

ZR Series

ZR LED Troffer

Rev. Date: V4 05/22/2020

Product Description

The ZR LED troffer provides energy productivity and code compliance – all with installation that’s so intuitive and simple. The ZR Series delivers from 2,000 to 10,000 lumens and 80 CRI quality light and is perfect for both new construction and renovation. Multiple control options including 0-10V, SmartCast® Technology, Lutron Vive, and Lutron EcoSystem products incorporate integrated ambient and occupancy sensing and wireless communication resulting in lower electricity bills, reduced maintenance and an improved total cost of ownership over traditional lighting control systems. The ZR LED troffer embodies a breakthrough in balancing energy savings, visual comfort and project budgets.

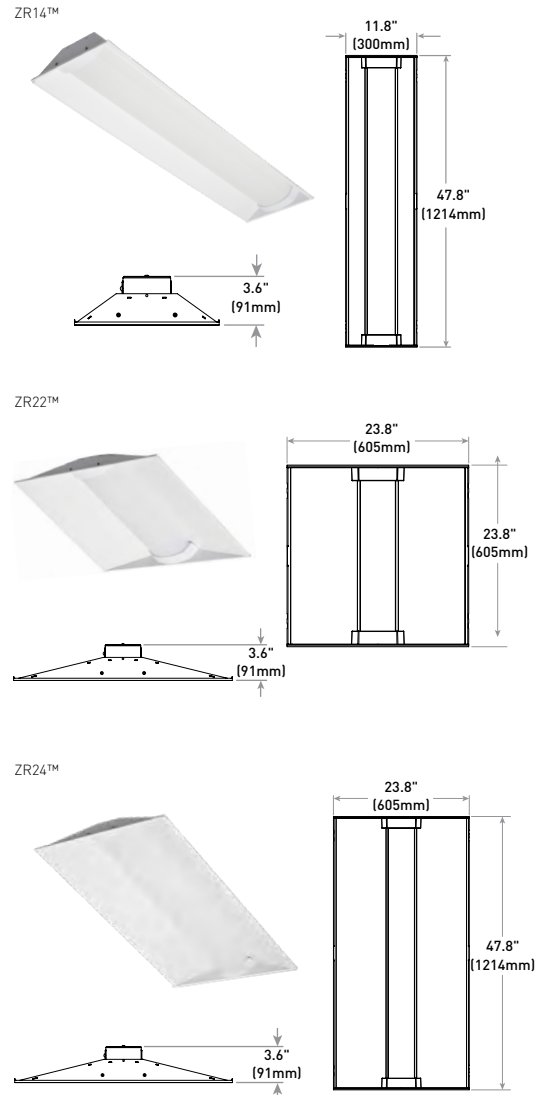
Performance Summary

Efficacy: Up to 144 LPW
Initial Delivered Lumens: 2,000 to 10,050 (see table below)
Input Power: 15W-74W
CRI: 80 CRI
CCT: 3000K, 3500K, 4000K, 5000K
Input Voltage: 120-277 VAC, 347VAC
Limited Warranty*: 5 years on luminaire; 5 years on SmartCast® and Lutron controls; up to 5 years for SmartCast® accessories; 1 year for luminaire accessories
Limited Warranty Emergency Back Up (EB) Battery: 5 Years on Battery Back Up. Test regularly in accordance with local code
Controls: 0-10V, SmartCast Wireless, Lutron Vive, Lutron EcoSystem
Mounting: Recessed [Designed for use in most ceiling grids including standard 1 1/2", 9/16", 15/16", hard ceiling, and surface mounting]

*See <http://creelighting.com/warranty> for warranty terms. For SmartCast accessories, consult SmartCast spec sheets for details on warranty terms.

Accessories

Field-Installed		
Drywall Grid Adapter DGA14-WHT DGA22-WHT DGA24-WHT	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 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 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® Technology Configuration Tool CCT-CWC-1 - One required per project when SC1 control is selected	SmartCast® Technology Wireless Dimmer CWD-CWC-WH	
Surface Mount Kits SMK-ZR22 - Not for use with EB or SmartCast® Technology SMK-ZR14 - Not for use with EB or SmartCast® Technology SMK-ZR24 - Not for use with EB or SmartCast® Technology	SmartCast® Technology Wireless Switch CWS-CWC-WH	



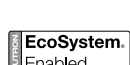
Ordering Information

Example: ZR24-60L-835-SC1-UNV

ZR	Series	Size	Lumen Package	CRI/CCT	Lens	Control	Voltage	Factory Installed Options*	
ZR	14	30L	50L	830	Blank ZR Curve	10V5 - 0-10V 5% Dimming	UNV - Universal 120-277V	EB Emergency Backup - Provides 90 minutes of emergency operation CP Chicago Plenum - Not available with 347V, EB or SmartCast® Technology 6PW5W Power Whip - 6' 5 Wire 10PW5W Power Whip - 10' 5 Wire GTD Generator Transfer Device - GT and EB cannot be used together	
			40L						835
		22	20L	840					80 CRI, 3500K
			30L						
		24	30L	70L					80 CRI, 5000K
				40L					
	50L		100L						
	60L		100L						

*Consult factory for other options.

*More information on Lutron controls can be found at lutron.com.



Product Specifications

SMARTCAST® TECHNOLOGY

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.

CONSTRUCTION & MATERIALS

- Durable 22 ga. cold rolled steel housing provides strength and uniformity
- Ultra-thin 3.6" (91mm) fixture height and lightweight design effectively target a broad range of plenum spaces and allow for easy installations
- Luminaire is post-painted for enhanced smooth finish
- Includes integrated hooks for mounting to t-bar, and cable slots for suspended mounting
- Luminaire sides and ends are hemmed in for safe, easy handling
- Room-side accessible/removable lens snaps and locks into end caps for tool-less entry
- Not for installation within 3" (76mm) of insulation
- **Weight: Standard:** 1x4 - 6.6 lbs. (3.0kg); 2x2 - 6.4 lbs. (2.9kg); 2x4 - 11.2 lbs. (5.1kg); **EB:** 1x4 - 10.1 lbs. (4.6kg); 2x2 - 9.2 lbs. (4.2kg); 2x4 - 14.1 lbs. (6.4kg)

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

- **Power Factor:** = 0.9 nominal
- **Input Power:** Stays constant over life
- **Input Voltage:** 120-277V, 347V, 60Hz
- **Operating Temperature Range:** 0°C - + 35°C (32°F - + 95°F)
- **Total Harmonic Distortion:** <20%
- **Dimming:** 1%-100% (Varies by control)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Designed for indoor use only
- UL924 (EB & GTD Option) Maximum mounting height: 15.0' (4.6m)
- RoHS compliant. Consult factory for additional details
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm - www.p65warnings.ca.gov

Delivered Lumens & Electrical Data*								
Size	Lumen Package	Delivered Lumens	System Watts 120-277V/347V	Total Current (A)				
				120V	208V	240V	277V	347V
2X2	20L	2,000	15	0.12	0.07	0.06	0.06	0.05
1X4/2X2/2X4	30L	3,470	26	0.21	0.12	0.11	0.10	0.08
1X4/2X2/2X4	40L	4,050	29	0.25	0.14	0.12	0.11	0.09
1X4/2X2	50L	4,860	36	0.31	0.17	0.15	0.13	0.11
2X4	50L	5,650	41	0.35	0.20	0.17	0.15	0.12
1X4/2X4	60L	6,100	44	0.38	0.21	0.19	0.16	0.13
2X4	70L	6,750	47	0.40	0.23	0.20	0.17	0.16
2X4	80L	8,200	62	0.52	0.30	0.26	0.23	0.19
2X4	100L	10,050	74	0.63	0.36	0.31	0.27	0.22

* Electrical data at 25°C (77°F). Actual wattage and lumens may differ by +/- 10% when operating between 120-277V or 347V +/- 10%.

SmartCast® Technology

INTEGRAL MOTION SENSOR

- Passive infrared (PIR)
- **Coverage area:** Please refer to the PIR motion sensor coverage table
- Not intended to be mounted higher than 20 ft.
- **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 20 ft. (6.1m)
- 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 and IC certifications

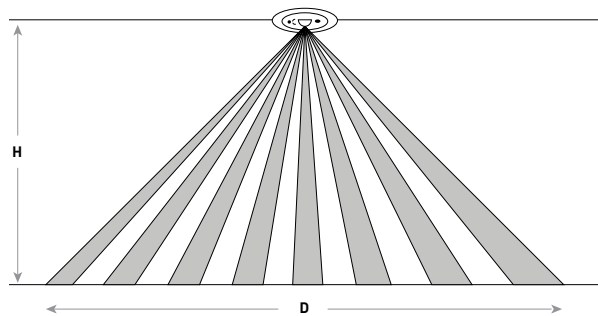
LUMINAIRE

- Energy metering with 4% accuracy
- 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?236135640H88E44139771048>

PIR Motion Sensor Coverage

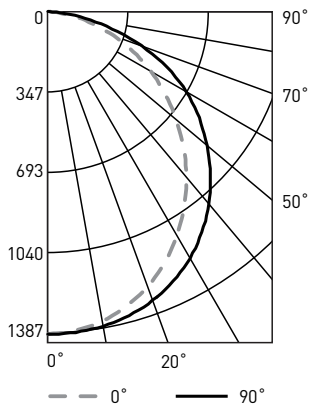


Mounting Height - H (Feet)	Motion Sensor Coverage Diameter - D (Feet)		
	Sensitivity - High (Default)	Sensitivity - Medium	Sensitivity - Low
10	20	10	8
12	26	14	12
14	28	15	13
20	38	Not Recommended	Not Recommended

Photometry

ZR14-40L-830-10V5-UNV BASED ON TEST REPORT #: STD200105NB-AB

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	104	100	96
2	99	90	83	78
3	90	79	71	64
4	82	70	61	54
5	76	63	54	47
6	70	56	47	41
7	65	51	42	36
8	60	47	38	32
9	56	43	34	29
10	53	39	31	26

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	17,595	19,830	21,057
55°	16,157	19,010	20,853
65°	14,415	18,162	20,173
75°	11,715	16,396	16,707
85°	6,622	10,245	9,960

Reference <https://www.creelighting.com/products/indoor/troffers/zr-series> for detailed photometric data.

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	1,078	N/A	27.1%
0-40	1,766	N/A	44.4%
0-60	3,120	N/A	78.5%
0-90	3,973	N/A	99.9%
0-180	3976	N/A	100%

Application Reference

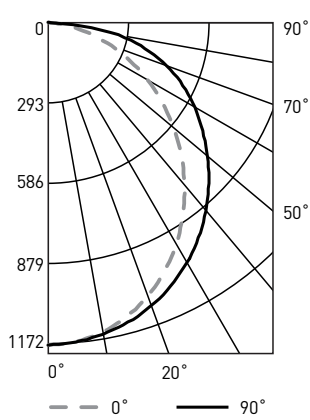
Open Space						
Spacing	Lumen Package	Initial Delivered Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	30L	3,470	26	133	0.39	50
	40L	4,050	29	140	0.44	59
	50L	4,860	36	135	0.54	70
	60L	6,100	44	139	0.66	88
8 x 10	30L	3,470	26	133	0.33	42
	40L	4,050	29	140	0.37	49
	50L	4,860	36	135	0.46	58
	60L	6,100	44	139	0.56	73
10 x 10	30L	3,470	26	133	0.26	33
	40L	4,050	29	140	0.29	38
	50L	4,860	36	135	0.36	46
	60L	6,100	44	139	0.44	58
10 x 12	30L	3,470	26	133	0.21	26
	40L	4,050	29	140	0.24	30
	50L	4,860	36	135	0.29	36
	60L	6,100	44	139	0.36	46

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

Photometry

ZR22-30L-830-10V5-UNV BASED ON TEST REPORT #: STD200105NB-BB

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	108	103	99	95
2	98	89	82	76
3	89	78	70	63
4	82	69	60	53
5	75	62	53	46
6	69	56	46	40
7	64	50	41	35
8	60	46	37	31
9	56	42	34	28
10	52	39	31	26

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m ²)				
Vertical Angle	Horizontal Angle			
	0°	45°	90°	
45°	14,592	16,216	17,578	
55°	13,318	15,853	18,013	
65°	11,782	15,892	19,277	
75°	9,486	16,512	21,205	
85°	4,901	13,274	15,706	

Reference <https://www.creelighting.com/products/indoor/troffers/zr-series> for detailed photometric data.

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	905	N/A	26.4%
0-40	1,476	N/A	43.2%
0-60	2,609	N/A	76.3%
0-90	3,419	N/A	100%
0-180	3,420	N/A	100%

Application Reference

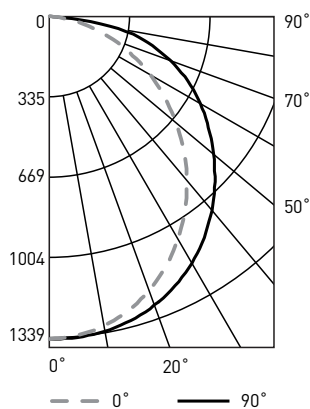
Open Space						
Spacing	Lumen Package	Initial Delivered Lumens	Wattage	LPW	w/ft ²	Average fc
8 x 8	20L	2,000	15	133	0.23	29
	30L	3,470	26	133	0.39	50
	40L	4,050	29	140	0.44	58
	50L	4,860	36	135	0.54	70
8 x 10	20L	2,000	15	133	0.19	24
	30L	3,470	26	133	0.33	41
	40L	4,050	29	140	0.37	48
	50L	4,860	36	135	0.46	58
10 x 10	20L	2,000	15	133	0.15	19
	30L	3,470	26	133	0.26	33
	40L	4,050	29	140	0.29	38
	50L	4,860	36	135	0.36	46
10 x 12	20L	2,000	15	133	0.12	15
	30L	3,470	26	133	0.21	26
	40L	4,050	29	140	0.23	30
	50L	4,860	36	135	0.29	36

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

Photometry

ZR24-40L-830-10V5-UNV BASED ON TEST REPORT #: STD200105NB-CB

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	108	103	98	94
2	98	89	82	76
3	89	78	70	63
4	81	69	60	53
5	75	61	52	45
6	69	55	46	40
7	64	50	41	35
8	59	46	37	31
9	56	42	34	28
10	52	39	31	25

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	1,039	19,163	20,656
55°	1,700	18,710	21,149
65°	3,018	18,826	22,574
75°	10,990	19,707	24,586
85°	6,482	16,515	16,392

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	1,039	N/A	26.1%
0-40	1,700	N/A	42.7%
0-60	3,018	N/A	75.8%
0-90	3,980	N/A	100%
0-180	3,982	N/A	100%

Reference <https://www.creelighting.com/products/indoor/troffers/zr-series> for detailed photometric data.

Application Reference

Open Space						
Spacing	Lumen Package	Initial Delivered Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	30L	3,470	26	133	0.39	50
	40L	4,050	29	140	0.44	59
	50L	5,650	41	138	0.62	82
	60L	6,100	44	139	0.66	88
	70L	6,750	47	144	0.71	98
	80L	8,200	62	132	0.93	119
	100L	10,050	74	136	1.11	146
8 x 10	30L	3,470	26	133	0.33	41
	40L	4,050	29	140	0.37	48
	50L	5,650	41	138	0.53	66
	60L	6,100	44	139	0.56	72
	70L	6,750	47	144	0.60	79
	80L	8,200	62	132	0.79	96
	100L	10,050	74	136	0.95	118
10 x 10	30L	3,470	26	133	0.26	33
	40L	4,050	29	140	0.29	38
	50L	5,650	41	138	0.41	54
	60L	6,100	44	139	0.44	58
	70L	6,750	47	144	0.47	64
	80L	8,200	62	132	0.62	78
	100L	10,050	74	136	0.74	95
10 x 12	30L	3,470	26	133	0.21	26
	40L	4,050	29	140	0.24	30
	50L	5,650	41	138	0.33	42
	60L	6,100	44	139	0.36	46
	70L	6,750	47	144	0.38	51
	80L	8,200	62	132	0.50	62
	100L	10,050	74	136	0.60	75

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

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