endplates have integral 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. Housing and ballast 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/Shielding

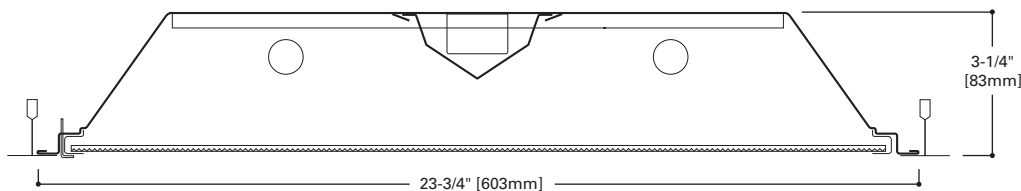
Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Flat and regressed aluminum doors also available. Positive light seals. Light stabilized, acrylic prismatic lens. Standard #12 pattern. Numerous additional shielding options available.



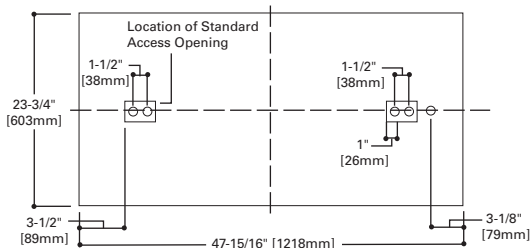
2GC8
228T8
232
428T8
432

2' X 4' TROFFER
2 OR 4 LAMP

Specification T8 Troffer



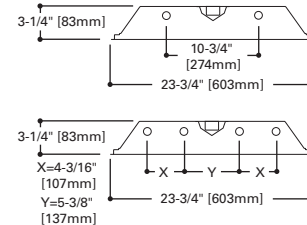
MOUNTING DATA



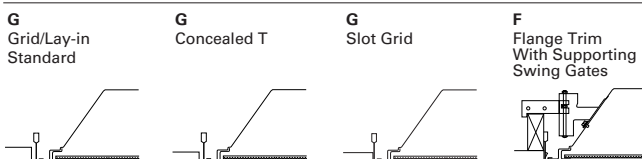
DOOR FRAMES



LAMP CONFIGURATIONS



CEILING COMPATIBILITY



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

(Verify compatibility/ consult factory.)

COOPER LIGHTING

ENERGY DATA

Input Watts:
HB Ballast & STD Lamps
228T8 (48), 232 (53)
428T8 (96), 432 (107)

Luminaire Efficacy Rating
LER = FL-80
Catalog Number: 2GC8-232A

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$3.00

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

**Consult Pre Sales Technical Support.

***Full sized ballast cover for biaxial lamps and emergency option may apply.

****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

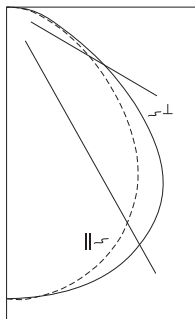
LINEAR DISCONNECT

Safe and convenient means of disconnecting power.



ADF091407

PHOTOMETRICS

**2GC8-232A**

Electronic Ballast

(2) F032/35K

T8 lamps

3100 lumens

Spacing criterion:

(H) 1.2 x mounting

height, (L) 1.4 x

mounting height

Efficiency 84.7%

Test Report:

2GC8-232A.IES

LER = FL-80

Yearly Cost of 1000

lumens, 3000 hrs at

.08 KWH = \$3.00

Candela

Angle	Along H	45°	Across L
0	1963	1963	1963
5	1966	1957	1962
10	1940	1941	1956
15	1895	1914	1944
20	1834	1876	1924
25	1753	1820	1883
30	1646	1741	1822
35	1525	1640	1745
40	1373	1502	1635
45	1186	1323	1463
50	986	1131	1235
55	795	917	974
60	623	677	734
65	471	460	528
70	347	295	383
75	247	198	288
80	175	151	212
85	93	92	118
90	7	16	23

Coefficients of Utilization

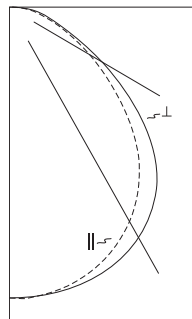
Effective floor cavity reflectance																20%					
rc rw RCR	80%				70%				50%				30%				10%				0%
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
0	101	101	101	101	99	99	99	99	94	94	94	90	90	90	86	86	86	85			
1	93	89	85	82	90	87	84	81	83	81	78	80	78	76	77	75	74	72			
2	85	78	73	68	83	77	71	67	74	69	66	71	67	64	68	65	63	61			
3	78	69	63	57	76	68	62	57	65	60	56	63	59	55	61	57	54	52			
4	71	62	54	49	69	60	54	49	58	53	48	56	51	47	55	50	47	45			
5	66	55	48	42	64	54	47	42	52	46	42	51	45	41	49	45	41	39			
6	61	50	42	37	59	49	42	37	48	41	37	46	41	36	45	40	36	34			
7	56	45	38	33	55	45	38	33	43	37	33	42	37	32	41	36	32	30			
8	53	41	34	29	51	41	34	29	40	34	29	39	33	29	38	33	29	27			
9	49	38	31	27	48	37	31	26	37	31	26	36	30	26	35	30	26	25			
10	46	35	28	24	45	35	28	24	34	28	24	33	28	24	32	27	24	22			

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1565	25.2	29.8
0-40	2585	41.7	49.2
0-60	4403	71.0	83.8
0-90	5254	84.7	100.0
0-180	5254	84.7	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	2690	3001	3319
55	2223	2564	2724
65	1788	1746	2004
75	1531	1227	1785
85	1712	1693	2172

**2GC8-432A**

Electronic Ballast

(4) F032/35K

T8 lamps

3100 lumens

Spacing criterion:

(H) 1.2 x mounting

height, (L) 1.3 x

mounting height

Efficiency 81.6%

Test Report:

2GC8-432A.IES

LER = FL-85

Yearly Cost of 1000

lumens, 3000 hrs at

.08 KWH = \$2.82

Candela

Angle	Along H	45°	Across L
0	3892	3892	3892
5	3891	3875	3885
10	3838	3839	3865
15	3750	3777	3826
20	3626	3687	3758
25	3460	3561	3654
30	3256	3388	3510
35	3001	3164	3321
40	2700	2878	3071
45	2329	2520	2728
50	1924	2136	2295
55	1543	1724	1825
60	1203	1288	1386
65	907	877	1004
70	669	563	729
75	472	378	547
80	335	287	405
85	182	175	228
90	15	32	48

Coefficients of Utilization

Effective floor cavity reflectance																			20%			
rc	80%				70%				50%				30%				10%				0%	
	rw	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0				
RCR																						
0	97	97	97	97	95	95	95	95	91	91	91	87	87	87	83	83	83	82				
1	89	86	82	79	87	84	81	78	80	78	76	77	75	73	74	73	71	69				
2	82	75	70	66	80	74	69	65	71	67	63	68	65	62	66	63	61	59				
3	75	67	60	55	73	65	60	55	63	58	54	61	57	53	59	55	52	50				
4	69	59	53	47	67	58	52	47	56	51	46	55	50	46	53	49	45	43				
5	64	53	46	41	62	53	46	41	51	45	40	49	44	40	48	43	40	38				
6	59	48	41	36	57	47	41	36	46	40	36	45	39	35	43	39	35	33				
7	55	44	37	32	53	43	37	32	42	36	32	41	35	31	40	35	31	30				
8	51	40	33	29	50	40	33	29	38	33	28	37	32	28	36	32	28	27				
9	48	37	30	26	46	36	30	26	35	30	26	35	29	26	34	29	25	24				
10	45	34	28	23	44	34	28	23	33	27	23	32	27	23	31	27	23	22				

Zonal Lumen Summary

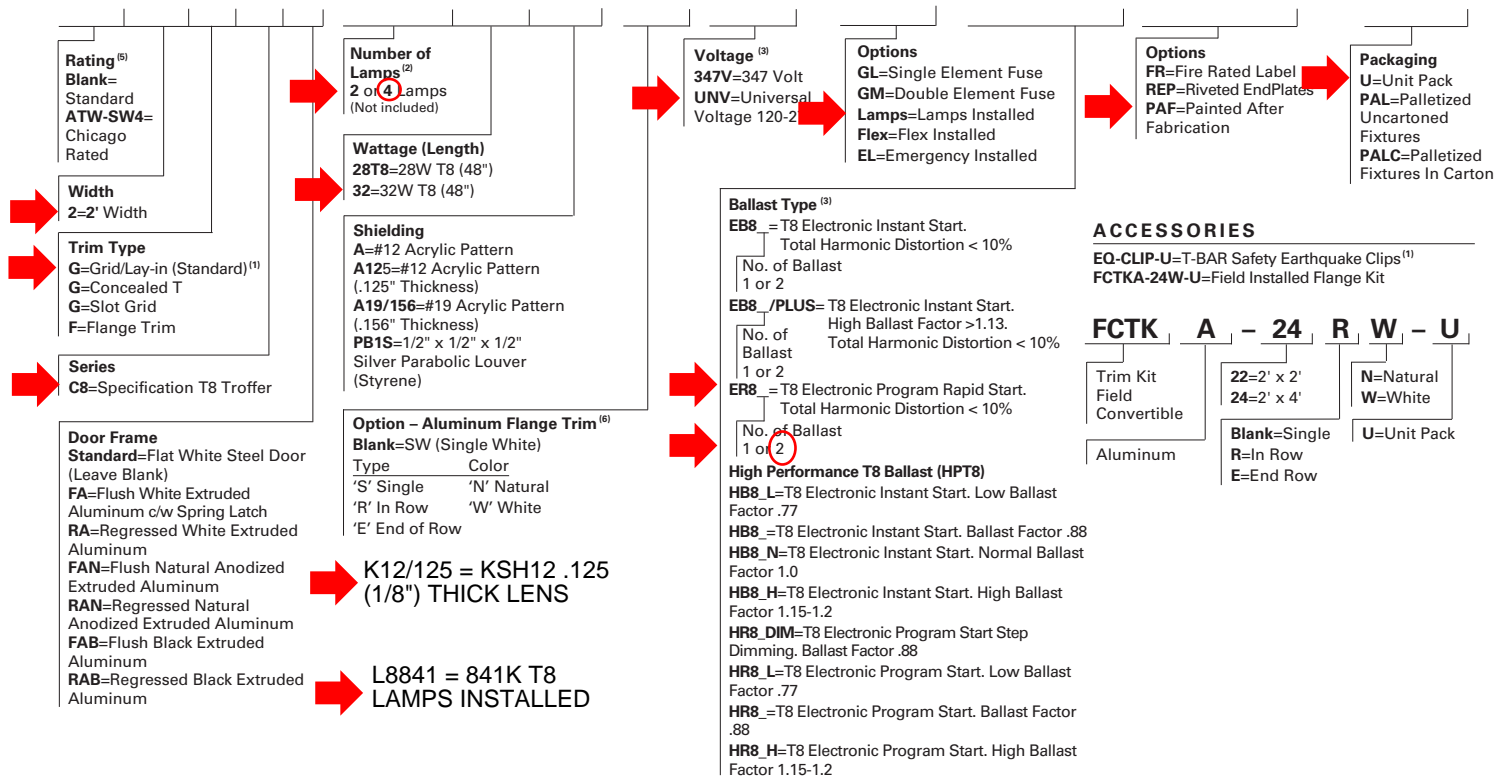
Zone	Lumens	%Lamp	%Fixture
0-30	3075	24.8	30.4
0-40	5048	40.7	49.9
0-60	8502	68.6	84.0
0-90	10124	81.6	100.0
0-180	10124	81.6	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	5283	5716	6188
55	4315	4821	5104
65	3442	3329	3811
75	2925	2343	3390
85	3349	3221	4196

ORDERING INFORMATION

SAMPLE NUMBER: 2GC8-232A-UNV-HB81-U



NOTES: ⁽¹⁾An EQ Grid Clip is recommended for all 9/16" ceiling systems. ⁽²⁾Standard off-center ballast on 3-lamp fixtures. ⁽³⁾Products also available in non-US voltages and frequencies for international markets. ⁽⁴⁾Not available when specifying emergencies, voltage must be specific. ⁽⁵⁾For NYC rated product, see separate specification sheets. ⁽⁶⁾Specify row configuration, type in catalog number when ordering complete fixture.

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

SHIPPING INFORMATION

Catalog No.	Wt.
2GC8-228T8A	20 lbs.
2GC8-232A	20 lbs.
2GC8-428T8A	20 lbs.
2GC8-432A	20 lbs.

COOPER LIGHTING - METALUX®

DESCRIPTION

GC8 is a premium grade specification lensed troffer series. This innovative, high quality luminaire is dedicated to the latest T8 lamp and micro electronic ballast technology for optimal performance and energy efficiency. The GC8 is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

The GC8 series features efficiency, quality and performance. The series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

Catalog #	2GC8-2BX40K12/125-UNV-TU	Type
Project	SUMMA ER GREEN	D
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. Micro ballast cover*** reduces ballast shadow for superior lens brightness uniformity and is easily removed without tools. Die formed captive lampholder brackets fully enclose lampholder wiring permitting easy lampholder replacement. Unibody endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. Ample KOs are provided for continuous row wiring. Endplates have integral Grid-lock feature for safety and convenience.

Electrical

Ballasts are CBM/ETL Class "P" and are positively secured by Rotor-lock T8 lampholders. Biaxial models use 2G11 base lampholders with double-edge wiping action pressure-lock contacts and horizontally oriented lamp support clips. UL/CUL listed. Suitable for damp locations.

Finish

Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibition. Housing and ballast 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/Shielding

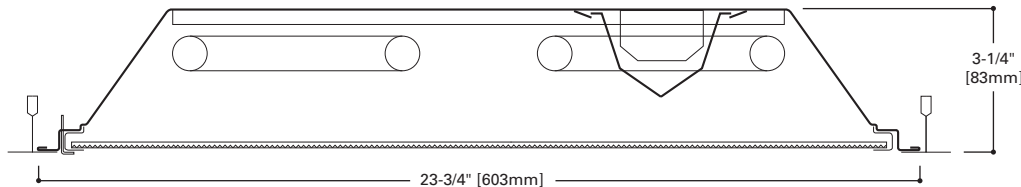
Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Flat and regressed aluminum doors also available. Positive light seals. Acrylic prismatic lens. Standard #12 pattern. Numerous additional shielding options available.



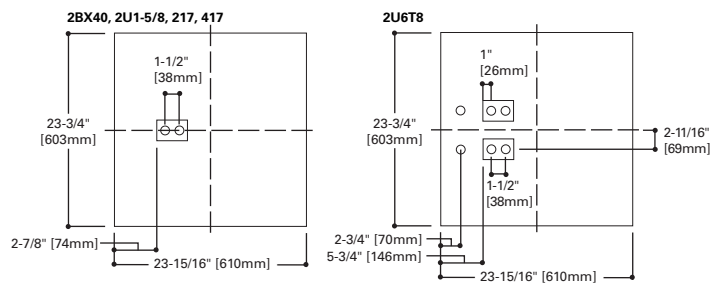
2GC8
2U6T8
2BX40
2U1-5/8

2' X 2' TROFFER
2 LAMPS

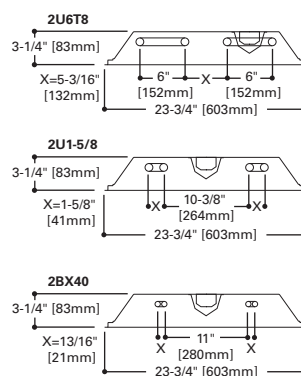
Specification T8 Troffer



MOUNTING DATA



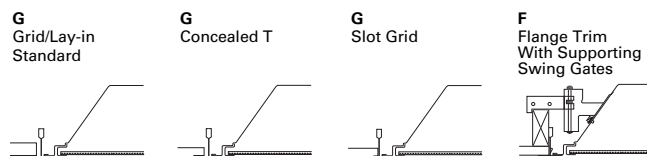
LAMP CONFIGURATIONS



DOOR FRAMES



CEILING COMPATIBILITY



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

(Verify compatibility/ consult factory.)

ENERGY DATA

Input Watts:
EB Ballast & STD Lamps
2U1-5/8 (61), 2U6T8 (61), 2BX40 (71)

ES Ballast & STD Lamps
2U1-5/8 (71), 2U6T8 (71), 2BX40 (77)

Luminaire Efficacy Rating

LER = FL-77

Catalog Number: 2GC8-2U6T8

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = \$3.12

*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

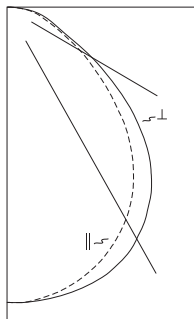
Safe and convenient means of disconnecting power.



ADF110984

COOPER LIGHTING

PHOTOMETRICS



2GC8-2U6T8A
Electronic Ballast
(2) 31W U6T8 lamps
2850 lumens
Spacing criterion:
(H) 1.2 x mounting
height, (L) 1.3 x
mounting height
Efficiency 80.1%
Test Report:
2GC82U6T8A.IES
LER = FL-77
Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH = \$3.12

Candela			
Angle	Along H	45°	Across L
0	1847	1847	1847
5	1843	1838	1848
10	1812	1820	1838
15	1763	1786	1819
20	1697	1738	1788
25	1610	1671	1733
30	1507	1581	1647
35	1378	1459	1539
40	1222	1312	1408
45	1046	1121	1243
50	845	910	1031
55	663	706	798
60	512	511	592
65	378	339	415
70	283	229	319
75	218	181	254
80	159	152	183
85	84	89	91
90	0	0	0

Coefficients of Utilization

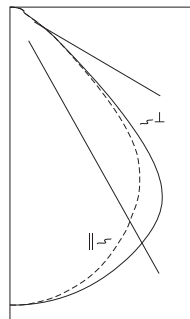
Effective floor cavity reflectance 20%												
rc	80%				70%				50%			
	70	50	30	10	70	50	30	10	50	30	10	0
RCR	70	50	30	10	70	50	30	10	50	30	10	0
0	95	95	95	95	93	93	93	93	89	89	89	80
1	88	84	81	78	86	82	79	77	79	77	74	68
2	80	74	69	65	78	73	68	64	70	66	63	58
3	74	66	60	55	72	65	59	54	62	58	54	50
4	68	59	52	47	66	58	52	47	56	51	46	43
5	63	53	46	41	61	52	46	41	50	45	40	38
6	58	48	41	36	57	47	41	36	46	40	36	34
7	54	44	37	32	53	43	37	32	42	36	32	30
8	50	40	33	29	49	39	33	29	38	33	29	27
9	47	37	30	26	46	36	30	26	35	30	26	24
10	44	34	28	24	43	34	28	24	33	27	24	22

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1450	25.4	31.7
0-40	2359	41.4	51.7
0-60	3874	68.0	84.8
0-90	4567	80.1	100.0
0-180	4567	80.1	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	3979	4265	4729
55	3109	3311	3743
65	2406	2158	2642
75	2266	1881	2640
85	2593	2747	2809



2GC8-2U6T8A156
Electronic Ballast
(2) 31W U6T8 lamps
2850 lumens
Spacing criterion:
(H) 1.2 x mounting
height, (L) 1.3 x
mounting height
Efficiency 77.1%
Test Report:
2GC82U6T8A19_156.IES
LER = FL-74
Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH = \$3.24

Candela			
Angle	Along H	45°	Across L
0	2045	2045	2045
5	2036	2035	2042
10	2003	2007	2026
15	1949	1965	1998
20	1874	1911	1956
25	1777	1837	1907
30	1667	1746	1847
35	1547	1631	1771
40	1372	1446	1621
45	1059	1110	1246
50	648	760	710
55	405	585	407
60	235	399	238
65	135	253	135
70	99	143	102
75	95	88	99
80	78	52	81
85	45	39	47
90	0	0	0

Coefficients of Utilization

Effective floor cavity reflectance 20%												
rc	80%				70%				50%			
	70	50	30	10	70	50	30	10	50	30	10	0
RCR	70	50	30	10	70	50	30	10	50	30	10	0
0	92	92	92	92	90	90	90	90	86	86	86	77
1	85	82	79	77	83	81	78	76	77	75	73	68
2	79	74	69	65	77	72	68	65	69	66	63	59
3	73	66	61	56	71	65	60	56	63	58	55	51
4	68	59	54	49	66	58	53	49	57	52	48	45
5	63	54	48	43	61	53	47	43	51	46	42	40
6	58	49	43	38	57	48	42	38	47	42	38	36
7	54	45	39	34	53	44	38	34	43	38	34	32
8	51	41	35	31	50	41	35	31	40	34	31	29
9	48	38	32	28	46	37	32	28	37	31	28	26
10	45	35	29	26	44	35	29	26	34	29	25	24

Zonal Lumen Summary

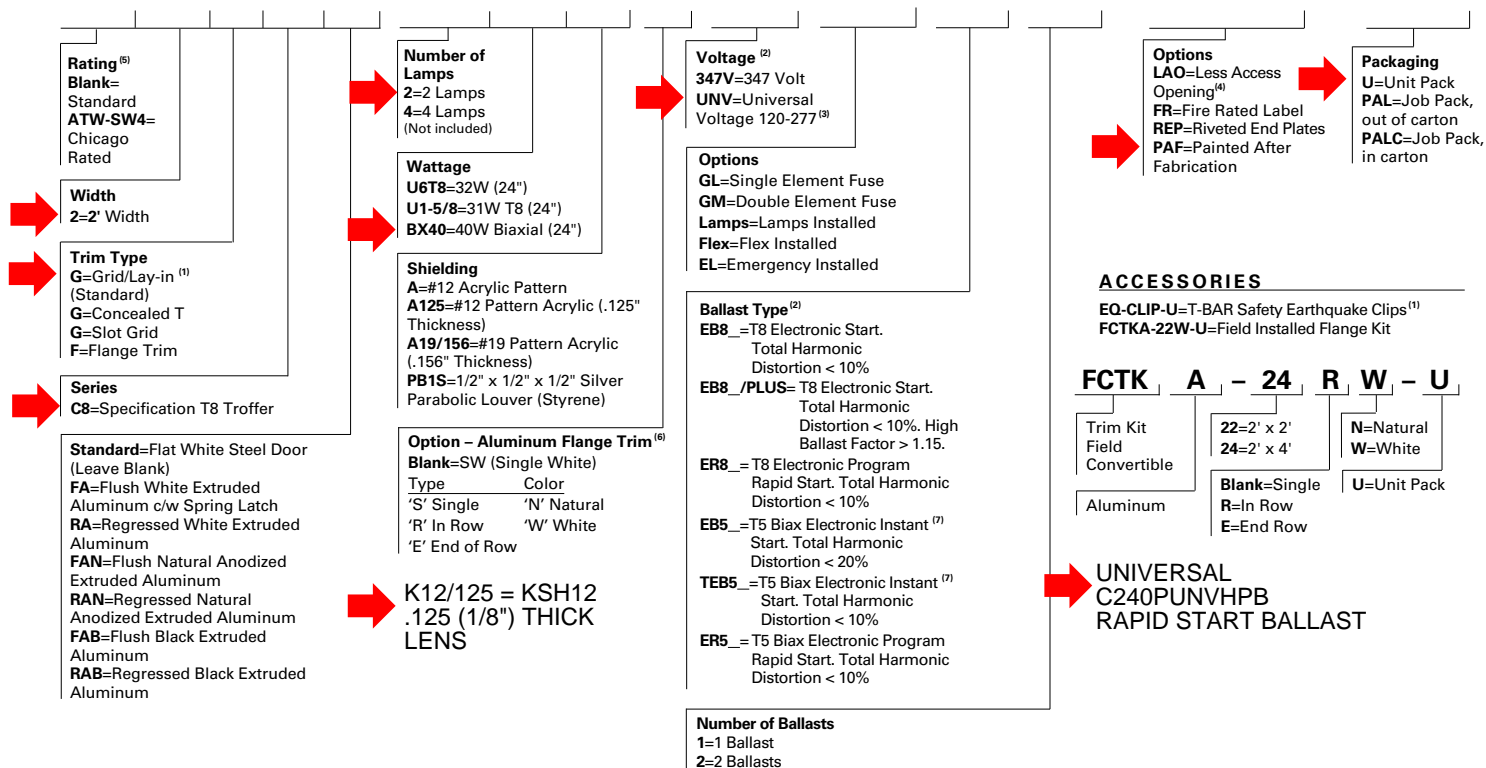
Zone	Lumens	%Lamp	%Fixture
0-30	1598	28.0	36.3
0-40	2621	46.0	59.6
0-60	3963	69.5	90.1
0-90	4396	77.1	100.0
0-180	4396	77.1	100.0

Luminance Data

Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
45	4029	4223	4740
55	1899	2744	1909
65	859	1610	859
75	987	915	1029
85	1389	1204	1451

ORDERING INFORMATION

SAMPLE NUMBER: 2GC8-2U6T8A-UNV-EB81-U



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⁾ Consult Pre Sales Technical Support. ⁽⁵⁾ For NYC rated product, see separate specification sheets. ⁽⁶⁾ Specify row configuration, type in catalog number when ordering complete fixture. ⁽⁷⁾ Not available in UNV voltages. Must specify voltage.

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

SHIPPING INFORMATION

Catalog No.	Wt.
2GC8-2U6T8A	12 lbs.
2GC8-2U1-5/8A	12 lbs.
2GC8-2BX40A	15 lbs.

COOPER LIGHTING - SURE-LITES®

DESCRIPTION

CX Series LED exit is a die cast aluminum unit suitable for architectural applications. With the new advanced standard features and industry leading innovations, they are now the most universal, energy friendly, easiest to stock and install, and safest Exits in their class.

Catalog #	CX61	Type
Project	AGMC ER GREEN	E1
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Electrical

- General Features

- Field selected red and green sign capability standard on all units (units shipped red, field convert to green with supplied parts)
- Dual Voltage Input 120/277 VAC, 60Hz
- **AC Only**
- Optional 2C (Two circuit, FTBR) available in 120/277 VAC in standard and emergency operation
- **Self Powered**
- Sure-Lites EZ Key patented external battery disconnect feature – prevents unnecessary battery drainage, saves on installation time
- Solid-state Voltage Limited Charger
- Brownout Circuit
- Low-Voltage Disconnect
- Test Switch/Power Indicator Light
- Standard 24 hour recharge time (max)
- Eagle-Eye™ Self-Diagnostic feature available as option

Housing Construction

- Die cast aluminum housing
- Die cast canopy included (for mounting convenience only - no electrical components in canopy)
- Universal pattern knockouts on rear of single face housing for direct mounting to junction box
- Knockout provided on housing for surface attachment
- Exit can be universally mounted: ceiling, wall or end
- Choice of three finishes: black housing with brushed aluminum face, white housing with white face or black housing with black face
- NFPA 101 compliant knockout chevrons allow quick conversion to directional signs
- Single and double faced signs available, order separately

Code Compliance

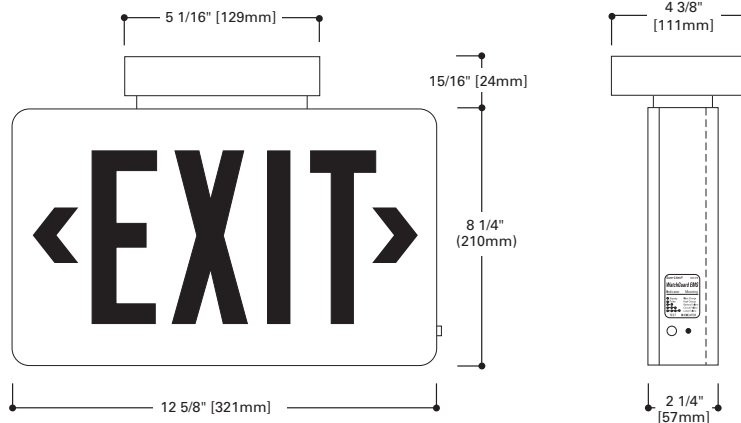
- UL 924 Listed
- UL Damp Location (0-40° C)
- Life Safety NFPA 101
- NEC/OSHA
- Most State and Local Codes
- Suitable for Floor Proximity Installation
- UL Listed for 2C (FTBR)

Lamp Data

- AC LED: Red and green LED lamps provide uniform diffused illumination
- DC: Red and green LED DC lamps (Brighter in emergency mode)

Warranty

- Exit: 1-Year
- Battery: 15-year pro-rata



CX SERIES

DIE-CAST ALUMINUM
SURFACE MOUNT
LED LAMPS
EXIT LIGHTING



ENERGY DATA

Maximum power consumption under all charge conditions:

AC Only, 120V - Red
Amps: 0.07
Watts: 0.98
Power Factor: 0.12

AC Only, 120V - Green
Amps: 0.07
Watts: 1.02
Power Factor: 0.13

AC Only, 277V - Red
Amps: 0.07
Watts: 1.04
Power Factor: 0.06

AC Only, 277V - Green
Amps: 0.07
Watts: 1.12
Power Factor: 0.06

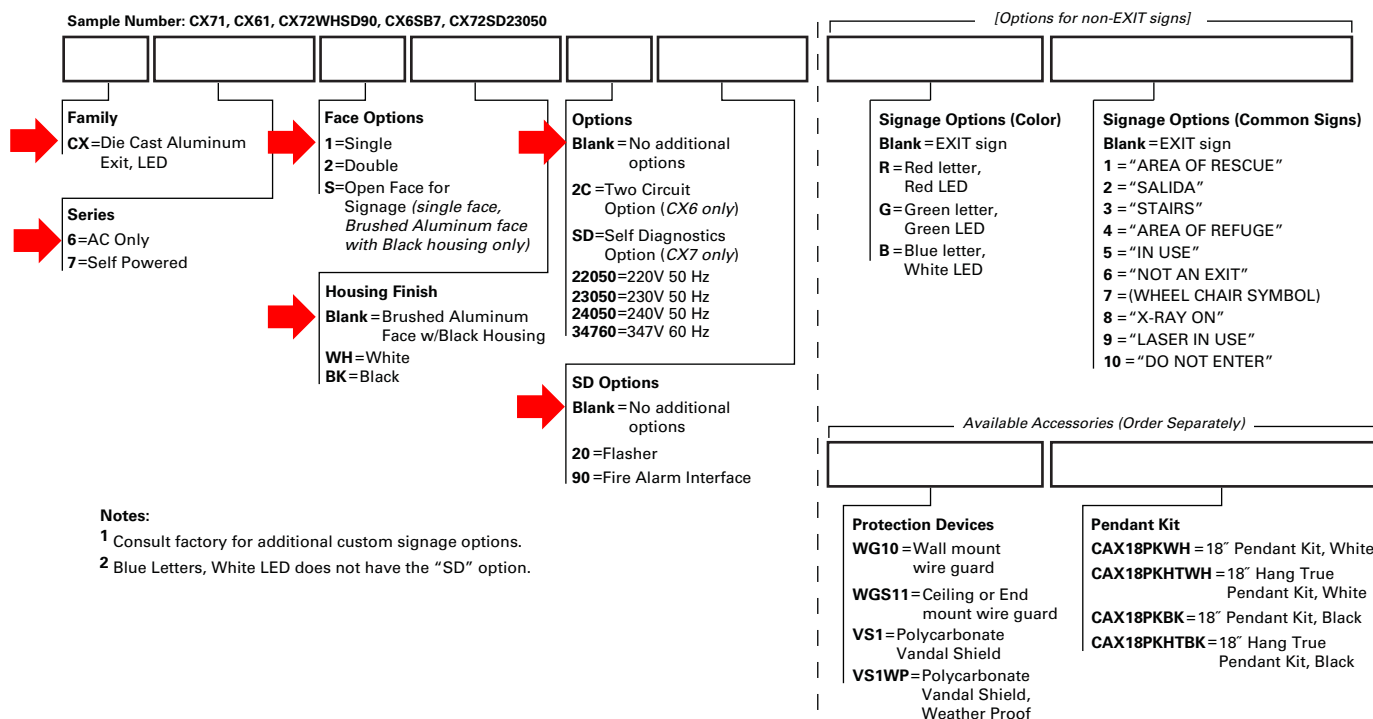
Self Powered, 120V - Red
Amps: 0.07
Watts: 0.98
Power Factor: 0.12

Self Powered, 120V - Green
Amps: 0.07
Watts: 1.00
Power Factor: 0.13

Self Powered, 277V - Red
Amps: 0.07
Watts: 1.03
Power Factor: 0.06

Self Powered, 277V - Green
Amps: 0.07
Watts: 1.09
Power Factor: 0.05

ORDERING INFORMATION



Notes:

- Consult factory for additional custom signage options.
- Blue Letters, White LED does not have the "SD" option.

TECHNICAL DATA

Lamps

CX Series Exits use energy efficient, long life LED's to provide uniform diffuse illumination of the exit face. These red and green LEDs require no maintenance and consume less than one watt, on average.

Housing Construction

Die cast aluminum with Brushed Aluminum face and black trim standard. Optional finishes include White and Black. NFPA 101 compliant knockout chevrons for easy conversion to directional sign. Universal pattern knockouts are in the back of the single face housing for direct mounting to junction box. Die cast aluminum alloy canopy included for universal mounting. Canopy is included for mounting convenience only—no electrical components in canopy.

Lens

Lenses for the CX Series Exits are made from durable, impact resistant polycarbonate. All exit faces are designed with full 3/4" stroke snap-out or snap-in chevron directional indicators to insure maximum visibility and compliance with the latest codes. Units come with red lenses installed and green lenses included for field selectable red or green signs.

Sure-Lites EZ Key External Battery Disconnect (Self Powered Only)

Patented technology that allows installers to externally control the battery connection. Better than line latching, allows installers to choose when the battery is connected so that it stays fresh longer. Allows battery to be disconnected after installation but before building is occupied, enabling emergency circuit to be shut down for power savings.

Brownout Circuit (Self Powered Only)

The brownout circuit on Sure-Lites' exits monitors the flow of AC current to the exit and activates the emergency lighting system when a predetermined reduction of AC power occurs. This dip in voltage will cause most ballasted fixtures to extinguish causing loss of normal lighting even though a total power failure has not occurred.

Solid-State Transfer (Self Powered Only)

The CX Series Exit incorporates solid-state switching which eliminates corroded and pitted contacts or mechanical failures associated with relays. The switching circuit is designed to detect a loss of AC voltage and automatically energizes the lamps using DC power. Upon restoration of AC power, the DC power will be disconnected and the charger will automatically recharge the battery.

Low Voltage Disconnect (Self Powered Only)

When the battery's terminal voltage falls, the low-voltage circuitry disconnects the lighting load. The disconnect remains in effect until normal utility power is restored, preventing deep battery discharge.

Test Switch/Power Indicator Light (Self Powered Only)

A test switch located on the side of the exit permits the activation of the emergency circuit for a complete operational systems check. The Power Indicator Light provides visual assurance that the AC power is on.

Sealed Nickel Cadmium Battery (Self Powered Only)

Sure-Lites sealed nickel cadmium batteries are maintenance-free with a life expectancy of 15 years. The sealed rechargeable nickel cadmium

battery offers high discharge rates and stable performance over a wide range of temperatures, from 0-40° C. The specially designed re-sealable vent automatically controls cell pressure, assuring safety and reliability. This battery is best suited for harsh ambient temperatures because the electrolyte is not active in the electrochemical process.

"2C" (AC Only)

The "2C" Option enables the Exits to operate per the requirements of UL 924 when connected simultaneously to both normal and emergency power circuits (two circuit operation—UL Category FTBR—Emergency Lighting and Power Equipment). The "2C" Option is a factory assembly change which alters the standard Exit such that it complies with and is UL Listed under the FTBR Category. This option should only be used for exits which are intended to be connected simultaneously to normal and emergency power circuits. Both circuits have universal 120/277 VAC standard.

Eagle Eye™ Self Diagnostics Option (Self Powered Only)

The self-diagnostic unit will automatically perform all tests required by UL924, and NFPA 101. The system indicates the status of the exit at all times using the LED indicator near the test switch on the side of the unit. A 90 minute battery power (emergency mode) simulation test will occur randomly once every 12 months. A 30 second battery power simulation test will occur every 30 days.

Warranty

All Sure-Lites' products are backed by a firm one-year warranty against defects in material and workmanship. Maintenance-free, long-life, sealed nickel cadmium batteries carry a fifteen-year pro-rata warranty.

COOPER LIGHTING - SURE-LITES®

DESCRIPTION

CX Series LED exit is a die cast aluminum unit suitable for architectural applications. With the new advanced standard features and industry leading innovations, they are now the most universal, energy friendly, easiest to stock and install, and safest Exits in their class.

Catalog #	CX62	Type
Project	AGMC ER GREEN EMERGENCY DEPT	E2
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Electrical

- General Features

- Field selected red and green sign capability standard on all units (units shipped red, field convert to green with supplied parts)
- Dual Voltage Input 120/277 VAC, 60Hz
- **AC Only**
- Optional 2C (Two circuit, FTBR) available in 120/277 VAC in standard and emergency operation
- **Self Powered**
- Sure-Lites EZ Key patented external battery disconnect feature – prevents unnecessary battery drainage, saves on installation time
- Solid-state Voltage Limited Charger
- Brownout Circuit
- Low-Voltage Disconnect
- Test Switch/Power Indicator Light
- Standard 24 hour recharge time (max)
- Eagle-Eye™ Self-Diagnostic feature available as option

Housing Construction

- Die cast aluminum housing
- Die cast canopy included (for mounting convenience only - no electrical components in canopy)
- Universal pattern knockouts on rear of single face housing for direct mounting to junction box
- Knockout provided on housing for surface attachment
- Exit can be universally mounted: ceiling, wall or end
- Choice of three finishes: black housing with brushed aluminum face, white housing with white face or black housing with black face
- NFPA 101 compliant knockout chevrons allow quick conversion to directional signs
- Single and double faced signs available, order separately

Code Compliance

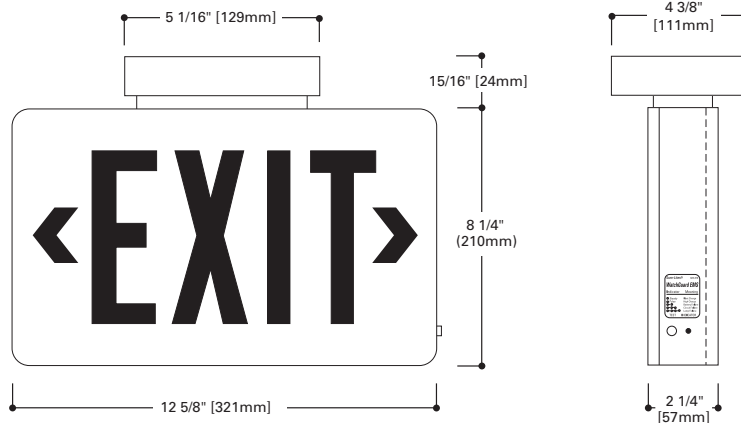
- UL 924 Listed
- UL Damp Location (0-40° C)
- Life Safety NFPA 101
- NEC/OSHA
- Most State and Local Codes
- Suitable for Floor Proximity Installation
- UL Listed for 2C (FTBR)

Lamp Data

- AC LED: Red and green LED lamps provide uniform diffused illumination
- DC: Red and green LED DC lamps (Brighter in emergency mode)

Warranty

- Exit: 1-Year
- Battery: 15-year pro-rata



CX SERIES

DIE-CAST ALUMINUM
SURFACE MOUNT
LED LAMPS
EXIT LIGHTING



ENERGY DATA

Maximum power consumption under all charge conditions:

AC Only, 120V - Red
Amps: 0.07
Watts: 0.98
Power Factor: 0.12

AC Only, 120V - Green
Amps: 0.07
Watts: 1.02
Power Factor: 0.13

AC Only, 277V - Red
Amps: 0.07
Watts: 1.04
Power Factor: 0.06

AC Only, 277V - Green
Amps: 0.07
Watts: 1.12
Power Factor: 0.06

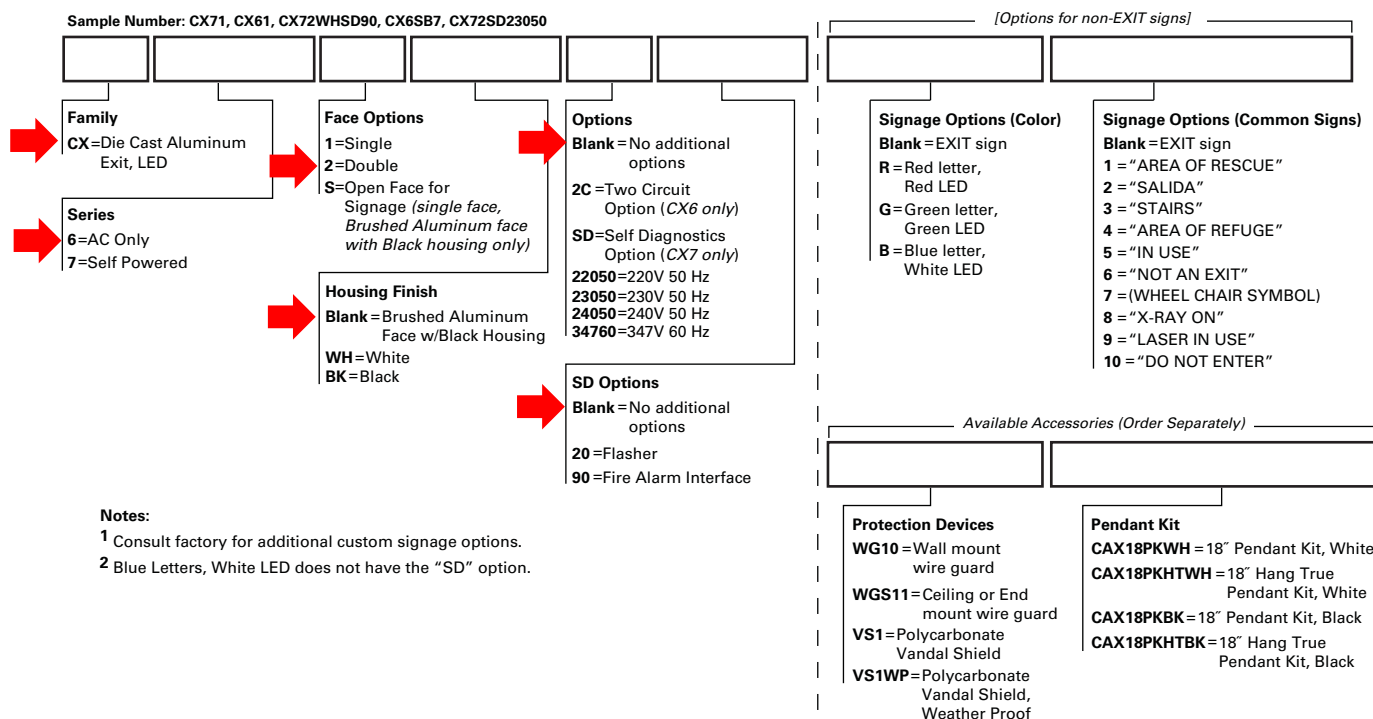
Self Powered, 120V - Red
Amps: 0.07
Watts: 0.98
Power Factor: 0.12

Self Powered, 120V - Green
Amps: 0.07
Watts: 1.00
Power Factor: 0.13

Self Powered, 277V - Red
Amps: 0.07
Watts: 1.03
Power Factor: 0.06

Self Powered, 277V - Green
Amps: 0.07
Watts: 1.09
Power Factor: 0.05

ORDERING INFORMATION



TECHNICAL DATA

Lamps

CX Series Exits use energy efficient, long life LED's to provide uniform diffuse illumination of the exit face. These red and green LEDs require no maintenance and consume less than one watt, on average.

Housing Construction

Die cast aluminum with Brushed Aluminum face and black trim standard. Optional finishes include White and Black. NFPA 101 compliant knockout chevrons for easy conversion to directional sign. Universal pattern knockouts are in the back of the single face housing for direct mounting to junction box. Die cast aluminum alloy canopy included for universal mounting. Canopy is included for mounting convenience only—no electrical components in canopy.

Lens

Lenses for the CX Series Exits are made from durable, impact resistant polycarbonate. All exit faces are designed with full 3/4" stroke snap-out or snap-in chevron directional indicators to insure maximum visibility and compliance with the latest codes. Units come with red lenses installed and green lenses included for field selectable red or green signs.

Sure-Lites EZ Key External Battery Disconnect (Self Powered Only)

Patented technology that allows installers to externally control the battery connection. Better than line latching, allows installers to choose when the battery is connected so that it stays fresh longer. Allows battery to be disconnected after installation but before building is occupied, enabling emergency circuit to be shut down for power savings.

Brownout Circuit (Self Powered Only)

The brownout circuit on Sure-Lites' exits monitors the flow of AC current to the exit and activates the emergency lighting system when a predetermined reduction of AC power occurs. This dip in voltage will cause most ballasted fixtures to extinguish causing loss of normal lighting even though a total power failure has not occurred.

Solid-State Transfer (Self Powered Only)

The CX Series Exit incorporates solid-state switching which eliminates corroded and pitted contacts or mechanical failures associated with relays. The switching circuit is designed to detect a loss of AC voltage and automatically energizes the lamps using DC power. Upon restoration of AC power, the DC power will be disconnected and the charger will automatically recharge the battery.

Low Voltage Disconnect (Self Powered Only)

When the battery's terminal voltage falls, the low-voltage circuitry disconnects the lighting load. The disconnect remains in effect until normal utility power is restored, preventing deep battery discharge.

Test Switch/Power Indicator Light (Self Powered Only)

A test switch located on the side of the exit permits the activation of the emergency circuit for a complete operational systems check. The Power Indicator Light provides visual assurance that the AC power is on.

Sealed Nickel Cadmium Battery (Self Powered Only)

Sure-Lites sealed nickel cadmium batteries are maintenance-free with a life expectancy of 15 years. The sealed rechargeable nickel cadmium

battery offers high discharge rates and stable performance over a wide range of temperatures, from 0-40° C. The specially designed re-sealable vent automatically controls cell pressure, assuring safety and reliability. This battery is best suited for harsh ambient temperatures because the electrolyte is not active in the electrochemical process.

"2C" (AC Only)

The "2C" Option enables the Exits to operate per the requirements of UL 924 when connected simultaneously to both normal and emergency power circuits (two circuit operation—UL Category FTBR—Emergency Lighting and Power Equipment). The "2C" Option is a factory assembly change which alters the standard Exit such that it complies with and is UL Listed under the FTBR Category. This option should only be used for exits which are intended to be connected simultaneously to normal and emergency power circuits. Both circuits have universal 120/277 VAC standard.

Eagle Eye™ Self Diagnostics Option (Self Powered Only)

The self-diagnostic unit will automatically perform all tests required by UL924, and NFPA 101. The system indicates the status of the exit at all times using the LED indicator near the test switch on the side of the unit. A 90 minute battery power (emergency mode) simulation test will occur randomly once every 12 months. A 30 second battery power simulation test will occur every 30 days.

Warranty

All Sure-Lites' products are backed by a firm one-year warranty against defects in material and workmanship. Maintenance-free, long-life, sealed nickel cadmium batteries carry a fifteen-year pro-rata warranty.

DESCRIPTION

The Ovation Series is a complete family of recessed direct/indirect luminaires featuring pleasant modern architectural styling, computer-designed optics and the latest energy efficient lamp and ballast technology. The luminaire combines a matte white indirect reflector and a perforated direct lamp shield to provide optimum brightness control. All components are located above the ceiling plane for a clean architectural appearance in the finished space. Carefully balanced design elements combine to provide an efficient and exciting alternative to traditional general lighting. Ovation is an excellent choice for a wide variety of commercial applications.

Catalog #	2RDI-332RP-UNV-L8841-ER8	Type
Project	AGMC ER GREEN	F
Comments		Date
Prepared by		

SPECIFICATION FEATURES

A...Construction

Nominal 6" deep housing is die formed of code gauge, prime cold rolled steel. Heavy gauge end plates are securely attached with screws for strength and rigidity and the elimination of gaps. Four auxiliary fixture end suspension points are provided. KOs for continuous row wiring. Large access plate for supply connection.

B...Electrical*

Ballasts are CBM/ETL Class "P" and are positively secured. Biax models use 2G11 base lampholders with double edge wiping action pressure lock contacts and vertically oriented lamp support clips. T8 models use rotor-lock lampholders for positive lamp retention. UL/CUL listed. Suitable for damp locations.

C...Ballast Access

Ballast can be removed from below without tools or from above using the unique ballast mounting/access plate.³

D...Finish

Durable cold rolled steel with multistage, iron phosphate pretreatment and white enamel finish to ensure maximum bonding and rust inhibition.

E...Reflectors

Indirect reflector has high reflectance baked matte white enamel finish for luminous uniformity. Positively retained direct lamp shield is constructed of heavy gauge perforated steel with high reflectance painted after fabrication finish and milky white overlay diffuser for visual comfort. All reflectors are precision formed in a computer-controlled operation.



2RDI

128T8

132

228T8

232

328T8

332

T1BX40, T2BX40

T3BX40

T8 OR BIAxIAL LAMPS

2' X 4' Recessed
Direct/Indirect
Center-Mount

Ovation™

ENERGY DATA

Input Watts:

EB Ballast & STD Lamps

128T8 (28), 228T8 (49), 328T8 (98)

132 (32), 232 (61), 332 (91),

T1BX40 (70), T2BX40 (140),

T3BX40 (210)

T1BX50 (106), T2BX50 (212)

T3BX50 (318)

T1BX55 (110), T2BX55 (220)

T3BX55 (330)

LER = FL65

Catalog Number: 2RDI-232RF

Yearly Cost of 1000 lumens,

3000 hrs at .08 KWH = \$3.69

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

**Consult Pre Sales Technical Support.

***See Drywall Frame Kit Accessory

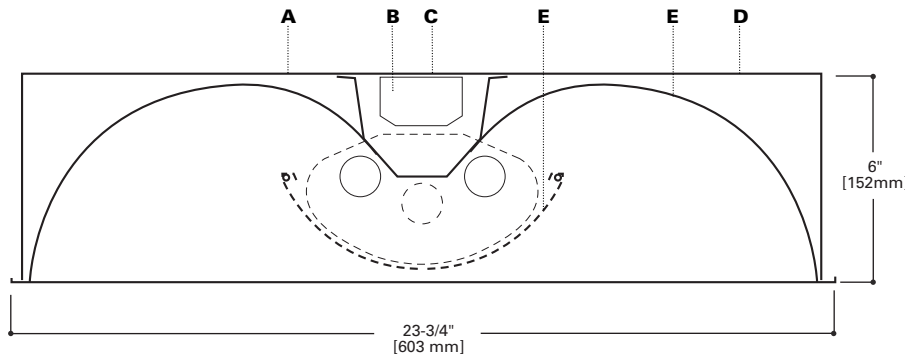
LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO LOCAL, STATE OR FEDERAL LAWS

LINEAR DISCONNECT

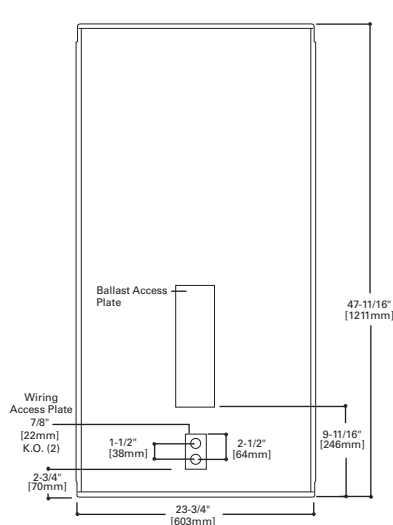
Safe and convenient means of disconnecting power.



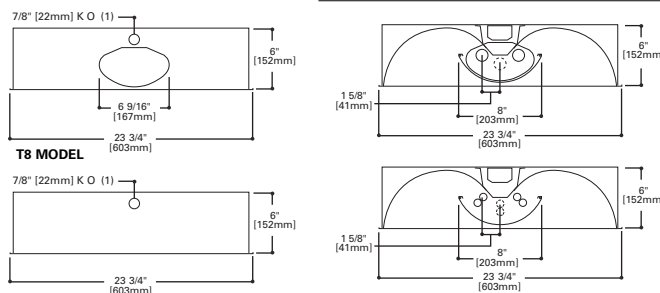
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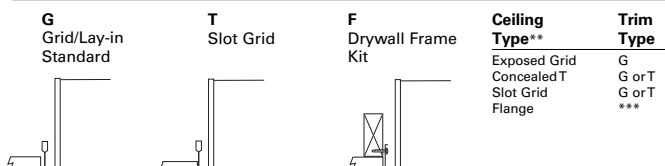
MOUNTING DATA



LAMP CONFIGURATIONS

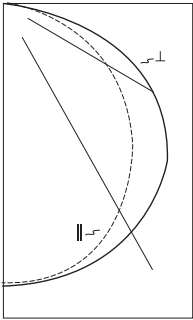


CEILING COMPATIBILITY



COOPER LIGHTING

PHOTOMETRICS

**2RDI-232RP**

Electronic Ballast

F032/830/XP3 Lamps
3100 LumensSpacing criterion:
(H) 1.2 x mounting
height, (L) 1.4 x
mounting height

Efficiency 70.7 %

Test Report:
2RDI232RP.IES

LER = FL61

Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH = \$3.93**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	50	30	10	0		
RCR																							
0	84	84	84	84	82	82	82	82	79	79	79	75	75	75	72	72	72	71					
1	77	73	70	67	75	71	68	66	68	66	64	66	64	62	63	61	60	58					
2	69	63	58	54	67	62	57	53	59	55	52	57	54	51	55	52	50	48					
3	63	55	49	44	61	54	48	44	52	47	43	50	46	42	48	45	42	40					
4	57	49	42	37	56	48	42	37	46	41	36	44	40	36	43	39	35	34					
5	53	43	37	32	51	42	36	32	41	35	31	39	35	31	38	34	31	29					
6	48	39	32	28	47	38	32	27	37	31	27	36	31	27	34	30	27	25					
7	45	35	29	24	44	34	28	24	33	28	24	32	27	24	31	27	24	22					
8	42	32	26	21	41	31	25	21	30	25	21	30	25	21	29	24	21	20					
9	39	29	23	19	38	29	23	19	28	23	19	27	22	19	26	22	19	18					
10	36	27	21	17	36	27	21	17	26	21	17	25	20	17	24	20	17	16					

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1088.56	17.6	24.8
0-40	1810.67	29.2	41.3
0-60	3339.06	53.9	76.2
0-90	4383.85	70.7	100.0
0-180	4383.85	70.7	100.0

Luminance Data

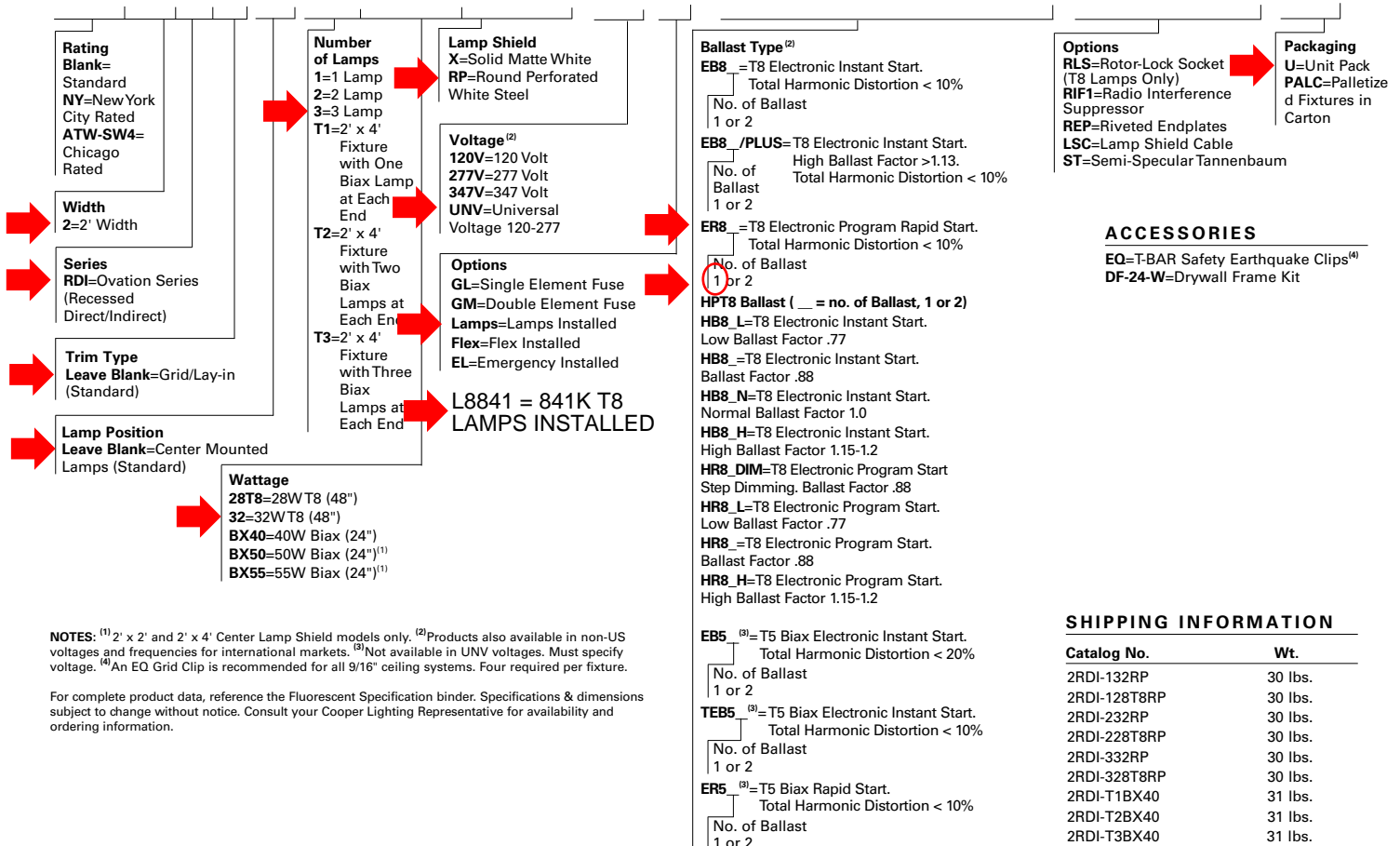
Angle in Deg	Average 0-Deg cd/sm	Average 45-Deg cd/sm	Average 90-Deg cd/sm
0-30	1801	2068	2279
0-40	1693	2130	2393
0-60	1519	2142	2380
0-90	1284	1893	2125
0-180	953	1397	1545

Candela

Angle	Along H	45°	Across
0	1372	1372	1372
5	1367	1370	1374
10	1348	1357	1365
15	1316	1334	1351
20	1273	1302	1332
25	1216	1261	1304
30	1148	1212	1271
35	1071	1156	1231
40	984	1092	1182
45	889	1021	1125
50	785	941	1053
55	678	853	958
60	564	753	846
65	448	632	702
70	335	498	539
75	232	342	384
80	139	205	228
85	58	85	94
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: 2RDI-232RP-120V-EB51-U



NOTES: (1) 2' x 2' and 2' x 4' Center Lamp Shield models only. (2) Products also available in non-US voltages and frequencies for international markets. (3) Not available in UNV voltages. Must specify voltage. (4) An EQ Grid Clip is recommended for all 9/16" ceiling systems. Four required per fixture.

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.

COOPER LIGHTING - METALUX®

DESCRIPTION

The Ovation Series is a complete family of recessed direct/indirect luminaires featuring pleasant modern architectural styling, computer-designed optics and the latest energy efficient lamp and ballast technology. The luminaire combines a matte white indirect reflector and a perforated direct lamp shield to provide optimum brightness control. All components are located above the ceiling plane for a clean architectural appearance in the finished space. Carefully balanced design elements combine to provide an efficient and exciting alternative to traditional general lighting. Ovation is an excellent choice for a wide variety of commercial applications.

Catalog #	2RDI-2BX40RP-UNV-TU-C241	Type
Project	AGMC ER GREEN EMERGENCY DEPT	G
Comments		Date
Prepared by		

SPECIFICATION FEATURES

A...Construction

Nominal 6" deep housing is die formed of code gauge, prime cold rolled steel. Heavy gauge end plates are securely attached with screws for strength and rigidity and the elimination of gaps. Four auxiliary fixture end suspension points are provided. KO's for continuous row wiring. Large access plate for supply connection.

B...Electrical*

Ballasts are CBM/ETL Class "P" and are positively secured. BiAx models use 2G11 base lampholders with double edge wiping action pressure lock contacts and vertically oriented lamp support clips. T8 models use rotor-lock lampholders for positive lamp retention. UL/CUL listed. Suitable for damp locations.

C...Ballast Access

Ballast can be removed from below without tools or from above using the unique ballast mounting/access plate.³

D...Finish

Durable cold rolled steel with multistage, iron phosphate pretreatment and white enamel finish to ensure maximum bonding and rust inhibition.

E...Reflectors

Indirect reflector has high reflectance baked matte white enamel finish for luminous uniformity. A positively retained direct lamp shield is constructed of heavy gauge perforated steel with high reflectance painted after fabrication finish and milky white overlay diffuser for visual comfort. All reflectors are precision formed in a computer-controlled operation



2RDI
1BX40
2BX40
3BX40
117
217
317

BIAXIAL OR T8 LAMPS

2' X 2' Recessed
Direct/Indirect
Center-Mount

Ovation™

ENERGY DATA

Input Watts:

EB Ballast & STD Lamps

1BX40 (43), 2BX40 (67), 3BX40 (102)
1BX50 (54), 2BX50 (106), 3BX50 (160)
1BX55 (59), 2BX55 (117), 3BX55 (176)
117 (19), 217 (34), 317 (54)

ES Ballast & STD Lamps

117 (23), 217 (45), 317 (68)

STD Ballast & STD Lamps

1BX40 (46), 2BX40 (82), 3BX40 (128)

Luminaire Efficacy Rating

LER = FL65

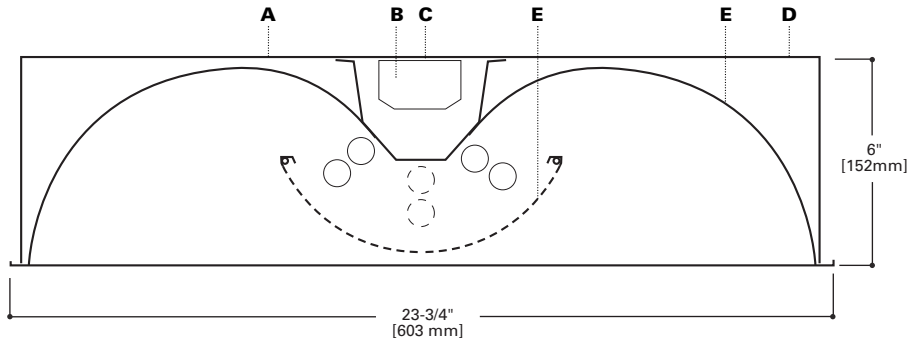
Catalog Number: 2RDI-2BX40RP

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$3.69

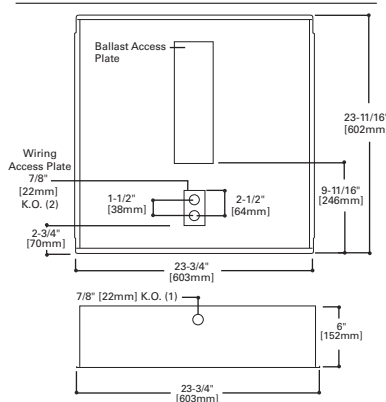
*Reference the lamp/ballast data in the
Technical Section for specific lamp/ballast
requirements.

**Consult Pre Sales Technical Support.

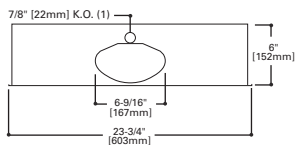
***See Drywall Frame Kit Accessory



MOUNTING DATA

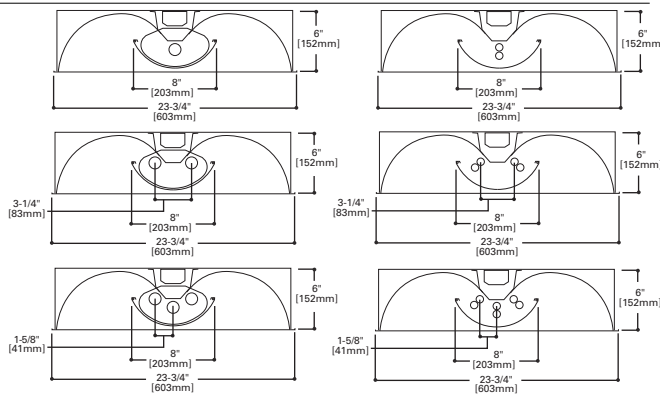


BIAX MODEL

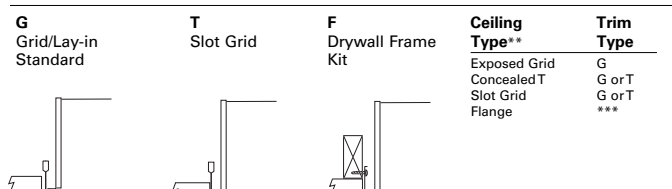


T8 MODEL

LAMP CONFIGURATIONS



CEILING COMPATIBILITY



G

Grid/Lay-in
Standard

T

Slot Grid

F

Drywall Frame
Kit

Ceiling Type**

Exposed Grid
Concealed T
Slot Grid
Flange

Trim Type

G
G or T
G or T

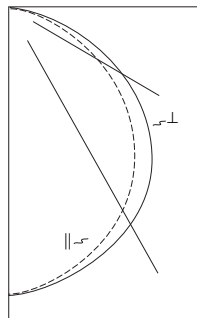
LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO
LOCAL, STATE OR FEDERAL LAWS

LINEAR DISCONNECT

Safe and convenient means of
disconnecting power.



PHOTOMETRICS



2RDI-2BX40RP
Electronic Ballast
F40BX/35K/RS Lamps
3150 Lumens

Spacing criterion:
(H) 1.2 x mounting
height, (L) 1.3 x
mounting height

Efficiency 78.2%

Test Report:
2RDI2BX40RP.IES

LER = FL65

Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH = \$3.69

Coefficients of Utilization

		Effective floor cavity reflectance												20%											
		80%				70%				50%				30%				10%				0%			
rc		70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																									
0		93	93	93	93	91	91	91	91	87	87	87	83	83	83	80	80	80	78						
1		86	82	79	76	84	81	78	75	77	75	73	74	72	71	71	70	69	67						
2		79	73	68	63	77	71	66	63	68	64	61	66	63	60	63	61	58	57						
3		72	64	58	53	70	63	57	53	61	56	52	59	55	51	57	53	50	49						
4		66	57	51	46	64	56	50	45	54	49	45	52	48	44	51	47	43	42						
5		60	50	44	38	59	50	43	38	48	42	38	46	41	37	45	41	37	35						
6		55	45	38	33	54	44	38	33	43	37	33	42	36	33	40	36	32	31						
7		51	40	34	29	50	40	33	29	39	33	29	37	32	28	36	32	28	27						
8		47	36	30	25	46	36	29	25	35	29	25	34	28	25	33	28	24	23						
9		43	32	26	21	42	32	26	21	31	25	21	30	25	21	29	25	21	20						
10		40	29	23	19	39	29	23	19	28	23	19	28	22	19	27	22	19	17						

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1339	21.2	27.2
0-40	2205	35.0	44.8
0-60	3932	62.4	79.8
0-90	4926	78.2	100.0
0-180	4926	78.2	100.0

Typical VCP Percentages

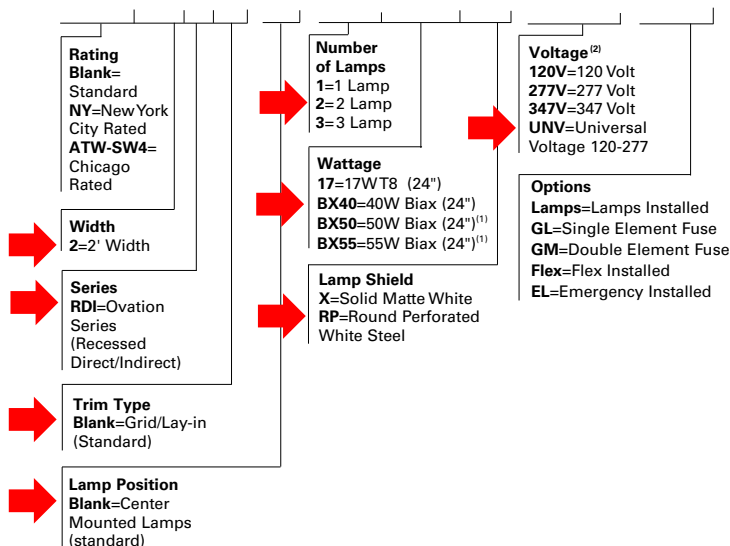
Room Size (Ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	48	54	41	48
30 x 30	44	46	38	40
30 x 60	43	43	35	35
60 x 30	47	48	43	45
60 x 60	44	44	38	38

Candela

Angle	Along H	45°	Across L
0	1701	1701	1701
5	1701	1698	1700
10	1677	1682	1689
15	1634	1648	1665
20	1574	1599	1631
25	1497	1539	1587
30	1406	1468	1533
35	1301	1386	1465
40	1182	1292	1381
45	1052	1186	1282
50	912	1067	1167
55	762	933	1029
60	610	792	867
65	465	637	683
70	334	466	520
75	217	305	362
80	119	176	205
85	48	66	72
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: 2RDI-2BX40RP-120V-EB51-U

Ballast Type⁽²⁾

EB8 =T8 Electronic Instant Start.
Total Harmonic Distortion < 10%
No. of Ballast
1 or 2

EB8 /PLUS =T8 Electronic Instant Start.
High Ballast Factor >1.13.
Total Harmonic Distortion < 10%
No. of Ballast
1 or 2

ER8 =T8 Electronic Program Rapid Start.
Total Harmonic Distortion < 10%
No. of Ballast
1 or 2

HPT8 Ballast (_ = no. of Ballast, 1 or 2)
HB8_L =T8 Electronic Instant Start.
Low Ballast Factor .77
HB8 =T8 Electronic Instant Start.
Ballast Factor .88
HB8_N =T8 Electronic Instant Start.
Normal Ballast Factor 1.0
HB8_H =T8 Electronic Instant Start.
High Ballast Factor 1.15-1.2
HR8_DIM =T8 Electronic Program Start
Step Dimming. Ballast Factor .88
HR8_L =T8 Electronic Program Start.
Low Ballast Factor .77
HR8 =T8 Electronic Program Start.
Ballast Factor .88
HR8_H =T8 Electronic Program Start.
High Ballast Factor 1.15-1.2

EB5 ⁽³⁾ =T5 Biax Electronic Instant Start.
Total Harmonic Distortion < 20%
No. of Ballast
1 or 2

TEB5 ⁽³⁾ =T5 Biax Electronic Instant Start.
Total Harmonic Distortion < 10%
No. of Ballast
1 or 2

ERS ⁽³⁾ =T5 Biax Rapid Start.
Total Harmonic Distortion < 10%
No. of Ballast
1 or 2

Options

RIF1=Radio Interference
Suppressor
REP=Riveted Endplates, for
use in New York City.
ST=Semi-Specular Tannenbaum
Main Reflector
LSC=Lamp Shield Cable
RLS=Rotor-Lock Socket
(T8 Lamps Only)

Packaging

U=Unit Pack
PALC=Job
Pack, in carton

**UNIVERSAL
C240PUNVHPB
RAPID START
BALLAST**

ACCESSORIES

EQ-CLIP-U=T-BAR Safety
Earthquake Clips⁽⁴⁾
DF-22-W=Drywall Frame Kit

SHIPPING INFORMATION

Catalog No.	Wt.
2RDI-1BX40RP	19 lbs.
2RDI-2BX40RP	19 lbs.
2RDI-3BX40RP	19 lbs.
2RDI-117RP	19.5 lbs.
2RDI-217RP	19.5 lbs.
2RDI-317RP	19.5 lbs.

NOTES: ⁽¹⁾ 2' x 2' and 2' x 4' Center Lamp Shield models only. ⁽²⁾ Products also available in non-US volt-
ages and frequencies for international markets. ⁽³⁾ Not available in UNV voltages. Must specify voltage.
⁽⁴⁾ An EQ Grid Clip is recommended for all 9/16" ceiling systems. Four required per fixture.

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

DESCRIPTION

6 inch LED recessed wide downlight specially designed for below ceiling installation. Two-stage reflector system produces smooth distribution with excellent light control and low aperture brightness. Lumen packages include 1000 and 1500 delivered lumens with color temperatures of 2700K, 3000K, 3500K, 4000K. Suitable for commercial construction and exceeds high efficacy requirements (with designated trims) for Title 24-2008 and IECC-2009.

SPECIFICATION FEATURES

Lower Shielding Reflector

Self-flanged, spun .050" thick aluminum lower reflector in combination with a lensed upper optical chamber provides superior lumen output with minimal source brightness. Available in all Portfolio Alzak® finishes.

Trim Retention

Lower reflector is retained with two torsion springs holding the flange tightly to the finished ceiling surface.

Plaster Frame / Collar

New Construction Housing: Die cast aluminum 1-1/2" deep collar accommodates ceiling materials up to 2". Remodel Housing: Galvanized steel plaster ring adjusts to accept up to 1" ceiling thickness.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 5" vertically from above and below the ceiling (new construction housing only).

Junction Box

(4) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring.

Thermal

Extruded aluminum heat sink conducts heat away from the LED module for improved performance and longer life.

LED

LED system contains a plurality of high brightness white LED's combined with a high reflectance upper reflector and convex transitional lens producing even distribution with no pixilation. Rated for 50,000 hours at 70% lumen maintenance. Auto resetting, thermally protected, LED's are turned off when safe operating temperatures are exceeded. Color variation within 3-step MacAdam ellipses. Flexible disconnect allows for tool-less replacement of LED engine from below ceiling.

840 (4000K)

PORTFOLIO™

Catalog #	LD610D120-ERW6835-6LW0H	Type
Project	AGMC ER GREEN EMERGENCY DEPT	H
Comments		Date
Prepared by		

Driver

Driver can be serviced from above or through the aperture.

Environmental

Fixture should not be operated in ambient temperatures above 40° C.

Code Compliance

Thermally protected and cULus listed for protected wet locations. IP54 Certified. Optional City of Chicago environmental air (CCEA) marking for plenum applications. EMI/RFI emissions per FCC 47CFR Part 18 Class B consumer limits. Non-IC rated - Insulation must be kept 3" from top and sides of housing. RoHS Compliant. Title 24 2008 Compliant with designated trims. ARRA Compliant. Photometric testing completed in accordance with IES LM 79 standards. LED life testing completed in accordance with LM 80 standards.

Warranty

5 year warranty.



**LD610
LD615
LD6R10
LD6R15**

6LW

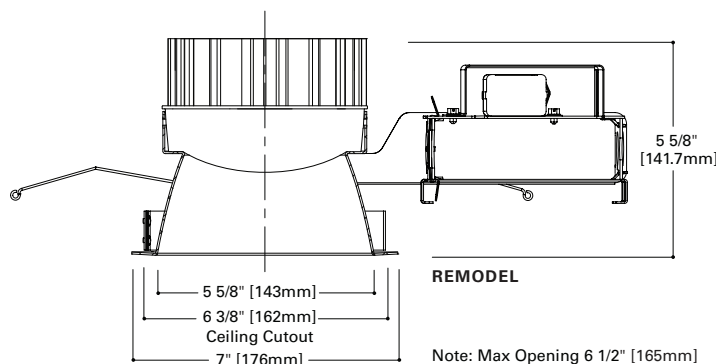
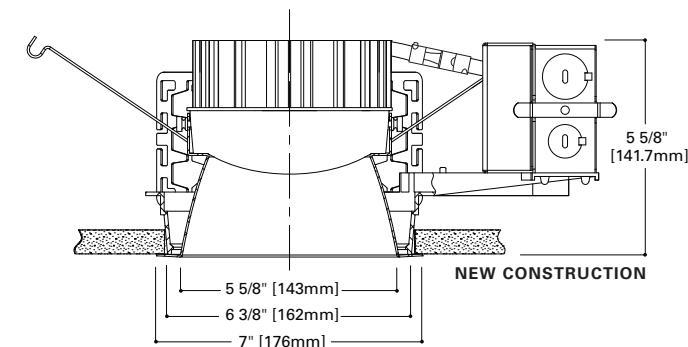
LED

6 Inch

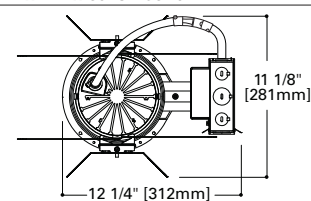
Wide Beam Downlight



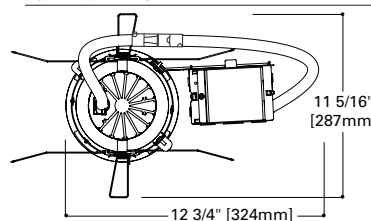
Qualified & Compliant with designated LED modules and trims.



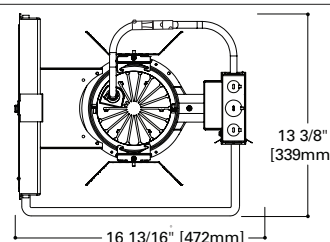
TOP VIEW - NEW CONSTRUCTION



TOP VIEW - REMODEL



TOP VIEW - NEW CONSTRUCTION WITH BATTERY



Energy Data

Sound Rating: Class A standards
Operating Temperature: 40°C (104°F)
1500 Lumen
(Values at non-dimming line voltage)
Minimum Starting Temp: -30°C (-22°F)
EMI/RFI: FCC Title 47 CFR, Part 18, Class B (Consumer)
Input Voltage: UNV (90V - 305V)
Power Factor: >0.90 (at nominal input 120/230/240/277 VAC & 100% of Rated Output Power)
Input Power: 24.8W
THD: <21%
120V Input Current: .21A
277V Input Current: .09A
Maximum Non-IC Ambient Continuous
Input Frequency: 47-63Hz
Rated Wattage: 24.8W
1000 Lumen D120 / D010
(Values at non-dimming line voltage)
Minimum Starting Temp: -30°C (-22°F)
EMI/RFI: FCC Title 47 CFR, Part 18, Class B (Consumer)
Input Voltage: 120/120-305V
Power Factor: >0.90
Input Power: 14.3W
THD: <20%
Input Frequency: 50/60Hz
Rated Wattage: 14.3W/17.5W

ORDERING INFORMATION

Example:

LD615D010 ERW6835 6LW0LI = 6" LED Wide Reflector Lens, 1500 lumen 3,500 K CCT with Universal 120 - 277V, 0 - 10 Driver

Housing	Delivered Lumens ¹	Driver	Options	Power Module	Color	Reflector	Finish	Options	Accessories
LD6 = 6" aperture LD6CP = 6" aperture, Chicago Plenum LD6R = 6" aperture remodel LD6RCP = 6" aperture remodel, Chicago Plenum	10 = 1000 lumens 15 = 1500 lumens	D010 = 10 to 100% dimming, 120-277V, 50/60Hz, 0-10V D120 = 15 to 100% dimming, 120V, 2 wire phase control, (1000 lumen only) DLUT = 1 to 100% dimming 120-277V L ₈₄₀ (4000K)	EM = Iota Emergency module with remote test switch ² EMBOD = Bodine Emergency module with	ERW6 = 6" module for wide reflector 827 = 80 CRI, 2700° K 830 = 80 CRI, 3000° K 835 = 80 CRI, 3500° K 340 = 80 CRI, 4000° K 327CP = 80 CRI, 2700° K, Chicago Plenum 330CP = 80 CRI, 3000° K, Chicago Plenum 335CP = 80 CRI, 3500° K, Chicago Plenum 340CP = 80 CRI, 4000° K, Chicago Plenum	6LW0 = Wide reflector, polymer trim ring 6LW1 = Wide reflector, self flanged (not available with baffles)	LI = Specular Clear H = Semi-Specular Clear WMH = Warm Haze G = Specular Gold WH = Wheat WHH = Wheat Haze GP = Graphite GPH = Graphite Haze CC = Chocolate CCH = Chocolate Haze K = Cognac KH = Cognac Haze B = Specular Black W = Gloss White BB = Black Baffle (6LW0 only) WB = White Baffle (6LW0 only)	WF = White painted flange (self flanged only) IP66 = IP66 Certified	HB26 = C Channel Bar Hanger, 26" Long, Pair HB50 = C Channel Bar Hanger, 50" Long, Pair RMB22 = Wood Joist Bar Hanger, 22" Long, Pair H277 = 277 to 120V step down transformer, 300VA H347 = 347 to 120V step down transformer, 75VA H347200 = 347 to 120V step down transformer, 200VA HSA6 = Slope Adapter for 6" Aperture Housings, Specify Slope TRM6 = Metal Trim Ring, Specify Color ³ TRR6 = Rimless Trim Ring ³ DT6 = Deco trim ³	

Notes: 1 Nominal delivered Lumens will vary depending on selected CCT, driver and reflector finish.
2 Not available with Chicago Plenum, not CSA approved.
3 Order trim with polymer trim ring (Consult specification sheet for color ordering information and options).

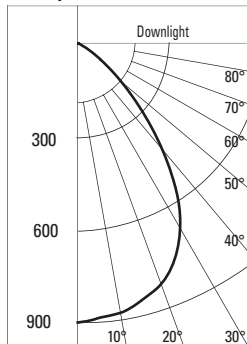
Notes: 1 Nominal delivered Lumens will vary depending on selected CCT, driver and reflector finish.

2 Not available with Chicago Plenum, not CSA approved.

3 Order trim with polymer trim ring (Consult specification sheet for color ordering information and options).

PHOTOMETRICS

Candlepower Distribution Curve



Test No. P20530
 LD615835D010 6LW51H
 Lumens = 1322
 Watts = 24.8
 LPW = 54.2
 CCT = 3500K
 SC = 1.1

Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'5"	29	6'
7'	18	8'
8'	14	9'
9'	11	10'
10'	9	11'

Candela Distribution

Degrees Vertical	Candela
0	889
5	876
15	839
25	746
35	540
45	274
55	94
65	17
75	3
85	1
90	0

Zonal Lumen Summary

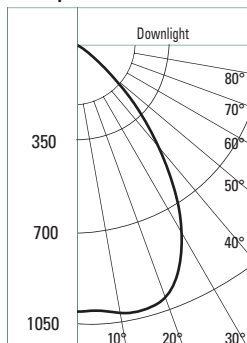
Zone	Lumens	%Fixture
0-30	663	50.2
0-40	998	75.5
0-60	1298	98.2
0-90	1322	100.0
90-180	0	0.0
0-180	1322	100.0

Luminance

Average Candela/M ²	Avg. 0° Luminance
45	47778
55	20207
65	4960
75	1429
85	1415

PHOTOMETRICS

Candlepower Distribution Curve



Test No. P20529
 LD615835D010 6LW51LI
 Lumens = 1427
 Watts = 24.8
 LPW = 57.5
 CCT = 3500K
 SC = 1.1

Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'5"	32	6.5'
7'	20	8'
8'	15	9'
9'	12	10.5'
10'	10	11.5'

Candela Distribution

Degrees Vertical	Candela
0	964
5	966
15	997
25	885
35	601
45	275
55	57
65	3
75	1
85	0
90	0

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	780	54.7
0-40	1153	80.9
0-60	1420	99.6
0-90	1426	100.0
90-180	0	0.0
0-180	1426	100.0

Luminance

Average Candela/M ²	Avg. 0° Luminance
45	47953
55	12253
65	875
75	476
85	0

 **COOPER** Lighting
www.cooperlighting.com

DESCRIPTION

6 inch LED recessed wide downlight specially designed for below ceiling installation. Two-stage reflector system produces smooth distribution with excellent light control and low aperture brightness. Lumen packages include 1000 and 1500 delivered lumens with color temperatures of 2700K, 3000K, 3500K, 4000K. Suitable for commercial construction and exceeds high efficacy requirements (with designated trims) for Title 24-2008 and IECC-2009.

SPECIFICATION FEATURES

Lower Shielding Reflector

Self-flanged, spun .050" thick aluminum lower reflector in combination with a lensed upper optical chamber provides superior lumen output with minimal source brightness. Available in all Portfolio Alzak® finishes.

Trim Retention

Lower reflector is retained with two torsion springs holding the flange tightly to the finished ceiling surface.

Plaster Frame / Collar

New Construction Housing: Die cast aluminum 1-1/2" deep collar accommodates ceiling materials up to 2". Remodel Housing: Galvanized steel plaster ring adjusts to accept up to 1" ceiling thickness.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 5" vertically from above and below the ceiling (new construction housing only).

Junction Box

(4) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring.

Thermal

Extruded aluminum heat sink conducts heat away from the LED module for improved performance and longer life.

LED

LED system contains a plurality of high brightness white LED's combined with a high reflectance upper reflector and convex transitional lens producing even distribution with no pixilation. Rated for 50,000 hours at 70% lumen maintenance. Auto resetting, thermally protected, LED's are turned off when safe operating temperatures are exceeded. Color variation within 3-step MacAdam ellipses. Flexible disconnect allows for tool-less replacement of LED engine from below ceiling.

Driver

Driver can be serviced from above or through the aperture.

Environmental

Fixture should not be operated in ambient temperatures above 40° C.

Code Compliance

Thermally protected and cULus listed for protected wet locations. IP54 Certified. Optional City of Chicago environmental air (CCEA) marking for plenum applications. EMI/RFI emissions per FCC 47CFR Part 18 Class B consumer limits. Non-IC rated - Insulation must be kept 3" from top and sides of housing. RoHS Compliant. Title 24 2008 Compliant with designated trims. ARRA Compliant. Photometric testing completed in accordance with IES LM 79 standards. LED life testing completed in accordance with LM 80 standards.

Warranty

5 year warranty.



**LD610
LD615
LD6R10
LD6R15**

6LW

LED

6 Inch

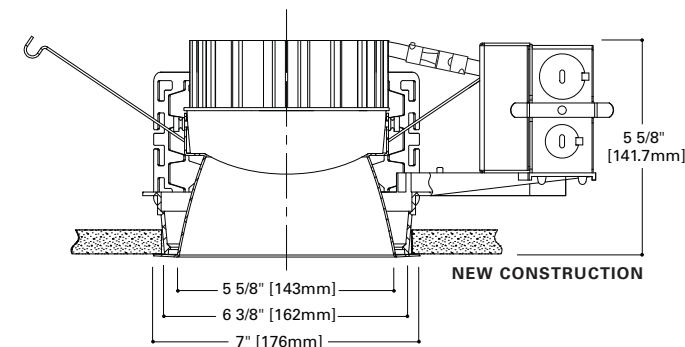
Wide Beam Downlight



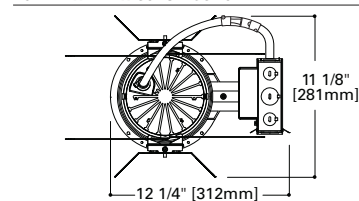
Qualified & Compliant with designated LED modules and trims.

Energy Data

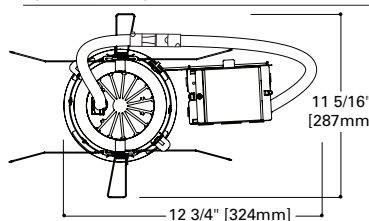
Sound Rating: Class A standards	
Operating Temperature: 40°C (104°F)	
1500 Lumen	
(Values at non-dimming line voltage)	
Minimum Starting Temp: -30°C (-22°F)	
EMI/RFI: FCC Title 47 CFR, Part 18, Class B (Consumer)	
Input Voltage: UNV (90V - 305V)	
Power Factor: >0.90 (at nominal input 120/230/240/277 VAC & 100% of Rated Output Power)	
Input Power: 24.8W	THD: <21%
120V Input Current: .21A	277V Input Current: .09A
Maximum Non-IC Ambient Continuous	
Input Frequency: 47-63Hz	
Rated Wattage: 24.8W	
1000 Lumen D120 / D010	
(Values at non-dimming line voltage)	
Minimum Starting Temp: -30°C (-22°F)	
EMI/RFI: FCC Title 47 CFR, Part 18, Class B (Consumer)	
Input Voltage: 120/120-305V	
Power Factor: >0.90	
Input Power: 14.3W	THD: <20%
Input Frequency: 50/60Hz	
Rated Wattage: 14.3W/17.5W	



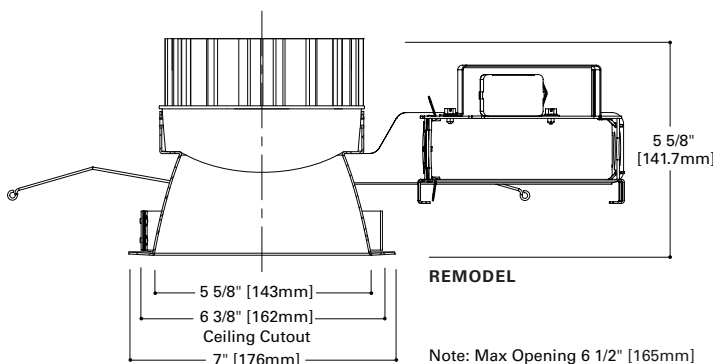
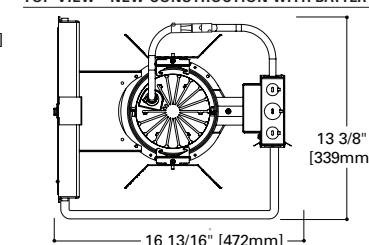
TOP VIEW - NEW CONSTRUCTION



TOP VIEW - REMODEL



TOP VIEW - NEW CONSTRUCTION WITH BATTERY



REMODEL

Note: Max Opening 6 1/2" [165mm]

ORDERING INFORMATION

Example:

LD615D010 ERW6835 6LW0LI = 6" LED Wide Reflector Lens, 1500 lumen 3,500 K CCT with Universal 120 - 277V, 0 - 10 Driver

Housing	Delivered Lumens ¹	Driver	Options	Power Module	Color	Reflector	Finish	Options	Accessories
LD6 = 6" aperture LD6CP = 6" aperture, Chicago Plenum LD6R = 6" aperture remodel LD6RCP = 6" aperture remodel, Chicago Plenum	10 = 1000 lumens 15 = 1500 lumens	D010 = 10 to 100% dimming, 120-277V, 50/60Hz, 0-10V D120 = 15 to 100% dimming, 120V, 2 wire phase control, (1000 lumen only) DLUT = 1 to 100% dimming, 120-277V L840 (4000K)	EM = Iota Emergency module with remote test switch ² EMBOD = Bodine Emergency module with	ERW6 = 6" module for wide reflector 827 = 80 CRI, 2700° K 830 = 80 CRI, 3000° K 835 = 80 CRI, 3500° K 840 = 80 CRI, 4000° K 827CP = 80 CRI, 2700° K, Chicago Plenum 830CP = 80 CRI, 3000° K, Chicago Plenum 835CP = 80 CRI, 3500° K, Chicago Plenum 840CP = 80 CRI, 4000° K, Chicago Plenum	6LW0 = Wide reflector, polymer trim ring 6LW1 = Wide reflector, self flanged (not available with baffles)	LI = Specular Clear H = Semi-Specular Clear WMH = Warm Haze G = Specular Gold WH = Wheat WHH = Wheat Haze GP = Graphite GPH = Graphite Haze CC = Chocolate CCH = Chocolate Haze K = Cognac KH = Cognac Haze B = Specular Black W = Gloss White BB = Black Baffle (6LW0 only) WB = White Baffle (6LW0 only)	WF = White painted flange (self flanged only) IP66 = IP66 Certified	HB26 = C Channel Bar Hanger, 26" Long, Pair HB50 = C Channel Bar Hanger, 50" Long, Pair RMB22 = Wood Joist Bar Hanger, 22" Long, Pair H277 = 277 to 120V step down transformer, 300VA H347 = 347 to 120V step down transformer, 75VA H347200 = 347 to 120V step down transformer, 200VA HSA6 = Slope Adapter for 6" Aperture Housings, Specify Slope TRM6 = Metal Trim Ring, Specify Color ³ TRR6 = Rimless Trim Ring ³ DT6 = Deco trim ³	

Notes: ¹ Nominal delivered Lumens will vary depending on selected CCT, driver and reflector finish.
² Not available with Chicago Plenum, not CSA approved.
³ Order trim with polymer trim ring (Consult specification sheet for color ordering information and options).

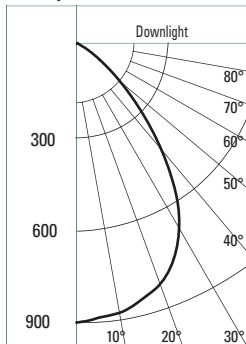
Notes: 1 Nominal delivered Lumens will vary depending on selected CCT, driver and reflector finish.

2 Not available with Chicago Plenum, not CSA approved.

3 Order trim with polymer trim ring (Consult specification sheet for color ordering information and options).

PHOTOMETRICS

Candlepower Distribution Curve



Test No. P20530
 LD615835D010 6LW51H
 Lumens = 1322
 Watts = 24.8
 LPW = 54.2
 CCT = 3500K
 SC = 1.1

Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'5"	29	6'
7'	18	8'
8'	14	9'
9'	11	10'
10'	9	11'

Candela Distribution

Degrees Vertical	Candela
0	889
5	876
15	839
25	746
35	540
45	274
55	94
65	17
75	3
85	1
90	0

Zonal Lumen Summary

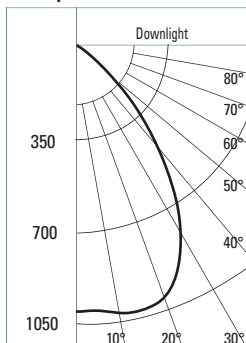
Zone	Lumens	%Fixture
0-30	663	50.2
0-40	998	75.5
0-60	1298	98.2
0-90	1322	100.0
90-180	0	0.0
0-180	1322	100.0

Luminance

Average Candela/M ²	Avg. 0° Luminance
45	47778
55	20207
65	4960
75	1429
85	1415

PHOTOMETRICS

Candlepower Distribution Curve



Test No. P20529
 LD615835D010 6LW51LI
 Lumens = 1427
 Watts = 24.8
 LPW = 57.5
 CCT = 3500K
 SC = 1.1

Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'5"	32	6.5'
7'	20	8'
8'	15	9'
9'	12	10.5'
10'	10	11.5'

Candela Distribution

Degrees Vertical	Candela
0	964
5	966
15	997
25	885
35	601
45	275
55	57
65	3
75	1
85	0
90	0

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	780	54.7
0-40	1153	80.9
0-60	1420	99.6
0-90	1426	100.0
90-180	0	0.0
0-180	1426	100.0

Luminance

Average Candela/M ²	Avg. 0° Luminance
45	47953
55	12253
65	875
75	476
85	0

PORTFOLIO LD6* IECC and T24 COMPLIANT HOUSING/TRIM COMPATIBILITY						
HOUSINGS GROUPED BY DRIVER FAMILY	D010	LD6*15D010 ERS827 . . .	LD6*15D010 ERS830 . . .	LD6*15D010 ERS835 LD6*15D010 ERS840...	....	....
	D120	. . .	. . .	. . .	LD6*10D120 ERS827 LD6*10D120 ERS830 . . .	. . . LD6*10D120 ERS835 LD6*10D120 ERS840
	DLUT	...	...	...	...	...
	
QUALIFYING TRIMS	6LW*LI**	6LW*LI** 6LW*W**	6LW*LI** 6LW*W** 6LW*G** 6LW*H** 6LW*WH** 6LW*WHH**	6LW*LI** 6LW*W** 6LW*G** 6LW*H** 6LW*WH** 6LW*WHH** 6LW*WMH**	6LW*LI** 6LW*W** 6LW*G** 6LW*H** 6LW*WH** 6LW*WHH** 6LW*WMH** 6LW*WB** 6LW*GP**	
CHICAGO PLENUM HOUSINGS/TRIMS ARE ONLY IECC QUALIFIED. FOR CHICAGO PLENUM HOUSINGS SUBSTITUTE LD6CP* FOR LD6* IN ABOVE MATRIX						

DESCRIPTION

4 inch LED recessed wide downlight specially designed for LED technology. Two-stage reflector system produces smooth distribution with excellent light control and low aperture brightness. Lumen packages include 900 and 1300 delivered lumens with color temperatures of 2700K, 3000K, 3500K, 4000K. Suitable for commercial construction and exceeds high efficacy requirements (with designated trims) for Energy Star, Title 24-2008 and IECC-2009.

SPECIFICATION FEATURES

Lower Shielding Reflector

Self-flanged, spun .050" thick aluminum lower reflector in combination with a lensed upper optical chamber provides superior lumen output with minimal source brightness. Available in all Portfolio Alzak® finishes.

Trim Retention

Lower reflector is retained with two torsion springs holding the flange tightly to the finished ceiling surface.

Plaster Frame / Collar

New Construction Housing: Die cast aluminum 1-1/2" deep collar accommodates ceiling materials up to 2". Remodel Housing: Galvanized steel plaster ring adjusts to accept up to 1" ceiling thickness.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 5" vertically from above and below the ceiling (new construction housing only).

Junction Box

(4) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring.

Thermal

Extruded aluminum heat sink conducts heat away from the LED module for improved performance and longer life.

LED

LED system contains a plurality of high brightness white LED's combined with a high reflectance upper reflector and convex transitional lens producing even distribution with no pixilation. Rated for 50,000 hours at 70% lumen maintenance. Auto resetting, thermally protected, LED's are turned off when safe operating temperatures are exceeded. Color variation within 3-step MacAdam ellipses. Flexible disconnect allows for tool-less replacement of LED engine from below ceiling.

Driver

Driver can be serviced from above or through the aperture.

Environmental

Fixture should not be operated in ambient temperatures above 40° C.

Code Compliance

Thermally protected and cULus listed for protected wet locations. IP54 Certified. Optional City of Chicago environmental air (CCEA) marking for plenum applications. EMI/RFI emissions per FCC 47CFR Part 18 Class B consumer limits. Non-IC rated - Insulation must be kept 3" from top and sides of housing. RoHS Compliant. Title 24 2008 Compliant with designated trims. ARRA Compliant. Photometric testing completed in accordance with IES LM 79 standards. LED life testing completed in accordance with LM 80 standards.

Warranty

5 year warranty.



**LD409
LD413
LD4R09
LD4R13**

4LW

LED

4 Inch

Wide Beam Downlight

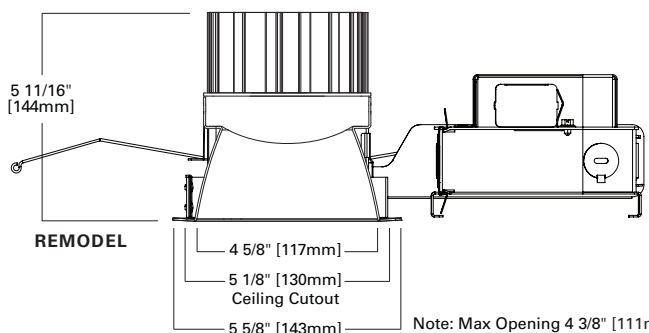
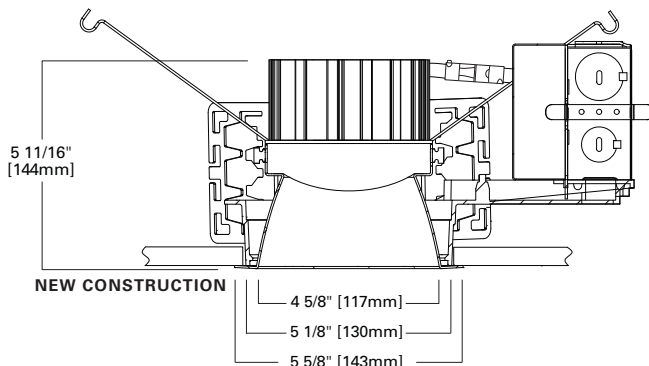
New Construction or Remodel



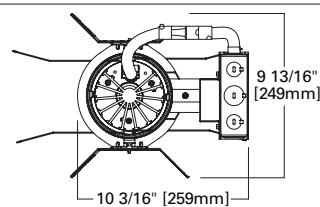
Qualified & Compliant with designated LED modules and trims.

Energy Data

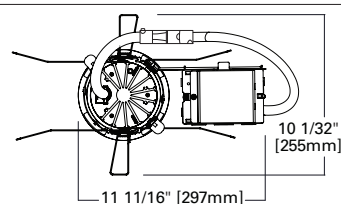
Sound Rating: Class A standards	
Operating Temperature: 40°C (104°F)	
1300 Lumen	
(Values at non-dimming line voltage)	
Minimum Starting Temp: -30°C (-22°F)	
EMI/RFI: FCC Title 47 CFR, Part 18, Class B	
Input Voltage: UNV (90V - 305V)	
Power Factor: >0.90 (at nominal input 120V/230/240/277 VAC & 100% of Rated Output Power)	
Input Power: 24.8W	THD: <21%
120V Input Current: .21A	277V Input Current: .09A
Maximum Non-IC Ambient Continuous	
Input Frequency: 47-63Hz	
Rated Wattage: 24.8W	
900 Lumen D120 / D010	
(Values at non-dimming line voltage)	
Minimum Starting Temp: -30°C (-22°F)	
EMI/RFI: FCC Title 47 CFR, Part 18, Class B (Consumer)	
Input Voltage: 120/120-305V	
Power Factor: >0.90	
Input Power: 14.3W	THD: <20%
Input Frequency: 50/60Hz	
Rated Wattage: 14.3W/17.5W	



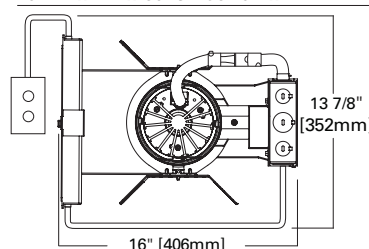
TOP VIEW - NEW CONSTRUCTION



TOP VIEW - REMODEL



TOP VIEW - NEW CONSTRUCTION WITH BATTERY



ORDERING INFORMATION

Example:

LD413D010 ERW4835 4LW0LI = 4" LED Wide Reflector Lens, 1300 lumen, 3,500 K CCT with Universal 120 - 277V, 0 - 10 Driver

Housing	Delivered Lumens ¹	Driver	Driver Options	Power Module	Color	Reflector	Finish	Options	Accessories
LD4 = 4" aperture LD4CP = 4" aperture, Chicago Plenum LD4R = 4" aperture remodel LD4RCP = 4" aperture remodel, Chicago Plenum	09 = 900 lumens 13 = 1300 lumen	D010 = 10 to 100% dimming, 120-277V, 50/60Hz, 0-10V D120 = 15 to 100% dimming, 120V, 2 wire phase control, (900 lumen only) DLUT = 1 to 100% dimming, 120-277V Lut 840 (4000K)	EM = Iota Emergency module with remote test switch ² EMBOD = Bodine Emergency module with	ERW4 = 4" module for wide beam reflector 827 = 80 CRI, 2700° K 830 = 80 CRI, 3000° K 835 = 80 CRI, 3500° K 340 = 80 CRI, 4000° K 327CP = 80 CRI, 2700° K, Chicago Plenum 330CP = 80 CRI, 3000° K, Chicago Plenum 335CP = 80 CRI, 3500° K, Chicago Plenum 340CP = 80 CRI, 4000° K, Chicago Plenum	4LW0 = Wide reflector, polymer trim ring 4LW1 = Wide reflector, self flanged (not available with baffles)	LI = Specular Clear H = Semi-Specular Clear WMH = Warm Haze G = Specular Gold WH = Wheat WHH = Wheat Haze GP = Graphite GPH = Graphite Haze CC = Chocolate CCH = Chocolate Haze K = Cognac KH = Cognac Haze B = Specular Black W = Gloss White BB = Black Baffle WB = White Baffle	WF = White painted flange (self flanged only) HB26 = C Channel Bar Hanger, 26" Long, Pair HB50 = C Channel Bar Hanger, 50" Long, Pair RMB22 = Wood Joist Bar Hanger, 22" Long, Pair H277 = 277 to 120V step down transformer, 300VA H347 = 347 to 120V step down transformer, 75VA H347200 = 347 to 120V step down transformer, 200VA HSA4 = Slope Adapter for 4" Aperture Housings, Specify Slope TRM4P = Metal Trim Ring, White ³ TRM4MB = Metal Trim Ring, Black ³ TRR4 = Rimless Trim Ring ³ LGSKT4IP66 = IP66 Gasket Kit		

Notes: 1 Nominal delivered Lumens will vary depending on selected CCT, driver and reflector finish.
2 Not available with Chicago Plenum.
3 Order trim with polymer trim ring (Consult specification sheet for color ordering information and options).
4 Not CSA approved.

Notes: 1 Nominal delivered Lumens will vary depending on selected CCT, driver and reflector finish.

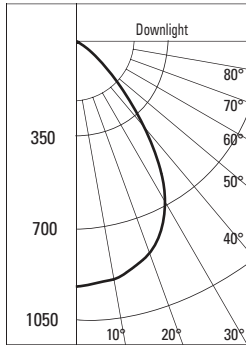
2 Not available with Chicago Plenum.

3 Order trim with polymer trim ring (Consult specification sheet for color ordering information and options).

4 Not CSA approved.

PHOTOMETRICS

Candlepower Distribution Curve



Test No. P20528
 LD413835D010 4LW1H
 Lumens = 1245
 Watts = 24.2 Watts
 LPW = 51.5
 CCT = 3500K
 SC = 1.1

Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'5"	30	6'
7'0"	18	8'
8'0"	14	9'
9'0"	11	10'
10'0"	9	11'

Candela Distribution

Degrees Vertical	Candela
0	904
5	890
15	845
25	740
35	508
45	225
55	75
65	17
75	4
85	1
90	0

Zonal Lumen Summary

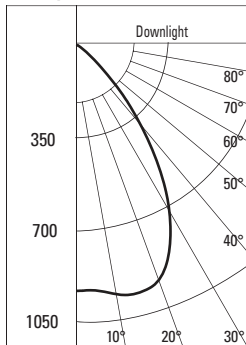
Zone	Lumens	%Fixture
0-30	663	53.2
0-40	977	78.5
0-60	1222	98.1
0-90	1246	100.0
90-180	0	0.0
0-180	1246	100.0

Luminance

Average Candela/M ²	Avg. 0° Luminance
45	39234
55	16123
65	4960
75	1906
85	1415

PHOTOMETRICS

Candlepower Distribution Curve



Test No. P20527
 LD413835D010 4LW1LI
 Lumens = 1387
 Watts = 24.2 Watts
 LPW = 57.3
 CCT = 3500K
 Spacing Criteria = 1.1

Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'5"	34	6'5"
7'0"	21	8'
8'0"	16	9'
9'0"	13	10'
10'0"	10	11'5"

Candela Distribution

Degrees Vertical	Candela
0	1027
5	1030
15	1069
25	930
35	577
45	208
55	35
65	2
75	1
85	0
90	0

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	826	59.5
0-40	1183	85.3
0-60	1383	99.7
0-90	1387	100.0
90-180	0	0.0
0-180	1387	100.0

Luminance

Average Candela/M ²	Avg. 0° Luminance
45	36270
55	7524
65	584
75	476
85	0

PORTFOLIO LD4* IECC and T24 COMPLIANT HOUSING/TRIM COMPATIBILITY					
HOUSINGS GROUPED BY DRIVER FAMILY	D010	- LD4*13D010 ERW830 -	- - LD4*13D010 ERW835 LD4*13D010 ERW840	- - -	- - -
	D120	- - - -	- - - -	LD4*09D120 ERW827 - - -	- LD4*09D120 ERW830 LD4*09D120 ERW835 LD4*09D120 ERW840
	DLUT	- - - -	- - - -	- - - -	- - - -
	DLUT	- - - -	- - - -	- - - -	- - - -
QUALIFYING TRIMS		4LW*LI**	4LW*LI** 4LW*W** 4LW*G**	4LW*LI** 4LW*W** 4LW*G** 4LW*H** 4LW*WH** 4LW*WHH**	4LW*LI** 4LW*W** 4LW*G** 4LW*H** 4LW*WH** 4LW*WHH** 4LW*WMH**
CHICAGO PLENUM HOUSINGS/TRIMS ARE ONLY IECC QUALIFIED. FOR CHICAGO PLENUM HOUSINGS SUBSTITUTE LD4CP* FOR LD4* IN ABOVE MATRIX					

PORTFOLIO LD4* ENERGY STAR QUALIFIED HOUSING/TRIM COMPATIBILITY				
HOUSINGS GROUPED BY DRIVER FAMILY	D010	LD4*13D010 ERW827 LD4*13D010 ERW830 -	- - LD4*13D010 ERW835 LD4*13D010 ERW840	- - -
	D120	LD4*09D120 ERW827 LD4*09D120 ERW830 -	- - -	- - LD4*09D120 ERW835 LD4*09D120 ERW840
	DLUT	- - -	- - -	- - -
	DLUT	- - -	- - -	- - -
QUALIFYING TRIMS		4LW*LI** 4LW*W** 4LW*G** 4LW*H** 4LW*WH** 4LW*WHH** 4LW*WB** 4LW*WMH**	4LW*LI** 4LW*W** 4LW*G** 4LW*H** 4LW*WH** 4LW*WHH** 4LW*WB** 4LW*WMH** 4LW*GP** 4LW*K**	4LW*LI** 4LW*W** 4LW*G** 4LW*H** 4LW*WH** 4LW*WHH** 4LW*WB** 4LW*WMH** 4LW*GP** 4LW*K** 4LW*GPH**
FOR CHICAGO PLENUM QUALIFIED HOUSING/TRIMS SUBSTITUTE LD4CP* FOR LD4* SHOWN IN ABOVE MATRIX				

DESCRIPTION

The SSF Series is a functional and multi-purpose standard strip family that incorporates premium performance and construction durability. Designed with our easy-to-use Flip-Up socket design, the SSF significantly reduces installation time. The performance and application versatility of this series can be increased by incorporating symmetrical or asymmetrical reflectors. The SSF Series can be installed using various mounting methods and numerous options and accessories are available. The SSF Series can be the illumination solution in commercial, industrial, retail and residential applications. Fixtures can be used in storage/utility areas, coves, display cases, shops, task and general area lighting.

SPECIFICATION FEATURES

A... Construction

Channel die cold rolled steel with numerous KOs for ease of installation. Groove for Tong Hanger. End plate quickly converts to snap-in channel connector for continuous row alignment. Lamp holder bracket flips in place. Channel/wireway cover secured with quarter-turn fasteners.

B... Electrical*

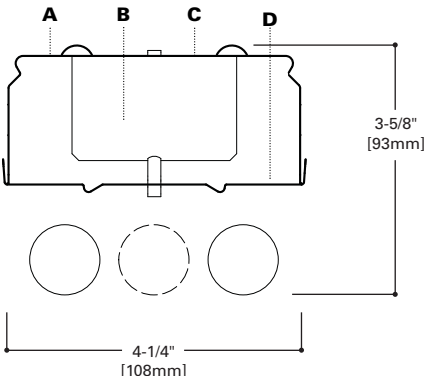
Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Rotor Lock lampholders. UL/CUL listed. Suitable for damp locations.

C... Finish

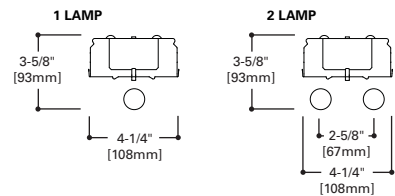
Multistage iron phosphate pretreatment ensures maximum bonding and rust inhibitor. Lighting upgrade, baked white enamel finish. Prepainted material is standard, PAF optional.

D... Channel/Wireway Cover

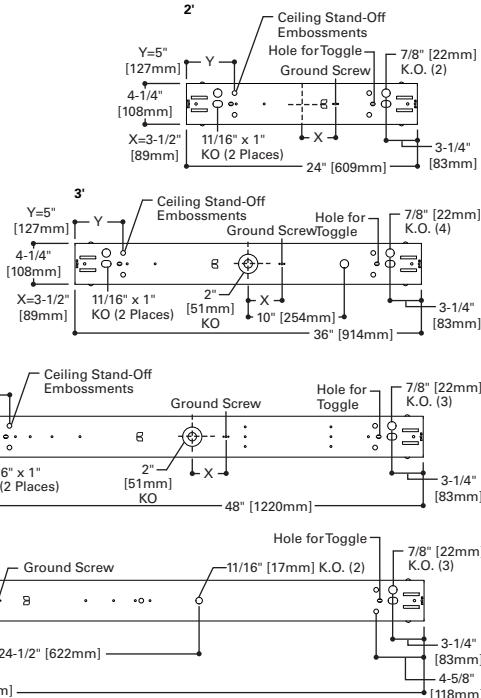
Die formed heavy gauge steel. Tight fit for ease of maintenance. Easily removed without use of tools. Optional reflector available incorporating silver technology enhancements (Silver Lining). Consult Pre Sales Technical Support.



LAMP CONFIGURATIONS



MOUNTING DATA

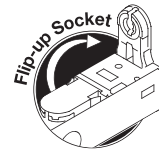


COOPER LIGHTING



SSF
117, 125
128T8
132, 217, 225
228T8
232
328T8
332

2', 3' OR 4' STRIP
1, 2 OR 3 T8 LAMPS
Standard Striplite



ENERGY DATA

Input Watts:
EB Ballasts Normal Ballast Factor
117 (20), 217 (34), 125 (23), 225 (53),
128T8 (25), 228T8 (49), 328T8 (71),
132 (28), 232 (58), 332 (80)
EB Ballasts Low Ballast Factor
125 (21), 225 (40), 128T8 (22),
228T8 (44), 328T8 (64), 132 (25),
232 (48), 332 (72)

Luminaire Efficacy Rating
LER = FS-88
Catalog Number: SSF-232

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$2.73

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

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

LINEAR DISCONNECT
Safe and convenient means of
disconnecting power.

ADF081661



DESCRIPTION

6 inch LED recessed wide downlight specially designed for below ceiling installation. Two-stage reflector system produces smooth distribution with excellent light control and low aperture brightness. Lumen packages include 1000 and 1500 delivered lumens with color temperatures of 2700K, 3000K, 3500K, 4000K. Suitable for commercial construction and exceeds high efficacy requirements (with designated trims) for Title 24-2008 and IECC-2009.

SPECIFICATION FEATURES

Lower Shielding Reflector

Self-flanged, spun .050" thick aluminum lower reflector in combination with a lensed upper optical chamber provides superior lumen output with minimal source brightness. Available in all Portfolio Alzak® finishes.

Trim Retention

Lower reflector is retained with two torsion springs holding the flange tightly to the finished ceiling surface.

Plaster Frame / Collar

New Construction Housing: Die cast aluminum 1-1/2" deep collar accommodates ceiling materials up to 2". Remodel Housing: Galvanized steel plaster ring adjusts to accept up to 1" ceiling thickness.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 5" vertically from above and below the ceiling (new construction housing only).

Junction Box

(4) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring.

Thermal

Extruded aluminum heat sink conducts heat away from the LED module for improved performance and longer life.

LED

LED system contains a plurality of high brightness white LED's combined with a high reflectance upper reflector and convex transitional lens producing even distribution with no pixilation. Rated for 50,000 hours at 70% lumen maintenance. Auto resetting, thermally protected, LED's are turned off when safe operating temperatures are exceeded. Color variation within 3-step MacAdam ellipses. Flexible disconnect allows for tool-less replacement of LED engine from below ceiling.

840 (4000K)

PORTFOLIO™

Catalog #	LD615DLUT-ERW6835-6LW0H	Type
Project	SUMMA ER- GREEN EMERGENCY DEPT	N
Comments		Date
Prepared by		

Driver

Driver can be serviced from above or through the aperture.

Environmental

Fixture should not be operated in ambient temperatures above 40° C.

Code Compliance

Thermally protected and cULus listed for protected wet locations. IP54 Certified. Optional City of Chicago environmental air (CCEA) marking for plenum applications. EMI/RFI emissions per FCC 47CFR Part 18 Class B consumer limits. Non-IC rated - Insulation must be kept 3" from top and sides of housing. RoHS Compliant. Title 24 2008 Compliant with designated trims. ARRA Compliant. Photometric testing completed in accordance with IES LM 79 standards. LED life testing completed in accordance with LM 80 standards.

Warranty

5 year warranty.



**LD610
LD615
LD6R10
LD6R15**

6LW

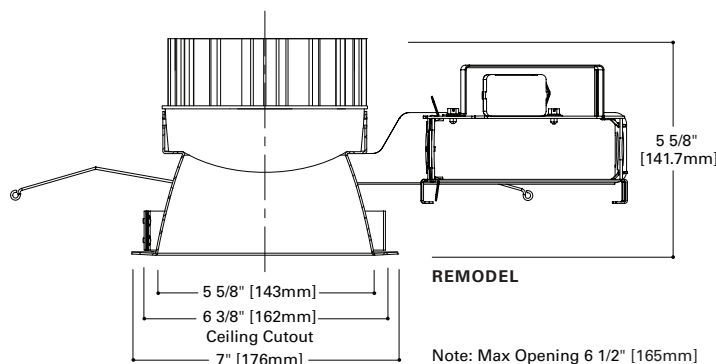
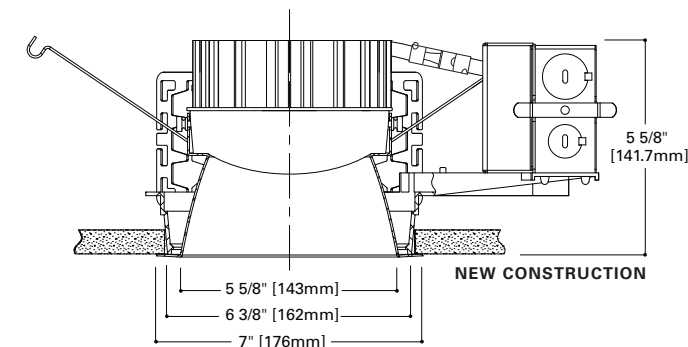
LED

6 Inch

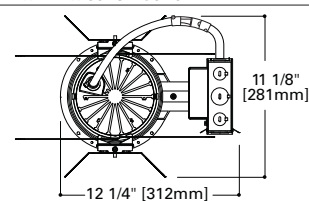
Wide Beam Downlight



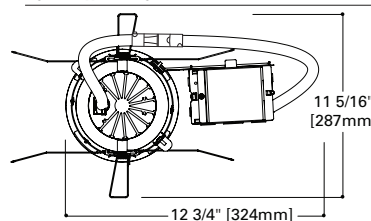
Qualified & Compliant with designated LED modules and trims.



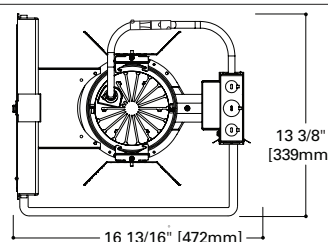
TOP VIEW - NEW CONSTRUCTION



TOP VIEW - REMODEL



TOP VIEW - NEW CONSTRUCTION WITH BATTERY



Energy Data	
Sound Rating: Class A standards	
Operating Temperature: 40°C (104°F)	
1500 Lumen	
(Values at non-dimming line voltage)	
Minimum Starting Temp: -30°C (-22°F)	
EMI/RFI: FCC Title 47 CFR, Part 18, Class B (Consumer)	
Input Voltage: UNV (90V - 305V)	
Power Factor: >0.90 (at nominal input 120/230/240/277 VAC & 100% of Rated Output Power)	
Input Power: 24.8W	THD: <21%
120V Input Current: .21A	277V Input Current: .09A
Maximum Non-IC Ambient Continuous	
Input Frequency: 47-63Hz	
Rated Wattage: 24.8W	
1000 Lumen D120 / D010	
(Values at non-dimming line voltage)	
Minimum Starting Temp: -30°C (-22°F)	
EMI/RFI: FCC Title 47 CFR, Part 18, Class B (Consumer)	
Input Voltage: 120/120-305V	
Power Factor: >0.90	
Input Power: 14.3W	THD: <20%
Input Frequency: 50/60Hz	
Rated Wattage: 14.3W/17.5W	

ORDERING INFORMATION

Example:

LD615D010 ERW6835 6LW0LI = 6" LED Wide Reflector Lens, 1500 lumen 3,500 K CCT with Universal 120 - 277V, 0 - 10 Driver

Housing	Delivered Lumens ¹	Driver	Options	Power Module	Color	Reflector	Finish	Options	Accessories
LD6 = 6" aperture LD6CP = 6" aperture, Chicago Plenum LD6R = 6" aperture remodel LD6RCP = 6" aperture remodel, Chicago Plenum	10 = 1000 lumens 15 = 1500 lumens	D010 = 10 to 100% dimming, 120-277V, 50/60Hz, 0-10V D120 = 15 to 100% dimming, 120V, 2 wire phase control, (1000 lumen only) DLUT = 1 to 100% dimming, 120-277V L	EM = Iota Emergency module with remote test switch ² EMBOD = Bodine Emergency module with	ERW6 = 6" module for wide reflector 827 = 80 CRI, 2700° K 830 = 80 CRI, 3000° K 835 = 80 CRI, 3500° K 840 = 80 CRI, 4000° K 827CP = 80 CRI, 2700° K, Chicago Plenum 830CP = 80 CRI, 3000° K, Chicago Plenum 835CP = 80 CRI, 3500° K, Chicago Plenum 840CP = 80 CRI, 4000° K, Chicago Plenum	6LW0 = Wide reflector, polymer trim ring 6LW1 = Wide reflector, self flanged (not available with baffles)	LI = Specular Clear H = Semi-Specular Clear WMH = Warm Haze G = Specular Gold WH = Wheat WHH = Wheat Haze GP = Graphite GPH = Graphite Haze CC = Chocolate CCH = Chocolate Haze K = Cognac KH = Cognac Haze B = Specular Black W = Gloss White BB = Black Baffle (6LW0 only) WB = White Baffle (6LW0 only)	WF = White painted flange (self flanged only) IP66 = IP66 Certified	HB26 = C Channel Bar Hanger, 26" Long, Pair HB50 = C Channel Bar Hanger, 50" Long, Pair RMB22 = Wood Joist Bar Hanger, 22" Long, Pair H277 = 277 to 120V step down transformer, 300VA H347 = 347 to 120V step down transformer, 75VA H347200 = 347 to 120V step down transformer, 200VA HSA6 = Slope Adapter for 6" Aperture Housings, Specify Slope TRM6 = Metal Trim Ring, Specify Color ³ TRR6 = Rimless Trim Ring ³ DT6 = Deco trim ³	

Notes: 1 Nominal delivered Lumens will vary depending on selected CCT, driver and reflector finish.
2 Not available with Chicago Plenum, not CSA approved.
3 Order trim with polymer trim ring (Consult specification sheet for color ordering information and options).

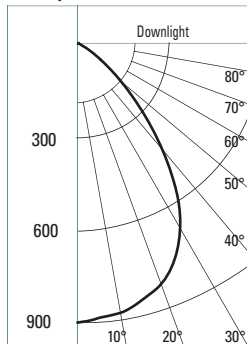
Notes: 1 Nominal delivered Lumens will vary depending on selected CCT, driver and reflector finish.

2 Not available with Chicago Plenum, not CSA approved.

3 Order trim with polymer trim ring (Consult specification sheet for color ordering information and options).

PHOTOMETRICS

Candlepower Distribution Curve



Test No. P20530
 LD615835D010 6LW51H
 Lumens = 1322
 Watts = 24.8
 LPW = 54.2
 CCT = 3500K
 SC = 1.1

Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'5"	29	6'
7'	18	8'
8'	14	9'
9'	11	10'
10'	9	11'

Candela Distribution

Degrees Vertical	Candela
0	889
5	876
15	839
25	746
35	540
45	274
55	94
65	17
75	3
85	1
90	0

Zonal Lumen Summary

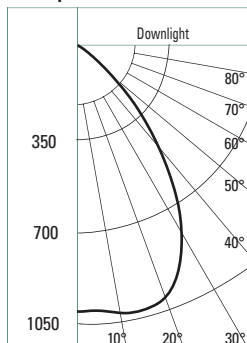
Zone	Lumens	%Fixture
0-30	663	50.2
0-40	998	75.5
0-60	1298	98.2
0-90	1322	100.0
90-180	0	0.0
0-180	1322	100.0

Luminance

Average Candela/M ²	Avg. 0° Luminance
45	47778
55	20207
65	4960
75	1429
85	1415

PHOTOMETRICS

Candlepower Distribution Curve



Test No. P20529
 LD615835D010 6LW51LI
 Lumens = 1427
 Watts = 24.8
 LPW = 57.5
 CCT = 3500K
 SC = 1.1

Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'5"	32	6.5'
7'	20	8'
8'	15	9'
9'	12	10.5'
10'	10	11.5'

Candela Distribution

Degrees Vertical	Candela
0	964
5	966
15	997
25	885
35	601
45	275
55	57
65	3
75	1
85	0
90	0

Zonal Lumen Summary

Zone	Lumens	%Fixture
0-30	780	54.7
0-40	1153	80.9
0-60	1420	99.6
0-90	1426	100.0
90-180	0	0.0
0-180	1426	100.0

Luminance

Average Candela/M ²	Avg. 0° Luminance
45	47953
55	12253
65	875
75	476
85	0

ADV100519
2011-05-05

DESCRIPTION

Recessed open downlight with 7 inch aperture for vertical ED17P protected medium base metal halide lamp. Universal input electronic ballast features end of life shutdown. Fixture is suitable for commercial construction. Insulation must be kept 3" from top and sides of housing. Wide beam distribution with 55° cutoff and low aperture brightness. Universal housing also accepts reflectors for PAR lamps, open wall wash and lens applications.

SPECIFICATION FEATURES

Plaster Frame / Collar

Die cast aluminum collar accommodates ceiling materials up to 1-1/2" thick. Stilts adjust quickly and accurately to accept reflectors for ED17P, PAR lamps, open, open wall wash and lens applications.

Socket Cap

Die cast aluminum socket cap reduces lamp base temperatures for longer life.

Conduit Fittings

Die cast aluminum conduit fittings secure flex to socket housing and junction box.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 5" vertically from above the ceiling.

Junction Box

(6) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring.

Reflector

Spun 0.050" thick aluminum reflector provides wide beam

distribution with 55° lamp and lamp image cutoff. Self flanged standard with optional white painted flange. Also available with polymer trim ring. Trim ring may be interchanged with metal trim ring available in various finishes or removed for rimless installation, see accessories. Available in all Portfolio Alzak® finishes.

Trim Retention

Keyholes align reflector to preinstalled machine screws that pull flange tight to the finished ceiling surface.

Socket

Pulse rated E26 medium base protected socket prevents use with lamps not suitable for open fixture use.

Insulation Detector

Self resetting detector opens circuit if insulation is improperly installed.

Ballast

Universal input (except 150 watt) 120/277V electronic ballast provides noise free operation, improved efficiency and increased lamp life as compared with magnetic ballast. Regulated output

power over a wide range of ANSI lamp voltages results in excellent color stability over time. End of lamp life shutdown – reset power to restore output.

Quartz Lamp Re-strike Time Delay System (Q Option)

Internal auxiliary 100W DC bayonet base T4 quartz lamp (included) provides low level illumination in the event of a momentary power interruption.

Emergency Circuit Lamp (ECL Accessory)

Emergency circuit lamp module for 100W DC bayonet base T4 quartz lamp (included) by emergency circuit. Field installed.

Code Compliance

Thermally protected and cULus damp location listed. Optional City of Chicago environmental air (CCEA) marking for plenum applications. EMI/RFI emissions per FCC 47CFR Part 18 non consumer limits.

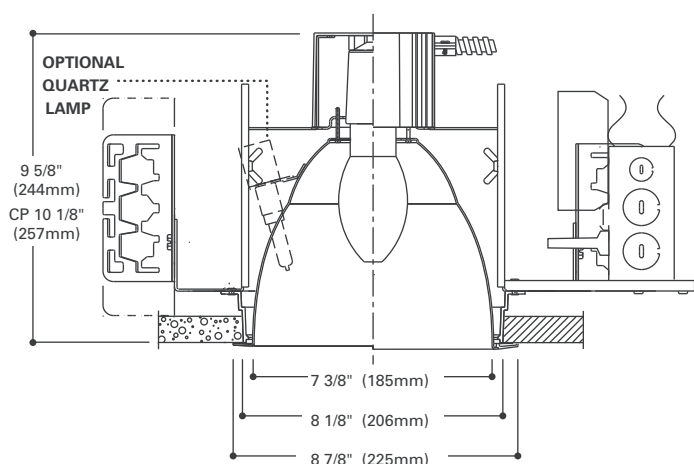


**MD750
MD770
MD7100
MD7150**

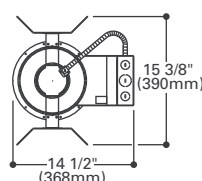
7750/7751

**Metal Halide
ED17P**

**7 Inch
Wide Beam Open Downlight**



TOP VIEW



Energy Data

50W

120V Input Power: 60W	277V Input Power: 60W
120V Input Current: 0.51A	277V Input Current: 0.22A
Minimum Starting Temp: -15°C, +5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

70W

120V Input Power: 86W	277V Input Power: 84W
120V Input Current: 0.72A	277V Input Current: 0.81A
Minimum Starting Temp: -20°C, -5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

100W

120V Input Power: 115W	277V Input Power: 113W
120V Input Current: 0.96A	277V Input Current: 0.42A
Minimum Starting Temp: -20°C, -5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

150W

120V Input Power: 165W	277V Input Power: 161W
120V Input Current: 1.38A	277V Input Current: 0.59A
Minimum Starting Temp: -30°C, -20°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

ORDERING INFORMATION

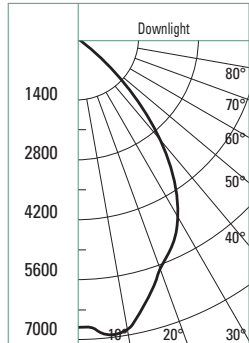
SAMPLE NUMBER: MD770E= 7" universal housing with UNV 120/277V electronic ballast for a 70W ED17P MH lamp
 7751LI= 7" wide beam reflector, self flanged, specular clear low iridescent
 (Order universal housing and trim separately)

Housing	Wattage	Ballast	Options	Trim	Finish	Options	Accessories
MD7 = 7" universal MH housing MD7CP = 7" universal MH housing, CCEA listed for City of Chicago plenum requirements 50 = 50W MH lamp 70 = 70W MH lamp 100 = 100W MH lamp 150 = 150W MH lamp	E = Electronic, UNV 120/277V 50/60Hz ¹ 1E = Electronic, 120V 50/60Hz ² 2E = Electronic, 277V 50/60Hz ²	Q = Quartz Restrike System ³			Alzak® Finishes LI = Specular clear, low iridescent H = Semi specular clear WMH = Warm haze G = Gold WH = Wheat GP = Graphite GPH = Graphite haze K = Cognac KH = Cognac Haze B = Black (Omit finish code with baffle option.)	WF = White painted flange (self flanged only) BB = Black baffle (polymer trim ring only) WB = White baffle (polymer trim ring only) HB26 = Bar hanger, 26" long, pair HB50 = Bar hanger, 50" long, pair RMB22 = Bar hanger for wooden joists, 22" long, pair HSA7* = Slope adapter for 7" aperture, specify slope TRM7* = Metal trim ring, specify finish TRR7 = Rimless trim ring ECL = Emergency circuit lamp H347 = 347V stepdown transformer, 75VA H347200 = 347V stepdown transformer, 200VA	
7750 = 7" wide beam reflector with white polymer trim ring 7750X = 7" wide beam reflector with white polymer trim ring, standby lamp 7751 = 7" wide beam reflector, self flanged 7751X = 7" wide beam reflector, self flanged, standby lamp							

- ¹ Not available with 150 watt.
² Available with 50 and 150 watt only.
³ Must use 1E or 2E fixed input ballast option with 50W.

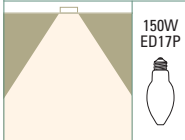
PHOTOMETRICS

Candlepower Distribution Curve



Spacing Criteria = 1.1
 Efficiency = 72.1%

Test No. H38037
 MD71001E 7750LI
 Lamp = 150W ED17P



Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'6"	218	6'0"
6'6"	156	7'0"
8'0"	103	8'6"
10'0"	66	10'0"
12'0"	46	12'6"
14'0"	34	15'6"

Coefficients of Utilization

Ceiling Wall % RCR	80%				70%				50%	
	70	50	30	10	50	30	10		50	10
Zonal cavity method -- floor reflectance = 20%										
0	86	86	86	86	84	84	84		80	80
1	82	80	78	77	78	77	75		75	73
2	78	75	72	70	73	71	69		71	67
3	74	70	66	63	69	66	63		67	62
4	70	65	61	58	64	61	58		63	57
5	67	61	57	54	60	56	53		59	53
6	63	57	52	49	56	52	49		55	49
7	60	53	48	45	52	48	45		51	45
8	56	49	45	41	49	44	41		48	41
9	53	45	41	38	45	41	38		44	38
10	50	42	38	35	42	38	35		41	35

DESCRIPTION

Recessed open downlight with 7 inch aperture for vertical ED17P protected medium base metal halide lamp. Universal input electronic ballast features end of life shutdown. Fixture is suitable for commercial construction. Insulation must be kept 3" from top and sides of housing. Wide beam distribution with 55° cutoff and low aperture brightness. Universal housing also accepts reflectors for PAR lamps, open wall wash and lens applications.

SPECIFICATION FEATURES

Plaster Frame / Collar

Die cast aluminum collar accommodates ceiling materials up to 1-1/2" thick. Stilts adjust quickly and accurately to accept reflectors for ED17P, PAR lamps, open, open wall wash and lens applications.

Socket Cap

Die cast aluminum socket cap reduces lamp base temperatures for longer life.

Conduit Fittings

Die cast aluminum conduit fittings secure flex to socket housing and junction box.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 5" vertically from above the ceiling.

Junction Box

(6) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring.

Reflector

Spun 0.050" thick aluminum reflector provides wide beam

distribution with 55° lamp and lamp image cutoff. Self flanged standard with optional white painted flange. Also available with polymer trim ring. Trim ring may be interchanged with metal trim ring available in various finishes or removed for rimless installation, see accessories. Available in all Portfolio Alzak® finishes.

Trim Retention

Keyholes align reflector to preinstalled machine screws that pull flange tight to the finished ceiling surface.

Socket

Pulse rated E26 medium base protected socket prevents use with lamps not suitable for open fixture use.

Insulation Detector

Self resetting detector opens circuit if insulation is improperly installed.

Ballast

Universal input (except 150 watt) 120/277V electronic ballast provides noise free operation, improved efficiency and increased lamp life as compared with magnetic ballast. Regulated output

power over a wide range of ANSI lamp voltages results in excellent color stability over time. End of lamp life shutdown – reset power to restore output.

Quartz Lamp Re-strike Time Delay System (Q Option)

Internal auxiliary 100W DC bayonet base T4 quartz lamp (included) provides low level illumination in the event of a momentary power interruption.

Emergency Circuit Lamp (ECL Accessory)

Emergency circuit lamp module for 100W DC bayonet base T4 quartz lamp (included) by emergency circuit. Field installed.

Code Compliance

Thermally protected and cULus damp location listed. Optional City of Chicago environmental air (CCEA) marking for plenum applications. EMI/RFI emissions per FCC 47CFR Part 18 non consumer limits.

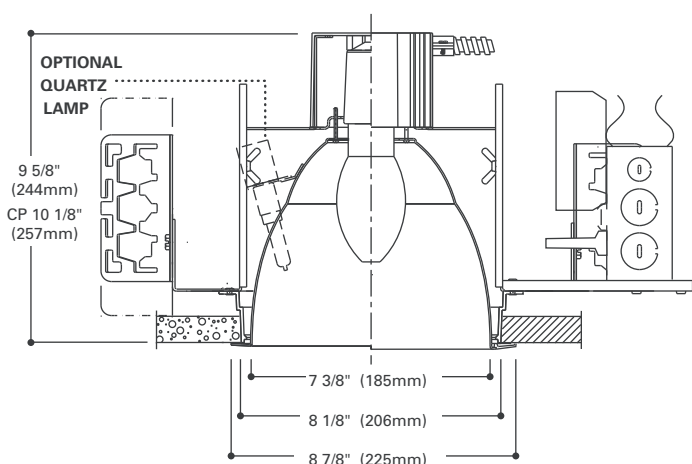


**MD750
MD770
MD7100
MD7150**

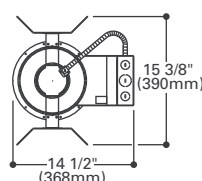
7750/7751

**Metal Halide
ED17P**

**7 Inch
Wide Beam Open Downlight**



TOP VIEW



Energy Data

50W

120V Input Power: 60W	277V Input Power: 60W
120V Input Current: 0.51A	277V Input Current: 0.22A
Minimum Starting Temp: -15°C, +5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

70W

120V Input Power: 86W	277V Input Power: 84W
120V Input Current: 0.72A	277V Input Current: 0.81A
Minimum Starting Temp: -20°C, -5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

100W

120V Input Power: 115W	277V Input Power: 113W
120V Input Current: 0.96A	277V Input Current: 0.42A
Minimum Starting Temp: -20°C, -5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

150W

120V Input Power: 165W	277V Input Power: 161W
120V Input Current: 1.38A	277V Input Current: 0.59A
Minimum Starting Temp: -30°C, -20°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

ORDERING INFORMATION

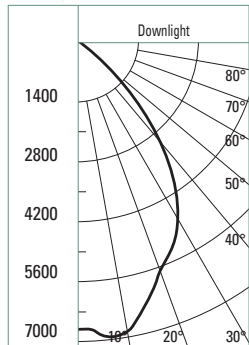
SAMPLE NUMBER: MD770E= 7" universal housing with UNV 120/277V electronic ballast for a 70W ED17P MH lamp
 7751LI= 7" wide beam reflector, self flanged, specular clear low iridescent
 (Order universal housing and trim separately)

Housing	Wattage	Ballast	Options	Trim	Finish	Options	Accessories
MD7 = 7" universal MH housing MD7CP = 7" universal MH housing, CCEA listed for City of Chicago plenum requirements 50 = 50W MH lamp 70 = 70W MH lamp 100 = 100W MH lamp 150 = 150W MH lamp		E = Electronic, UNV 120/277V 50/60Hz ¹ 1E = Electronic, 120V 50/60Hz ² 2E = Electronic, 277V 50/60Hz ²	Q = Quartz Restrike System ³		Alzak® Finishes LI = Specular clear, low iridescent H = Semi specular clear WMH = Warm haze G = Gold WH = Wheat GP = Graphite GPH = Graphite haze K = Cognac KH = Cognac Haze B = Black (Omit finish code with baffle option.)	WF = White painted flange (self flanged only) BB = Black baffle (polymer trim ring only) WB = White baffle (polymer trim ring only) HB26 = Bar hanger, 26" long, pair HB50 = Bar hanger, 50" long, pair RMB22 = Bar hanger for wooden joists, 22" long, pair HSA7* = Slope adapter for 7" aperture, specify slope TRM7* = Metal trim ring, specify finish TRR7 = Rimless trim ring ECL = Emergency circuit lamp H347 = 347V stepdown transformer, 75VA H347200 = 347V stepdown transformer, 200VA	

¹ Not available with 150 watt.
² Available with 50 and 150 watt only.
³ Must use 1E or 2E fixed input ballast option with 50W.

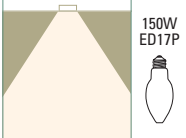
PHOTOMETRICS

Candlepower Distribution Curve



Spacing Criteria = 1.1
 Efficiency = 72.1%

Test No. H38037
 MD71001E 7750LI
 Lamp = 150W ED17P



Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'6"	218	6'0"
6'6"	156	7'0"
8'0"	103	8'6"
10'0"	66	10'0"
12'0"	46	12'6"
14'0"	34	15'6"

Coefficients of Utilization

Ceiling Wall % RCR	80%				70%				50%	
	70	50	30	10	50	30	10		50	10
Zonal cavity method -- floor reflectance = 20%										
0	86	86	86	86	84	84	84		80	80
1	82	80	78	77	78	77	75		75	73
2	78	75	72	70	73	71	69		71	67
3	74	70	66	63	69	66	63		67	62
4	70	65	61	58	64	61	58		63	57
5	67	61	57	54	60	56	53		59	53
6	63	57	52	49	56	52	49		55	49
7	60	53	48	45	52	48	45		51	45
8	56	49	45	41	49	44	41		48	41
9	53	45	41	38	45	41	38		44	38
10	50	42	38	35	42	38	35		41	35

DESCRIPTION

Recessed open downlight with 7 inch aperture for vertical ED17P protected medium base metal halide lamp. Universal input electronic ballast features end of life shutdown. Fixture is suitable for commercial construction. Insulation must be kept 3" from top and sides of housing. Wide beam distribution with 55° cutoff and low aperture brightness. Universal housing also accepts reflectors for PAR lamps, open wall wash and lens applications.

SPECIFICATION FEATURES

Plaster Frame / Collar

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Socket Cap

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Conduit Fittings

Die cast aluminum conduit fittings secure flex to socket housing and junction box.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 5" vertically from above the ceiling.

Junction Box

(6) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring.

Reflector

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distribution with 55° lamp and lamp image cutoff. Self flanged standard with optional white painted flange. Also available with polymer trim ring. Trim ring may be interchanged with metal trim ring available in various finishes or removed for rimless installation, see accessories. Available in all Portfolio Alzak® finishes.

Trim Retention

Keyholes align reflector to preinstalled machine screws that pull flange tight to the finished ceiling surface.

Socket

Pulse rated E26 medium base protected socket prevents use with lamps not suitable for open fixture use.

Insulation Detector

Self resetting detector opens circuit if insulation is improperly installed.

Ballast

Universal input (except 150 watt) 120/277V electronic ballast provides noise free operation, improved efficiency and increased lamp life as compared with magnetic ballast. Regulated output

power over a wide range of ANSI lamp voltages results in excellent color stability over time. End of lamp life shutdown – reset power to restore output.

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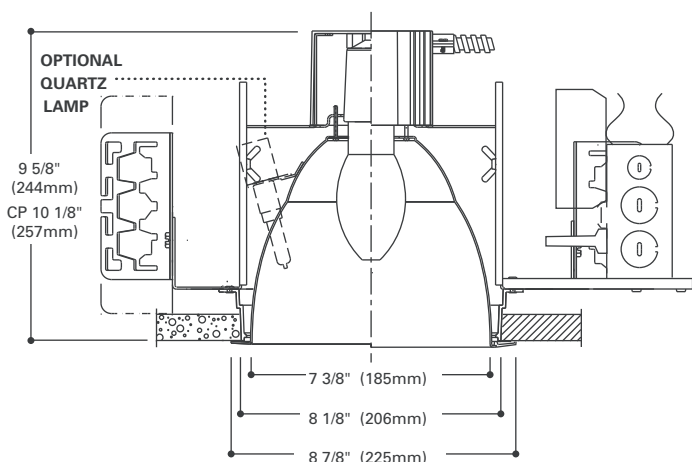


**MD750
MD770
MD7100
MD7150**

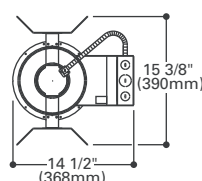
7750/7751

**Metal Halide
ED17P**

**7 Inch
Wide Beam Open Downlight**



TOP VIEW



Energy Data

50W

120V Input Power: 60W	277V Input Power: 60W
120V Input Current: 0.51A	277V Input Current: 0.22A
Minimum Starting Temp: -15°C, +5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

70W

120V Input Power: 86W	277V Input Power: 84W
120V Input Current: 0.72A	277V Input Current: 0.81A
Minimum Starting Temp: -20°C, -5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

100W

120V Input Power: 115W	277V Input Power: 113W
120V Input Current: 0.96A	277V Input Current: 0.42A
Minimum Starting Temp: -20°C, -5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

150W

120V Input Power: 165W	277V Input Power: 161W
120V Input Current: 1.38A	277V Input Current: 0.59A
Minimum Starting Temp: -30°C, -20°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

ORDERING INFORMATION

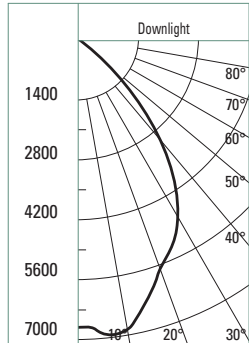
SAMPLE NUMBER: MD770E= 7" universal housing with UNV 120/277V electronic ballast for a 70W ED17P MH lamp
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MD7 = 7" universal MH housing MD7CP = 7" universal MH housing, CCEA listed for City of Chicago plenum requirements 50 = 50W MH lamp 70 = 70W MH lamp 100 = 100W MH lamp 150 = 150W MH lamp		E = Electronic, UNV 120/277V 50/60Hz ¹ 1E = Electronic, 120V 50/60Hz ² 2E = Electronic, 277V 50/60Hz ² 7750 = 7" wide beam reflector with white polymer trim ring 7750X = 7" wide beam reflector with white polymer trim ring, standby lamp 7751 = 7" wide beam reflector, self flanged 7751X = 7" wide beam reflector, self flanged, standby lamp	Q = Quartz Restrike System ³		Alzak® Finishes LI = Specular clear, low iridescent H = Semi specular clear WMH = Warm haze G = Gold WH = Wheat GP = Graphite GPH = Graphite haze K = Cognac KH = Cognac Haze B = Black (Omit finish code with baffle option.)	WF = White painted flange (self flanged only) BB = Black baffle (polymer trim ring only) WB = White baffle (polymer trim ring only) HB26 = Bar hanger, 26" long, pair HB50 = Bar hanger, 50" long, pair RMB22 = Bar hanger for wooden joists, 22" long, pair HSA7* = Slope adapter for 7" aperture, specify slope TRM7* = Metal trim ring, specify finish TRR7 = Rimless trim ring ECL = Emergency circuit lamp H347 = 347V stepdown transformer, 75VA H347200 = 347V stepdown transformer, 200VA	

- 1 Not available with 150 watt.
 2 Available with 50 and 150 watt only.
 3 Must use 1E or 2E fixed input ballast option with 50W.

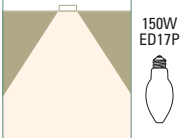
PHOTOMETRICS

Candlepower Distribution Curve



Spacing Criteria = 1.1
 Efficiency = 72.1%

Test No. H38037
 MD71001E 7750LI
 Lamp = 150W ED17P



Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'6"	218	6'0"
6'6"	156	7'0"
8'0"	103	8'6"
10'0"	66	10'0"
12'0"	46	12'6"
14'0"	34	15'6"

Coefficients of Utilization

Ceiling Wall % RCR	80%				70%				50%	
	70	50	30	10	50	30	10		50	10
Zonal cavity method -- floor reflectance = 20%										
0	86	86	86	86	84	84	84		80	80
1	82	80	78	77	78	77	75		75	73
2	78	75	72	70	73	71	69		71	67
3	74	70	66	63	69	66	63		67	62
4	70	65	61	58	64	61	58		63	57
5	67	61	57	54	60	56	53		59	53
6	63	57	52	49	56	52	49		55	49
7	60	53	48	45	52	48	45		51	45
8	56	49	45	41	49	44	41		48	41
9	53	45	41	38	45	41	38		44	38
10	50	42	38	35	42	38	35		41	35

DESCRIPTION

Recessed open downlight with 7 inch aperture for vertical ED17P protected medium base metal halide lamp. Universal input electronic ballast features end of life shutdown. Fixture is suitable for commercial construction. Insulation must be kept 3" from top and sides of housing. Wide beam distribution with 55° cutoff and low aperture brightness. Universal housing also accepts reflectors for PAR lamps, open wall wash and lens applications.

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Die cast aluminum socket cap reduces lamp base temperatures for longer life.

Conduit Fittings

Die cast aluminum conduit fittings secure flex to socket housing and junction box.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 5" vertically from above the ceiling.

Junction Box

(6) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring.

Reflector

Spun 0.050" thick aluminum reflector provides wide beam

distribution with 55° lamp and lamp image cutoff. Self flanged standard with optional white painted flange. Also available with polymer trim ring. Trim ring may be interchanged with metal trim ring available in various finishes or removed for rimless installation, see accessories. Available in all Portfolio Alzak® finishes.

Trim Retention

Keyholes align reflector to preinstalled machine screws that pull flange tight to the finished ceiling surface.

Socket

Pulse rated E26 medium base protected socket prevents use with lamps not suitable for open fixture use.

Insulation Detector

Self resetting detector opens circuit if insulation is improperly installed.

Ballast

Universal input (except 150 watt) 120/277V electronic ballast provides noise free operation, improved efficiency and increased lamp life as compared with magnetic ballast. Regulated output

power over a wide range of ANSI lamp voltages results in excellent color stability over time. End of lamp life shutdown – reset power to restore output.

Quartz Lamp Re-strike Time Delay System (Q Option)

Internal auxiliary 100W DC bayonet base T4 quartz lamp (included) provides low level illumination in the event of a momentary power interruption.

Emergency Circuit Lamp (ECL Accessory)

Emergency circuit lamp module for 100W DC bayonet base T4 quartz lamp (included) by emergency circuit. Field installed.

Code Compliance

Thermally protected and cULus damp location listed. Optional City of Chicago environmental air (CCEA) marking for plenum applications. EMI/RFI emissions per FCC 47CFR Part 18 non consumer limits.

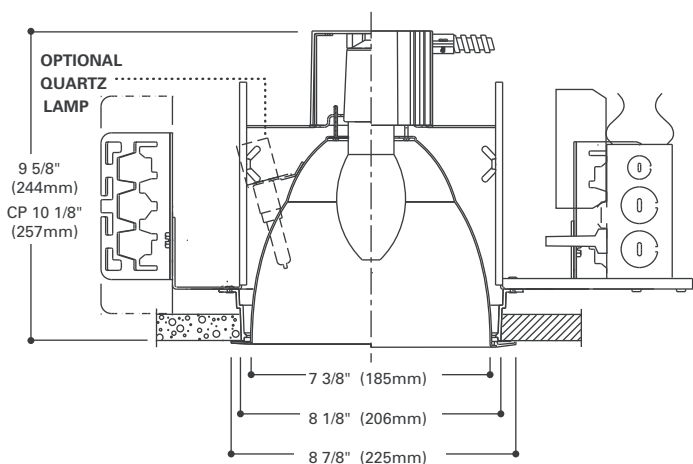


**MD750
MD770
MD7100
MD7150**

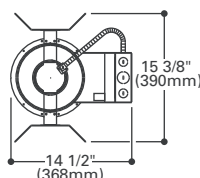
7750/7751

**Metal Halide
ED17P**

**7 Inch
Wide Beam Open Downlight**



TOP VIEW



Energy Data

50W

120V Input Power: 60W	277V Input Power: 60W
120V Input Current: 0.51A	277V Input Current: 0.22A
Minimum Starting Temp: -15°C, +5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

70W

120V Input Power: 86W	277V Input Power: 84W
120V Input Current: 0.72A	277V Input Current: 0.81A
Minimum Starting Temp: -20°C, -5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

100W

120V Input Power: 115W	277V Input Power: 113W
120V Input Current: 0.96A	277V Input Current: 0.42A
Minimum Starting Temp: -20°C, -5°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

150W

120V Input Power: 165W	277V Input Power: 161W
120V Input Current: 1.38A	277V Input Current: 0.59A
Minimum Starting Temp: -30°C, -20°F	
THD: <20%	Power Factor: >0.90
Sound Rating: A	

ORDERING INFORMATION

SAMPLE NUMBER: MD770E= 7" universal housing with UNV 120/277V electronic ballast for a 70W ED17P MH lamp
 7751LI= 7" wide beam reflector, self flanged, specular clear low iridescent
 (Order universal housing and trim separately)

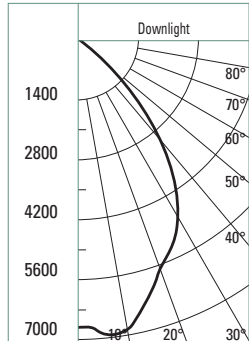
Housing	Wattage	Ballast	Options	Trim	Finish	Options	Accessories
MD7 = 7" universal MH housing MD7CP = 7" universal MH housing, CCEA listed for City of Chicago plenum requirements 50 = 50W MH lamp 70 = 70W MH lamp 100 = 100W MH lamp 150 = 150W MH lamp		E = Electronic, UNV 120/277V 50/60Hz ¹ 1E = Electronic, 120V 50/60Hz ² 2E = Electronic, 277V 50/60Hz ²	Q = Quartz Restrike System ³		Alzak® Finishes LI = Specular clear, low iridescent H = Semi specular clear WMH = Warm haze G = Gold WH = Wheat GP = Graphite GPH = Graphite haze K = Cognac KH = Cognac Haze B = Black (Omit finish code with baffle option.)	WF = White painted flange (self flanged only) BB = Black baffle (polymer trim ring only) WB = White baffle (polymer trim ring only) HB26 = Bar hanger, 26" long, pair HB50 = Bar hanger, 50" long, pair RMB22 = Bar hanger for wooden joists, 22" long, pair HSA7* = Slope adapter for 7" aperture, specify slope TRM7* = Metal trim ring, specify finish TRR7 = Rimless trim ring ECL = Emergency circuit lamp H347 = 347V stepdown transformer, 75VA H347200 = 347V stepdown transformer, 200VA	

¹ Not available with 150 watt.
² Available with 50 and 150 watt only.
³ Must use 1E or 2E fixed input ballast option with 50W.

7750 = 7" wide beam reflector with white polymer trim ring
7750X = 7" wide beam reflector with white polymer trim ring, standby lamp
7751 = 7" wide beam reflector, self flanged
7751X = 7" wide beam reflector, self flanged, standby lamp

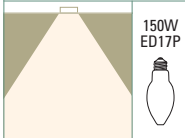
PHOTOMETRICS

Candlepower Distribution Curve



Spacing Criteria = 1.1
 Efficiency = 72.1%

Test No. H38037
 MD71001E 7750LI
 Lamp = 150W ED17P



Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
5'6"	218	6'0"
6'6"	156	7'0"
8'0"	103	8'6"
10'0"	66	10'0"
12'0"	46	12'6"
14'0"	34	15'6"

Coefficients of Utilization

Ceiling Wall % RCR	80%				70%				50%	
	70	50	30	10	50	30	10		50	10
Zonal cavity method -- floor reflectance = 20%										
0	86	86	86	86	84	84	84		80	80
1	82	80	78	77	78	77	75		75	73
2	78	75	72	70	73	71	69		71	67
3	74	70	66	63	69	66	63		67	62
4	70	65	61	58	64	61	58		63	57
5	67	61	57	54	60	56	53		59	53
6	63	57	52	49	56	52	49		55	49
7	60	53	48	45	52	48	45		51	45
8	56	49	45	41	49	44	41		48	41
9	53	45	41	38	45	41	38		44	38
10	50	42	38	35	42	38	35		41	35

DESCRIPTION

The Fail-Safe CFR is designed for use in horizontal or non-laminar air flow clean rooms. The enclosed and gasketed housing and one-piece, outside flanged door protect against infiltration of airborne bacteria. The extruded aluminum inset door and the hole-free design of the housing prevent air exchange between the fixture and plenum, allowing relamping without contamination of the clean areas. UL/cUL listed for wet locations, and manufactured in accordance with U.S.D.A., F.D.A., N.S.F and Federal Standard 209E. 200 PSI Hose Down Rating standard.

Catalog #	CFR-24-332-UNV-IK12-ER81-F	Type	R
Project	SUMMA ER GREEN EMERGENCY DEPT	Date	
Comments			
Prepared by			

SPECIFICATION FEATURES

Application

The CFR is suitable for use in I.E.S. Class 100, 1,000, 10,000 and 100,000 clean room environments. Applications include clean rooms, technical and biomedical labs, food processing/testing centers and pharmaceutical labs.

Fasteners

Machine screws secure through captive cagenuts in housing and are spaced to compress gasketing on all sides.

Housing

Die-formed, 20 ga. CRS with tightly butted and spot welded, sealed end caps. Contains no holes that would allow air passage. Standard white high reflectance polyester powder coat finish. Gloss: 85%; Reflectance: 93%; Hardness: 2H; Salt Spray: 500 Hours.

Hinge

Two braided, stainless steel cables on one side of door provide hinging.

Door

Fully gasketed, rigid extruded aluminum, inset door with baked white polyester powder coat and mitered corners withstands stringent cleaning and "wet location" conditions.

Gasket

White, closed cell, Flexiseal(TM) gasketing surrounds perimeter of lens to seal lens to door frame and around perimeter of door to seal door to housing.

Access

A gasketed access plate on top of the housing with two flattened, 7/8" diameter knockouts allows connection of vapor tight conduit fitting. Optional, above ceiling, top access door for luminaire

maintenance is available and ideal for food processing and cleanroom applications.

Lens

Lens is clear Pattern 12 acrylic with prisms positioned inside fixture and smooth surface on the outside for easy cleaning.

Lamps

(By Others)

Lens Retention

Unique, Particlock(TM) lens retention system utilizes continuous, 18 ga. media clampdowns to sandwich gasketing and integrate lens and door frame for even environmental seal.

Ballast

Standard Class P, CBM/ETL ballast.

Labels

UL/cUL listed, standard wet label.



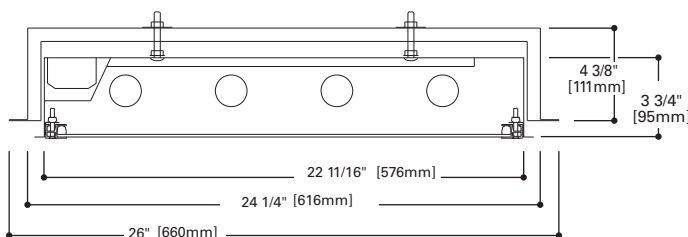
CFR24

2x2

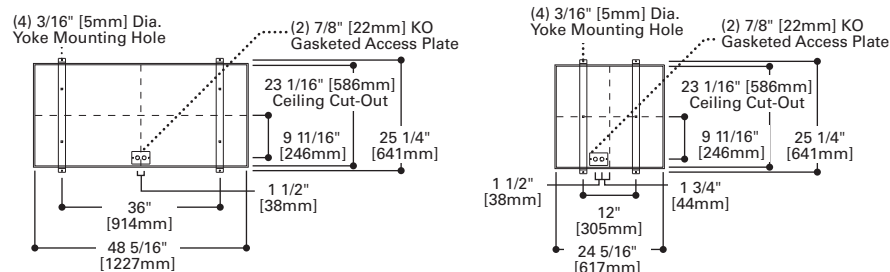
2x4

Cleanroom

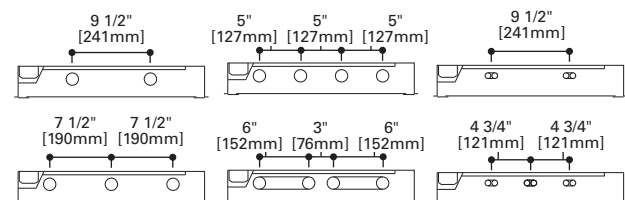
RECESSED FLANGE
Inset Flat Door



MOUNTING DIMENSIONS

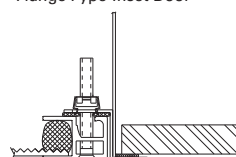


LAMP CONFIGURATIONS



DOOR FRAME

Flange Type-Inset Door



ORDERING INFORMATION

SAMPLE NUMBER: CFR-24-332-277-IK12-EB81-GLR

Product Family	Grid Size	Lamp Type	Voltage	Shielding	Ballast	Door/Finish Options	Options
CFR	24						
<p>CFR=Fluorescent Flange Recessed</p> <p>24= 24"</p> <p>2' Fixture Length</p> <p>T5 Fluorescent</p> <p>214=(2) 14W Lamps</p> <p>314=(3) 14W Lamps</p> <p>414=(4) 14W Lamps</p> <p>224=(2) 24W Lamps</p> <p>324=(3) 24W Lamps</p> <p>424=(4) 24W Lamps</p> <p>T8 Fluorescent</p> <p>217=(2) 17W Lamps</p> <p>317=(3) 17W Lamps</p> <p>417=(4) 17W Lamps</p> <p>617=(6) 17W Lamps</p> <p>Biaxial Fluorescent</p> <p>240BX=(2) 40W Lamps</p> <p>340BX=(3) 40W Lamps</p> <p>440BX=(4) 40W Lamps</p>	<p>4' Fixture Length</p> <p>T5 Fluorescent</p> <p>228=(2) 28W Lamps</p> <p>328=(3) 28W Lamps</p> <p>428=(4) 28W Lamps</p> <p>254=(2) 54W Lamps</p> <p>354=(3) 54W Lamps</p> <p>454=(4) 54W Lamps</p> <p>T8 Fluorescent</p> <p>232=(2) 32W Lamps</p> <p>332=(3) 32W Lamps</p> <p>432=(4) 32W Lamps</p> <p>632=(6) 32W Lamps</p>	<p>120=120V</p> <p>277=277V</p> <p>347=347V</p> <p>UNV=120V-277V</p> <p>IK12= K-12 Prismatic</p> <p>IP12=K-12 Prismatic Polycarbonate</p> <p>KSH25= Bat Wing Distribution ¹</p> <p>93= Prismatic Tempered Glass</p>	<p>Electronic Ballasts ²</p> <p>EB51= (1) Ballast for use with T5 Lamp</p> <p>EB52=(2) Ballasts for use with T5 Lamp</p> <p>EB81= (1) Ballast for use with T8 Lamp</p> <p>EB82= (2) Ballasts for use with T8 Lamp</p> <p>EBX1= (1) Ballast for use with Biaxial Lamp</p> <p>EBX2= (2) Ballasts for use with Biaxial Lamp</p>	<p>Blank=Standard, extruded aluminum, baked white finish</p> <p>ALX=Extruded Aluminum Door/ Clear Anodized Finish</p> <p>SSN= Stainless Steel Door/ Brushed Finish</p> <p>SSP= Stainless Steel Door/ Polyester Powder Finish</p>	<p>EBP=Emergency Battery Pack</p> <p>GLR=Fuse and Holder</p> <p>RIF=Radio Frequency Interference Filter</p> <p>TAD=Top Access Door ³</p> <p>GSK=Gasketing applied to housing flange to seal against ceiling</p> <p>Housing Options</p> <p>ALH=Aluminum Polyester Powder Finish</p> <p>SHN=Stainless Steel, Brushed Finish</p> <p>SHP=Stainless Steel, Polyester Powder Finish</p>		

NOTES:

Electronic ballast may cause interference with other electronic devices. If interference occurs, move the device away from the product or plug/connect into a different circuit/outlet.

¹ The KSH25 provides improved visual performance and wide angle distribution. This lens has an integral prism pattern designed so that prisms face the lamp cavity and still supply superior photometrics. Highly recommended for all high-tech manufacturing environments.

² For specific electronic ballast, specify brand and catalog number.

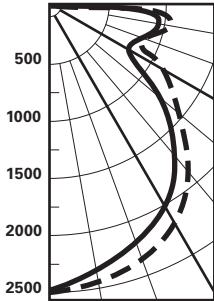
³ Contact your Cooper Lighting Representative for dimensional details.

ER81 = ELECTRONIC RAPID START BALLAST

PAF = PAINTED AFTER FABRICATION

PHOTOMETRICS

Candlepower Distribution



Test No. ITL36036

CFR-24-440-IK12

Lamp=(4) 40WT12

Lumens=8526

Spacing Criteria

┐=1.4 ┐=1.2

Efficiency=67.7%

Average Luminance

Deg.	┐	┐
45	1595	1323
55	1154	980
65	822	779
75	871	857
85	1018	933

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	2728	21.7	32.0
0-40	4499	35.7	52.8
0-60	7316	58.1	85.8
0-90	8526	67.7	100.0
90-180	0	0.0	0.0
0-180	8526	67.7	100.0

Coefficient of Utilization

rc	80%				70%			50%		30%		10%		0%
rw	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR														
0	81	81	81	81	79	79	79	75	75	72	72	69	69	68
1	75	72	69	67	70	68	66	67	64	65	62	62	60	59
2	69	64	60	57	63	59	56	61	55	58	54	56	52	51
3	64	58	53	49	57	52	48	55	48	53	47	51	46	45
4	59	52	46	42	51	46	42	49	42	48	41	46	40	39
5	54	46	41	37	46	40	36	44	36	43	36	42	35	34
6	50	42	36	32	41	36	32	40	32	39	31	38	31	30
7	46	38	32	28	37	32	28	36	28	35	28	34	28	26
8	43	34	28	25	33	28	24	33	24	32	24	31	24	23
9	39	30	25	21	30	25	21	29	21	29	21	28	21	20
10	37	28	22	19	27	22	19	27	19	26	19	25	19	17

rc=Ceiling reflectance, rw=W all reflectance, RCR=Room cavity ratio

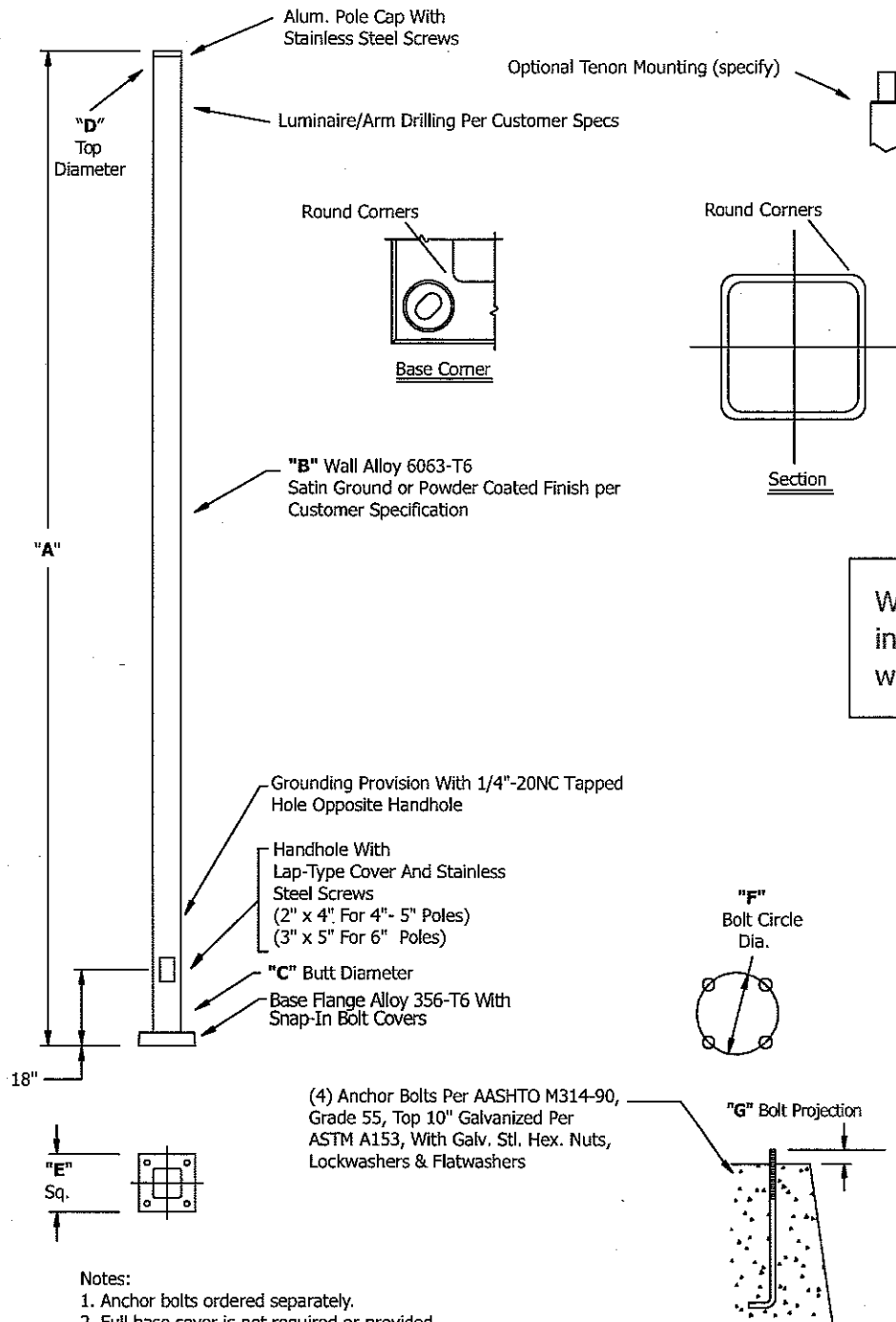
CU Data Based on 20% Effective Floor Cavity Reflectance.



4 Bolt Base

SSA25D5-4-

SUMMA ER GREEN EMERGENCY
DEPT
TYPE SA
SSA24D5-4-GY



WARNING: Do not install light pole without luminaire.

Mounting Height: 25 ft
Wall Thickness: .188 in
Butt Diameter: 5 in
Top Diameter: 5 in
Base Diameter: 11.25 in
Bolt Circle: 10.5-11. in
Bolt Projection: 2 in
Bolt Size: .75 x 30 x 3
Net Weight: 121
Luminary Weight: 100
Arm Length:
Quantity:

Maximum EPA

70:	8.6
80:	4.9
90:	2.6
100:	0.9
110:	

Accessories

Your Name:
Representative Name:
Architect Name:
Project Name:
Customer P.O. #:

Finish: -
Date: 05/18/2010
Notes:

CUT TO 24'
GY = GRAY PAINTED FINISH

MARYELLEN

DESCRIPTION

The Talon is the most versatile, functionally designed, universally adaptable outdoor luminaire available. Incorporating modular LED LightBAR™ technology, Talon brings outstanding uniformity and energy-conscious illumination to walkways, parking lots, roadways, building areas, and any security lighting application. UL/ cUL listed for wet locations.

SPECIFICATION FEATURES

Construction

One-piece heavy-wall, die-cast aluminum construction with integral reveal channels along top surface of housing. Optimized for reliable operation from 40°C down to -30°C, internal cast-in wall separates optical and electrical chambers allowing components to operate cooler. Stainless steel latches and hinges allow for tool-less opening and removal of door frame.

Optics

Choice of thirteen (13) patented, high-efficiency AccuLED Optics™ manufactured from injection-molded acrylic. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED optics create consistent distributions with the scalability to meet customized application requirements. Talon optics feature quick disconnect wiring plugs and are field-rotatable in 90° increments allowing manipulation of distribution independent of fixture position. Offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

Electrical

Offered standard with LED drivers and related electrical componentry hard mounted to die-cast housing details for optimal heat transfer and operating efficiency. Talon operates from 120-277V 50/60Hz, 347V 60Hz, 480V 60Hz. Optional galvanized steel swing-down power tray with integral handle allow tray to be removed from housing providing ample hand and tool room for attachment of fixture during installation. Offered standard with the Cooper Lighting proprietary circuit module designed to withstand 10kV transient line surge. 50,000+ hour life with >70% lumen maintenance. LightBARs™ feature an IP66 enclosure rating.

Mounting

Extruded 8" aluminum arm includes internal bolt guides allowing for easy positioning of fixture during installation to pole or wall surface. Standard single carton packaging of housing, square pole arm and round pole adapter for contractor-friendly arrival of product on site. Optional mounting methods include a wall

mount plate, an external mast arm that accepts 2-3/8" O.D. horizontal tenons and direct mounting to pole or wall surfaces. Tenon adapters available to slipfit over poles equipped with 2-3/8" or 3-1/2" O.D. tenon. 3G vibration rated.

Finish

Housing and arm finished in a 5-stage Super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty

Talon LED features a five-year limited warranty.



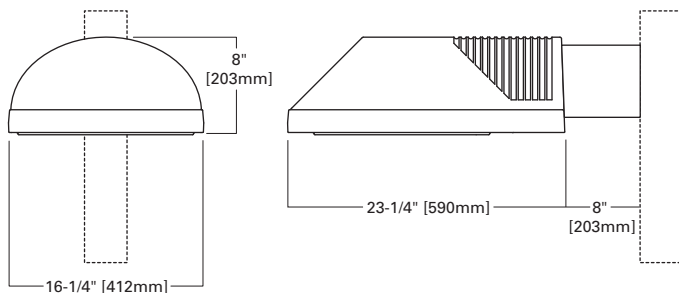
TLM TALON MEDIUM LED

2 - 6 LightBARs
Solid State LED

ARCHITECTURAL AREA
LUMINAIRE

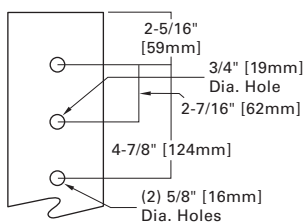
SustainableLEDesign™

DIMENSIONS

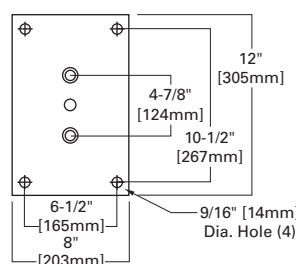


ARM DRILLING

TYPE "M"



WALL MOUNT



CERTIFICATION DATA

UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightBARs
3G Vibration Rated
ARRA Compliant
ISO 9001

ENERGY DATA

Electronic LED Driver

>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60hz, 347V/60hz,
480V/60hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating

EPA

Effective Projected Area: (Sq. Ft.)
Luminaire w/o Arm: 0.79
8" Arm: 0.43

SHIPPING DATA

Approximate Net Weight:
42 lbs. (25.91 kgs.)



POWER AND LUMENS BY BAR COUNT

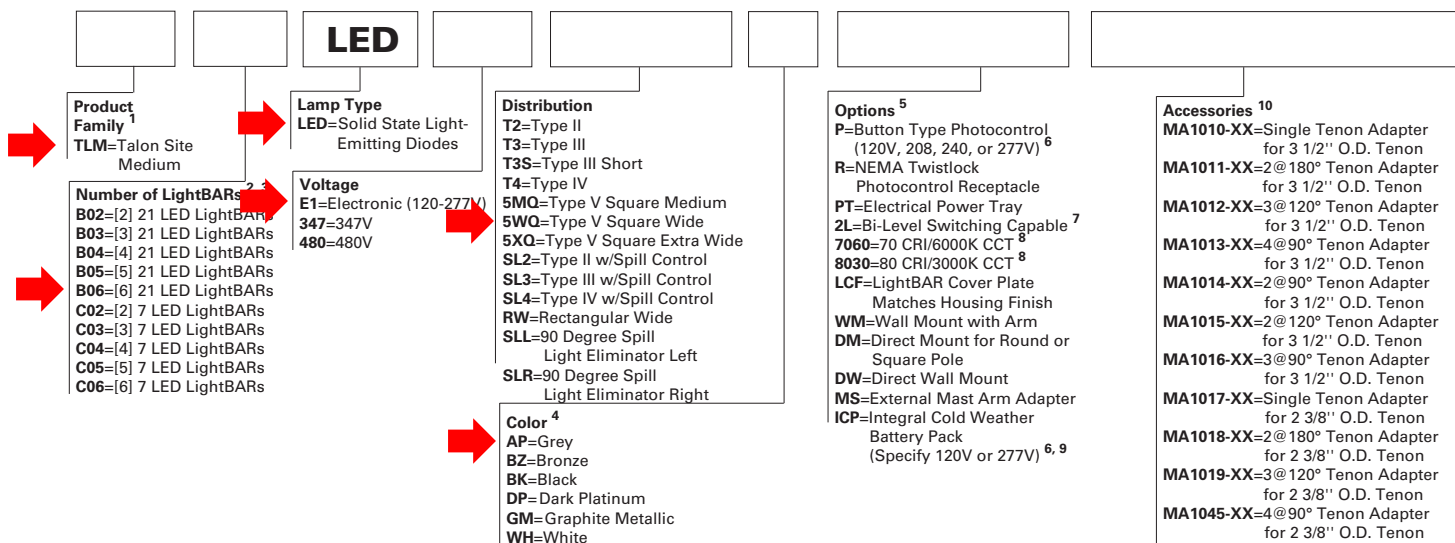
Number of LightBARs	DISTRIBUTION														
	Power [Watts]	Current @ 120V [A]	Current @ 277V [A]	T2	T3	T3S	T4	SL2	SL3	SL4	5MQ	5WQ	5XQ	RW	SLR/SL
7 LED LIGHTBAR															
C02	54	0.46	0.21	3,509	3,469	3,391	3,495	3,484	3,368	3,347	3,711	3,724	3,605	3,540	3,203
C03	77	0.65	0.29	5,291	5,230	5,112	5,269	5,252	5,078	5,046	5,594	5,614	5,436	5,337	4,829
C04	101	0.86	0.37	6,983	6,902	6,747	6,954	6,932	6,703	6,660	7,383	7,410	7,174	7,043	6,373
C05	131	1.11	0.50	8,362	8,265	8,079	8,327	8,300	8,026	7,975	8,841	8,872	8,590	8,434	7,631
C06	154	1.30	0.58	10,119	10,002	9,777	10,077	10,045	9,712	9,651	10,699	10,737	10,396	10,206	9,235
21 LED LIGHTBAR															
B02	51	0.43	0.20	4,317	4,267	4,171	4,299	4,285	4,143	4,117	4,564	4,580	4,435	4,354	3,940
B03	73	0.62	0.28	6,508	6,433	6,288	6,481	6,460	6,246	6,207	6,881	6,906	6,686	6,564	5,939
B04	95	0.81	0.35	8,589	8,490	8,299	8,554	8,526	8,244	8,192	9,081	9,114	8,824	8,663	7,839
B05	124	1.05	0.48	10,285	10,166	9,938	10,242	10,209	9,871	9,809	10,874	10,913	10,566	10,373	9,386
B06	146	1.24	0.56	12,446	12,302	12,026	12,395	12,355	11,946	11,871	13,159	13,207	12,786	12,554	11,359

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96

ORDERING INFORMATION

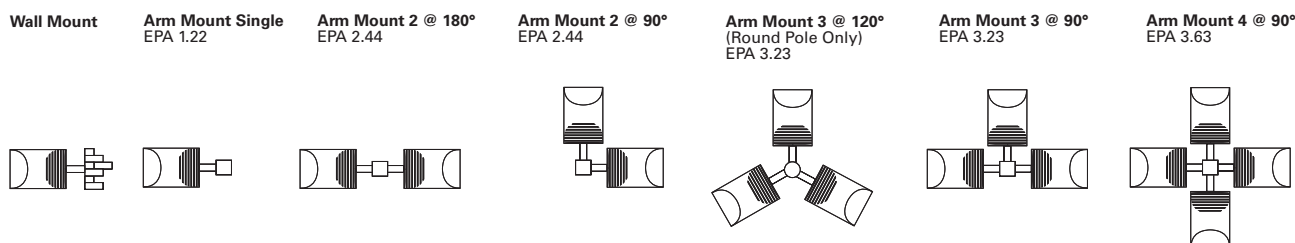
SAMPLE NUMBER: TLM-B03-LED-E1-T3-BK



NOTES:

- 8" arm and round pole adapter included with fixture.
- 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
- Standard 4000K CCT and nominal 70CRI.
- Custom and RAL color matching available upon request. Consult Cooper Lighting Representative for further information.
- Add as suffix.
- Must specify voltage.
- Low-Level output varies by bar count specified. Consult Factory.
- Consult Factory for lead times and lumen multiplier.
- Available with B02 or C02, B03 or C03, and B04 or C04 configurations only. Rated for 25 Degrees C ambient.
- Order separately, replace XX with color suffix.

MOUNTING CONFIGURATIONS

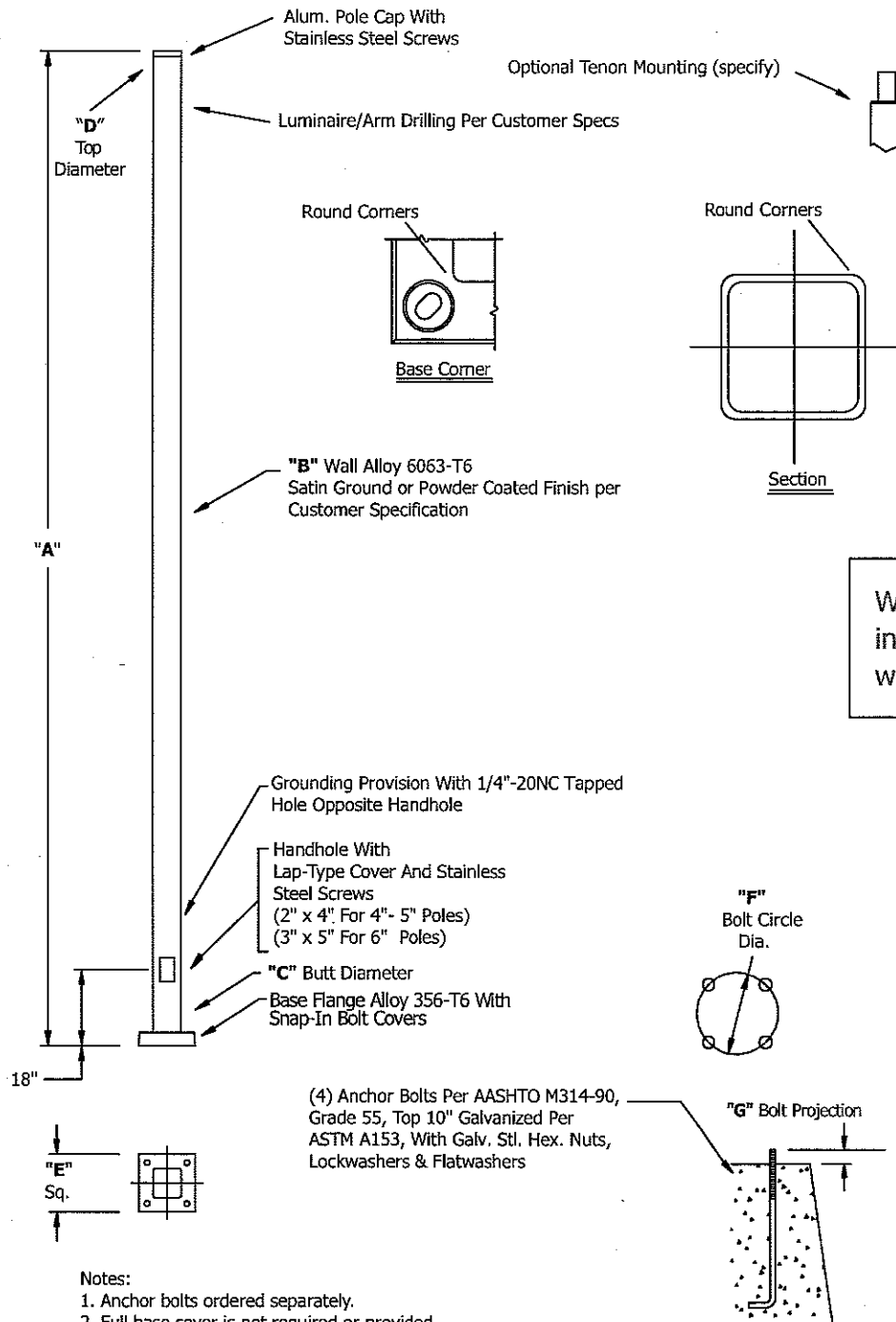




4 Bolt Base

SSA25D5-4-

SUMMA ER GREEN EMERGENCY
DEPT
TYPE SB
SSA22.5D5-4-GY



WARNING: Do not install light pole without luminaire.

- Notes:
1. Anchor bolts ordered separately.
 2. Full base cover is not required or provided.

Mounting Height: 25 ft
Wall Thickness: .188 in
Butt Diameter: 5 in
Top Diameter: 5 in
Base Diameter: 11.25 in
Bolt Circle: 10.5-11. in
Bolt Projection: 2 in
Bolt Size: .75 x 30 x 2
Net Weight: 121
Luminary Weight: 100
Arm Length:
Quantity:

Maximum EPA

70: 8.6
80: 4.9
90: 2.6
100: 0.9
110:

Accessories

Your Name:
Representative Name:
Architect Name:
Project Name:
Customer P.O. #:

Finish: -
Date: 05/18/2010
Notes:

CUT TO 22.5'
GY = GRAY PAINTED FINISH

MARYELLEN

DESCRIPTION

The Talon is the most versatile, functionally designed, universally adaptable outdoor luminaire available. Incorporating modular LED LightBAR™ technology, Talon brings outstanding uniformity and energy-conscious illumination to walkways, parking lots, roadways, building areas, and any security lighting application. UL/ cUL listed for wet locations.

SPECIFICATION FEATURES

Construction

One-piece heavy-wall, die-cast aluminum construction with integral reveal channels along top surface of housing. Optimized for reliable operation from 40°C down to -30°C, internal cast-in wall separates optical and electrical chambers allowing components to operate cooler. Stainless steel latches and hinges allow for tool-less opening and removal of door frame.

Optics

Choice of thirteen (13) patented, high-efficiency AccuLED Optics™ manufactured from injection-molded acrylic. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED optics create consistent distributions with the scalability to meet customized application requirements. Talon optics feature quick disconnect wiring plugs and are field-rotatable in 90° increments allowing manipulation of distribution independent of fixture position. Offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

Electrical

Offered standard with LED drivers and related electrical componentry hard mounted to die-cast housing details for optimal heat transfer and operating efficiency. Talon operates from 120-277V 50/60Hz, 347V 60Hz, 480V 60Hz. Optional galvanized steel swing-down power tray with integral handle allow tray to be removed from housing providing ample hand and tool room for attachment of fixture during installation. Offered standard with the Cooper Lighting proprietary circuit module designed to withstand 10kV transient line surge. 50,000+ hour life with >70% lumen maintenance. LightBARs™ feature an IP66 enclosure rating.

Mounting

Extruded 8" aluminum arm includes internal bolt guides allowing for easy positioning of fixture during installation to pole or wall surface. Standard single carton packaging of housing, square pole arm and round pole adapter for contractor-friendly arrival of product on site. Optional mounting methods include a wall

mount plate, an external mast arm that accepts 2-3/8" O.D. horizontal tenons and direct mounting to pole or wall surfaces. Tenon adapters available to slipfit over poles equipped with 2-3/8" or 3-1/2" O.D. tenon. 3G vibration rated.

Finish

Housing and arm finished in a 5-stage Super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty

Talon LED features a five-year limited warranty.



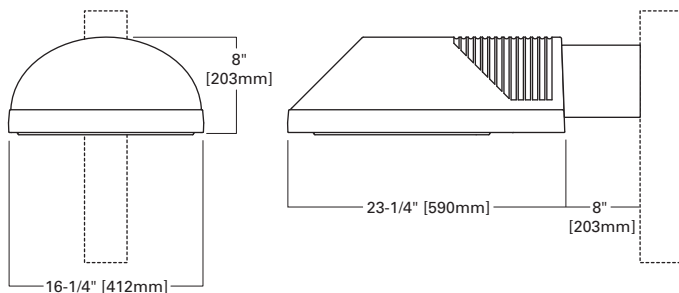
TLM TALON MEDIUM LED

2 - 6 LightBARs
Solid State LED

ARCHITECTURAL AREA
LUMINAIRE

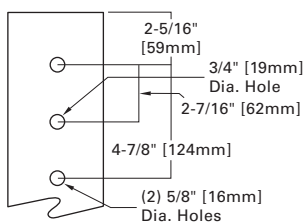
SustainableLEDesign™

DIMENSIONS

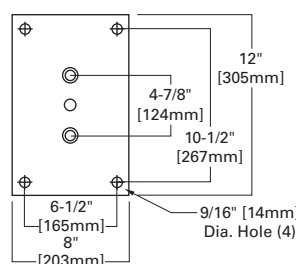


ARM DRILLING

TYPE "M"



WALL MOUNT



CERTIFICATION DATA

UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightBARs
3G Vibration Rated
ARRA Compliant
ISO 9001

ENERGY DATA

Electronic LED Driver

>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60hz, 347V/60hz,
480V/60hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating

EPA

Effective Projected Area: (Sq. Ft.)
Luminaire w/o Arm: 0.79
8" Arm: 0.43

SHIPPING DATA

Approximate Net Weight:
42 lbs. (25.91 kgs.)



POWER AND LUMENS BY BAR COUNT

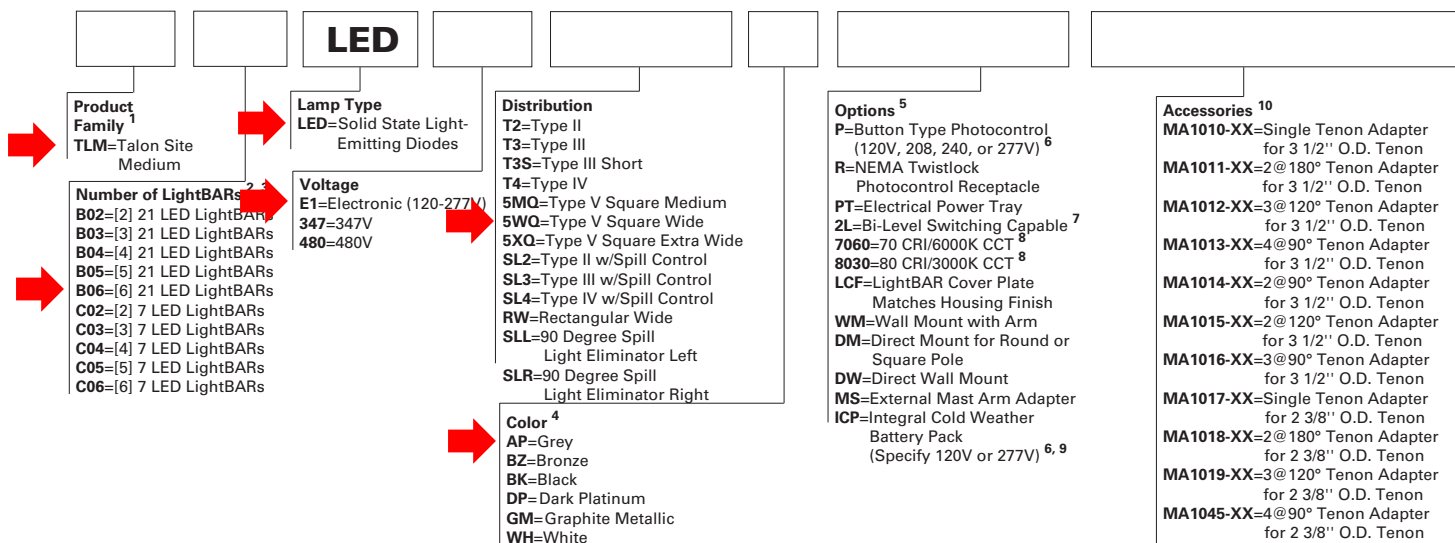
Number of LightBARs	DISTRIBUTION														
	Power [Watts]	Current @ 120V [A]	Current @ 277V [A]	T2	T3	T3S	T4	SL2	SL3	SL4	5MQ	5WQ	5XQ	RW	SLR/SL
7 LED LIGHTBAR															
C02	54	0.46	0.21	3,509	3,469	3,391	3,495	3,484	3,368	3,347	3,711	3,724	3,605	3,540	3,203
C03	77	0.65	0.29	5,291	5,230	5,112	5,269	5,252	5,078	5,046	5,594	5,614	5,436	5,337	4,829
C04	101	0.86	0.37	6,983	6,902	6,747	6,954	6,932	6,703	6,660	7,383	7,410	7,174	7,043	6,373
C05	131	1.11	0.50	8,362	8,265	8,079	8,327	8,300	8,026	7,975	8,841	8,872	8,590	8,434	7,631
C06	154	1.30	0.58	10,119	10,002	9,777	10,077	10,045	9,712	9,651	10,699	10,737	10,396	10,206	9,235
21 LED LIGHTBAR															
B02	51	0.43	0.20	4,317	4,267	4,171	4,299	4,285	4,143	4,117	4,564	4,580	4,435	4,354	3,940
B03	73	0.62	0.28	6,508	6,433	6,288	6,481	6,460	6,246	6,207	6,881	6,906	6,686	6,564	5,939
B04	95	0.81	0.35	8,589	8,490	8,299	8,554	8,526	8,244	8,192	9,081	9,114	8,824	8,663	7,839
B05	124	1.05	0.48	10,285	10,166	9,938	10,242	10,209	9,871	9,809	10,874	10,913	10,566	10,373	9,386
B06	146	1.24	0.56	12,446	12,302	12,026	12,395	12,355	11,946	11,871	13,159	13,207	12,786	12,554	11,359

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96

ORDERING INFORMATION

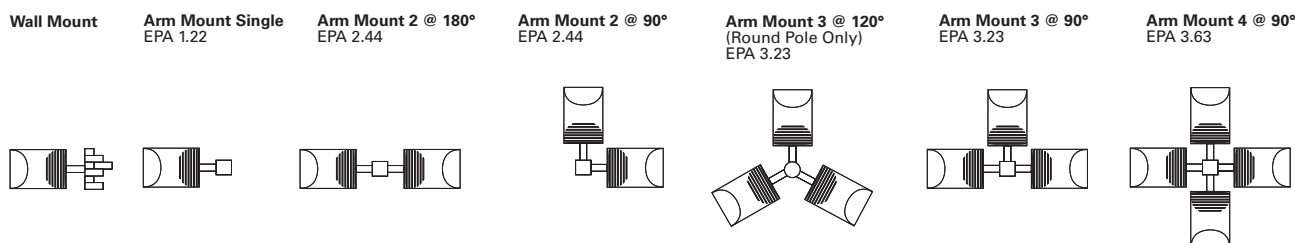
SAMPLE NUMBER: TLM-B03-LED-E1-T3-BK



NOTES:

- 8" arm and round pole adapter included with fixture.
- 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
- Standard 4000K CCT and nominal 70CRI.
- Custom and RAL color matching available upon request. Consult Cooper Lighting Representative for further information.
- Add as suffix.
- Must specify voltage.
- Low-Level output varies by bar count specified. Consult Factory.
- Consult Factory for lead times and lumen multiplier.
- Available with B02 or C02, B03 or C03, and B04 or C04 configurations only. Rated for 25 Degrees C ambient.
- Order separately, replace XX with color suffix.

MOUNTING CONFIGURATIONS

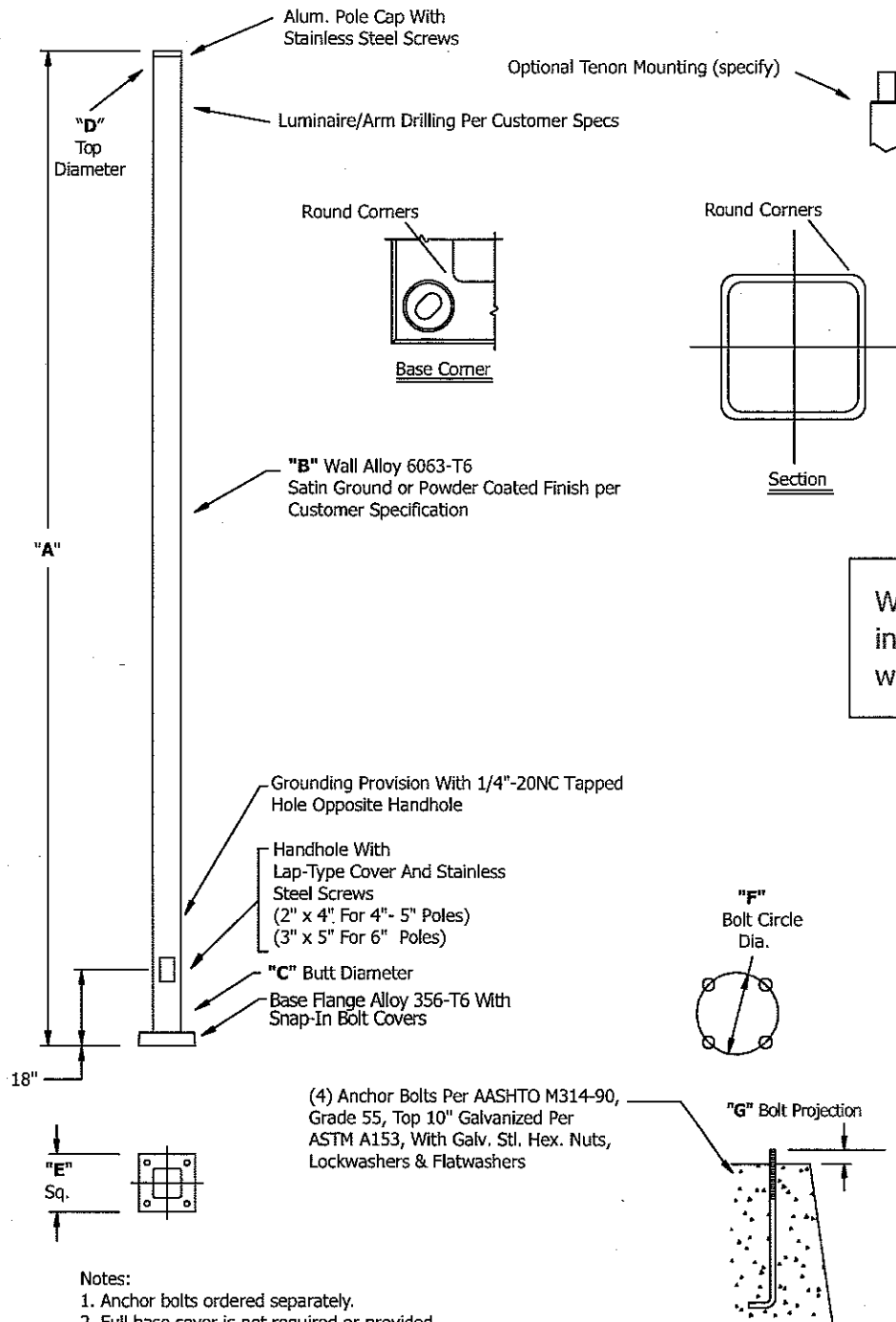




4 Bolt Base

SSA25D5-4-

SUMMA ER GREEN EMERGENCY
DEPT
TYPE SC
SSA24D5-4-GY



WARNING: Do not install light pole without luminaire.

- Notes:
1. Anchor bolts ordered separately.
 2. Full base cover is not required or provided.

Mounting Height: 25 ft
Wall Thickness: .188 in
Butt Diameter: 5 in
Top Diameter: 5 in
Base Diameter: 11.25 in
Bolt Circle: 10.5-11. in
Bolt Projection: 2 in
Bolt Size: .75 x 30 x 3
Net Weight: 121
Luminary Weight: 100
Arm Length:
Quantity:

Maximum EPA

70:	8.6
80:	4.9
90:	2.6
100:	0.9
110:	

Accessories

Your Name:
Representative Name:
Architect Name:
Project Name:
Customer P.O. #:

Finish: -
Date: 05/18/2010
Notes:

CUT TO 24'
GY = GRAY PAINTED FINISH

MARYELLEN

DESCRIPTION

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SPECIFICATION FEATURES

Construction

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Optics

Choice of thirteen (13) patented, high-efficiency AccuLED Optics™ manufactured from injection-molded acrylic. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED optics create consistent distributions with the scalability to meet customized application requirements. Talon optics feature quick disconnect wiring plugs and are field-rotatable in 90° increments allowing manipulation of distribution independent of fixture position. Offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

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Mounting

Extruded 8" aluminum arm includes internal bolt guides allowing for easy positioning of fixture during installation to pole or wall surface. Standard single carton packaging of housing, square pole arm and round pole adapter for contractor-friendly arrival of product on site. Optional mounting methods include a wall

mount plate, an external mast arm that accepts 2-3/8" O.D. horizontal tenons and direct mounting to pole or wall surfaces. Tenon adapters available to slipfit over poles equipped with 2-3/8" or 3-1/2" O.D. tenon. 3G vibration rated.

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Housing and arm finished in a 5-stage Super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty

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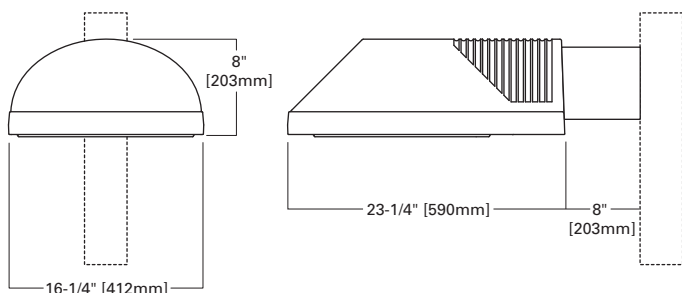
TLM TALON MEDIUM LED

2 - 6 LightBARs
Solid State LED

ARCHITECTURAL AREA
LUMINAIRE

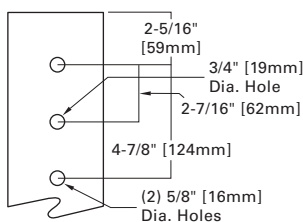
SustainableLEDesign™

DIMENSIONS

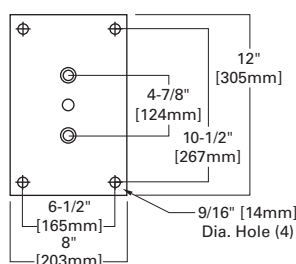


ARM DRILLING

TYPE "M"



WALL MOUNT



CERTIFICATION DATA

UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightBARs
3G Vibration Rated
ARRA Compliant
ISO 9001

ENERGY DATA

Electronic LED Driver

>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60hz, 347V/60hz,
480V/60hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating

EPA

Effective Projected Area: (Sq. Ft.)
Luminaire w/o Arm: 0.79
8" Arm: 0.43

SHIPPING DATA

Approximate Net Weight:
42 lbs. (25.91 kgs.)



POWER AND LUMENS BY BAR COUNT

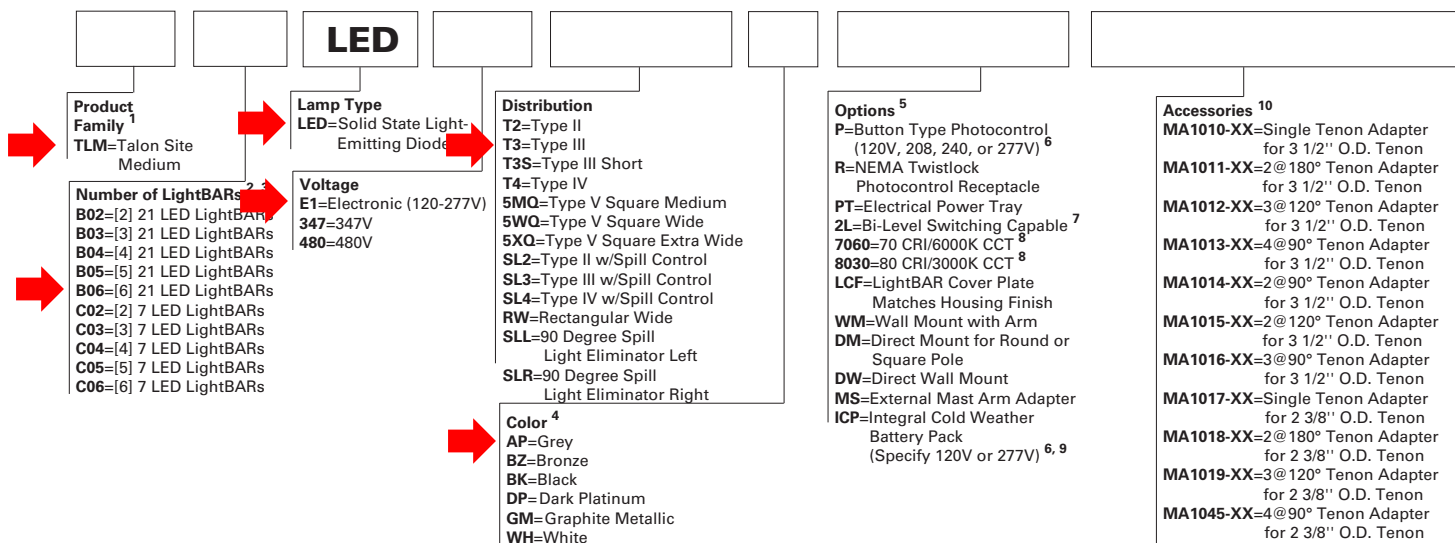
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ORDERING INFORMATION

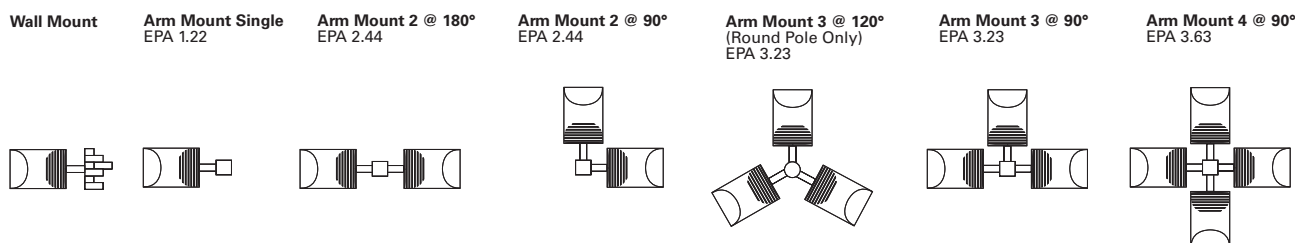
SAMPLE NUMBER: TLM-B03-LED-E1-T3-BK



NOTES:

- 8" arm and round pole adapter included with fixture.
- 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
- Standard 4000K CCT and nominal 70CRI.
- Custom and RAL color matching available upon request. Consult Cooper Lighting Representative for further information.
- Add as suffix.
- Must specify voltage.
- Low-Level output varies by bar count specified. Consult Factory.
- Consult Factory for lead times and lumen multiplier.
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MOUNTING CONFIGURATIONS

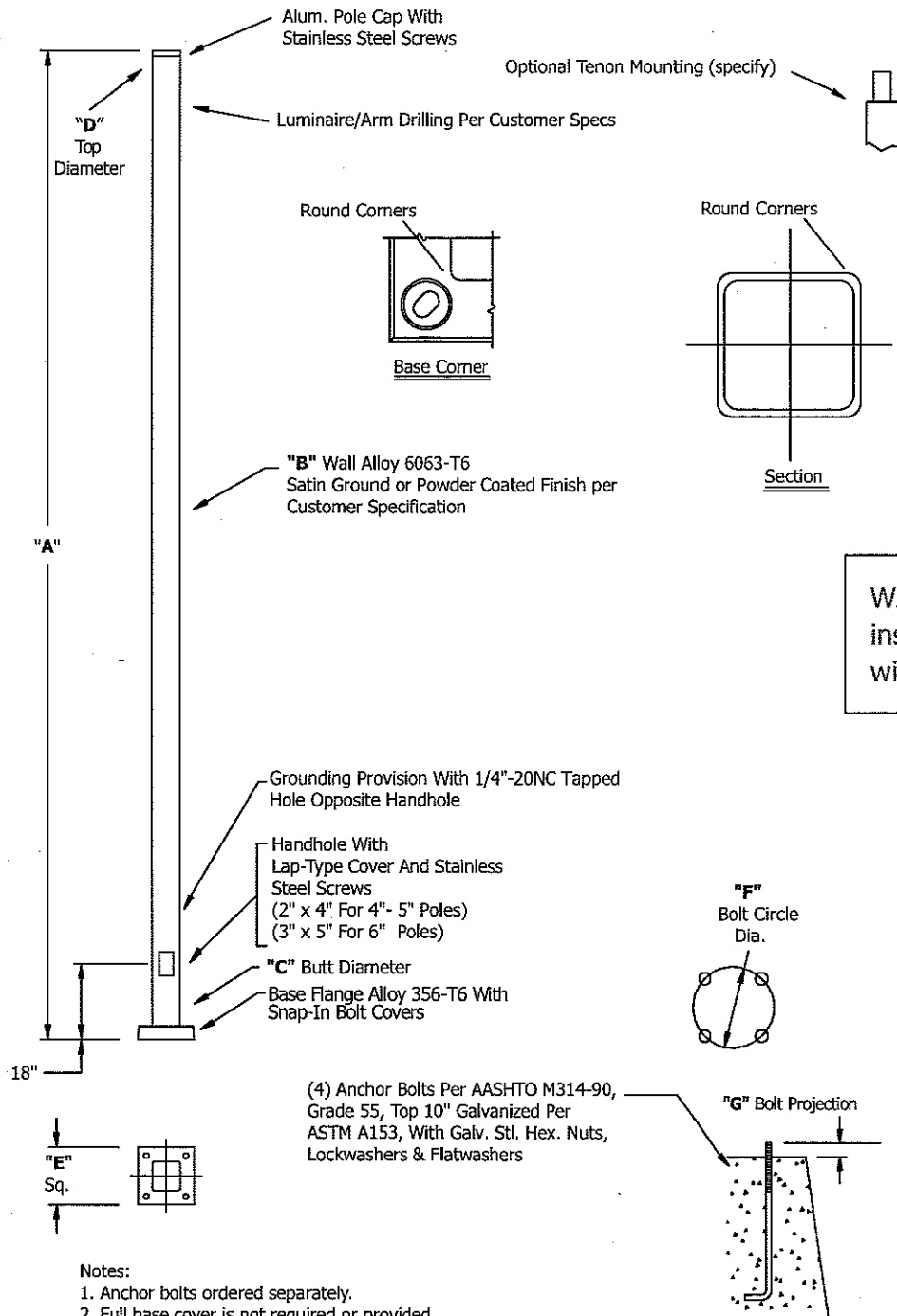




4 Bolt Base

SSA25D5-4-

SUMMA ER GREEN EMERGENCY
DEPT
TYPE SD
SSA24D5-4-GY



WARNING: Do not install light pole without luminaire.

- Notes:
1. Anchor bolts ordered separately.
 2. Full base cover is not required or provided.

Mounting Height: 25 ft
Wall Thickness: .188 in
Butt Diameter: 5 in
Top Diameter: 5 in
Base Diameter: 11.25 in
Bolt Circle: 10.5-11. in
Bolt Projection: 2 in
Bolt Size: .75 x 30 x 3
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Luminary Weight: 100
Arm Length:
Quantity:

Maximum EPA

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110:	

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Your Name:
Representative Name:
Architect Name:
Project Name:
Customer P.O. #:

Finish: -
Date: 05/18/2010
Notes:

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MARYELLEN

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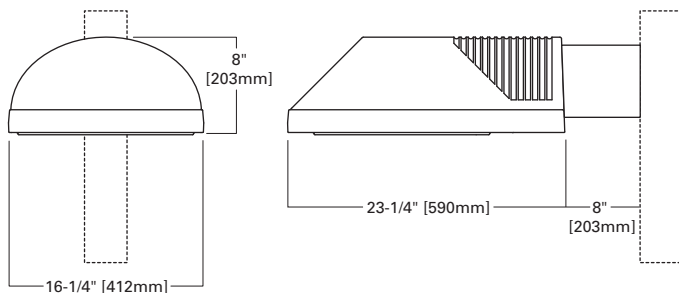
TLM TALON MEDIUM LED

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LUMINAIRE

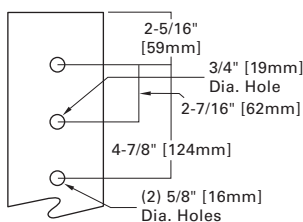
SustainableLEDesign™

DIMENSIONS

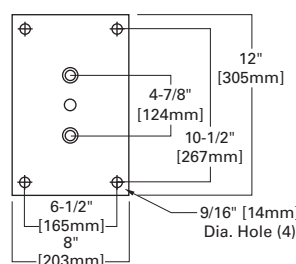


ARM DRILLING

TYPE "M"



WALL MOUNT



CERTIFICATION DATA

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EPA

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Luminaire w/o Arm: 0.79
8" Arm: 0.43

SHIPPING DATA

Approximate Net Weight:
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POWER AND LUMENS BY BAR COUNT

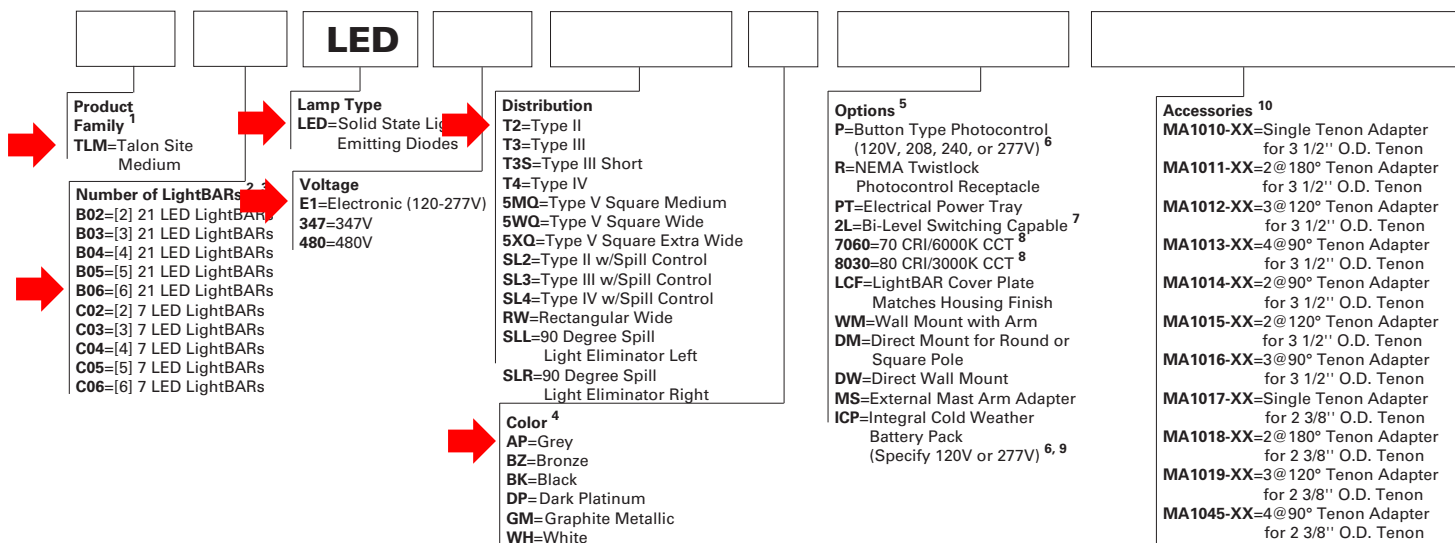
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LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
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15°C	1.03
25°C	1.00
40°C	0.96

ORDERING INFORMATION

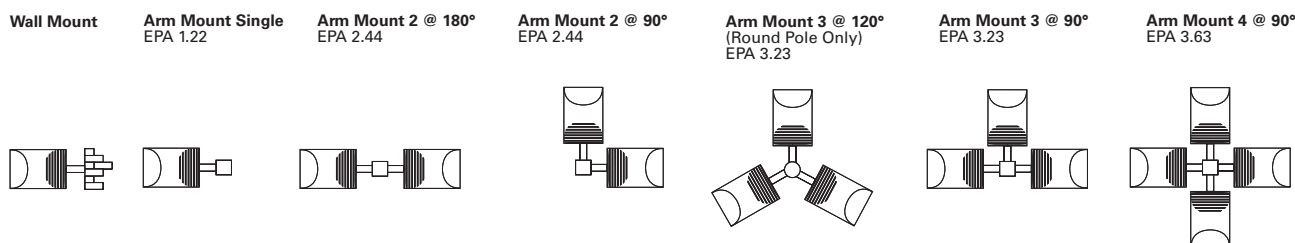
SAMPLE NUMBER: TLM-B03-LED-E1-T3-BK



NOTES:

- 8" arm and round pole adapter included with fixture.
- 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
- Standard 4000K CCT and nominal 70CRI.
- Custom and RAL color matching available upon request. Consult Cooper Lighting Representative for further information.
- Add as suffix.
- Must specify voltage.
- Low-Level output varies by bar count specified. Consult Factory.
- Consult Factory for lead times and lumen multiplier.
- Available with B02 or C02, B03 or C03, and B04 or C04 configurations only. Rated for 25 Degrees C ambient.
- Order separately, replace XX with color suffix.

MOUNTING CONFIGURATIONS



DESCRIPTION

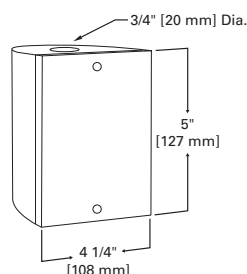
The Vision Flood Small (VFS) knuckle features a 3/4" NPT threaded nipple on its bottom surface for direct mounting to the following accessories: Junction Box (JB), Slipfitter (SF), Stanchion Mount (SM), Twin Arm Mount (TMA), Wall Mount Arm (WMA), Wall Mount (WM), and Post Mount Extensions (PM1, PM2). When coupled with the available slipfitter (SF), the VFS can be mounted to the following accessories: Surface Mount Tenon (SMT), Stanchion Mount Tenon (ST), Twin Mount Arm Tenon (TMT), and Wall Mount Arm Tenon (WMT).

Catalog #	VFS-TV-AP/JB-AP	Type	SE
Project	SUMMA ER- GREEN EMERGENCY DEPT		
Comments			
Prepared by		Date	

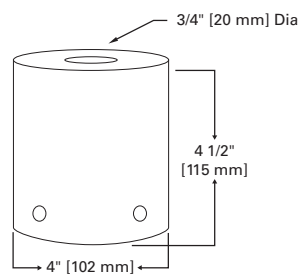
ACCESSORIES SPECIFICATIONS

JUNCTION BOX [JB]

U.L. and CSA listed for wet locations, the Vision J-Box is supplied with a 3/4" clearance hole on the top surface and two (2) 3/4" NPT openings on the bottom surface. An optional drilling consisting of one (1) 1/2" NPT opening on the bottom surface can be specified.



**Junction Box
[JB]**



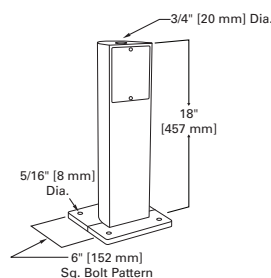
**Slipfitter
[SF]**

SLIPFITTER [SF]

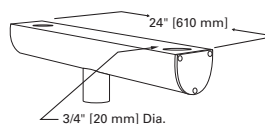
Die-cast aluminum slipfitter features a 3/4" NPT entry point on top surface to mate to standard VFS knuckle. Allows fixture assembly to be mounted to standard 2" pipe size (2 3/8" O.D.) tenons and tenon equipped accessories.

STANCHION MOUNT [SM]

Used to mount fixture above grade to solid surface, or partially buried when secured to concrete pad. Cast aluminum housing and mounting plate is 18" tall and is supplied with a single 3/4" clearance hole entry point.



**Stanchion Mount
[SM]**



**Twin Arm Mount
[TMA]**

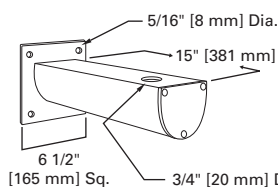
TWIN ARM MOUNT [TMA]

Soft form extruded aluminum arm is 24" in length and features two (2) 3/4" clearance holes for twin fixture mount. Other lengths and drilling patterns available upon request.

Twin arm base slip fits over standard 2" pipe size (2 3/8" O.D.) tenon. End caps are removable for wiring access. Useful in ground mount and pole mount applications.

WALL MOUNT ARM [WMA]

Extruded aluminum arm with cast mounting plate is 15" in length and is supplied with a 3/4" clearance hole entry point. Also useful as an arm extension off square area light poles.



**Wall Mount Arm
[WMA]**



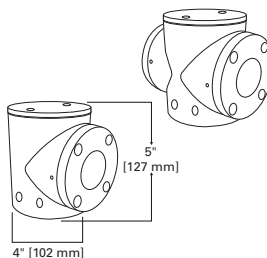
**Wall Mount
[WM]**

WALL MOUNT [WM]

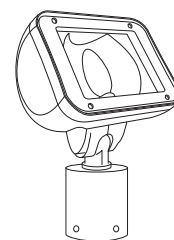
Cast aluminum mounting plate adapts around 4" square or octagonal J-box by others. Additional stud mounting is required beyond J-box attachment. Consists of mounting bracket and cast aluminum splice access cover providing a clean transition to the wall surface. Hanger mount integral to mounting plate allows for ease of installation.

POST MOUNT EXTENSION [PM1/PM2]

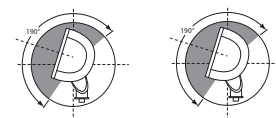
Cast aluminum assembly slip fits over standard 2" pipe size (2 3/8" O.D.) tenons, and allows for single (PM1), or double (PM2) mount configurations. Assembly allows for 360° of fixture rotation. Top cap provides splice access. Useful for single or twin, pole mounted downward aiming applications.



**Post Mount Extension
[PM1/PM2]**

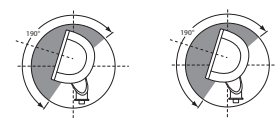


VFS VISION FLOOD SMALL ACCESSORIES

Aiming Range (From Center)

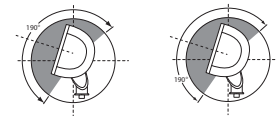
[JB]

[SF]



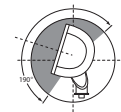
[SM]

[TMA]



[WMA]

[WM]



[PM1/PM2]

ACCESSORIES SPECIFICATIONS (CON'T.)

SURFACE MOUNT TENON [SMT]

For above-grade surface mount placement, the SMT is supplied with a 4" tall standard 2" pipe size (2 3/8" O.D.) tenon.

STANCHION MOUNT TENON [ST]

Used to mount fixture above grade to solid surface, or partially buried when secured to concrete pad. Cast aluminum housing and mounting plate is 18" tall and is supplied with a standard 2" pipe size (2 3/8" O.D.) tenon.

TWIN ARM MOUNT TENON [TMT]

Soft form extruded aluminum arm is 24" in length and features two (2) standard 2" pipe size (2 3/8" O.D.) tenons for twin fixture mount. Other lengths and drilling patterns available upon request. Twin arm base slip fits over standard 2" pipe size (2 3/8" O.D.) tenon. End caps are removable for wiring access. Useful in ground mount and pole mount applications. For extended downward aiming, utilize PM1 or PM2 in conjunction with TMT.

WALL MOUNT ARM TENON [WMT]

Extruded aluminum arm with cast mounting plate is 15" in length and is supplied with a standard 2" pipe size (2 3/8" O.D.) tenon. Also useful as an arm extension off square area lightpole.

TOP VISOR [VFS-TV]

Controls excess spill and glare on top portion of distribution. Especially useful in uplighting applications to limit light travel above intended wall surface or sign. Mounts to accessory channel in doorframe. Compatible with all distributions.

BARN DOORS [VFS-BD]

Four (4) independently mounted and adjustable doors control cutoff angles in all directions, allowing custom distribution control for any application. Compatible with all distributions.

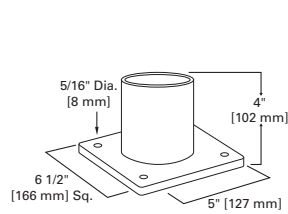
VANDAL SHIELD [VFS-VS]

3/16" thick molded polycarbonate convex lens. Treated with UV inhibitor to discourage the gradual discoloration that results from exposure to sunlight and metal halide lamps.

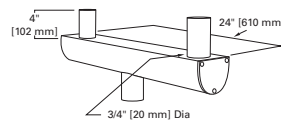
EXTERNAL GRID LOUVERS

[VFS-GL1 / VFS-GL2]

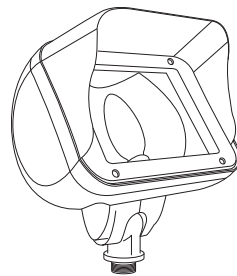
Designed to control lamp glare and spill light while maintaining beam efficiency. Useful when aiming direction or intended target lies in close proximity to pedestrian and/or motor vehicle activity. Mounts to accessory channel in doorframe. Finished in black powder coat paint. GL1 for NS and NF optics only. GL2 for MF, WF, VF and HS optics only.



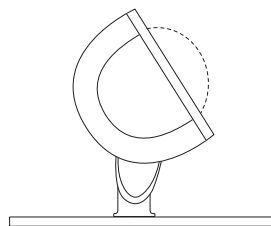
Surface Mount Tenon [SMT]



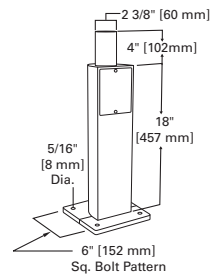
Twin Arm Mount Tenon [TMT]



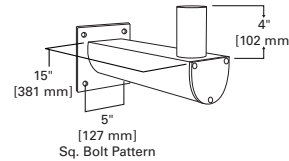
Top Visor [VFS-TV]



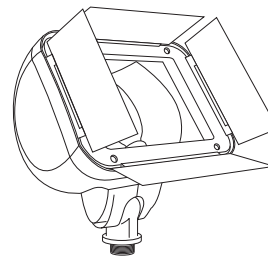
Vandal Shield [VFS-VS]



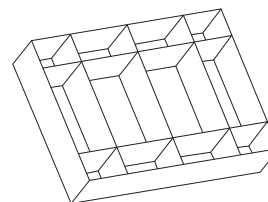
Stanchion Mount Tenon [ST]



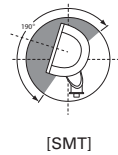
Wall Mount Arm Tenon [WMT]



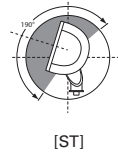
Barn Doors [VFS-BD]



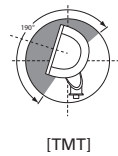
External Grid Louvers [VFS-GL1 / VFS-GL2]

Aiming Range (From Center)

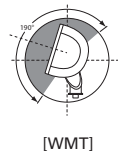
[SMT]



[ST]



[TMT]



[WMT]

NOTE: Specifications and dimensions subject to change without notice

Visit our web site at www.cooperlighting.com

Customer First Center 1121 Highway 74 South Peachtree City, GA 30269 770.486.4800 FAX 770.486.4801 ADH090087

DESCRIPTION

VISION FLOOD'S cylindrical form blends effortlessly to architectural and landscape environments. Available in wattages up to 1000 watt Metal Halide and Pulse Start Metal Halide, and in two (2) housing sizes, VISION FLOOD offers properly scaled solutions for any floodlighting application.

SPECIFICATION FEATURES**Construction**

HOUSING: One-piece die-cast aluminum housing maintains a nominal .125" thickness to endure the toughest environments while maintaining precise tolerance control. **DOOR:** Die-cast aluminum door maintains a nominal .125" thickness and features concealed hinging to the housing. Door is secured with four (4) tamper resistant recessed stainless steel allen head fasteners. Door frame features an integral accessory channel for the mounting of optional light control accessories. Doorframe seals to housing with a continuous extruded silicone gasket. Lens is impact resistant .180" thick tempered clear flat glass, sealed to the door with a one-piece silicone gasket. **KNUCKLE:** Heavy-duty die-cast aluminum knuckle utilizes a taper-lock adjustment mechanism for both solid engagement and infinite aiming adjustment. Knuckle

adjustment is made via one (1) captive stainless steel allen head fastener consistent with doorframe fasteners. Tested to sustain 3G of vibration without losing aiming position. VFS knuckle features a 3/4" NPT nipple on bottom surface for rigid attachment to available mounting accessories. Optional slipfitter mount available for VFS.

Electrical

ELECTRICAL COMPONENTS: High Power Factor (HPF) ballast components are strategically located and heat sunk to the housing for cooler operation and longer life. The VFS housing is rated for 40 degrees C (104 degrees F) ambient environments.

Optical

OPTICAL ASSEMBLY: Choice of six (6) high efficiency optical systems constructed of premium 95% reflective anodized aluminum sheet, or bright specular anodized

VFS-K-70-MP-MT-WF-AP-L/VF		Type
Catalog #		SE
Project	SUMMA ER- GREEN EMERGENCY DEPT	Date
Comments		
Prepared by		

polished spun aluminum. Available distributions include Narrow Spot, Narrow Flood, Medium Flood, Wide Flood, Horizontal Spot, and Vertical Flood. All reflector modules feature toolless removal, quick disconnect wire connections, and are field interchangeable. Small housing (VFS) optics feature medium-base lampholders.

Finish

Housing and arm finished in a 5 stage premium TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available. Consult your INVUE Lighting Systems Representative for more information.



VFS VISION FLOOD SMALL

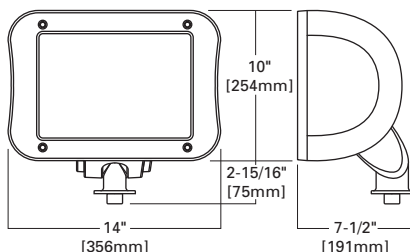
50 - 175W

Pulse Start Metal Halide

Metal Halide

High Pressure Sodium

ARCHITECTURAL
FLOOD LUMINAIRE

DIMENSIONS**WATTAGE TABLE**

Lamp Type	Wattage
Pulse Start Metal Halide (MP)	50, 70, 100, 150W
High Pressure Sodium (HPS)	50, 70, 100, 150W
Metal Halide (MH)	175W

CERTIFICATION DATA

IP65 Rated
U.L. 1598 Listed
3G Vibration Tested
CSA Listed
40°C Ambient Temperature Rating
ISO 9001

EPA

Effective Projected Area:
(Sq. Ft.)
1.19

SHIPPING DATA
(Approximate)

Net Weight (lbs.): 37

ORDERING INFORMATION

Sample Number: VFS-K-150-MP-120-NF-WH

Product Family VFS=Vision Flood Small	Lamp Wattage ¹ MP 50=50W 70=70W 100=100W 150=150W MH ² 175=175W HPS 50=50W 70=70W 100=100W 150=150W	Voltage ³ 120=120V 208=208V 240=240V 277=277V 347=347V 480=480V DT= Dual-Tap wired 277V ⁴ MT= Multi-Tap wired 277V ⁵ TT= Triple-Tap wired 347V ⁶	Color ⁷ BK=Black AP=Grey BZ=Bronze WH=White DP= Dark Platinum GM= Graphite Metallic VR= Verde Green	Accessories ⁹ JB-XX=Architectural J-Box with two 3/4" NPT Entries SM-XX=Stanchion Mount ST-XX=Stanchion Mount Tenon WM-XX=Wall Mount WMA-XX= Wall Mount Arm WMT-XX= Wall Mount Arm Tenon Mount TMA-XX= Twin Mount Arm - EPA 0.35 TMT-XX= Twin Mount Arm Tenon Mount - EPA 0.42 SMT-XX= Surface Mount Tenon SF-XX= Slipfitter PM1-XX= Post Mount Extension Single - EPA 0.12 PM2-XX= Post Mount Extension Double - EPA 0.12 VFS-CFR-XX= Color Filter Adapter with Red Gel VFS-CFB-XX= Color Filter Adapter with Bright Blue Gel VFS-CFG-XX= Color Filter Adapter with Deep Green Gel VFS-CFO-XX= Color Filter Adapter with Warm Orange Gel VFS-BD-XX= Barn Doors - EPA 1.01 VFS-TV-XX= Top Visor - EPA 0.6 VFS-VS= Vandal Shield VFS-GL1= External Grid Louver (NS and NF Optics Only) ¹⁰ VFS-GL2=External Grid Louver (MF, WF, VF and HS optics ¹⁰ only)
Mounting Type K=Knuckle	Lamp Type MP= Pulse Start Metal Halide MH= Metal Halide HPS= High Pressure Sodium	Optical System NS= Narrow Spot NF= Narrow Flood MF= Medium Flood WF= Wide Flood VF= Vertical Flood HS= Horizontal Spot	Options ⁸ F= Single Fuse (120, 277 or 347V) Specify Voltage FF= Double Fuse (208, 240 or 480V) Specify Voltage PC= Button Type Photocontrol (Specify Voltage) L= Lamp Included	

- Notes: 1 All HID lamps are medium-base.
2 MH products available for non-U.S. markets only.
3 Products also available in non-US voltages and 50Hz for international markets. Consult factory for availability and ordering information.
4 Dual-tap is 120/277V wired 277V.
5 Multi-tap is 120/208/240/277V wired 277V.
6 Triple-tap is 120/277/347V wired 347V.
7 Custom and RAL color matching available upon request. Consult your INVUE Lighting Systems Representative for further information.
8 Add as suffix in the order shown.
9 Order separately, replace XX with color suffix.
10 Standard color is black powder coat.

DESCRIPTION

PHOCUS defines the ultimate floodlighting solution; powerful performance, easily concealable size and a stunningly beautiful shape. Available in wattages up to 150 watt T-6 Metal Halide. PHOCUS is versatile in application. Ground, wall, ceiling, burial and remote mounting configurations offer a wide variety of application alternatives to accomplish specific design requirements. Offering seven (7) uniquely shaped optical distributions, plus an array of HID and Quartz Halogen PAR lamps, PHOCUS is unrivaled in it's optical versatility. An available family of light control accessories provides custom cutoff solutions to meet specific distribution requirements.

SPECIFICATION FEATURES**Construction**

HOUSING: One-piece, die-cast aluminum housing maintains a nominal .125" wall to endure the toughest environments while maintaining precise tolerance control. Cast indicator mark on backside of housing reference 2.5 degree internal aiming marks on yoke arm for precise vertical aiming control. **DOOR:** Die-cast aluminum door maintains a nominal .125" wall thickness. Door is secured with two (2) tamper resistant recessed stainless steel fasteners. Lens is impact resistant .20" tempered clear contoured glass, sealed to the door with a one-piece molded silicone gasket. **YOKE ARMS:** Heavy-duty die-cast aluminum yoke utilizes a taper-lock adjustment mechanism for both solid attachment and infinite aiming. Vertical adjustment is made via one (1) captive stainless steel fastener consistent with doorframe fasteners. Tested in all planes to sustain 3G of vibration.

BASE ASSEMBLY: Die-cast aluminum base assembly grounds yoke arms and allows for 357 degrees of horizontal rotation. Base assembly includes angle increment markers spaced at 2.5 degree intervals for ease of aiming, and an internal cast stop to prohibit rotation beyond one full revolution. Continuous silicone gaskets prevent water intrusion into base.

Electrical

INTEGRAL BALLAST BOX: Die-cast aluminum ballast enclosure attaches to mounting surface with two (2) 3/8" stainless steel lag bolts. Wiring compartment features a removable cover and is completely sealed from electrical components to prevent water or vapor entry into the fixture. Standard silicone-filled wire nuts prevent wicking of water through wire leads. Continuous silicone gasketing throughout base assembly forbids contaminant entry. **ELECTRICAL COMPONENTS:** Choice of high power factor (HPF) magnetic, or superior performing electronic HID ballasts.

Optical

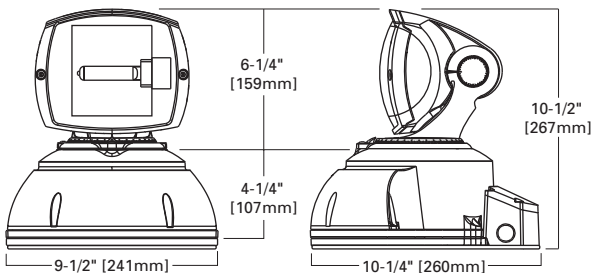
OPTICAL SYSTEMS: Choice of seven (7) high efficiency optical systems constructed of highly reflective anodized aluminum sheet, or bright anodized polished spun aluminum. Available distributions include Narrow Spot, Axial, Horizontal Narrow Flood, Horizontal Medium Flood, Horizontal Wide Flood, Vertical Narrow Flood, Vertical Medium Flood, and Vertical Wide Flood. Pulse Start Metal Halide available in a variety of beam spreads. Pulse Start Metal Halide T6 lamps feature G12 lampholders. Pulse Start Metal Halide PAR-20 lamps feature medium screw base lampholders.

Finish

Fixtures and accessories are finished in a premium 5 stage TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available. Consult your INVUE Lighting Systems Representative for more information.



PHH PHOCUS FLOOD

39 - 150W**Pulse Start Metal Halide**
**ARCHITECTURAL
FLOOD LUMINAIRE**
DIMENSIONS**WATTAGE TABLE**

Lamp Type	Wattage
Pulse Start Metal Halide T6	39, 70, 100, 150W
Pulse Start Metal Halide PAR20	39W

CERTIFICATION DATA

IP66 Rated
 U.L. 1598 Listed
 2G Vibration Tested
 CSA Listed
 25°C Ambient Temperature Rating
 ISO 9001

**SHIPPING DATA
(Approximate)**

Net Weight (lbs.): 10

ORDERING INFORMATION

Sample Number: PHH-150-MH-120-MB-HNF-GIB-BK-L

Product Family PHH=PHOCUS HID	Voltage ⁵ 120=120V 208=208V 240=240V 277=277V 347=347V DT= Dual-Tap wired 277V ^{6, 7} MT= Multi-Tap wired 277V ^{6, 8} TT= Triple-Tap wired 347V ^{6, 9} UNV= 120-277V Universal Electronic Ballast	Ballast MB=Magnetic Ballast EB=Electronic Ballast ¹⁰ Optical System <u>HID T6 Lamps</u> NS= Narrow Spot HNF= Horizontal Narrow Flood HMF= Horizontal Medium Flood HWF= Horizontal Wide Flood VNF= Vertical Narrow Flood VMF= Vertical Medium Flood VWF= Vertical Wide Flood <u>HID PAR Lamps</u> ¹¹ SP10= 10° Spot FL30= 30° Flood	Color ¹⁴ BK=Black AP=Grey BZ=Bronze WH=White DP= Dark Platinum GM= Graphite Metallic VR= Verde Green Options ¹⁵ F= Single Fuse (120, 277 or 347V) ¹⁶ Specify Voltage FF= Double Fuse (208, 240 or 480V) ¹⁶ Specify Voltage FR= Frosted Flat Glass Lens L= Lamp Included	Accessories ¹⁷ VA3003-XX=Color Filter Adapter with Red Gel VA3004-XX=Color Filter Adapter with Bright Blue Gel VA3005-XX=Color Filter Adapter with Deep Green Gel VA3006-XX= Color Filter Adapter with Warm Orange Gel VA3001-XX= Top Visor VA3002-XX= Four Sided Shield VA3007-XX= Wire Guard
Lamp Wattage <u>MP T6 Lamps</u> ¹ 39= 39W ² 70= 70W ³ 100= 100W 150= 150W <u>MP PAR Lamps</u> ⁴ 39= 39W ²		Mounting <u>Ground Mount</u> GBB= Direct In-Ground Mount (supplied w/ in-ground box and ballast) ¹² GIB= Integral Ballast Box GRB=Remote Mount (supplied w/ remote in-ground box and ballast) ¹² GRNB=Remote Mount (requires remote potted ballast and ballast box by ¹³ others) GSR=Spike Mount (supplied w/ remote in-ground box and ballast) ¹² <u>Wall/Ceiling Mount</u> WIB=Integral Ballast Box WRNB=Remote Mount (requires remote potted ballast and ballast box by others)		
Lamp Type MP= Pulse Start Metal Halide MPT6= Pulse Start Metal Halide T6				

GIB

XXX = PLEASE ADVISE MOUNTING

- Notes: 1 T6 lamps use G12 base.
 2 Available in Dual-Tap, 120 and 277V only.
 3 70W magnetic ballast limited to Dual-tap 120/277 or 120/347.
 4 39W PAR20 lamps use medium screw base.
 5 Products also available in non-US voltages and 50Hz for international markets. Consult factory for availability and ordering information.
 6 Magnetic ballasts only.
 7 Dual-tap is 120/277V wired 277V.
 8 Multi-tap is 120/208/240/277V wired 277V.
 9 Triple-tap is 120/277/347V wired 347V.
 10 120 through 277V only. Not available with 150 MP lamp, or GBB, GRB, GSR ground mount options.
 11 PAR 20 MP lamps available in 39W only.
 12 GBB, GRB, GSR mounting options include a magnetic potted in-ground ballast enclosure. Not available in 150W MP. Maximum 50' remoting distance from fixture head.
 13 For use when ground mounting in non-earth or interior surface environments.
 14 Custom and RAL color matching available upon request. Consult your INVUE Lighting Systems Representative for further information.
 15 Add as suffix in the order shown.
 16 Fusing available on GIB and WIB mounting options only.
 17 Order separately, replace XX with color suffix.

DESCRIPTION

Entri LED features a classic and stylish design with the added benefits of solid state lighting technology, offering outstanding uniformity and energy savings. Using Cooper Lighting's proprietary LED LightBAR™ technology and AccuLED optical systems, Entri LED offers designers vast versatility in system design, function and performance. Use Entri LED for wall mount architectural lighting applications and egress lighting requirements. UL/cUL listed for use in wet locations.

SPECIFICATION FEATURES**Construction**

HOUSING: Heavy wall, one-piece, die-cast aluminum construction for precise tolerance control and repeatability in manufacturing. Integral extruded aluminum heat sink provides superior thermal heat transfer in +40°C ambient environments. Housing and heat sink are designed to offer various options for down lighting, up lighting or a combination of both up and down. **FACEPLATE / DOOR:** One-piece die-cast aluminum construction. Captive, side hinged faceplate swings open via release of one (1) flush mount die-cast aluminum latch on housing side panel. Door closure and seal is ensured through a robust and positive retention bale latch which upon closing can be heard through distinct sound. **GASKET:** One-piece molded silicone gasket mates perfectly between the door and housing for repeatable seal. Silicone wire way plug on housing back wall seals incoming electrical leads to prevent moisture and dust entry. **LENS:** Uplight lens is impact resistant, 5/32" thick tempered frosted glass sealed to housing with continuous bead silicone gasket. Downlight lens is LED board integrated acrylic over-optics, each individually sealed for IP66 rating. **HARDWARE:** Stainless steel mounting screws and latch hardware allow access to electrical components for installation and servicing.

Optics

DISTRIBUTION: Primary downlight distribution offers a choice of six (6) patented, high-efficiency AccuLED Optics™, that maximize light collection and direction distribution onto the application region. Each optical lens is precision manufactured via injection-molding, then precisely arranged and sealed on the board media. Optional uplight LED distribution features a diffuse soft glow for enhancing architectural scenes or accentuating structural features. **LEDs:** High output LEDs, 50,000+ hours life at >70% lumen maintenance, offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

Electrical

DRIVER: LED drivers are potted and heat sunk for optimal performance and prolonged life. Standard drivers feature electronic universal voltage (120-277V/50-60hz), greater than 0.9 power factor, less than 20% harmonic distortion and feature ambient temperature range of +40°C (104°F) down to minimum starting temperature of -30°C (-22°F). Shipped standard with Cooper Lighting proprietary circuit module designed to withstand 10kV of transient line surge. Options to control light levels, energy savings and egress capabilities (battery pack and separate circuit) are available. All LED LightBARs™ and drivers are mounted to a primary mounting plate and are easily replaced by use of quick disconnects for ease of wiring.

Mounting

JUNCTION BOX: Standard with zinc plated quick-mount junction box plate that mounts directly to 4" J-Box. LightBARs mount facing downward. Fixture slides over mounting plate and is secured with two (2) stainless steel fasteners. Mounting plate features a one-piece EPDM gasket on back side of plate to firmly seal fixture to wall surface, forbidding entry of moisture and particulates. Optional mounting arrangements utilize a die-cast mounting adaptor box to allow for LED battery pack, surface conduit and through branch wiring. Entri LED is approved for mounting on combustible surfaces.

Finish

Housing is finished in 5-stage SuperTGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. LightBAR™ cover plates are standard white and may be specified to match finish of luminaire housing. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult Outdoor Architectural Colors brochure for a complete selection.

Warranty

Entri LED features a five-year limited warranty.

Catalog #	ENV-B01-LED-E1-BL2-AP	Type
Project	SUMMA ER GREEN EMERGENCY DEPT	T
Comments		Date
Prepared by		



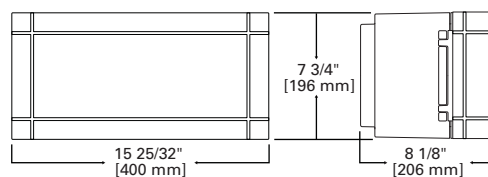
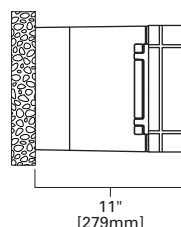
ENV ENTRI LED ROUND REVEALS

1 - 2 LightBARs

Solid State LED

ARCHITECTURAL WALL
LUMINAIRE

Sustainable Design

DIMENSIONS**CONDUIT MOUNT / BATTERY BACK BOX****CERTIFICATION DATA**

UL/cUL Listed
ISO 9001
IP66 LightBARs
ARRA Compliant
LM79 / LM80 Compliant

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60hz, 347V/60hz,
480V/60hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating

SHIPPING DATA

Approximate Net Weight:
16 lbs. (7.3 kgs.)

POWER AND LUMENS BY BAR COUNT

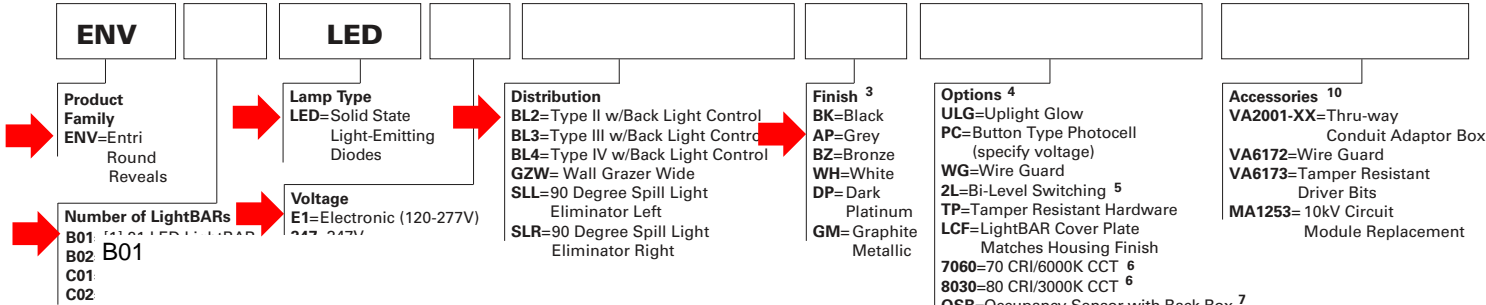
Number of LightBARs	DISTRIBUTION							
	Power [Watts]	Current @ 120V [A]	Current @ 277V [A]	BL2	BL3	BL4	GZW	SLR/ SLL
7 LED LIGHTBAR								
C01	27	0.23	0.13	1,704	1,615	1,686	1,688	1,550
C02	54	0.46	0.21	3,408	3,230	3,372	3,375	3,099
21 LED LIGHTBAR								
B01	27	0.23	0.13	1,770	1,625	1,720	1,725	1,571
B02	51	0.43	0.20	3,540	3,249	3,440	3,450	3,142

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96

ORDERING INFORMATION

SAMPLE NUMBER: ENV-B02-LED-E1-BL3-GM



- NOTES:
- 1 Standard 4000K CCT and nominal 70 CRI. LightBARs for downlight use only.
 - 2 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
 - 2 Consult factory for availability.
 - 3 Custom and RAL color matching available upon request. Consult your customer service representative for further information.
 - 4 Add as suffix in the order shown.
 - 5 Low-level output varies by bar count, consult factory. Not available with 347V or 480V. Available with 2 Bars (B02 or C02) only.
 - 6 Consult customer service for lead times and lumen multiplier.
 - 7 Available with B02 or C02, only (1) LightBAR on street side will be wired to sensor. Time Delay factory setting 15 minutes. When ordered with Option PC, both light bars will be connected to photocell as primary switching means. Standard sensor lens covers 8-foot mount height, 360-degree coverage, maximum 48-foot diameter. Not available in all configurations or with BBB or CWB options.
 - 8 Specify 120 or 277V. LED standard integral battery pack is rated for minimum operating temperature 32°F (0°C). Operates (1) lightbar for 90 minutes. Not available in all configurations or with OSB option. Consult factory.
 - 9 Specify 120 or 277V. LED cold weather integral battery pack is rated for minimum operating temperature -4°F (-20°C). Operates (1) lightbar for 90 minutes. Not available in all configurations or with OSB option.
 - 10 Order separately, replace XX with color suffix.

DESCRIPTION

The MedicalTask Undercabinet Series provides effective task lighting solutions for any application. This solid front specification grade fluorescent undercabinet series incorporates the latest energy efficient technology with fluorescent lamps and electronic ballasts to improve the appearance and productivity of the illuminated environment. The unique low profile solid front design conforms to various applications such as nursing stations, modular offices, laboratories, computer work centers and practically any under-counter installation where an inconspicuous light source is required to provide high light levels below the luminaire.

SPECIFICATION FEATURES

Internal Reflector

Standard white painted housing reflector for improved efficiency. Front Reflector Standard white painted solid front housing reflector improves efficiency and minimizes glare.

Housing

Available in 1.8" deep heavy gauge seam welded CRS construction with no exposed fasteners. Keyhole mounting slots are located on top of housing for ease of installation. Knock-outs are provided on ends for continuous row mounting.

Finish

Standard white high reflectance polyester powder coat finish applied after fabrication.

Lens

Choice of clear, Pattern 12 prismatic acrylic diffuser or batwing asymmetric.

Lamps

By others.

Ballast

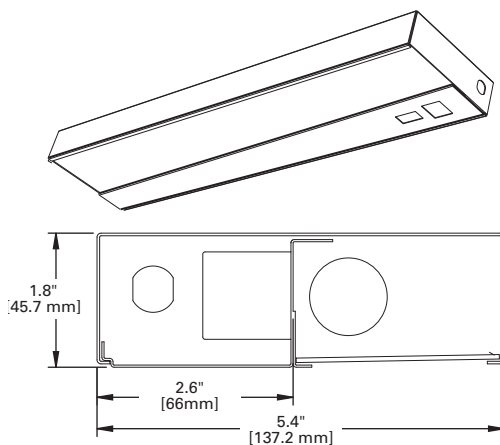
Electronic Class P CBM/ETL.

Electrical

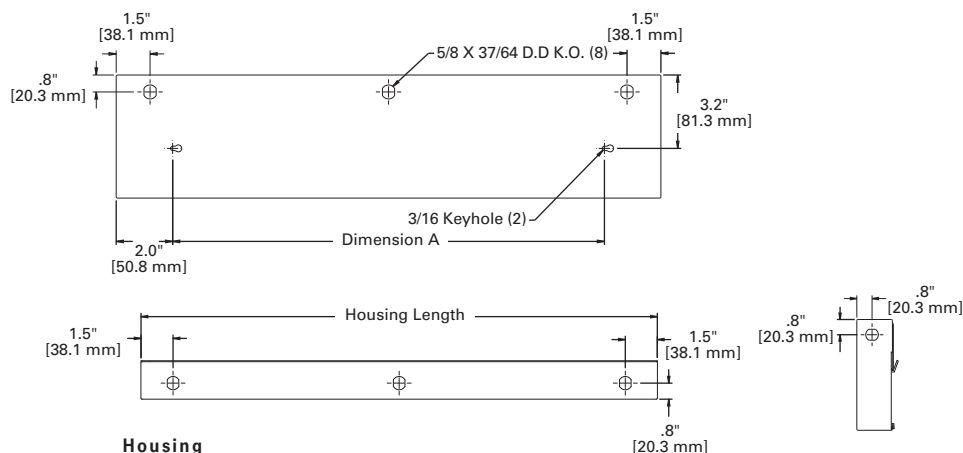
Suitable for through wiring when installed in continuous rows.

Labels

UL/cUL listed.



SIDE DIMENSIONS



Housing Length	Dimension A	Lamp
24.1" [612.1 mm]	20.1" [510.5 mm]	17WT8
36.1" [916.9 mm]	32.1" [815.3 mm]	25WT8
48.1" [1221.7 mm]	44.1" [1120.1 mm]	32WT8
60.1" [1526.5 mm]	56.1" [1424.9 mm]	40WT8

ENERGY DATA

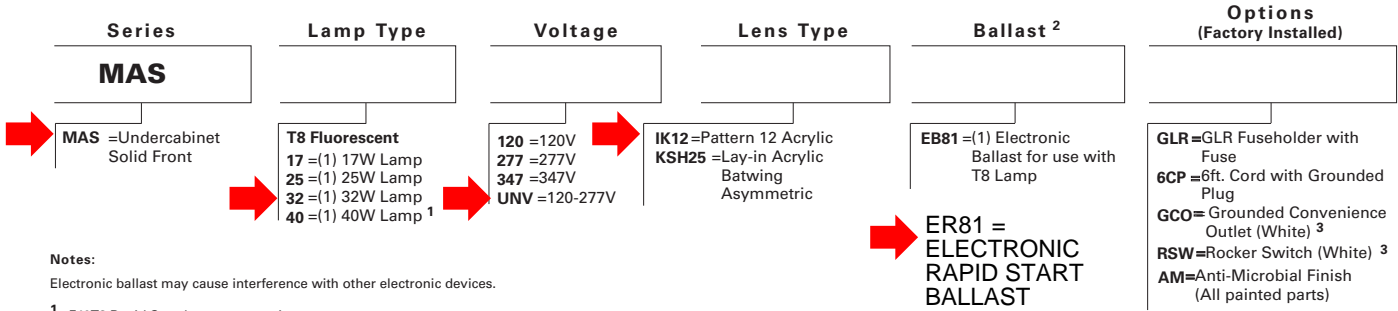
Input Watts:

Electronic Ballasts and Standard Lamps

- (1) 17WT8 Fluorescent: 22W
- (1) 25WT8 Fluorescent: 29W
- (1) 32WT8 Fluorescent: 36W
- (1) 40WT8 Fluorescent: 42W

ORDERING INFORMATION

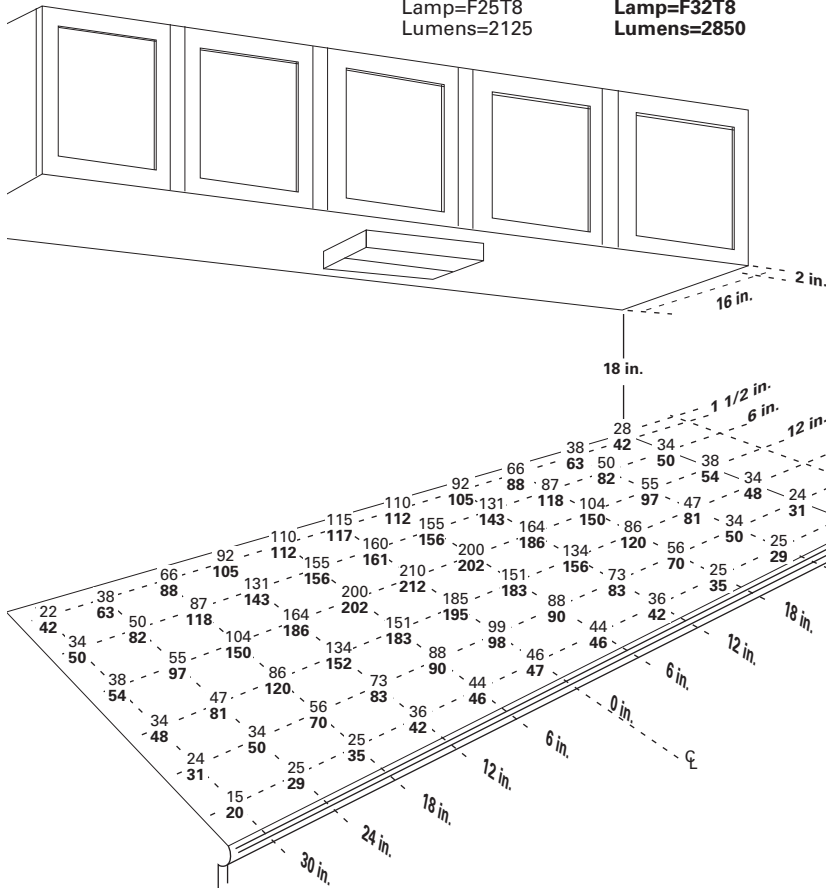
SAMPLE NUMBER: MAS-17-120-IK12-EB81-RSW



PHOTOMETRICS

Fixture Application

18" Mounting Height



Top Number:
Test No. 174P113
MAS-25-IK12
Lamp=F25T8
Lumens=2125

Bottom Number:
Test No. 174P119
MAS-32-IK12
Lamp=F32T8
Lumens=2850

Optional Mounting Heights

Top Number: Test No. 174P102; MAS-25-IK12
Bottom Number: Test No. 174P101; MAS-32-IK12

15" Mounting Height

	30"	24"	18"	12"	6"	0"	6"	12"	18"	24"	30"
1 1/2"	28	45	73	101	120	124	115	95	67	43	27
6"	43	66	93	113	123	127	124	114	94	67	42
12"	31	65	135	221	266	271	251	204	125	61	31
18"	27	53	104	170	206	210	195	156	97	48	25
24"	17	30	50	76	89	91	84	70	46	27	16
30"	10	15	20	30	33	34	32	28	20	15	10
	15	23	28	32	35	37	38	35	28	28	16

Top Number: Test No. 174P114; MAS-25-IK12
Bottom Number: Test No. 174P120; MAS-32-IK12

24" Mounting Height

	30"	24"	18"	12"	6"	0"	6"	12"	18"	24"	30"
1 1/2"	19	34	57	83	101	106	101	83	57	34	19
6"	41	60	80	94	101	106	101	94	80	60	41
12"	23	42	70	97	118	126	118	97	70	42	23
18"	25	43	72	105	128	135	128	105	72	43	25
24"	49	75	104	126	139	143	139	126	104	75	49
30"	23	41	65	71	116	126	116	71	65	41	23
	45	67	91	111	124	130	124	111	91	67	45
	19	33	50	96	88	94	88	96	50	33	19
	34	52	66	80	90	94	90	80	66	52	34
	13	23	31	45	54	58	54	45	31	23	13
	25	34	41	50	57	57	57	50	41	34	25

Note:
Point by point illumination scale is distorted on
fixture application and mounting.

DESCRIPTION

The MedicalTask Undercabinet Series provides effective task lighting solutions for any application. This solid front specification grade fluorescent undercabinet series incorporates the latest energy efficient technology with fluorescent lamps and electronic ballasts to improve the appearance and productivity of the illuminated environment. The unique low profile solid front design conforms to various applications such as nursing stations, modular offices, laboratories, computer work centers and practically any under-counter installation where an inconspicuous light source is required to provide high light levels below the luminaire.

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Lens

Choice of clear, Pattern 12 prismatic acrylic diffuser or batwing asymmetric.

Lamps

By others.

Ballast

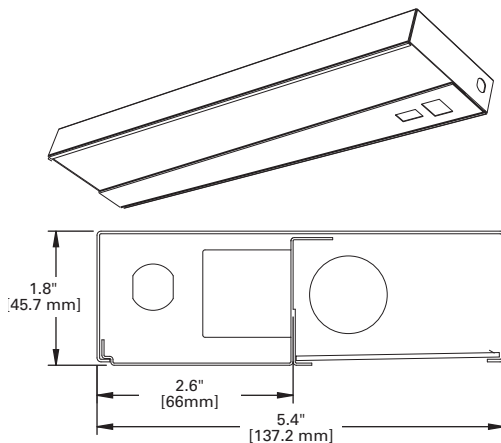
Electronic Class P CBM/ETL.

Electrical

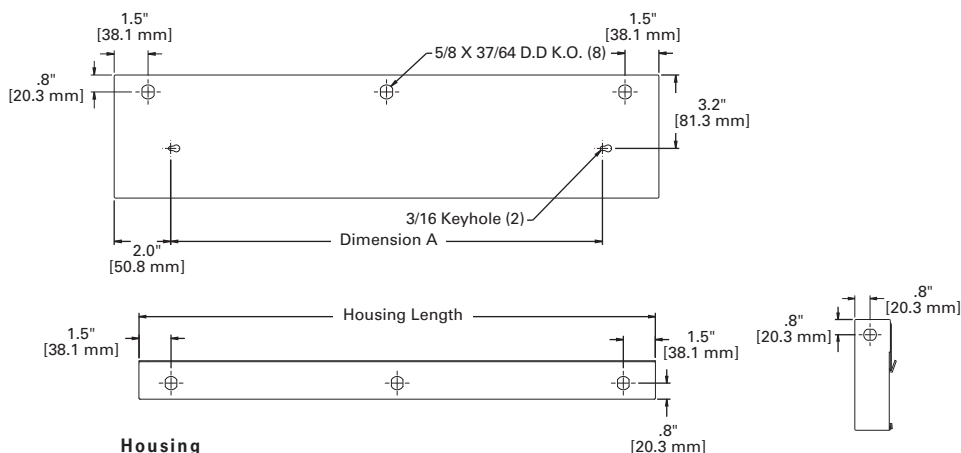
Suitable for through wiring when installed in continuous rows.

Labels

UL/cUL listed.



SIDE DIMENSIONS



Housing Length	Dimension A	Lamp
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36.1" [916.9 mm]	32.1" [815.3 mm]	25WT8
48.1" [1221.7 mm]	44.1" [1120.1 mm]	32WT8
60.1" [1526.5 mm]	56.1" [1424.9 mm]	40WT8

ENERGY DATA

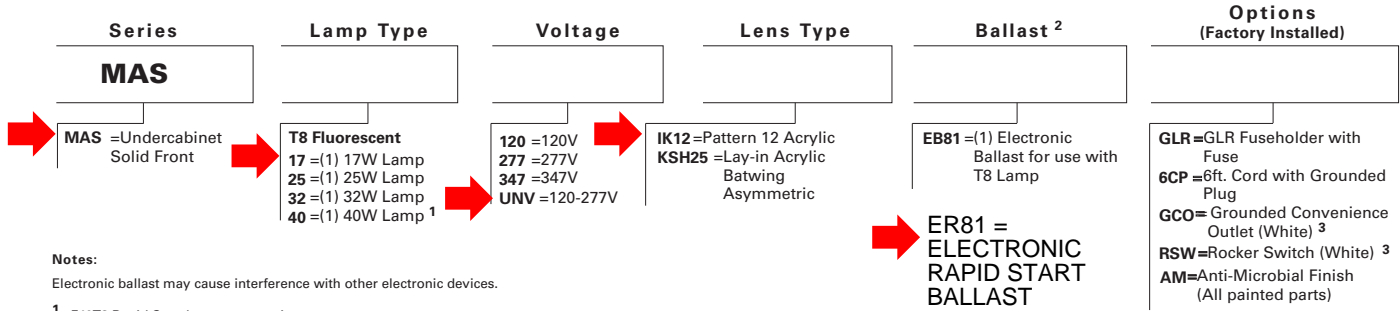
Input Watts:

Electronic Ballasts and Standard Lamps

- (1) 17WT8 Fluorescent: 22W
- (1) 25WT8 Fluorescent: 29W
- (1) 32WT8 Fluorescent: 36W
- (1) 40WT8 Fluorescent: 42W

ORDERING INFORMATION

SAMPLE NUMBER: MAS-17-120-IK12-EB81-RSW



Notes:

Electronic ballast may cause interference with other electronic devices.

¹ F40T8 Rapid Start lamp construction.² For specific electronic ballast, specify brand and catalog number.³ GCO and RSW are mounted standard on the right side of the luminaire.

PHOTOMETRICS

Fixture Application

18" Mounting Height

Top Number:

Test No. 174P113

MAS-25-IK12

Lamp=F25T8

Lumens=2125

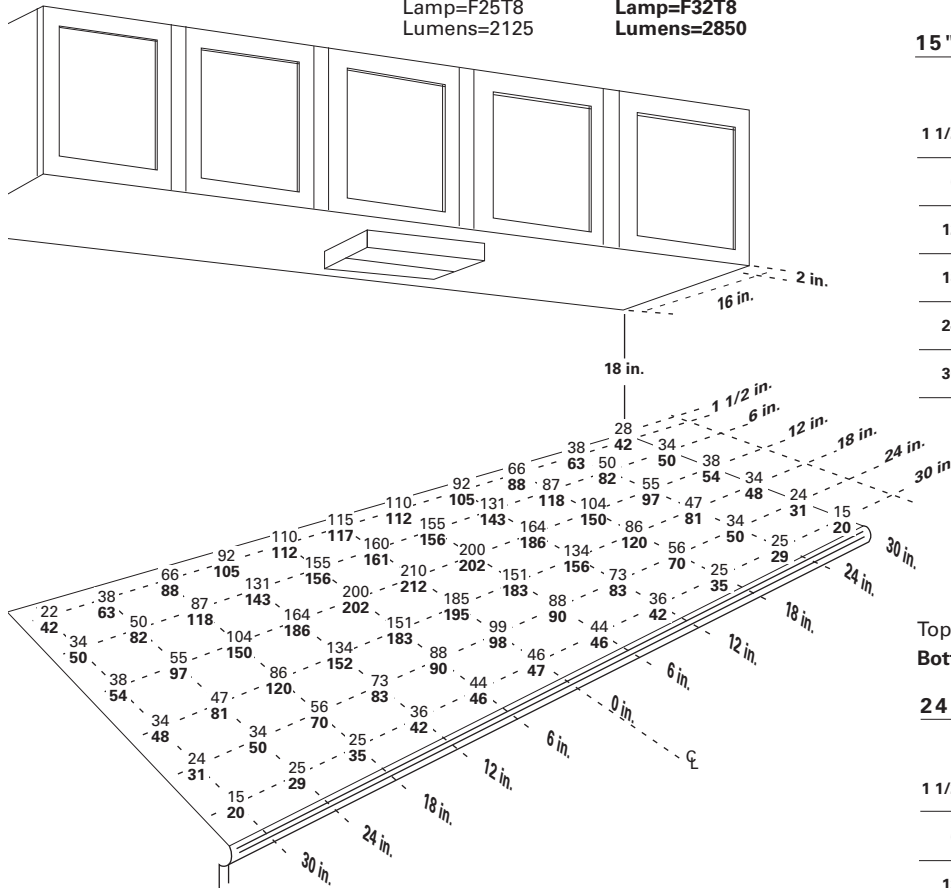
Bottom Number:

Test No. 174P119

MAS-32-IK12

Lamp=F32T8

Lumens=2850



Note:

Point by point illumination scale is distorted on fixture application and mounting.

Optional Mounting Heights

Top Number: Test No. 174P102; MAS-25-IK12

Bottom Number: Test No. 174P101; MAS-32-IK12

15" Mounting Height

	30"	24"	18"	12"	6"	0"	6"	12"	18"	24"	30"
1 1/2"	28	45	73	101	120	124	115	95	67	43	27
	43	66	93	113	123	127	124	114	94	67	42
6"	32	57	103	156	188	189	178	146	95	53	30
	52	92	142	173	188	191	190	177	145	94	52
12"	31	65	135	221	266	271	251	204	125	61	31
	60	121	197	243	263	270	266	249	202	123	59
18"	27	53	104	170	206	210	195	156	97	48	25
	51	96	151	131	202	208	207	194	155	97	48
24"	17	30	50	76	89	91	84	70	46	27	16
	28	48	72	85	91	93	91	82	67	47	28
30"	10	15	20	30	33	34	32	28	20	15	10
	15	23	28	32	35	37	38	35	28	28	16

Top Number: Test No. 174P114; MAS-25-IK12

Bottom Number: Test No. 174P120; MAS-32-IK12

24" Mounting Height

	30"	24"	18"	12"	6"	0"	6"	12"	18"	24"	30"
1 1/2"	19	34	57	83	101	106	101	83	57	34	19
	41	60	80	94	101	106	101	94	80	60	41
6"	23	42	70	97	118	126	118	97	70	42	23
	47	71	94	112	123	124	123	112	94	71	47
12"	25	43	72	105	128	135	128	105	72	43	25
	49	75	104	126	139	143	139	126	104	75	49
18"	23	41	65	71	116	126	116	71	65	41	23
	45	67	91	111	124	130	124	111	91	67	45
24"	19	33	50	96	88	94	88	96	50	33	19
	34	52	66	80	90	94	90	80	66	52	34
30"	13	23	31	45	54	58	54	45	31	23	13
	25	34	41	50	57	57	57	50	41	34	25

DESCRIPTION

The VRGC features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum lamp to lens spacing. It produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility. Designed to offer maximum efficiency and performance for today's unique interior specifications, the VRGC is perfect for use in office spaces, schools, hospitals, industrial facilities and commercial areas with high traffic volume.

Catalog #	2VRFC-432ACTF187-UNV-ER	Type
Project	SUMMA ER GREEN EMERGENCY DEPT	X
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Nominal 4-1/2" deep, para-contoured housing, die-formed code gauge, prime cold rolled steel. Die-embossed housing has full-length, die-formed stiffeners for added strength. Deep "V" ballast/wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KO's for continuous row

wiring. Endplates have integral Grid-Lock feature for safety and convenience.

Finish

Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

Hinging/Latching

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

Frame/Shielding

Die-formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Positive light seals. Frame and lens are secured to housing with 4 or 6 T20 stainless steel TORX® screws.

Electrical *

Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Pressure lock lampholders.

Labels

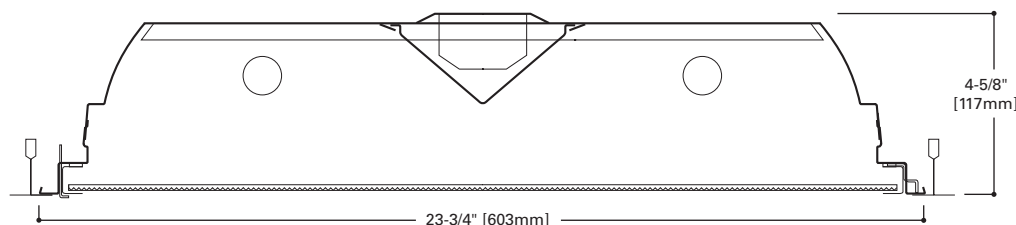
UL/cUL listed. **



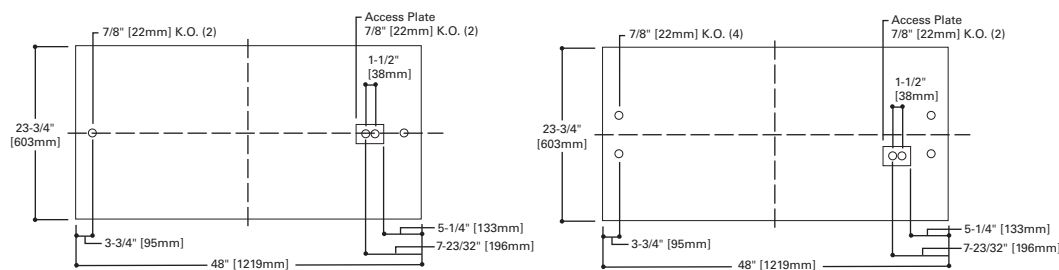
2VR

**2x4
Fluorescent
Vandal Resistant**

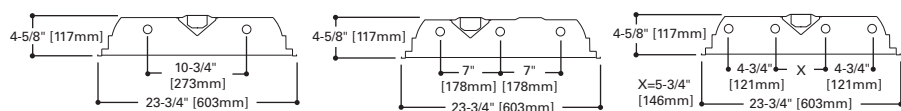
RECESSED



MOUNTING DATA



LAMP CONFIGURATIONS

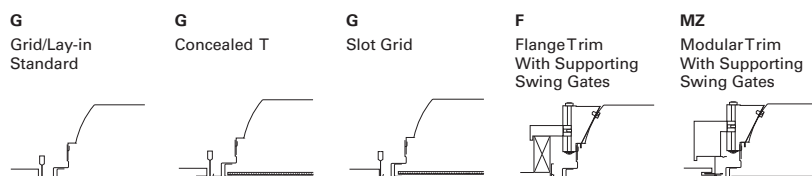


DOOR FRAME

VRGC
Flat, White Steel



CEILING COMPATIBILITY



Ceiling Type**	Trim Type
Exposed Grid	G
Concealed T	G
Slot Grid	G
Flange	F
Concealed Spline	MZ
Metal Pan	MZ

TORX® is a registered trademark of Camcar Division of Textron Inc.

ENERGY DATA

Input Watts:

EB Ballast & STD Lamps

232 (61)
432 (122)

ES Ballast & STD Lamps

232 (71)
432 (142)

Luminaire Efficacy Rating

LER = FL-66

Catalog Number: 2GC-232A

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$3.64

* Reference the lamp/ballast data in the

Technical Section for specific lamp/ballast requirements.

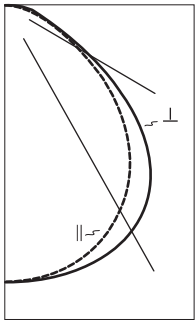
**Consult Pre Sales Technical Support.

ORDERING INFORMATION

SAMPLE NUMBER: 2VRGC-232A

Width	Product Family	Trim Type	Series	Door Type	No. of Lamps	Wattage (Length)	Lens Type	Voltage	Ballast Type	Options (Add as Suffix)
2	VR		C							
2 = 2'	VR				2, 3 or 4 Lamps (Not included)				Standard Magnetic Ballast Leave Blank (Biax Only)	PAF= Painted after Fabrication GL= Internal Single Element Fusing GM= Dual Element Fusing LCWE = F40/Cool White Energy Saving Lamps, Installed L8730= F32T8 3000 Kelvin Lamps, Installed L8735= F32T8 3500 Kelvin Lamps, Installed L8741= F32T8 4100 Kelvin Lamps, Installed EL4= Emergency Lighting, self contained RIF1 = Radio Interference Suppressor FR= Suitable for Fire Rated Applications EQ= T-BAR Safety Earthquake Clips ² RLS= Rotor-Lock Socket (T8 Lamps only) 6S= Six T20TORX®-head Screws (3 per side) SC =Safety Chain
G = Grid/Lay-in - Standard G = Concealed T G =Slot Grid F = Flange Trim MZ = Modular Trim EMZ = Modular Trim (Extended Swing Arm)					28T5 =28W T5 (48") 32 =32W T8 (48") 54T5 =54W T5HO (48")				LEOC8= Energy Saving Ballast (T8 Lamp only) EB = Generic Electronic Ballast	
C					ACTF140= .140Thick ACTF187= .187Thick PA375 = .250 polycarbonate with .125 prismatic overlay (standard with 6S option)				No. of Ballasts 1 or 2 ¹ Lamp Size 8 = T8	
Standard = Flat White Steel Door (Leave Blank)					120=120V 277=277V 347=347V UNV=Universal Voltage (120-277V)				(For specific Electronic Ballast specify Brand and Catalog Number.)	
									Notes: ¹ Two ballast in 2 or 4 lamp require LAO (less access opening). ² EQ Grid Clip is recommended for all 9/16" ceiling systems.	
									ER82 = (2)ELECTRONIC RAPID START BALLASTS	VRSD = VANDAL RESISTANT SCREWDRIVER

PHOTOMETRICS



2VRGC-232A
Electronic Ballast
F32T8/35K Lamps
2800 Lumens

Spacing criterion:
(II) 1.3 x mounting
height, (⊥) 1.4 x
mounting height
Efficiency 79.4%

Test Report
#108P156

LER = FL-66

Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH = \$3.64

Coefficients of Utilization

Effective floor cavity reflectance				20%															
80%				70%				50%				30%				10%			
rc	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0	0
RCR																			
0	95	95	95	95	92	92	92	92	88	88	88	84	84	84	81	81	81	79	
1	87	84	81	78	85	82	80	77	79	77	75	76	74	72	73	72	70	69	
2	81	75	70	66	79	73	69	65	71	67	64	68	65	62	66	63	61	59	
3	74	67	61	56	72	66	60	56	63	59	55	61	57	54	59	56	53	52	
4	68	60	53	49	67	59	53	48	57	52	48	55	51	47	53	50	46	45	
5	63	53	47	42	61	52	46	41	51	45	41	49	44	41	48	43	40	38	
6	58	48	41	36	56	47	41	36	46	40	36	44	39	35	43	39	35	34	
7	53	43	36	32	52	42	36	32	41	35	31	40	35	31	39	34	31	29	
8	49	39	32	27	48	38	32	27	37	31	27	36	31	27	35	30	27	25	
9	45	35	28	24	44	34	28	24	33	27	23	32	27	23	32	27	23	22	
10	42	31	25	21	41	31	25	21	30	25	21	29	24	21	29	24	21	19	

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1328	23.7	29.9
0-40	2203	39.3	49.5
0-60	3742	66.8	84.1
0-90	4447	79.4	100.0
0-180	4447	79.4	100.0

Typical VCP Percentages

Room Size (Ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	72	75	69	73
30 x 30°	68	70	65	68
30 x 60	62	64	57	60
60 x 30	70	73	69	71
60 x 60	62	64	58	61

Candela

Angle	Along II	45°	Across ⊥
0	1656	1656	1656
5	1647	1655	1663
10	1627	1644	1660
15	1595	1623	1649
20	1545	1590	1633
25	1481	1546	1604
30	1400	1486	1557
35	1299	1405	1493
40	1171	1294	1395
45	1013	1138	1245
50	835	954	1031
55	667	764	799
60	520	579	597
65	393	412	428
70	281	269	298
75	191	173	221
80	126	126	165
85	66	77	94
90	0	0	0

PW-100 Passive Infrared Wall Switch Sensor

High sensitivity and dense coverage for exceptional performance

Color-matched lens and low profile for appealing design



Selectable operation, walk-through, test and presentation modes for increased energy savings and convenience

Defaults to Manual-ON operation for maximum energy savings

Part of a comprehensive line of PIR, Ultrasonic and Dual Technology wall switch sensors

PROJECT	SUMMA ER GREEN
LOCATION/TYPE	SPECIFY FINISH

Product Overview

Description

The PW-100 passive infrared (PIR) wall switch sensor can turn lights OFF and ON based on occupancy. It is characterized by high sensitivity to small and large movements, appealing aesthetics, and a variety of features.

Operation

The PW-100 replaces existing wall switches and fits in a single gang junction box. It uses advanced PIR technology to detect occupancy and keep lighting ON when it is needed. Once the space is vacated and the time delay elapses, lights automatically turn OFF. DIP switch settings allow for a variety of control options such as Auto-ON operation, walk-through and test modes.

Manual-on Control

Factory default operation is for Manual-ON, so that users turn lights on only when needed. This control strategy is proven to save more energy than Auto-ON, and will be required where the ASHRAE 90.1-2010 energy code is adopted. If desired, the PW-100 may be reconfigured to turn lights on automatically.

Applications

The PW-100 sensor is well suited for small, enclosed spaces with clear line of sight of the occupant. Common applications include small office, small conference room and lunch/break rooms.

Features

- Detection Signature Processing eliminates false triggers and provides immunity to RFI and EMI
- Zero-crossing for long relay life
- Vandal resistant lens combines precise coverage with durability
- Choice of Manual-ON or Auto-ON operation
- Selectable walk-through mode turns lights off three minutes after the room is initially occupied if no motion is detected after the first 30 seconds
- Test mode allows quick and easy adjustments
- Selectable audible and/or visual alerts for impending shutoff
- In automatic mode, sensor returns automatically to Auto-ON after lights are turned off manually; ideal for presentations
- LED indicates occupancy detection
- Optional light level sensing with simple setup
- Service mode allows sensor to operate as a service switch in the unlikely event of a failure
- 2-wire and 3-wire models available for applications with or without neutral wire
- Sensor coverage tested to NEMA Guide Publication WD 7-2000
- Compatible with decorator wall plates
- Qualifies for ARRA-funded public works projects

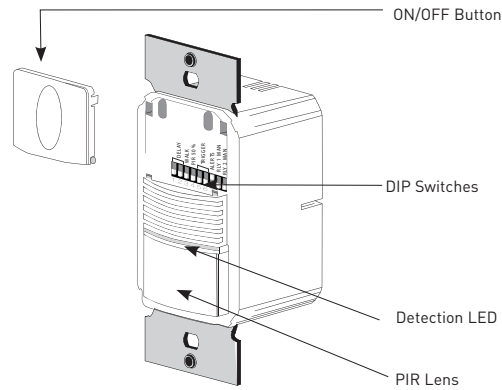


Specifications

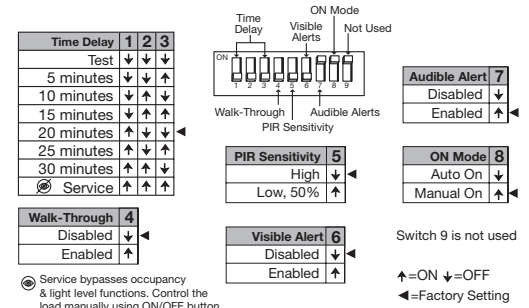
- PW-100, PW-101: 120/277 VAC; 50/60 Hz
@ 120 VAC, 0-800 W ballast or tungsten, 1/6 hp
@ 277 VAC, 0-1200 W ballast
- PW-100-347: 347 VAC; 50/60Hz; 0-1500 W ballast
- Time delays: 5, 10, 15, 20, 25 or 30 minutes, walk-through, test-mode
- Coverage: Major motion 35' x 30'
Minor motion 20' x 15'
- Sensitivity adjustment: PIR (high/low)
- Dimensions: 2.73" x 1.76" x 1.83"
(69.3mm x 44.7mm x 46.5mm) L x W x D
- UL and cUL listed
- Five year warranty

Controls & Settings

Product Controls

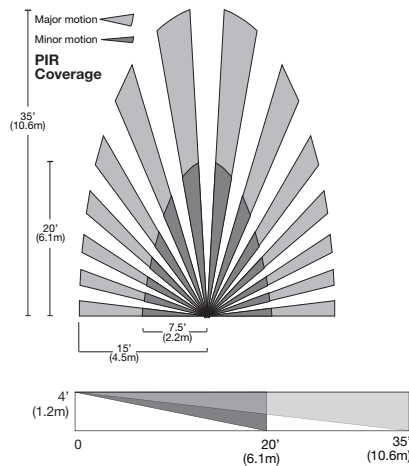


DIP Switch Settings

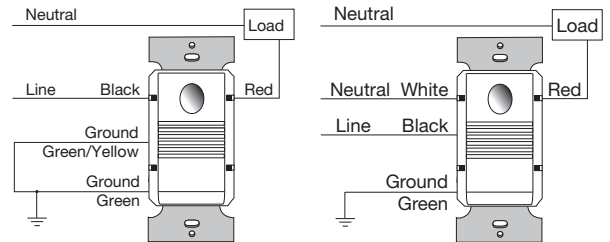


Coverage & Wiring

Coverage Pattern



Wiring Diagrams



Wiring for PW-100 with no neutral wire run to the switch box.

Wiring for PW-101 with a neutral connection in the switch box.

For best performance, WattStopper recommends using this sensor in spaces no larger than 15' x 12'.

Ordering Information

Catalog No.	Color	Voltage	Load Rating
<input type="checkbox"/> PW-100-W	White	120/277 VAC; 50/60 Hz 2-wire sensor; no neutral connection	@ 120 VAC, 0-800 W ballast or tungsten, 1/6 hp @ 277 VAC, 0-1200 W ballast
<input type="checkbox"/> PW-100-W-U			
<input type="checkbox"/> PW-100-W-FTA			
<input type="checkbox"/> PW-100-LA	Lt. Almond		
<input type="checkbox"/> PW-100-I	Ivory		
<input type="checkbox"/> PW-100-I-U			
<input type="checkbox"/> PW-100-I-FTA			
<input type="checkbox"/> PW-100-G	Grey	120/277 VAC; 50/60 Hz 3-wire sensor; requires neutral connection	@ 120 VAC, 0-800 W ballast or tungsten, 1/6 hp @ 277 VAC, 0-1200 W ballast
<input type="checkbox"/> PW-100-B	Black		
<input type="checkbox"/> PW-101-W	White		
<input type="checkbox"/> PW-101-LA	Lt. Almond		
<input type="checkbox"/> PW-101-I	Ivory		
<input type="checkbox"/> PW-101-G	Grey		
<input type="checkbox"/> PW-101-B	Black		
<input type="checkbox"/> PW-100-347-W	White	347 VAC; 50/60 Hz	0-1500 W ballast
<input type="checkbox"/> PW-100-347-LA	Lt. Almond		
<input type="checkbox"/> PW-100-347-I	Ivory		
<input type="checkbox"/> PW-100-347-G	Grey		
<input type="checkbox"/> PW-100-347-B	Black		

Order wall plate separately.



TS-400 Digital Time Switch



PROJECT

SUMMA ER-GREEN
SPECIFY FINISH

LOCATION/TYPE

Product Overview

Description

The IntelliSwitch TS-400 series digital time switches automatically turn lights off after a preset time. The simple pushbutton operation provides users with convenient time out lighting control without the nuisance of twist timers.

Operation

The TS replaces an existing wall switch. The TS-400 operates between 100 and 300 volts. Pressing the TS's on/off button turns lights on. The lights will remain on for the duration of the time-out setting which is adjustable from 5 minutes to 12 hours. Lights can be turned off before the time-out setting expires by pressing the on/off button. Also, the unit can be reset at any time by holding down the on/off button for 2 seconds. This will bring the timer back to its original time out setting and restart the countdown.

Time Scroll Overrides

The time scroll option allows users to temporarily override the time out setting without adjusting the settings. Time scroll is selected with the calibration button. With time scroll programmed to "UP", lights can be held on longer than the time out period. With time scroll programmed to down "DN", lights can be turned off sooner than the time out period. Pressing the on/off switch for more than 4 seconds causes the timer to scroll in the set direction throughout the possible time out settings.

Applications

The TS is an ideal lighting control choice in equipment rooms, storage areas, and closets.

Features

- Time-out settings range from 5 minutes to 12 hours for flexibility in fitting many applications
- Optional flash and beep warnings allow time to reset the switch if someone is present
- Time scroll option provides temporary override of the preset time out period
- Simple reset feature for returning the switch to its original preset time-out setting
- Electroluminescent back-lit LCD shows timer countdown
- Terminal style wiring simplifies installation
- Zero crossing reduces stress on the relay and increases product longevity
- Pushbutton programming gives the TS an easy set up process
- Setting the time-out for 2 hours and time scroll to down allows Title 24 compliance for using override switches
- Compatible with decorator wall plates
- Qualifies for ARRA-funded public works projects

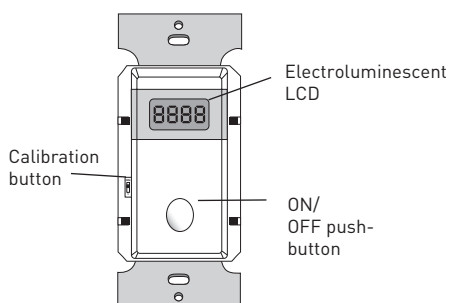


Specifications

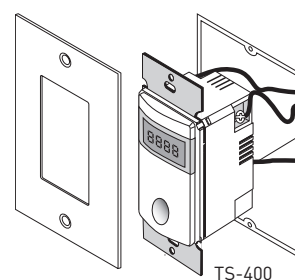
- TS-400: 120/277 VAC; 50/60 Hz
- Time-out adjustments range from 5 minutes to 12 hours (5 minute increments to 1 hour, then 15 minute increments to 12 hours)
- Optional visual warning: flashes lights at 5 minutes and 1 minute prior to time-out
- Optional audible warning: beeps every 5 seconds at 1 minute prior to time-out
- No minimum load requirement
- Compatible with all electronic ballasts and motor loads
- Dimensions: 2.66" x 1.79" x 1.76" (67.5mm x 45.5mm x 44.7mm)
- UL and cUL listed
- Five year warranty

Controls & Installation

Product Controls

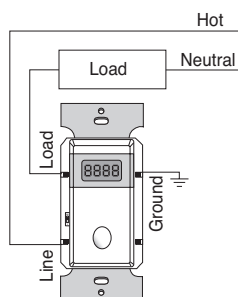


Installation

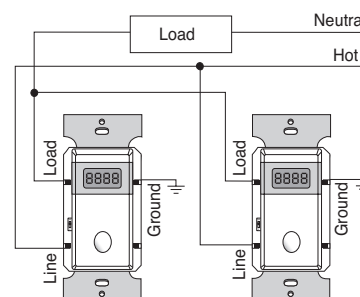


Wiring

TS-400 Single Level Lighting



TS-400 3-Way Lighting



Ordering Information

Catalog No.	Color	Voltage	Load Rating
<input type="checkbox"/> TS-400-W	White	120 VAC; 50/60 Hz, or 277 VAC; 50/60 Hz	0-800 Watt ballast, or 0-1200 Watt ballast
<input type="checkbox"/> TS-400-W-U			
<input type="checkbox"/> TS-400-I	Ivory		
<input type="checkbox"/> TS-400-A	Lt. Almond		
<input type="checkbox"/> TS-400-B	Black		
<input type="checkbox"/> TS-400-G	Grey		

Order wall plate separately.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

3/20/2013 9:14:35 AM

in

Case No(s). 13-0079-EL-EEC

Summary: Application (Part 2 of 2) electronically filed by Ms. Lindsey E Sacher on behalf of Summa Health System Hospitals and Ohio Edison Company