

CR Series

CR14™ 1' x 4' Architectural LED Troffer

Rev. Date: V9 06/10/2022

Product Description

The CR14™ Architectural LED troffer delivers up to 130 lumens per watt of exceptional 90 CRI light at 4000 lumens. 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 CR14 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 makes the CR14 perfect for use in commercial new construction or renovated spaces.

Performance Summary

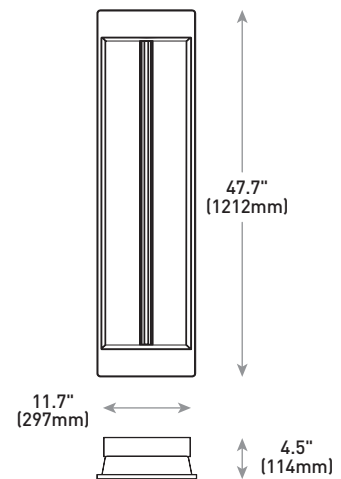
Utilizes Cree TrueWhite® Technology (90 CRI)
Room-Side Heat Sink
Efficacy: 90-130 LPW
Initial Delivered Lumens: 2,200, 3,100, 4,000, 5,000 lumens
Input Power: 22-50 watts
CRI: 90 CRI (Cree TrueWhite® Technology), 80+ CRI (HD)
CCT: 3000K, 3500K, 4000K, 5000K
Input Voltage: 120-277 VAC or 347 VAC
Limited Warranty¹: 10 years on luminaire, up to 5 years for SmartCast® accessories, 1 year on CR14-22L-40K-S, 1 year on field-installed accessories
Limited Warranty Emergency Back Up (EB) Battery: 1 Year Battery Back Up. Test regularly in accordance with local codes
Controls: Step Level to 50%, 0-10V Dimming to 5% or Lutron EcoSystem Enabled to 5%
Mounting: Recessed*; surface or suspended w/surface mount kit accessory

¹ See <http://creelighting.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		
Adjustable Power Feeds with Cable Support Canopy Kits AC5-18/4-72-PD8-JB - Requires use of surface mount kit Adjustable Cable Support Kits AC5-72-PD8-JB - Requires use of surface mount kit SmartCast® 10V Zone Controller CSC-ZC-10V-CWC - Intelligent sensing and control of 0-10V luminaires	T-Bar Clips for Hunter Douglas® Ceilings CR-HDC - Makes the CR troffers compatible with Armstrong XL, USG DX 1-1/2" or USG 1-5/8" T-grids - Allows fixture to hang 1-1/2" below T-grid to be flush with ceiling tiles - One required per luminaire - Includes 4 clips and 8 screws SmartCast® Technology Configuration Tool CCT-CWC 1 - One required per project when CIF-10V is selected	Drywall Grid Adaptor DGA24-WHT Junction Box (5-Pack) EJBCR-5PK - Expanded size junction box for through wiring - Not compatible with surface mount kits 6' Flexible Power Whip PW-18/4-06-9T/SS Surface Mount Kit SMK-CR24 - Not compatible with EB14 option. When EB14 is required, order as EB14SMK option - Not compatible with EJBCR-5PK



NOTE: Use of Expanded Junction Box will expand the depth to 6.5" [164mm] and Emergency Backup will expand the depth to 6.2" [156mm]. Use of integral 347V will increase luminaire height by 1.7" [42mm]

Ordering Information

Example: CR14-40L-35K-S

CR14	Product	Lumen Package	CCT	Voltage	Control	Options
CR14	22L	22W, 2,200 lumens – 100 LPW - Available only with 35K or 40K	30K 3000K	Blank 120-277 Volt	S Step Dimming to 50%	CP Chicago Plenum Rated - Not available with 347V or EB14 options or CIF-10V, EJBCR or PW-18/4-06-9T/SS accessories
	31L	34W, 3,100 lumens – 90 LPW	35K 3500K	34 347 Volt	10V 0-10V Dimming to 5%	HD² CRI 80+ - Available only with 40L (44W, 4,000 lumens – 90 LPW)
	40L	40W, 4,000 lumens – 100 LPW	40K 4000K	- Integrated option available only with 40L and 10V.	LES ¹ Lutron EcoSystem® Enabled to 5%	EB14³ Emergency Backup - 1400 lumens - Not for use with SMK Kits. Use EB14 SMK - Provides 90 minutes of emergency operation - Minimum operating temperature: 10°C (50°F); 20°C (68°F) with HD and EB14 option
	40LHE	30.5W, 4,000 lumens – 130 LPW [30K] 32W, 4,000 lumens – 125 LPW [35K] 33W, 4,000 lumens – 120 LPW [40K] 34.5W, 4,000 lumens – 115 LPW [50K]	50K 5000K			EB14SMK⁴ Emergency Backup w/Surface Mount Kit - 1400 lumens - Includes surface mount kit accessory SMK-CR14 (see table above) - Provides 90 minutes of emergency operation - Minimum operating temperature: 10°C (50°F)
	50L	50W, 5,000 lumens – 100 LPW				

1. Not available with 31L or 40LHE 2. Not available with 34 or EB14SMK 3. Not available with 50L, 34 or LES except 40L 4. Not available with 50L, 50K, 34, LES or HD



US: creelighting.com (800) 236-6800

Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING®

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 LIGHTING LED TECHNOLOGY

Cree Lighting’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
- Not for installation within 3" (76mm) of insulation
- 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); EB14: 10°C - + 35°C (50°F - + 95°F); HD w/EB14: 20°C - + 35°C (68°F - + 95°F)
- **Total Harmonic Distortion:** < 20%
- **10V Source Current:** 0.25mA

CONTROLS

- Step dimming to 50%
- Continuous dimming to 5% with 0-10V DC control protocol. For use with Class 1 or Class 2 dimming systems
- Lutron EcoSystem® Enabled option allows seamless integration with Lutron EcoSystem controls
- Reference <https://cree.widen.net/s/nfqgmfchnk/0-10v-step-and-les-controls-options-spec-sheet-cr-flex-zr-troffers-ls-ur-styllus-ws-cdr-kbl> for recommended dimming controls and wiring diagrams

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Designed for indoor use only
- UL924 (EB14 option)
- CCEA approved when ordered with CP option
- RoHS compliant. Consult factory for additional details
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

CR Series Ambient Adjusted Lumen Maintenance						
Ambient	Initial Delivered Lumens	Initial LMF	25K hr Reported ² LMF	50K hr Reported ² LMF	75K hr Estimated ³ LMF	100K hr Estimated ³ LMF
0°C (41°F)	22L, 31L, 40L, and 50L	1.05	1.04	1.04	1.04	1.04
	40LHE	1.05	1.01	0.98	0.96	0.94
5°C (41°F)	22L, 31L, 40L, and 50L	1.04	1.03	1.03	1.03	1.03
	40LHE	1.04	1.00	0.97	0.95	0.93
10°C (50°F)	22L, 31L, 40L, and 50L	1.03	1.02	1.02	1.02	1.02
	40LHE	1.03	0.99	0.96	0.94	0.92
15°C (59°F)	22L, 31L, 40L, and 50L	1.02	1.01	1.01	1.01	1.01
	40LHE	1.02	0.98	0.95	0.93	0.91
20°C (68°F)	22L, 31L, 40L, and 50L	1.01	1.00	1.00	1.00	1.00
	40LHE	1.01	0.97	0.95	0.92	0.90
25°C (77°F)	22L, 31L, 40L, and 50L	1.00	0.99	0.99	0.99	0.99
	40LHE	1.00	0.96	0.94	0.91	0.89
30°C (86°F)	22L, 31L, 40L, and 50L	0.99	0.98	0.98	0.98	0.98
	40LHE	0.99	0.95	0.93	0.91	0.89
35°C (95°F)	22L, 31L, 40L, and 50L	0.98	0.97	0.97	0.97	0.97
	40LHE	0.98	0.94	0.92	0.90	0.88
40°C (104°F)	22L, 31L, 40L, and 50L	0.97	0.96	0.96	0.96	0.96
	40LHE	0.97	0.93	0.91	0.89	0.87

¹ Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors.

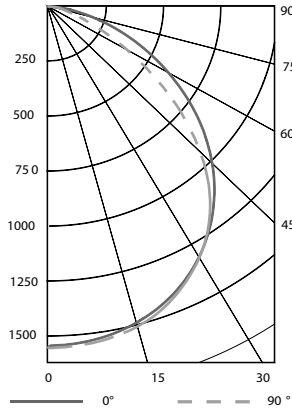
² In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.

³ Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

Photometry

CR14-40L-30K BASED ON LTL REPORT TEST #: 24294

Luminaire photometry has been conducted in accordance with IES LM-79-08. IES 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	106	102	73
2	101	93	87	82
3	92	82	75	69
4	85	74	65	59
5	78	66	57	51
6	72	60	51	45
7	67	54	46	40
8	63	49	41	36
9	58	45	37	32
10	55	42	34	29

Average Luminance Table (cd/m ²)				
		Horizontal Angle		
		0°	45°	90°
Vertical Angle	45°	5,407	5,407	5,407
	55°	5,015	5,002	4,673
	65°	4,589	4,315	3,572
	75°	3,039	1,690	1,282
	85°	1,727	1,249	1,321

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	1,220	N/A	30.8%
0-40	1,995	N/A	50.4%
0-60	3,385	N/A	85.5%
0-90	3,959	N/A	100%
0-180	3,959	N/A	100%

Effective Floor Cavity Reflectance: 20%

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

Application Reference

Based on CR14-40L-30K Luminaire

Open Space						
Spacing	Initial Delivered Lumens	Lumens	Wattage	LPW	w/ft ²	Average fc
8 x 8	22L	2200	22	100	0.35	30
	40L	4000	40	100	0.69	54
	40LHE	4000	30.5	125	0.56	54
	50L	5000	50	100	0.78	68
8 x 10	22L	2200	22	100	0.28	25
	40L	4000	40	100	0.55	45
	40LHE	4000	30.5	125	0.45	45
	50L	5000	50	100	0.62	57
10 x 10	22L	2200	22	100	0.22	21
	40L	4000	40	100	0.44	38
	40LHE	4000	30.5	125	0.36	38
	50L	5000	50	100	0.50	48
10 x 12	22L	2200	22	100	0.19	17
	40L	4000	40	100	0.37	30
	40LHE	4000	30.5	125	0.30	30
	50L	5000	50	100	0.42	38

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

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