

# SIMPLESEAL™

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

### PRODUCT FEATURES:

- » Narrow-spectrum 570nm amber LED circuit provides only high-purity light without UV for spectrally-sensitive applications
- » Recessed ceiling mount; grid or flange - 1'x4' & 2'x4'
- » 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

### 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 570nm amber (115 nm FWHM bandwidth) mid-power LED arrays produce no Ultraviolet and less than 0.019 watts of light below 480nm. Available separately circuited white mid-power LED arrays in 3500K, 4000K and 5000K color temperatures with maximum 3-step MacAdam variation allowance. Minimum 82 CRI. 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 amber circuits (non dim-to-dark with 347V; 330 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 amber 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.

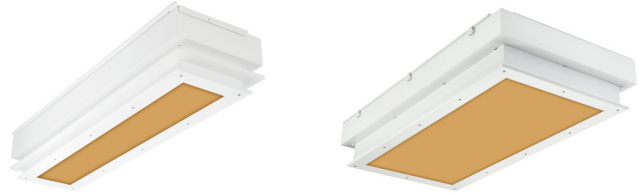
**PHOTOMETRICS:** Photometry tested to the IESNA LM-79-08 standard. For additional photometric data, please go to [www.kenall.com](http://www.kenall.com).

**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.



| PROJECT INFORMATION |       |
|---------------------|-------|
| Job Name            | _____ |
| Fixture Type        | _____ |
| Catalog Number      | _____ |
| Approved by         | _____ |



### ORDERING INFORMATION (Ex: CSETO-24-45AD/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>Driver Type</b>                                       |         |           |           | <b>Housing Options</b>   |         |
|              | <b>14</b> 1'x4'                      |            |            | <b>DIM1</b> 0-10V Dimming to 1%                          |         |           |           | <b>2H</b> 20-Ga CRS in Gloss White   |         |
|              | <b>24</b> 2'x4'                      |            |            | <b>DIM01</b> 0-10V Dimming to 0.1% (n/a with 347V)       |         |           |           |  |         |
|              |                                      |            |            | <b>DALI</b> DALI Dimming to 1% (n/a with 347V)           |         |           |           | <b>Optics</b>  |         |
|              | <b>1'x4'</b>                         |            |            | <b>Voltage</b>   |         |           |           | <b>SYM</b> Symmetric, Diffused DR Acrylic  |         |
|              | <b>45A/45L</b> 45W Amber/45W White   |            |            | <b>DV</b> 120-277VAC, 50/60Hz                            |         |           |           | <b>Options</b>   |         |
|              | <b>45A</b> 45 Watt Amber Only        |            |            | <b>120</b> 120VAC  |         |           |           | <b>LEL</b> 10W Self-Testing Emergency Battery Backup (120V and 277V specified voltages only) |         |
|              | <b>90A</b> 90 Watt Amber Only        |            |            | <b>277</b> 277VAC  |         |           |           | <b>AMF</b> Antimicrobial Finish  |         |
|              |                                      |            |            | <b>347</b> 347VAC  |         |           |           | <b>FN**</b> Food Zone/Non-Contact  |         |
|              | <b>2'x4'</b>                         |            |            | <b>Doorframe Options</b>                                 |         |           |           | <b>FS</b> Fuse & Holder  |         |
|              | <b>45AD/45LD</b> 45W Amber/45W White |            |            | <b>5F</b> 20-Ga Type 304 SS with 4B Brushed Finish (STD) |         |           |           | <b>2C</b> Two Circuit Wiring (n/a with 45L lamp power)                                       |         |
|              | <b>45AD/67L</b> 45W Amber/67W White  |            |            | <b>2F</b> 20-Ga CRS in Gloss White                       |         |           |           |  |         |
|              | <b>45AD/90L</b> 45W Amber/90W White  |            |            |  |         |           |           |  |         |
|              | <b>90A/90L</b> 90W Amber/90W White   |            |            |  |         |           |           |  |         |
|              | <b>90A</b> 90 Watt Amber Only        |            |            |  |         |           |           |  |         |
|              | <b>135A</b> 135 Watt Amber Only      |            |            |  |         |           |           |  |         |
|              | <b>Lamp Color:</b>                   |            |            |  |         |           |           |  |         |
|              | <b>35K8</b> 3500K, 80 CRI            |            |            |  |         |           |           |  |         |
|              | <b>40K8</b> 4000K, 80 CRI            |            |            |  |         |           |           |  |         |
|              | <b>50K8</b> 5000K, 80 CRI            |            |            |  |         |           |           |  |         |

\*\* Lensing consists of FDA approved Food Zone clear polycarbonate outer lens and diffused acrylic inner lens  
 ▲ Applied only to exposed painted surfaces of luminaire  
 ‡ n/a for 'Amber Only' configurations



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### PERFORMANCE

#### Amber/White LED

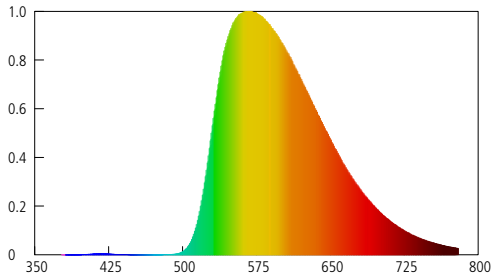
| Size         | Lamp Code      | Initial Delivered Lumens |                         |                       | Initial Delivered Lumens |                         |                       | White/Amber Estd. L <sub>70</sub> LED Life (hrs) |
|--------------|----------------|--------------------------|-------------------------|-----------------------|--------------------------|-------------------------|-----------------------|--|
|              |                | Amber Lamp @ 25°C (lm)   | Efficacy - Amber (lm/W) | Input Power Amber (W) | White Lamp @ 25°C (lm)   | Efficacy - White (lm/W) | Input Power White (W) |  |
| 1' × 4'      | 45A/45L-35K8   | 5,850                    | 119                     | 49                    | 5,876                    | 118                     | 50                    | 60,000 / 80,000                                  |
|              | 45A/45L-40K8   | 5,850                    | 119                     | 49                    | 6,077                    | 122                     | 50                    | 60,000 / 80,000                                  |
|              | 45A/45L-50K8   | 5,850                    | 119                     | 49                    | 6,493                    | 130                     | 50                    | 60,000 / 80,000                                  |
| 2' × 4'      | 45AD/45LD-35K8 | 6,310                    | 129                     | 49                    | 6,873                    | 149                     | 46                    | 60,000 / 80,000                                  |
|              | 45AD/45LD-40K8 | 6,310                    | 129                     | 49                    | 7,108                    | 155                     | 46                    | 60,000 / 80,000                                  |
|              | 45AD/45LD-50K8 | 6,310                    | 129                     | 49                    | 7,594                    | 165                     | 46                    | 60,000 / 80,000                                  |
|              | 45AD/67L-35K8  | 6,310                    | 129                     | 49                    | 9,517                    | 130                     | 73                    | 60,000 / 80,000                                  |
|              | 45AD/67L-40K8  | 6,310                    | 129                     | 49                    | 9,842                    | 134                     | 73                    | 60,000 / 80,000                                  |
|              | 45AD/67L-50K8  | 6,310                    | 129                     | 49                    | 10,515                   | 143                     | 73                    | 60,000 / 80,000                                  |
|              | 45AD/90L-35K8  | 6,310                    | 129                     | 49                    | 12,285                   | 123                     | 100                   | 60,000 / 80,000                                  |
|              | 45AD/90L-40K8  | 6,310                    | 129                     | 49                    | 12,704                   | 127                     | 100                   | 60,000 / 80,000                                  |
|              | 45AD/90L-50K8  | 6,310                    | 129                     | 49                    | 13,573                   | 136                     | 100                   | 60,000 / 80,000                                  |
|              | 90A/90L-35K8   | 12,619                   | 127                     | 99                    | 12,285                   | 123                     | 100                   | 60,000 / 80,000                                  |
|              | 90A/90L-40K8   | 12,619                   | 127                     | 99                    | 12,704                   | 127                     | 100                   | 60,000 / 80,000                                  |
| 90A/90L-50K8 | 12,619         | 127                      | 99                      | 13,573                | 136                      | 100                     | 60,000 / 80,000       |  |

#### Amber LED

| Size    | Lamp Type | Initial Delivered Lumens |                         |                       | Estd. L <sub>70</sub> LED Life (hrs) |
|---------|-----------|--------------------------|-------------------------|-----------------------|--------------------------------------|
|         |           | Amber Lamp @ 25°C (lm)   | Efficacy - Amber (lm/W) | Input Power Amber (W) |                                      |
| 1' × 4' | 45A       | 5,850                    | 119                     | 49                    | 80,000                               |
|         | 90A       | 11,701                   | 119                     | 98                    | 60,000                               |
| 2' × 4' | 90A       | 12,619                   | 129                     | 98                    | 80,000                               |
|         | 135A      | 18,929                   | 129                     | 147                   | 60,000                               |

Subject to change without notice. Visit [www.kenall.com](http://www.kenall.com) for .ies files and additional information

### Spectroradiometric Parameters



Purity: 0.985  
 UV: 0.0000% (<390nm)  
 Radiant Flux < 480nm: 0.08%  
 Bandwidth: 115nm  
 Peak Wavelength: 570nm



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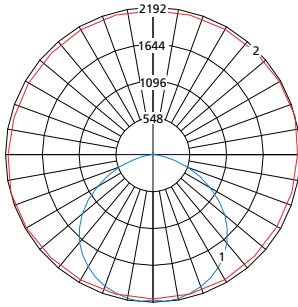
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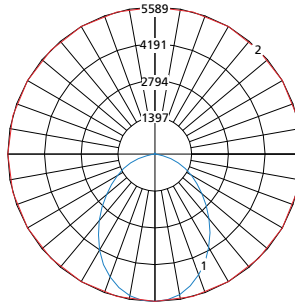
Model: CSETO-14-45A/45L-40K8-DIM1-DV-2F-2H-SYM (White Mode)



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.)

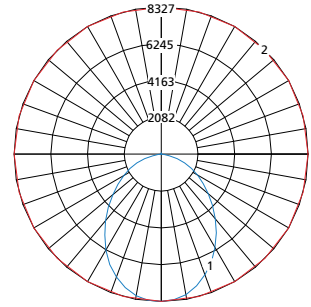
Model: CSETO-24-90A/90L-40K8-DIM1-DV-2F-2H-SYM (White Mode)



Maximum Candela = 5589 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-24-135A-DIM1-DV-2F-2H-SYM (Amber Mode)\*

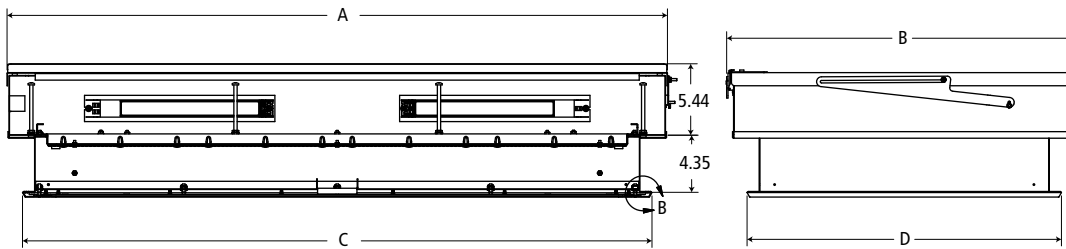


Maximum Candela = 8327 Located At Horizontal Angle = 0, Vertical Angle = 0

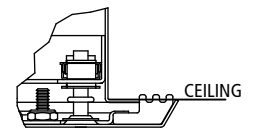
- 1 - Vertical Plane Through Horizontal Angles (0-180) (Through Max. Cd.)
- 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

### DIMENSIONAL DATA

#### CROSS SECTION



#### GASKET PROFILE



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



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