

INVITATION TO BIDDERS #2023-05
DEPARTMENT OF PHYSICAL THERAPY RESEARCH LAB –
CONSTRUCTION SERVICES
RESPONSE TO CLARIFYING QUESTIONS II
August 1, 2023

Note that these are questions submitted by interested firms to this solicitation. The below answers are for clarification purposes only and in no way alter or amend the BID as published.

1. QUESTION: Contractors still need to know if the light fixture types "R1" and "R2" on sheet E0.02 marked "TBD" for the MFG/Catalog # will be selected by the design team before the project bids or left up to the electrical subcontractor.

ANSWER: Please refer to product selections for light fixtures titled as R1 & R2 within this document.

End of Clarifying Questions

R1 & R2

[Please see attached.]

SIMPLESEAL™

CSEDO SERIES – LED – OVERLAPPING DOOR

PRODUCT FEATURES:

- » High-output, high-CRI LED lamp sources for accurate color rendition and lighting performance
- » Diffused high-efficiency lens for reduced glare
- » Recessed ceiling mount; grid or flange - 1'x4', 2'x2', 2'x4'
- » 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 with 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 optional.

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.

ELECTRICAL: Available 3000K, 3500K, 4000K and 5000K color temperatures with maximum 3-step MacAdam variation allowance. 120-277VAC, 50/60Hz electrical input with serviceable high power factor electronic, constant-current driver (<20% THD, >0.95 PF). Standard 0-10V dimming with 1-100% range and dim-to-dark capabilities (non dim-to-dark with 347V; 660µA maximum source current per circuit). Optional 0-10V dimming with 0.1-100% range and dim-to-dark capabilities via eldoLED SOLdrive series driver (n/a 347V input; ≤0.5V required from dimming control for dim-to-dark operation; 800µA max. source current).

SENSOR & CONTROLS: Optional sensor available with compatible third party controls. To see the full list of compatible controls, [click here](#).

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 LED warranty.

LISTINGS: Luminaire is certified to UL standards by Intertek Testing Laboratories for Wet Location. 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. Suitable for installation into -30°C to 40°C ambient environments, unless otherwise noted.



PROJECT INFORMATION

Job Name _____

Fixture Type _____

Catalog Number _____

Approved by _____



ORDERING INFORMATION (Ex: CSEDO-24-67L-40K8-DIM1-DV-2F-4H-SYM)

Model	Size	Lamp Power	Lamp Color	Driver	Voltage	Doorframe	Housing	Optics	Options	Accessories
CSEDO							SYM			
Size		Lamp Power		Driver Type		Options				
14	1'×4'	1'×4'		DIM1		0-10V Dimming to 1%				
22	2'×2'	45L	45 Watt LED	DIM01		0-10V Dimming to 0.1% (n/a with 347 Voltage)				
24	2'×4'	67L	67 Watt LED							
		90L	90 Watt LED							
		2'×2'		Voltage						
		45LD	45 Watt Dual-Row LED	DV		120-277VAC, 50/60Hz				
		67L	67 Watt LED	120		120VAC				
		90L	90 Watt LED	277		277VAC				
				347		347VAC				
		2'×4'		Doorframe Options						
		45LD	45 Watt Dual-Row LED	5F		20-Ga Type 304 SS (STD)				
		67L	67 Watt LED	2F		20-Ga CRS				
		90L	90 Watt LED	XF		20-Ga Type 316 SS				
		135L	135 Watt LED	PAF		.063" Painted Fabricated Aluminum				
		180L	180 Watt LED							
		Lamp Color		Housing Options						
		30K8	3000K / 82 CRI min.	4H		24-Ga CRS (STD)				
		35K8	3500K / 82 CRI min.	2H		20-Ga CRS				
		40K8	4000K / 82 CRI min.	5H		20-Ga Type 304 SS				
		50K8	5000K / 82 CRI min.	XH		20-Ga Type 316 SS				
				PAH		.050" Painted Aluminum				
				Optics						
				SYM		Symmetric, Diffused DR Acrylic				
							LEL† 10W Emergency Battery Pack			
							20KV‡ 20KV/KA Surge Protection per IEEE/ANSI C62.41.2 Cat. A			
							AMF* Antimicrobial Finish			
							FN** Food Zone/Non-Contact			
							TS Stainless Steel Doorframe Thumb Screws			
							FS Fuse & Holder			
							HJ Sealed Wireway			
							MS Motion Sensor (n/a with 347 Voltage Option)			
							RF• Radio Frequency Filter			
							RM♦ Continuous Row Mounting			
							2C Two Circuit Wiring (1'x4'-45L single circuit operation will yield uneven lens luminance)			
							P442‡ Optional NSF Protocol P442 Certified			
							Accessories			
							IF** Install Frame			
							* Add .375" to ceiling cut out dimensions			
							• Voltage specific selection required			
							** Lensing consists of FDA approved Food Zone clear polycarbonate outer lens and diffused acrylic inner lens			
							† n/a with 180L lamp option or 347V input; voltage-specific selection required and height of fixture is 5.875" when specified with 135L lamp option; 0°C/32°F min. operating environment.			
							▲ 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)			

Click HERE for CSEDO 'Fast Track' Ordering Options

Click HERE for CSEDO
'Fast Track' Ordering Options

Ships in 5 days



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CSEDO_14_22_24-061622

SIMPLESEAL™

CSEDO SERIES – LED – OVERLAPPING DOOR

PERFORMANCE		Initial Delivered Lumens		Input Power (W)	Drive Current (mA)	Estd. L70 LED Life (Hrs)
Model	Lamp Type	@ 25°C	Efficacy (lm/W)			
CSEDO14	45L-30K8	4,906	100	49	100	80,000
	45L-35K8	5,057	103			
	45L-40K8	5,230	107			
	45L-50K8	5,439	111			
	67L-30K8	7,514	104	72	75	80,000
	67L-35K8	7,747	108			
	67L-40K8	8,011	111			
	67L-50K8	8,332	116			
	90L-30K8	9,587	99	97	100	60,000
	90L-35K8	9,884	102			
	90L-40K8	10,221	105			
	90L-50K8	10,630	110			
CSEDO22	45LD-30K8	5,212	106	49	100	80,000
	45LD-35K8	5,373	110			
	45LD-40K8	5,556	113			
	45LD-50K8	5,779	118			
	67L-30K8	7,984	111	72	75	80,000
	67L-35K8	8,231	114			
	67L-40K8	8,511	118			
	67L-50K8	8,852	123			
	90L-30K8	10,259	106	97	100	60,000
	90L-35K8	10,576	109			
	90L-40K8	10,937	113			
	90L-50K8	11,374	117			
CSEDO24	45LD-30K8	6,293	137	46	50	100,000
	45LD-35K8	6,593	143			
	45LD-40K8	6,709	146			
	45LD-50K8	6,977	152			
	67L-30K8	8,753	122	72	75	80,000
	67L-35K8	9,171	127			
	67L-40K8	9,331	130			
	67L-50K8	9,704	135			
	90L-30K8	11,247	116	97	100	60,000
	90L-35K8	11,594	120			
	90L-40K8	11,990	124			
	90L-50K8	12,470	129			
	135L-30K8	15,943	108	147	100	60,000
	135L-35K8	16,436	112			
	135L-40K8	16,997	116			
	135L-50K8	17,677	120			
	180L-30K8	21,739	111	196	100	60,000
	180L-35K8	22,411	114			
	180L-40K8	23,176	118			
	180L-50K8	24,103	123			

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



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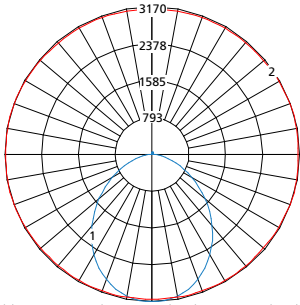
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CSEDO SERIES – TECHNICAL DATA

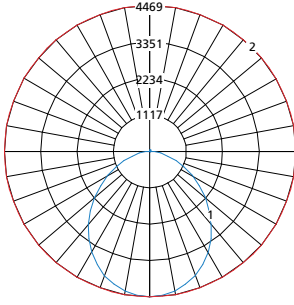
PERFORMANCE

Model: CSEDO14-67L-40K8-DIM1-1-DV-5F-2H-SYM



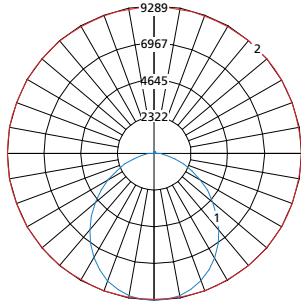
Maximum Candela = 3170 Located At Horizontal Angle = 15, Vertical Angle = 2.5
1 - Vertical Plane Through Horizontal Angles (15-195) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

Model: CSEDO22-90L-40K8-DIM1-1-DV-5F-2H-SYM



Max Candela = 4469 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.)

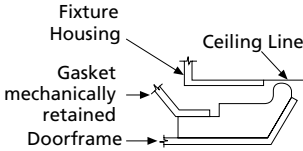
Model: CSEDO24-180L-40K8-DIM1-1-DV-5F-2H-SYM



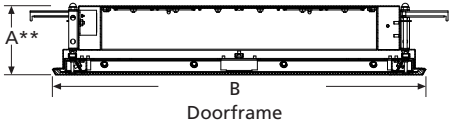
Max Candela = 9289 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

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 135L lamp option when ordered in conjunction with LEL option.



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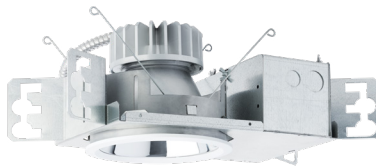
SIMPLESEAL DOWNLIGHT

Luminaires for Cleanroom Applications

CDL SERIES

PRODUCT FEATURES:

- » 6" sealed, recessed downlight with flush lens trim
- » Delivered lumens: 794 - 5,305 lm
- » 1% Dimming via 0-10V or DALI control



PROJECT INFORMATION

Job Name _____

Fixture Type _____

Catalog Number _____

Approved by _____

SPECIFICATIONS

HEAT SINK: Die-cast aluminum with external radial fins for natural convection.

ROUGH-IN FRAME: 18-gauge die-formed, corrosion-resistant steel. Vertically adjustable collar accommodates ceiling thicknesses up to 2", adjustable post-installation. Universal mounting brackets accept 3/4" and 1-1/2" lathers channel, 1/2" EMT conduit and hanger bars. Quick-access junction box accessible post-installation from above and below ceiling. Includes (4) 1/2" and (2) 3/4" knock-outs to allow straight conduit runs. Listed for (8) 12AWG, 90°C conductors and feed-thru branch wiring. Provided with FMC with electrical quick-connect to Trim Section.

TRIM/HOUSING SECTION: IP-rated housing section incorporates the heat sink, LED module, optics and lower trim. Configurable with an IP64-rated Flush lens trim that is secured to the Rough-In frame with hidden torsion springs, and an IP65 Flush lens trim secured with four (4) Phillips-head, captive fasteners. See trim ordering information for available options.

OPTICAL: High-Efficiency mixing chamber design with regressed diffused tempered-glass lens producing uniform light output. Available with various reflector distribution patterns and finishes. Flush lens trim options include a clear lens. See distribution and reflector finish ordering information for available options.

ELECTRICAL: LED array available in multiple CCT and CRI combinations with a maximum 3-step MacAdam variation allowance. See Trim Ordering Information for available options. 120-277VAC or 347VAC, 50/60Hz electrical input with serviceable constant current driver (<20% THD, >0.90 PF). Minimum 85% driver efficiency. Standard 0-10V dimming with 1-100% range and dim-to-dark capabilities (non dim-to-dark with 347V); 165µA maximum source current. Optional eldoLED ECODrive DALI driver with 1-100% range.

PHOTOMETRICS: Photometry tested to the IESNA LM-79-08 standard by an ILAC/ISO17025 accredited laboratory. For photometric information, go to www.kenall.com.

WARRANTY: Limited five (5) year LED warranty

LISTINGS: Luminaire is certified to UL standards by Intertek Testing Laboratory for non-IC and Wet Location installations. IP64 and IP65 rating per IEC60598. NSF2 Splash/Non-Food Zone. Optional CCEA compliance. Meets FED-STD-209E/Class 100 (ISO 5) Cleanrooms.



ORDERING INFORMATION (EX: CDL6-FF-2FW-22L-40K8-W-CSS-T-RIG6-DV-DIM1)

TRIM

Model	Trim Style	Trim Finish	Lamp Power	Lamp Color	Distribution	Reflector Finish	Flush Lens Type
-------	------------	-------------	------------	------------	--------------	------------------	-----------------

CDL6

Trim Style

FF Flush Lens (With Fasteners - IP65)
NF Flush Lens (Without Fasteners - IP64)

Trim Finish

2FW Cold-Rolled Steel in Flat White
5BR Type 304 Stainless Steel with 4B Brushed Finish
5FW Type 304 Stainless Steel in Flat White

Lamp Power

12L 12 Watt LED
22L 22 Watt LED
33L 33 Watt LED
55L* 55 Watt LED

Lamp Color

30K8 3000K / 80 CRI min.
30K9 3000K / 90 CRI min.
35K8 3500K / 80 CRI min.
35K9 3500K / 90 CRI min.
40K8 4000K / 80 CRI min.
40K9 4000K / 90 CRI min.
50K8 5000K / 80 CRI min.

Distribution

M Medium
W Wide

Reflector Finish

FW Flat White
CS Clear Specular
CSS Clear Semi-Specular

Flush Lens Type

T 1/8" Clear High-Impact Acrylic
G 1/8" Clear Polycarbonate

ROUGH-IN

Rough-In	Input Voltage	Driver Type	Options
----------	---------------	-------------	---------

RIG6

Rough-In

RIG6 6" Rough-In

Input Voltage

DV 120-277V, 50/60Hz
120 120VAC, 60Hz
277 277VAC, 60Hz
347* 347VAC, 60Hz

Driver Type

DIM1 0-10V Dimming to 1%
DALI DALI Dimming to 1%

Options

LEL Emergency Battery Backup with Remote Test Switch
FS Fuse & Holder
CCEA CCEA Approved (specified voltage required; n/a 347V)

* N/A with DALI Driver Type. N/A with LEL option

▲ Must be installed with a minimum 24" on-center spacing, 12" from wall, and have 3" clearance above the Trim/Housing



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CDL6-061021

SIMPLESEAL DOWNLIGHT

Luminaires for Cleanroom Applications

For additional photometry, go to www.kenall.com

CDL SERIES

PERFORMANCE

Optic			Lamp Power	Initial Delivered Lumens, By Lamp Color							Efficacy (lm/W)	Input Power (W)	Estd. L70 LED Life (hrs)
Distribution	Reflector Finish	Lens Type		30K8	30K9	35K8	35K9	40K8	40K9	50K8			
M	CS	T	12L	1,024	856	1,024	867	1,065	867	1,088	57 - 73	15	80,000
			22L	1,677	1,402	1,677	1,419	1,744	1,419	1,782	58 - 74	24	85,000
			33L	2,430	2,032	2,430	2,056	2,527	2,056	2,581	58 - 74	35	70,000
			55L	4,334	3,624	4,334	3,668	4,508	3,668	4,605	58 - 74	62	75,000
		G	12L	1,048	876	1,048	887	1,090	887	1,114	58 - 74	15	80,000
			22L	1,716	1,435	1,716	1,452	1,785	1,452	1,823	60 - 76	24	85,000
			33L	2,487	2,079	2,487	2,104	2,586	2,104	2,642	59 - 75	35	70,000
			55L	4,436	3,709	4,436	3,754	4,613	3,754	4,713	60 - 76	62	75,000
	CSS	T	12L	961	804	961	814	1,000	814	1,021	54 - 68	15	80,000
			22L	1,574	1,316	1,574	1,332	1,637	1,332	1,672	55 - 70	24	85,000
			33L	2,281	1,907	2,281	1,930	2,372	1,930	2,423	54 - 69	35	70,000
			55L	4,069	3,402	4,069	3,443	4,231	3,443	4,323	55 - 70	62	75,000
		G	12L	984	823	984	833	1,023	833	1,045	55 - 70	15	80,000
			22L	1,611	1,347	1,611	1,363	1,675	1,363	1,712	56 - 71	24	85,000
			33L	2,334	1,952	2,334	1,975	2,427	1,975	2,480	56 - 71	35	70,000
			55L	4,164	3,482	4,164	3,524	4,330	3,524	4,424	56 - 71	62	75,000
	FW	T	12L	950	794	950	804	988	804	1,009	53 - 67	15	80,000
			22L	1,555	1,300	1,555	1,316	1,617	1,316	1,652	54 - 69	24	85,000
			33L	2,253	1,884	2,253	1,906	2,343	1,906	2,394	54 - 68	35	70,000
			55L	4,019	3,360	4,019	3,401	4,180	3,401	4,270	54 - 69	62	75,000
		G	12L	972	813	972	822	1,011	822	1,033	54 - 69	15	80,000
			22L	1,591	1,331	1,591	1,347	1,655	1,347	1,691	55 - 70	24	85,000
			33L	2,305	1,928	2,305	1,951	2,398	1,951	2,450	55 - 70	35	70,000
			55L	4,113	3,439	4,113	3,481	4,277	3,481	4,370	55 - 70	62	75,000
W	CS	T	12L	1,153	964	1,153	976	1,199	976	1,225	66 - 84	15	80,000
			22L	1,888	1,578	1,888	1,597	1,963	1,597	2,006	66 - 84	24	85,000
			33L	2,735	2,287	2,735	2,314	2,844	2,314	2,906	65 - 83	35	70,000
			55L	4,879	4,079	4,879	4,129	5,074	4,129	5,184	66 - 84	62	75,000
		G	12L	1,180	986	1,180	998	1,227	998	1,253	67 - 86	15	80,000
			22L	1,932	1,615	1,932	1,635	2,009	1,635	2,052	67 - 86	24	85,000
			33L	2,799	2,340	2,799	2,369	2,911	2,369	2,974	67 - 85	35	70,000
			55L	4,993	4,175	4,993	4,225	5,193	4,225	5,305	67 - 86	62	75,000
	CSS	T	12L	978	818	978	828	1,017	828	1,039	56 - 71	15	80,000
			22L	1,602	1,339	1,602	1,356	1,666	1,356	1,702	56 - 71	24	85,000
			33L	2,321	1,941	2,321	1,964	2,414	1,964	2,466	55 - 70	35	70,000
			55L	4,141	3,462	4,141	3,504	4,306	3,504	4,399	56 - 71	62	75,000
		G	12L	1,001	837	1,001	847	1,041	847	1,064	57 - 73	15	80,000
			22L	1,639	1,371	1,639	1,387	1,705	1,387	1,742	57 - 73	24	85,000
			33L	2,375	1,986	2,375	2,010	2,470	2,010	2,524	57 - 72	35	70,000
			55L	4,238	3,543	4,238	3,586	4,407	3,586	4,502	57 - 73	62	75,000
	FW	T	12L	1,084	906	1,084	917	1,127	917	1,152	62 - 79	15	80,000
			22L	1,775	1,484	1,775	1,502	1,846	1,502	1,886	62 - 79	24	85,000
			33L	2,572	2,150	2,572	2,176	2,675	2,176	2,732	61 - 78	35	70,000
			55L	4,588	3,836	4,588	3,883	4,771	3,883	4,875	62 - 79	62	75,000
		G	12L	1,109	928	1,109	939	1,154	939	1,179	63 - 81	15	80,000
			22L	1,817	1,519	1,817	1,537	1,889	1,537	1,930	63 - 80	24	85,000
			33L	2,632	2,201	2,632	2,227	2,737	2,227	2,796	63 - 80	35	70,000
			55L	4,695	3,926	4,695	3,974	4,883	3,974	4,989	63 - 80	62	75,000

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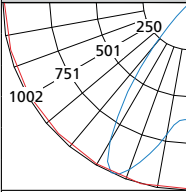
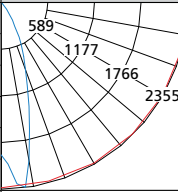
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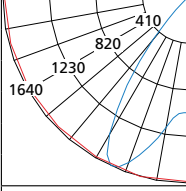
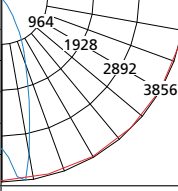
CDL6-061021

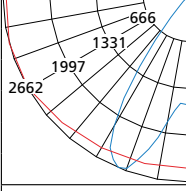
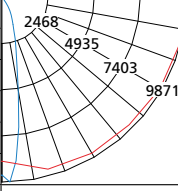
SIMPLESEAL DOWNLIGHT

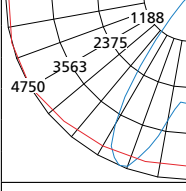
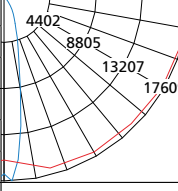
Luminaires for Cleanroom Applications

CDL SERIES**PERFORMANCE**

Wide Distribution Candela Curve	CDL6-FF-12L-40K8-W-CS-T		Distance to illuminated plane (ft)	CDL6-FF-12L-40K8-M-CS-T		Medium Distribution Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	27.8	7.5	5'	84.4	3.2	
	22.0	7.8	6'	58.6	3.5	
	16.1	9.0	7'	43.1	4.0	
	12.3	11.0	8'	33.0	4.6	
	9.8	11.7	9'	26.0	5.2	
	7.9	12.6	10'	21.1	5.8	
Spacing Criteria: 1.4	foot-candle multipliers for 30K8(.96), 30K9(.80), 35K8(.96), 35K9(.81), 40K9(.81), 50K8(1.0)					Spacing Criteria: 0.62
Beam Angle: 59°	Beam diameter is where foot-candles drop to 50% of maximum					Beam Angle: 34°

Wide Distribution Candela Curve	CDL6-FF-22L-40K8-W-CS-T		Distance to illuminated plane (ft)	CDL6-FF-22L-40K8-M-CS-T		Medium Distribution Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	45.5	7.5	5'	138.2	3.2	
	36.0	7.8	6'	96.0	3.5	
	26.3	9.0	7'	70.5	4.0	
	20.2	11.0	8'	54.0	4.6	
	16.1	11.7	9'	42.7	5.2	
	13.0	12.6	10'	34.5	5.8	
Spacing Criteria: 1.4	foot-candle multipliers for 30K8(.96), 30K9(.80), 35K8(.96), 35K9(.81), 40K9(.81), 50K8(1.0)					Spacing Criteria: 0.62
Beam Angle: 59°	Beam diameter is where foot-candles drop to 50% of maximum					Beam Angle: 34°

Wide Distribution Candela Curve	CDL6-FF-33L-40K8-W-CS-T		Distance to illuminated plane (ft)	CDL6-FF-33L-40K8-M-CS-T		Medium Distribution Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	65.9	7.5	5'	200.2	3.2	
	52.1	7.8	6'	139.0	3.5	
	38.2	9.0	7'	102.2	4.0	
	29.3	11.0	8'	78.2	4.6	
	23.3	11.7	9'	61.8	5.2	
	18.8	12.6	10'	50.1	5.8	
Spacing Criteria: 1.36	foot-candle multipliers for 30K8(.96), 30K9(.80), 35K8(.96), 35K9(.81), 40K9(.81), 50K8(1.0)					Spacing Criteria: 0.36
Beam Angle: 54°	Beam diameter is where foot-candles drop to 50% of maximum					Beam Angle: 21°

Wide Distribution Candela Curve	CDL6-FF-55L-40K8-W-CS-T		Distance to illuminated plane (ft)	CDL6-FF-55L-40K8-M-CS-T		Medium Distribution Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	117.6	7.5	5'	357.2	3.2	
	93.0	7.8	6'	248.0	3.5	
	68.1	9.0	7'	182.2	4.0	
	52.2	11.0	8'	139.5	4.6	
	41.5	11.7	9'	110.2	5.2	
	33.6	12.6	10'	89.3	5.8	
Spacing Criteria: 1.36	foot-candle multipliers for 30K8(.96), 30K9(.80), 35K8(.96), 35K9(.81), 40K9(.81), 50K8(1.0)					Spacing Criteria: 0.36
Beam Angle: 54°	Beam diameter is where foot-candles drop to 50% of maximum					Beam Angle: 21°



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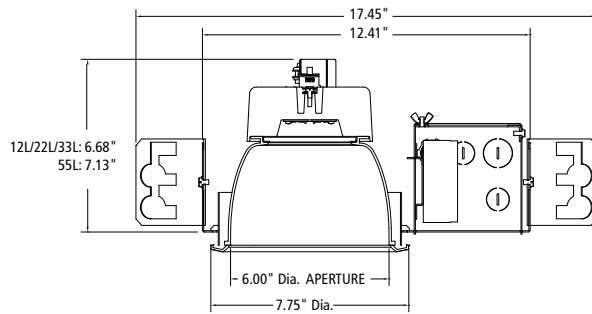
SIMPLESEAL DOWNLIGHT

Luminaires for Cleanroom Applications

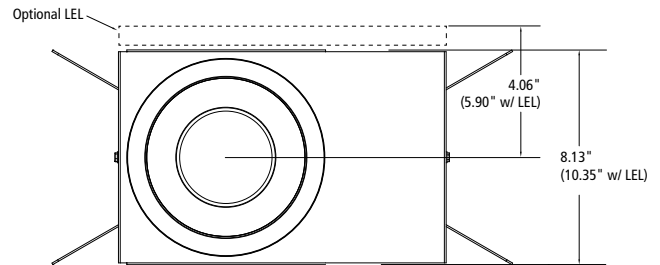
CDL SERIES

DIMENSIONAL DATA

CROSS SECTION



BOTTOM VIEW



RECOMMENDED CEILING CUT-OUT

NF Trims: 7.13" Dia.

FF Trims: 7.38" Dia.



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Model No.: CSEDO

Sample SN: CSEDO-14-90L40K-DCC-DV-5F-2H-SYM

Manufacturer: Kenall Manufacturing

Date: 10-18-2016

Tested By: Brett Sorensen Reviewed By: Jeff Roche

Reviewed By: Kevin Dahlen

Description:

Test Condition

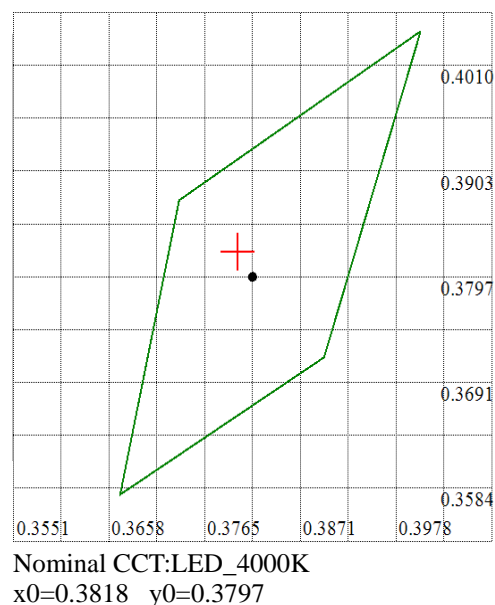
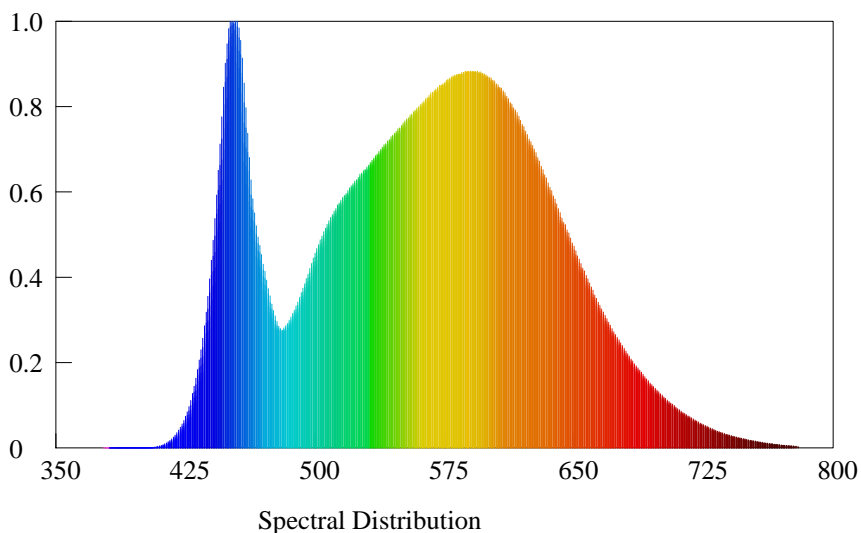
Temperature: 25.1°C

RH: 56.1%

Spectrum Range: 380-780 nm

Scan Step: 1 nm

Spectroradiometric Parameters



Chromaticity Coordinates: x=0.3801 y=0.3822 u'=0.2227 v'=0.5039

Correlated Color Temperature: 4048 K

Dominant Wavelength: 576.0 nm(E)

Luminous Flux: 9180.2 lm

Purity: 0.2877

Chromaticity Difference: 0.0026Duv

Peak Wavelength: 454 nm

Color Ratio: Kr=37.4% Kg=53.1% Kb=9.5%

Bandwidth: 21.7nm

Radiant Flux: 22.255 W

Rendering Index: Ra=82.5

R1=80 R2=89 R3=95 R4=80 R5=80 R6=84 R7=87 R8=65

R9=10 R10=74 R11=78 R12=57 R13=83 R14=97 R15=75

Electric Parameters

Voltage: 120.02 V

Current: 0.8106 A

Power Factor: 1.00

Power: 97.11 W

Luminous Efficacy: 94.5 lm/W

-Tested to LM-79-08 and ANSI C78.377-08 standards.

-The test results relate to the specific model tested under the listed environmental conditions only.

-This report shall not be reproduced, except in full, without written permission from Northern Lights Testing Laboratories.

-This test was performed with a Sensing SL-300 Spectroradiometer and software, Chroma AC power source, Yokogawa WT210 power meter, T&D TR-71W data logger, B&K Precision 1743B DC power source, and a Ohm-labs current shunt.

-Measurement Uncertainty: 1.4% at a confidence of 95%

SENSING Instruments Co.,Ltd