

RE: CGP Lighting

1 message

Todd Dominski <tdominski@eastbrowncow.com>

Thu, May 4, 2017 at 11:43 AM

To: Jean Fraser <jf@portlandmaine.gov>

Jean,

Please accept this email as confirmation that I will order and install the approved light fixtures for the Solar Canopy Project at the Fore Street Garage with a multi-level option installed on them. The multi-level option will allow adjustment of the lumen output of the light fixtures based on occupancy or daylight.

I have attached the lighting packet with cut sheets.

Let me know if you need me to send over anything else.

Thanks again for working with me on this project.

Todd L. Dominski

Todd L. Dominski

East Brown Cow Management, Inc.

100 Commercial Street, Suite 306

Portland, Maine 04101



ROCKINGHAM ELECTRICAL SUPPLY COMPANY

Job Name: Fore Street Garage
 Customer: East Brown Cow
 Sender: Mark Whitney
 To: Todd

May 1, 2017

QTY	TYPE	MFG	DESCRIPTION	PRICE	TOTAL
12	B4	CREE	OSQ-A-NM-4ME-B-40K-UL-SV-OSQ-DA	\$ 205.00	\$ 2,460.00
12	B4	CREE	WM-DM (Bracket)	\$ 15.00	\$ 180.00
21	IG-40L	CREE	IG-NM-5S-A-40-UL-WH	\$ 100.00	\$ 2,100.00
				Totals:	\$ 4,740.00
			Revision 4-21-17		
21	IG-40L-REV3	CREE	PKG-304-5M-DM-04-E-UL-XX-350-40K XX = Please Advise color	\$ 100.00	\$ 2,100.00
			Revision 5-1-17		
21	Adder	CREE	"ML" Option Factory Installed LED Multi-Level Please See Cut Sheet Attached	\$ 100.00	\$ 2,100.00
			Notes:		
			> Freight Prepaid		
			> Type IG-40L Order with either IG-JB or IG-PD (Same Pricing)		
			> Pendant Stem not included in price - Stems be others		
			> Lead time too be determined		
			> Subject to approvals		
			> Black and Bronze Fixtures are the same price		

[REDACTED]

[REDACTED]

[REDACTED]

304 Series™

LED Parking Structure Luminaire

Product Description

Slim, low profile design. Luminaire is constructed from rugged die cast and extruded aluminum components. LED driver is mounted in a sealed weathertight center chamber that allows for access from below the luminaire. High performance aluminum heat sinks specifically designed for LED parking structure application.

Applications: Parking structures and low-medium bay general lighting

Performance Summary

Patented NanoOptic® Product Technology

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

CRI: Minimum 70 CRI

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

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

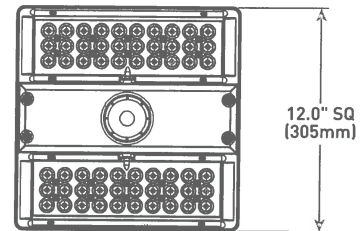
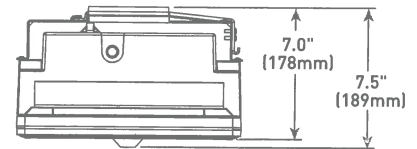
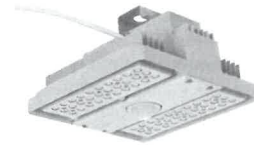
† See <http://lighting.cree.com/warranty> for warranty terms

Accessories

Field-Installed	
Bird Guard - For pendant or hook & cord mount only XA-XCPBRDGRD	For Hook & Cord Mount luminaires Locking Type Plug XA-L515P – 120V XA-L615P – 208/240V XA-L715P – 277V XA-L3720P – 347V
For Pendant Mount luminaires Leveler - For 0-13° Sloped Ceilings XA-PNDTLVL**	Locking Type Receptacle XA-L515R – 120V XA-L615R – 208/240V XA-L715R – 277V XA-L720R – 347V
Fitting XA-PSFTG**	Steady Lock - For eyebolt SL-C
Pendant Mount Kits - Includes conduit fitting and threaded pipe - Pendant height from ceiling surface to bottom of the luminaire; mounting accessories or surface boxes will add to overall height XA-PS12KIT** – 12" (305mm) XA-PS18KIT** – 18" (457mm) XA-PS22KIT** – 22" (559mm)	Hand-Held Remote XA-SENSREM - For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

** Must specify color

DM Mount



LED Count (x10)	Weight
04	20.4 lbs. (9.3kg)
06	20.8 lbs. (9.4kg)

Ordering Information

Example: PKG-304-5M-DM-04-E-UL-SV-700

PKG-304				E				
Product	Optic	Mounting	LED Count (x10)	Series	Voltage	Color Options	Drive Current	Options
PKG-304	V Medium 5S Type V Short PS Petroleum Symmetric SL Sparkle Petroleum 40 40° Flood	DM Direct HC Hook & Cord PD Pendant	04 06		UL Universal 120-277V UH Universal 347-480V	BK Black BZ Bronze SV Silver WH White	350 350mA 525 525mA 700 700mA	DIM 0-10V Dimming - Control by others - Refer to Dimming spec sheet for details - Can't exceed of specified drive current F Fuse - Available with UL voltage only - When code dictates fusing use time delay fuse - Refer to ML spec sheet for availability with ML options J Alternate Junction Box Mounting - For direct mount only - Alternate bracket to fit 4" (102mm) square and RACO279 J-Box ML Multi-Level - Refer to ML spec sheet for details - Intended for downlight applications at 0° tilt PML Programmable Multi-Level - Refer to PML spec sheet for details - Intended for downlight applications at 0° tilt 40K 4000K Color Temperature - Minimum 70 CRI - Color temperature per luminaire



Rev. Date: V2 07/27/2016



US: lighting.cree.com/lighting

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

Canada: www.cree.com/canada

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

304 Series™ LED Parking Structure Luminaire

Product Specifications

CONSTRUCTION & MATERIALS

- Slim, low profile design
- Constructed from rugged die cast and extruded aluminum components
- LED driver is mounted in a sealed weathertight center chamber that allows for access from below the luminaire
- High performance heat sinks specifically designed for LED parking structure application
- Direct mounting bracket is designed to mount directly over existing single gang and octagonal junction boxes for direct mount
- Hook and cord mount provided with spring lock hook for mounting and 1.5' (0.5m) of cord
- Pendant mount includes 36" (419mm) cord out of the luminaire and is intended to be mounted by 3/4 IP pendant (by others)
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultradurable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver, and white are available
- **Weight:** See Weight Charts on pages 1 and 5

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 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
- **10V Source Current:** 0.15mA

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Enclosure rated IP66 per IEC 60529
- Consult factory for CE Certified products
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15 standards for conducted and radiated emissions
- DLC qualified when ordered with 5M or 5S optics. Please refer to www.designlights.org/QPL for most current information
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- RoHS Compliant. Consult factory for additional details
- Meets Buy American requirements within ARRA

Electrical Data*							
LED Count (x10)	System Watts 120-480V	Total Current					
		120V	208V	240V	277V	347V	480V
350mA							
04	46	0.39	0.24	0.22	0.21	0.15	0.12
06	69	0.57	0.34	0.30	0.27	0.21	0.16
525mA							
04	71	0.59	0.35	0.31	0.28	0.21	0.16
06	101	0.84	0.49	0.43	0.38	0.30	0.22
700mA							
04	94	0.79	0.46	0.40	0.36	0.28	0.21
06	135	1.14	0.65	0.57	0.50	0.40	0.29

* Electrical data at 25°C (77°F)

Recommended 304 Series™ Lumen Maintenance Factors (LMF) ¹					
Ambient	Initial LMF	25K hr Projected ² LMF	50K hr Projected ² LMF	75K hr Calculated ³ LMF	100K hr Calculated ³ LMF
5°C (41°F)	1.04	0.99	0.97	0.95	0.93
10°C (50°F)	1.03	0.98	0.96	0.94	0.92
15°C (59°F)	1.02	0.97	0.95	0.93	0.91
20°C (68°F)	1.01	0.96	0.94	0.92	0.90
25°C (77°F)	1.00	0.95	0.93	0.91	0.89

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

² 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

³ 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

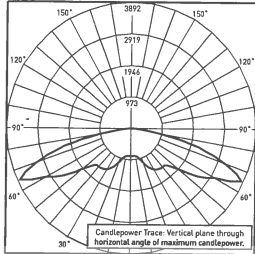


304 Series™ LED Parking Structure Luminaire

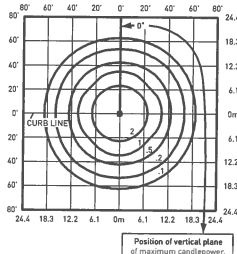
Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. To obtain an IES file specific to your project consult: <http://lighting.cree.com/products/outdoor/parking-structure/304-series-2>

5M



ITL Test Report #: 77285
 PKG-304-5M-**-06-E-UL-700-40K
 Initial Delivered Lumens: 11,681

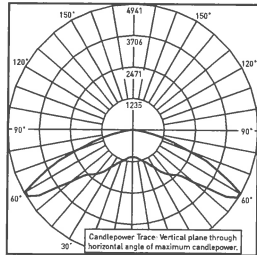


PKG-304-5M-**-06-E-UL-700-40K
 Mounting Height: 15' (4.6m) A.F.G.
 Initial Delivered Lumens: 11,625
 Initial FC at grade

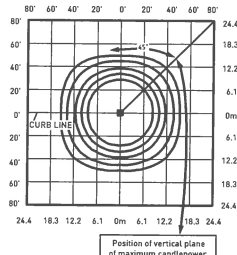
Type V Medium Distribution				
LED Count (x10)	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
350mA				
04	4,595	B3 U1 G1	4,771	B3 U1 G1
06	6,838	B3 U1 G1	7,101	B3 U1 G2
525mA				
04	6,433	B3 U1 G1	6,680	B3 U1 G1
06	9,574	B3 U1 G2	9,942	B3 U1 G2
700mA				
04	7,811	B3 U1 G2	8,111	B3 U1 G2
06	11,625	B4 U1 G2	12,072	B4 U1 G2

* Initial delivered lumens at 25°C (77°F)
 ** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: www.ies.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf

5S



ITL Test Report #: 77876
 PKG-304-5S-**-06-E-UL-700-40K
 Initial Delivered Lumens: 12,738



PKG-304-5S-**-06-E-UL-700-40K
 Mounting Height: 15' (4.6m) A.F.G.
 Initial Delivered Lumens: 12,917
 Initial FC at grade

Type V Short Distribution				
LED Count (x10)	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
350mA				
04	5,105	B2 U0 G1	5,302	B2 U0 G1
06	7,598	B3 U0 G1	7,890	B3 U0 G1
525mA				
04	7,147	B3 U0 G1	7,422	B3 U0 G1
06	10,637	B3 U0 G2	11,046	B3 U0 G2
700mA				
04	8,679	B3 U0 G1	9,013	B3 U0 G1
06	12,917	B3 U0 G2	13,413	B3 U0 G2

* Initial delivered lumens at 25°C (77°F)
 ** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: www.ies.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf

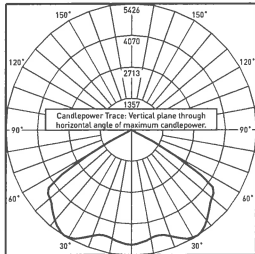


304 Series™ LED Parking Structure Luminaire

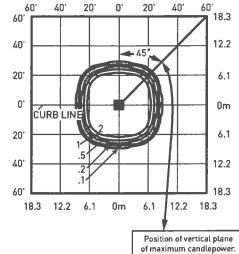
Photometry

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PS



ITL Test Report #: 76940
CAN-304-PS-**-06-E-UL-700-40K
Initial Delivered Lumens: 13,581

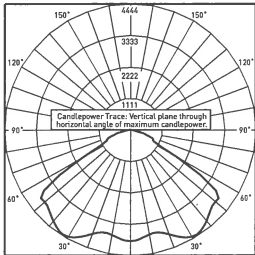


PKG-304-PS-**-06-E-UL-700-40K
Mounting Height: 15' (4.6m) A.F.G.
Initial Delivered Lumens: 13,204
Initial FC at grade

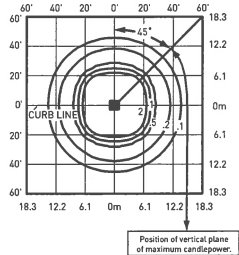
Petroleum Symmetric Distribution				
LED Count (x10)	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
350mA				
04	5,219	B2 U0 G0	5,419	B2 U0 G0
06	7,767	B3 U0 G0	8,066	B3 U0 G0
525mA				
04	7,306	B3 U0 G0	7,587	B3 U0 G0
06	10,874	B3 U0 G0	11,292	B3 U0 G0
700mA				
04	8,872	B3 U0 G0	9,213	B3 U0 G0
06	13,204	B3 U0 G0	13,712	B3 U0 G0

* Initial delivered lumens at 25°C (77°F)
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: www.ies.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf

SL



ITL Test Report #: 77415
CAN-304-SL-**-06-E-UL-700-40K
Initial Delivered Lumens: 12,707



PKG-304-SL-**-06-E-UL-700-40K
Mounting Height: 15' (4.6m) A.F.G.
Initial Delivered Lumens: 12,773
Initial FC at grade

Sparkle Petroleum Distribution				
LED Count (x10)	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
350mA				
04	5,048	B2 U0 G1	5,243	B2 U0 G1
06	7,514	B3 U0 G1	7,803	B3 U0 G1
525mA				
04	7,068	B2 U0 G1	7,340	B2 U0 G1
06	10,519	B3 U0 G1	10,924	B3 U0 G1
700mA				
04	8,582	B3 U0 G1	8,912	B3 U0 G1
06	12,773	B3 U0 G1	13,264	B3 U0 G1

* Initial delivered lumens at 25°C (77°F)
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: www.ies.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf

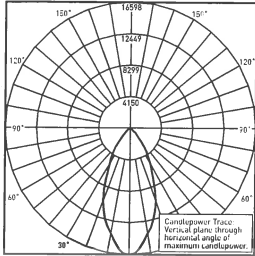


304 Series™ LED Parking Structure Luminaire

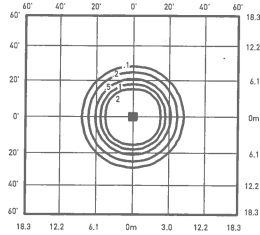
Photometry

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40°



ITL Test Report #: 78011
CAN-304-40-**-06-E-UL-700-40K
Initial Delivered Lumens: 12,497



PKG-304-40-**-06-E-UL-700-40K
Mounting Height: 15' (4.6m) A.F.G.
Initial Delivered Lumens: 12,917
Initial FC at grade

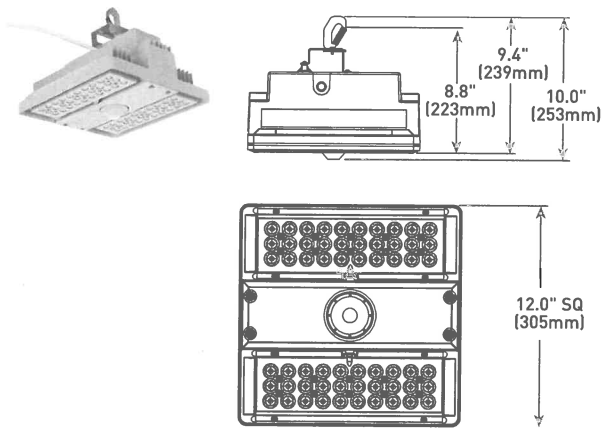
40° Flood Distribution

LED Count (x10)	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
350mA				
04	5,105	N/A	5,302	N/A
06	7,598	N/A	7,890	N/A
525mA				
04	7,147	N/A	7,422	N/A
06	10,637	N/A	11,046	N/A
700mA				
04	8,679	N/A	9,013	N/A
06	12,917	N/A	13,413	N/A

* Initial delivered lumens at 25°C (77°F)

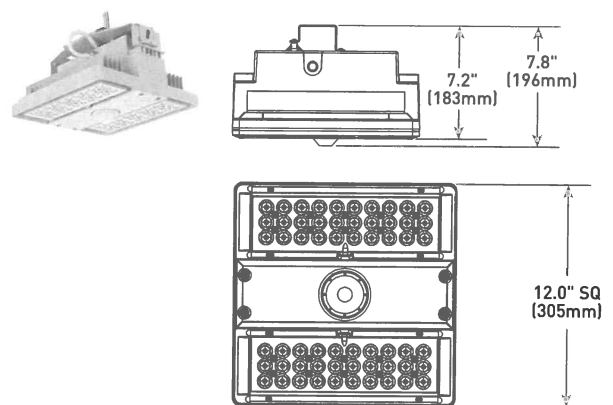
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: www.ies.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf

HC Mount



LED Count (x10)	Weight
04	18.1 lbs. (8.2kg)
06	18.6 lbs. (8.4kg)

PD Mount



LED Count (x10)	Weight
04	18.5 lbs. (8.4kg)
06	18.8 lbs. (8.5kg)

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US: lighting.cree.com/lighting T (800) 236-6800 F (262) 504-5415

Canada: www.cree.com/canada



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

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

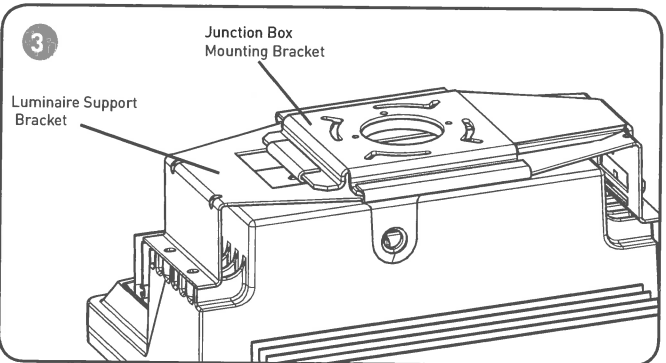
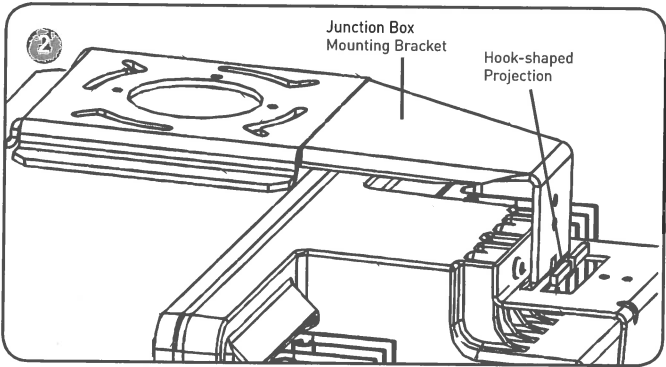
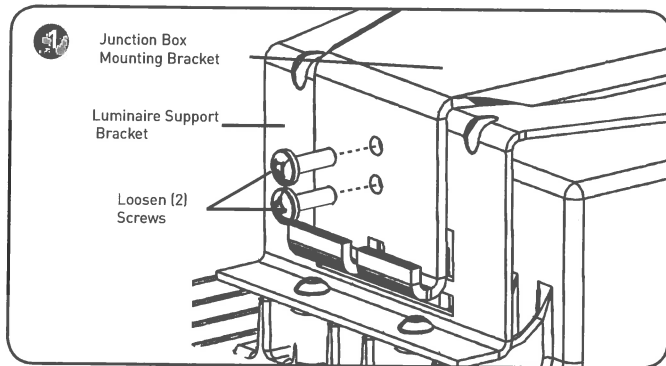
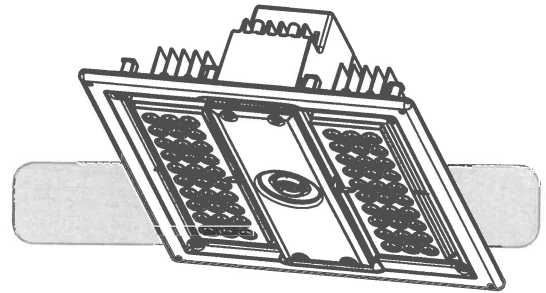
READ AND FOLLOW ALL SAFETY INSTRUCTIONS

- DANGER**- Risk of shock- Disconnect power before installation.
DANGER – Risque de choc – Couper l'alimentation avant l'installation.
- This luminaire must be installed in accordance with the NEC or your local electrical code. If you are not familiar with these codes and requirements, consult a qualified electrician.
Ce produit doit être installé conformément à NEC ou votre code électrique local. Si vous n'êtes pas familier avec ces codes et ces exigences, veuillez contacter un électricien qualifié.
- When handling, hold luminaire on sides to prevent damage to the top screen or LED's.
- Take care to keep the LED lenses clean during installation.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

TO INSTALL:

INSTALLATION INSTRUCTIONS INSTRUCTIONS D'INSTALLATION



DIRECT MOUNTING

STEP 1:

Remove the junction box mounting bracket from the luminaire by loosening (2) screws and sliding it out of the channels of the luminaire support bracket. See **Figure 1 and 3.**

STEP 2:

Attach the junction box mounting bracket to the customer supplied junction box using the customer supplied screws.

STEP 3:

Temporarily hang the luminaire from the hook-shaped projection on the junction box mounting bracket. See **Figure 2.**

STEP 4:

Make wiring connections per the **Electrical Connections** section.

STEP 5:

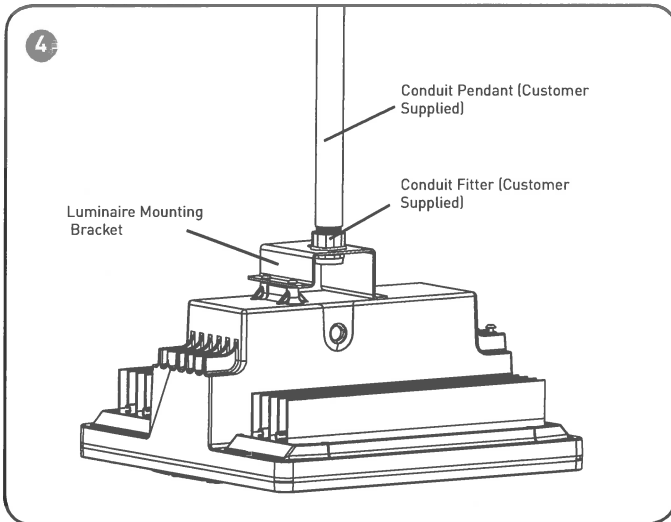
Secure the cord plate/gasket assembly to the junction box mounting bracket using (2) supplied screws.

STEP 6:

Remove the luminaire from the junction box mounting bracket and slide the channels on the luminaire support bracket onto the flanges of the junction box mounting bracket. See **Figure 3.**

STEP 7:

Secure the luminaire to the bracket using the (2) screws that were loosened in Step 1.



PENDANT MOUNT

NOTE: Ensure that the customer supplied pendant is capable of supporting the weight of the luminaire.

STEP 1:

Size the pendant and locate the junction box accordingly. Install a suitable Listed cord strain relief bushing in the junction box, and feed the luminaire's supply cord through it. Tie an overhand knot in the cord inside the junction box.

STEP 2:

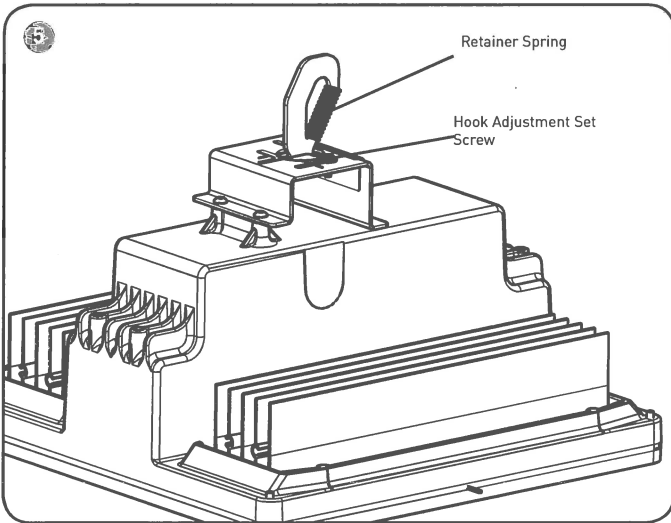
Make wiring connections to the cord and supply wiring per the **Electrical Connections** section.

STEP 3:

Attach the junction box cover/pendant assembly to the junction box using customer supplied screws.

STEP 4:

Secure the pendant to the luminaire mounting bracket using a customer supplied suitable conduit fitting. See **Figure 4**.



HOOK AND CORD MOUNTING

STEP 1:

Push down on retainer spring until top of spring is free of luminaire hook. See **Figure 5**.

STEP 2:

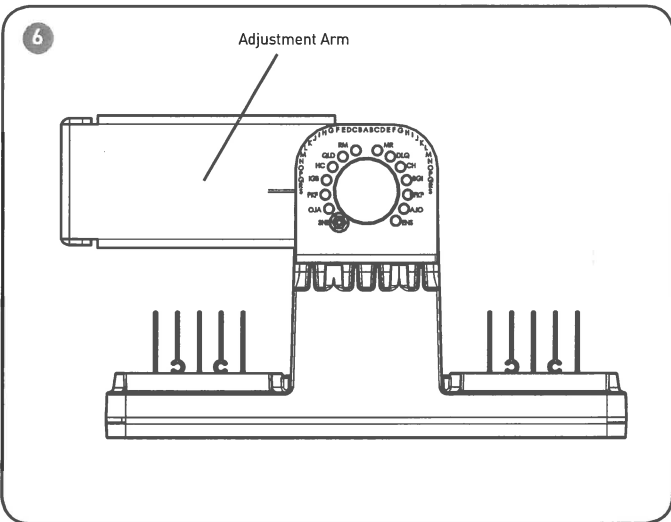
Slide hook into securely mounted customer supplied eye hanger and return retainer spring to original position. **NOTE:** The luminaire should already be factory set for correct balance. However, should you need to, the luminaire may be balanced by loosening the hook adjustment set screw on the top of the housing and sliding the hook as necessary for correct balance. Tighten hook set screw when finished. See **Figure 5**.

STEP 3:

Install a suitable Listed cord strain relief bushing in the junction box, and feed the fixture's supply cord through it. Tie an overhand knot in the cord inside the junction box.

STEP 4:

Make wiring connections to the cord and supply wiring per the **Electrical Connections** section.



ADJUSTABLE MOUNT

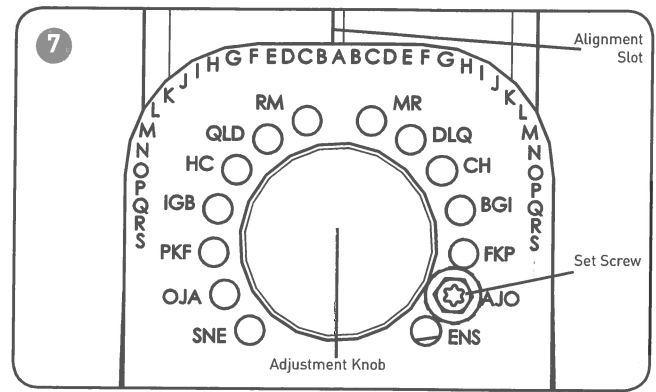
STEP 1:

Secure the top of the Adjustable Arm to mounting surface with screws (not supplied).

STEP 2:

Make wiring connections per the **Electrical Connections** section.

DEGREE	ADJUSTABLE FIXTURE POSITION (FIGURE 7)
90	A
85	B
80	C
75	D
70	E
65	F
60	G
55	H
50	I
45	J
40	K
35	L
30	M
25	N
20	O
15	P
10	Q
5	R
0	S



ADJUSTING HEIGHT OF LUMINAIRE

If desired, the position of the luminaire can be adjusted as follows:

STEP 1:

Remove set screw. See **Figure 7**.

STEP 2:

Loosen adjustable knob. See **Figure 7**.

STEP 3:

Rotate luminaire to desired position. Use the alignment slot to align with a letter in the table, above, which will correspond to the fixture degree (figure 6 is shown at 0 degrees)

STEP 4:

Tighten Adjustment Knob to hold luminaire in place.

STEP 5:

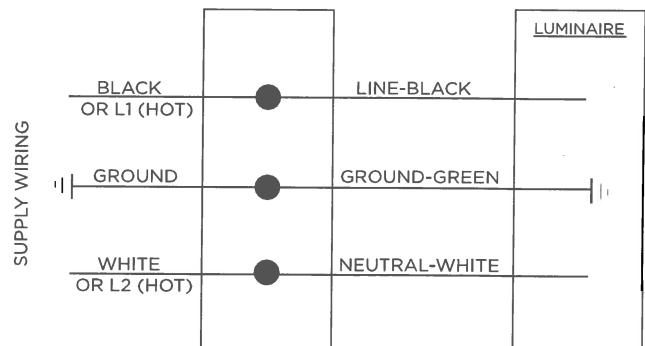
Insert Set Screw into hole that corresponds with the letter in table on the left.

ELECTRICAL CONNECTIONS- PHASE TO NEUTRAL WIRING - 120/277V

- Connect the black luminaire lead to the line supply lead
- Connect the white luminaire lead to the neutral supply lead
- Connect the green or green/yellow ground lead to the supply ground lead

ELECTRICAL CONNECTIONS- PHASE TO PHASE WIRING - 208/240/480V

- Connect L1 (Hot) supply lead to the black lead.
- Connect L2 (Hot) supply lead to the white lead
- Connect the green or green/yellow ground lead to the supply ground lead



LED Multi-Level Options

For use with Cree Edge™ Series, LEDway® Series, 228 Series™, 304 Series™, XSP Series, CPY Series, OSQ series and VG Series Luminaires

Product Description

The Cree® Multi-Level options include a factory-installed sensor integrated into the luminaire which allows the luminaire to produce different lumen outputs in High Mode and Low Mode. The multi-level option is designed to operate all LEDs at the same output for maximum and uniform life.

The occupancy sensor uses passive infrared technology that reacts to changes in infrared energy (moving heat) within the coverage area of the sensor. When motion is detected the luminaire is switched to High Mode. After motion is no longer detected and the time delay cycle has been completed, the luminaire is returned to its Low Mode setting. The sensor itself includes eight possible field adjustable settings for each of the following categories: Ambient Light, Time Delay, High Dimming and Low Dimming.

Ambient Light feature (A) is factory set at "OSO" which eliminates any daylight harvesting management and allows the fixture to operate only on occupancy. The Ambient Light feature includes eight possible field settings:

Factory Setting

Occupancy Sensing Only (OSO):

Occupancy detection (PIR) enabled only. Ambient Light sensing is disabled. The sensor will switch the luminaire to High Mode during occupancy detection regardless of environment light levels. After motion is no longer detected and the time delay cycle has been completed, the luminaire returned to its Low Mode setting.

Field Settings (must be changed in field)

Occupancy Sensing and Time Off (OSTO):

Occupancy detection (PIR) enabled only with Time Off operation. Ambient Light sensing is disabled. The sensor will switch the luminaire to High Mode during occupancy detection regardless of environment light levels. After motion is no longer detected and the time delay cycle has been completed, the luminaire returned to its Low Mode setting. Sensor will switch the luminaire to Off after 30 minutes of no occupancy detection (Low Mode).

Occupancy Sensing and Low Ambient (OSLA):

Occupancy detection (PIR) and Ambient Light sensing enabled. When in Low Mode and environment light levels exceed 130 Lux (12 FC), luminaire will turn Off and remain Off regardless of occupancy. If environment light levels are below 80 Lux (7 FC), luminaire will remain in Low Mode during no occupancy and switch to High Mode after occupancy is detected.

Occupancy Sensing and High Ambient (OSHA):

Occupancy detection (PIR) and Ambient Light sensing enabled. When in Low Mode and environment light levels exceed 600 Lux (55 FC), luminaire will turn Off and remain Off regardless of occupancy. If environment light levels are below 500 Lux (46 FC), luminaire will remain in Low Mode during no occupancy and switch to High Mode after occupancy is detected.

Occupancy Sensing, Low Ambient and Time Off (OSLATO):

Occupancy detection (PIR), Ambient Light sensing and Time Off enabled. When in Low Mode and environment light levels exceed 130 Lux (12 FC), luminaire will turn Off and remain Off regardless of occupancy. If environment light levels are below 80 Lux (7 FC) and occupancy is detected, luminaire will switch to High Mode. After motion is no longer detected and the time delay cycle has been completed, the luminaire returned to its Low Mode setting. Sensor will switch the luminaire Off after 2 minutes of no occupancy detection (Low Mode).

Occupancy Sensing, High Ambient and Time Off (OSHATO):

Occupancy detection (PIR), Ambient Light sensing and Time Off enabled. When in Low Mode and environment light levels exceed 600 Lux (55 FC), luminaire will turn Off and remain Off regardless of occupancy. If environment light levels are below 500 Lux (46 FC) and occupancy is detected, luminaire will switch to High Mode. After motion is no longer detected and the time delay cycle has been completed, the luminaire returns to its Low Mode setting. Sensor will switch the luminaire Off after 2 minutes of no occupancy detection (Low Mode).

The following features are used to bypass sensor:

Lock Low Mode (LL):

Sensor locks in Low Dimming level indefinitely. The occupancy detection (PIR) and Ambient Light operation are disabled during the Lock Low Mode. Typically used for Test Mode.

Lock High Mode (LH):

Sensor turns the fixture on at the Low Dimming setting. Sensor will cycle every 5 seconds between specified Low and High Dimming settings for 4 complete cycles (Low, High, Low, High) and then locks in High Mode indefinitely. The occupancy detection (PIR) and Ambient Light operation are disabled during the Lock High Mode. Typically used for Test Mode.

Time Delay feature (D) can be adjusted from 0.5 min to 30 min. and is factory set at 4 min. Once motion is detected, the lighting load will remain in the High Mode until motion is no longer detected and the Time Delay cycle has been completed.

Low Dimming refer to product specific table for Low Dimming (L) ranges and factory settings.

High Dimming refer to product specific table for High Dimming (H) ranges and factory settings. Please note some luminaires may have maximum output limitations.

Limited Warranty*

5 year on Multi-Level Option

* See www.cree.com/lighting/products/warranty for warranty terms

LED Multi-Level Options

Figure 1 – LEDway® Streetlights, Cree Edge™, Cree Edge™ High Output and OSQ Series Area and Flood Luminaires, and XSP Street and Area Luminaires

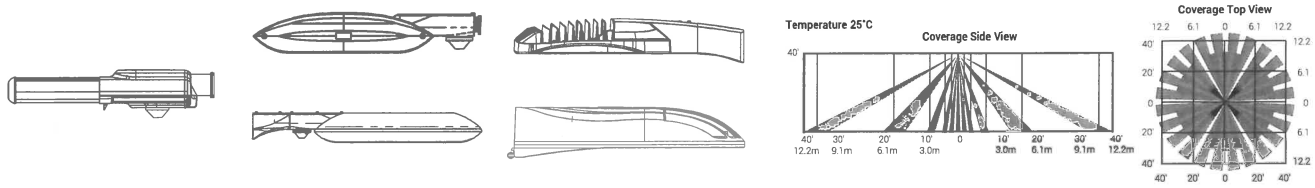
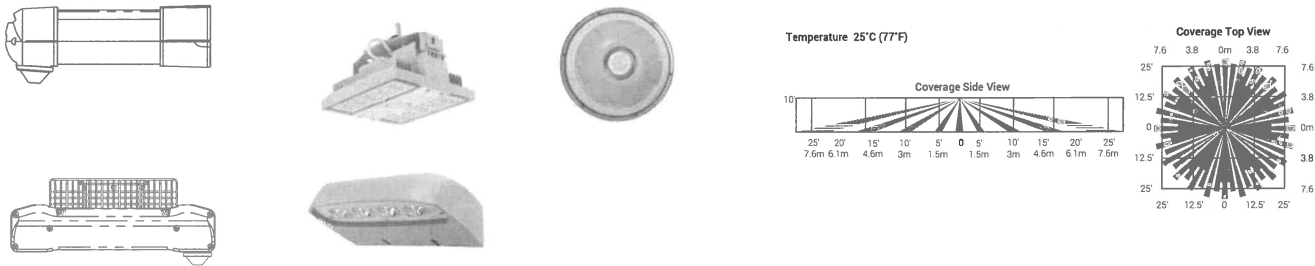


Figure 2 – Cree Edge™ and CPY250™ Canopy/Soffit Luminaires, 304 Series™ and 228 Series™ Recessed Canopy/Soffit Luminaires, 304 Series™ Interior Recessed and Flood Luminaires



Figure 3 – Cree Edge™ and XSPW™ Wall Mount Luminaires, Cree Edge™ and 304 Series™ Parking Structure Luminaires, and VG Series Vehicle Garage Luminaires



Sensor Details	
Luminaire	Coverage Area
LEDway® Streetlights, Cree Edge™, Cree Edge™ High Output and OSQ Series Area and Flood Luminaires, and XSP Street and Area Luminaires	Lens coverage: 30' (9.1m) optimal mounting height and 60' (18.3m) diameter coverage with a 360° circular pattern. The minimum and maximum mounting heights are 20' (6.1m) and 40' (12.2m) respectively. Lens mounting height to coverage radius is 1:1. See Figure 1. Note: When mounting heights are above 30' (9.1m), the sensor only detects large objects such as fork lift trucks or cars.
Cree Edge™ and CPY250™ Canopy/Soffit Luminaires, 304 Series™ and 228 Series™ Recessed Canopy/Soffit Luminaires, and 304 Series™ Interior Recessed and Flood Luminaires	Lens coverage: 20' (6.1m) optimal mounting height and 40' (12.2m) diameter coverage area with a 360° circular pattern. The minimum and maximum mounting heights are 10' (3m) and 30' (9.1m) respectively. Lens mounting height to coverage radius ratio is 1:1. See Figure 2.
Cree Edge™ and XSPW™ Wall Mount Luminaires, Cree Edge™ and 304 Series™ Parking Structure Luminaires, and VG Series Vehicle Garage Luminaires	Lens coverage: 10' (3m) optimal mounting height and 50' (15.2m) diameter coverage area with a 360° circular pattern. The maximum mounting height is 15' (4.6m). Lens mounting height to coverage radius is 1:2.5. See Figure 3.



LED Multi-Level Options

Product Availability

Cree Edge™ Series Luminaires												
Drive Current (mA)	Voltage	Area & Flood			Area & Flood Round		Canopy	Interior Round	Parking	Pathway ¹	Security	High Output Area & Flood
		Direct & Adjustable Arm Mounts	Post Top Mounts	SA Mounts	Direct & Adjustable Arm Mounts	Post Top Mounts ¹	All Mounts	All Mounts	All Mounts	All Mounts	Wall Mount	All Mounts
350	120-277	20-160 LEDs ^{FR}	40-160 LEDs ^{FP}	N/A	40-120 LEDs ^F	N/A	40-160 LEDs ^{FP}	N/A	40-100 LEDs ^F	N/A	20-80 LEDs ^F	N/A
	347-480	20-160 LEDs	40-80 LEDs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
525	120-277	20-160 LEDs ^{FR}	40-160 LEDs ^{FP}	N/A	40-120 LEDs ^F	N/A	40-160 LEDs ^{FP}	N/A	40-100 LEDs ^F	N/A	20-80 LEDs ^F	N/A
	347-480	20-160 LEDs	40-80 LEDs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
700	120-277	20-60 LEDs ^{FR}	40-60 LEDs ^{FP}	N/A	40-60 LEDs ^F	N/A	40-60 LEDs ^{FP}	N/A	40-60 LEDs ^F	N/A	20-80 LEDs ^F	120, 240 LEDs ^{FR}
	347-480	20-60 LEDs	40-60 LEDs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1000	120-277	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	120 LEDs ^{FR}
	347-480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

¹ Consult TL spec sheet for availability

^F Multi-Level option available with Fusing option

^R Multi-Level option available with Photocell option

^{FR} Multi-Level option available with NEMA® Photocell Receptacle option

LEDway® Series Luminaires			
Drive Current (mA)	Voltage	LEDway® Streetlight	
		Horizontal Tenon Mount	IP66 Rated Mounts
350	120-277	N/A	20-120 LEDs ^{FR}
	347-480	N/A	N/A
525	120-277	N/A	20-120 LEDs ^{FR}
	347-480	N/A	N/A
700	120-277	N/A	20-120 LEDs ^{FR}
	347-480	N/A	N/A
1000	120-277	N/A	N/A
	347-480	N/A	N/A

^F Multi-Level option available with Fusing option

^{FR} Multi-Level option available with NEMA® Photocell Receptacle option

304 Series™ Luminaires										
Drive Current (mA)	Voltage	Canopy			Parking Structure	Floodlight	Interior		Soffit	
		Recessed Mount for Single Skin Canopies	Recessed Mount for Double Skin Canopies	Recessed Upgrade Kit Mounts	All Mounts	Yoke Mounts	Recessed Mount	IC Rated Recessed Mount	Recessed Mount	IC Rated Recessed Mount
350	120-277	40-60 LEDs ^F	40-60 LEDs ^F	40-60 LEDs ^F	40-60 LEDs ^F	40-60 LEDs ^F	40-60 LEDs ^F	40 LEDs ^F	40-60 LEDs ^F	40 LEDs ^F
	347-480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
525	120-277	40-60 LEDs ^F	40-60 LEDs ^F	40-60 LEDs ^F	40-60 LEDs ^F	40-60 LEDs ^F	40-60 LEDs ^F	N/A	40-60 LEDs ^F	N/A
	347-480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
700	120-277	40-60 LEDs ^F	40-60 LEDs ^F	N/A	40-60 LEDs ^F	40-60 LEDs ^F	N/A	N/A	N/A	N/A
	347-480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

^F Multi-Level option available with Fusing option

228 Series™ Luminaires					
Drive Current (mA)	Voltage	Canopy		Soffit	
		Recessed Mount	Recessed Upgrade Kit Mounts	Recessed Mount	IC Rated Recessed Mount
350	120-277	90 LEDs	N/A	30, 60 LEDs	N/A
	347-480	N/A	N/A	N/A	N/A
525	120-277	30, 60, 90 LEDs	30, 60 LEDs	30, 60 LEDs	N/A
	347-480	N/A	N/A	N/A	N/A
700	120-277	30, 60, 90 ¹ LEDs	30, 60 LEDs	N/A	N/A
	347-480	N/A	N/A	N/A	N/A
900	120-277	60 LEDs ¹	N/A	N/A	N/A
	347-480	N/A	N/A	N/A	N/A
1000	120-277	30 LEDs ¹	N/A	N/A	N/A
	347-480	N/A	N/A	N/A	N/A

¹ Requires marked spacing 48" (1,219mm) x 24" (610mm) x 6" (152mm); 48" (1,219mm) luminaire to luminaire, 24" (610mm) luminaire to side wall, 6" (152mm) above luminaire.



LED Multi-Level Options

350mA Drive Current

Note: For use with products when 350mA drive current is specified. Specified drive current represents the maximum drive current that will be available with dimming option. Specifying the maximum allowed drive current for your product will provide the greatest range of dimming. Multipliers are for estimating purposes only. Check actual spec sheet data where available.

Position	Low Dimming Settings					
	120-277V			347-480V		
	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier
0	0	0.00	0.00	0	0.00	0.00
1	75	0.15	0.15	38	0.10	0.11
2	125	0.26	0.27	63	0.17	0.18
3	150	0.31	0.31	75	0.20	0.22
4	175	0.36	0.37	88	0.23	0.29
5	225	0.45	0.45	113	0.31	0.35
6	275	0.55	0.53	138	0.38	0.41
7	325	0.64	0.62	163	0.45	0.48

Factory Dimming Settings		
Multi-Level Option	Low Dimming Setting	High Dimming Setting
ML4 (HL)	75mA	350mA
ML5 (HK)	175mA	350mA

Position	High Dimming Settings					
	120-277V			347-480V		
	Drive Current	System Watts Multiplier	Lumen Multiplier	Drive Current	System Watts Multiplier	Lumen Multiplier
0	350	0.67	0.70	175	0.49	0.52
1	425	0.83	0.80	213	0.59	0.60
2	475	0.92	0.89	238	0.66	0.66
3	525	1.00	1.00	263	0.74	0.73
4	525	1.00	1.00	275	0.77	0.76
5	525	1.00	1.00	288	0.81	0.79
6	525	1.00	1.00	313	0.88	0.85
7	525	1.00	1.00	350	1.00	1.00

525mA Drive Current

Note: For use with products when 525mA drive current is specified. Specified drive current represents the maximum drive current that will be available with dimming option. Specifying the maximum allowed drive current for your product will provide the greatest range of dimming. Multipliers are for estimating purposes only. Check actual spec sheet data where available.

Position	Low Dimming Settings					
	120-277V			347-480V		
	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier
0	0	0.00	0.00	0	0.00	0.00
1	75	0.15	0.15	75	0.15	0.15
2	125	0.26	0.27	125	0.26	0.27
3	150	0.31	0.31	150	0.31	0.31
4	175	0.36	0.37	175	0.45	0.45
5	225	0.45	0.45	225	0.45	0.45
6	275	0.55	0.53	275	0.55	0.53
7	325	0.64	0.62	325	0.64	0.62

Factory Dimming Settings		
Multi-Level Option	Low Dimming Setting	High Dimming Setting
ML (CL)	75mA	525mA
ML1 (CK)	175mA	525mA

LED Multi-Level Options

525mA Drive Current Continued

Note: For use with products when 525mA drive current is specified. Specified drive current represents the maximum drive current that will be available with dimming option. Specifying the maximum allowed drive current for your product will provide the greatest range of dimming. Multipliers are for estimating purposes only. Check actual spec sheet data where available.

Position	High Dimming Settings					
	120-277V			347-480V		
	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier
0	350	0.67	0.70	350	0.67	0.70
1	425	0.83	0.80	425	0.83	0.80
2	475	0.92	0.89	475	0.82	0.89
3	525	1.00	1.00	525	1.00	1.00
4	525	1.00	1.00	525	1.00	1.00
5	525	1.00	1.00	525	1.00	1.00
6	525	1.00	1.00	525	1.00	1.00
7	525	1.00	1.00	525	1.00	1.00

700mA Drive Current

Note: For use with products when 700mA drive current is specified. Specified drive current represents the maximum drive current that will be available with dimming option. Specifying the maximum allowed drive current for your product will provide the greatest range of dimming. Multipliers are for estimating purposes only. Check actual spec sheet data where available.

Position	Low Dimming Settings					
	120-277V			347-480V		
	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier
0	0	0.00	0.00	0	0.0	0.0
1	75	0.11	0.12	75	0.14	0.12
2	125	0.19	0.21	125	0.19	0.21
3	150	0.23	0.25	150	0.23	0.25
4	175	0.26	0.29	175	0.26	0.29
5	225	0.32	0.35	225	0.33	0.35
6	275	0.40	0.42	275	0.40	0.42
7	325	0.78	0.49	325	0.47	0.49

Factory Dimming Settings		
Multi-Level Option	Low Dimming Setting	High Dimming Setting
ML2 (DL)	75mA	700mA
ML3 (DK)	175mA	700mA

Position	High Dimming Settings					
	120-277V			347-480V		
	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier
0	350	0.50	0.56	350	0.49	0.56
1	425	0.62	0.63	425	0.60	0.63
2	475	0.68	0.70	475	0.67	0.70
3	525	0.76	0.79	525	0.73	0.79
4	550	0.80	0.80	550	0.78	0.80
5	575	0.83	0.84	575	0.81	0.80
6	625	0.90	0.91	625	0.88	0.91
7	700	1.00	1.00	700	1.00	1.00



LED Multi-Level Options

1000mA Drive Current

Note: For use with products when 1000mA drive current is specified. Specified drive current represents the maximum drive current that will be available with dimming option. Specifying the maximum allowed drive current for your product will provide the greatest range of dimming. Multipliers are for estimating purposes only. Check actual spec sheet data where available.

Position	Low Dimming Settings			High Dimming Settings		
	120-277V			120-277V		
	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier	Drive Current (mA)	System Watts Multiplier	Lumen Multiplier
0	0	0.00	0.00	525	0.44	0.53
1	110	0.08	0.16	650	0.56	0.63
2	175	0.13	0.25	750	0.65	0.71
3	225	0.19	0.25	825	0.73	0.77
4	270	0.22	0.30	850	0.75	0.79
5	350	0.29	0.39	900	0.78	0.83
6	425	0.36	0.43	1000	0.87	0.91
7	500	0.42	0.51	1050	1.00	1.00

Factory Dimming Settings		
Multi-Level Option	Low Dimming Setting	High Dimming Setting
ML6 (XL)	110mA	1000mA
ML7 (XK)	175mA	1000mA

VG Series

Note: For use with VG Series luminaires

VG Series Luminaires		
Input Power Designator	Voltage	Availability
A	120-277	Available
	347, 480	Available

Position	Low Dimming Settings		High Dimming Settings	
	120-277V, 347V, 480V		120-277V, 347V, 480V	
	System Watts Multiplier	Lumen Multiplier	System Watts Multiplier	Lumen Multiplier
0	0.00	0.00	0.44	0.53
1	0.08	0.16	0.56	0.63
2	0.13	0.25	0.65	0.71
3	0.19	0.25	0.73	0.77
4	0.22	0.30	0.75	0.79
5	0.29	0.39	0.78	0.83
6	0.36	0.43	0.87	0.91
7	0.42	0.51	1.00	1.00

Factory Dimming Settings		
Multi-Level Option	Low Dimming Setting	High Dimming Setting
ML	5	7
ML1	5	4
ML2	1	7
ML3	1	4
ML4	1	0
ML5	5	0



LED Multi-Level Options

CPY Series

Note: For use with CPY250™ luminaires

CPY Series Luminaires		
Input Power Designator	Voltage	Availability
A	120-277	N/A
	347-480	N/A
B	120-277	Available
	347-480	N/A
C	120-277	N/A
	347-480	N/A
D	120-277	Available
	347-480	N/A

Factory Dimming Settings			
Input Power Designator	Multi-Level Option	Low Dimming Setting	High Dimming Setting
B	ML	4	5
D	ML	4	7

CPY Series – Input Power Designator B				
Position	Low Dimming Settings		High Dimming Settings	
	120-277V		120-277V	
	System Watts Multiplier	Lumen Multiplier	System Watts Multiplier	Lumen Multiplier
0	0.20	0.12	0.72	0.75
1	0.27	0.28	0.81	0.83
2	0.32	0.33	0.90	0.91
3	0.36	0.38	1.00	1.00
4	0.45	0.48	1.00	1.00
5	0.54	0.57	1.00	1.00
6	0.63	0.67	1.00	1.00
7	0.68	0.71	1.00	1.00

CPY Series – Input Power Designator D				
Position	Low Dimming Settings		High Dimming Settings	
	120-277V		120-277V	
	System Watts Multiplier	Lumen Multiplier	System Watts Multiplier	Lumen Multiplier
0	0.00	0.00	0.54	0.55
1	0.14	0.14	0.65	0.67
2	0.20	0.17	0.72	0.75
3	0.24	0.22	0.80	0.83
4	0.27	0.26	0.84	0.86
5	0.35	0.35	0.88	0.90
6	0.43	0.44	0.96	0.97
7	0.50	0.51	1.00	1.00

OSQ Series

Note: For use with OSQ™ luminaires

OSQ Series Luminaires		
Input Power Designator	Voltage	Availability
A	120-277	Available ^F
	347-480	N/A
J	120-277	Available ^F
	347-480	N/A
S	120-277	Available ^F
	347-480	N/A

^F Multi-Level option available with Fusing option

^R Multi-Level option available with NEMA® Photocell Receptacle option

Position	Low Dimming Settings		High Dimming Settings	
	120-277V		120-277V	
	System Watts Multiplier	Lumen Multiplier	System Watts Multiplier	Lumen Multiplier
0	0.00	0.00	0.50	0.60
1	0.12	0.14	0.62	0.72
2	0.17	0.23	0.71	0.80
3	0.22	0.29	0.78	0.85
4	0.26	0.34	0.81	0.87
5	0.34	0.43	0.85	0.90
6	0.41	0.51	0.95	0.97
7	0.48	0.58	1.00	1.00

Factory Dimming Settings		
Multi-Level Option	Low Dimming Setting	High Dimming Setting
ML	5	7

LED Multi-Level Options

XSP Series

Note: For use with XSP1™, XSP2™, XSP2L™ and XSPW™ Luminaires

XSP Series Luminaires		
Input Power Designator	Voltage	Availability
XSP1, XSP2 Versions A&B A-I	120-277	Available ^F
	347-480	Available ^F
XSP2L Version A L-P	120-277	Available ^F
XSPW C	120-277	Available ^F
	347	N/A
XSPW G	120-277	N/A
	347	N/A

^F Multi-Level option available with Fusing option

^F Multi-Level option available with NEMA® Photocell Receptacle option

XSP1, XSP2, & XSPW Luminaires				
Position	Low Dimming Settings		High Dimming Settings	
	120-480V		120-480V	
	System Watts Multiplier	Lumen Multiplier	System Watts Multiplier	Lumen Multiplier
0	0.00	0.00	0.47	0.51
1	0.16	0.12	0.55	0.60
2	0.18	0.16	0.63	0.68
3	0.22	0.21	0.71	0.75
4	0.26	0.26	0.82	0.85
5	0.31	0.33	0.88	0.90
6	0.35	0.38	1.00	1.00
7	0.41	0.44	1.00	1.00

Factory Dimming Settings			
Luminaire	Multi-Level Option	Low Dimming Setting	High Dimming Setting
XSP1, XSP2 and XSP2L	ML (K)	4	7
XSPW	ML (K)	5	7

XSP2L Luminaires				
Position	Low Dimming Settings		High Dimming Settings	
	120-277V		120-277V	
	System Watts Multiplier	Lumen Multiplier	System Watts Multiplier	Lumen Multiplier
0	0.00	0.00	0.61	0.69
1	0.18	0.18	0.71	0.78
2	0.25	0.28	0.81	0.86
3	0.30	0.34	0.91	0.94
4	0.34	0.40	1.00	1.00
5	0.41	0.41	1.00	1.00
6	0.45	0.53	1.00	1.00
7	0.53	0.62	1.00	1.00

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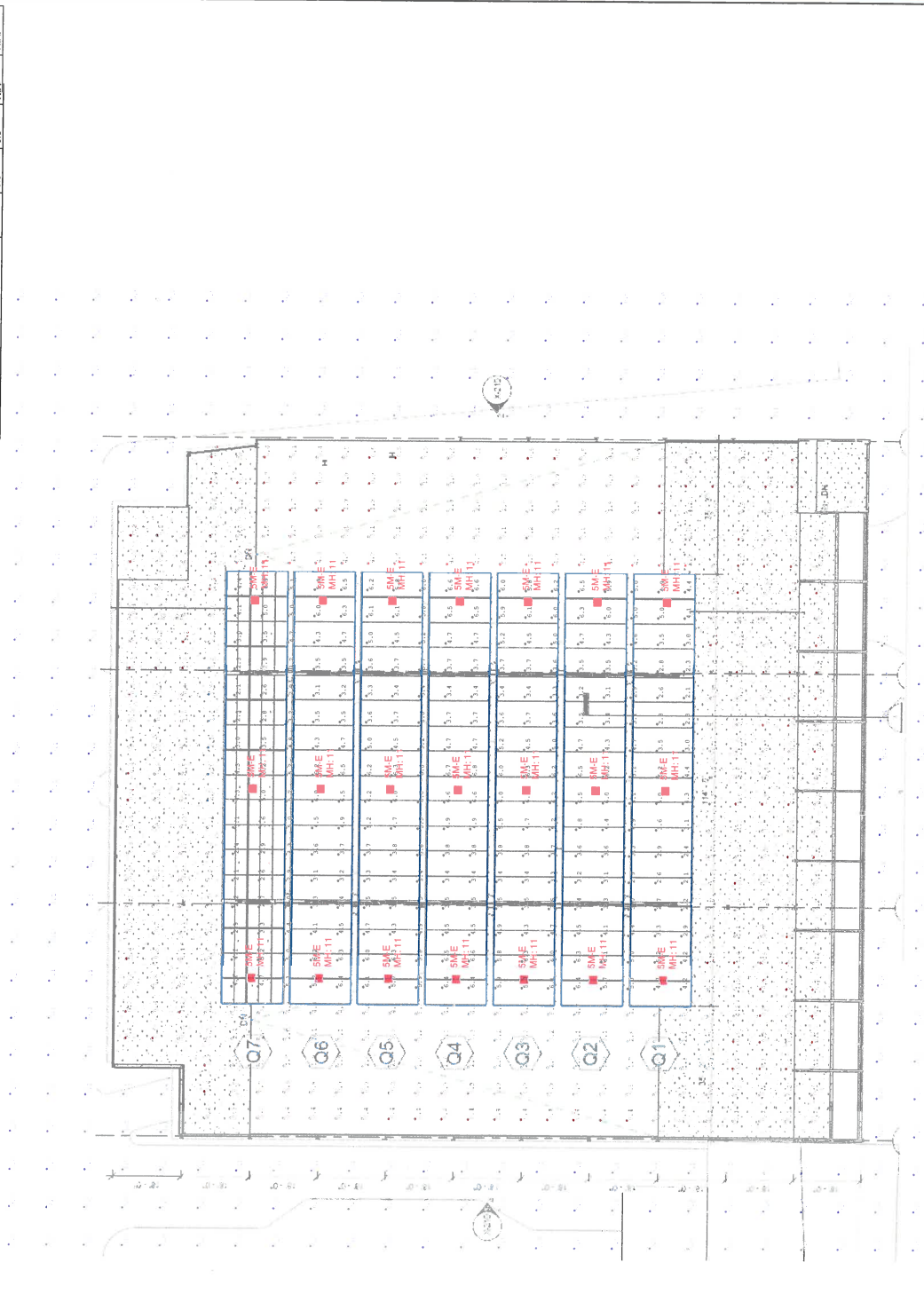
US: www.cree.com/lighting T (800) 236-6800 F (262) 504-5415

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Luminaire Schedule			
Label	Qty	Arrangement	Lumens/Lamp L.F.
SM-E	1	SINGLE	4955
MH-11	1	SINGLE	4955
Total Watts		PKG-304-SM-PD-04-E-U-VH-360-40K	
Total Lumens		4955	

Footcandle calculation using predicted lumen output after 65K hours of operation			
Label	Area (sq. ft.)	Footcandle	Footcandle
CANOPY PARKING	4.45	6.8	2.1
PERIMETER PARKING	1.41	5.3	0.1
SPILL LIGHT	0.04	0.3	0.0
			N.A.



Project Name: FORE STREET GARAGE
 Date: 02/22/2017
 Scale: 1"=20'
 Footcandle calculated at grade

Filename: V:\CommonApp\Eng\OUT\702820W1LBR2.AGI
 Layout by: LINDA SCHALLER

1200 Royal Street, Richmond, VA 23177
 www.cree.com | (804) 236-6300

"LED V is in effect as of April 1, 2017, which impacts the nature applicability of many LED products. If you receive LED qualified luminaire, please reference <http://www.designlighting.com/> for original qualified product listing. Email usa@designlighting.com for assistance."



