

# Essentia® Series Flat Panel

LED Flat Panel – 2' x 4'

## Product Description

The Essentia® Series LED Flat Panel troffer transforms any space into a modern, visually comfortable environment with superior 90 CRI light quality. The remarkably thin 2.8" (70mm) depth of the flat panel easily accommodates narrow plenums or can be suspended for a more stylish look. The 2' x 2' flat panel delivers up to 5,000 lumens of highly efficacious 100 lumens per watt light with great color quality. The enhanced optics enable the flat panel troffer to meet spaces with low glare requirements and improve the customer experience by reducing lighting fatigue.

**Applications:** Office, retail, education, petroleum

## Performance Summary

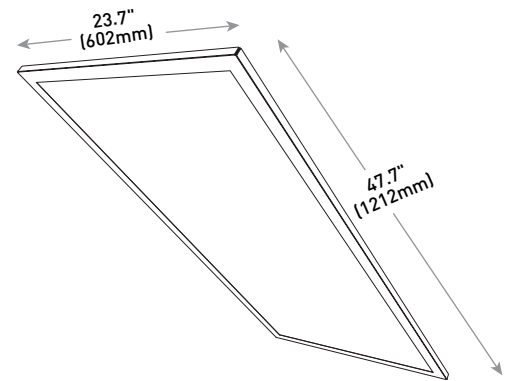
<b>Initial Delivered Lumens:</b> 4,000 - 5,000 lumens
<b>Input Power:</b> 40-50 watts
<b>Efficacy:</b> Up to 100 LPW
<b>CRI:</b> Minimum 90
<b>CCT:</b> 3500K, 4000K, 5000K
<b>Input Voltage:</b> 120-277 VAC
<b>L<sub>70</sub> Lifetime:</b> 79,500 hours at 25° C
<b>Limited Warranty<sup>1</sup>:</b> 5 years
<b>Dimming:</b> 0/1-10V dimming down to 10%
<b>Limited Warranty Emergency Back Up (EB) Battery:</b> 1 Year Battery Back Up. Test regularly in accordance with local codes
<b>Mounting:</b> Recessed* or Suspended w/surface mount kit accessory

<sup>1</sup> 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	
<b>Suspension Kit</b> FPAC-45-1 - Suspension Kit with canopy kit and cables	<b>Drywall Grid Adaptor</b> DGA24-WHT - Above ceiling access required
<b>Surface Mount Kit</b> SMK-CR24	<b>Chicago Plenum Field Kit</b> CPLFP - Fits all FP types to be installed in the field



## Ordering Information

Example: FP24-40L-35K-10V

Product	Initial Delivered Lumens	CCT	Control	Voltage	Options
<b>FP24</b> Essentia Series Flat Panel 2' x 4'	<b>40L</b> 40W, 4,000 lumens, 100 LPW <b>50L</b> 50W, 5,000 lumens, 100 LPW	<b>35K</b> 3500K <b>40K</b> 4000K <b>50K</b> 5000K	<b>10V</b> 0-10V	<b>Blank</b> - 120-277 volt	<b>EB14 Emergency Backup</b> - 1,400 lumens

NOTE: Price adder may apply depending on configuration



Rev. Date: V7 05/01/2018



## Product Specifications

### CONSTRUCTION & MATERIALS

- Solid aluminum frame provides strength and uniformity
- Ultra-thin 2.8" (70mm) luminaire height and design effectively target a broad range of plenum spaces and allow for easy installations
- Luminaire is post-painted with a soft matte white paint
- Compatible with standard 15/16" and 9/16" T-Bar ceilings<sup>1</sup>
- Compatible with drywall ceilings via accessory kit<sup>2</sup>
- Surface or cable mounting via accessory kits
- Frosted polycarbonate lens for non-pixelated appearance

### OPTICAL SYSTEM

- Edge-lit flat panel optics produce soft balanced low glare illumination
- Components work together to optimize distribution, balancing the delivery of high illuminance levels on horizontal surfaces with an ideal amount of light on walls and vertical surfaces

### ELECTRICAL SYSTEM

- Integral, high-efficiency driver
- **Power Factor:** > 0.9
- **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%

### CONTROLS

- Continuous dimming to 10% with 0-10V DC control protocol
- **10V Source Current:** 0.10mA
- For use with Class 2 dimming systems only. Reference [www.creelink.com/exLink.asp?70982140Z58R34I26620963](http://www.creelink.com/exLink.asp?70982140Z58R34I26620963) for recommended dimming controls and wiring diagrams

### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- DLC qualified. Please refer to [www.designlights.org/QPL](http://www.designlights.org/QPL) for most current information
- RoHS compliant. Consult factory for additional details
- Suitable for damp locations
- Designed for indoor use
- **Ingress Protection:** IP40
- Type IC rated for direct contact with insulation
- UL924 (EB14 option)
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions-fixtures/results for most current information

<sup>1</sup> Installation in 9/16" T-bar ceilings requires that fixture be aligned to grid aperture by securing four integral hanging clips to T-bar  
<sup>2</sup> Above ceiling access required

Electrical Data*					
Initial Delivered Lumens	System Watts 120-277V	Total Current (A)			
		120V	208V	240V	277V
40L	40	0.41	0.23	0.21	0.18
50L	50	0.52	0.30	0.26	0.22

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

Recommended Essentia® Series Flat Panel Lumen Maintenance Factors (LMF) <sup>1</sup>					
Ambient	Initial LMF	25K hr Projected <sup>2</sup> LMF	50K hr Calculated <sup>3</sup> LMF	75K hr Calculated <sup>3</sup> LMF	100K hr Calculated <sup>3</sup> LMF
25°C (77°F)	1.00	0.91	0.81	0.72	0.64

<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

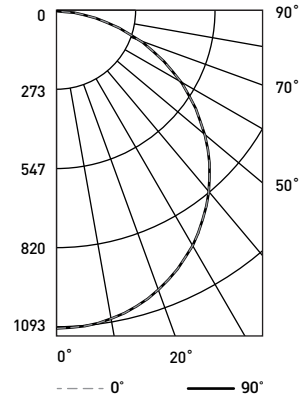
Open Space						
Spacing (ft)	Initial Delivered Lumens	Lumens	Wattage	LPW	w/ft <sup>2</sup>	Average FC
8x8	40L	4,000	40	100	0.60	58
	50L	5,000	50	100	0.75	73
8x10	40L	4,000	40	100	0.50	48
	50L	5,000	50	100	0.63	61
10x10	40L	4,000	40	100	0.40	39
	50L	5,000	50	100	0.50	48
10x12	40L	4,000	40	100	0.32	31
	50L	5,000	50	100	0.40	39

<sup>9</sup> Ceiling, 80/50/20 Reflectances, 2.5 workplane. LLF: 1.0 Initial. Open Space: 50' x 40' x 9'

**Photometry**

**FP24-40L-35K-10V BASED ON DTC REPORT TEST #: PL07123-004**

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%.



Initial Delivered Lumens: 3,867  
 Efficacy: 101.0 LPW  
 S/M: 1.26

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	90	83	77
3	89	79	70	64
4	82	70	61	54
5	75	62	53	46
6	69	56	47	40
7	64	50	42	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/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	1,680	1,696	1,706
55°	1,643	1,649	1,651
65°	1,577	1,574	1,574
75°	1,447	1,441	1,445
85°	1,251	1,231	1,262

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

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	1,020	N/A	26.4%
0-40	1,677	N/A	43.4%
0-60	2,993	N/A	77.4%
0-90	3,868	N/A	100%
0-180	3,469	N/A	100%

