ZR Series

ZR24™ 2' x 4' LED Troffer

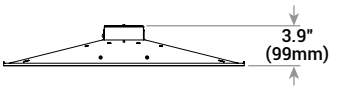
Product Description

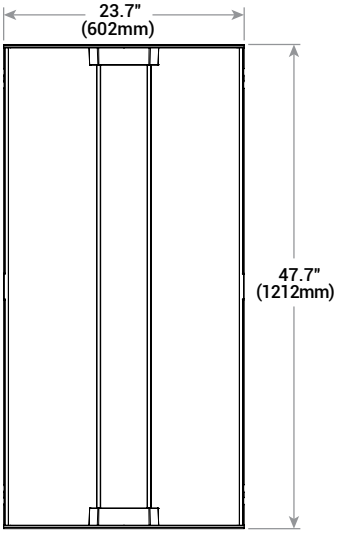
The ZR24™ LED troffer delivers up to 5000 lumens of superior 90 CRI light quality and is perfect for both new construction and renovation. Powered by Cree TrueWhite® Technology, the slim and lightweight ZR24™ LED troffer boasts an efficacious 90-150 LPW performance along with 0-10V dimming to meet local energy codes. The ZR24™ LED troffer embodies a breakthrough in balancing energy savings, visual comfort and initial cost.

Performance Summary

- Utilizes Cree TrueWhite® Technology (90 CRI) or available in 80 CRI
- **Efficacy:** 90-150 LPW
- **Initial Delivered Lumens:** 4,000 or 5,000 lumens
- **Input Power:** 26-45 watts
- **CRI:** 90 CRI (Cree TrueWhite® Technology), 80+ CRI (FD)
- **CCT:** 3500K, 4000K, 5000K
- **Input Voltage:** 120-277 VAC or 347 VAC
- **Limited Warranty†:** 10 years
- **Controls:** 0-10V dimming to 5%
- **Mounting:** Recessed*

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





Accessories

Field-Installed	
Drywall Grid Adapter DGA 24WHT **Surface Mount Kit** SMK ZR24 - Not for use with EB14	**6' Flexible Power Whip** PW-18/4-06-9T-SS

Ordering Information

Example: ZR24-40L-35K-10V

ZR24				10V	
Product	**Initial Delivered Lumens**	**CCT**	**Voltage**	**Control**	**Options**
ZR24	**40L** 44W, 4000 Lumens - 90 LPW **40L HE** 26W, 4000 Lumens - 150 LPW **50L** 45W, 5000 Lumens - 111 LPW - Available with FD option only	**35K** 3500K - Available with 40L and 40L HE only **40K** 4000K **50K** 5000K - Available with 50L only	**Blank** 120-277 Volt **34** 347 Volt - Available with 40L only	**10V** 0-10V Dimming to 5%	EB14 Emergency Backup - 1400 lumens - Available on US versions only **FD** - Must order when 50L is selected - 80 CRI

* Acceptable for use with standard 9/16 T-Bar or larger when installed per installation instructions. Consult factory for non-standard grid applications

Rev. Date: V4 11/09/2015

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.

CONSTRUCTION & MATERIALS

- Durable 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
- Provided t-bar clips and holes for mounting support wires enable recessed or suspended installation
- Luminaire sides and ends are hemmed in for safe, easy handling

OPTICAL SYSTEM

- Unique luminaire design creates perfect balance of both horizontal and vertical illumination
- Optimized smooth 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 or 347V, 50/60Hz
- **Operating Temperature Range:** 0˚C - + 35˚C (32˚F - + 95˚F)
- **Total Harmonic Distortion:** <20%

CONTROLS

- Continuous dimming to 5% with 0-10V DC control protocol
- For use with Class 2 dimming systems only. Reference www.creelink.com/exLink.asp?7098214OZ58R34I26620963 for recommended dimming controls and wiring diagrams

REGULATORY & VOLUNTARY QUALIFICATIONS

- UL924 (EB option)
- cULus Listed
- Suitable for damp locations
- Designed for indoor use and outdoor covered applications
- DLC qualified when ordered with 40L, 90 LPW type. Please refer to 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

Application Reference

Open Space

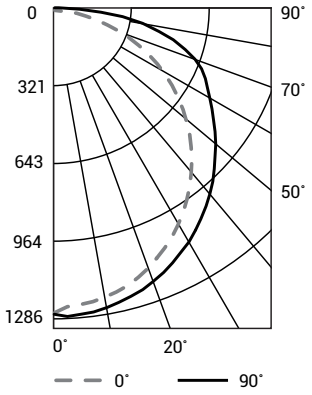
Spacing	Initial Delivered Lumens	Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	40L	4,000	44	90	0.66	56
	40L HE		26	150	0.39	56
	50L	5,000	45	111	0.68	69
8 x 10	40L	4,000	44	90	0.55	46
	40L HE		26	150	0.33	46
	50L	5,000	45	111	0.56	57
10 x 10	40L	4,000	44	90	0.44	37
	40L HE		26	150	0.26	37
	50L	5,000	45	111	0.45	46
10 x 12	40L	4,000	44	90	0.35	30
	40L HE		26	150	0.21	30
	50L	5,000	45	111	0.36	37

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-35K BASED ON CESTL REPORT TEST #: PL02014-0005

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%

Average Luminance Table (cd/m²)

Vertical Angle	Horizontal Angle 0°	45°	90°
45°	1,642	1,772	1,899
55°	1,580	1,788	2014
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%

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

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

Ambient	Initial Delievered Lumens	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Projected[2] LMF	100K hr Calculated[3] LMF
0˚C (32˚F)	40L HE	1.05	1.01	0.98	0.96	0.94
	40L/50L	1.05	0.99	0.95	0.91	0.87
5˚C (41˚F)	40L HE	1.04	1.00	0.97	0.95	0.93
	40L/50L	1.04	0.98	0.94	0.90	0.86
10˚C (50˚F)	40L HE	1.03	0.99	0.96	0.94	0.92
	40L/50L	1.03	0.97	0.93	0.89	0.85
15˚C (59˚F)	40L HE	1.02	0.98	0.95	0.93	0.91
	40L/50L	1.02	0.96	0.92	0.88	0.84
20˚C (68˚F)	40L HE	1.01	0.97	0.95	0.92	0.90
	40L/50L	1.01	0.95	0.91	0.87	0.83
25˚C (77˚F)	40L HE	1.00	0.96	0.94	0.91	0.89
	40L/50L	1.00	0.95	0.90	0.86	0.83
30˚C (86˚F)	40L HE	0.99	0.95	0.93	0.91	0.89
	40L/50L	0.99	0.94	0.89	0.86	0.82
35˚C (95˚F)	40L HE	0.98	0.94	0.92	0.90	0.88
	40L/50L	0.98	0.93	0.89	0.85	0.81

[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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