

# CR Series with Cree SmartCast® Technology

CR14™ 1' x 4' Architectural LED Troffer

## Product Description

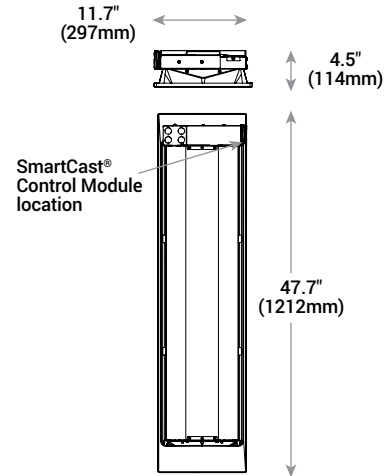
The CR14™ architectural LED troffer with Cree SmartCast® Technology delivers exceptional lighting performance combined with simple lighting controls that are easy to use and install. Cree SmartCast® Technology products incorporate integrated ambient and occupancy sensing and wireless communication to achieve energy savings and extended product life resulting in lower electricity bills, reduced maintenance, and an improved total cost of ownership over traditional lighting control systems. And now, CR Series troffers with Cree SmartCast® Technology offer field adjustable color temperatures, simplifying project specification, ordering and installation by allowing one troffer to be used in any space regardless of color temperature preference.

## Performance Summary

Utilizes Cree TrueWhite® Technology
Room-Side Heat Sink
<b>Efficacy:</b> 100-131 LPW
<b>Initial Delivered Lumens:</b> 4,000 lumens
<b>Input Power:</b> 30.5-40 watts
<b>CRI:</b> 90 CRI
<b>CCT:</b> 3000K, 3500K, 4000K, 5000K, adjustable CCT
<b>Input Voltage:</b> 120-277 VAC
<b>Limited Warranty*:</b> 5 years
<b>Controls:</b> Cree SmartCast® Technology
<b>Mounting:</b> Recessed*

\* See [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/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>Cree SmartCast® Technology Configuration Tool</b> CCT-CWC-1 - One required per project when CMA control is selected	<b>Cree SmartCast® Technology Wireless Dimmer</b> CWD-CWC-WH <b>Cree SmartCast® Technology Wireless Switch</b> CWS-CWC-WH <b>Drywall Grid Adaptor</b> DGA14-WHT
<b>Cree SmartCast® Technology Face Plates</b> CFP-1-WH - Matching Cree face plate, 1-gang, white CFP-2-WH - Matching Cree face plate, 2-gang, white CFP-3-WH - Matching Cree face plate, 3-gang, white	

## Ordering Information

Fully assembled luminaire is composed of two components that must be ordered separately:  
 Example: **Luminaire:** CR14-40L-35K-CMA + **Control Module:** CM-CWC-1

Product	Initial Delivered Lumens	CCT	Voltage	Control	Options
CR14	<b>40L</b> 40W, 4,000 lumens – 100 LPW <b>40LHE</b> 30.5W, 4,000 lumens – 131 LPW (30K) 32W, 4,000 lumens – 125 LPW (35K) 33W, 4,000 lumens – 121 LPW (40K) 34.5W, 4,000 lumens – 116 LPW (50K)	<b>30K</b> 3000K <b>35K</b> 3500K <b>40K</b> 4000K <b>50K</b> 5000K <b>ACK</b> Adjustable CCT: 3000K-5000K - Available only with 40L - Factory set at 4000K - Adjustable in 500K increments	Blank 120-277 Volt	<b>CMA</b> Cree SmartCast® Technology - Controls ready with integral motion and ambient sensors - Requires control module: CM-CWC-1 (see table below)	<b>EB10W Emergency Battery Backup</b> - 40L-ACK: 1,000 lumens - 40LHE-30K: 1,300 lumens - 40LHE-35K: 1,250 lumens - 40LHE-40K: 1,200 lumens - 40LHE-50K: 1,150 lumens

Control Modules
Cree SmartCast® Technology wireless control module (factory installed) CM-CWC-1



Rev. Date: V3 09/30/2015



## Product Specifications

### CREE SMARTCAST® TECHNOLOGY

Cree SmartCast® Technology changes the paradigm of lighting control. With the press of a single button, Cree SmartCast® Technology enabled luminaires and controls create their own secure network and auto-associate to form logical groups throughout every space. Integrated sensors and robust wireless communication included in every luminaire combined with revolutionary OneButton™ Setup enables automated setup and configuration of luminaires and wall controls. With no extra wires or interfaces, Cree SmartCast® Technology products reduce installation time and complexity.

### 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.

### 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)

### 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 Voltage:** 120-277V, 50/60Hz
- **Operating Temperature Range:** 0°C - + 35°C (32°F - + 95°F)
- **Total Harmonic Distortion:** < 20%
- **Dimming:** 5% - 100%

### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Designed for indoor use
- UL924 (EB10W option)
- DLC qualified. 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 standards for conducted and radiated emissions

## Cree SmartCast® Technology

### INTEGRAL MOTION SENSOR

- Passive infrared (PIR)
- **Coverage area:** 100 sq. ft. (30.5m<sup>2</sup>) 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

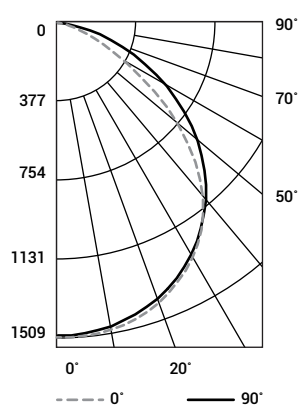
### DEPLOYMENT

- Please refer to the SmartCast® Deployment Guide at [www.creelink.com/exLink.asp?236135640H88E44139771048](http://www.creelink.com/exLink.asp?236135640H88E44139771048)

**Photometry**

**CR14-40L-30K BASED ON CSA REPORT TEST #: 2362893-02**

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	106	102	98
2	101	93	87	81
3	92	82	75	68
4	85	73	65	58
5	78	66	57	51
6	72	59	51	44
7	67	54	45	39
8	62	49	41	35
9	58	45	37	32
10	55	42	34	29

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	4,965	5,002	4,657
55°	4,552	4,351	3,482
65°	3,861	3,047	2,058
75°	2,869	1,618	1,114
85°	1,486	820	884

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	1,187	N/A	30.1%
0-40	1,952	N/A	49.5%
0-60	3,360	N/A	85.2%
0-90	3,945	N/A	100%
0-180	3,945	N/A	100%

Reference [www.cree.com/Lighting/Products/Indoor/Troffers/CR-Series](http://www.cree.com/Lighting/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/ft²	Average fc
8 x 8	40L	4,000	40W	100	0.69	54
	40LHE		30.5W	131	0.56	54
8 x 10	40L		40W	100	0.55	45
	40LHE		30.5W	131	0.45	45
10 x 10	40L		40W	100	0.44	38
	40LHE		30.5W	131	0.36	38
10 x 12	40L		40W	100	0.37	30
	40LHE		30.5W	131	0.30	30

9' ceiling; 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial Open Space: 50' x 40' x 10'

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 Projected <sup>2</sup> LMF	100K hr Calculated <sup>3</sup> LMF
0°C (32°F)	40L	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)	40L	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)	40L	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)	40L	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)	40L	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)	40L	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)	40L	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)	40L	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)	40L	0.97	0.96	0.96	0.96	0.96
	40LHE	0.97	0.93	0.91	0.89	0.87

<sup>1</sup> Lumen maintenance values at 25°C 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)

