

Scale: 1 inch=30 Ft.



Prepared For:
Hobbs & Associates
35 Reserve Park Drive
Roslindale, MA 02370
Tel: 781-871-0011

Job Name:
Clem Marina
Portland, CT

Lighting Layout
Version A

Scale: as noted
Date: 12/20/19
Filename: Clem Marina Ltg Layout 252004A.LGI
Drawn By: dventio

PROJECT # 120125
CASE # 252004

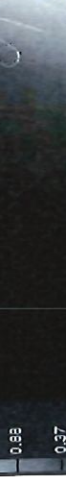
The Lighting Analysis, Energy Analysis and Illuminance Simulation (Lighting Design) provided by the RAB Lighting, Inc. ("RAB") represents an anticipated prediction of lighting system performance based upon design parameters and information supplied by others. These design parameters and information that design parameters and other information for field verification by RAB and therefore actual measured results may vary from the actual field conditions. RAB makes no representation or warranty, either implied or stated, nor represents the appearance or condition of any objects or materials shown or indicated on any drawings or documents created and submitted by RAB as a condition of any agreement or contract, including any addendum, modification or change order, for the project. RAB is not responsible for any errors or omissions in any drawings or documents for informational purposes and is not intended for construction nor as being part of a project's construction documentation package.

Calculation Summary	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Description	PSpdlr	PSpctb	Meter Type
Property Line	Illuminance	Fc	0.02	0.2	0.0	N/A	N/A	Readings taken at 0'-0" AFG	10	N/A	Horizontal
Site Lighting	Illuminance	Fc	0.40	7.9	0.0	N/A	N/A	Readings taken at 0'-0" AFG	10	10	Horizontal
Parking Lot	Illuminance	Fc	2.65	7.9	0.5	5.30	15.80	Readings taken at 0'-0" AFG			

Luminaire Tag Summary		
Tag		Qty
A		2
B		4

Luminaire Schedule				All quotes/orders generated from this layout must be forwarded to the Local Rep Agency		BUG Rating	
Symbol	Qty	Tag	Label	Arrangement	LLF	Description	Bug Rating
	2	A	ALED478Y	SINGLE	1.000	Type IV	B1-U0-G2
	2	B	ALED3778Y x2	BACK-BACK	1.000	Type III	B1-U0-G2

Expanded Luminaire Location Summary						
LumNo	Tag	X	Y	MTG HT	Orient	TIR
1	A	344.625	208.195	20	159.677	0
2	B	274.33	199.797	20	166.368	0
2	B	278.218	198.855	20	346.368	0
3	B	261.105	143.132	20	161.565	0
3	B	264.897	141.868	20	343.565	0
4	A	333.647	112.752	20	157.9	0



Tag	Min	Avg	Max
7	0	0.11	0.37
2	0	0.33	1.7
3	0	0.37	1.7
4	0	0.37	1.7
5	0	0.37	1.7
6	0	0.37	1.7
7	0	0.37	1.7

NOTES:

- The light loss factor (LLF) is a product of many variables, only lamp lumen depreciation (LLD) has been applied to the calculated results unless otherwise noted. The LLF is the result (expected) of mean lumen / initial lumens per lamp manufacturer's specifications.
- Illuminance values shown (in footcandles) are the predicted results for planes of calculation either horizontal, vertical or inclined as designated in the calculation summary. Meter orientation is normal to the plane of calculation.
- The calculated results of this lighting simulation represent an anticipated prediction of system performance. Actual measured results may vary from the predicted performance and are subject to means and methods which are beyond the control of RAB Lighting Inc.
- Mounting height determination is job site specific, our lighting simulations assume a mounting height (mounting point) of the luminaire symbol to be taken at the top of the symbol for ceiling mounted luminaires and at the bottom of the symbol for all other luminaire mounting configurations.
- It is the Owner's responsibility to confirm the suitability of the existing or proposed poles and bases to support the proposed luminaire weight and EPC of the proposed fixture and the owner's responsibility to confirm the weight and EPC of the proposed luminaire fixture and the owner's responsibility to confirm the suitability of the existing or proposed poles and bases in the state the site is located be engaged to assist in this determination.
- The landscape material shown herein is conceptual, and is not intended to be an accurate representation of any particular plant, shrub, bush, or tree as these materials are living organisms and subject to constant change. The conceptual objects shown are for illustrative purposes only. The actual illumination values measured in the field will vary.
- Photometric model elements such as buildings, rooms, plants, furnishings or any architectural details which impact the dispersion of light must be detailed by the customer documents for inclusion in the RAB lighting design model. RAB is not responsible for any inaccuracies caused by incomplete information on the part of the customer, and reserves the right to use best judgment when translating customer requests into photometric studies.
- RAB Lighting Inc. luminaire and product designs are protected under U.S. and International Intellectual Property laws. Patents issued or pending apply.

The Lighting Analysis, Layout, Energy Analysis and/or Visual Simulation ("Lighting Design") provided by the RAB Lighting Inc. ("RAB") represents anticipated predicted results based upon design parameters and intended results may vary from the actual field conditions. RAB recommends that design parameters and other information be field verified to reduce variation.

RAB neither warrants, either implied or stated, nor represents that the actual measured light level, or energy consumption levels as compared to those illustrated by the Lighting Design, or any other information provided by RAB, shall be used as a basis for any claims, damages, or liability of the Lighting Design. The Lighting Design is issued, in whole or in part, as advisory documents for informational purposes and is not intended for construction or as being part of a project's construction documentation package.

Job Name: Clem Marina Portland, CT Lighting Layout Version A	Scale: as noted Date: 12/2019 Filename: Clem Marina Lig Layout 252004-AG	PROJECT # 120125 CASE # 252004
Prepared For: Hobbs & Associates 35 Reservoir Park Drive Rockland, MA 02370 Tel: 781-871-5011		
170 Ludlow Avenue, Northvale, NJ 07647 888-722-1000 • rablighting.com		
Filename: 252004-ClemMarinaWorkingFiles\AG-Clem Marina Lig Layout 252004-AG		

ALED4T78Y

RAB | Outdoor



Color: Bronze

Weight: 31.4 lbs

Project:

Type:

Prepared By:

Date:

Driver Info

Type	Constant Current
120V	0.66A
208V	0.41A
240V	0.35A
277V	0.30A
Input Watts	77.1W
Efficiency	N/A

LED Info

Watts	78W
Color Temp	3000K (Warm)
Color Accuracy	71 CRI
L70 Lifespan	100,000
Lumens	9,611
Efficacy	124.7 LPW

Technical Specifications

Listings

UL Listing:

Suitable for wet locations as a downlight

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities. DLC Product Code: P2DP8BD4

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

Dark Sky Conformance:

Conforms to (allows for conformance to) the requirements for the IDA's "Fixture Seal of Approval" as of March 1, 2016.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

LEDs:

Six (6) multi-chip, 13W, high-output, long-life LEDs

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warranted to shift no more than 200K in CCT over a 5-year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type IV distribution (also known as a Forward Throw) is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semi-circular distribution with essentially the same candlepower at lateral angles from 90° to 270°.

Effective Projected Area:

EPA = 0.75

Ambient Temperature:

Suitable For use in 40°C (104°F)

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior heat sinking with external Air-Flow fins

Lens:

Tempered glass lens

Housing:

Die cast aluminum housing, lens frame and mounting arm

IP Rating:

Ingress Protection rating of IP66 for dust and water

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease. Round pole diameter must be >4" to mount fixtures at 90° orientation.

Reflector:

Specular vacuum-metallized polycarbonate

ALED4T78Y

Technical Specifications (continued)

Construction

Gaskets:

High-temperature silicone gaskets

Finish:

Formulated for high durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

Electrical

THD:

5.0% at 120V, 13% at 277V

Surge Protection:

4kV

Driver:

Constant Current, Class 2, 2000mA, 100-277V, 50-60Hz, 1.1A, Power Factor 99%

Power Factor:

99.5% at 120V, 93.6% at 277V

Other

Patents:

The ALED design is protected by patents in the U.S. Pat. 668,370, Canada Pat. 144956, China ZL201230100154.X, and Mexico Pat. 38423. Pending patents in Taiwan.

BAA Compliance:

Click [here](#) for BAA compliance.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

Equivalency:

Equivalent to 250W Metal Halide

Buy American Act Compliance:

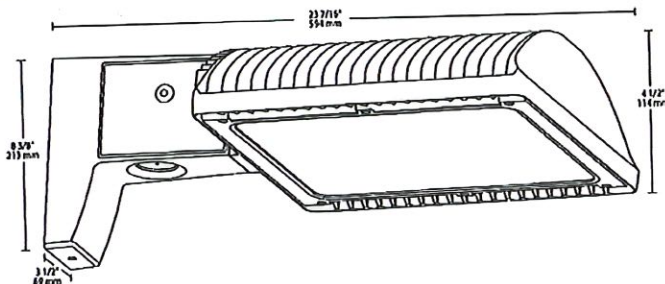
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Optical

BUG Rating:

B1 U0 G2

Dimensions



Features

- 66% energy cost savings vs. HID
- 100,000-hour LED lifespan
- 5-Year, No-Compromise Warranty

ALED4T78Y

RAB | Outdoor

Ordering Matrix

Family	Optics	Wattage	Mounting	Color Temp	Finish	Driver Options	Options	Other Options
ALED	4T	78		Y				
	4T = Type IV 3T = Type III 2T = Type II	50 = 50W 78 = 78W 105 = 105W 125 = 125W 150 = 150W	Blank = Pole mount SF = Slipfitter	Blank = 5000K (Cool) N = 4000K (Neutral) Y = 3000K (Warm)	Blank = Bronze RG = Roadway Gray W = White K = Black	Blank = 120-277V /480 = 480V /BL = Bi-Level /D10 = 0-10V Dimming	Blank = No Option /LC = Lightcloud® Controller /PCS = 120V Swivel Photocell /PCS2 = 277V Swivel Photocell /PCT = 120-277V Twistlock Photocell /PCS4 = 480V Swivel Photocell /PCT4 = 480V Twistlock Photocell /WS2 = Multi-Level Motion Sensor 20 ft. /WS4 = Multi-Level Motion Sensor 40 ft.	Blank = Standard USA = BAA Compliant

ALED3T78Y



Color: Bronze

Weight: 31.4 lbs

Project:

Type:

Prepared By:

Date:

Driver Info

Type	Constant Current
120V	0.66A
208V	0.41A
240V	0.35A
277V	0.30A
Input Watts	76.8W
Efficiency	N/A

LED Info

Watts	78W
Color Temp	3000K (Warm)
Color Accuracy	70 CRI
L70 Lifespan	100,000
Lumens	8,765
Efficacy	114.1 LPW

Technical Specifications

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

LEDs:

Six (6) multi-chip, 13W, high-output, long-life LEDs

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warranted to shift no more than 200K in CCT over a 5-year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Listings

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities. DLC Product Code: P0000179T

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

UL Listing:

Suitable for wet locations as a downlight

Dark Sky Conformance:

Conforms to (allows for conformance to) the requirements for the IDA's "Fixture Seal of Approval" as of March 1, 2016.

Construction

IES Classification:

The Type III distribution is ideal for roadway, general parking and other area lighting applications where a larger pool of lighting is required. It is intended to be located near the side of the area, allowing the light to project outward and fill the area.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Ambient Temperature:

Suitable For use in 40°C (104°F)

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior heat sinking with external Air-Flow fins

Effective Projected Area:

EPA = 0.75

Lens:

Tempered glass lens

Housing:

Die cast aluminum housing, lens frame and mounting arm

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease. Round pole diameter must be >4" to mount fixtures at 90° orientation.

Reflector:

Specular vacuum-metallized polycarbonate

Technical Specifications (continued)

Construction

Gaskets:

High-temperature silicone gaskets

Finish:

Formulated for high durability and long-lasting color

Green Technology:

Mercury and UV free. RoHS-compliant components.

Electrical

THD:

4.4% at 120V, 12.4% at 277V

Surge Protection:

4kV

Driver:

Constant Current, Class 2, 2000mA, 100-277V, 50-60Hz, 1.1A, Power Factor 99%

Power Factor:

99.5% at 120V, 93.5% at 277V

Other

Patents:

The ALED design is protected by patents in the U.S. Pat. 668,370, Canada Pat. 144956, China ZL201230100154.X, and Mexico Pat. 38423. Pending patents in Taiwan.

BAA Compliance:

Click [here](#) for BAA compliance.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at rablighting.com/warranty.

Equivalency:

Equivalent to 250W Metal Halide

Buy American Act Compliance:

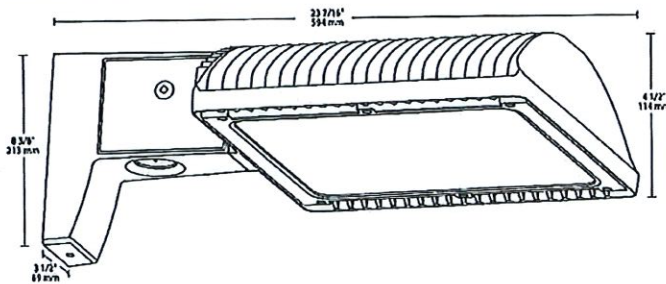
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Optical

BUG Rating:

B1 U0 G2

Dimensions



Features

- 66% energy cost savings vs. HID
- 100,000-hour LED lifespan
- 5-Year, No-Compromise Warranty

ALED3T78Y

Ordering Matrix

Family	Optics	Wattage	Mounting	Color Temp	Finish	Driver Options	Options	Other Options
ALED	3T	78		Y				
	4T = Type IV 3T = Type III 2T = Type II	50 = 50W 78 = 78W 105 = 105W 125 = 125W 150 = 150W	Blank = Pole mount SF = Slipfilter	Blank = 5000K (Cool) N = 4000K (Neutral) Y = 3000K (Warm)	Blank = Bronze RG = Roadway Gray W = White K = Black	Blank = 120-277V /480 = 480V /BL = Bi-Level /D10 = 0-10V Dimming	Blank = No Option /LC = Lightcloud® Controller /PCS = 120V Swivel Photocell /PCS2 = 277V Swivel Photocell /PCT = 120-277V Twistlock Photocell /PCS4 = 480V Swivel Photocell /PCT4 = 480V Twistlock Photocell /WS2 = Multi-Level Motion Sensor 20 ft. /WS4 = Multi-Level Motion Sensor 40 ft.	Blank = Standard USA = BAA Compliant



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze

Weight: 195.0 lbs

Project:

Type:

Prepared By:

Date:

Technical Specifications

Listings

CSA Listed:

Suitable for wet locations

Construction

Shaft:

46,000 p.s.i. minimum yield.

Hand Holes:

Reinforced with grounding lug and removable cover

Base Plates:

36,000 p.s.i. minimum yield.

Shipping Protection:

All poles are shipped in individual corrugated cartons to prevent finish damage

Color:

Bronze powder coating

Height:

20 FT

Weight:

195 lbs

Gauge:

7

Wall Thickness:

3/16"

Shaft Size:

4"

Hand Hole Dimensions:

3" x 5"

Bolt Circle:

8 1/2"

Base Dimension:

8"

Anchor Bolt:

Galvanized anchor bolts and galvanized hardware and anchor bolt template. All bolts have a 3" hook.

Anchor Bolt Templates:

WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available [online](#).

Pre-Shipped Anchor Bolts:

Bolts can be pre-shipped upon request for additional freight charge

Max EPA's/Max Weights:

- 70MPH 16.2 ft./390 lb.
- 80MPH 11.8 ft./285 lb.
- 90MPH 8.7 ft./205 lb.
- 100MPH 6.3 ft./150 lb.
- 110MPH 4.5 ft./110 lb.
- 120MPH 3.1 ft./75 lb.
- 130MPH 2.0 ft./50 lb.
- 140MPH 1.1 ft./30 lb.
- 150MPH 0.4 ft./10 lb..

Accessories:

Anchor Bolts: [ABK4-07](#)

PS4-07-20D2

Technical Specifications (continued)

Other

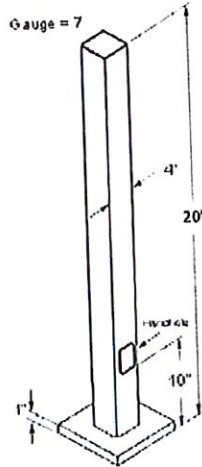
Terms of Sale:

Pole Terms of Sale is available [online](#).

Buy American Act Compliance:

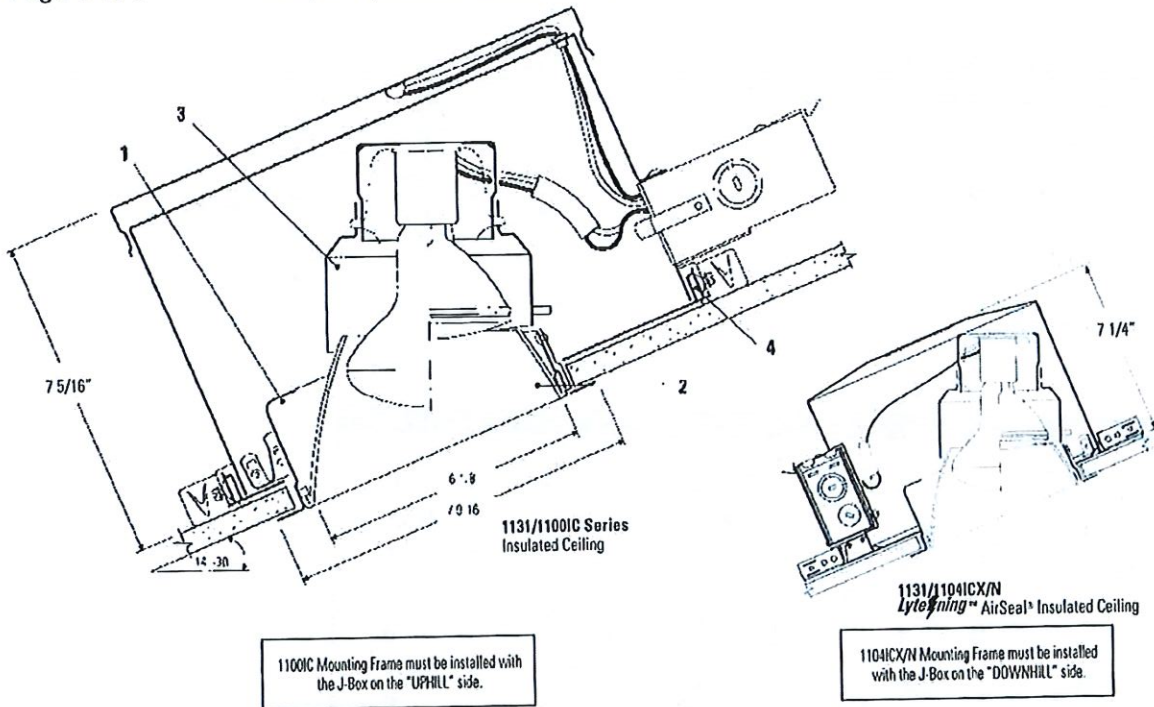
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Anchor Bolt Kit Includes pole cap and base cover (sold separately)
- Custom manufactured for each application



Complete Fixture consists of Reflector Trim & Frame-In Kit. Select each separately.

Reflector Trim		Frame-In Kit — See Individual Frame-In Kit Specification Sheets			
		Incandescent			
		Frame-In Kit	Installation Type	Lamping	Height
1131	Black Step Baffle	1100IC	IC	75W PAR30 (Short Neck)	7 5/16"
1131WH	White Step Baffle	1100AICM	AirSeal® IC	65W BR30	7 5/16"
1131GD	Specular Gold	1104ICX/N	AirSeal® IC	75W PAR30 (Short Neck)	7 1/4"
1131CL	Specular Clear			85W BR30	
1131BK	Specular Black				

Features

- Housing:** Hydroformed aluminum, .040" thick; white trim flange.
- Aperture:** Conical aluminum step baffle, matte black or gloss white finish; or hydroformed aluminum cone, specular finish. For ceiling slopes 14° - 30° angle, 3/12 - 7/12 pitch.
- Lamp Housing:** Hydroformed aluminum, .040" thick; permits ± 7° vertical adjustment for straight downlighting.
- Frame-In Kit:** See Frame-In Kit specification sheets for more details.

Options & Accessories

Extra Wide Flange Trim Ring: 1954 - 8 5/8" O.D.

Labels

UL (Suitable for Damp Locations), I.B.E.W.

Job Information	Type:
Job Name:	
Cat. No.:	
Lamp(s):	
Notes:	

631 Airport Road, Fall River, MA 02720 • (508) 679-8131 • Fax (508) 674-4710
 We reserve the right to change details of design, materials and finish.
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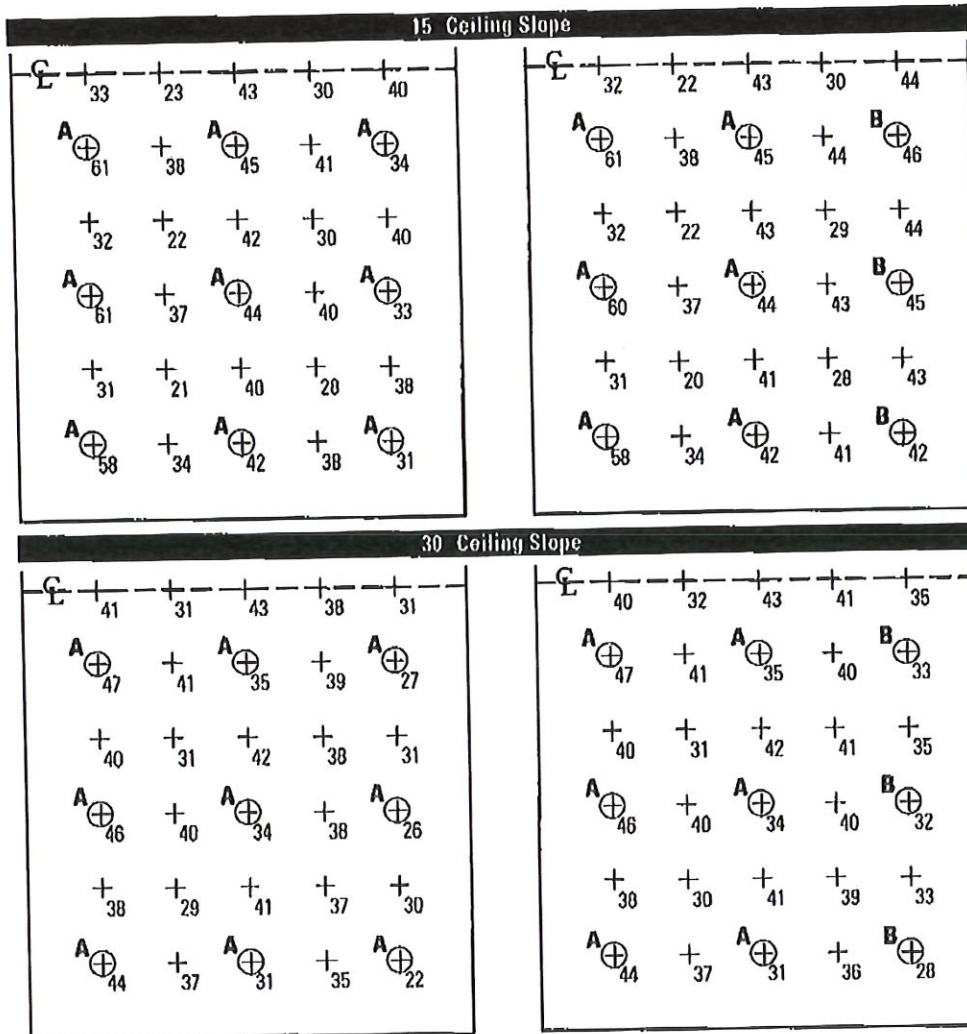
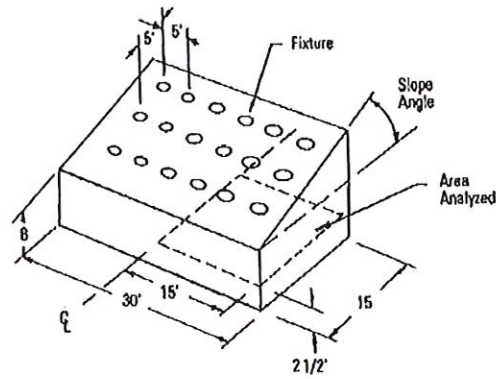
Footcandles 2 1/2' Above the Floor

Fixture mounted on 5' x 5' centers (horizontally) in 15' x 30' room with sloped ceiling.

Room reflectances: 80% ceiling, 50% walls, 20% floor.

A = 75W PAR30 FL (Flood)

B = 75W PAR30 NFL (Narrow Flood)

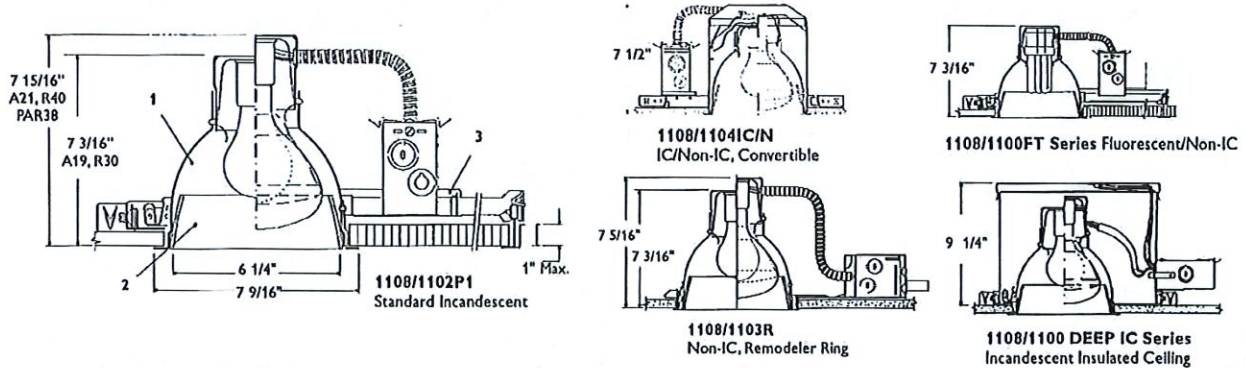


Data calculated with GENESYS using bare lamp photometrics. Fixture spacing exceeding 5' may cause uneven lighting under lowest ceiling areas.
 To convert lighting data for a lower wattage incandescent lamp of the same type, multiply the footcandle (or candlepower) values by the ratio of the lumens of the two lamps.
 The coefficients of utilization remain the same.

Job Information **Type:**

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Project: _____ Catalog No: _____ Mfg: _____
 Location: _____ Fixture Type: _____ Qty: _____
 Notes: _____ Lamps: _____



Ordering guide Complete Fixture consists of Reflector Trim & Frame-In Kit. Select each separately.

example: 1112 + 1101LED

Reflector Trim Catalog number	Frame-In Kit — See Individual Frame-In Kit Specification Sheets				Incandescent			
	Fluorescent	Installation Type	Lamping	Height	Frame-In Kit	Installation Type	Lamping	Height
1108* Brushed Gold 1110* Brushed Clear 1112 Specular Gold 1113* Specular Clear 1113BK* Specular Black 1113CD* Clear Diffuse White Flange 1113WH Matte White	1104F13 series	IC	(1) Quad/Triple 13W (GX24q-1)	7 1/2"	1102P1 1103R	Non-IC Non-IC Remodeler	100WA19 150WA21, PAR38, BR40	7 3/16" - 7 15/16"
	1104F10 series	IC	(1) Quad/Triple 18W (GX24q-2)	7 1/2"	1100IC 1100AICM 1100DICM 1100DAICM	IC AirSeal IC Deep IC Deep AirSeal IC	75WA19 90W PAR38 100W BR40	7 5/16" 7 5/16" 9 1/4" 9 1/4"
	1104F26† series	IC	(1) Quad/Triple 26W (GX24q-3)	7 1/2"	1104ICX/N	AirSeal IC	60WA19 120W BR40 120W (100W) 100W PAR38 (90W)	7 5/16" 7 5/16" 9 1/4" 9 1/4"
	1101F18ICU/N	Performance IC	(1) Quad/Triple 18W (GX24q-2)	7 1/4"	1104IC/N 1104ICR	AirSeal IC IC Remodeler	60WA19 (52W) 75W PAR38 65W BR40	7 1/4" 7 1/2"
	1101F2642ICU 1101F2642IUN	Performance IC	(1) Triple 26/32W (GX24q-3)	7 1/4"	1104IC/N 1104ICR	AirSeal IC IC Remodeler	60WA19 (52W) 75W PAR38 65W BR40	7 1/4" 7 1/2"
	1101FDICMX1/N	Performance IC, Advance Mark10, Dimming 120v	(1) Triple 26/32W (GX24q-3)	7 1/4"	1104IC/N 1104ICR	Non-IC Non-IC Remodeler	100WA19 (75W) PAR38 150W BR40	7 1/2"
	1101FDICMX2/N	Performance IC, Advance Mark10, Dimming 277v	(1) Triple 26/32W (GX24q-3)	7 1/4"				
	1001F18U series	UniFrame™ Non-IC	(1) Quad/Triple 18W (GX24q-2)	7 1/16" max				
	1101F2642U series 1100FTU series	UniFrame™ Non-IC Non-IC	(1) Triple 26/32W (GX24q-3)	7 1/16" max 7 3/16"				
					LED			
					Frame-In Kit	Installation		Height
					1101LED 1101LEDEM 1100LEDREM L56LED	Non-IC Non-IC EM Non-IC Remodeler Non-IC Retrofit		7-1/2"

Features

- Reflector:** Hydroformed aluminum, .040" minimum thickness; Anobrite® (anodic-processed) semi-specular finish for permanent reflectivity; matte white or Natural Metal™ trim flange.
- Aperture Cone:** Aluminum cone painted or anodized finish.
- Frame-In Kit:** (1102P1 standard frame shown). Other frames listed above and shown on the right. See Frame-In Kit specification sheets for more details.

Options and Accessories

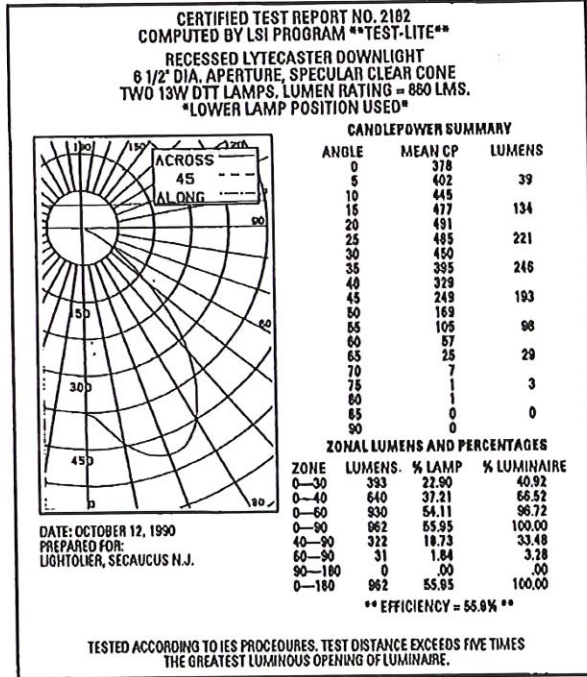
Lytegems: See 1500 Series Specification Sheets
 Retaining Clips: 1955 - For installing in existing ceiling
 Extra Wide Flange Trim Ring: 1954 - 8-5/8" O.D.
 Spread Lens: L56WWLENS - Proprietary spread lens for use with combination of wall washer optics and LED Frame-In Kits.

Labels

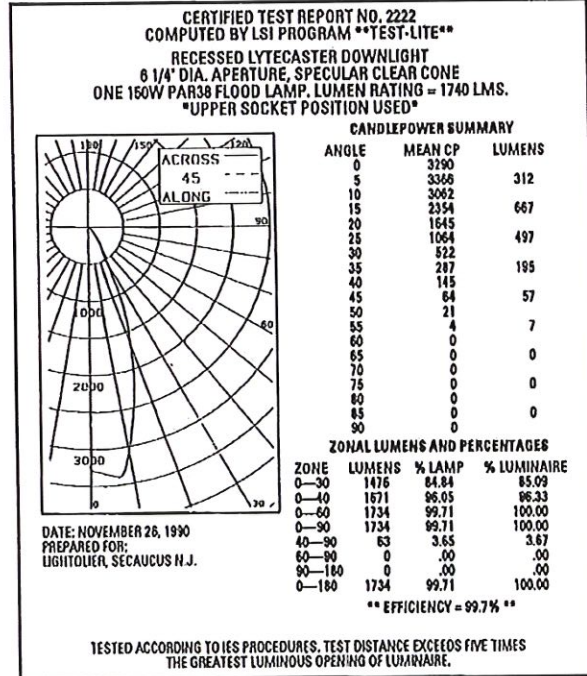
U.L. (Suitable for Damp Locations); I.B.E.W.

PHILIPS
LIGHTOLIER

SPACING RATIO = 1.5



SPACING RATIO = 0.7



COEFFICIENTS OF UTILIZATION

% EFFECTIVE CEILING CAVITY REFLECTANCE

ROOM CAVITY RATIO	% WALL REFLECTANCE															
	80			70			50			30			10			0
	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
1	.61	.60	.58	.60	.59	.57	.58	.57	.56	.56	.55	.54	.54	.53	.52	.51
2	.56	.54	.52	.55	.53	.51	.53	.52	.50	.52	.50	.49	.50	.49	.48	.47
3	.52	.48	.46	.51	.48	.46	.49	.47	.45	.48	.46	.44	.47	.45	.43	.42
4	.47	.44	.41	.47	.44	.41	.46	.43	.40	.44	.42	.40	.43	.41	.39	.38
5	.43	.40	.37	.43	.39	.37	.42	.39	.36	.41	.38	.36	.40	.38	.36	.35
6	.40	.36	.33	.39	.35	.33	.38	.35	.33	.37	.35	.32	.37	.34	.32	.31
7	.36	.32	.29	.36	.32	.29	.35	.31	.29	.34	.31	.29	.34	.31	.29	.28
8	.33	.28	.26	.33	.29	.26	.32	.28	.26	.31	.28	.26	.31	.28	.26	.25
9	.30	.26	.23	.30	.26	.23	.29	.26	.23	.29	.26	.23	.28	.25	.23	.22
10	.28	.24	.21	.27	.24	.21	.27	.23	.21	.26	.23	.21	.26	.23	.21	.20

20% FLOOR CAVITY REFLECTANCE

Conversion Factors: 2 Lt. 13W Quad Tube: White, C.U. x 0.7; Black, C.U. x 0.65. 1 Lt. 13 Quad Tube: Clear & Gold, C.U. x 1.15; White, C.U. x 1; Black, C.U. x 0.85. 100W A19 and 150W A21: Clear & Gold, C.U. x 1.15; White, C.U. x 1.1; Black, C.U. x 0.8.

COEFFICIENTS OF UTILIZATION

% EFFECTIVE CEILING CAVITY REFLECTANCE

ROOM CAVITY RATIO	% WALL REFLECTANCE															
	80			70			50			30			10			0
	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
1	1.13	1.11	1.09	1.11	1.09	1.07	1.07	1.05	1.04	1.03	1.02	1.01	1.00	.99	.98	.97
2	1.08	1.05	1.02	1.06	1.03	1.01	1.03	1.01	.99	1.00	.98	.97	.97	.96	.95	.93
3	1.03	1.00	.97	1.02	.99	.96	.99	.97	.95	.97	.95	.93	.95	.93	.92	.91
4	.99	.95	.92	.98	.95	.92	.96	.93	.91	.94	.92	.90	.93	.90	.89	.88
5	.95	.91	.88	.94	.90	.88	.93	.89	.87	.91	.88	.86	.90	.87	.85	.84
6	.92	.88	.85	.91	.87	.84	.90	.87	.84	.89	.86	.83	.87	.85	.83	.82
7	.88	.84	.81	.88	.84	.81	.86	.83	.81	.85	.82	.80	.85	.82	.80	.79
8	.85	.81	.78	.84	.81	.78	.84	.80	.77	.83	.79	.77	.82	.79	.77	.76
9	.82	.78	.75	.81	.78	.75	.81	.77	.74	.80	.76	.74	.79	.76	.74	.73
10	.79	.75	.72	.79	.75	.72	.78	.74	.72	.77	.74	.72	.77	.74	.71	.70

20% FLOOR CAVITY REFLECTANCE

Conversion Factor: 150W PAR38 FL: White, C.U. x 0.95; Black, C.U. x 0.9. 150W BR40 FL: Clear and Gold, C.U. x 1.0; White, C.U. x 0.95; Black, C.U. x 0.85.

To convert lighting data for a lower wattage incandescent lamp of the same type, multiply the footcandle (or candlepower) values by the ratio of the lumens of the two lamps. The coefficients of utilization remain the same.



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