Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR3Mx 25L 35K MD xx xx RD3F 25L 35K MD MW SO

Nom. 3" Round Downlight, Medium Beam

Test Number

SP-01417

Test Date

9/21/2022

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	2410
Efficacy	91.64 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.48
Two luminaires, plane 90°	0.48
Four luminaires	0.5

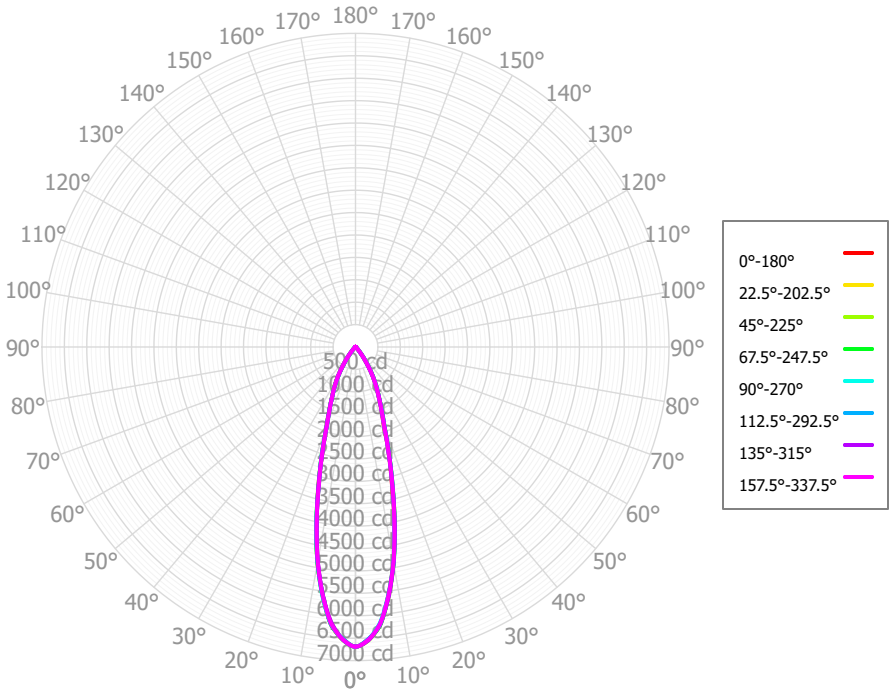
Full Beam Angle

0° - 180°	29°
90° - 270°	29°

IES File Header Contents

Keyword	Value
TEST	SP-01417
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2022
ISSUEDATE	10/24/2022
LUMCAT	SR3Mx 25L 35K MD xx xx RD3F 25L 35K MD MW SO
LUMINAIRE	Nom. 3" Round Downlight, Medium Beam
OTHER	Matte White Trim, Solite lens
OTHER	29 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	For RD3F or RD3N Downlight Trim
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture
0.00° - 10.00°	553.66	22.97%
10.00° - 20.00°	870.29	36.11%
20.00° - 30.00°	575.30	23.87%
30.00° - 40.00°	272.47	11.31%
40.00° - 50.00°	63.12	2.62%
50.00° - 60.00°	29.11	1.21%
60.00° - 70.00°	20.22	0.84%
70.00° - 80.00°	10.09	0.42%
80.00° - 90.00°	2.98	0.12%
0.00° - 90.00°	2397.25	99.47%

Zone	Lumens	% Fixture
90.00° - 100.00°	2.03	0.08%
100.00° - 110.00°	1.93	0.08%
100.00° - 120.00°	3.76	0.16%
120.00° - 130.00°	1.84	0.08%
130.00° - 140.00°	1.65	0.07%
140.00° - 150.00°	1.43	0.06%
150.00° - 160.00°	1.15	0.05%
160.00° - 170.00°	0.71	0.03%
170.00° - 180.00°	0.21	0.01%
0.00° - 180.00°	2410.04	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°	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54	6690.54
2.50°	6534.77	6550.46	6561.68	6542.06	6540.50	6517.04	6541.81	6530.19	6532.06	6540.71	6543.62	6525.98	6538.89	6528.19	6555.99	6542.96	6534.77
5.00°	6245.81	6224.13	6222.31	6246.91	6196.92	6225.07	6178.79	6210.57	6231.24	6215.26	6183.42	6229.38	6210.36	6235.51	6215.68	6223.59	6245.81
7.50°	5605.21	5614.63	5648.35	5617.16	5601.43	5589.02	5592.11	5597.10	5598.89	5611.27	5600.36	5606.22	5630.11	5604.83	5644.93	5609.26	5605.21
10.00°	4873.07	4889.29	4887.90	4908.17	4870.82	4867.77	4854.27	4853.45	4891.95	4868.24	4868.26	4885.81	4880.36	4901.48	4878.62	4888.39	4873.07
12.50°	4014.06	4004.92	4055.23	4026.31	4000.08	4019.52	3989.68	4015.79	4006.78	4029.25	4004.69	4039.55	4046.73	4017.56	4043.39	4002.21	4014.06
15.00°	3127.98	3183.78	3171.15	3199.26	3194.43	3145.01	3187.24	3142.22	3175.30	3148.69	3199.17	3162.07	3163.48	3184.24	3156.50	3176.44	3127.98
17.50°	2459.53	2440.39	2472.25	2476.32	2448.48	2481.31	2430.81	2468.86	2456.84	2470.96	2439.56	2494.51	2472.82	2461.50	2458.36	2433.23	2459.53
20.00°	1829.11	1879.10	1889.31	1890.35	1902.71	1852.12	1897.92	1861.98	1870.20	1870.24	1900.06	1869.36	1883.44	1868.17	1884.83	1864.80	1829.11
22.50°	1504.70	1515.71	1511.30	1535.56	1521.64	1521.47	1513.02	1513.65	1529.25	1517.18	1514.09	1533.24	1510.80	1520.87	1506.50	1507.20	1504.70
25.00°	1221.27	1230.12	1245.78	1239.80	1238.08	1227.70	1237.09	1237.64	1242.01	1245.85	1235.08	1244.56	1239.04	1225.10	1243.10	1220.24	1221.27
27.50°	1003.51	1020.40	1022.01	1031.57	1026.39	1018.24	1024.52	1025.32	1042.45	1026.41	1021.69	1023.84	1012.89	1015.06	1014.34	1009.71	1003.51
30.00°	792.32	810.77	818.56	823.49	817.09	816.41	818.14	827.72	838.27	821.39	810.99	811.53	805.09	805.98	803.40	798.41	792.32
32.50°	591.24	601.21	621.96	615.60	609.35	620.03	614.90	627.99	627.47	618.43	601.76	608.61	606.48	598.35	601.10	586.37	591.24
35.00°	390.81	422.93	428.30	433.37	433.92	423.99	440.51	427.86	441.59	415.94	424.75	406.55	411.04	416.59	402.72	408.12	390.81
37.50°	266.42	268.47	289.63	281.21	276.88	291.70	279.07	292.91	287.71	283.01	263.08	277.60	276.48	268.68	268.92	258.87	266.42
40.00°	144.34	169.40	171.25	172.25	178.16	161.51	181.66	167.71	176.78	163.29	168.06	152.70	160.00	162.89	160.49	160.86	144.34
42.50°	103.33	108.06	112.52	108.68	108.93	112.49	109.49	114.04	114.62	110.04	100.98	106.97	107.12	106.53	105.38	101.69	103.33
45.00°	63.27	73.14	72.51	68.77	73.10	64.66	74.37	68.59	73.48	66.63	69.81	63.47	69.97	70.45	68.54	68.02	63.27
47.50°	52.69	54.03	54.03	50.87	51.94	52.33	51.73	52.92	53.45	52.82	51.57	51.55	54.94	55.41	52.58	51.64	52.69
50.00°	42.42	43.36	41.34	39.42	40.11	40.55	42.36	39.57	40.28	42.23	42.00	39.95	44.49	44.43	42.67	42.45	42.42
52.50°	37.44	37.18	35.32	33.28	31.88	36.97	36.76	34.44	33.31	36.94	35.12	37.06	38.97	37.23	37.88	37.54	37.44
55.00°	32.69	32.32	30.79	29.49	28.04	33.48	31.52	29.70	29.09	32.05	31.50	34.07	34.26	32.97	34.32	33.10	32.69
57.50°	30.33	28.06	28.10	27.43	25.63	30.76	26.36	27.29	27.09	29.51	28.72	29.48	30.64	31.13	30.65	28.89	30.33
60.00°	27.89	26.31	25.74	25.11	24.15	27.81	23.65	24.92	24.55	27.08	25.58	25.12	27.15	27.98	26.96	26.21	27.89
62.50°	24.78	25.58	22.96	22.63	22.93	23.13	21.42	23.14	21.62	24.92	22.37	23.04	24.85	23.89	23.90	24.22	24.78
65.00°	21.64	22.95	20.11	19.03	20.75	18.63	18.72	21.29	18.68	22.76	19.54	20.93	22.66	20.55	20.94	21.18	21.64
67.50°	18.26	19.66	16.45	14.78	18.35	15.13	15.94	18.13	15.75	20.37	16.77	18.54	17.87	17.71	18.40	17.72	18.26
70.00°	15.03	16.25	12.71	12.64	14.51	12.13	13.50	15.07	13.14	17.85	14.88	15.99	12.94	14.78	15.92	14.84	15.03
72.50°	12.51	12.81	11.00	11.56	10.40	11.42	11.09	13.44	10.72	12.56	13.10	12.55	10.74	11.78	12.81	12.16	12.51
75.00°	9.92	10.23	9.45	9.34	9.75	10.31	8.94	11.61	8.92	7.58	9.64	9.32	8.60	8.90	9.64	9.47	9.92
77.50°	7.04	7.86	7.19	6.62	9.64	7.68	6.82	8.01	7.41	6.43	6.01	7.05	6.63	6.08	7.52	6.79	7.04
80.00°	4.63	5.68	4.91	4.50	6.59	5.22	4.79	4.68	5.37	5.24	4.52	4.89	4.70	4.59	5.45	4.82	4.63
82.50°	3.77	3.55	3.76	2.61	3.19	3.26	2.77	3.11	3.10	3.67	3.17	3.14	3.61	3.68	3.37	3.04	3.77
85.00°	2.96	2.67	2.64	2.20	2.52	1.83	2.11	1.77	2.16	2.31	2.49	1.87	2.58	2.63	1.30	2.09	2.96
87.50°	2.25	2.00	2.64	2.26	2.06	1.89	1.49	1.57	1.71	2.23	1.84	2.16	2.32	1.53	1.61	1.31	2.25
90.00°	1.73	1.92	2.63	1.94	1.66	2.04	1.72	1.38	1.71	2.14	1.73	2.28	2.10	1.41	1.91	1.54	1.73
92.50°	1.69	1.91	2.47	1.52	1.26	2.42	1.94	1.23	1.84	1.95	1.63	1.96	2.32	1.62	1.86	1.93	1.69
95.00°	1.76	1.80	2.30	1.66	1.55	2.51	2.03	1.15	2.05	1.78	1.69	1.78	2.46	1.65	1.81	2.00	1.76
97.50°	2.07	1.69	2.03	1.93	1.83	2.01	2.10	1.26	2.29	1.68	1.73	1.92	2.05	1.62	1.86	2.03	2.07
100.00°	2.21	1.78	1.80	2.14	1.61	1.62	2.01	1.35	1.85	1.61	1.52	2.09	1.75	1.86	1.87	1.79	2.21

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	2866	2866	2866	2866	2798	2798	2798	2798	2671	2671	2671	2554	2554	2554	2447	2447	2447	2397
	1	2747	2686	2632	2583	2687	2633	2585	2541	2534	2496	2460	2443	2413	2385	2359	2336	2314	2289
	2	2631	2526	2440	2367	2578	2485	2406	2340	2406	2342	2287	2333	2282	2237	2266	2225	2189	2181
	3	2522	2386	2280	2197	2475	2352	2256	2178	2289	2208	2142	2230	2164	2108	2176	2121	2074	2080
	4	2419	2261	2145	2056	2377	2233	2126	2044	2182	2091	2019	2134	2057	1994	2089	2024	1971	1987
RCR	5	2322	2149	2027	1938	2285	2126	2013	1929	2084	1986	1911	2044	1960	1894	2007	1935	1877	1900
	6	2231	2048	1924	1836	2198	2029	1913	1829	1994	1892	1816	1961	1871	1803	1930	1852	1791	1820
	7	2147	1956	1832	1746	2117	1940	1824	1741	1911	1807	1731	1883	1791	1722	1857	1775	1712	1746
	8	2067	1873	1750	1666	2041	1859	1743	1662	1834	1729	1655	1810	1716	1648	1788	1704	1641	1677
	9	1993	1796	1676	1594	1969	1785	1670	1591	1763	1659	1586	1743	1648	1580	1723	1638	1575	1613
	10	1924	1726	1608	1529	1902	1716	1603	1527	1698	1594	1522	1680	1585	1518	1663	1576	1514	1554

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	221.2 fc	2.8 ft
6.5 ft	158.4 fc	3.3 ft
7.5 ft	118.9 fc	3.9 ft
8.0 ft	104.5 fc	4.1 ft
10.0 ft	66.9 fc	5.1 ft
12.0 ft	46.5 fc	6.2 ft
14.0 ft	34.1 fc	7.2 ft
16.0 ft	26.1 fc	8.2 ft
20.0 ft	16.7 fc	10.3 ft
24.0 ft	11.6 fc	12.4 ft
28.0 ft	8.5 fc	14.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1467105	1467105	1467105
45.00°	19619	22485	22670
55.00°	12498	11770	10719
65.00°	11227	10435	10767
75.00°	8403	8002	8263
85.00°	7440	6646	6333

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	11.6	12.6	12.0	12.9	13.2	11.8	12.8	12.2	13.1	13.4
	3H	13.2	14.1	13.6	14.4	14.8	13.2	14.0	13.5	14.3	14.7
	4H	13.7	14.5	14.1	14.8	15.2	13.6	14.3	14.0	14.7	15.1
	6H	13.9	14.6	14.4	15.0	15.4	13.9	14.6	14.3	15.0	15.4
	8H	14.0	14.7	14.4	15.1	15.5	14.0	14.6	14.4	15.0	15.5
	12H	14.1	14.7	14.5	15.1	15.5	14.0	14.6	14.5	15.0	15.5
4H	2H	12.1	12.8	12.5	13.2	13.6	12.1	12.9	12.6	13.3	13.7
	3H	13.8	14.5	14.3	14.9	15.3	13.7	14.3	14.1	14.7	15.2
	4H	14.4	15.0	14.9	15.4	15.9	14.2	14.8	14.7	15.2	15.7
	6H	14.7	15.2	15.2	15.7	16.2	14.7	15.2	15.2	15.6	16.1
	8H	14.8	15.3	15.3	15.7	16.2	14.8	15.2	15.2	15.7	16.2
	12H	14.9	15.3	15.4	15.8	16.3	14.8	15.2	15.3	15.7	16.2
8H	4H	14.5	15.0	15.0	15.4	15.9	14.4	14.8	14.9	15.3	15.8
	6H	15.0	15.3	15.5	15.8	16.3	14.9	15.2	15.4	15.7	16.2
	8H	15.1	15.4	15.6	15.9	16.5	15.0	15.3	15.6	15.9	16.4
	12H	15.3	15.5	15.8	16.0	16.6	15.1	15.4	15.7	15.9	16.5
12H	4H	14.5	14.9	15.0	15.4	15.9	14.3	14.7	14.8	15.2	15.7
	6H	15.0	15.3	15.5	15.8	16.3	14.9	15.2	15.4	15.7	16.2
	8H	15.1	15.4	15.7	15.9	16.5	15.0	15.3	15.6	15.8	16.4

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0