

CRD-4

LED - Cleanroom 4" Downlight Luminaire

Project:	Catalog #:	Type:
Notes:		

Product Description

A Cleanroom downlight specifically designed to provide laboratory illumination from a sealed, smooth and cleanable aperture. The low cutoff angle reduces glare reflected on monitors and glossy surfaces. These gasketed flush lensed luminaires are designed to seal the ceiling and prevent the entrance of contaminated air into the cleanroom. The CRD series is capable of up to 5000 lumens, and provide full range dimming to 1%, offering the flexibility desired by laboratory staff. These fixtures feature an option for 97+ CRI with very high R9 value, providing improved color recognition.



Feature Options

- Designed for use with Grid, Drywall or Cleanroom Panel Ceilings up to 2.5" thick
- Delivered lumens: 1000 - 5,100 lm
- Standard smooth wipe-down flush lens
- ISO 60598 IP65 Certified
- NSF2 Splash Zone Certified
- Antimicrobial finished trims

Install Frame

18 Ga Rigid Steel Frame supported by two Butterfly style vertically adjustable brackets. Frame supports a large junction box with (5) 1/2 inch trade size knockouts. Plaster ring attachment provides for adjustment after installation from below the ceiling for ceilings up to 2.5 inches thick.

Optical Assembly

The assembly is factory sealed to maintain a clean appearance. The heat sink, reflector, lens, and trim are sealed with long-life EPDM closed cell gasket materials. Supported by Torsion Springs to a vertically adjustable collar (plaster flange) that allows up to 2.5" thick ceilings.

Lens

Standard lens; Clear, flat, 0.125" thick high impact polycarbonate sealed into the trim assembly secured by a die-cast ring and trim providing continuous compression to lens, reflector and gaskets. Smooth external surface for easy cleaning.

Gaskets

Die cut closed cell EPDM foam gaskets seal lens to the trim and reflector.

LED

Factory sealed COB style LED light engine that is field replaceable and serviceable from below. COB LEDs are high efficiency and closely regulated to maintain CRI, color consistency, lumen performance, and efficacy. Choose from 2700K, 3000K, 3500K, 4000K, and 5000K color temperatures with a color consistency of 2 SDCM, standard 80 CRI, optional 90 and 95 CRI. Lifetime L70 is greater than 60,000 hrs.

Electrical

The standard electronic driver is constant current, programmable and dimmable to 1% using a 0-10V protocol. High efficiency (>85%) and low THD (<10%). Certified to FCC Part 15, Class A. 120-277Vac or 347Vac, 50/60hz. See "Options" for DALI driver choices.

Trim Finish

5 Stage pretreatment and antimicrobial gloss white polyester powder coated. Antimicrobial matte white polyester powder coating is optional*. See "Finish Options".

Installation

Recessed Non-IC- Marked Spacings for T-bar Grid and F type (drywall) ceilings. Compatible with 9/16" (NFG), 15/16", 1" and 1-1/2" standard grid ceilings. Plaster Ring has vertical adjustment for ceilings from 1/2"-2.5" thick. Use under a covered structural ceiling.

Listings, Certifications and Ratings

UL/ETL listed for recessed type Non-IC Marked Spacings, Wet locations. NSF2- Splash Zone. ISO3 cleanroom rated. Ingress Protection IP65, BSL1-3, EU GMP Grade A.

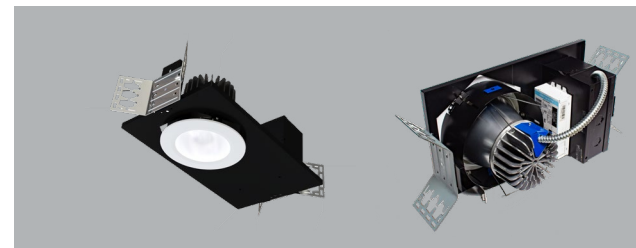
Warranty

5 year limited warranty. For complete warranty, click here:



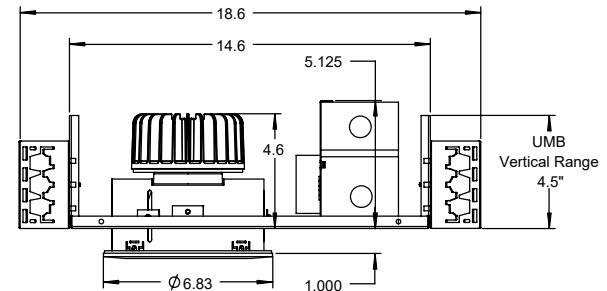
Approvals

- UL/ETL listed Wet locations
- NSF-2, ISO3-9, BSL1-3, EU
- EU GMP Grade A

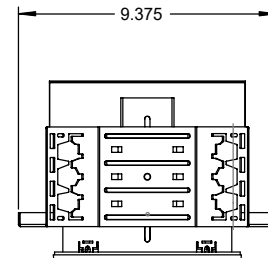


Dimensions

End View



Side View



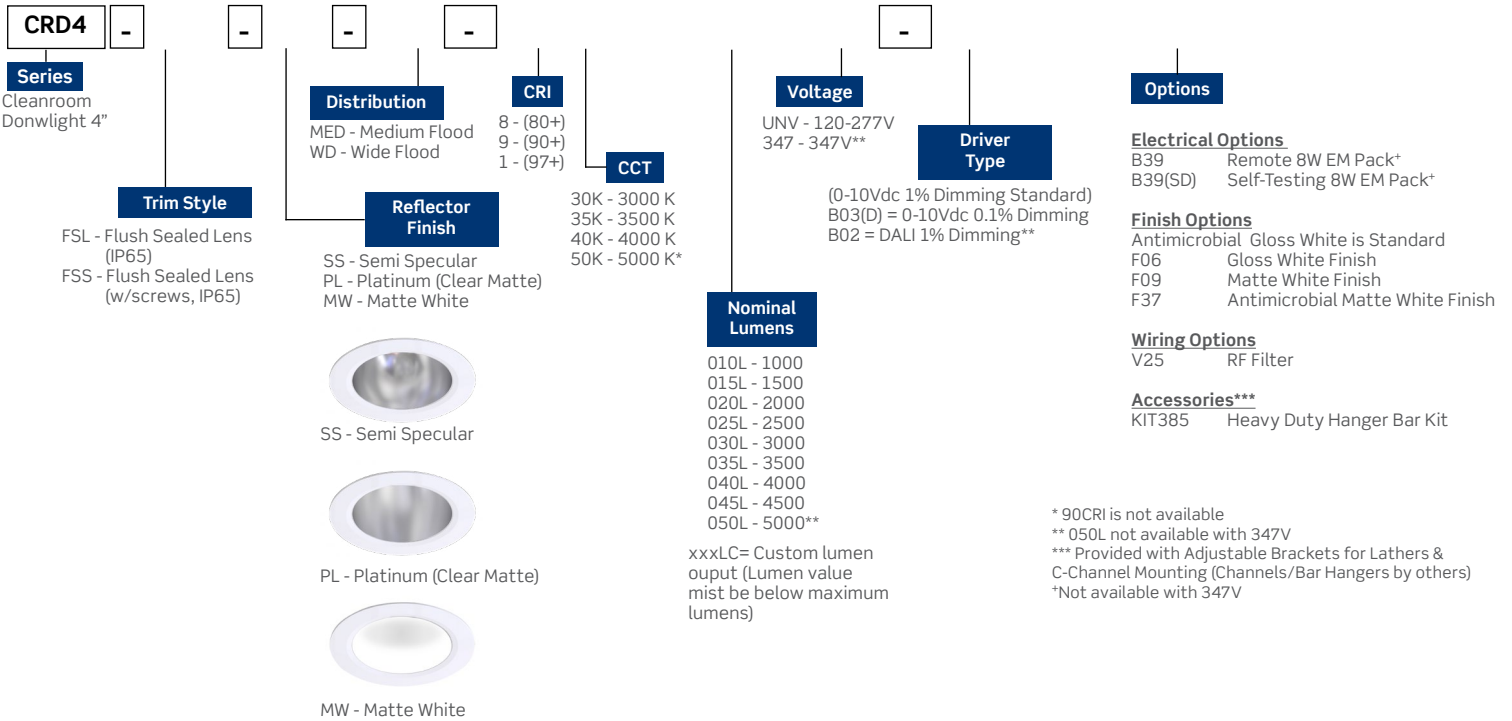
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LED - Cleanroom 4" Downlight Luminaire

Project:	Catalog #:	Type:
Notes:		

Order Key

EXAMPLE: CRD4-FSS-SC-WD-840KUNV



Performance Scaling

CRI	CCT	Lumen Multiplier
80	2700K	0.91
	3000K	0.92
	3500K	0.98
	4000K	1.00
	5000K	1.02
90	3000K	0.84
	3500K	0.79
	4000K	0.82
98	3500K	0.75
	4000K	0.79

Project:	Catalog #:	Type:
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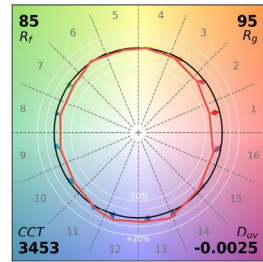
LED Performance Data - 4" FLS (Flush Sealed Lens)

Distribution Order Code	Reflector Order Code	Lumens Order Code	Delivered Lumens 2700K	Delivered Lumens 3000K	Delivered Lumens 3000K	Delivered Lumens 3500K	Delivered Lumens 3500K	Delivered Lumens 4000K	Delivered Lumens 4000K	Delivered Lumens 5000K	Delivered Lumens 3500K	Delivered Lumens 4000K	Estimated L80 LED Life (hrs)	Supply Watts	Efficacy Range
			80 CRI	80 CRI	90 CRI	80 CRI	90 CRI	80 CRI	90 CRI	80 CRI	90 CRI	80 CRI			
MED - Medium	SS	010L	845	851	778	909	736	929	758	944	692	730	>90Khrs	10.2	67.9 - 92.5
		015L	1268	1276	1166	1363	1104	1393	1137	1416	1038	1095	>90Khrs	15.4	67.4 - 91.9
		020L	1691	1702	1555	1817	1471	1858	1516	1888	1384	1460	>90Khrs	20.5	67.5 - 92.1
		025L	2113	2127	1944	2271	1839	2322	1895	2360	1730	1825	>80Khrs	25.6	67.6 - 92.2
		030L	2536	2553	2333	2726	2207	2787	2274	2832	2076	2191	>80Khrs	30.8	67.4 - 91.9
		035L	2959	2978	2721	3180	2575	3251	2653	3303	2422	2556	>80Khrs	35.9	67.5 - 92.0
		040L	3381	3404	3110	3634	2943	3716	3032	3775	2768	2921	>80Khrs	41.3	67.0 - 91.4
		045L	3804	3829	3499	4088	3311	4180	3411	4247	3114	3286	>70Khrs	46.2	67.4 - 91.9
		050L	4227	4255	3888	4543	3679	4645	3790	4719	3460	3651	>70Khrs	51.3	67.5 - 92.0
	PL	010L	889	895	818	956	774	977	797	993	728	768	>90Khrs	10.2	71.4 - 97.3
		015L	1334	1342	1227	1433	1161	1466	1196	1489	1092	1152	>90Khrs	15.4	70.9 - 96.7
		020L	1778	1790	1636	1911	1548	1954	1595	1985	1456	1536	>90Khrs	20.5	71.0 - 96.8
		025L	2223	2237	2044	2389	1935	2443	1993	2482	1820	1920	>80Khrs	25.6	71.1 - 96.9
		030L	2667	2685	2453	2867	2321	2931	2392	2978	2184	2304	>80Khrs	30.8	70.9 - 96.7
		035L	3112	3132	2862	3344	2708	3420	2790	3474	2548	2688	>80Khrs	35.9	71.0 - 96.8
		040L	3556	3580	3271	3822	3095	3908	3189	3971	2912	3072	>80Khrs	41.3	70.5 - 96.1
		045L	4001	4027	3680	4300	3482	4397	3588	4467	3276	3456	>70Khrs	46.2	70.9 - 96.7
		050L	4446	4475	4089	4778	3869	4885	3986	4963	3639	3840	>70Khrs	51.3	70.9 - 96.8
W - Wide	SS	010L	890	896	819	957	775	978	798	994	729	769	>90Khrs	10.2	71.4 - 97.4
		015L	1335	1344	1228	1435	1162	1467	1197	1491	1093	1153	>90Khrs	15.4	71.0 - 96.8
		020L	1780	1792	1637	1913	1549	1956	1596	1988	1457	1538	>90Khrs	20.5	71.1 - 97.0
		025L	2225	2240	2047	2392	1937	2445	1995	2485	1822	1922	>80Khrs	25.6	71.2 - 97.1
		030L	2670	2688	2456	2870	2324	2934	2395	2981	2186	2307	>80Khrs	30.8	71.0 - 96.8
		035L	3115	3136	2866	3348	2711	3424	2794	3478	2551	2691	>80Khrs	35.9	71.0 - 96.9
		040L	3561	3584	3275	3827	3099	3913	3193	3975	2915	3075	>80Khrs	41.3	70.6 - 96.3
		045L	4006	4032	3684	4305	3486	4402	3592	4472	3279	3460	>70Khrs	46.2	71.0 - 96.8
		050L	4451	4480	4094	4783	3874	4891	3991	4969	3644	3844	>70Khrs	51.3	71.0 - 96.9
	PL	010L	897	903	825	964	781	986	804	1001	734	775	>90Khrs	10.2	71.4 - 97.4
		015L	1345	1354	1237	1446	1171	1478	1206	1502	1101	1162	>90Khrs	15.4	71.0 - 96.8
		020L	1794	1806	1650	1928	1561	1971	1609	2003	1469	1549	>90Khrs	20.5	71.1 - 97.0
		025L	2242	2257	2062	2410	1952	2464	2011	2504	1836	1937	>80Khrs	25.6	71.2 - 97.1
		030L	2691	2709	2475	2892	2342	2957	2413	3004	2203	2324	>80Khrs	30.8	71.0 - 96.8
		035L	3139	3160	2887	3374	2732	3450	2815	3505	2570	2711	>80Khrs	35.9	71.0 - 96.9
		040L	3588	3611	3300	3856	3122	3943	3217	4006	2937	3099	>80Khrs	41.3	70.6 - 96.3
		045L	4036	4063	3712	4338	3513	4435	3619	4506	3304	3486	>70Khrs	46.2	71.0 - 96.8
		050L	4485	4514	4125	4820	3903	4928	4021	5007	3671	3874	>70Khrs	51.3	71.0 - 96.9
	MW	010L	836	841	769	898	727	918	749	933	684	722	>90Khrs	10.2	67.1 - 91.5
		015L	1254	1262	1153	1347	1091	1378	1124	1400	1026	1083	>90Khrs	15.4	66.6 - 90.9
		020L	1672	1683	1537	1796	1455	1837	1499	1866	1368	1444	>90Khrs	20.5	66.8 - 91.0
		025L	2089	2103	1922	2246	1818	2296	1874	2333	1711	1805	>80Khrs	25.6	66.8 - 91.1
		030L	2507	2524	2306	2695	2182	2755	2248	2799	2053	2166	>80Khrs	30.8	66.6 - 90.9
		035L	2925	2944	2690	3144	2546	3214	2623	3266	2395	2527	>80Khrs	35.9	66.7 - 91.0
		040L	3343	3365	3075	3593	2910	3674	2998	3732	2737	2887	>80Khrs	41.3	66.3 - 90.4
		045L	3761	3786	3459	4042	3273	4133	3372	4199	3079	3248	>70Khrs	46.2	66.6 - 90.9
		050L	4179	4206	3844	4491	3637	4592	3747	4666	3421	3609	>70Khrs	51.3	66.7 - 90.9

This chart is for performance selection and may change without notice. Consult IES files for official performance data.

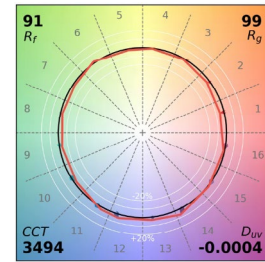
Project:	Catalog #:	Type:
Notes:		

3500K CCT Color Metric Summary					
CCT:	3453	CRI:	83		
Δ					
2700	3000	3500	4000	5000	



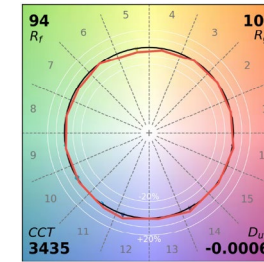
TM-30	Rf = 85
	Rg = 95
CRI	Ra = 83
	R9 = 8

3500K CCT Color Metric Summary					
CCT:	3494	CRI:	93		
Δ					
2700	3000	3500	4000	5000	



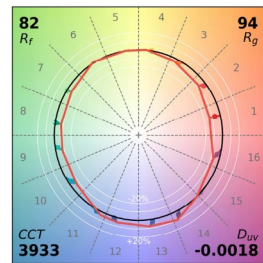
TM-30	Rf = 91
	Rg = 99
CRI	Ra = 93
	R9 = 63

3500K CCT Color Metric Summary					
CCT:	3500K	CRI:	98		
Δ					
2700	3000	3500	4000	5000	



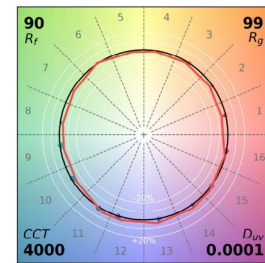
TM-30	Rf = 94
	Rg = 101
CRI	Ra = 98
	R9 = 98

4000K CCT Color Metric Summary					
CCT:	3933	CRI:	82		
Δ					
2700	3000	3500	4000	5000	



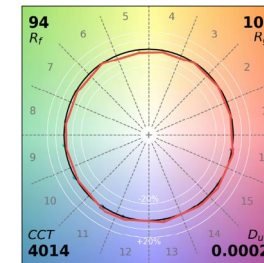
TM-30	Rf = 82
	Rg = 94
CRI	Ra = 82
	R9 = <6

4000K CCT Color Metric Summary					
CCT:	4000K	CRI:	92		
Δ					
2700	3000	3500	4000	5000	



TM-30	Rf = 90
	Rg = 99
CRI	Ra = 92
	R9 = 63

4000K CCT Color Metric Summary					
CCT:	4014	CRI:	98		
Δ					
2700	3000	3500	4000	5000	



TM-30	Rf = 94
	Rg = 100
CRI	Ra = 98
	R9 = 98

xxx4-FSL-SS-MED-840K-040L		3716 Lumens	UGR Rating:	13	20x30x10h
Medical Downlight Performance			Spacing Criteria: 0-180 0.58		
Size	Distribution	Finish	Spacing Criteria: Diag. 0.72		
4"	Medium	Semi-Specular	Beam Angle	34.1	
Watts:	41.4	80CRI	2000	4000	6000 8000
Mtg. Ht. (ft)	Light Level (fc)	Beam Dia. (ft)			
5	308.8	3.1			
6	214.4	3.7			
7	157.6	4.3			
8	120.6	4.9			
9	95.3	5.5			
10	77.2	6.1			

xxx4-FSL-SS-WD-840K-040L		3913 Lumens	UGR Rating:	14	20x30x10h
Medical Downlight Performance			Spacing Criteria: 0-180 1.62		
Size	Distribution	Finish	Spacing Criteria: Diag. 1.22		
4"	Wide	Semi-Specular	Beam Angle	79.8	
Watts:	40.5w	80CRI	700	1400	2100 2800
Mtg. Ht. (ft)	Light Level (fc)	Beam Dia. (ft)			
5	88.4	8.4			
6	61.4	10.0			
7	45.1	11.7			
8	34.5	13.4			
9	27.3	15.1			
10	22.1	16.7			

xxx4-FSL-PL-WD-840K-040L		3943 Lumens	UGR Rating:	13	20x30x10h
Medical Downlight Performance			Spacing Criteria: 0-180 1.26		
Size	Distribution	Finish	Spacing Criteria: Diag. 1.1		
4"	Wide	Platinum (PL)	Beam Angle	75.5	
Watts:	41.7	80CRI	750	1500	2250 3000
Mtg. Ht. (ft)	Light Level (fc)	Beam Dia. (ft)			
5	116.0	7.7			
6	80.6	9.3			
7	59.2	10.8			
8	45.3	12.4			
9	35.8	13.9			
10	29.0	15.5			

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