

SIMPLESEAL™

CSEDO SERIES – BIOS SkyBlue™ – OVERLAPPING DOOR

PRODUCT FEATURES:

- » Features BIOS SkyBlue Technology to benefit daytime alertness, cognition, mood and circadian rhythms
- » Diffused high-efficiency lens for reduced glare
- » Suitable for universal installation into 1.0" and 1.5" grid or flange (drywall) ceilings
- » One piece overlapping door provides air-tight integrity of luminaire
- » Optional Food Zone/Non-Contact listing, ideal for food processing applications
- » Optional NSF P442 Protocol assures a sealed cleanroom environment



SPECIFICATIONS

HOUSING: Standard 24-gauge (optional 20-gauge) cold rolled steel, hole-free, one-piece, seam-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.

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

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.

LED MODULE: Serviceable static, dynamic or tunable mid-power Gen 2 BIOS Biological LED modules. Biological Static, Biological Dynamic, and Biological Tunable LED source with blue spectrum peak at 490nm and higher melanopic ratio. CRI 80+ with R9 > 90. Dynamic features 500K downward CCT shift when dimmed for evening applications requiring lower melanopic ratio. Tunable features 2700K CCT for evening applications. Refer to table for specific melanopic values.

DRIVER/CONTROL: 120-277VAC, 50/60Hz electrical input (PF ≥ 0.9, THD < 20%). **Biological Static:** Serviceable, constant-current single channel driver with single analog (0-10V) control input for intensity. 1-100% range with dim to dark capabilities and a linear dimming curve. **Biological Dynamic:** Serviceable constant-current driver with the BIOS Dynamic Bio-Dimming™ module keeps light output constant while reducing melanopic lux. Single analog (0-10V) control input. 1-100% dimming range with dim-to-dark capabilities and a linear dimming curve. Dimming from 100-75% reduces CCT by 500K, dimming below 75% reduces light level. **Biological Tunable:** Serviceable, constant-current multi-channel programmable driver with dual analog (0-10V) control inputs for intensity and CCT. Optional DALI (Type 8) driver. Logarithmic intensity profile with 0.1-100% range, with dim-to-dark capabilities. Linear profile on CCT adjustment.

INSTALLATION: Non-IC recessed ceiling mounting into grid and flange application types. Flange installation utilizes included adjustable swing-out mounting brackets. Grid installation suitable for 1" and 1.5" T-bar ceilings. Housing is field-convertible between grid and flange-style mounting types. See Options for continuous row mounting and install frames.

PHOTOMETRICS: Photometry tested to the IESNA LM-79-08 standard. For additional photometric data, please go to www.kenall.com.

WARRANTY: Limited five (5) year warranty.

LISTINGS: Luminaire is certified to UL standards by Intertek Testing Laboratories for Wet Locations and non-IC recessed installation. Certified IP66 per IEC 60598. NSF2 Splash/Non-Food Zone. CCEA Approved. Suitable for biosafety labs rated BSL 3 and 4. Optional NSF Protocol P442 certified. FED-STD-209E/Class 1 (ISO 3) Cleanrooms. Optional NSF2 Food Zone/Non-Contact. Suitable for EU GMP Grade A cleanrooms.



ORDERING INFORMATION (Ex: CSEDO-24-67B-35K8-DIM1-DV-2F-2H-SYM)

| Model | Size | Lamp Power | Lamp Color | Driver | Voltage | Doorframe | Housing | Optics | Options | Accessories |
|--------------|----------------------------|---------------------------------------|---------------|--|---------|-----------|---------|------------|---------|-------------|
| CSEDO | | | | | | | | SYM | | |
| Size | Lamp Power | Driver Type | Optics | | | | | | | |
| 14 1'x4' | 1'x4' | DIM1 | SYM | Symmetric, Diffused DR Acrylic | | | | | | |
| 22 2'x2' | 45B 45 Watt BIOS | BIODIM1* | Options | LEL† 10W Emergency Battery Pack | | | | | | |
| 24 2'x4' | 67B 67 Watt BIOS | | | AMF* Antimicrobial Finish | | | | | | |
| | 90B 90 Watt BIOS | ATW | Options | FN** Food Zone/Non-Contact | | | | | | |
| | 2'x2' | | | FS Fuse & Holder | | | | | | |
| | 45BD 45 Watt Dual-Row BIOS | DTW | Options | HJ Sealed Wireway | | | | | | |
| | 67B 67 Watt BIOS | | | RF Radio Frequency Filter (voltage specific selection required) | | | | | | |
| | 90B 90 Watt BIOS | Voltage | | RM* Continuous Row Mounting | | | | | | |
| | 2'x4' | DV 120-277VAC, 50/60Hz | | P442‡ Optional NSF Protocol P442 Certified | | | | | | |
| | 45BD 45 Watt Dual-Row BIOS | 120 120VAC | | Accessories | | | | | | |
| | 67B 67 Watt BIOS | 277 277VAC | | IF** Install Frame | | | | | | |
| | 90B 90 Watt BIOS | Doorframe Options | | * Add .375" to ceiling cut out dimensions | | | | | | |
| | 135B 135 Watt BIOS | 5F 20-Ga Type 304 SS (STD) | | ** Lensing consists of FDA approved Food Zone clear polycarbonate outer lens and diffused acrylic inner lens | | | | | | |
| | 180B 180 Watt BIOS | 2F 20-Ga CRS | | † n/a with 180B lamp option; voltage-specific selection required; height of fixture is 5.875" | | | | | | |
| | | XF 20-Ga Type 316 SS | | ▲ Applied only to exposed painted surfaces of luminaire (not available on stainless steel doorframes) | | | | | | |
| | | PAF .063" Painted Fabricated Aluminum | | ‡ P442 only available on CSEDO24 | | | | | | |
| | | Housing Options | | ◆ Only available when installed in drywall ceilings (flange mount) | | | | | | |
| | | 4H 24-Ga CRS (STD) | | ◆ Not available with 135B and 180B. | | | | | | |
| | | 2H 20-Ga CRS | | | | | | | | |
| | | 5H 20-Ga Type 304 SS | | | | | | | | |
| | | XH 20-Ga Type 316 SS | | | | | | | | |
| | | PAH .050" Painted Aluminum | | | | | | | | |



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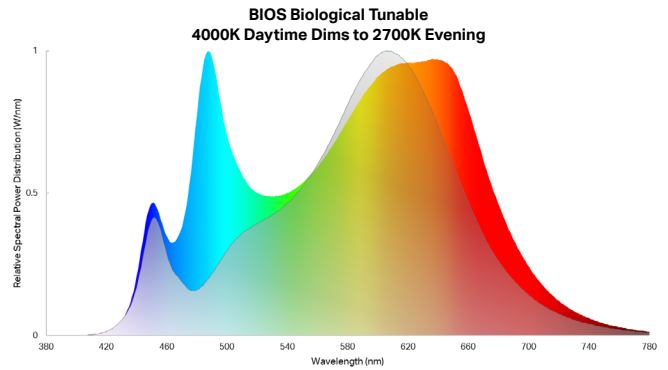
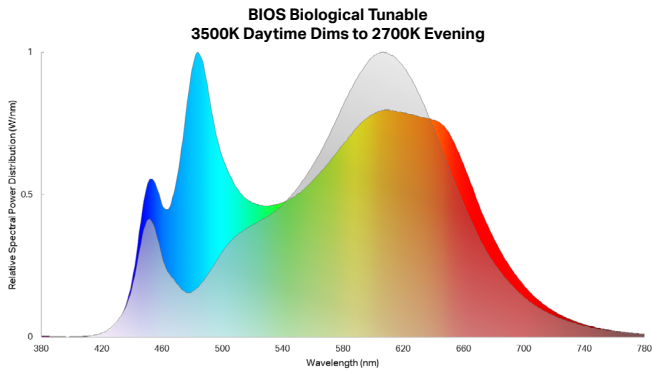
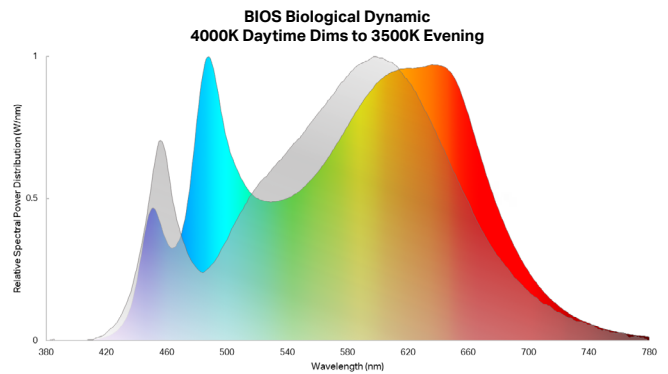
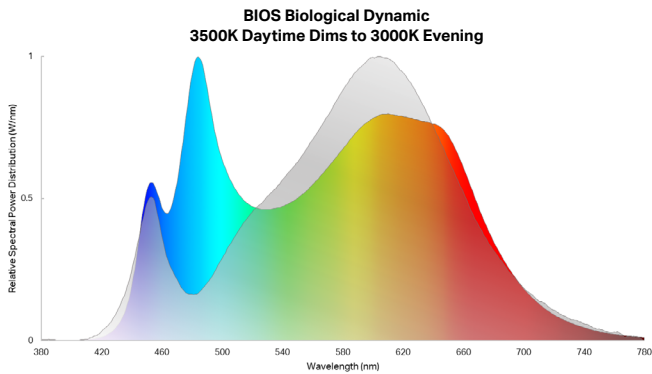
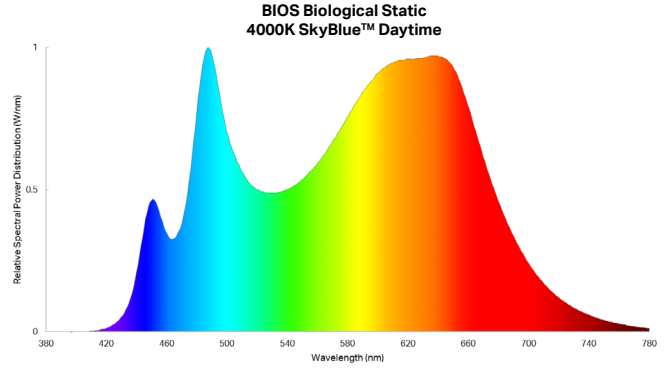
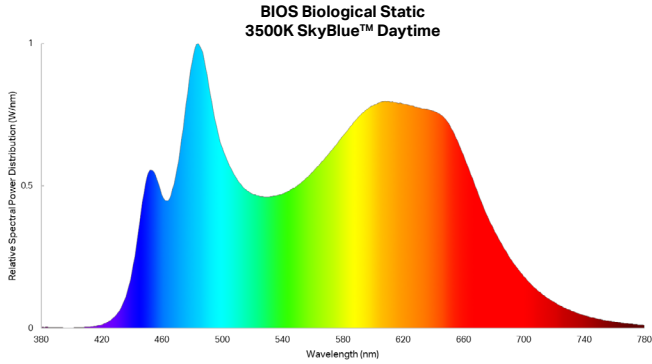
DELIVERED MELANOPIC RATIO OF 35K8 BIOS

| BIOS Type | Spectral Mode | Nominal CCT | Melanopic Ratio* | |
|--------------------|---------------|-------------|------------------|-------|
| | | | m-EER | m-DER |
| Biological Static | Daytime | 3500K | ≥0.80 | ≥0.72 |
| Biological Dynamic | Daytime | 3500K | ≥0.80 | ≥0.72 |
| | Evening | 3000K | ≤0.49 | ≤0.44 |
| Biological Tunable | Daytime | 3500K | ≥0.80 | ≥0.72 |
| | Evening | 2700K | ≤0.47 | ≤0.42 |

DELIVERED MELANOPIC RATIO OF 40K8 BIOS

| BIOS Type | Spectral Mode | Nominal CCT | Melanopic Ratio* | |
|--------------------|---------------|-------------|------------------|-------|
| | | | m-EER | m-DER |
| Biological Static | Daytime | 4000K | ≥0.90 | ≥0.81 |
| Biological Dynamic | Daytime | 4000K | ≥0.90 | ≥0.81 |
| | Evening | 3500K | ≤0.57 | ≤0.51 |
| Biological Tunable | Daytime | 4000K | ≥0.90 | ≥0.81 |
| | Evening | 2700K | ≤0.47 | ≤0.42 |

*Melanopic ratios are provided in two forms: (m-EER) which is calculated using the WELL v2 methodology and the corresponding CIE melanopic Daylight Equivalent Ratio, (m-DER).



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PERFORMANCE

| Model | Lamp Type | Initial Delivered Lumens | | Input Power (W) | Drive Current (mA) | Estd. L70 LED Life (Hrs) |
|---------|-----------|--------------------------|-----------------|-----------------|--------------------|--------------------------|
| | | @ 25°C | Efficacy (lm/W) | | | |
| CSEDO14 | 45B-35K8 | 4,046 | 83 | 49 | 100 | 80,000 |
| | 45B-40K8 | 4,393 | 90 | | | |
| | 67B-35K8 | 6,197 | 86 | 72 | 75 | 80,000 |
| | 67B-40K8 | 6,729 | 93 | | | |
| | 90B-35K8 | 7,907 | 82 | 97 | 100 | 60,000 |
| | 90B-40K8 | 8,586 | 89 | | | |
| CSEDO22 | 45BD-35K8 | 4,298 | 88 | 49 | 100 | 80,000 |
| | 45BD-40K8 | 4,667 | 95 | | | |
| | 67B-35K8 | 6,584 | 91 | 72 | 75 | 80,000 |
| | 67B-40K8 | 7,150 | 99 | | | |
| | 90B-35K8 | 8,461 | 87 | 97 | 100 | 60,000 |
| | 90B-40K8 | 9,187 | 95 | | | |
| CSEDO24 | 45BD-35K8 | 5,275 | 115 | 46 | 50 | 100,000 |
| | 45BD-40K8 | 5,635 | 123 | | | |
| | 67B-35K8 | 7,337 | 102 | 72 | 75 | 80,000 |
| | 67B-40K8 | 7,838 | 109 | | | |
| | 90B-35K8 | 9,276 | 96 | 97 | 100 | 60,000 |
| | 90B-40K8 | 10,072 | 104 | | | |
| | 135B-35K8 | 13,149 | 89 | 147 | 100 | 60,000 |
| | 135B-40K8 | 14,277 | 97 | | | |
| | 180B-35K8 | 17,929 | 91 | 196 | 100 | 60,000 |
| | 180B-40K8 | 19,468 | 99 | | | |

Displayed information is for described luminaires only. Subject to change without notice.
Visit www.kenall.com for IES files and additional information.



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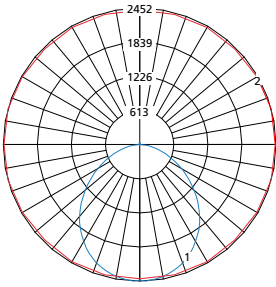
CSEDO SERIES – BIOS SkyBlue™ – OVERLAPPING DOOR

PERFORMANCE

Model: CSEDO14-67B-35K8-DIM1-1-DV-2F-2H-SYM

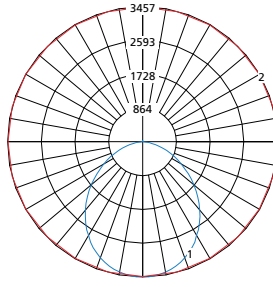
Model: CSEDO22-90B-35K8-DIM1-1-DV-2F-2H-SYM

Model: CSEDO24-180B-35K8-DIM1-1-DV-2F-2H-SYM



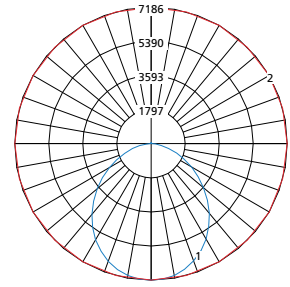
Maximum Candela = 2452 Located At Horizontal Angle = 15, Vertical Angle = 2.5

- 1 - Vertical Plane Through Horizontal Angles (15-195) (Through Max. Cd.)
- 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)



Max Candela = 4469 Located At Horizontal Angle = 15, Vertical Angle = 2.5

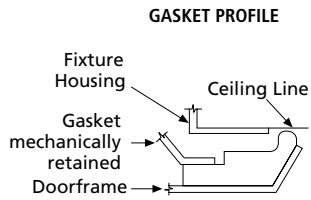
- 1 - Vertical Plane Through Horizontal Angles (15 - 195) (Through Max. Cd.)
- 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)



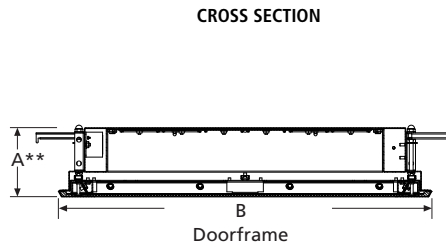
Max Candela = 7186 Located At Horizontal Angle = 0, Vertical Angle = 0

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

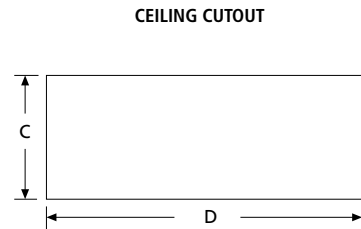
DIMENSIONAL DATA



GASKET PROFILE



CROSS SECTION



CEILING CUTOUT

DIMENSIONAL DATA (IN INCHES)

| | A | B | C | D |
|-----|------|---------------|-------|-------|
| 1x4 | 4.43 | 11.94 x 47.94 | 10.85 | 46.85 |
| 2x2 | 4.43 | 23.94 x 23.94 | 22.85 | 22.85 |
| 2x4 | 4.43 | 23.94 x 47.94 | 22.85 | 46.85 |

* Add .375" to ceiling cut out dimensions when IF Option is specified

** Height is 5.875" with LEL option



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