

CR Series

CR14™, CR22™, and CR24™ Architectural LED Troffer w/SmartCast Technology

Rev. Date: V2 06/10/2021

Product Description

The CR Series architectural LED troffers deliver up to 125 lumens per watt of exceptional indirect low glare, 90 CRI light from 3,200 to 4,000 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. Its design makes the CR Series perfect for use in commercial new construction or renovated spaces. The CR Series product family is available with SmartCast® Technology controls and tunable white CCT.

Performance Summary

Utilizes Cree TrueWhite® Technology
Room-Side Heat Sink
Efficacy: Up to 125 LPW
Initial Delivered Lumens: 3,200 - 4,000 lumens
Input Power: 27-32 watts
CRI: 90 CRI
CCT: Tunable White (SmartCast® Technology)
Input Voltage: 120-277 VAC
Limited Warranty*: 10 years on luminaire; 10 years on SmartCast® controls; up to 5 years for SmartCast® accessories; 1 year for luminaire accessories
Limited Warranty Emergency Back Up (EB) Battery: 1 Year Battery Back Up. Test regularly in accordance with local codes
Controls: SmartCast to 5%
Mounting: Recessed*

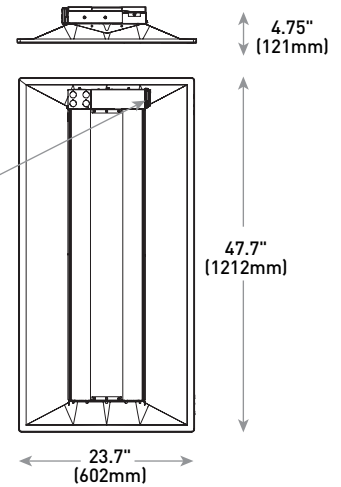
* See <http://creelighting.com/warranty> for warranty terms

* 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	SmartCast® Technology Adjustable CCT Wireless Dimmer CCD-CWC-WH - Requires SmartCast luminaires with 9ACK CRI/CCT - 3000K-5000K adjustable CCT
Adjustable Cable Support Kits AC5-72-PD8-JB - Requires use of surface mount kit	SmartCast® Technology Wireless Plug Load Controller CPLC-JB-CWC SmartCast® Touchscreen Control CSC-TS-A-BK SmartCast® Wireless Gateway with Wi-Fi CSC-GW-CWC-W - Required with SmartCast Touchscreen Control
T-Bar Clips for Hunter Douglas® Ceilings CR-HDC-1 - 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® Wall Plug Power Supply CSC-WPS-120V - For use with SmartCast Wireless Gateway with Wi-Fi SmartCast® Ceiling Plug Power Supply CSC-CPS-120V - For use with SmartCast Wireless Gateway with Wi-Fi SmartCast® 10V Zone Controller CSC-ZC-10V-CWC - Intelligent sensing and control of 0-10V luminaires SmartCast® 5-Button Wireless Scene Controller CSC-SC-5B-CWC-WH (w/o text) CSC-SC-5S-CWC-WH (w/scene text) CSC-SC-5C-CWC-WH (w/CCT text) CSC-SC-5X-CWC-WH (w/custom text)
SmartCast® Technology Configuration Tool CCT-CWC-1 - One required per project when CMA control or CSC-ZC-10V-CWC accessory is selected	Drywall Grid Adaptor DGA14-WHT (1x4) DGA22-WHT (2x2) DGA24-WHT (2x4)
SmartCast® Technology Face Plates CFP-1-WH - Matching face plate, 1-gang, white CFP-2-WH - Matching face plate, 2-gang, white CFP-3-WH - Matching face plate, 3-gang, white	
SmartCast® Technology Wireless Dimmer CWD-CWC-WH	
SmartCast® Technology Wireless Switch CSC-CWS-UNVN-WH (neutral wire required) CSC-CWS-UNV-WH (no neutral required)	

CR24 w/SmartCast® Technology



Refer to page 5 for additional sizes

Ordering Information

Example: CR24-40L-940-CMA-UNV

CR	Product	Size	Lumen Package	CRI/CCT	CMA Control	UNV Voltage	Options*
CR	14 1x4 24 2x4	40L 4,000 Lumens	9ACK 90 CRI, Adjustable Color 3000K-6500K in 100K increments	CMA SmartCast Wireless Technology with 5% Dimming, Integral Motion and Ambient Sensors - Available only with 9ACK	UNV Universal 120-277V	EB Emergency Backup - 1400 lumens - Provides 90 minutes of emergency operation	
	22 2x2	32L 3,200 Lumens					

* Consult factory for other options.



SMARTCAST®
TECHNOLOGY

CREE ⇄ LIGHTING®

US: creelighting.com (800) 236-6800

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

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:** > 90% at full load
- **Input Power:** Stays constant over life
- **Input Voltage:** 120-277V, 50/60Hz
- **Operating Temperature Range:** 0°C - + 35°C (32°F - + 95°F); 347V: 0°C - + 25°C (32°F - + 77°F); EB: 10°C - + 35°C (50°F - + 95°F)
- **Total Harmonic Distortion:** < 20% at full load
- **10V Source Current:** 0.25mA

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Designed for indoor use only
- UL924 (EB 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

Cree Lighting SmartCast® Technology

INTEGRAL MOTION SENSOR

- Passive infrared (PIR)
- **Coverage area:** 100 sq. ft. (30.5m²) at 10 ft. (3.0m) mounting height
- Not intended to be mounted higher than 12 ft. (3.7m)
- **Operation:**
 - Grouped with a wall control: Luminaire will operate in vacancy mode (manual-on/auto-off)
 - Not grouped with a wall control: Luminaire will operate in occupancy mode (auto-on/auto-off)
- Luminaires operate at full intensity until OneButton™ Setup is initiated by the Cree Configuration Tool

AMBIENT LIGHT SENSOR

- Sensor response matches response of human eye
- Not intended to be mounted higher than 12 ft. (3.7m)
- Luminaires operate at full intensity until OneButton™ Setup is initiated by the Cree Configuration Tool
- Daylight harvesting calibration performed automatically during OneButton™ Setup

INTEGRAL WIRELESS COMMUNICATION

- 2.4GHz wireless mesh technology with AES 128-bit encryption
- Self assigns to quietest channel during OneButton™ Setup
- **Range:**
 - 30 ft. (9.1m) in typical commercial applications
 - 300 ft. (91.4m) open air without obstructions
- **Network:** 250 devices max.
- **Space:** 100 devices max. per group
- FCC certified
- IC certified

LUMINAIRE

- Luminaires operate at full intensity until OneButton™ Setup is initiated by the Cree Configuration Tool
- 10 year power fail memory of settings

DEPLOYMENT

- Please refer to the SmartCast® Deployment Guide at www.creelink.com/exLink.asp?236135640H88E44I39771048

CR Series Ambient Adjusted Lumen Maintenance					
Ambient	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)	1.05	1.04	1.04	1.04	1.04
5°C (41°F)	1.04	1.03	1.03	1.03	1.03
10°C (50°F)	1.03	1.02	1.02	1.02	1.02
15°C (59°F)	1.02	1.01	1.01	1.01	1.01
20°C (68°F)	1.01	1.00	1.00	1.00	1.00
25°C (77°F)	1.00	0.99	0.99	0.99	0.99
30°C (86°F)	0.99	0.98	0.98	0.98	0.98
35°C (95°F)	0.98	0.97	0.97	0.97	0.97

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.

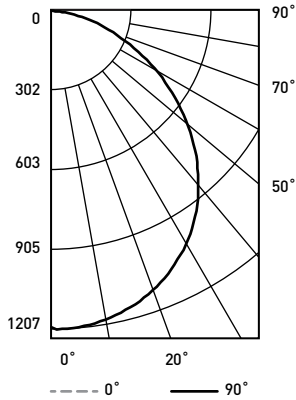
Delivered Lumens & Electrical Data*							
Product/ Size	Lumen Package	Initial Delivered Lumens	Wattage				
			120-277V	120V	208V	240V	277V
CR14/ CR24	40L	4,000	32	0.28	0.17	0.15	0.12
CR22	32L	3,200	27	0.23	0.14	0.13	0.10

* Lumen and electrical data at 25 °C (77 °F). Actual wattage may differ by +/- 10% when operating between 120-277V +/- 10%.

Photometry

CR14-31L-930-10V-UNV BASED ON RESTL REPORT TEST #: PL16135-001A

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	98
2	101	93	87	82
3	92	83	75	69
4	85	74	65	59
5	78	66	57	51
6	72	60	51	45
7	67	54	46	40
8	63	50	41	36
9	59	46	38	32
10	55	42	34	29

Effective Floor Cavity Reflectance: 20%

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

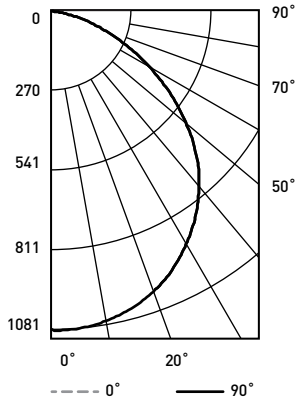
Average Luminance Table (cd/m ²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	3,912	3,867	3,719
55°	3,553	3,339	2,893
65°	3,068	2,471	1,862
75°	2,476	1,410	1,020
85°	1,744	739	787

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	938	N/A	30.9%
0-40	1,532	N/A	50.5%
0-60	2,594	N/A	85.5%
0-90	3,034	N/A	100%
0-180	3,034	N/A	100%

Photometry

CR22-32L-9ACK-CMA-UNV (5000K) BASED ON UL VERIFICATION SERVICES REPORT TEST #: 13670865.10

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	105	101	97
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	54	40	32	27

Effective Floor Cavity Reflectance: 20%

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

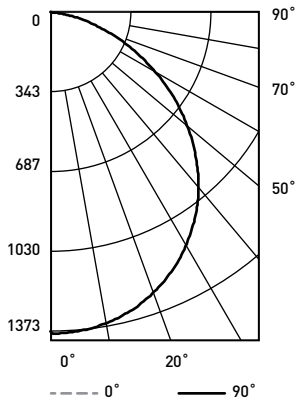
Average Luminance Table (cd/m ²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	3,294	3,584	3,713
55°	2,900	3,380	3,503
65°	2,304	2,900	3,105
75°	1,550	2,157	1,918
85°	423	507	234

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	850	N/A	28.2%
0-40	1,403	N/A	46.6%
0-60	2,482	N/A	82.4%
0-90	3,012	N/A	100%
0-180	3,012	N/A	100%

Photometry

CR24-40L-9ACK-CMA-UNV (5000K) BASED ON UL VERIFICATION SERVICES REPORT TEST #: 13670865.05

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	109	105	101	97
2	100	92	85	80
3	91	81	73	67
4	83	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	54	40	33	27

Effective Floor Cavity Reflectance: 20%

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

Average Luminance Table (cd/m ²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	1,953	2,077	2,125
55°	1,778	1,955	1,983
65°	1,505	1,723	1,736
75°	1,098	1,331	910
85°	454	115	111

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	1,072	N/A	28.3%
0-40	1,766	N/A	46.6%
0-60	3,111	N/A	82.2%
0-90	3,786	N/A	100%
0-180	3,786	N/A	100%

Application Reference

1x4 & 2x4 Application Reference

Open Space						
Spacing	Lumen Package	Initial Delivered Lumens	Wattage	LPW	w/ft ²	Average fc
8 x 8	40L	4,000	32	125	0.59	54
8 x 10	40L	4,000	32	125	0.47	45
10 x 10	40L	4,000	32	125	0.38	38
10 x 12	40L	4,000	32	125	0.31	30

10' ceiling: 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial

Open Space: 50' x 40' x 10

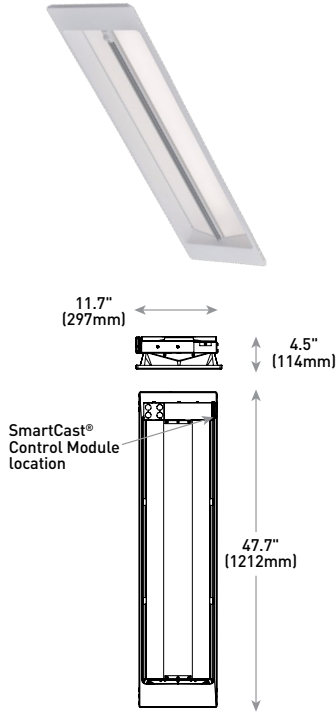
2x2 Application Reference

Open Space						
Spacing	Lumen Package	Initial Delivered Lumens	Wattage	LPW	w/ft ²	Average fc
8 x 8	32L	3,200	27	119	0.47	43
8 x 10	32L	3,200	27	119	0.37	36
10 x 10	32L	3,200	27	119	0.30	30
10 x 12	32L	3,200	27	119	0.25	24

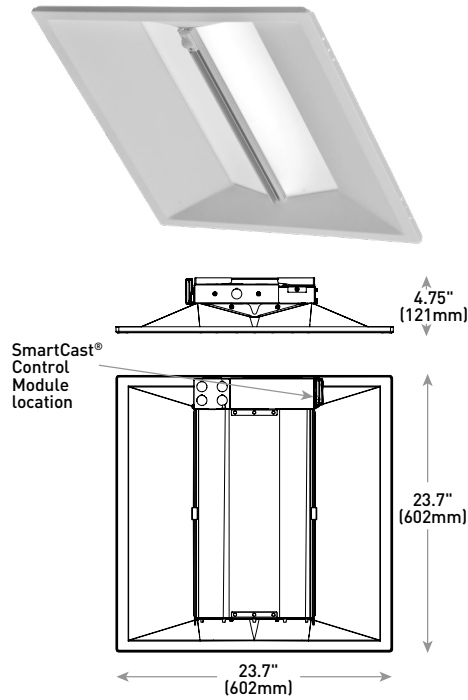
10' ceiling: 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial

Open Space: 50' x 40' x 10

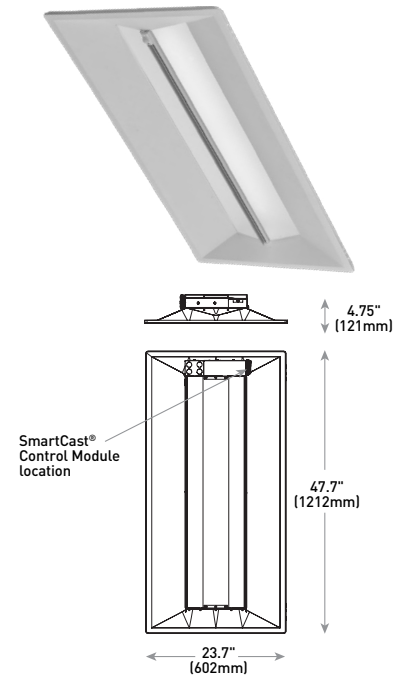
CR14 w/SmartCast® Technology



CR22 w/SmartCast® Technology



CR24 w/SmartCast® Technology



© 2021 Cree Lighting, A company of IDEAL INDUSTRIES. All rights reserved. For informational purposes only. Content is subject to change. Patent www.creelighting.com/patents. Cree®, the Cree Lighting logo, TrueWhite®, Cree TrueWhite® and the Cree TrueWhite Technology logo are registered trademarks of Cree, Inc. SmartCast® and the SmartCast Technology logo are registered trademarks, and CR14™, CR22™, and CR24™ are trademarks of Cree Lighting, A company of IDEAL INDUSTRIES. The UL logo is a registered trademark of UL LLC. Hunter Douglas® is a registered trademark of Hunter Douglas International, N.V. Corporation.