PROJECT INFORMATION				
	Job Name		Catalog Number	
	Fixture Type		Approved by	

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

1'×4' 2'×2' 2'×4'

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 2×2, (12) for 2×4. Thumb screws optional.

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. CSEDO is participating in Declare.

LED · ETL US LISTED · IP66 · NSF · ISO 3 Class 1 · CCEA Approved · FN OPTION · P442 Option · BSL 3-4 · bios · Declare.

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
- **14** 1'×4'
- **22** 2'×2'
- **24** 2'×4'

Lamp Power

1'×4'
- **45B** 45 Watt BIOS
- **67B** 67 Watt BIOS
- **90B** 90 Watt BIOS

2'×2'
- **45BD** 45 Watt Dual-Row BIOS
- **67B** 67 Watt BIOS
- **90B** 90 Watt BIOS

2'×4'
- **45BD** 45 Watt Dual-Row BIOS
- **67B** 67 Watt BIOS
- **90B** 90 Watt BIOS
- **135B** 135 Watt BIOS
- **180B** 180 Watt BIOS

Lamp Color
- **35K8** 3500K SkyBlue / 80CRI min / R9 90+
- **40K8** 4000K SkyBlue / 80CRI min / R9 90+

Driver Type
- **DIM1** BIOS Biological Static with 0-10V Dimming to 1% with Dim-to-Dark Capabilities
- **BIODIM1**♦ BIOS Biological Dynamic with 0-10V Intensity Dimming to 1% and Dim-to-Dark Capabilities
- **ATW** BIOS Biological Tunable White with 0-10V Control of Intensity and CCT independently on 2 separate channels
- **DTW** BIOS Biological Tunable White with DALI Control of Intensity and CCT independently on 2 separate channels

Voltage
- **DV** 120-277VAC, 50/60Hz
- **120** 120VAC
- **277** 277VAC

Doorframe Options
- **5F** 20-Ga Type 304 SS (STD)
- **2F** 20-Ga CRS
- **XF** 20-Ga Type 316 SS
- **PAF** .063" Painted Fabricated Aluminum

Housing Options
- **4H** 24-Ga CRS (STD)
- **2H** 20-Ga CRS
- **5H** 20-Ga Type 304 SS
- **XH** 20-Ga Type 316 SS
- **PAH** .050" Painted Aluminum

Optics
- **SYM** Symmetric, Diffused DR Acrylic

Options
- **LEL**† 10W Emergency Battery Pack
- **AMF**▲ Antimicrobial Finish
- **FN**** Food Zone/Non-Contact
- **TS** Stainless Steel Doorframe Thumb Screws
- **FS** Fuse & Holder
- **HJ** Sealed Wireway
- **RF** Radio Frequency Filter (voltage specific selection required)
- **RM**♦ Continuous Row Mounting
- **P442**‡ Optional NSF Protocol P442 Certified

Accessories
- **IF***♦ Install Frame

* Add .375" to ceiling cut out dimensions
** Lensing consists of FDA approved Food Zone clear polycarbonate outer lens and diffused acrylic inner lens
† 0ºC/32ºF min. ambient
▲ Applied only to exposed painted surfaces of luminaire (not available on stainless steel doorframes)
‡ P442 only available on CSEDO24
♦ Only available when installed in drywall ceilings (flange mount)
♦ Not available with 135B and 180B.

This product is able to comply with the latest domestic preference legislation, such as the Buy American Act (BAA), Trade Agreement Ace (TAA), Build America, Buy America Act (BABA), and others. It may be covered by patents found at www.kenall.com/patents.Content of specification sheets is subject to change; please consult www.kenall.com for current product details. ©2025 Kenall Mfg.Co.

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CSEDO SERIES – BIOS SkyBlue™ – OVERLAPPING DOOR

DELIVERED MELANOPIC RATIO OF 35K8 BIOS

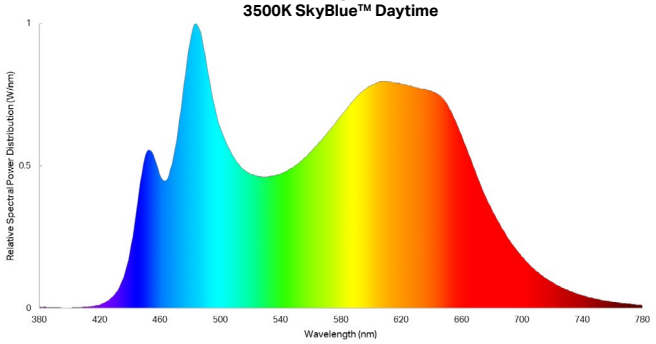
BIOS Type	Spectral Mode	Nominal CCT	Melanopic Ratio*	
			m-EER	m-DER
Biological Static	Daytime	3500K	≥0.80	≥0.72
Biological Dynamic	Daytime	3500K	≥0.80	≥0.72
	Evening	3000K	≤0.49	≤0.44
Biological Tunable	Daytime	3500K	≥0.80	≥0.72
	Evening	2700K	≤0.47	≤0.42

DELIVERED MELANOPIC RATIO OF 40K8 BIOS

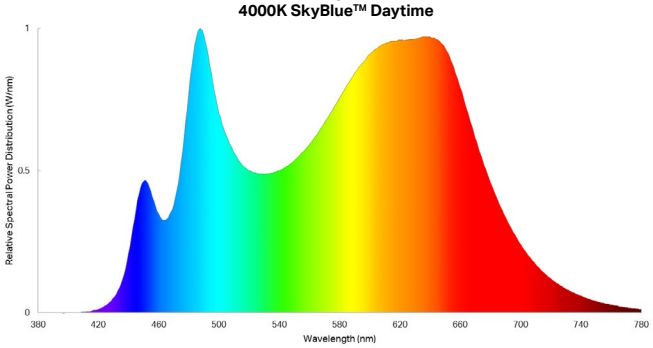
BIOS Type	Spectral Mode	Nominal CCT	Melanopic Ratio*	
			m-EER	m-DER
Biological Static	Daytime	4000K	≥0.90	≥0.81
Biological Dynamic	Daytime	4000K	≥0.90	≥0.81
	Evening	3500K	≤0.57	≤0.51
Biological Tunable	Daytime	4000K	≥0.90	≥0.81
	Evening	2700K	≤0.47	≤0.42

*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).

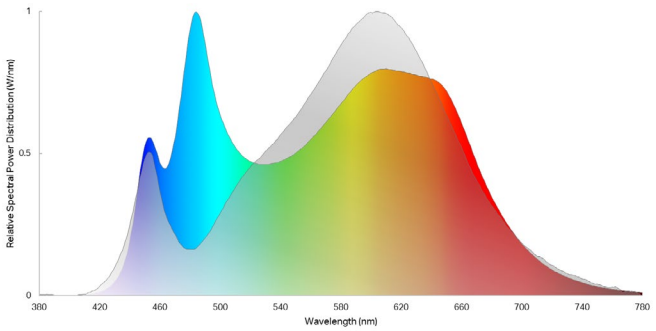
BIOS Biological Static
3500K SkyBlue™ Daytime



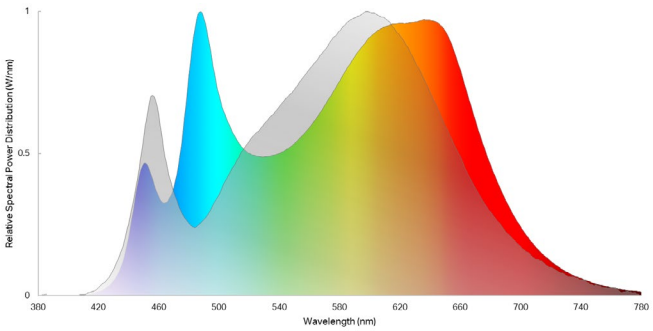
BIOS Biological Static
4000K SkyBlue™ Daytime



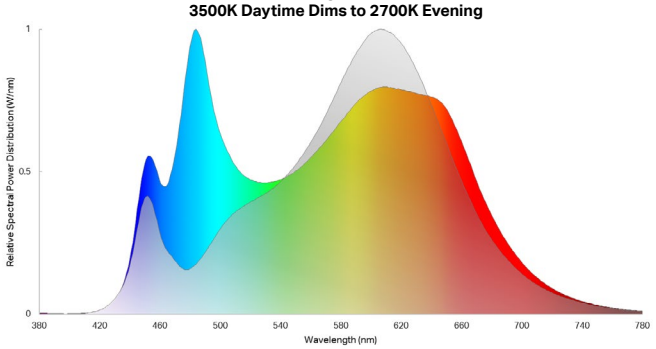
BIOS Biological Dynamic
3500K Daytime Dims to 3000K Evening



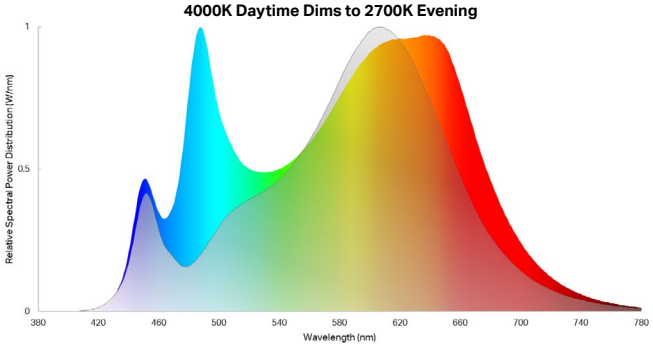
BIOS Biological Dynamic
4000K Daytime Dims to 3500K Evening



BIOS Biological Tunable
3500K Daytime Dims to 2700K Evening



BIOS Biological Tunable
4000K Daytime Dims to 2700K Evening



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PERFORMANCE

Model	Lamp Type	Initial Delivered Lumens @ 25°C	Efficacy (lm/W)	Input Power (W)	Drive Current (mA)	Estd. L_{70} LED Life (Hrs)
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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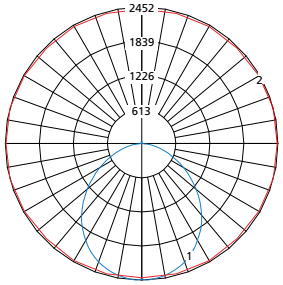
CSEDO SERIES – BIOS SkyBlue™ – OVERLAPPING DOOR

PERFORMANCE

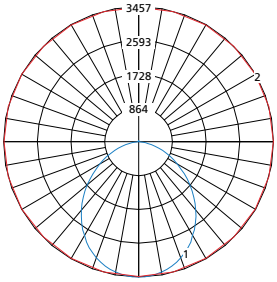
Model: CSEDO14-67B-35K8-DIM1-1-DV-2F-2H-SYM



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.)

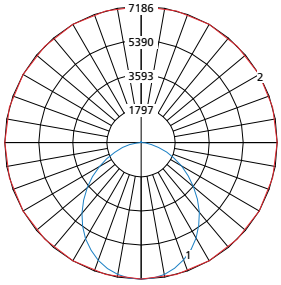
Model: CSEDO22-90B-35K8-DIM1-1-DV-2F-2H-SYM



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.)

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

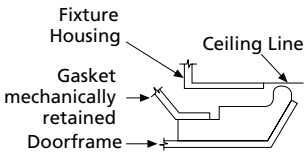


Max Candela = 7186 Located At Horizontal Angle = 0, Vertical Angle = 0

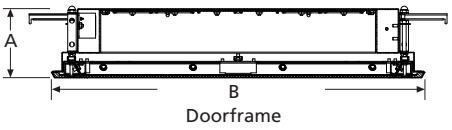
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

DIMENSIONAL DATA

GASKET PROFILE



CROSS SECTION



CEILING CUTOUT

DIMENSIONAL DATA (IN INCHES)

	A	B	C	D
1×4	4.43	11.94 × 47.94	10.85	46.85
2×2	4.43	23.94 × 23.94	22.85	22.85
2×4	4.43	23.94 × 47.94	22.85	46.85

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

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