CR14™ with Cree SmartCast™ Technology
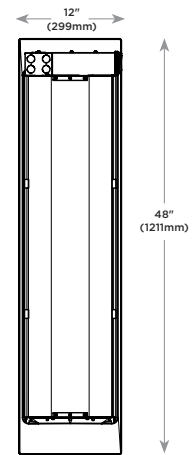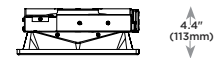## 1'x4' Architectural LED Troffer

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.

Performance Summary

Utilizes Cree TrueWhite® Technology

Active Color Management

Room-Side Heat Sink

Assembled in the US

Efficacy: 100-125 LPW

Delivered Light Output: 4,000 lumens

Input Power: 30-44 watts

CRI: 90 CRI

CCT: 3000K, 3500K, 4000K, 5000K

Input Voltage: 120-277 VAC

Limited Warranty: 5 years†

Lifetime: Designed to last 75,000 hours (Standard TW) and 100,000 hours (HE TW)

Controls: Integral ambient light and motion sensors

Mounting: Recessed

CR14™

4.4"
(113mm)

12"
(299mm)

48"
(1211mm)

Ordering Information

Example: CR14-40L-35K-CMA

CR14™				
Product	**Lumen Output**	**Color Temp**	**Voltage**	**Control**
CR14	**40L** 40W — 4,000 lumens – 100 LPW **40LHE** 30.5W — 4,000 lumens – 125 LPW (30K) 32W — 4,000 lumens – 120 LPW (35K) 33W — 4,000 lumens – 115 LPW (40K) 34.5W — 4,000 lumens – 110 LPW (50K)	**30K** 3000 Kelvin **35K** 3500 Kelvin **40K** 4000 Kelvin **50K** 5000 Kelvin	**Blank** 120-277 Volt (Standard)	**CMA** Controls ready with integral motion and ambient sensors. Compatible with control modules listed below.

†See www.cree.com/lighting for warranty terms.

Control Modules

CM-CWC-1
Cree SmartCast™ Technology wireless control module (factory installed)

Rev. Date 02/11/2014

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 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.

LUMEN MAINTENANCE FACTORS

- Reference www.cree.com/lighting for detailed lumen maintenance factors.

CONSTRUCTION & MATERIALS

- Durable 20-gauge steel housing with standard troffer access plate for electrical installation.
- Field replaceable light engine integrates LEDs, driver, power supply, thermal management, and optical mixing components.
- 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.
- Provided t-bar clips and holes for mounting support wires enable recessed or suspended installation.

    NOTE: Reference www.cree.com/lighting for detailed instructions on field replacement of the light engine.

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 and power supply.
- Power Factor = 0.9 nominal
- Input Voltage: 120-277V, 50/60Hz
- Temperature Rating: Designed to operate in temperatures 0-35 C room side and plenum side.
- Total Harmonic Distortion: < 20%
- Dimming: 5% - 100%

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed.
- DLC qualified.**
- Suitable for damp locations.
- Designed for Indoor use.

**Please refer to DLC QPL list for most current information.

INTEGRAL MOTION SENSOR

- Passive infrared (PIR).
- Coverage area: 100 sq. ft. at 10 ft. mounting height.
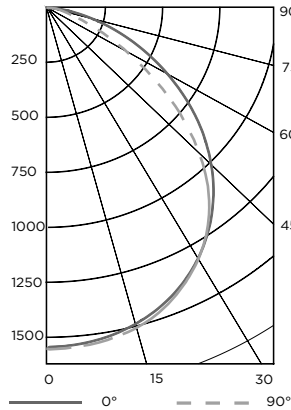
INTEGRAL AMBIENT LIGHT SENSOR

- Sensor response matches response of human eye.

Photometry

CR14-4000L BASED ON LTL REPORT TEST #: 24294

Fixture 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 fixture efficiency of 100%.

Coefficients Of Utilization

RCC %:	80			
RW %:	70	50	30	0
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

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m2)

Vertical Angle	Horizontal Angle		
	0°	45°	90°
0°	5,407	5,407	5,407
45°	5,015	5,002	4,673
55°	4,589	4,315	3,572
65°	3,933	3,122	2,247
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%

Reference www.cree.com/lighting for detailed photometric data.

Application Reference

	Open Space				
Spacing	Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	2,200L	22W	100	0.35	30
	4,000L	40W	100	0.69	54
	4,000L	30.5W	125	0.56	54
	5,000L	50W	100	0.78	68
8 x 10	2,200L	22W	100	0.28	25
	4,000L	40W	100	0.55	45
	4,000L	30.5W	125	0.45	45
	5,000L	50W	100	0.62	57
10 x 10	2,200L	22W	100	0.22	21
	4,000L	40W	100	0.44	38
	4,000L	30.5W	125	0.36	38
	5,000L	50W	100	0.50	48
10 x 12	2,200L	22W	100	0.19	17
	4,000L	40W	100	0.37	30
	4,000L	30.5W	125	0.30	30
	5,000L	50W	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 10'

CREE

Cree SmartCast™ Technology

INTEGRAL OCCUPANCY SENSOR

- Operation:
  - Grouped with a wall control: Luminaire will operate in vacancy mode (manual-on/auto-off).
  - Not grouped with a wall control: Luminare will operate in occupancy mode (auto-on/auto-off).
- Luminaires operate at full intensity until OneButton™ Setup is initiated by the Cree™ Configuration Tool.

INTEGRAL AMBIENT LIGHT SENSOR

- 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. in typical commercial applications.
  - 300 ft. 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.

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