

# ZR24™

2'x4' LED Troffer

Type A

## Product Description

The ZR24™ LED troffer delivers 4000 lumens of superior 90 CRI light quality and is perfect for both new construction or renovation. Powered by Cree TrueWhite® Technology, the slim and lightweight ZR24™ LED troffer boasts an efficacious 90 LPW performance along with 0-10V dimming to meet local energy codes. The ZR24™ LED troffer embodies a breakthrough in balancing energy savings, visual comfort and initial cost.

## Performance Summary

Utilizes Cree TrueWhite® Technology

Assembled in the US & Mexico

**Efficacy:** 90 LPW

**Delivered Light Output:** 4000 lumens

**Input Power:** 44 watts

**CRI:** 90 CRI

**CCT:** 3500K, 4000K

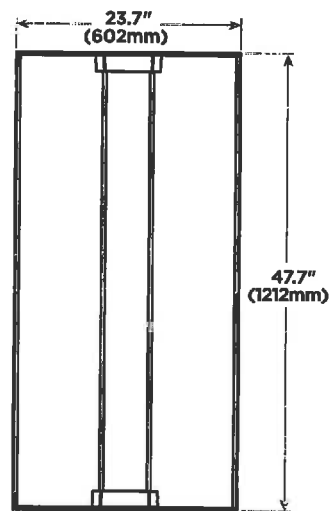
**Input Voltage:** 120-277 VAC

**Limited Warranty†:** 10 years

**Lifetime:** Designed to last up to 75,000 hours

**Controls:** 0-10V Dimming to 5%\*

**Mounting:** Recessed



## Ordering Information

Example: ZR24-40L-35K-10V

ZR24	40L			10V	
Product	Light Output (lm)	Color Temp (K)	Voltage	Control	Options
ZR24	40L 44W, 4000 Lumens	35K 3500 Kelvin 40K 4000 Kelvin	Blank 120-277 Volt	10V 0-10V Dimming 5%*	EB Emergency Backup**

† See [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for warranty terms

\* Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimming controls and wiring diagrams

\*\* EB option available Q2 2014



Rev. Date: 03/26/2014



**ZR24™**  
2'x4' LED Troffer

**Product Specifications**

**CREE TRUEWHITE™ TECHNOLOGY**

A revolutionary way to generate high-quality white light, Cree TrueWhite™ Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics, and lifelong color consistency, all while maintaining high luminous efficacy - a true no compromise solution.

**LUMEN MAINTENANCE FACTORS**

- Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed lumen maintenance factors

**CONSTRUCTION & MATERIALS**

- Durable cold rolled steel housing provides strength and uniformity
- Ultra-thin 3.9" fixture height and lightweight design effectively target a broad range of plenum spaces and allow for easy installations
- Fixture is pre-painted for enhanced smooth finish
- Provided t-bar clips and holes for mounting support wires enable recessed or suspended installation
- Fixture sides and ends are hemmed in for safe, easy handling

**OPTICAL SYSTEM**

- Unique fixture design creates perfect balance of both horizontal and vertical illumination
- Optimized smooth lens eliminates pixelation and delivers a low-glare, diffused light distribution

**ELECTRICAL SYSTEM**

- Cree born components including highly efficacious Cree® LED chips along with an integral high-efficiency Cree® driver
- Power Factor = 0.9 nominal
- Input Power: Stays constant over life
- Input Voltage: 120-277V, 50/60Hz
- Battery Backup: Consult factory
- Temperature Rating: Designed to operate in temperatures 0-35 °C and below room side and plenum side
- Total Harmonic Distortion: <20%

**CONTROLS**

- Continuous dimming to 5% with 0-10V DC control protocol\*

**REGULATORY & VOLUNTARY QUALIFICATIONS**

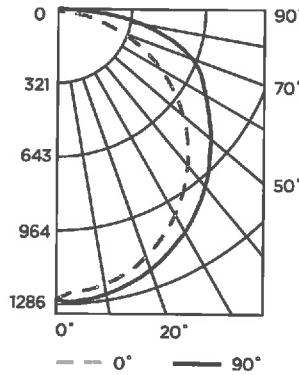
- UL924 (EB option)
- cULus Listed
- Suitable for damp locations
- Designed for indoor use
- Product qualified on the DesignLights Consortium (DLC) Qualified Products List (QPL)

\*Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimming controls and wiring diagrams

**Photometry**

**ZR24-40L-40K BASED ON CESTL REPORT TEST #: PLO2844-001**

Fixture photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. IESNA LM-79-08 specifies the entire luminaire as the source resulting in a fixture efficiency of 100%.



**Coefficients of Utilization - Zonal Cavity Method**

RC %:	80			
	70	50	30	10
RW %:				
RCR: 0	119	119	119	119
1	107	102	97	93
2	97	88	80	74
3	88	76	68	61
4	80	67	58	51
5	73	60	50	43
6	68	54	44	38
7	63	49	40	33
8	58	44	36	29
9	55	41	32	26
10	51	37	29	24

Effective Floor Cavity Reflectance: 20%

**Average Luminance Table (cd/m2)**

Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	1642	1772	1899
55°	1580	1788	2014
65°	1480	1885	2341
75°	1276	2240	2819
85°	952	2498	3203

**Zonal Lumen Summary**

Zone	Lumens	% Lamp	Luminaire
0-30	990	N/A	24.4%
0-40	1628	N/A	40.1%
0-60	2949	N/A	72.6%
0-90	4064	N/A	100%
0-180	4064	N/A	100%

Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed photometric data.

**Application Reference**

Spacing	Lumens	Wattage	LPW	w/f2	Average ft
8 x 8	3200	35	91	0.53	45
	4000	44	91	0.66	56
8 x 10	3200	35	91	0.44	37
	4000	44	91	0.55	46
10 x 10	3200	35	91	0.35	30
	4000	44	91	0.44	37
10 x 12	3200	35	91	0.28	24
	4000	44	91	0.35	30

9' ceiling: 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial  
Open Space: 50' x 40' x 10'

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<b>FSL LED</b> DECORATIVE FLOOD	Cat.#		
	Job	Type D1	

**SPECIFICATIONS**

**Intended Use:**

Ultra compact flood with wide beam NEMA 6 x 6 distribution for lighting applications such as safety/security, facade, area, or signs; operating temperature of -35°C to 40°C

**Construction:**

- Rugged die-cast aluminum housing with dark bronze finish
- High impact UV stabilized acrylic outer lens protects LEDs and allows for cleaning/debris removal
- Vented housing isolates LED module from driver maximizing product life and performance
- Visor and vandal shield available

**LED:**

- 7 high powered LEDs deliver 2040 lumens
- 5100K CCT, 67 CRI

**Optical/Electrical**

- Wide flood NEMA 6 x 6 distribution for general purpose flood and facade lighting
- 120-277V operation, 50/60Hz (PC version 120V only) 26.5w, 1050mA, 78 LPW
- IP66 and RoHS compliant driver
- 0-10V dimming driver

**Installation:**

- Traditional 1/2" x 14 NPS threaded adjustable knuckle mounting

**Listings:**

- Meets DesignLights Consortium (DLC) qualifications
- Lighting Facts
- IP66, Listed to UL1598 for use in wet locations

**Warranty:**

For more information visit:  
<http://www.hubbelloutdoor.com/resources/warranty/>

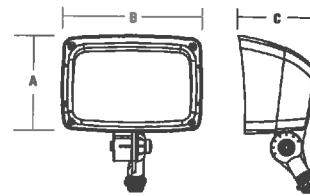
**PRODUCT IMAGE(S)**



**NEW**



**DIMENSIONS**



A	B	C	Weight
4.5"	7.49"	4.03"	6 lbs.
114 mm	190 mm	102 mm	2.7 kg

**SHIPPING INFORMATION**

Catalog Number	G.W(kg)/CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
FSL-7 (Single carton 1pc.)	2.66	9.45"	7.87"	6.69"
FSL-7 (Master carton 2 pcs.)	5.31	16.54"	10.04"	7.68"

Carton dimensions for shipping purposes only

**CERTIFICATIONS/LISTINGS**



IP66

**ORDERING INFORMATION**

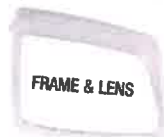
Catalog Number	Mount	Max Candle Power	Beam Pattern	Wattage	Drive Current	Voltage	Color Temperature	Lumens	LPW	Weight lbs. (kg)
FSL-7	1/2" thread	1450	Wide	26.5	1050mA	120-277V	5100K	2040	77	6 (2.7)
FSL-7-PC1	1/2" thread	1450	Wide	26.5	1050mA	120V	5100K	2040	77	6 (2.7)

**PAINT IN FIELD SHUTTER GREEN**

**ACCESSORIES/REPLACEMENT PARTS - Order Separately**

Catalog Number	Descriptor
FSL-SPC	Polycarbonate lens (Replaces existing acrylic fixture lens)
FSL-VISOR-XX <sup>1</sup>	Top/Bottom visor (Tap holes in lens frame for field installation)
93047942AC	Acrylic lens w/ gasket
93047957	25w, Driver, 1040mA
20750110264	Knuckle mount Dark Bronze finish. Contact factory for additional finishes

<sup>1</sup> Specify finish color to match fixture, e.g. DB - Bronze.



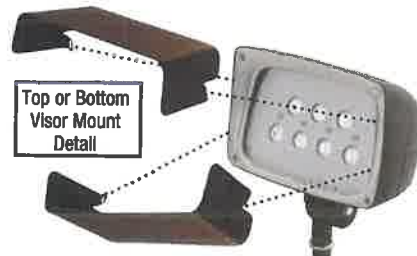
FSL-SPC



FSL-VISOR - 3/4 View



Front View



Top or Bottom Visor Mount Detail



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Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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FSL7LED-SPEC 2/14

**PERFORMANCE DATA**

# OF LEDS	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	5K (5100K nominal, 67 CRI)				
				NEMA	FIELD ANGLE H' X V'	LUMENS	LPW	MAX BEAM CANDLEPOWER
7	1050mA	26.5W	W	6 X 6	108 X 106	2040	77	1450

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment, application and inherent performance tolerances of the electrical components.

**LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)**

AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	1.00
40°C	104°F	0.99
50°C	122°F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

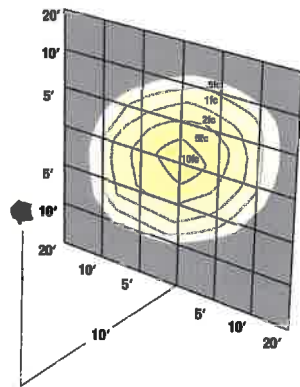
**PROJECTED LUMEN MAINTENANCE**

AMBIENT TEMP.	OPERATING HOURS					Calculated L70 (HOURS)
	0	25,000	50,000	TM-21-11 60,000	100,000	
40°C / 104°F	0.99	0.91	0.85	0.84	0.76	>137,000

**ELECTRICAL DATA**

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (W)
7	1	1050mA	120	0.23	26.5
			277	0.11	26.5

**PHOTOMETRICS** For additional photometric information and IES downloads, visit our web site at [www.hubbelloutdoor.com](http://www.hubbelloutdoor.com)



**LIGHTING FACTS**

**LED Lighting facts**  
A Program of the U.S. DOE

Light Output (Lumens)	2040
Watts	26.5
Lumens per Watt (Efficacy)	76

Color Accuracy Color Rendering Index (CRI)	71
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Light Color  
CIE General Color Temperature (K): 5280 (Daylight)

2700K 3000K 4000K 5000K 6500K

Visit [www.lightingfacts.com](http://www.lightingfacts.com) for the Label Reference Guide.

**NIBLICK POLY LED**

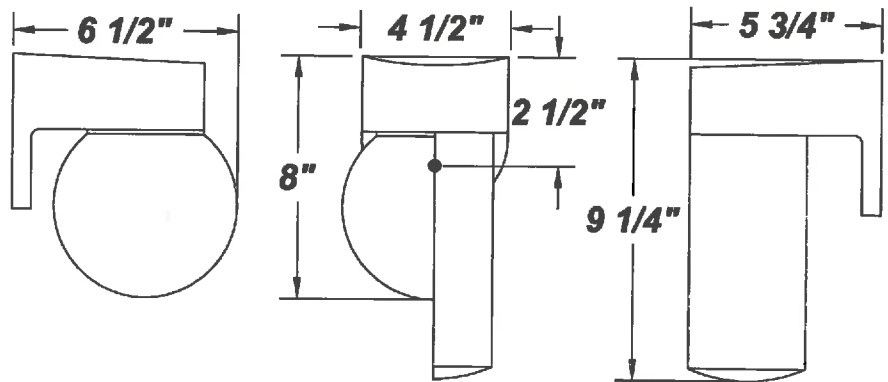


COMPACT FLUORESCENT

PROJECT :
TYPE: E
ORDERING # :
COMMENTS :

**FEATURES**

- Black or White Polycarbonate Housing
- Luminous White Polycarbonate Jar Diffuser
- Ambient Operating Temperature -40° C (-40° F) to 40° C (105° F)
- Constant Current at 700 Milliamps
- UL Class 2 Driver - Power Factor >.90
- Estimated 50,000 Hours Life (L70)
- Thermal Protected LED Array
- Mounts Directly to 4" Junction Box (By Others)
- Mounting Hardware Included
- Wet Location



**ORDERING INFORMATION**

Example : (PNK - L10.0 - 120 - 277V - JW - BK - 40K)

PRODUCT	SOURCE/WATTAGE	VOLTAGE	DIFFUSER	FINISH	OPTIONS
PNK					
<b>Niblick Poly</b>	<b>L10.0 - (4) LED Array</b>  50,000 Hours(L70)  Please See "Options" Column For Specifications	<b>120 - 277V</b> (50 / 60Hz)  Please See "Options" Column For Driver Specifications	<b>JW - White Jar</b> Polycarbonate Lens <b>GW - White 6"</b> Polycarbonate Globe	<b>BK - Black</b> <b>WH - White</b>	<b>10W LED ARRAY</b> <b>40K - 4000K Color Temp.</b>  - 74 CRI Typ. - Constant Current at 700 Milliamps By Driver - 11.3W Input = 912 Lumens - Estimated 80 Lumens Per Watt



**NOTES**

We reserve the right to revise the design or components of any product due to parts availability or change in UL standards, without assuming any obligation or liability to modify any products previously manufactured, and without notice.

Model Number: LED-90WH

Approvals:

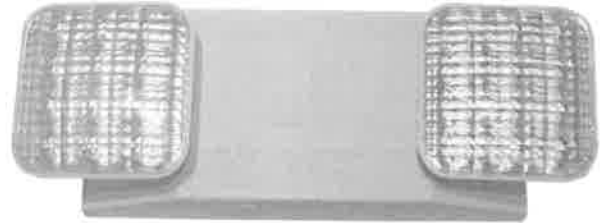
Accessories:

Job: Popeye's

Type: EM

**FEATURES**

- Each head contains 8 long-lasting, efficient, ultra-bright, white LEDs using 1.1 watts per head
- Completely self-contained, compact, low-profile design
- Rugged, injection-molded UL94 V-0 flame retardant, high-temperature thermoplastic housing
- Remote capable- up to 2 HLED remote heads
- AC lockout for ease of installation and installer protection
- Low voltage disconnect eliminates deep discharge
- Brown-out, short circuit and voltage surge protection
- Charge rate/power "ON" LED indicator light with test button
- Maintenance-free Ni-cad battery
- UL listed 90 minute emergency run time, 24 hour recharge time
- Universal J-Box mounting system
- Optional Guardian Self-Test/Self-Diagnostics (G2) available
- Standard finishes: Black or white
- 120/277V dual primary, 60Hz input
- Suitable for damp location



The LED-90 Series combines a low-profile, contemporary appearance with LED economy and dependability. Fully adjustable heads complement any application.



**WARRANTY**

Any component that fails due to manufacturer's defect is guaranteed for 3 years with a separate 5 year pro-rated warranty on the battery. The warranty does not cover physical damage, abuse or acts of God. Manufacturer reserves the right to charge for such repairs if deemed necessary.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

**ORDERING INFORMATION Example: LED-90-G2**

Series	Finish	Options (Factory Installed)	Accessories <sup>2</sup> (Field Installed)
LED-90	BLANK = White BL = Black	G2 = Self-Test/Self-Diagnostics R <sup>1</sup> = Remote Capacity	WG-90 = Wire Guard (Back Mount) XG-90 = Poly Guard (Back Mount) WPV-2 = Wet Location/Vandal Guard (Back Mount)

<sup>1</sup> For use with single or double HLED remote lamps only  
<sup>2</sup> Order as separate line item

## CONSTRUCTION

The LED-90 is a precision molded unit with lamp housings constructed of UV stable 5VA flame retardant, corrosion proof thermoplastic. Units resist denting, peeling, scratching and corrosion. Not recommended for outdoor use. Tool-less access provided for easy maintenance, universal J-box mounting pattern and keyhole slots provided for simple installation.

## ILLUMINATION

Illumination is accomplished utilizing high-intensity, long-life LEDs and consumes only 1 watt nominal power per head. LEDs provide excellent illumination while maximizing energy efficiency. LEDs are a maintenance-free solution, providing up to 100,000 hours of use without failure.

## ELECTRICAL

### Input

Dual-voltage input 120 or 277VAC @ 60Hz

### Sealed Nickel Cadmium Battery – NiCad

Extronix sealed nickel cadmium batteries are maintenance-free with a life expectancy of 15 years. Nickel cadmium batteries offer high discharge rates and continue to perform in a vast temperature range from 0-40 degrees C. NiCad technology provides long lasting, safe and reliable performance by utilizing the jelly-roll design and allows a Ni-Cad cell to deliver a much higher maximum current than an equivalent size alternative battery. As a relatively larger area of the electrode is in contact with the active material in each cell, the internal resistance for an equivalent sized NiCad cell is lower which increases the maximum current that can be delivered.

### Emergency

The LED-90 will operate for a minimum of 90 minutes during a loss of power with a 24 hour maximum recharge time for the battery.

### Brownout Circuit

The brownout circuit monitors the flow of AC current to the unit and triggers the emergency lighting system once a set reduction of AC power occurs. This dip in the voltage will cause many fixtures to extinguish causing loss of normal lighting even though a total power failure has not occurred.

### Low Voltage Disconnect

When the battery's terminal voltage falls below predetermined levels, the low-voltage circuit disconnects the emergency lighting load. The disconnect remains in effect until normal power is restored, preventing deep battery discharge and improving the life of the battery. The disconnect will also automatically reconnect the load circuit once the battery voltage returns to a normal value after charging.

### Solid-State Transfer

The unit features a solid-state switching transistor which eliminates damaged contacts or mechanical failures associated with relays. The switching circuit is designed to detect a loss of AC power and automatically energizes the lamps. Upon restoration of the AC voltage, the emergency lamps will switch off and the charger will automatically recharge the battery.

### Overload and Short-Circuit Protection

The solid-state overload monitoring system in the DC circuit disconnects the lamp load from the battery should excessive wattage demands be made and automatically resets when the overload or short-circuit is removed. This overload current protective characteristic eliminates the need for fuses or circuit breakers for the DC load.

### Test Button

Our easily located test button allows for manual verification of proper operation of the transfer circuit and emergency lamps.

## INSTALLATION

Units are mountable in any orientation, on wall or ceilings. A universal mounting pattern and rear keyhole slots are provided as well as top and side conduit entry options for ease of installation.

### Damp Location Rated (Option DR)

Damp location rating ensures the fixture is designed to operate safely in outdoor locations that are protected from the direct elements. Damp location rated fixtures may be installed indoors. Products with damp location ratings are not designed to withstand constant or significant moisture or direct contact with water or steam.

### Guardian Self-Test/Self-Diagnostics (Option: G2)

The Guardian circuit continuously monitors the operating condition of the AC power, battery supply voltage, emergency lamp continuity and charging circuit.

The purpose of this option is to provide visual signaling in response to a fault at the EXIT sign battery and/or battery charger. If a failure is detected, visual status will occur immediately via the CHARGER LED and/or the BATTERY FAULT LED. The LEDs will stay illuminated until the fault is corrected.

The Guardian circuit also monitors the transfer circuit as well as performing automatic code compliant testing. The Guardian circuit will perform a 30 second discharge and self-test every 28-30 days. A 90 minute discharge and self-test is performed every 6 months.

### Remote Capable (Option: R)

The R option provides this unit with an additional 2.2 watts of remote for use with HLED remote lamps.

## CONFORMANCE TO CODES & STANDARDS

The LED-90 Series is UL listed and meets or exceeds the following: UL 924, NEC requirements and NFPA 101.

## REMOTE LAMPS (Order Separately)

### FEATURES

- Each lamp contains 8 long lasting, efficient ultra-bright white LEDs.
- For use with LED-90 or 400C units only
- Wet location option available



Single Lamp with  
Weatherproof (WP) Option



Double Lamp with  
No Options

## REMOTE ORDERING INFORMATION

### Series

HLED = Single Remote Lamp  
2HLED = Double Remote Lamp

### Example: HLED-G2

### Options

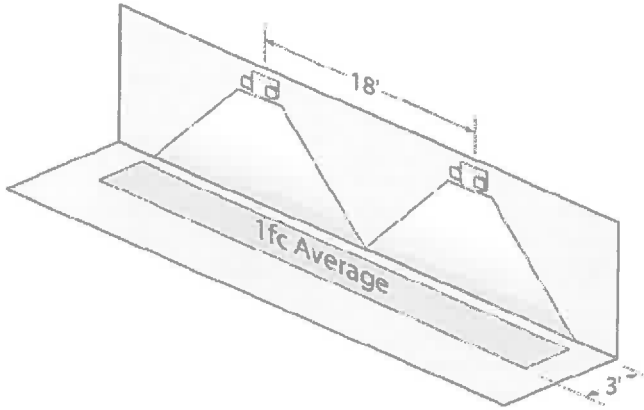
G2 = Self Test / Diagnostics  
WP = Weatherproof Applications

Order remote lamps as separate line item

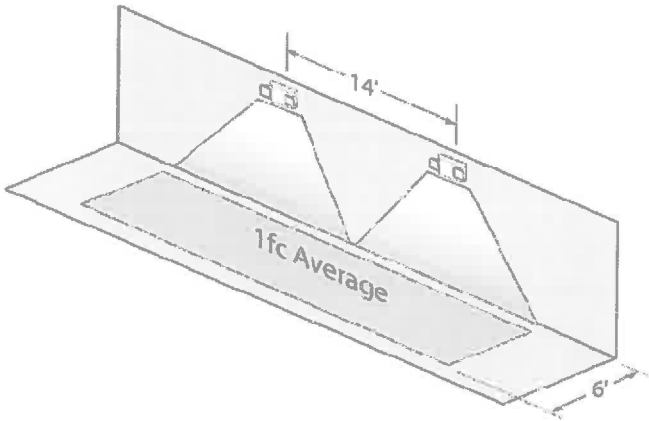
Remote lamps with G2 option are compatible with LED emergency lighting units with G2 option only.

### SAMPLE PHOTOMETRICS

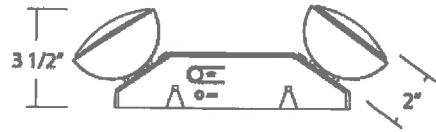
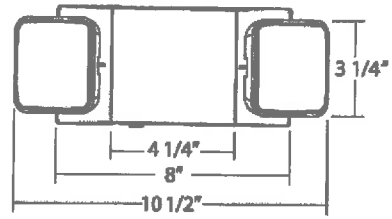
Using multiple units mounted at a typical 7.5' delivers 18' center-to-center spacing on a 3' wide egress path.



Using multiple units mounted at a typical 7.5' delivers 14' center-to-center spacing on a 6' wide egress path.



### DIMENSIONS





Model Number: VLED-U-WH-EL90R

Approvals:

Accessories:

Job: Popeye's

Type: EX

**FEATURES**

- LED combo exit where each of the heads contain 8 long lasting, efficient, ultra-bright white LEDs using 1.1 watts per head
- Easy to install, snap together design
- Rugged, injection-molded UL94 V-0 flame retardant, high-temperature thermoplastic housing
- Remote capable - up to 2 CLED remote heads
- Universal style - includes 2 face plates, a back plate and mounting canopy
- Charge rate/power "ON" LED indicator light with test button
- Low voltage disconnect eliminates deep discharge
- Brown-out, short circuit and voltage surge protection
- Overcharge protection
- Maintenance-free NiCad battery
- Universal J-Box mounting system - Ceiling or wall mount
- UL listed 90 minute emergency run time, 24 hour recharge time
- Constant, uniform illumination by long-life, high intensity, red or green LEDs
- Fully-illuminated 6" characters with 3/4" stroke
- Optional Guardian Self-Test/Self-Diagnostics (G2) available
- Chevron-style, universal arrow knockouts
- 120/277V dual primary, 60Hz input
- Standard finishes: Black or white
- Suitable for damp location



Combining LED exit illumination with reliable LED lamp heads, this attractive low-profile design offers maintenance-free, long life dependable service. Easily mounts above doors and in restricted spaces to fit any application.



SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

**WARRANTY**

Any component that fails due to manufacturers defect is guaranteed for 3 years with a separate 5 year pro-rated warranty on the battery. The warranty does not cover physical damage, abuse or acts of God. Manufacturer reserves the right to charge for such repairs if deemed necessary.

**ORDERING INFORMATION Example: VLED-U-WH-EL90-G2**

Series	Style	Finish	Type	Options (Factory Installed)	Accessories <sup>3</sup> (Field Installed)
VLED = Red	1 = Single Face	WH = White	EL90 = LED Lamps	G2 = Self-Test/Self-Diagnostics	WG-5 = Wire Guard (Back Mount)
GVLED = Green	U <sup>1</sup> = Universal	BL = Black		R <sup>2</sup> = Remote Capability	XG-EL90 = Poly Guard (Back Mount)

<sup>1</sup> Universal includes 2nd exit face and backplate

<sup>2</sup> For use with single or double CLED remote lamps only

<sup>3</sup> Order as separate line item

## CONSTRUCTION

The VLED-EL90 series is constructed of a precision-molded housing constructed of 5VA flame retardant, corrosion proof, UV stable thermoplastic. N.F.P.A. approved Field-selectable chevrons. Units resist denting, peeling, scratching and corrosion.

Stencil letters are 6" high with 3/4" stroke, with minimum of 100 ft viewing distance rating as required by UL924 standard.

## ILLUMINATION

Fully illuminated 6" letters with 3/4" stroke is achieved with high output, long lasting red or green LEDs. An exclusive color-matched diffuser eliminates hot spots and striations, providing optimal light output. LEDs are a maintenance-free solution, providing up to 100,000 hours of use without failure.

## EMERGENCY LIGHTS

Emergency lights are single or double face compatible with two side mounted 6 volt, 1.1 watt high intensity LED lamp heads.

## ELECTRICAL

### Input

Dual-voltage input 120 or 277VAC @ 60Hz.

### Sealed Nickel Cadmium Battery – NiCad

Extronix sealed nickel cadmium batteries are maintenance-free with a life expectancy of 15 years. Nickel cadmium batteries offer high discharge rates and continue to perform in a vast temperature range from 0-40 degrees C. NiCad technology provides long lasting, safe and reliable performance by utilizing the jelly-roll design and allows a Ni-Cad cell to deliver a much higher maximum current than an equivalent size alternative battery. As a relatively larger area of the electrode is in contact with the active material in each cell, the internal resistance for an equivalent sized NiCad cell is lower which increases the maximum current that can be delivered.

### Emergency

The VLED-EL90 series exit will operate for a minimum of 90 minutes during a loss of power with a 24 hour maximum recharge time for the battery.

### Brownout Circuit

The brownout circuit monitors the flow of AC current to the unit and triggers the emergency lighting system once a set reduction of AC power occurs. This dip in the voltage will cause many fixtures to extinguish causing loss of normal lighting even though a total power failure has not occurred.

### Low Voltage Disconnect

When the battery's terminal voltage falls below predetermined levels, the low-voltage circuit disconnects the emergency lighting load. The disconnect remains in effect until normal power is restored, preventing deep battery discharge and improving the life of the battery. The disconnect will also automatically reconnect the load circuit once the battery voltage returns to a normal value after charging.

### Solid-State Transfer

The unit features a solid-state switching transistor which eliminates damaged contacts or mechanical failures associated with relays. The switching circuit is designed to detect a loss of AC power and automatically energizes the lamps. Upon restoration of the AC voltage, the emergency lamps will switch off and the charger will automatically recharge the battery.

### Overload and Short-Circuit Protection

The solid-state overload monitoring system in the DC circuit disconnects the lamp load from the battery should excessive wattage demands be made and automatically resets when the overload or short-circuit is removed. This overload current protective characteristic eliminates the need for fuses or circuit breakers for the DC load.

### Test Button

Our easily located test button allows for manual verification of proper operation of the transfer circuit and emergency lamps.

## INSTALLATION

Simple snap together universal design allows for faceplate and back plate to be fully interchangeable. Mounting canopy is supplied with all signs and snaps into enclosure with two positive locking tabs.

### Damp Location Rated

Damp location rating ensures the fixture is designed to operate safely in outdoor locations that are protected from the direct elements. Damp location rated fixtures may be installed indoors. Products with damp location ratings are not designed to withstand constant or significant moisture or direct contact with water or steam.

### Guardian Self-Test/Self-Diagnostics (Option: G2)

The Guardian circuit continuously monitors the operating condition of the AC power, battery supply voltage, emergency lamp continuity and charging circuit.

The purpose of this option is to provide visual signaling in response to a fault at the EXIT sign battery and/or battery charger. If a failure is detected, visual status will occur immediately via the CHARGER LED and/or the BATTERY FAULT LED. The LEDs will stay illuminated until the fault is corrected.

The Guardian circuit also monitors the transfer circuit as well as performing automatic code compliant testing. The Guardian circuit will perform a 30 second discharge and self-test every 28-30 days. A 90 minute discharge and self-test is performed every 6 months.

### Remote Capable (Option: R)

The R option provides this unit with an additional 2.2 watts of remote for use with up to (2) CLED remote lamps.

## CONFORMANCE TO CODES & STANDARDS

The VLED-EL90 Series is UL listed and meets or exceeds the following: UL 924, NEC requirements and NFPA 101.

## REMOTE LAMPS (Order Separately)

### FEATURES

- Each lamp contains 8 long lasting, efficient ultra-bright white LEDs
- For use with VLED-EL90 or CLED combo units only
- Wet location option available



Single Lamp with  
Weatherproof (WP) Option



Double Lamp with  
No Options

## REMOTE ORDERING INFORMATION

Example: CLED-G2

### Series

CLED = Single Remote Lamp  
2CLED = Double Remote Lamp

### Options

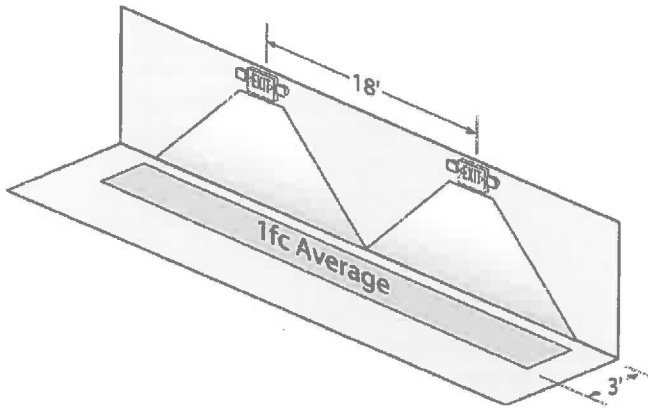
G2 = Self Test / Diagnostics  
WP = Weatherproof Applications

Order remote lamps as separate line item

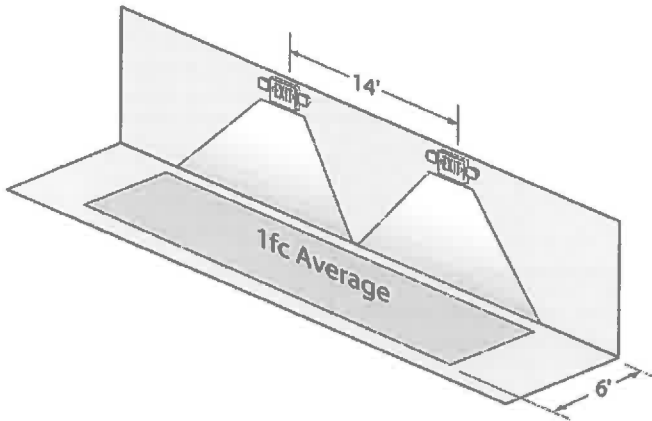
Remote lamps with G2 option are compatible with LED combo units with G2 option only.

### SPACING GUIDES

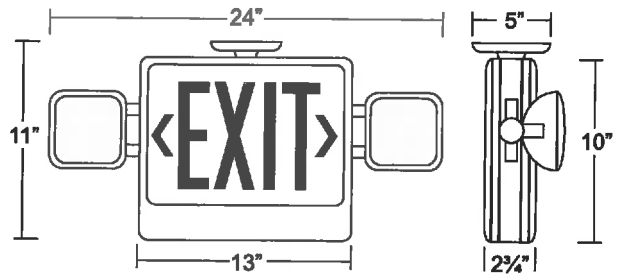
Using multiple units mounted at a typical 7.5' delivers 18' center-to-center spacing on a 3' wide egress path.



Using multiple units mounted at a typical 7.5' delivers 14' center-to-center spacing on a 6' wide egress path.



### DIMENSIONS



**Model Number:** LL50HN4  
**Type:** ER  
**Job:** Popeye's

**Approvals:**

**FEATURES**

- Wet location listed, resistant to corrosive atmospheres, non-hazardous dust environments
- Fully gasketed enclosure
- Fully adjustable 5 watt MR-16 halogen lamp heads
- Automatic brownout protection
- Contractor friendly, snap-together design
- AC lockout feature reduces installation time
- Wall or ceiling mounted
- UV stable, fiberglass components
- UL 94-5VA flame rating
- 120/277V dual primary 60Hz input
- Low voltage disconnect
- 90 minute emergency run time
- Sealed momentary test switch



The LL50H-N4 is ideal for wet locations, resistant to corrosive atmospheres, non-hazardous dust environments. The adjustable halogen lamps are enclosed in a fully gasketed, corrosive resistant polycarbonate enclosure designed to withstand the harshest enviroments.

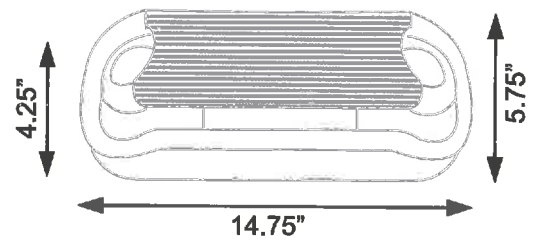
**CONFORMANCE TO CODES & STANDARDS**

The LL50H-N4 Series is U.L. Listed and meets or exceeds the following: U.L. 924, N.E.C. requirements and N.F.P.A. 101.

**WARRANTY**

Any component that fails due to manufacturer's defect is guaranteed for 1 year with a separate 5 year pro-rated warranty on the battery. The warranty does not cover physical damage, abuse or acts of God. Manufacturer reserves the right to charge for such repairs if deemed necessary.

**DIMENSIONS**



**ORDERING INFORMATION**

<b>LL50H-N4</b>
<b>SERIES</b>
LL50H-N4 = Wet Location

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

## CONSTRUCTION

Enclosure is constructed of precision molded polycarbonate, resistant to corrosive atmospheres. Fully gasketed clear polycarbonate cover encloses lamps and reflectors, and offers protection against wet, non-hazardous dust, and hose down locations.

## ILLUMINATION

Units come standard with two fully adjustable MR-16, 6 volt, 5 watt halogen lamps.

## ELECTRONICS

Dual voltage, 120 volt or 277 volt input. Circuit provides automatic brownout, short circuit, and overload protection. A sealed momentary test switch and LED charge indicator are included.

## BATTERY

Maintenance-free, sealed lead-calcium battery provides an estimated service life of 10 years with an operating temperature range of 19°C to 30°C (65°F to 85°F).

## EMERGENCY OPERATION

120/277 VAC dual voltage input with surge protected, solid-state charging circuitry provides for a reliable charging system. The charging system is furnished with low voltage disconnect, AC lockout, brownout protection, AC indicator lamp and test switch. The low voltage disconnect (LVD) feature will disconnect the battery prior to an unacceptable deep discharge, but not before the required 90 minute emergency operation. The AC lockout feature prevents battery drain prior to the initial energizing of utility power, and allows the installer to complete all wiring and electrical connections without energizing the emergency circuit. The brownout protection circuitry will automatically switch the unit into the emergency mode if the utility voltage sags below 20% of nominal. Battery charging circuitry is entirely solid-state, and utilizes a constant current charger for sealed lead-calcium battery units. Battery recharge time after full discharge is less than the required UL 924 standard. Line sensitive electronics cause an instantaneous transfer to battery power if utility power is lost, or a brownout condition is detected. When line voltage is present and stabilized, the transfer circuitry switches back to normal operation and begins recharging the battery. The transfer circuitry can be tested via a momentary test switch located on the housing.



LED

Type: WP

## LED Wall Pack

**Applications** – Security, pathway and perimeter lighting; ideal for entry ways, walkways and parking facilities.

**Typical Mounting Height:** 8 to 15 feet **Typical Spacing:** 1 to 2 times the mounting height

**NEW!**



7-1/4"H x 8-1/2"W x 7-1/4"D  
Weight: 3 lbs.



## NEUTRAL WHITE (4000K)

**27-watt LED,  
1375 Delivered Lumens  
(Comparable to 100W Incandescent)**

**CAT.# E-WP1X031Z7**

### Accessories



**CAT.# E-ACP1  
(120 volts)**

*Photocell is field installed.  
Drilling of the housing in the field is required.*

### Features:

- 25,000 hours of maintenance-free operation
- 120-volt operation
- Non-dimmable
- Sturdy die-cast aluminum housing and lens frame, with dark-bronze polyester powder-coat finish
- Minimum starting temperature: -40° F
- UV stabilized prismatic polycarbonate refractor
- One-piece anodized aluminum reflector
- 3/8-inch NPT tapped back and two sides for conduit entrances
- Optional photocell available
- RoHS compliant
- Cree LEDs inside
- UL Listed for wet locations
- 3-year warranty

## LED Wall Mount

**Applications** – Security, entry ways, stairways, storage and perimeter areas, as well as residential exteriors.

**Typical Mounting Height:** 8 to 18 feet **Typical Spacing:** 1.5 to 2 times the mounting height

**NEW!**



9"H x 5-3/4"W x 4"D  
Weight: 2 lbs.



## WARM WHITE (3000K)

**14-watt LED,  
675 Delivered Lumens  
(Comparable to 65W Incandescent)**

**Bronze CAT.# E-WW1X011Z3  
White CAT.# E-WW1X011W3**

## WARM WHITE (3500K)

**21-watt LED,  
1200 Delivered Lumens  
(Comparable to 100W Incandescent)**

**Bronze CAT.# E-WW1X021Z3  
White CAT.# E-WW1X021W3**

### Features:

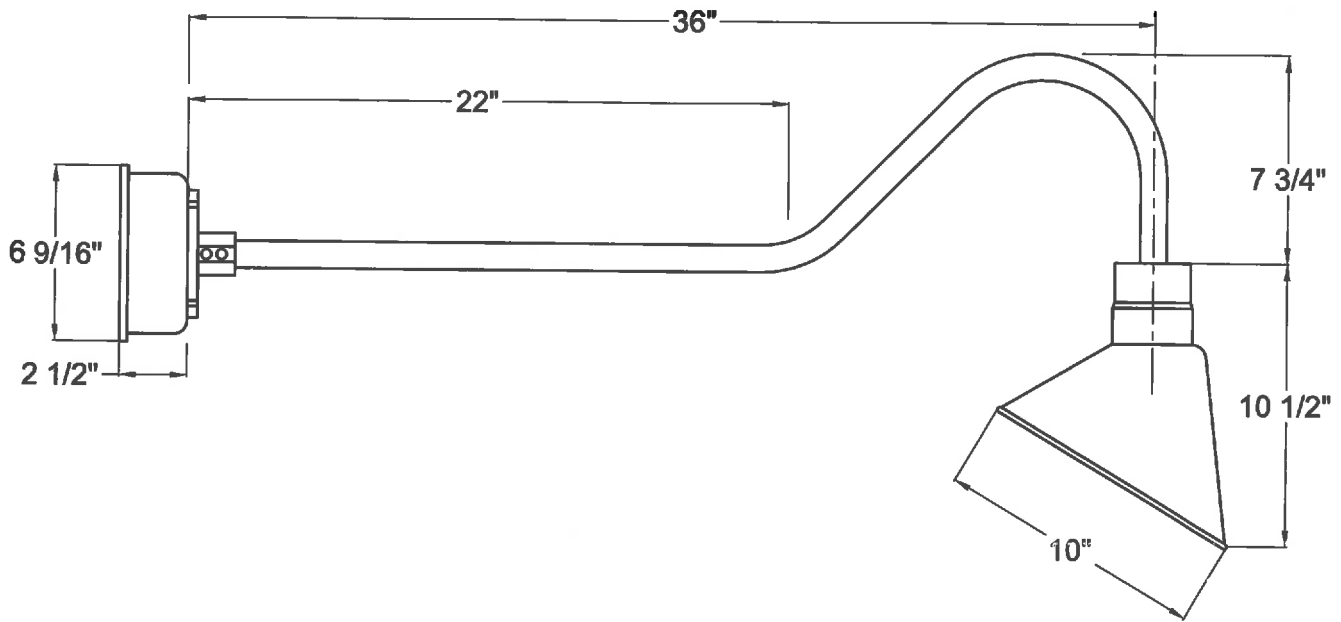
- 25,000 hours of maintenance-free operation
- 120-volt operation
- Non-dimmable
- Built-in photocell
- Polycarbonate housing in bronze or white with heavy-duty aluminum mounting plate
- 1/2-inch NPT tapped back and bottom for conduit entrances
- Minimum starting temperature: -40° F
- UV-stabilized polycarbonate prismatic refractor
- RoHS compliant
- Cree LEDs inside
- UL Listed for wet locations
- 3-year warranty



# HI-LITE MFG. CO., INC.

13450 Monte Vista Avenue  
 Chino, California 91710  
 Telephone: (909) 465-1999  
 Toll Free: (800) 465-0211  
 Fax: (909) 465-0907  
 www.hilitemfg.com

JOB NAME: <b>Popeyes</b>		
SCALE: <b>N.T.S.</b>	DATE: <b>02/27/2014</b>	TYPE: <b>H</b>
DRAWN BY: <b>S.M.</b>	QTY:	
SHEET:		REV:



Item Number	Wattage
H-811/C/-EVG/38/LED2/40/F/BCM	38W

**Finish**  
602 (Evergreen)

**Mounting**  
Wall Mounted

**Lamping**  
38W 4000Lumens 82°  
Beam Angle LED2,3500K

**Voltage**  
120 or 277 must  
specify when ordering

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# Hermitage Lighting National Accounts



### Product Specifications

Job Name:	Job Type: Type: LL1
Quantity:	Comments



### ITEM# EDJ31111

Inspired by the small disks of glass that are used as ornaments in stained glass windows, this single light pendant presents a simple and clean cylindrical glass canopy accented by chrome hardware and featuring adjustable height for maximum adaptability. Consider it the perfect lighting solution for bar, bathroom, kitchen island or pool table.

#### Certification

UL Standard

Dry

#### Finish

Polished Chrome

#### Glass/Shade

Red

#### Product Category

Mini Pendant

#### Lamping

Number of Bulb(s)

#### Measurements

1  
**Width**  
**Height**  
**Length**  
**Extension**  
**Back Plate Width**  
**Back Plate Height**  
**HCO**  
**Min Overall Height**  
**Max Overall Height**  
**Hanging Weight**  
**Height Adjustable**  
**Slope**

#### Shipping

3.50"  
12.00"  
N/A  
N/A  
N/A  
N/A  
N/A  
N/A  
120.00"  
3.96 lb(s)  
Yes  
N/A

**Carton Weight**  
**Carton Width**  
**Carton Height**  
**Carton Length**  
**Carton Cubic Feet**  
**Master Pack**  
**Master Pack Weight**  
**Master Pack Width**  
**Master Pack Height**  
**Master Pack Length**  
**Master Cubic Feet**  
**UPS Shippable**

5.94 lb(s)  
5.91"  
6.50"  
18.50"  
N/A  
1  
N/A  
N/A  
N/A  
N/A  
N/A  
N/A  
Yes

**Rated Life** ±2,500 Hours  
**Rated Lumens** ±672  
**Color Temp** ±2,700 K  
**Bulb(s) Included** No  
**Light Up/Down** N/A  
**Beam Spread** N/A  
**CRI** N/A  
**Photo Cell Included** N/A  
**Ballast** N/A  
**Dimmable** Standard Dimmer

**USES A 10 WATT EDISON LED LAMP**

**BOTTOM OF FIXTURE SHOULD BE NO LOWER THAN 7' AFF.**







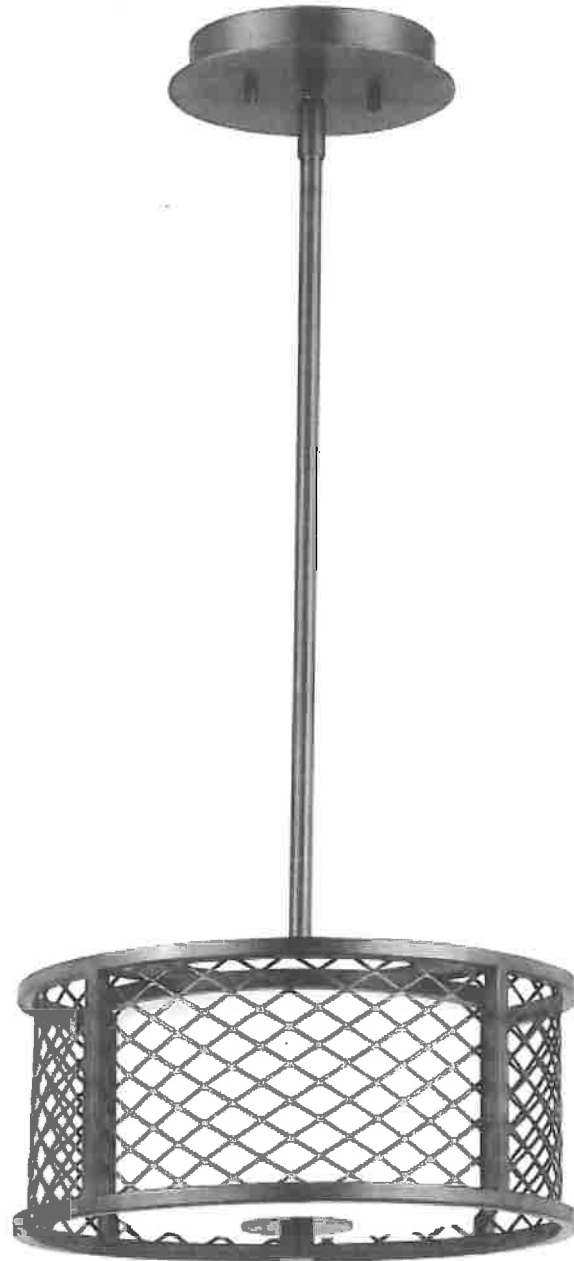
Project: **POPEYE'S**  
Fixture Type: **LL2 16" ACRYLIC**

**Crab Pot Height 6"**  
**Diameter 16"**  
**Overall Height 46"**

BOTTOM OF FIXTURE SHOULD  
BE NO LOWER THAN 7' 0" AFF

•UI Approved

**DO NOT  
OVERTIGHTEN  
DECORATIVE NUT  
THAT HOLDS THE  
ACRYLIC SHADE.  
THIS WILL CAUSE  
THE FRAGILE SHADE  
TO BREAK**



**PRODUCT CODES**

Catalog Number	Input Voltage	Lamp Rating (max.)
<b>PF3463157216A</b>	<b>120</b>	<b>3 - 10 watt LED</b>





# Hermitage Lighting National Accounts



Project: **POPEYE'S**  
 Fixture Type: **Flavoriety**  
 Location: Type: LL3  
 Contact/Phone:

Fixtures will use 10 watt LED lamps.

RED  
Cylinder



7' 6"  
AFF

Blue  
bullet



7' 0"  
AFF

Orange  
bell



7' 6"  
AFF

Blue  
cylinder



7' 0"  
AFF

Orange  
bullet



7' 6"  
AFF

Red  
Bell



7' 0"  
AFF

Orange  
cylinder



7' 6"  
AFF

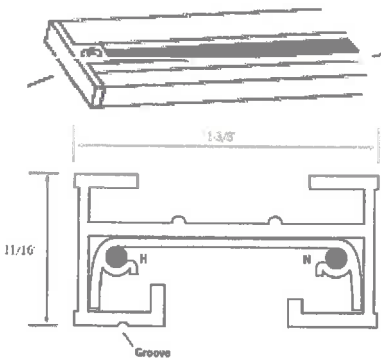
**Note:**

Pendants are installed on (2) tracks spaced 9" apart.

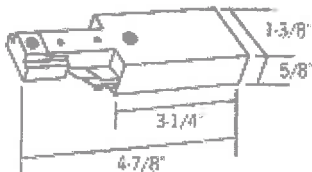
Mount 7'6" a.f.f. fixtures on Front Track.

Mount 7'0" a.f.f. fixture on Rear Track.

Pendants to be spaced 10 o.c. typical with center pendant aligned on center with the centerline of beverage counter or beverage unit (depending on existing conditions).



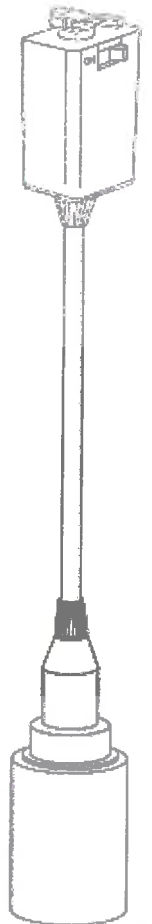
8' Track Detail / End and bottom view



End Feed for track

UL LISTED

Cord/Pendant Adapter assembly



**PRODUCT CODES**

Catalog Number	Input Voltage	Lamp Rating (max.)
<b>Flavoriety C</b>	120	10 Watts LED



# CR6™

## 6" LED Downlight

### Product Description

The CR6™ LED downlight delivers up to 800 lumens of exceptional 90+ CRI light while achieving up to 67 lumens per watt. This breakthrough performance is achieved by combining the high efficacy and high-quality light of Cree TrueWhite® Technology. The CR6 is available in a warm color temperature and has a variety of trim options. It easily installs into most standard six-inch recessed IC or non-IC housings, making the CR6 perfect for use in both residential and light commercial, new construction or retrofit, applications.

### Performance Summary

Utilizes Cree TrueWhite® Technology

Delivered Light Output: 625, 800 lumens

Input Power: 9.5, 12 watts

CRI: 90

CCT: 2700K, 3000K, 3500K, 4000K

Limited Warranty\*: 5 years

Lifetime: Designed to last 50,000 hours

Dimming: Dimmable to 5%\*

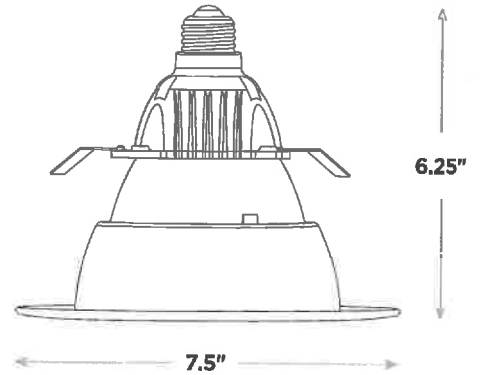
### Housings & Accessories

Reference Housing & Accessory documents for more details.

Trims & Reflectors	
<b>CT6A</b> Diffuse silver reflector	<b>CT6AB</b> Diffuse black reflector
<b>CT6AW</b> Diffuse wheat reflector	<b>CT6BB</b> Flat black flange and reflector

Housings (GU24 Only)	
<b>H6</b> Architectural	<b>SC6</b> Cylindrical Surface Mount
<b>RC6</b> New Construction	<b>SC6-CM</b> Cylindrical Cord Mount
<b>RR6</b> Retrofit	<b>SC6-WM</b> Cylindrical Wall Mount



### Ordering Information

Example: CR6-625L-27K-12-E26

### QUICKSHIP™

For full list of Cree Quick Ship products visit [www.cree.com/lighting/quickship](http://www.cree.com/lighting/quickship)

Series	Size	Source Lumens (Approx)	CCT	Voltage	Base Type
CR6	6 inch	625L 625 Lumens 800L 800 Lumens	27K 2700K 30K 3000K 35K 3500K 40K 4000K	12 120 Volts	E26 Edison Base GU24 GU24 Base (Title 24 Compliant)

\* See [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for warranty terms

\* Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimmers



Rev. Date V2 08/25/2014



**Product Specifications**

**CREE TRUEWHITE® TECHNOLOGY**

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics, and lifelong color consistency, all while maintaining high luminous efficacy - a true no compromise solution.

**CONSTRUCTION & MATERIALS**

- Durable upper housing protects LEDs, driver and power supply. Adjustable flip clips resist heat while providing retention for flush ceiling fit.
- Thermal management system uses both upper housing and lower reflector to conduct heat away from LEDs and transfer it to the plenum space for optimal performance. LED junction temperatures stay below specified maximum even when installed in insulated ceilings.
- Suitable for insulated and non-insulated ceilings
- One-piece aluminum lower reflector redirects light while also conducting heat away from LEDs. It creates a comfortable visual transition from the lens to the ceiling plane and easily accommodates CT6 snap-in trims

**OPTICAL SYSTEM**

- Unique combination of reflective and refractive optical components achieves a uniform, comfortable appearance while eliminating pixelation and color fringing. This ensures smooth light patterns are projected with no hot spots and minimal striations
- Components work together to optimize distribution, balancing the delivery of high illuminance levels on horizontal surfaces with an ideal amount of light on walls and vertical surfaces. This increases the perception of spaciousness
- Diffusing lens shields direct view of LEDs while lower reflector balances brightness of lens with the ceiling to create a low-glare high angle appearance

**ELECTRICAL SYSTEM**

- Integral, high-efficiency driver and power supply
- **Power Factor:** > 0.9
- **Input Voltage:** 120V, 60Hz
- **Dimming:** Dimmable to 5% with most incandescent dimmers\*

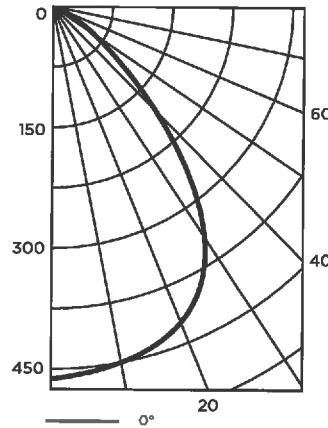
**REGULATORY & VOLUNTARY QUALIFICATIONS**

- ENERGY STAR® qualified
- cULus Listed
- Exceeds California Title-24 high efficacy luminaire requirements
- Suitable for wet locations

\* Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimmers

**Photometry**

**CR6 BASED ON ONSPEX REPORT #: 30014047-3**  
**CR6-625L: MULTIPLY BY 0.78**



**Intensity (Candlepower) Summary**

Angle	Mean CP
0°	456
5°	453
15°	432
25°	386
35°	293
45°	174
55°	85
65°	42
75°	25
85°	6
90°	0

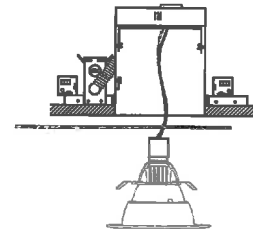
**Zonal Lumen Summary**

Zone	Lumens	% Lamp	% Fix
0-30	336	42.10%	42.10%
0-40	516	64.60%	64.60%
0-60	724	90.60%	90.60%
0-90	800	100%	100%

Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed photometric data.

**Installation**

- Designed to easily install in standard 6" downlight housings from Cree and other manufacturers\*
- Quick install system utilizes a unique retention feature. Simply attach socket to CR6. Move light to ready position and slide into housing



NOTE: Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed installation instructions.

\*Reference [www.cree.com/lighting](http://www.cree.com/lighting) for a list of compatible housings

**Application Reference**

Spacing	Lumens	Wattage	LPW	w/ft²	Average FC
4 x 4	625	9.5	61	0.60	36
6 x 6				0.28	18
8 x 8				0.15	10
10 x 10				0.10	7
4 x 4	800	12	67	0.76	47
6 x 6				0.35	22
8 x 8				0.19	13
10 x 10				0.13	8

10' Ceiling, 80/50/20 Reflectances, 2.5 workplane.  
 LLF: 1.0 Initial, Open Space: 50' x 40' x 10'

Spacing	Lumens	Wattage	LPW	w/ft²	Average FC
4' on Center	625	9.5	61	0.40	13
6' on Center				0.27	9
8' on Center				0.20	7
10' on Center				0.17	6
4' on Center	800	12	67	0.51	17
6' on Center				0.34	11
8' on Center				0.25	8
10' on Center				0.21	7

10' Ceiling, 80/50/20 Reflectances, Light levels on the ground.  
 LLF: 1.0 Initial, Corridor: 6' Wide x 100' Long

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# LE6™

## Six-Inch Adjustable LED Downlight

Type: LL5

### Product Description

The LE6™ adjustable LED downlight delivers 500 lumens of exceptional 90+ CRI light while achieving over 41 lumens per watt. This breakthrough performance is achieved by combining the high efficacy and high-quality light of Cree TrueWhite® Technology. The LE6 is available in warm or neutral color temperatures and can be adjusted from 10 to 30 degrees for smooth wall washing. It easily installs into most standard six-inch recessed IC or non-IC housings, making the LE6 perfect for use in commercial new construction or retrofit applications.

### Performance Summary

Utilizes Cree TrueWhite® Technology

Active Color Management

**Delivered Light Output:** 500 lumens (at 30 degree tilt)

**Input Power:** 12 watts

**CRI:** 90

**CCT:** 2700K, 3500K

**Warranty:** 10 years\*

**Lifetime:** Designed to last 50,000 hours

**Dimming:** Dimmable to 20%\*

### Ordering Information

Example: LE6

Product
<b>LE6</b> 2700K, Edison Base
<b>LE6-GU24</b> 2700K, GU24 Base
<b>LE6C</b> 3500K, Edison Base
<b>LE6C-GU24</b> 3500K, GU24 Base

### Housings & Accessories

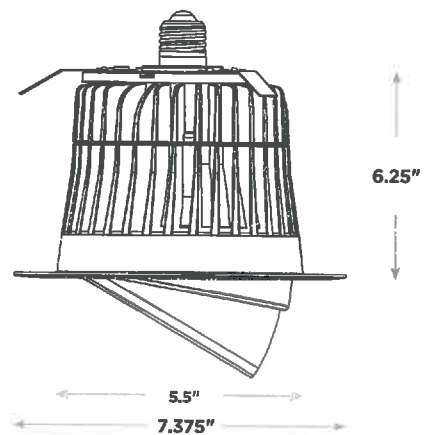
Reference Housing & Accessory documents for more details.

Housings (Edison or GU24)	
<b>H6</b> Architectural	<b>SC6</b> Cylindrical Surface Mount
<b>RC6</b> New Construction	<b>SC6-CM</b> Cylindrical Cord Mount
<b>RR6</b> Retrofit	<b>SC6-WM</b> Cylindrical Wall Mount

\* Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimmers.

† See [www.cree.com/lighting](http://www.cree.com/lighting) for warranty terms.

LE6



Rev. Date 11/01/2012



**Product Specifications**

**CREE TRUEWHITE® TECHNOLOGY**

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology mixes the light from the highest performing red and unsaturated yellow LEDs. This patented approach delivers an exclusive combination of 90+ CRI, beautiful light characteristics, and lifelong color consistency, all while maintaining high luminous efficacy—a true no compromise solution.

**CONSTRUCTION & MATERIALS**

- Durable die-cast aluminum housing protects LEDs, driver and power supply. Adjustable flip clips resist heat while providing retention for flush ceiling fit.
- Thermal management system uses integral heat sink to conduct heat away from LEDs and transfer it to the plenum space for optimal performance. LED junction temperatures stay below specified maximum even when installed in attic insulation with ambient temperatures exceeding 60 C.
- Suitable for insulated and non-insulated ceilings.
- Adjustable trim offers vertical lens adjustment from 10 to 30 degrees.

**OPTICAL SYSTEM**

- Unique combination of reflective and refractive optical components achieves a uniform, comfortable appearance while eliminating pixelation and color fringing. This ensures smooth light patterns are projected with no hot spots and minimal striations.
- Components work together to optimize distribution, balancing the delivery of high illuminance levels on horizontal surfaces with an ideal amount of light on walls and vertical surfaces. This increases the perception of spaciousness.
- Diffusing lens shields direct view of LEDs while adjustable trim enables 10 to 30 degrees vertical lens adjustment to wash a wall with light.

**ELECTRICAL SYSTEM**

- Integral, high-efficiency driver and power supply.
- **Power Factor** > 0.9 nominal
- **Input Voltage:** 120V, 60Hz
- **Dimming:** Dimmable to 20% with most incandescent dimmers. Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimmers.

**REGULATORY & VOLUNTARY QUALIFICATIONS**

- cULus Listed
- Suitable for damp locations.

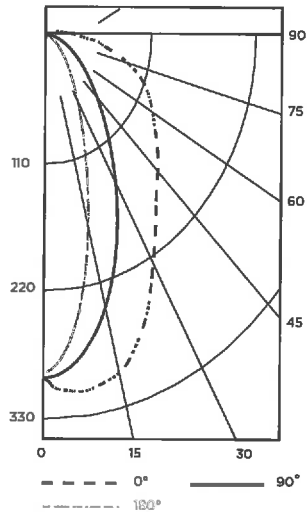
**Application Reference**

Spacing	Luminaires 3' from wall on 2' centers		Luminaires 3' from wall on 4' centers	
	Footcandle Values		Footcandle Values	
Height	Between Centers	On Centers	Between Centers	On Centers
10	13	13	8	10
9	18	18	12	14
8	18	18	13	13
7	15	15	11	11
6	13	13	9	9
5	11	11	8	8
4	9	9	7	7
3	8	8	6	6
2	7	7	5	5
1	6	6	5	5

Average initial illuminance in footcandles, reflectances = 80/50/20, ceiling height = 10', based on minimum of 5 luminaires, placed in a hallway with width = 6', aimed at center points 3' and 4' apart respectively.

**Photometry**

LE6 ITL TEST #: 61449 TILTED TO 30°



**Intensity (Candlepower) Summary**

Angle	0°	90°	180°
0°	299	299	299
5°	312	293	270
15°	304	250	177
25°	256	181	91
35°	206	120	43
45°	170	82	17
55°	145	54	0
65°	117	30	0
75°	81	14	0
85°	50	3	0
90°	40	0	0
95°	30	0	0
105°	13	0	0

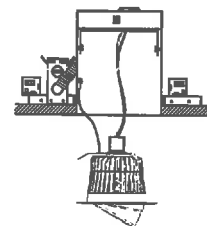
**Zonal Lumen Summary**

Zone	Lumens	% Fix
0-30	182	36.3%
0-40	262	52.3%
0-60	393	78.8%
0-90	487	97.6%
0-180	500	100%

Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed photometric data.

**Installation**

- Designed to easily install in standard 6" downlight housings from Cree and other manufacturers.\*
- Quick install system utilizes a unique retention feature. Simply attach socket to LE6. Move light to ready position and slide into housing.



NOTE: Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed installation instructions.

\*Reference [www.cree.com/lighting](http://www.cree.com/lighting) for a list of compatible housings.

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# OSQ Series

LED Area/Flood Luminaire – Large

## Product Description

The OSQ™ Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is rugged cast aluminum with an integral, weathertight LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. 'S' Input power designator is a suitable upgrade for HID applications up to 750 Watts.

**Applications:** Parking lots, walkways, campuses, auto dealerships, office complexes, and internal roadways.

## Performance Summary

Utilizes BetaLED® Technology

NanoOptic® Precision Delivery Grid™ optic

Made in the U.S.A. of U.S. and imported parts

CRI: Minimum 70 CRI (4000K & 5700K); 80 CRI (3000K)

CCT: 3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)

**Limited Warranty\*:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

## Accessories

Field-Installed	
Backlight Shield OSQ-BLSLF – Front facing optics	OSQ-BLSLR – Rotated optics

## Ordering Information

Fully assembled luminaire is composed of two components that must be ordered separately:

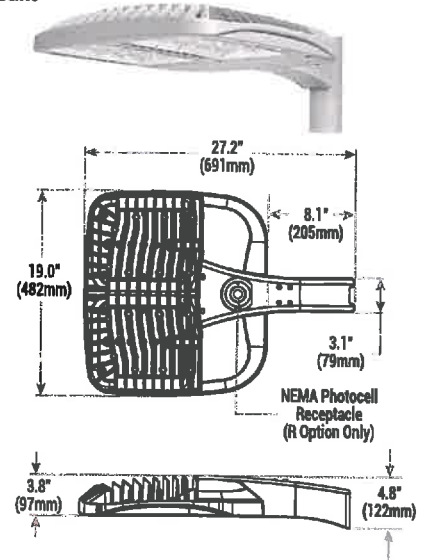
Example: Mount: OSQ-AA SV + Luminaire: OSQ A NM 2ME S 40K-UL SV

Mount (Luminaire must be ordered separately)				
OSQ-				
OSQ-AA Adjustable Arm	Color Options:	SV Silver BK Black	BZ Bronze PB Platinum Bronze	WH White
OSQ-DA Direct Arm				

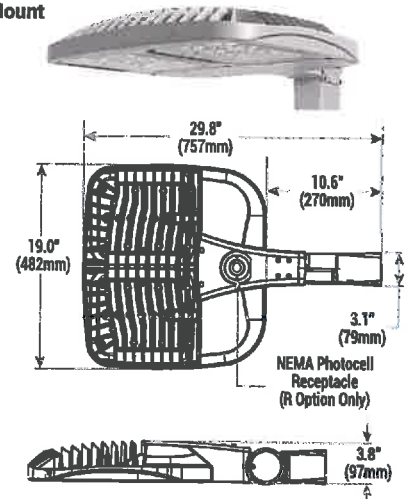
Luminaire (Mount must be ordered separately)											
OSQ	A	NM	Optic		Input Power Designator	CCT	-	Voltage	Color Options	Options	
OSQ	A	NM No Mount	2ME+ Type II Medium 3ME+ Type III Medium 4ME+ Type IV Medium 5ME Type V Medium 5SH Type V Short	15D 15' Flood 25D 25' Flood 40D 40' Flood 60D 60' Flood	S 223W	30K 3000K 40K 4000K 67K 6700K	- US * Canada	UL Universal 120-277V	SV Silver BK Black BZ Bronze PB Platinum Bronze WH White	<b>DIM</b> 0-10V Dimming - Control by others - Refer to Dimming spec sheet for details - Can't exceed wattage of specified input power designator  <b>F</b> Fuse - When code dictates fusing, use time delay fuse  <b>ML</b> Multi-Level - Refer to ML spec sheet for details - High: 100%, Low: 30% - Intended for downlight applications at 0° tilt	<b>Q9</b> Field Adjustable Output - Refer to Field Adjustable Output spec sheet for details  <b>R</b> NEMA® Photocell Receptacle - Intended for downlight applications at 0° tilt - Photocell by others  <b>RL</b> Rotate Left - LED and optic are rotated to the left  <b>RR</b> Rotate Right - LED and optic are rotated to the right

\* See [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for warranty terms  
\* Available with Backlight Shield when ordered with field-installed accessory (see table above)

## DA Mount



## AA Mount



Rev. Date: 05/27/14



US: [www.cree.com/lighting](http://www.cree.com/lighting)

T (800) 236-6800 F (262) 504-5415

Canada: [www.cree.com/canada](http://www.cree.com/canada)

T (800) 473-1234 F (800) 890-7507

## OSQ Series – Large

### Product Specifications

#### CONSTRUCTION & MATERIALS

- Slim, low profile design minimizes wind load requirements
- Luminaire housing is rugged die cast aluminum with an integral, weathertight LED driver compartment and high performance heat sink
- Convenient interlocking mounting method on direct arm mount. Mounting adapter is rugged die cast aluminum and mounts to 3-6" (76-152mm) square or round pole, secured by two 5/16-18 UNC bolts spaced on 2" (51mm) centers
- Mounting for the adjustable arm mount adapter is rugged die cast aluminum and mounts to 2" (51mm) IP; 2.375" (60mm) O.D. tenon
- Adjustable arm mount can be adjusted 180° in 2.5° increments
- Designed for uplight and downlight applications
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, bronze, black, white, and platinum bronze are available
- Weight: 28.5 lbs. (13kg)

#### ELECTRICAL SYSTEM

- Input Voltage: 120-277V, 50/60Hz, Class 1 drivers
- Power Factor: > 0.9 at full load
- Total Harmonic Distortion: < 20% at full load
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used

#### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Enclosure rated IP66 per IEC 60529 when ordered without R option
- Consult factory for CE Certified products
- Pending certification to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA

Electrical Data					
Input Power Designator	System Watts 120-277V	Total Current			
		120V	208V	240V	277V
S	223	1.94	0.85	0.99	1.13

Recommended Cree® Outdoor Luminaire Lumen Maintenance Factors (LMF) <sup>1</sup>						
Ambient	Input Power Designator	Initial LMF	25K hr Projected <sup>2</sup> LMF	50K hr Projected <sup>2</sup> LMF	75K hr Calculated <sup>3</sup> LMF	100K hr Calculated <sup>3</sup> LMF
5°C (41°F)	S	1.04	0.99	0.94	0.88	0.84
10°C (50°F)	S	1.03	0.98	0.93	0.88	0.83
15°C (59°F)	S	1.02	0.97	0.92	0.87	0.83
20°C (68°F)	S	1.01	0.96	0.91	0.86	0.82
25°C (77°F)	S	1.00	0.95	0.90	0.85	0.81

<sup>1</sup> Lumen maintenance values at 25°C (77°F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing

<sup>2</sup> In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

<sup>3</sup> In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

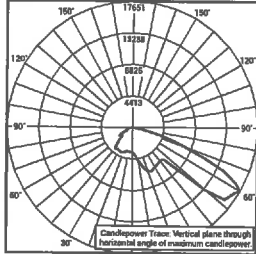


OSQ Series – Large

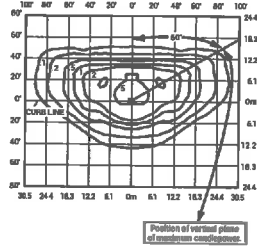
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory. To obtain an IES file specific to your project consult: <http://www.cree.com/lighting>.

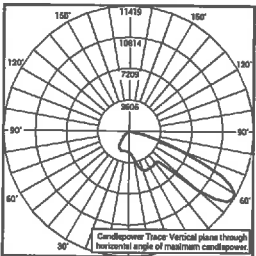
2ME



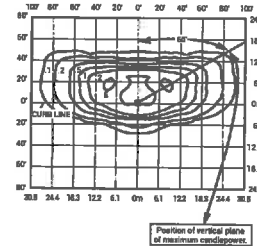
RESTL Test Report #: PL03403-001  
OSQ A \*\* 2ME S 40K-UL  
Initial Delivered Lumens: 21,329



OSQ A \*\* 2ME S 40K-UL  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 21,696  
Initial FC at grade

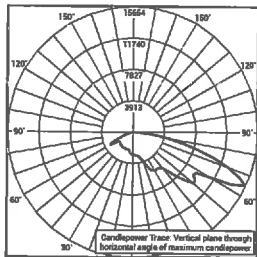


RESTL Test Report #: PL03642-003  
OSQ A \*\* 2ME J 40K-UL w/OSQ-BLSMF  
Initial Delivered Lumens: 14,643

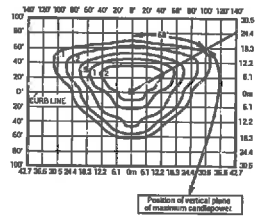


OSQ A \*\* 2ME J 40K-UL w/OSQ-BLSMF  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 18,597  
Initial FC at grade

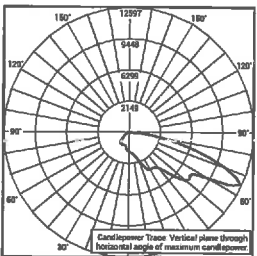
3ME



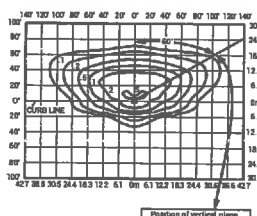
RESTL Test Report #: PL03499-001  
OSQ A \*\* 3ME S 40K-UL  
Initial Delivered Lumens: 21,013



OSQ A \*\* 3ME S 40K-UL  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 21,475  
Initial FC at grade



RESTL Test Report #: PL03642-001  
OSQ A \*\* 3ME J 40K-UL w/OSQ-BLSMF  
Initial Delivered Lumens: 14,229



OSQ A \*\* 3ME J 40K-UL w/OSQ-BLSMF  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 18,375  
Initial FC at grade

Type II Medium Distribution						
Input Power Designator	3000K		4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
S	20,046	B3-U0-G3	21,696	B3-U0-G3	23,179	B3-U0-G3

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens  
\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf). Valid with no tilt

Type II Medium w/BLS Distribution						
Input Power Designator	3000K		4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
S	17,182	B3-U0-G2	18,597	B3-U0-G2	19,867	B3-U0-G2

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens  
\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf). Valid with no tilt

Type III Medium Distribution						
Input Power Designator	3000K		4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
S	19,841	B3-U0-G3	21,475	B3-U0-G3	22,942	B3-U0-G3

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens  
\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf). Valid with no tilt

Type III Medium w/BLS Distribution						
Input Power Designator	3000K		4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
S	16,978	B2-U0-G3	18,375	B2-U0-G3	19,631	B2-U0-G3

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens  
\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf). Valid with no tilt

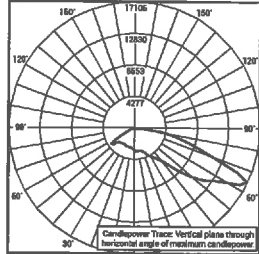


# OSQ Series – Large

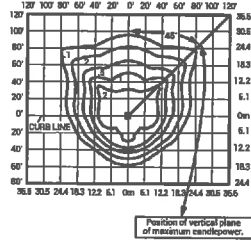
## Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory. To obtain an IES file specific to your project consult: <http://www.cree.com/lighting>.

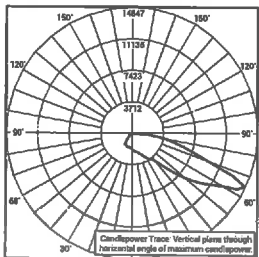
### 4ME



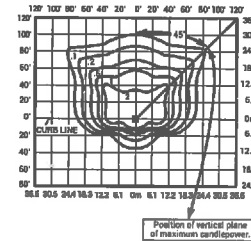
RESTL Test Report #: PL03402-001  
OSQ A \*\* 4ME S 40K-UL  
Initial Delivered Lumens: 20,830



OSQ A \*\* 4ME S 40K-UL  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 21,253  
Initial FC at grade

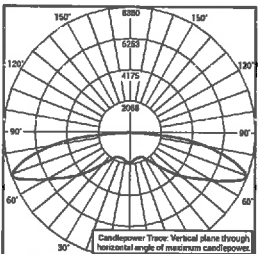


RESTL Test Report #: PL03642-002  
OSQ A \*\* 4ME J 40K-UL w/OSQ-BLSMF  
Initial Delivered Lumens: 13,647

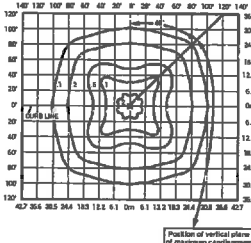


OSQ A \*\* 4ME S 40K-UL w/OSQ-BLSMF  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 18,154  
Initial FC at grade

### 5ME

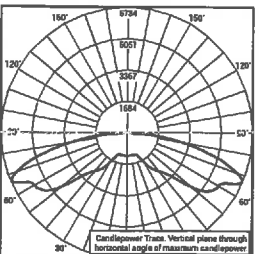


RESTL Test Report #: PL03466-001  
OSQ A \*\* 5ME S 40K-UL  
Initial Delivered Lumens: 20,709

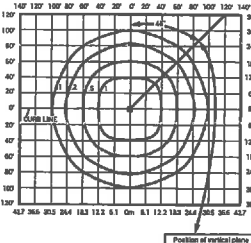


OSQ A \*\* 5ME S 40K-UL  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 20,536  
Initial FC at grade

### 5SH



RESTL Test Report #: PL03501-001  
OSQ A \*\* 5SH S 40K-UL  
Initial Delivered Lumens: 21,066



OSQ A \*\* 5SH S 40K-UL  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 20,982  
Initial FC at grade

Type IV Medium Distribution						
Input Power Designator	3000K		4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
S	19,637	B3-U0-G3	21,253	B3-U0-G3	22,705	B3-U0-G3

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens  
\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf). Valid with no tilt

Type IV Medium w/BLS Distribution						
Input Power Designator	3000K		4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
S	16,778	B2-U0-G3	18,154	B2-U0-G3	19,394	B2-U0-G3

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens  
\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf). Valid with no tilt

Type V Medium Distribution						
Input Power Designator	3000K		4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
S	17,346	B4-U0-G5	20,536	B5-U0-G5	20,841	B5-U0-G5

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens  
\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf). Valid with no tilt

Type V Short Distribution						
Input Power Designator	3000K		4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
S	17,722	B4-U0-G4	20,982	B5-U0-G4	21,294	B5-U0-G4

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens  
\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf). Valid with no tilt



OSQ Series – Large

**Photometry**

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory. To obtain an IES file specific to your project consult: <http://www.cree.com/lighting>.

15D

15' Flood Distribution			
Input Power Designator	3000K	4000K	5700K
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
S	17,345	20,536	20,841

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens

25D

25' Flood Distribution			
Input Power Designator	3000K	4000K	5700K
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
S	16,968	20,089	20,388

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens

40D

40' Flood Distribution			
Input Power Designator	3000K	4000K	5700K
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
S	16,590	19,643	19,935

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens

## OSQ Series – Large

### Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory. To obtain an IES file specific to your project consult: <http://www.cree.com/lighting>.

60D

60' Flood Distribution			
Input Power Designator	3000K	4000K	5700K
	Initial Delivered Lumens*	Initial Delivered Lumens*	Initial Delivered Lumens*
S	16,213	19,197	19,482

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens

# OSQ Series – Large

## Luminaire EPA

Fixed Arm Mount – OSQ-DA Weight: 28.5 lbs. (13kg)							
Single	2 @ 180°	2 @ 90°	3 @ 90°	3 @ 120°	3 @ 180°	4 @ 180°	4 @ 90°
0.80	1.61	1.26	2.06	1.68	3.33	4.66	4.71

Adjustable Arm Mount – OSQ-AA Weight: 28.5 lbs. (13kg)							
Single	2 @ 180°	2 @ 90°	3 @ 90°	3 @ 120°	3 @ 180°	4 @ 180°	4 @ 90°

Tenon Configuration (0°–80° Tilt); If used with Cree tenons, please add tenon EPA with Luminaire EPA							
PB-1A*; PT-1; PW-1A3	PB-2A*; PB-2R**; PD-2A4(180); PT-2(180); PW-2A3	PD-2A4(90); PT-2(90)	PD-3A4(90); PT-3(90)	PT-3(120)	PB-3A*; PB-3R**	PB-4(180)	PB-4A*(90); PB-4R**; PD-4A4(90); PT-4(90)
<b>0° Tilt</b>							
0.80	1.61	1.26	2.06	1.68	3.33	4.66	4.71
<b>10° Tilt</b>							
0.81	1.61	1.52	2.42	2.32	4.40	6.06	5.48
<b>20° Tilt</b>							
1.24	1.61	2.04	2.84	3.18	5.08	7.80	6.27
<b>30° Tilt</b>							
1.64	1.64	2.44	3.24	3.97	6.08	9.40	7.07
<b>45° Tilt</b>							
2.20	2.20	3.00	3.80	5.07	8.86	11.64	8.19
<b>60° Tilt</b>							
2.63	2.63	3.43	4.23	5.73	9.84	13.36	9.05
<b>70° Tilt</b>							
2.82	2.82	3.62	4.42	5.73	10.41	14.12	9.43
<b>80° Tilt</b>							
2.58	2.58	3.32	4.06	5.11	9.71	13.16	8.83
Tenon Configuration (90° Tilt); If used with Cree tenons, please add tenon EPA with Luminaire EPA							
PB-1A*; PT-1; PW-1A3	PB-2A*; PB-2R**; PD-2A4(180); PT-2(180); PW-2A3	PB-2A*	PB-3A*	PT-3(120)	PB-3A*; PB-3R**	PB-4(180)	PB-4A*(90); PB-4R**
<b>90° Tilt</b>							
2.95	2.95	4.64	6.82	5.73	10.61	14.64	11.19

## Tenon EPA

Part Number	EPA
PB-1A*	None
PB-2A*	0.82
PB-3A*	1.52
PB-4A*(180)	2.22
PB-4A*(90)	1.11
PB-2R**	0.92
PB-3R**	1.62
PB-4R**	2.32
PD Series Tenons	0.09
PT Series Tenons	0.10
PW-1A3***	0.47
PW-2A3***	0.94

\* Specify pole size  
 \*\* Specify round pole or tenon dimensions  
 \*\*\* These EPA values must be multiplied by the following ratio: Fixture Mounting Height/Total Pole Height

Tenons and Brackets (must specify color)	
<b>Square Internal Mount Vertical Tenons (Steel)</b> - Mounts to 3-6" (76-152mm) square aluminum or steel poles PB-1A* – Single PB-4A**(90) – 90° Quad PB-2A* – 180° Twin PD-4A**(180) – 180° Quad PB-3A* – 180° Triple	<b>Round Internal Mount Vertical Tenons (Steel)</b> - Mounts to 2.375" (60mm) O.D. round aluminum or steel poles or tenons PB-2R2.375 – Twin PB-4R2.375 – Quad PB-3R2.375 – Triple
<b>Square Internal Mount Horizontal Tenons (Aluminum)</b> - Mounts to 4" (102mm) square aluminum or steel poles PD-2A4(90) – 90° Twin PD-3A4(90) – 90° Triple PD-2A4(180) – 180° Twin PD-4A4(90) – 90° Quad	<b>Round External Mount Horizontal Tenons (Aluminum)</b> - Mounts to 2.375" (60mm) O.D. round aluminum or steel poles or tenons - Mounts to square pole with PB-1A* tenon PT-1H – Single PT-3H(90) – 90° Triple PT-2H(90) – 90° Twin PT-4H(90) – 90° Quad PT-2H(180) – 180° Twin
<b>Wall Mount Brackets</b> - Mounts to wall, roof or side of wood pole WM-2 – Standard WM-4 – L-Shape	<b>Mid-Pole Bracket</b> - Mounts to square pole PW-1A3* – Single PW-2A3* – Double

\* Specify pole size: 3 (3"), 4 (4"), 5 (5"), or 6 (6") \*\* Specify pole size: 4 (4"), 5 (5"), or 6 (6")

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