

SIMPLESEAL® CSEDO

RECESSED OVERLAPPING DOOR - NARROW SPECTRUM LED

Luminaires for Cleanroom Applications



PRODUCT FEATURES

- Recessed ceiling mount; grid or flange - 1'x4', 2'x2', 2'x4'
- Phosphor-converted 570 nm Amber, Native 590 nm Amber, 630 nm Red and 660 nm Deep Red lamping options for spectrally sensitive applications such as photo-sensitive manufacturing
- White LED light sources deliver greater than 90 CRI without sacrificing efficacy
- Evenly illuminated diffuser in white mode provides reduced glare and surface brightness
- Low-profile housing fits in tight spaces — only 2.5" deep
- Overlapping doorframe with a progressive surface for effective cleaning

SPECIFICATIONS

HOUSING: Constructed of die-formed, fully seam-welded 24-gauge cold rolled steel as standard. Optional 20-gauge CRS, 304 stainless, 316 stainless steel or .050" aluminum. 18-gauge housing flange with mitered and welded-corners in matching material type. White TGIC polyester powder coat finish with 5-step pre-treatment. Salt spray test: 1,000 hours; Reflectance: 92%.

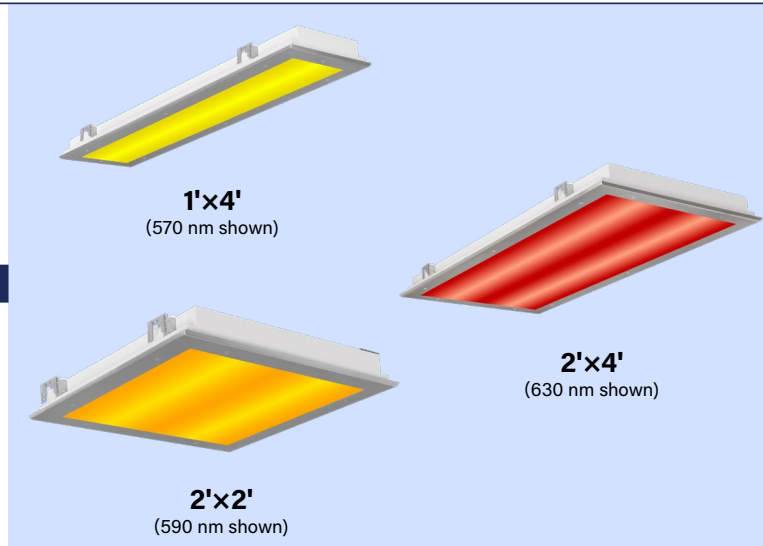
DOORFRAME: Standard one-piece, 20-gauge Type 304 stainless steel with post-fabrication 4B brushed finish. One-piece seamless beveled perimeter construction. Optional Type 316 SS with 4B brushed finish. Optional CRS or aluminum construction in Gloss White. Continuous lens retention system. Mechanical guide for doorframe fastener alignment. Doorframe secured to housing with galvanized steel aircraft cables and captive, flush mounted Phillips head stainless steel fasteners - (8) for 1x4 and 2x2 sizes, (10) for 2x4; thumb screws optional.

OPTICS: High-impact diffuse acrylic lens, nominal .125" thick. Continuous seal to perimeter of door aperture with RTV silicone and mechanical retention bracketry. FN option includes FDA-approved clear polycarbonate outer lens with acrylic inner diffuser.

DOORFRAME GASKET: One-piece, extruded closed cell Nitrile gasketing continuously seals Doorframe to Housing and ceiling surface.

LED MODULE: Replaceable narrow spectrum 570 nm phosphor-converted amber (115 nm bandwidth), 590 nm native amber (15 nm bandwidth), 630 nm native red or 660 nm native deep red mid-power LED arrays for spectrally sensitive applications. Available separately circuited and controlled white LED source with 90CRI min., 3 SDCM color variation max.

DRIVER: 120-277VAC or 347VAC, 50/60Hz electrical input with serviceable constant-current drivers (<20% THD, >0.90 PF). Minimum 85% driver efficiency. Standard 0-10V dimming with 1-100% range and dim-to-dark capabilities. 0.4mA maximum driver source current. Consult factory for DALI availability. Narrow spectrum and white LED circuits can be independently powered and dimmed.



SENSOR & CONTROLS: Wattstopper or third-party control options available upon request. To see the full list of compatible controls, click [here](#).

INSTALLATION: Suitable for recessed ceiling installation in specified grid or drywall (flange) ceiling types. Grid installation suitable for 15/16", 1" and 1.5" wide T-bar ceilings. Includes integral grid brackets designed for lay-in applications with nominal T-bar heights of 1.5", 1-1/16", and 2". Refer to installation instructions for additional details. The construction can accommodate other T-bar heights when means of attachment to the structure are provided by others. Flange constructions shall be specified for total ceiling thicknesses (including structure) of 1.30"-2.20" (F1) or 2.10"-3.00" (F2). See Options for continuous row mounting and install frames. Gasketed wire access panel on rear of housing allows electrical connections without door removal; includes one 7/8" hole and one 7/8" knockout. Suitable for -30°C to 40°C ambient environments, unless otherwise noted.

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 LED warranty.

LISTINGS: Luminaire is certified to UL standards by Intertek Testing Laboratories for recessed ceiling insulation contact (IC-rated) and Indoor Wet Location installations. Certified IP66 per IEC 60598. Certified NSF2 Splash 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. Build America, Buy America Act compliant.

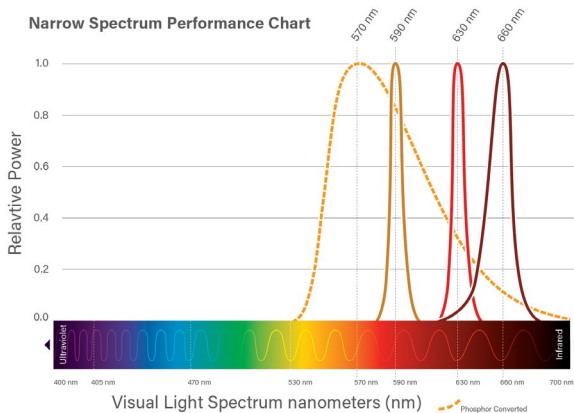
ORDERING INFORMATION (EX: CSEDO-24-F2-45A/80L-35K9-DIM1-DV-5F-2H-SYM-1-LEL)

Model	Size	Ceiling Type	Lamp Power	Lamp Color	Driver	Voltage	Doorframe	Housing	Optical	Fasteners	Options	Accessories
CSEDO					DIM1		SYM					
Size				2'x4' Lamp Power Continued								
14	1'x4' Nominal			54DR/63L	54W 660 nm Native Deep Red / 63W White LED			4H	24-Ga CRS in Gloss White (STD)		* Add .375" to ceiling cut out dimensions	
22	2'x2' Nominal			54DR/80L	54W 660 nm Native Deep Red / 80W White LED			2H	20-Ga CRS in Gloss White		† Only available when installed in drywall ceilings (flange mount)	
24	2'x4' Nominal			108DR	108W 660 nm Native Deep Red			5H	20-Ga Type 304 SS		‡ n/a with 347V input. 0°C/32°F min. ambient. Wired to the narrow spectrum circuit when combination lamping is specified.	
Ceiling Type				Lamp Color (White Lamping Only)								
G	Grid 1"-1.5" T Bar			45A/44L	45W 570 nm PC Amber / 44W White LED			XH	20-Ga Type 316 SS		▲ Applied only to exposed painted surfaces of luminaire (not available on stainless steel doorframes)	
F1*	Flange 1.30"-2.20" Ceiling Thickness			45A/63L	45W 570 nm PC Amber / 63W White LED			PAH	.050" Fabricated Aluminum in Gloss White		** Lensing consists of FDA approved Food Zone clear polycarbonate outer lens and diffused acrylic inner lens	
F2*	Flange 2.10"-3.00" Ceiling Thickness			45A/80L	45W 570 nm PC Amber / 80W White LED			Optical Distribution				
Lamp Power				90A/80L								
1'x4' & 2'x2'				90A								
22R/44L	22W 630 nm Native Red / 44W White LED			135A								
22R/63L	22W 630 nm Native Red / 63W White LED			27K9								
22R	22W 630 nm Native Red			30K9								
22NA/44L	22W 590 nm Native Amber / 44W White LED			35K9								
22NA/63L	22W 590 nm Native Amber / 63W White LED			40K9								
22NA	22W 590 nm Native Amber			50K9								
54DR	54W 660 nm Native Deep Red			Driver Type								
45A/44L	45W 570 nm PC Amber / 44W White LED			DIM1								
45A	45W 570 nm PC Amber			Voltage								
90A	90W 570 nm PC Amber			DV								
2'x4'				347								
22R/63L	22W 630 nm Native Red / 63W White LED			Doorframe Options								
22R/80L	22W 630 nm Native Red / 80W White LED			20								
22R/120L	22W 630 nm Native Red / 120W White LED			2F								
44R	44W 630 nm Native Red			XF								
22NA/63L	22W 590 nm Native Amber / 63W White LED			PAF								
22NA/80L	22W 590 nm Native Amber / 80W White LED			Accessories								
22NA/120L	22W 590 nm Native Amber / 120W White LED			IF*†								
44NA	44W 590 nm Native Amber			Install Frame (for use with Ceiling Type F2 only)								

PERFORMANCE

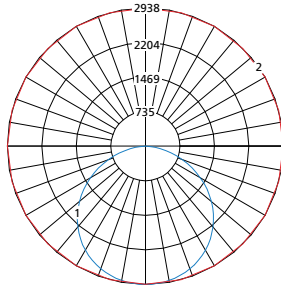
SIZE	LAMP CODE	LAMP DESCRIPTION	Initial Delivered Lumens, By Lamp Type (lm)					EFFICACY, WHITE (LM/W)	INPUT POWER, COLOR (W)	INPUT POWER, WHITE (W)	TM-21 REPORTED L70 (HRS)
			COLORS	30K9	35K9	40K9	50K9				
1 x 4	22NA/44L	590 nm Native Amber / White	1,239	5,805	6,023	6,165	6,257	116 - 125	27	50	>60K / >102K
	22NA/63L		1,239	8,154	8,460	8,659	8,789	117 - 127	27	69	
	45A/44L	570 nm PC Amber / White	5,941	5,805	6,023	6,165	6,257	116 - 125	47	50	>60K / >102K
	22R/44L	630 nm Native Red / White	1,425	5,805	6,023	6,165	6,257	116 - 125	27	50	>60K / >102K
	22R/63L		1,425	8,154	8,460	8,659	8,789	117 - 127	27	69	
	22NA	590 nm Native Amber	1,239	-	-	-	-	-	27	-	>60,000
	45A	570 nm PC Amber	5,941	-	-	-	-	-	47	-	>60,000
	22R	630 nm Native Red	1,425	-	-	-	-	-	27	-	>60,000
54DR	660 nm Native Deep Red	984	-	-	-	-	-	61	-	>54,000	
2 X 2	22NA/44L	590 nm Native Amber / White	1,262	5,914	6,135	6,280	6,374	118 - 128	27	50	>60K / >102K
	22NA/63L		1,262	8,156	8,462	8,662	8,791	117 - 126	27	70	
	45A/44L	570 nm PC Amber / White	6,052	5,914	6,135	6,280	6,374	118 - 128	47	50	>60K / >102K
	22R/44L	630 nm Native Red / White	1,451	5,914	6,135	6,280	6,374	118 - 128	27	50	>60K / >102K
	22R/63L		1,451	8,156	8,462	8,662	8,791	117 - 126	27	70	
	22NA	590 nm Native Amber	1,262	-	-	-	-	-	27	-	>60,000
	45A	570 nm PC Amber	6,052	-	-	-	-	-	47	-	>60,000
	90A		9,594	-	-	-	-	99	-		
	22R	630 nm Native Red	1,451	-	-	-	-	-	27	-	>60,000
54DR	660 nm Native Deep Red	1,002	-	-	-	-	-	61	-	>54,000	
2 X 4	22NA/63L	590 nm Native Amber / White	1,384	8,945	9,280	9,499	9,641	128 - 138	27	70	>60K / >102K
	22NA/80L		1,384	11,354	11,779	12,057	12,238	130 - 140	27	88	
	22NA/120L		1,384	16,556	17,176	17,582	17,845	128 - 138	27	129	
	45A/44L	570 nm PC Amber / White	6,514	6,522	6,766	6,926	7,029	133 - 143	48	49	>60K / >102K
	45A/63L		6,514	8,945	9,280	9,499	9,641	128 - 138	48	70	
	45A/80L		6,514	11,354	11,779	12,057	12,238	130 - 140	48	88	
	90A/80L		10,677	11,354	11,779	12,057	12,238	130 - 140	99	88	
	22R/63L	630 nm Native Red / White	1,565	8,945	9,280	9,499	9,641	128 - 138	27	70	>60K / >102K
	22R/80L		1,565	11,354	11,779	12,057	12,238	130 - 140	27	88	
	22R/120L		1,565	16,556	17,176	17,582	17,845	128 - 138	27	129	
	54DR/63L	660 nm Native Deep Red / White	1,103	8,945	9,280	9,499	9,641	128 - 138	62	70	>54K / >102K
	54DR/80L		1,103	11,354	11,779	12,057	12,238	130 - 140	62	88	
	44NA	590 nm Native Amber	2,613	-	-	-	-	-	52	-	>60,000
	90A	570 nm PC Amber	10,677	-	-	-	-	-	99	-	>60,000
	135A		15,709	-	-	-	-	148	-		
	44R	630 nm Native Red	3,034	-	-	-	-	-	52	-	>60,000
108DR	660 nm Native Deep Red	1,518	-	-	-	-	-	135	-	>54,000	

NOTE: Information subject to change without notice. All testing conducted by an ILAC/ISO17025 accredited laboratory. Please visit www.kenall.com for IES files and additional information.



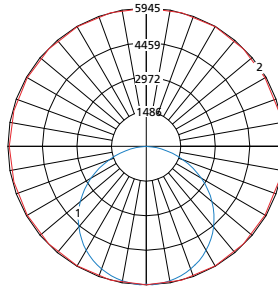
PERFORMANCE

Model: CSEDO-22-pp-qq_63L-40K9-DIMI-DV-uu-vv-SYM-xx-yy-zz White on



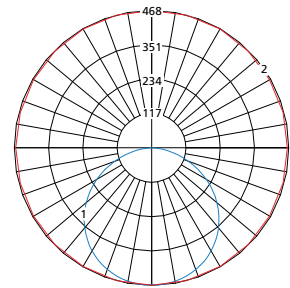
Max Candela = 2938 Located At Horizontal Angle = 0, Vertical Angle = 0
 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

Model: CSEDO-24-pp-qq_120L-40K9-DIMI-DV-uu-vv-SYM-xx-yy-zz White on



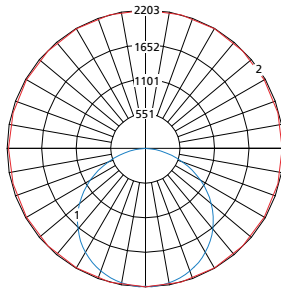
Max Candela = 5945 Located At Horizontal Angle = 90, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

Model: CSEDO-24-pp-22NA_qq-rr-DIMI-DV-uu-vv-SYM-xx-yy-zz Native Amber on



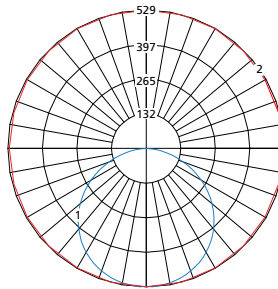
Max Candela = 468 Located At Horizontal Angle = 90, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

Model: CSEDO-24-pp-45A_qq-rr-DIMI-DV-uu-vv-SYM-xx-yy-zz Amber on



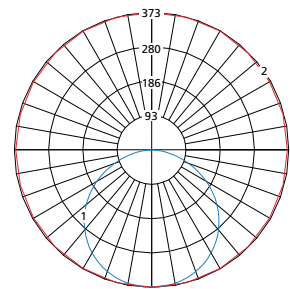
Max Candela = 2203 Located At Horizontal Angle = 90, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

Model: CSEDO-24-pp-22R_qq-rr-DIMI-DV-uu-vv-SYM-xx-yy-zz Native Red on



Max Candela = 529 Located At Horizontal Angle = 90, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

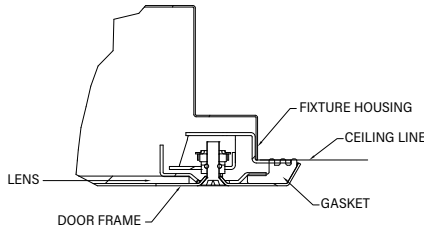
Model: CSEDO-24-pp-54DR_qq-rr-DIMI-DV-uu-vv-SYM-xx-yy-zz Native Deep Red on



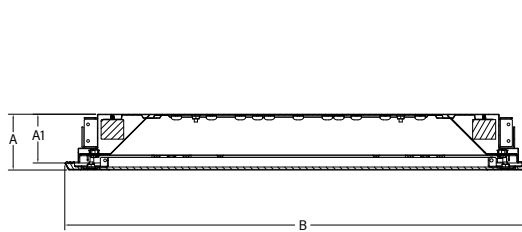
Max Candela = 373 Located At Horizontal Angle = 90, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

DIMENSIONAL DATA

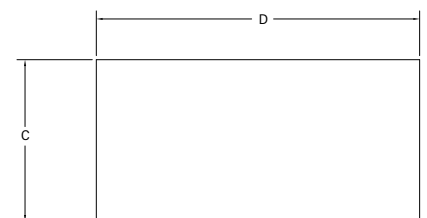
GASKET PROFILE



CROSS SECTION



CEILING CUTOUT



DIMENSIONAL DATA (IN INCHES)

	A	A1	B	C*	D*
1x4	2.82	2.50	11.94 x 47.94	10.85	46.85
2x2	2.82	2.50	23.94 x 23.94	22.85	22.85
2x4	2.82	2.50	23.94 x 47.94	22.85	46.85

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