

228 Series™

LED Recessed Canopy Luminaire

Product Description

Slim, low profile, easy mounting from below or above the deck. Luminaire sides are rugged cast aluminum with high performance extruded aluminum heat sinks specifically designed for LED. Luminaire mounts directly to the canopy deck and is secured in place with compression molded trim frame. Luminaire housing is provided with factory applied foam gasket and provides for a weathertight seal between luminaire housing and canopy deck. Suitable for use in single or double skin canopies with 12" (305mm) or 16" (406mm) wide panels. Designed for canopies of 16-22 gauge (maximum 0.065" [1.65mm] thickness).

Applications: Petroleum stations, convenience stores, drive-thru banks and restaurants, retail and grocery

Performance Summary

Patented NanoOptic® Product Technology

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

CRI: Minimum 70 CRI

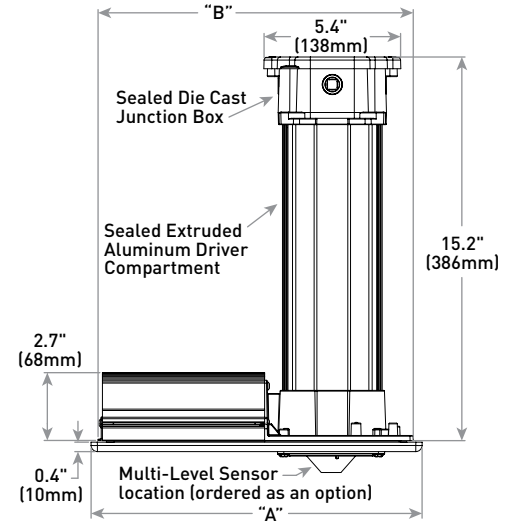
CCT: 4000K (+/- 300K), 5700K (+/- 500K) standard

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

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

Accessories

Field-Installed	
<p>Upgrade Plate Kit 12.0" x 21.0" (305mm x 533mm) steel face plate used when replacing recessed HID luminaires in existing open canopies</p> <ul style="list-style-type: none"> - Includes mounting channels and hardware XA-CT30F021W - 30 LED XA-CT60F021W - 60 LED XA-CT90F021W - 90 LED - For use with canopies that are greater than 2.5" (64mm) in height XA-CT30F021WS - 30 LED XA-CT60F021WS - 60 LED XA-CT90F021WS - 90 LED - For use with shallow canopies that are less than 2.5" (64mm) in height <p>Upgrade Plate Kit - Metal Metal plate used when replacing surface mounted HID luminaires. Painted Colorfast DeltaGuard® white. Must be field cut to match luminaire</p> <ul style="list-style-type: none"> XA-CTP26X24WT - 26" x 24" (660mm x 610mm) steel plate spans two 12" (305mm) deck panels XA-CTP26X32WT - 26" x 32" (660mm x 813mm) steel plate spans two 16" (406mm) deck panels 	<p>Upgrade Plate Kit - Plastic 24.3" x 26.0" (617mm x 660mm) plastic canopy trim plates with and without backer plates. For use when replacing existing surface mounted or recessed HID luminaires</p> <ul style="list-style-type: none"> XA-CT30B047W - 30 LED XA-CT60B047W - 60 LED XA-CT90B047W - 90 LED - Kits without backer plates for use with canopies that have a maximum of 7" (178mm) diameter cut hole XA-CT30C241W - 30 LED XA-CT60C241W - 60 LED XA-CT90C241W - 90 LED - Kits with backer plates for use with 12" (305mm) or 16" (406mm) canopies that have a maximum of 10" (254mm) diameter or 10" x 10" (254mm x 254mm) cut hole XA-CT30C642W - 30 LED XA-CT60C642W - 60 LED XA-CT90C642W - 90 LED - Kits with backer plates for use with 16" (406mm) canopies that have a maximum of 12" (305mm) diameter or 12" x 12" (305mm x 305mm) cut hole <p>Hand-Held Remote XA-SENSREM - For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required</p>



LED Count (x10)	Drive Current	Dim. "A"	Dim. "B"	Weight
03	525/700mA	13.1" (333mm)	12.5" (317mm)	18.7 lbs. (8.5kg)
06	525/700mA	17.8" (451mm)	17.2" (437mm)	23.9 lbs. (10.8kg)
06	900mA	17.8" (451mm)	17.2" (437mm)	24.5 lbs. (11.1kg)
09	350mA	22.5" (572mm)	21.9" (557mm)	32.0 lbs. (14.5kg)
09	525/700mA	22.5" (572mm)	21.9" (557mm)	31.9 lbs. (14.5kg)

Ordering Information

Example: CAN-228-SL-RM-03-E-UL-WH-525

Product	Optic	Mounting	LED Count (x10)	Series	Voltage	Color Options	Drive Current	Options
CAN-228	5M Type V Medium SL Sparkle Petroleum PS Petroleum Symmetric	RM Recessed	03 - Available with SL optic only 06 09	E	UL Universal 120-277V UH Universal 347-480V	BK Black BZ Bronze SV Silver WH White	350 350mA - Available with 90 LEDs only 525 525mA 700* 700mA 900* 900mA - Available with UL voltage only - Available with 60 LEDs only	DIM 0-10V Dimming - Control by others - Refer to Dimming spec sheet for details - Can't exceed specified drive current ML Multi-Level - Refer to ML spec sheet for details PML Programmable Multi-Level - Refer to PML spec sheet for details 40K 4000K Color Temperature - Color temperature per luminaire - Minimum 70 CRI

* 60 LED luminaires with 900mA drive current and 90 LED luminaires with 700mA require marked spacing: 48" x 24" x 6" (1,219mm x 610mm x 152mm); 48" (1,219mm) center-to-center of adjacent luminaires, 24" (610mm) luminaire center to side building member, 6" (152mm) top of luminaire to overhead building member



US: lighting.cree.com/lighting

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

Rev. Date: V3 02/13/2018

Canada: www.cree.com/canada



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

Product Specifications

CONSTRUCTION & MATERIALS

- Slim, low profile, easy mounting from below or above the deck
- Luminaire sides are rugged cast aluminum with high performance extruded aluminum heat sink specifically designed for LED
- Luminaire mounts directly to the canopy deck and is secured in place with compression molded trim frame
- Luminaire is provided with factory applied foam gasket and provides for a weathertight seal between luminaire housing and canopy deck
- Suitable for single or double skin canopies with 12" (305mm) or 16" (406mm) wide panels. Designed for canopies of 16-22 gauge (maximum 0.065" [1.65mm] thickness)
- Weathertight driver compartment is constructed of anodized extruded aluminum for exceptional corrosion resistance and thermal performance
- Integral weathertight junction box with 4.5" (114mm) IP threaded connection points. Rated for feed through 8 (4 in, 4 out) #12 AWG conductors
- Below ceiling serviceable driver tray for ease of upgrade or replacement
- Field adjustable drive current. Can't exceed drive current specified in part number. Exception is 90 LEDs at 350mA which can be adjusted to 525mA
- 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. Black, bronze, silver, and white are available
- **Weight:** See Dimensions and Weight chart on page 1

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
- **Maximum 10V Source Current:** 30-60 LED: 0.15mA; 90 LED: 0.30mA
- 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
- Meets FCC Part 15 Class A standards for conducted and radiated emissions
- 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
- DLC qualified when ordered with PS or SL optics with 60 LEDs and 525 or 700mA drive current. Please refer to www.designlights.org/QPL for most current information

Electrical Data*							
LED Count (x10)	System Watts 120-480V	Total Current					
		120V	208V	240V	277V	347V	480V
350mA							
09	99	0.83	0.48	0.42	0.38	0.29	0.22
525mA							
03	54	0.45	0.28	0.25	0.23	0.16	0.12
06	99	0.83	0.48	0.42	0.38	0.29	0.22
09	155	1.32	0.76	0.68	0.61	0.45	0.34
700mA							
03	70	0.58	0.35	0.31	0.28	0.21	0.16
06	132	1.11	0.66	0.57	0.50	0.39	0.28
09	201	1.64	0.96	0.84	0.75	0.59	0.44
900mA							
06	180	1.53	0.91	0.79	0.70	N/A	N/A

* Electrical data at 25°C (77°F)

Recommended 228 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 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

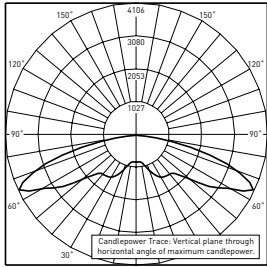


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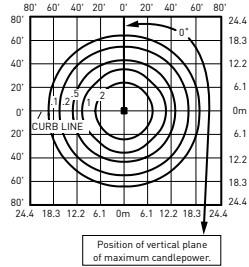
Photometry

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/canopy-and-soffit/228-series>

5M



ITL Test Report #: 78147
 PKG-304-5M-**-06-E-UL-700-57K
 Initial Delivered Lumens: 12,508

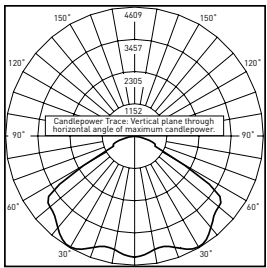


CAN-228-5M-**-06-E-UL-700-40K
 Mounting Height: 15' (4.6m) A.F.G.
 Initial Delivered Lumens: 12,222
 Initial FC at grade

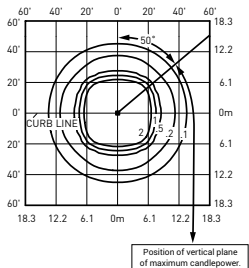
Type V Medium Distribution				
LED Count (x10)	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
350mA				
09	10,120	B3 U0 G2	10,509	B4 U0 G2
525mA				
06	9,506	B3 U0 G2	9,872	B3 U0 G2
09	14,168	B4 U0 G3	14,713	B4 U0 G3
700mA				
06	12,222	B4 U0 G2	12,693	B4 U0 G2
09	18,216	B4 U0 G3	18,917	B4 U0 G3
900mA				
06	14,939	B4 U0 G3	15,513	B4 U0 G3

* 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



RESTL Test Report #: PL05297-001
 CAN-228-SL-**-06-E-UL-700-40K
 Initial Delivered Lumens: 13,102



CAN-228-SL-**-06-E-UL-700-40K
 Mounting Height: 15' (4.6m)
 Initial Delivered Lumens: 13,430
 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				
09	11,120	B3 U0 G1	11,547	B3 U0 G1
525mA				
03	5,290	B2 U0 G1	5,493	B2 U0 G1
06	10,445	B3 U0 G1	10,847	B3 U0 G1
09	15,567	B3 U0 G1	16,166	B3 U0 G1
700mA				
03	6,801	B2 U0 G1	7,063	B2 U0 G1
06	13,430	B3 U0 G1	13,946	B3 U0 G1
09	20,015	B4 U0 G1	20,785	B4 U0 G1
900mA				
06	16,414	B3 U0 G1	17,045	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

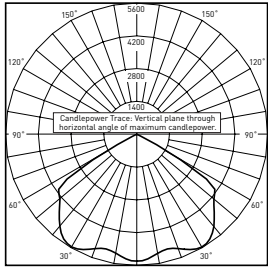


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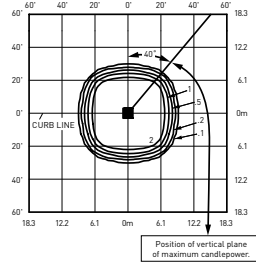
Photometry

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/canopy-and-soffit/228-series>

PS



RESTL Test Report #: PL05295-001
CAN-228-PS-**-06-E-UL-700-40K
Initial Delivered Lumens: 13,753



CAN-228-PS-**-06-E-UL-700-40K
Mounting Height: 15' (4.6m)
Initial Delivered Lumens: 13,882
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				
09	11,494	B3 U0 G0	11,936	B3 U0 G0
525mA				
06	10,797	B3 U0 G0	11,213	B3 U0 G0
09	16,092	B4 U0 G0	16,711	B4 U0 G0
700mA				
06	13,882	B3 U0 G0	14,416	B3 U0 G0
09	20,690	B4 U0 G0	21,486	B4 U0 G0
900mA				
06	16,967	B4 U0 G0	17,620	B4 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