

# FLEX Series Troffer

FLX22™ 2' x 2' Specification LED Troffer

## Product Description

The FLEX Series LED troffer delivers up to 5,000 lumens with enhanced color quality. The variety of inner optic accessories provides greater design flexibility making it perfect for both new construction and renovation. The slim and lightweight FLEX Series LED troffer boasts an efficacy of 125-145 LPW performance along with standard 1% 0-10V dimming and optional 5% SmartCast® Technology dimming to meet local energy codes. The FLEX Series troffer's 1% dimming with 0-10V controls also delivers enhanced flicker control for improved visual comfort.

## Performance Summary

<b>Efficacy:</b> 125-145 LPW
<b>Initial Delivered Lumens:</b> 3,200-5,000 lumens
<b>Input Power:</b> 25-43 watts
<b>CRI:</b> 80+ CRI
<b>CCT:</b> 3000K, 3500K, 4000K, 5000K
<b>Input Voltage:</b> 120-277 VAC or 347 VAC
<b>Limited Warranty†:</b> 10 years on luminaire
<b>Limited Warranty Emergency Back Up (EB) Battery:</b> 1 Year on Battery Back Up. Test regularly in accordance with local codes
<b>Controls:</b> 0-10V dimming to 1%, SmartCast® Technology dimming to 5%
<b>Mounting:</b> Recessed [Designed for use in most ceiling grids including standard 1 1/2", 9/16", 15/16", hard ceiling, and surface mounting]
Room-side accessible removable lens
Assembled in the U.S.A. of U.S. and imported parts

†See <http://lighting.cree.com/warranty> for warranty terms

## Inner Optic Overlay Diffuser Accessories

Field-Installed	
<b>Wavy Inner Optic Diffuser, 10-Pack</b> FLX-WVD-2 - Only for luminaires with 10V controls FLX-CMA-WVD-2 - Only for luminaires with CMA controls	<b>Brushed Metal Inner Optic Diffuser, 10-Pack</b> FLX-BMD-2 - Only for luminaires with 10V controls FLX-CMA-BMD-2 - Only for luminaires with CMA controls
<b>Perforated Inner Optic Diffuser, 10-Pack</b> FLX-PFD-2 - Only for luminaires with 10V controls FLX-CMA-PFD-2 - Only for luminaires with CMA controls	<b>Striped Inner Optic Diffuser, 10-Pack</b> FLX-STRD-2 - Only for luminaires with 10V controls FLX-CMA-STRD-2 - Only for luminaires with CMA controls
<b>Diffuse Inner Optic, 10-Pack</b> FLX-STD-2 - Only for luminaires with 10V controls FLX-CMA-STD-2 - Only for luminaires with CMA controls	<b>Sample Inner Optic Diffuser Kit</b> FLX-SMPL-2 - Only for luminaires with 10V controls - Includes one of each inner optic overlay diffuser

## Ordering Information

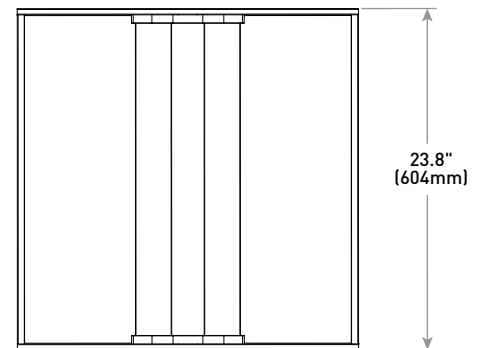
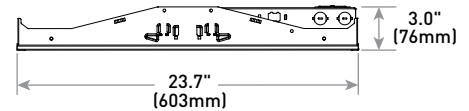
Example: FLX22-32L-35K-10V-EB14-FD

FLX22	Product	Lumen Package*	CCT	Voltage	Control	Options	FD
FLX22		<b>32L</b> 25-30W, 3,200 Lumens <b>50L</b> 38-43W, 5,000 Lumens	<b>30K</b> 3000K <b>35K</b> 3500K <b>40K</b> 4000K <b>50K</b> 5000K	<b>Blank</b> 120-277 Volt <b>34</b> 347 Volt	<b>10V 1% Dimming</b> - 0-10V dimming to 1% <b>CMA Cree SmartCast® Technology</b> - Integral motion and ambient sensors and wireless communication - Dimming to 5%	<b>EB14 Emergency Backup</b> - 1,400 lumens - Provides 90 minutes of emergency operation - Available only with 120-277V	<b>FD</b> 80+ CRI

\* Lumen package codes identify approximate light output only. Actual lumen output levels vary depending on CCT. Refer to delivered lumens & electrical data table for specific lumen values.

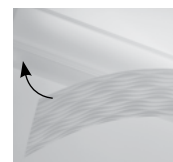


STANDARD OPTION



Type	Weight
Standard	11.3 lbs. [5.1kg]
347V	12.0 lbs. [5.4kg]
w/EB14 Option	15.8 lbs. [7.2kg]

## Inner Optic Overlay Diffuser Accessories



Brushed Metal
Striped
Perforated
Wavy
Diffuse



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



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Rev. Date: V3 03/06/2019

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## 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.

### CONSTRUCTION & MATERIALS

- Durable 22 ga. cold rolled steel housing provides strength and uniformity
- Ultra-thin 3.0" (76mm) 0-10V or 4.3" (109mm) SmartCast® Technology luminaire height and lightweight design effectively target a broad range of plenum spaces and allow for easy installations
- Luminaire is pre-painted for enhanced matte 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 - 11.3 lbs. (5.1kg); 347V - 12.0 lbs. (5.4kg); EB14 - 15.8 lbs. (7.2kg)

### 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
- Additional diffuser options available. Refer to Inner Optic Overlay Diffuser Accessories table on page 1 for additional details

### ELECTRICAL SYSTEM

- **Power Factor:** = 0.9 nominal
- **Input Power:** Stays constant over life
- **Input Voltage:** 120-277V, 50/60Hz or 347V, 60Hz
- **Operating Temperature Range:** 0°C - + 35°C (32°F - + 95°F)
- **Total Harmonic Distortion:** < 20% for standard fixtures; < 25% for EB option

### CONTROLS

- 10V option provides continuous dimming to 1% with 0-10V DC control protocol
- **10V Source Current:** 0.15mA
- For use with Class 2 dimming systems only
- Use only lighting controls with neutral connection or controls intended for use with LED fixtures
- Reference [www.creelink.com/exLink.asp?70982140Z58R34126620963](http://www.creelink.com/exLink.asp?70982140Z58R34126620963) for recommended dimming controls and wiring diagrams
- **SmartCast® Technology Dimming:** 5-100%

### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Designed for indoor use
- Requires minimum 90°C supply conductors
- UL924 (EB option). Maximum mounting height: 14.0' (4.3m)
- RoHS compliant. Consult factory for additional details
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions
- Meets Buy American requirements within ARRA
- DLC Premium qualified. Please refer to [www.designlights.org/GPL](http://www.designlights.org/GPL) for most current information
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

## Cree SmartCast® Technology

### INTEGRAL MOTION SENSOR

- Passive infrared (PIR)
- **Coverage area:** 100 sq. ft. (30.5m<sup>2</sup>) 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® Technology Deployment Guide at <https://www.creelink.com/exLink.asp?236135640H88E44139771048>

FLEX Series Ambient Adjusted Lumen Maintenance <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	0.97	0.92	0.87	0.82
5°C (41°F)	1.03	0.96	0.91	0.86	0.81
10°C (50°F)	1.02	0.95	0.90	0.85	0.80
15°C (59°F)	1.01	0.94	0.89	0.84	0.79
20°C (68°F)	1.01	0.94	0.89	0.84	0.79
25°C (77°F)	1.00	0.93	0.88	0.83	0.78
30°C (86°F)	0.99	0.92	0.87	0.82	0.77
35°C (95°F)	0.99	0.92	0.87	0.82	0.77

<sup>1</sup> Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors.

<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).



# FLX22™ 2' x 2' Specification LED Troffer

Delivered Lumens & Electrical Data*										
Lumen Package	Controls	Delivered Lumens		System Watts		Total Current (A)				
		3000K/3500K	4000K/5000K	120-277V	347V	120V	208V	240V	277V	347V
32L	10V	3,170	3,370	27	26	0.25	0.14	0.13	0.11	0.08
	CMA			25	26	0.23	0.13	0.12	0.10	0.08
32L w/EB14 Option	10V			30	N/A	0.28	0.16	0.14	0.12	N/A
	CMA			27	N/A	0.25	0.14	0.13	0.11	N/A
50L	10V	4,850	5,150	39	38	0.36	0.21	0.18	0.15	0.12
	CMA			38	41	0.35	0.20	0.18	0.15	0.13
50L w/EB14 Option	10V			43	N/A	0.40	0.23	0.20	0.17	N/A
	CMA			40	N/A	0.37	0.21	0.19	0.16	N/A

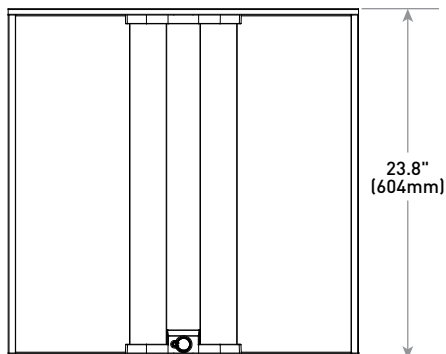
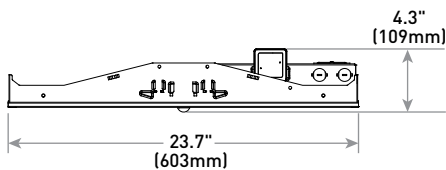
\* Electrical data at 25°C (77°F). Actual wattage and lumens may differ by +/- 10% when operating between 120-277V or 347V +/- 10%.

## Accessories

Field-Installed	
<p><b>Drywall Grid Adapter</b> <a href="#">DGA22-WHT</a></p> <p><b>Surface Mount Kit</b> SMK-FLX22 - Not for use with EB14 or SmartCast® Technology</p> <p><b>6' Flexible Power Whip</b> <a href="#">PW-18/4-06-9T/SS</a> - For use in non-dimming applications only</p> <p><b>Wireless 0-10V Dimming/Switching Interface with Cree SmartCast® Technology</b> <a href="#">CIF-10V-CWC-SNSR</a> - For use with luminaires with 10V controls when integral SmartCast® Technology isn't available</p>	<p><b>Cree SmartCast® Technology Configuration Tool</b> <a href="#">CCT-CWC-1</a> - One required per project CMA control or CIF-10V-CWC-SNSR accessory is selected</p> <p><b>Cree SmartCast® Technology Face Plates†</b> 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</p> <p><b>Cree SmartCast® Technology Wireless Dimmer†</b> CWD-CWC-WH</p> <p><b>Cree SmartCast® Technology Wireless Switch†</b> CWS-CWC-WH</p> <p><b>Cree SmartCast® Technology Wireless Plug Load Controller</b> <a href="#">CPLC-JB-CWC</a></p>

† Refer to the [Wireless Dimmer SmartCast Technology Control](#) spec sheet for more details.

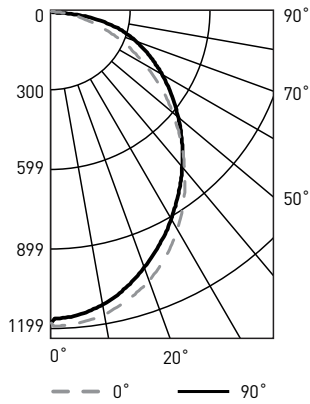
## SMARTCAST® TECHNOLOGY OPTION



**Photometry**

**FLX22-32L-30K-10V-FD BASED ON CESTL REPORT TEST #: PL13283-001A**

Luminaire photometry has been conducted 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	108	104	99	95
2	99	90	83	78
3	90	79	71	65
4	82	70	62	55
5	76	63	54	47
6	70	57	48	41
7	65	52	43	37
8	61	47	39	33
9	57	43	35	30
10	53	40	32	27

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	2,966	2,930	2,992
55°	2,687	2,747	2,934
65°	2,365	2,621	3,010
75°	1,911	2,580	3,281
85°	1,222	2,534	3,309

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

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	888	N/A	28.4%
0-40	1,426	N/A	45.6%
0-60	2,441	N/A	78.1%
0-90	3,126	N/A	100%
0-180	3,126	N/A	100%

**Application Reference**

Open Space						
Spacing	Lumen Package	Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	32L	3,200	27	119	0.40	45
	50L	5,000	39	128	0.58	65
8 x 10	32L	3,200	27	119	0.33	37
	50L	5,000	39	128	0.48	53
10 x 10	32L	3,200	27	119	0.27	30
	50L	5,000	39	128	0.39	43
10 x 12	32L	3,200	27	119	0.21	24
	50L	5,000	39	128	0.30	35

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