ZR Series with Cree SmartCast® Technology

ZR24™ 2' x 4' LED Troffer

Product Description

The ZR24™ LED troffer with Cree SmartCast® Technology, Cree's intelligent light solution, provides extreme energy productivity and code compliance – all with installation that's so intuitive and simple, it just works. The ZR Series delivers 4000 lumens of superior 90 CRI light quality and is perfect for both new construction and renovation. 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. The ZR24™ LED troffer embodies a breakthrough in balancing energy savings, visual comfort and initial cost.
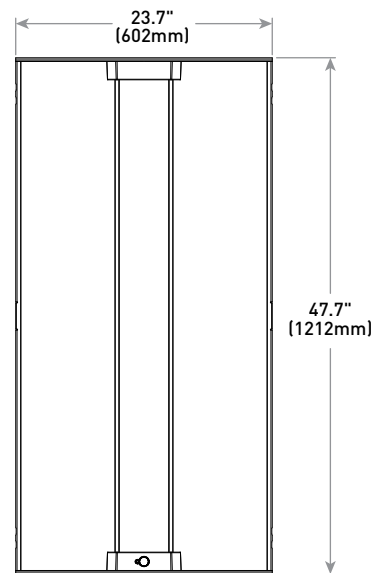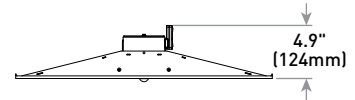
Performance Summary

Utilizes Cree TrueWhite® Technology

Efficacy: 90 LPW

Initial Delivered Lumens: 4,000 lumens

Input Power: 44 watts

CRI: 90 CRI

CCT: 3500K, 4000K

Input Voltage: 120-277 VAC

Limited Warranty‡: 10 years on luminaire

Limited Warranty Emergency Back Up (EB) Battery: 1 Year on Battery Back Up. Test regularly in accordance with local codes

Controls: Cree SmartCast® Technology

Mounting: Recessed*

† See http://lighting.cree.com/warranty for warranty terms
* Not intended for use with 9/16" T-Bar grids unless used with a 9/16" accessory clip like "Armstrong® LFC- Fixture Clip" which can be purchased through distribution. Consult factory for non-standard grid applications.

Accessories

Field-Installed	
Drywall Grid Adapter DGA24-WHT **6' Flexible Power Whip** PW-18/4-06-9T/SS **Cree SmartCast® Technology Configuration Tool** CCT-CWC-1 - One required per project when CMA control is selected	**Cree SmartCast® Technology Face Plates‡** 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 **Cree SmartCast® Technology Wireless Dimmer‡** CWD-CWC-WH **Cree SmartCast® Technology Wireless Switch‡** CWS-CWC-WH

‡ Refer to the Wireless Dimmer Smartcast Control spec sheet for more details

NOTE: Not compatible with SMK surface mount kits

4.9"
(124mm)

23.7"
(602mm)

47.7"
(1212mm)

Ordering Information

Example: ZR24-40L-35K-CMA

ZR24	40L			CMA	
Product	**Initial Delivered Lumens**	**CCT**	**Voltage**	**Control**	**Options**
ZR24	40L 44W, 4,000 Lumens	35K 3500K **40K** 4000K	**Blank** 120-277 Volt	**CMA** Cree SmartCast® Technology - Integral motion and ambient sensors and wireless communication	**EB14** Emergency Backup - 1,400 lumens - Available on US versions only - Provides 90 minutes of emergency operation

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CREE TRUE WHITE TECHNOLOGY

DLC LISTED

RoHS

CREE SMARTCAST® TECHNOLOGY

CREE™

Product Specifications

CREE SMARTCAST® TECHNOLOGY

Cree SmartCast® Technology is the most intuitive and easiest to install intelligent light solution on the market. SmartCast Technology delivers up to 70% energy savings at up to half the cost of other solutions. Luminaires combine best-in-class light with onboard sensors and intelligence to deliver a better light experience. Extreme energy productivity, code compliance and a better light experience without any extra design, installation or setup work.

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.

CONSTRUCTION & MATERIALS

- Durable 22 ga. cold rolled steel housing provides strength and uniformity
- Ultra-thin 4.9" (124mm) luminaire height and lightweight design effectively target a broad range of plenum spaces and allow for easy installations
- Luminaire is pre-painted for enhanced smooth finish
- Includes t-bar clips and holes for mounting support wires (by others)
- Luminaire sides and ends are hemmed in for safe, easy handling
- Includes lens gasket to prevent ingress of insects
- Not for installation within 3" (76mm) of insulation

OPTICAL SYSTEM

- Unique luminaire design creates perfect balance of both horizontal and vertical illumination
- Optimized smooth acrylic lens eliminates pixelation and delivers a low-glare, diffused light distribution

ELECTRICAL SYSTEM

- Cree born components including highly efficacious Cree® LED chips along with an integral high-efficiency Cree® driver
- **Power Factor:** = 0.9 nominal
- **Input Power:** Stays constant over life
- **Input Voltage:** 120-277V, 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 (EB option). Maximum mounting height: 15.0' (4.6m)
- DLC qualified. Please refer to 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

Cree SmartCast® Technology

INTEGRAL MOTION SENSOR

- Passive infrared (PIR)
- **Coverage area:** 100 sq. ft. (30.5m^2) 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
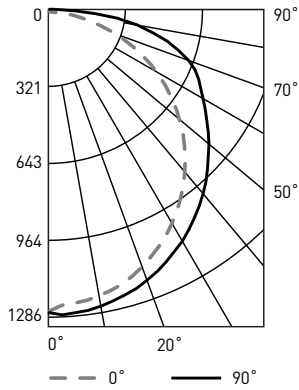- 10 year power fail memory of settings

DEPLOYMENT

- Please refer to the SmartCast® Deployment Guide at https://www.creelink.com/exLink.asp?23613564OH88E44I39771048

US: lighting.cree.com   T (800) 236-6800 F (262) 504-5415   **Canada: www.cree.com/canada**   T (800) 473-1234 F (800) 890-7507

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Photometry

ZR24-40L-40K BASED ON DTC REPORT TEST #: 14938-G

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	107	102	97	93
2	97	88	80	74
3	88	76	68	61
4	80	67	58	51
5	73	60	50	43
6	68	54	44	38
7	63	49	40	33
8	58	44	36	29
9	55	41	32	26
10	51	37	29	24

Effective Floor Cavity Reflectance: 20%

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

Average Luminance Table (cd/m²)

		Horizontal Angle		
		0°	45°	90°
Vertical Angle	45°	1,642	1,772	1,899
	55°	1,580	1,788	2,014
	65°	1,480	1,885	2,341
	75°	1,276	2,240	2,819
	85°	952	2,498	3,203

Zonal Lumen Summary

Zone	Lumens	% Lamp	Luminaire
0-30	990	N/A	24.4%
0-40	1,628	N/A	40.1%
0-60	2,949	N/A	72.6%
0-90	4,064	N/A	100%
0-180	4,064	N/A	100%

Electrical Data*

Initial Delivered Lumens	System Watts 120-277V	Total Current (A)			
		120V	208V	240V	277V
40L	44	0.38	0.26	0.23	0.17
40L w/EB14 Option	46	0.38	0.27	0.24	0.17

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

Application Reference
Based on ZR24-40L-40K-CMA

Open Space

Spacing	Lumens	Wattage	LPW	w/ft²	Average FC
8 x 8	4,000	44	91	0.66	56
8 x 10				0.55	46
10 x 10				0.44	37
10 x 12				0.35	30

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

Recommended ZR Series Lumen Maintenance Factors (LMF)[1]

Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Calculated[3] LMF	100K hr Calculated[3] LMF
0°C (32°F)	1.04	1.04	1.04	1.04	1.04
5°C (41°F)	1.03	1.03	1.03	1.03	1.03
10°C (50°F)	1.02	1.02	1.02	1.02	1.02
15°C (59°F)	1.02	1.02	1.02	1.02	1.02
20°C (68°F)	1.01	1.01	1.01	1.01	1.01
25°C (77°F)	1.00	1.00	1.00	1.00	1.00
30°C (86°F)	0.99	0.99	0.99	0.99	0.99
35°C (95°F)	0.98	0.98	0.98	0.98	0.98

[1] Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing
[2] 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)
[3] 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)

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