Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR3Mx 25L 35K WD xx xx RDD3F 25L 35K WD MW GL

Nom. 3" Round Deep Downlight A-Spec, Wide Beam

Test Number

SP-01409_2

Test Date

9/19/2022

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	26.3 W

Lumen Output

Output Lumens	2414
Efficacy	91.79 lm/W

Luminous Dimensions

0° - 180° Size	-0.25
90° - 270° Size	-0.25
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.6
Two luminaires, plane 90°	0.59
Four luminaires	0.64

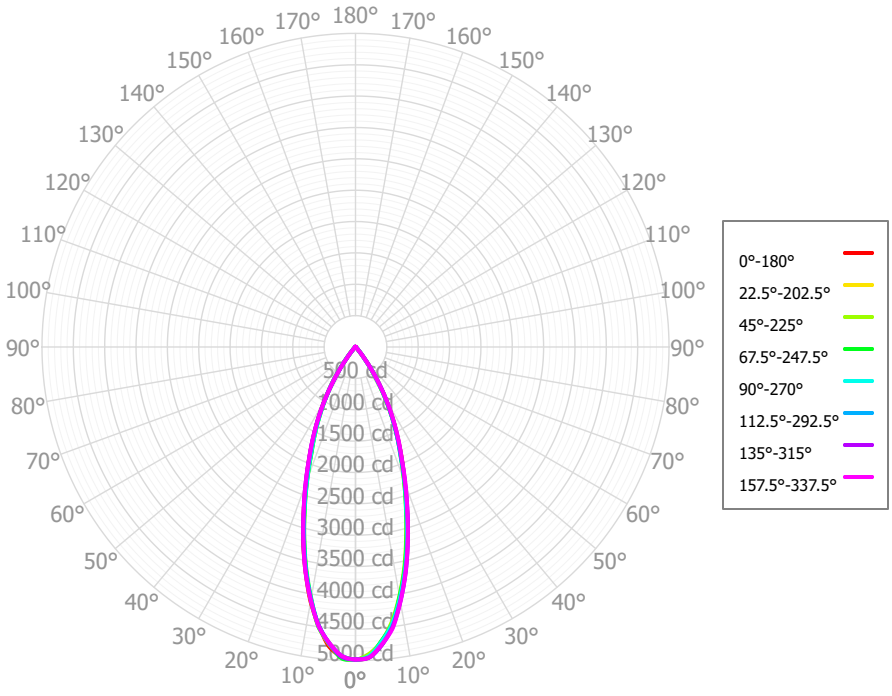
Full Beam Angle

0° - 180°	38°
90° - 270°	37°

IES File Header Contents

Keyword	Value
TEST	SP-01409_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/19/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 25L 35K WD xx xx RDD3F 25L 35K WD MW GL
LUMINAIRE	Nom. 3" Round Deep Downlight A-Spec, Wide Beam
OTHER	Matte White Trim, Clear Glass lens
OTHER	38 Degree Beam Angle
LAMP	N/A, 19mm LES
LAMPCAT	N/A, Min. 80 CRI
OTHER	Reference project SL167
OTHER	minus 2W, no thermal protection required for 7L, 10L, and 15L (non-IC)
OTHER	minus 2W, no thermal protection required for all (including 20L and 25L) IC luminaires
OTHER	Total Luminaire Watts is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	80

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture
0.00° - 10.00°	437.93	18.14%
10.00° - 20.00°	871.63	36.11%
20.00° - 30.00°	716.79	29.69%
30.00° - 40.00°	296.65	12.29%
40.00° - 50.00°	43.94	1.82%
50.00° - 60.00°	17.50	0.72%
60.00° - 70.00°	10.07	0.42%
70.00° - 80.00°	4.03	0.17%
80.00° - 90.00°	2.37	0.10%
0.00° - 90.00°	2400.93	99.45%

Zone	Lumens	% Fixture
90.00° - 100.00°	1.99	0.08%
100.00° - 110.00°	1.96	0.08%
100.00° - 120.00°	3.86	0.16%
120.00° - 130.00°	1.83	0.08%
130.00° - 140.00°	1.72	0.07%
140.00° - 150.00°	1.60	0.07%
150.00° - 160.00°	1.23	0.05%
160.00° - 170.00°	0.70	0.03%
170.00° - 180.00°	0.24	0.01%
0.00° - 180.00°	2414.12	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58	4983.58
2.50°	4923.53	4955.64	4901.38	4947.14	4933.38	4930.90	4947.61	4931.33	4941.83	4955.66	4934.81	4973.33	4945.99	4953.72	4960.22	4955.14	4923.53
5.00°	4771.91	4740.97	4719.73	4709.09	4724.18	4751.92	4751.51	4743.01	4800.06	4761.57	4767.05	4747.73	4753.63	4769.48	4777.10	4766.73	4771.91
7.50°	4444.90	4475.73	4425.88	4462.51	4460.51	4480.42	4488.60	4493.68	4480.17	4504.77	4489.32	4506.78	4492.00	4501.38	4513.03	4529.42	4444.90
10.00°	4085.52	4075.59	4033.84	4045.25	4068.60	4086.54	4102.50	4100.69	4124.93	4096.23	4103.26	4069.82	4083.82	4113.00	4121.10	4125.67	4085.52
12.50°	3644.86	3646.68	3595.37	3622.59	3644.49	3653.97	3670.60	3680.86	3676.99	3663.47	3639.81	3628.89	3650.87	3670.52	3694.18	3685.93	3644.86
15.00°	3193.32	3177.48	3122.51	3141.98	3172.43	3178.10	3211.82	3207.92	3221.38	3182.33	3169.19	3155.93	3174.33	3206.11	3220.68	3219.38	3193.32
17.50°	2739.95	2702.02	2678.92	2671.27	2691.04	2726.28	2745.03	2752.71	2748.99	2715.83	2694.24	2688.02	2707.75	2733.48	2758.71	2748.58	2739.95
20.00°	2286.43	2296.98	2253.57	2268.85	2288.52	2297.62	2331.55	2326.78	2310.92	2274.10	2262.25	2248.38	2256.11	2302.70	2309.94	2333.10	2286.43
22.50°	1932.77	1899.49	1894.66	1881.07	1896.92	1922.84	1930.73	1939.63	1936.22	1881.02	1852.16	1834.69	1861.43	1884.77	1919.98	1923.68	1932.77
25.00°	1582.90	1585.44	1570.97	1567.67	1576.45	1592.00	1604.42	1607.22	1590.25	1557.15	1532.68	1532.13	1539.96	1564.39	1587.00	1609.16	1582.90
27.50°	1283.85	1276.28	1255.83	1257.18	1262.50	1276.89	1291.34	1286.43	1288.72	1251.24	1252.01	1237.73	1241.31	1267.43	1276.33	1300.82	1283.85
30.00°	985.87	981.47	944.52	957.87	971.46	972.77	993.74	979.53	996.82	967.23	983.20	970.61	967.49	987.00	983.96	1005.08	985.87
32.50°	713.88	688.18	677.57	673.74	681.45	701.32	698.12	700.59	717.48	704.34	718.53	711.74	710.47	709.53	715.09	710.74	713.88
35.00°	448.91	447.76	426.80	436.81	450.71	449.07	459.41	450.30	469.42	463.28	483.43	475.36	468.96	469.92	462.76	467.93	448.91
37.50°	263.30	217.65	256.79	238.99	225.67	271.49	225.09	264.83	256.40	278.38	256.54	274.29	280.17	235.20	276.01	234.18	263.30
40.00°	96.99	136.27	110.36	139.45	143.87	131.10	142.45	135.69	126.74	143.38	150.96	151.96	133.16	142.49	128.66	144.06	96.99
42.50°	68.94	61.89	67.41	67.11	67.01	74.51	65.61	68.94	76.19	72.07	71.94	65.95	62.88	61.62	65.72	61.25	68.94
45.00°	43.87	48.77	48.47	51.02	52.18	52.35	51.30	48.72	47.25	48.66	48.32	48.18	44.68	46.75	45.11	46.42	43.87
47.50°	34.41	36.48	37.90	38.46	38.24	39.54	37.29	36.20	35.94	35.13	33.88	34.70	33.34	34.35	34.08	32.77	34.41
50.00°	26.05	29.29	28.81	32.08	31.16	29.90	29.70	28.54	27.85	27.95	27.33	27.97	25.92	28.38	27.02	26.39	26.05
52.50°	22.13	22.83	24.18	26.36	24.51	24.29	22.55	23.62	22.00	22.22	21.68	22.08	21.61	22.45	22.37	20.61	22.13
55.00°	18.42	19.69	20.11	21.61	20.28	19.77	20.14	20.17	17.97	17.28	18.61	17.32	18.78	17.40	18.55	17.58	18.42
57.50°	15.37	16.70	17.18	17.93	16.40	17.12	17.63	16.95	15.02	14.58	15.72	14.39	15.99	12.67	15.17	14.98	15.37
60.00°	12.76	14.23	14.33	15.58	13.98	14.87	14.42	13.84	13.56	12.90	14.27	13.55	13.21	11.51	11.91	13.90	12.76
62.50°	11.30	11.92	12.17	13.03	11.64	12.86	11.36	11.86	12.84	11.88	12.86	12.02	11.99	10.43	10.51	12.47	11.30
65.00°	9.76	10.09	10.02	10.25	9.58	10.90	9.06	10.31	11.35	11.11	11.31	9.83	11.26	9.90	9.50	10.04	9.76
67.50°	8.06	8.17	8.41	7.99	7.74	8.59	6.97	8.83	9.54	8.86	9.74	8.14	9.26	9.05	8.11	7.94	8.06
70.00°	6.48	6.01	6.77	6.22	6.47	6.24	5.71	7.36	7.13	6.15	7.64	6.85	6.92	6.59	6.67	6.62	6.48
72.50°	5.11	4.19	4.84	4.49	5.18	4.75	4.47	5.25	4.52	4.54	5.57	5.07	5.22	4.39	5.19	5.23	5.11
75.00°	3.94	3.05	3.04	2.81	3.87	3.30	3.29	2.98	3.25	3.19	3.77	2.94	3.65	3.23	3.71	3.69	3.94
77.50°	3.06	2.37	2.59	2.29	2.84	2.66	2.39	2.59	2.34	2.47	2.27	2.52	3.14	2.42	2.93	2.58	3.06
80.00°	2.55	2.42	2.19	2.55	2.33	2.07	2.22	2.52	2.24	1.88	2.58	3.13	2.77	2.72	2.20	2.20	2.55
82.50°	2.50	2.30	2.09	2.56	2.02	2.39	2.10	2.30	2.32	1.62	2.78	2.84	2.49	2.89	2.15	2.12	2.50
85.00°	2.36	1.94	2.00	2.44	2.00	2.65	2.06	2.06	2.13	1.41	2.42	2.11	2.21	2.73	2.11	2.45	2.36
87.50°	2.11	1.69	2.01	2.10	1.98	1.94	1.94	1.97	1.89	1.54	2.12	1.81	2.22	2.57	1.98	2.56	2.11
90.00°	1.89	1.57	1.97	1.66	1.96	1.36	1.65	1.90	1.92	1.70	2.05	1.70	2.26	2.40	1.86	2.40	1.89
92.50°	1.69	1.53	1.76	1.61	1.93	1.85	1.62	1.62	1.97	1.53	2.00	1.82	1.94	2.26	1.79	2.07	1.69
95.00°	1.76	1.58	1.65	1.70	1.91	2.22	1.98	1.33	1.80	1.35	2.02	2.00	1.64	2.18	1.73	1.58	1.76
97.50°	2.05	1.75	1.82	1.95	1.86	1.92	2.13	1.51	1.62	1.62	2.04	1.83	1.98	2.01	1.78	1.42	2.05
100.00°	2.03	2.02	1.98	2.25	1.79	1.67	2.04	1.67	1.74	1.86	2.10	1.56	2.29	1.72	1.81	1.56	2.03

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	2871	2871	2871	2871	2803	2803	2803	2803	2675	2675	2675	2558	2558	2558	2451	2451	2451	2401
	1	2751	2690	2635	2586	2691	2637	2588	2544	2537	2499	2463	2446	2416	2388	2362	2339	2317	2291
	2	2633	2528	2441	2368	2580	2486	2407	2340	2407	2343	2287	2334	2282	2237	2267	2225	2188	2181
	3	2521	2384	2277	2192	2474	2350	2252	2174	2286	2205	2138	2227	2160	2103	2173	2117	2070	2076
	4	2415	2254	2136	2047	2373	2227	2118	2034	2175	2082	2009	2126	2048	1985	2082	2016	1961	1978
RCR	5	2314	2137	2013	1922	2276	2114	1999	1913	2071	1972	1895	2032	1945	1878	1994	1920	1861	1886
	6	2219	2030	1904	1813	2185	2012	1893	1807	1976	1872	1794	1942	1851	1781	1911	1831	1769	1800
	7	2129	1933	1806	1717	2099	1917	1797	1712	1887	1781	1703	1859	1764	1693	1832	1748	1684	1719
	8	2045	1844	1718	1631	2018	1831	1711	1627	1805	1697	1620	1781	1684	1613	1758	1671	1606	1645
	9	1966	1762	1638	1553	1941	1751	1632	1551	1729	1621	1545	1708	1610	1540	1688	1599	1534	1575
	10	1892	1687	1564	1483	1869	1677	1560	1481	1658	1550	1476	1640	1541	1472	1623	1533	1468	1510

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	164.7 fc	3.8 ft
6.5 ft	118.0 fc	4.5 ft
7.5 ft	88.6 fc	5.1 ft
8.0 ft	77.9 fc	5.5 ft
10.0 ft	49.8 fc	6.9 ft
12.0 ft	34.6 fc	8.2 ft
14.0 ft	25.4 fc	9.6 ft
16.0 ft	19.5 fc	11.0 ft
20.0 ft	12.5 fc	13.7 ft
24.0 ft	8.7 fc	16.5 ft
28.0 ft	6.4 fc	19.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1092803	1092803	1092803
45.00°	13605	15032	16182
55.00°	7041	7688	7753
65.00°	5063	5201	4973
75.00°	3338	2578	3279
85.00°	5925	5043	5034

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	7.4	8.3	7.8	8.7	9.0	7.5	8.4	7.9	8.7	9.1
	3H	8.4	9.3	8.8	9.6	10.0	8.6	9.4	9.0	9.7	10.1
	4H	8.7	9.4	9.1	9.8	10.2	8.8	9.5	9.2	9.9	10.3
	6H	8.9	9.6	9.3	9.9	10.4	9.0	9.7	9.4	10.0	10.5
	8H	9.0	9.6	9.5	10.1	10.5	9.1	9.7	9.5	10.1	10.6
	12H	9.2	9.8	9.7	10.2	10.7	9.3	9.9	9.7	10.3	10.7
4H	2H	7.7	8.5	8.1	8.8	9.2	7.8	8.6	8.2	8.9	9.3
	3H	8.9	9.5	9.3	9.9	10.3	9.0	9.6	9.5	10.1	10.5
	4H	9.2	9.7	9.6	10.2	10.6	9.3	9.8	9.7	10.3	10.7
	6H	9.4	9.9	9.9	10.4	10.8	9.6	10.0	10.0	10.5	11.0
	8H	9.6	10.1	10.1	10.5	11.0	9.7	10.2	10.2	10.6	11.1
	12H	10.0	10.3	10.5	10.8	11.3	10.0	10.4	10.5	10.9	11.4
8H	4H	9.2	9.6	9.7	10.1	10.6	9.3	9.7	9.8	10.2	10.7
	6H	9.6	9.9	10.1	10.4	10.9	9.7	10.0	10.2	10.5	11.0
	8H	9.9	10.2	10.4	10.7	11.2	10.0	10.3	10.6	10.9	11.4
	12H	10.4	10.6	10.9	11.2	11.7	10.5	10.8	11.1	11.3	11.9
12H	4H	9.2	9.5	9.7	10.0	10.5	9.3	9.6	9.8	10.1	10.6
	6H	9.6	9.9	10.1	10.3	10.9	9.7	10.0	10.3	10.5	11.1
	8H	9.9	10.2	10.5	10.7	11.3	10.1	10.4	10.7	10.9	11.5

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0