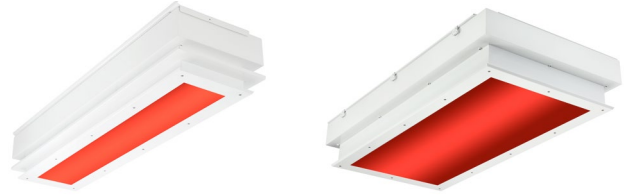


# SIMPLESEAL™

## CSETO SERIES – RED & WHITE LED – TOP ACCESS

### PRODUCT FEATURES:

- » Narrow-spectrum 630nm red LED circuit provides only high-purity light for spectrally-sensitive applications
- » Recessed ceiling mount; grid or flange - 1'x4' & 2'x4' sizes
- » Provides service from above to all electronics without entering the cleanroom
- » Durable construction resists damage from unintended foot traffic
- » 600lb load tested to reduce the hazard of foot traffic
- » One piece overlapping door provides easy cleaning and air-tight integrity of luminaire



### PROJECT INFORMATION

Job Name \_\_\_\_\_

Fixture Type \_\_\_\_\_

Catalog Number \_\_\_\_\_

Approved by \_\_\_\_\_

### SPECIFICATIONS

**HOUSING:** 20-gauge CRS or stainless steel. Hole-free, die formed and welded construction. 18-gauge housing flange with mitered and welded corners. White TGIC polyester powder coat finish – 5-step pre-treatment. Salt spray test: 1,000 hours; Reflectance: 92%.

**DOORFRAME:** 20-gauge type 304 stainless steel (#4 finish-post fabrication). One-piece 60° beveled perimeter construction. Continuous angle lens retention system. Mechanical guide for doorframe fastener alignment. Doorframe secured to housing with stainless steel aircraft cables and captive flush mounted Phillips head stainless steel fasteners (8) for 2x2, (12) for 2x4. Thumb screws used for FN option.

**OPTICS:** Symmetric optic includes diffused, impact-resistant acrylic lens. FN option includes FDA approved Food Zone clear polycarbonate lens outer lens; diffused acrylic inner lens.

**DOORFRAME GASKET:** One-piece closed cell extruded Nitrile gasket seals Doorframe to housing and ceiling structure.

**TOP ACCESS PANEL:** 20-gauge CRS panel is cable hinged to housing for room-side removal. Panel is sealed with a closed cell gasket to housing inner surface. Protected from accidental foot traffic to 600lbs static load without damage when properly installed.

**ELECTRICAL:** Replaceable white mid-power LED array. Available 3500K, 4000K and 5000K color temperatures with maximum 3-step MacAdam variation allowance. Minimum 82 CRI, R9>0. 630nm red mid-power LED array (16nm FWHM bandwidth). 120/277VAC or 347VAC, 50/60Hz electrical input with replaceable high power factor electronic, constant-current driver (<10% THD, >0.90 PF). Minimum 85% driver efficiency. Standard 0-10V dimming with 1-100% range with dim-to-dark capabilities on white and red circuit (non dim-to-dark with 347V; 495 µA maximum source current per circuit). Optional 0-10V dimming with 0.1-100% range and dim-to-dark capabilities via eldoLED SOLOdrive series driver (n/a 347V input; ≤0.5V required from dimming control for dim-to-dark operation; 600µA max. source current). White circuit and red circuit can be independently powered and dimmed.

**INSTALLATION:** Non-IC recessed ceiling mounting into walkable grid or walkable ceiling systems. Walkable ceiling (flange) installation suitable for ceilings up to 4" in thickness. Secured to ceiling with continuous perimeter compression to ceiling panel. Grid installation suitable for 1" and 1.5" T-bar ceilings. Supplemental support required. Housing is universal in construction between grid and flange-style mounting types.

**PHOTOMETRICS:** Photometry tested to the IESNA LM-79-08 standard. For additional photometric data, please go to [www.kenall.com](http://www.kenall.com).

**WARRANTY:** Limited five (5) year warranty.

**LISTINGS:** Luminaire is certified to UL standards by Intertek Testing Laboratories for Wet Location. Certified IP6x from above ceiling (Dust Tight). Certified IP65 from below per IEC 60598. NSF2 Splash/Non-Food Zone. CCEA Approved. Suitable for FED-STD-209E/Class 1 (ISO 3), Biosafety Labs Rated BSL 3 and 4. as well as EU GMP Grade A Cleanrooms. Optional NSF2 Food Zone/ Non-Contact. Build America, Buy America Act compliant.



### ORDERING INFORMATION (Ex: CSETO-24-23R/90L-40K8-DIM1-DV-2F-2H-SYM)

Model	Size	Lamp Power	Lamp Color	Driver	Voltage	Doorframe	Housing	Optics	Options
<b>CSETO</b>							<b>2H</b>	<b>SYM</b>	
<b>Size</b>		<b>Lamp Power</b>			<b>Voltage</b>		<b>Housing Options</b>		
<b>14</b>	1'x4'	<b>1'x4'</b>			<b>DV</b>	120-277VAC, 50/60Hz	<b>2H</b>	20-Ga CRS	
<b>24</b>	2'x4'	<b>23R/45L</b>	23 Watt Red/45 Watt White LED		<b>120</b>	120VAC			
		<b>23R</b>	23 Watt Red LED		<b>277</b>	277VAC		<b>Optics</b>	
					<b>347</b>	347VAC		<b>SYM</b>	Symmetric, Diffused DR Acrylic
		<b>2'x4'</b>			<b>Doorframe Options</b>			<b>Options</b>	
		<b>23R/67L</b>	23 Watt Red/67 Watt White LED		<b>5F</b>	20-Ga Type 304 SS (STD)		<b>LEL</b>	10W Self-Testing Emergency Battery Backup (120V and 277V specified voltages only)
		<b>23R/90L</b>	23 Watt Red/90 Watt White LED		<b>2F</b>	20-Ga CRS		<b>AMF▲</b>	Antimicrobial Finish
		<b>23R/135L</b>	23 Watt Red/135 Watt White LED					<b>FN**</b>	Food Zone/Non-Contact
		<b>46R</b>	46 Watt Red LED					<b>FS</b>	Fuse & Holder
		<b>Lamp Color‡</b>						<b>2C</b>	Two Circuit Wiring (n/a with 45L lamp power)
		<b>35K8</b>	3500K, 82 CRI						
		<b>40K8</b>	4000K, 82 CRI						
		<b>50K8</b>	5000K, 82 CRI						
		<b>Driver Type</b>							
		<b>DIM1</b>	0-10V Dimming to 1%						
		<b>DIM01</b>	0-10V Dimming to 0.1% (n/a with 347V)						
		<b>DALI</b>	DALI Dimming to 1% (n/a with 347V)						

\*\* Lensing consists of FDA approved Food Zone clear polycarbonate outer lens and diffused acrylic inner lens  
▲ Applied only to exposed painted surfaces of luminaire



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## CSETO SERIES – RED & WHITE LED – TOP ACCESS

### PERFORMANCE

#### Red/White LED

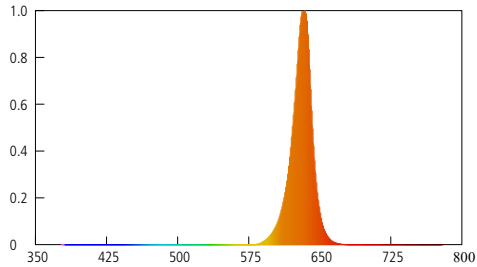
Size	Lamp Code	Initial Delivered Lumens			Initial Delivered Lumens			White/Red Estd. L <sub>70</sub> LED Life (hrs)
		Red Lamp @ 25°C (lm)	Efficacy - Red (lm/W)	Input Power Red (W)	White Lamp @ 25°C (lm)	Efficacy - White (lm/W)	Input Power White (W)	
1' × 4'	23R/45L-35K8	1,123	40	28	5,876	118	50	36,000 / 80,000
	23R/45L-40K8	1,123	40	28	6,077	122	50	36,000 / 80,000
	23R/45L-50K8	1,123	40	28	6,493	130	50	36,000 / 80,000
2' × 4'	23R/67L-35K8	1,123	40	28	9,517	130	73	36,000 / 80,000
	23R/67L-40K8	1,123	40	28	9,842	134	73	36,000 / 80,000
	23R/67L-50K8	1,123	40	28	10,515	143	73	36,000 / 80,000
	23R/90L-35K8	1,123	40	28	12,285	123	100	36,000 / 60,000
	23R/90L-40K8	1,123	40	28	12,704	127	100	36,000 / 60,000
	23R/90L-50K8	1,123	40	28	13,573	136	100	36,000 / 60,000
	23R/135L-35K8	1,123	40	28	18,083	121	149	36,000 / 60,000
	23R/135L-40K8	1,123	40	28	18,700	125	149	36,000 / 60,000
	23R/135L-50K8	1,123	40	28	19,979	134	149	36,000 / 60,000

#### Red LED

Size	Lamp Type	Initial Delivered Lumens			Estd. L <sub>70</sub> LED Life (hrs)
		Red Lamp @ 25°C (lm)	Efficacy - Red (lm/W)	Input Power Red (W)	
1' × 4'	23R	1,123	40	28	36,000
2' × 4'	46R	2,246	40	56	36,000

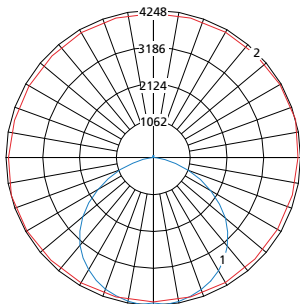
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#### Red Circuit Spectral Power Distribution (SPD)



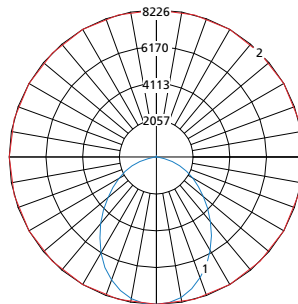
Purity: 1.0  
 UV: 0.0000% (<390nm)  
 Radiant Flux < 575nm: 0.0000%  
 Bandwidth: 16nm  
 Peak Wavelength: 630nm

Model: CSETO-14-23R/45L-40K-DIM1-DV-2F-2H-SYM (White Mode)



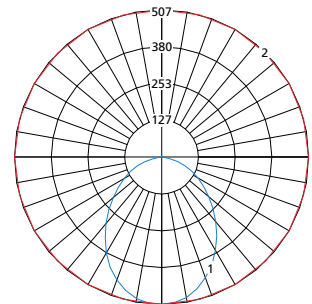
Maximum Candela = 2192 Located At Horizontal Angle = 15, Vertical Angle = 5  
 — 1 - Vertical Plane Through Horizontal Angles (15-195) (Through Max. Cd.)  
 — 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

Model: CSETO-24-23R/135L-40K-DIM1-DV-2F-2H-SYM (White Mode)



Maximum Candela = 8226 Located At Horizontal Angle = 0, Vertical Angle = 0  
 — 1 - Vertical Plane Through Horizontal Angles (0-180) (Through Max. Cd.)  
 — 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

Model: CSETO-24-23R/135L-40K-DIM1-DV-2F-2H-SYM (Red Mode)\*



Maximum Candela = 507 Located At Horizontal Angle = 0, Vertical Angle = 0  
 — 1 - Vertical Plane Through Horizontal Angles (0-180) (Through Max. Cd.)  
 — 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

\*Luminous intensity of "red" mode is equal across all product sizes



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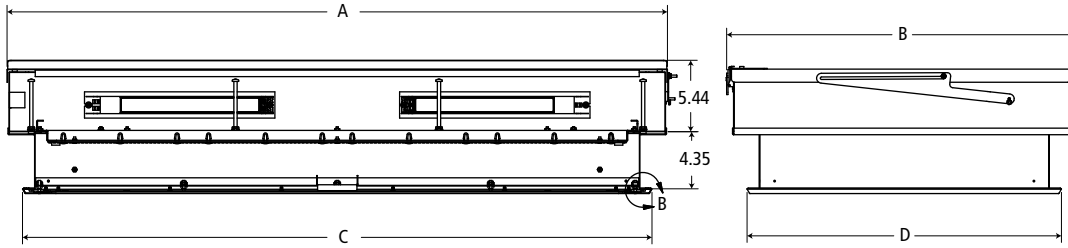
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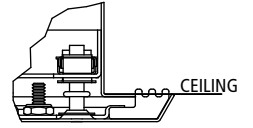
## CSETO SERIES – RED & WHITE LED – TOP ACCESS

### DIMENSIONAL DATA

CROSS SECTION



GASKET PROFILE



DIMENSIONAL DATA (IN INCHES)					
	A	B	C	D	CEILING CUTOUT
1x4	50.30	14.70	47.90	11.90	10.25 × 22.25
2x4	50.30	26.70	47.90	23.90	46.25 × 22.25



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