

# ZR24RK Series Retrofit Kit

ZR24RK 2' x 4' LED Troffer Retrofit Kit with Matte Finish

## Product Description

The ZR-RK Series delivers superior energy efficiency of up to 132 lumens per watt for maximum energy savings. While some LED retrofit products replace only the source and leave the fluorescent optic and aesthetic unchanged, the ZR-RK retrofit completes the transformation: the old housing is concealed beneath an appealing new look and LED-optimized optic, while leaving the plenum undisturbed. Optimized for installation in under four minutes, the ZR-RK retrofit delivers maximum improvement for minimum effort. The ZR-RK retrofit is compatible with most existing 2'x4' and 2'x2' recessed troffers with a minimum housing depth of 3 inches. The ZR-RK retrofit features a matte finished housing for less glare and better light distribution, standard dimming to 5% and 80+ CRI — all in a package with a price as attractive as it looks.

## Performance Summary

**Efficacy:** Up to 132 LPW

**Initial Delivered Lumens:** 4,000 or 5,000 lumens

**Input Power:** 32-40 watts

**CRI:** 80+ CRI

**CCT:** 3000K (40L), 3500K, 4000K

**Input Voltage:** 120-277 VAC

**Limited Warranty:** 5 years on luminaire

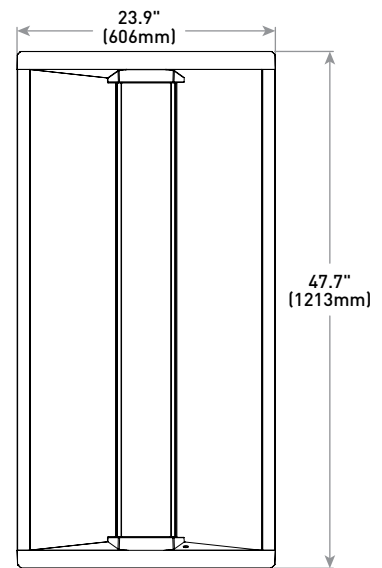
**Limited Warranty Emergency Back Up (EB) Battery:** 1 Year on Battery Back Up. Test regularly in accordance with local codes

**Controls:** 0-10V dimming to 5%

**Mounting:** Existing Fluorescent Prismatic and Parabolic Troffer Pans Using NEMA® 9/16" or 15/16" T-Bar Ceiling Grid\*

\* 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



## Ordering Information

Example: ZR24RK-40L-35K-10V-FD

ZR24RK				10V	FD	
Product	Lumen Package*	CCT	Voltage	Control	CRI	Options
ZR24RK	40L 32W, 4,000 lumens 50L 40W, 5,000 lumens	30K 3000K - Available with 40L only 35K 3500K 40K 4000K	Blank 120-277 Volt	10V 0-10V dimming to 5%	FD 80+ CRI	EB Emergency Backup - 1,000 lumens - Provides 90 minutes of emergency operation

\* Refer to Electrical Data & Initial Delivered Lumens table for lumen values



US: [lighting.cree.com](http://lighting.cree.com)



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Rev. Date: V2 12/20/2017

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ZR24RK 2' x 4' LED Troffer Retrofit Kit with Matte Finish

Product Specifications

CONSTRUCTION & MATERIALS

- Durable 22 ga. cold rolled steel frame provides strength and uniformity
- Frame is post-painted for enhanced smooth matte finish
- End caps are UV stabilized polycarbonate
- Fits into existing fluorescent prismatic and parabolic troffer pans using NEMA® 9/16" or 15/16" T-Bar ceiling grid
- Not for installation within 3" (76mm) of insulation
- Removable lens for easy maintenance and cleaning
- Magnetic lens to prevent dust and bug intrusion

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 at full load
- **Input Power:** Stays constant over life
- **Input Voltage:** 120-277V, 50/60Hz
- **Operating Temperature Range:** 0°C - + 35°C (32°F - + 95°F)
- **Total Harmonic Distortion:** < 20%; < 30% (EB option)

CONTROLS

- Continuous dimming to 5% with 0-10V DC control protocol
- **10V Source Current:** 0.15mA
- Use only lighting controls with neutral connection or controls intended for use with LED fixtures
- Reference [www.creelink.com/exLink.asp?70982140Z58R34I26620963](http://www.creelink.com/exLink.asp?70982140Z58R34I26620963) for recommended dimming controls and wiring diagrams

REGULATORY & VOLUNTARY QUALIFICATIONS

- UL1598C (Retrofit Kit)
- This product is cULus Classified for use in existing 2x4 recessed troffers using NEMA® 9/16" or 15/16" T-Bar ceiling grid . 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
- Suitable for damp locations
- Designed for indoor use
- Products with the -EB suffix are provided with a factory-installed emergency lighting LED battery pack and are eligible to serve as part of a facility's emergency lighting system in accordance with ANSI/NFPA 101 and Article 700 of ANSI/NFPA 70. 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
- DLC Premium qualified. Please refer to <https://www.designlights.org/search/> for most current information

Electrical Data & Initial Delivered Lumens*								
Lumen Package	CCT	Initial Delivered Lumens	System Watts 120-277V	Efficacy (LPW)	Total Current (A)			
					120V	208V	240V	277V
40L	30K	3,913	32	122	0.27	0.15	0.13	0.12
	35K	4,100		128				
	40K	4,224		132				
40L w/EB	30K	3,913	36	109	0.31	0.17	0.15	0.14
	35K	4,100		114				
	40K	4,224		117				
50L	35K	5,050	40	126	0.35	0.19	0.17	0.15
	40K	5,203		130				
50L w/EB	35K	5,050	45	112	0.38	0.22	0.19	0.17
	40K	5,203		116				

\* Data provided at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V +/- 10%. Actual production yield may vary between -10 and +10% of initial delivered lumens

Recommended ZR-RK Series Lumen Maintenance Factors (LMF) <sup>1</sup>					
Ambient	Initial LMF	25K hr Projected <sup>2</sup> LMF	50K hr Projected <sup>2</sup> LMF	75K hr Calculated <sup>3</sup> LMF	100K hr Calculated <sup>3</sup> LMF
0°C (32°F)	1.04	0.99	0.92	0.85	0.79
5°C (41°F)	1.03	0.98	0.91	0.85	0.79
10°C (50°F)	1.02	0.97	0.90	0.84	0.78
15°C (59°F)	1.01	0.96	0.89	0.83	0.77
20°C (68°F)	1.01	0.96	0.89	0.83	0.77
25°C (77°F)	1.00	0.95	0.88	0.82	0.76
30°C (86°F)	0.99	0.94	0.88	0.81	0.76
35°C (95°F)	0.99	0.94	0.88	0.81	0.76

<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)

Application Reference

Open Space					
Spacing	Lumens	Wattage	LPW	w/ft <sup>2</sup>	Average fc
8 x 8	4,100	32	128	0.48	58
8 x 10				0.40	49
10 x 10				0.32	39
10 x 12				0.26	31

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

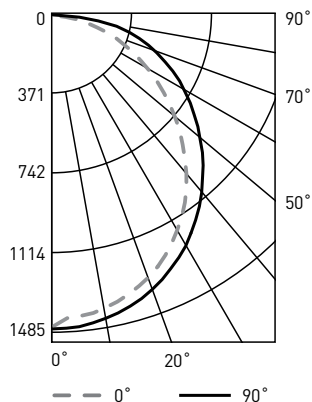


## ZR24RK 2' x 4' LED Troffer Retrofit Kit with Matte Finish

### Photometry

#### ZR24RK-40L-30K-10V-FD BASED ON CESTL REPORT TEST #: PL10258-001A

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				
<b>RC %:</b>	80			
<b>RW %:</b>	70	50	30	10
<b>RCR: 0</b>	119	119	119	119
1	108	103	99	94
2	98	89	82	76
3	89	78	70	63
4	82	69	60	54
5	75	62	53	46
6	69	56	47	40
7	64	51	42	36
8	60	46	38	32
9	56	42	34	29
10	52	39	31	26

Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	1,131	N/A	27.0%
0-40	1,839	N/A	43.9%
0-60	3,212	N/A	76.6%
0-90	4,193	N/A	100%
0-180	4,193	N/A	100%

Average Luminance Table (cd/m <sup>2</sup> )				
Vertical Angle	Horizontal Angle			
	0°	45°	90°	
45°	8,579	9,332	9,914	
55°	7,809	8,943	9,940	
65°	6,883	8,792	10,336	
75°	5,777	9,036	11,451	
85°	4,416	9,541	10,088	

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

### KIT CONTAINS THE FOLLOWING PARTS:

#### Main Assembly



#### End Cap



#### Side Panel



#### Lens

