

# CR Series

CR22™ 2' x 2' Architectural LED Troffer

## Product Description

The CR22™ Architectural LED troffer delivers up to 100 lumens per watt of exceptional 90 CRI light at both 2000 and 3200 lumen levels. This breakthrough performance is achieved by combining the high efficacy and high-quality light of Cree TrueWhite® Technology with a unique thermal management design. The CR22™ product family is available in warm, neutral, cool, or daylight color temperatures and has step, 0-10V, or Lutron EcoSystem® Enabled dimming options. Its unique indirect illumination design lightweight design makes the CR22™ perfect for use in commercial new construction or renovated spaces.

## Performance Summary

Utilizes Cree TrueWhite® Technology (90 CRI)
Room-Side Heat Sink
<b>Efficacy:</b> 90-100 LPW
<b>Initial Delivered Lumens:</b> 2,000, 3,200 lumens
<b>Input Power:</b> 22-35 watts
<b>CRI:</b> 90 CRI (Cree TrueWhite® Technology), 80+ CRI (HD)
<b>CCT:</b> 3000K, 3500K, 4000K, 5000K
<b>Input Voltage:</b> 120-277 VAC or 347 VAC
<b>Limited Warranty<sup>1</sup>:</b> 10 years
<b>Limited Warranty Emergency Back Up (EB) Battery:</b> 1 Year Battery Back Up. Test regularly in accordance with local codes
<b>Controls:</b> Step Level to 50%, 0-10V Dimming or Lutron EcoSystem Enabled to 5%
<b>Mounting:</b> Recessed*; surface or suspended w/surface mount kit accessory

<sup>1</sup> See <http://lighting.cree.com/warranty> for warranty terms  
 \* Acceptable for use with standard 9/16 T-Bar or larger when installed per installation instructions. Consult factory for non-standard grid applications

## Accessories

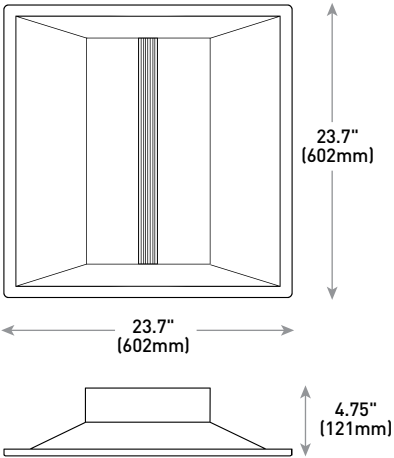
Field-Installed		
<b>Adjustable Power Feeds with Cable Support Canopy Kits</b> AC5-18/4-72-PD8-JB - Requires use surface mount kit <b>Adjustable Cable Support Kits</b> AC5-72-PD8-JB - Requires use of surface mount kit <b>Wireless 0-10V Dimming/ Switching Interface with Cree Smartcast® Technology</b> CIF-10V - For use with luminaires with 10V controls when integral SmartCast isn't available	<b>Cree SmartCast® Technology Configuration Tool</b> CCT-CWC 1 - One required per project when CIF-10V is selected <b>Chicago Plenum Field Kit</b> CPLCR CPLCR-EM - For luminaires w/EB14 options <b>347 Volt Conversion Kits</b> CR-347V - For use with 10V or LES controls - Not compatible with surface mount kits or EJBCR-5PK CR-347V-SD - For use with S controls - Not compatible with surface mount kits or EJBCR-5PK	<b>Drywall Grid Adaptor</b> DGA22-WHT <b>Junction Box (5-Pack)</b> EJBCR-5PK - Expanded size junction box for through wiring - Not compatible with surface mount kits or 347V adaptor kits <b>6' Flexible Power Whip</b> PW-18/4-06-9T/SS <b>Surface Mount Kit</b> SMK-22 - Not compatible with EB14 option. When EB14 is required, order as EB14SMK option - Not compatible with 347V adaptor kits or EJBCR-5PK

## Ordering Information

Example: CR22-20L-35K-S

CR22	Product	Initial Delivered Lumens	CCT	Voltage	Control	Options
CR22	20L 22W, 2,000 lumens – 90 LPW 32L 32W, 3,200 lumens – 100 LPW	30K 3000K 35K 3500K 40K 4000K 50K 5000K	Blank 120-277 Volt 34 347 Volt - Integrated option available only with 32L and 10V. Other types require addition of a 347 volt accessory kit (see table above)	S Step Dimming to 50% 10V 0-10V Dimming to 5% LES <sup>1</sup> Lutron EcoSystem® Enabled to 5%	HD <sup>2</sup> CRI 80 - Available only with 32L (35W, 3,200 lumens – 91LPW) EB14 <sup>3</sup> Emergency Backup - 1400 lumens - Not for use with SMK Kits. Use EB14 SMK EB14SMK <sup>4</sup> Emergency Backup w/Surface Mount Kit - 1400 lumens - Includes surface mount kit accessory SMK-CR22 (see table above)	

1. Not available with 20L 2. Not available with 34 or EB14SMK 3. Not available with 34 or LES except 32L 4. Not available with 50K, 34 or LES  
 NOTE: Price adder may apply depending on configuration



**NOTE:** Use of Expanded Junction Box will expand the depth to 6.7" (170mm) and Emergency Backup will expand the depth to 6.4" (163mm). Use of 347V will increase fixture height by 1.7" (42mm)

Rev. Date: V6 10/08/2018



## 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.

### CREE LED TECHNOLOGY

Cree's total systems approach to product development is a comprehensive engineering philosophy that combines the most advanced LED sources, driver technologies, optics and forms. The result is highly-reliable luminaire solutions for both indoor and outdoor applications that reduce energy use, extend lifetimes, and maximize illumination performance and quality.

### ROOM-SIDE HEAT SINK

An innovative thermal management system designed to maximize cooling effectiveness by integrating a unique room-side heat sink into the diffusing lens. This breakthrough design creates a pleasing architectural aesthetic while conducting heat away from LEDs in a temperature-controlled environment. This enables the LEDs to consistently run cooler, providing significant boosts to lifetime, efficacy, and color consistency.

### CONSTRUCTION & MATERIALS

- Durable 22-gauge steel housing with standard troffer access plate for electrical installation
- One-piece lower reflector finished with a textured high reflectance white polyester powder coating creates a comfortable visual transition from the lens to the ceiling plane
- Includes t-bar clips and holes for mounting support wires (by others)
- May be surface mounted or suspended w/surface mount kit accessory
- Individual luminaires may be mounted end to end for a continuous row of illumination

### OPTICAL SYSTEM

- Unique combination of reflective and refractive optical components achieves a uniform, comfortable appearance while eliminating pixelation and color fringing
- 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 integrated with upward-facing LED strip eliminates 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
- **Power Factor:** = 0.9 nominal
- **Input Power:** Stays constant over life.
- **Input Voltage:** 120-277V or 347V, 50/60Hz
- **Operating Temperature Range:** 0°C - + 35°C (32°F - + 95°F)
- **Total Harmonic Distortion:** < 20%
- **10V Source Current:** 0.25mA

### CONTROLS

- Step dimming to 50%
- Optional continuous dimming to 5% with 0-10V DC control protocol
- Optional Lutron EcoSystem® Enabled option allows seamless integration with Lutron EcoSystem controls
- Reference [www.creelink.com/exLink.asp?70982140Z58R34126620963](http://www.creelink.com/exLink.asp?70982140Z58R34126620963) for recommended dimming controls and wiring diagrams

### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Designed for indoor use
- UL924 (EB14 option)
- DLC qualified when ordered with 32L. Please refer to [www.designlights.org/QPL](http://www.designlights.org/QPL) for most current information
- RoHS compliant. Consult factory for additional details
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
-  **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

Recommended CR Series Lumen Maintenance Factors (LMF) <sup>1</sup>						
Ambient	Initial Delivered Lumens	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
0°C (41°F)	20L and 32L	1.05	1.04	1.04	1.04	1.04
5°C (41°F)	20L and 32L	1.04	1.03	1.03	1.03	1.03
10°C (50°F)	20L and 32L	1.03	1.02	1.02	1.02	1.02
15°C (59°F)	20L and 32L	1.02	1.01	1.01	1.01	1.01
20°C (68°F)	20L and 32L	1.01	1.00	1.00	1.00	1.00
25°C (77°F)	20L and 32L	1.00	0.99	0.99	0.99	0.99
30°C (86°F)	20L and 32L	0.99	0.98	0.98	0.98	0.98
35°C (95°F)	20L and 32L	0.98	0.97	0.97	0.97	0.97
40°C (104°F)	20L and 32L	0.97	0.96	0.96	0.96	0.96

<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

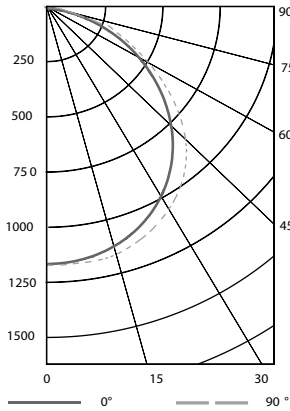
<sup>2</sup>In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

<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

**Photometry**

**CR22-32L-30K BASED ON LTL REPORT TEST #: 24292**

Luminaire 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 luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	110	105	101	98
2	100	92	85	80
3	91	81	73	67
4	84	72	63	57
5	77	64	55	49
6	71	58	49	43
7	66	52	44	38
8	61	48	39	33
9	57	44	36	30
10	53	40	32	27

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	3,575	3,864	3,972
55°	3,164	3,656	3,758
65°	2,498	3,133	3,347
75°	1,620	2,348	2,051
85°	366	252	168

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	923	N/A	28.1%
0-40	1,527	N/A	46.5%
0-60	2,704	N/A	82.5%
0-90	3,280	N/A	100%
0-180	3,959	N/A	100%

Effective Floor Cavity Reflectance: 20%

Reference <http://lighting.cree.com/products/indoor/troffers/cr-series> for detailed photometric data

**Application Reference**

Based on CR22-32L-30K Luminaire

Open Space						
Spacing	Initial Delivered Lumens	Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	22L	2000	22	90	0.35	28
	32L	3200	32	100	0.55	44
8 x 10	22L	2000	22	90	0.28	23
	32L	3200	32	100	0.44	37
10 x 10	22L	2000	22	190	0.22	20
	32L	3200	32	100	0.35	31
10 x 12	22L	2000	22	90	0.19	16
	32L	3200	32	100	0.29	25

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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