

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SR3Mx 25L 35K ND xx xx RD3F 25L 35K ND MW NL  
Nom. 3" Round Downlight, Narrow Beam

### **Test Number**

SP-01416\_1

### **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
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#### Lumen Output

Output Lumens	2580
Efficacy	98.08 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.39
Two luminaires, plane 90°	0.39
Four luminaires	0.42

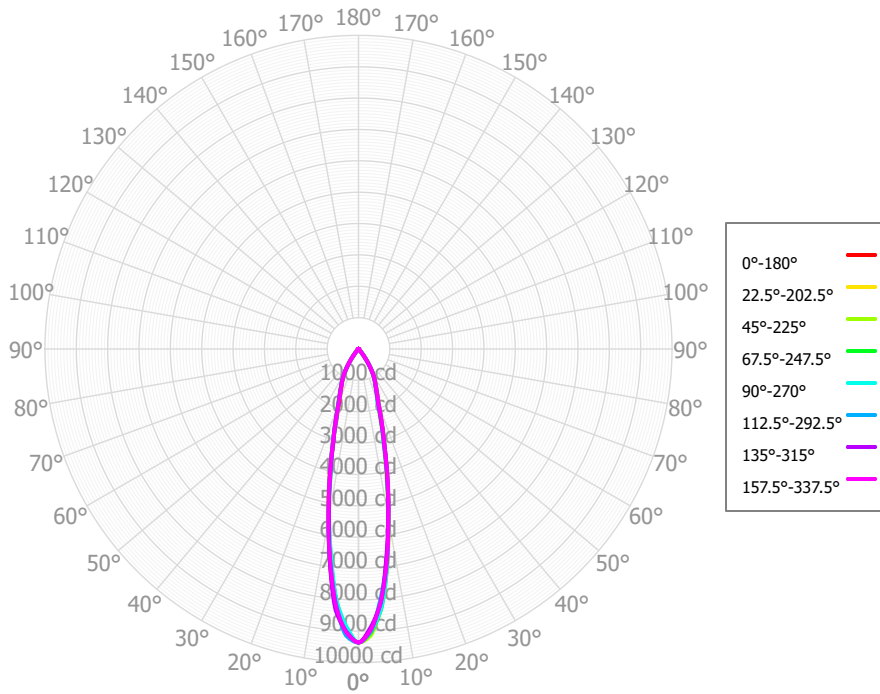
#### Full Beam Angle

0° - 180°	23°
90° - 270°	23°

### IES File Header Contents

Keyword	Value
TEST	SP-01416_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2022
ISSUDATE	10/24/2022
LUMCAT	SR3Mx 25L 35K ND xx xx RD3F 25L 35K ND MW NL
LUMINAIRE	Nom. 3" Round Downlight, Narrow Beam
OTHER	Matte White Trim, No lens
OTHER	23 Degree Beam Angle
LAMP	N/A, 19mm LES
LAMPCAT	N/A, Min. 80 CRI
OTHER	Reference project SL167
OTHER	Total Luminaire Watts is approximate
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	For RD3F or RD3N Downlight Trim
OTHER	This report prepared by Spectrum Lighting

**Candela Polar Plot**



**Zonal Lumen Summary**

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	693.12	26.87%	90.00° - 100.00°	1.81	0.07%
10.00° - 20.00°	890.62	34.53%	100.00° - 110.00°	1.77	0.07%
20.00° - 30.00°	601.33	23.31%	100.00° - 120.00°	3.52	0.14%
30.00° - 40.00°	297.38	11.53%	120.00° - 130.00°	1.60	0.06%
40.00° - 50.00°	34.56	1.34%	130.00° - 140.00°	1.53	0.06%
50.00° - 60.00°	20.82	0.81%	140.00° - 150.00°	1.40	0.05%
60.00° - 70.00°	20.38	0.79%	150.00° - 160.00°	1.14	0.04%
70.00° - 80.00°	6.25	0.24%	160.00° - 170.00°	0.65	0.03%
80.00° - 90.00°	3.29	0.13%	170.00° - 180.00°	0.21	0.01%
0.00° - 90.00°	2567.74	99.54%	0.00° - 180.00°	2579.61	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°	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58	9357.58
2.50°	8942.74	9079.72	9135.73	9048.90	9004.45	9144.57	9016.88	9039.91	8997.67	9048.39	9054.52	8902.94	886716	9007.58	8889.81	8970.97	8942.74
5.00°	8189.10	8156.45	8156.26	8317.00	8302.84	8189.59	8361.46	8229.29	8276.70	8092.33	8069.90	8078.10	8065.74	8020.08	8130.49	8119.24	8189.10
7.50°	6825.80	6976.79	6874.38	6990.78	6954.85	6908.50	6942.52	6867.89	6934.27	6786.02	6911.06	6725.21	6704.61	6864.70	6770.53	6897.23	6825.80
10.00°	5500.57	5505.95	5505.91	5455.88	5439.31	5522.47	5432.70	5531.98	5469.77	5465.32	5498.33	5428.86	5411.89	5476.47	5453.26	5487.76	5500.57
12.50°	4240.13	4260.82	4115.64	4239.73	4236.08	4107.42	4258.68	4217.61	4285.24	4139.52	4255.29	4198.29	4216.94	4259.54	4231.59	4300.56	4240.13
15.00°	3197.97	3209.51	3170.00	3098.39	3083.51	3172.62	3114.21	3197.68	3131.10	3166.81	3201.15	3203.14	3215.20	3221.81	3175.12	3195.50	3197.97
17.50°	2437.85	2456.21	2293.67	2398.48	2401.06	2320.46	2458.37	2367.43	2429.49	2280.24	2433.38	2415.07	2424.47	2446.67	2389.91	2476.12	2437.85
20.00°	1894.80	1898.07	1869.05	1760.96	1753.90	1892.49	1840.27	1860.19	1757.73	1831.97	1906.59	1897.84	1882.05	1882.07	181718	1853.19	1894.80
22.50°	1563.61	1559.78	1476.91	1505.81	1505.72	1501.69	1563.84	1506.34	1508.73	1449.11	1560.27	1559.81	1544.63	1534.07	1509.73	1553.66	1563.61
25.00°	1319.73	1327.78	1303.30	1273.28	1264.38	1311.30	1301.98	1288.52	1268.01	1269.70	1329.68	1318.62	1303.62	1316.14	1278.37	1304.08	1319.73
27.50°	1141.08	1128.51	1127.08	1103.96	1099.24	1121.39	1113.50	1116.57	1095.71	1102.83	1114.65	1125.56	1122.31	1114.34	1118.80	1117.33	1141.08
30.00°	928.61	940.73	916.76	930.36	925.96	902.52	915.70	904.15	913.75	889.34	906.98	905.21	911.22	919.62	921.58	934.77	928.61
32.50°	697.28	719.62	705.15	708.88	699.47	683.74	687.63	682.48	68713	675.36	686.92	675.00	686.36	702.01	69718	705.68	697.28
35.00°	480.05	490.71	485.63	491.19	480.02	465.58	469.04	465.48	468.45	455.27	462.63	462.43	472.35	477.20	480.58	479.31	480.05
37.50°	268.53	305.48	284.79	295.25	288.34	265.68	272.00	249.10	274.34	250.98	282.11	254.17	261.95	295.76	268.16	287.86	268.53
40.00°	148.95	126.40	155.52	130.06	132.01	141.15	126.08	144.90	123.23	139.18	111.53	144.47	148.28	123.38	146.92	116.05	148.95
42.50°	55.58	73.84	55.55	75.13	70.24	44.72	66.63	48.24	67.72	47.88	61.73	48.99	55.86	69.53	61.69	66.54	55.58
45.00°	29.44	28.94	32.11	32.31	26.52	27.70	29.40	32.66	30.05	32.72	27.65	31.69	34.71	29.31	32.34	26.05	29.44
47.50°	15.69	21.01	16.29	19.42	18.13	15.71	20.31	18.27	21.49	21.24	21.11	19.48	22.39	21.85	18.13	19.86	15.69
50.00°	15.09	13.89	15.01	11.59	13.60	14.05	16.11	16.47	17.58	19.17	16.13	19.05	18.29	15.83	16.97	15.89	15.09
52.50°	15.71	15.72	15.24	12.96	14.75	14.98	16.67	16.23	19.38	19.55	19.65	19.27	14.93	19.17	17.99	17.75	15.71
55.00°	22.83	18.57	17.61	16.60	18.46	19.82	20.17	24.40	23.56	24.49	23.64	27.39	25.15	23.04	26.16	21.87	22.83
57.50°	29.74	2712	21.76	23.37	25.01	23.90	25.83	31.19	29.96	29.25	32.64	34.54	34.42	31.46	34.93	30.32	29.74
60.00°	30.71	32.12	27.84	26.57	26.85	2710	27.25	33.12	30.97	33.74	38.85	36.03	34.31	36.96	35.03	32.96	30.71
62.50°	30.51	24.39	27.50	26.04	24.75	25.15	26.30	31.04	28.16	30.64	30.04	34.55	32.42	28.07	34.38	27.38	30.51
65.00°	21.32	17.76	21.88	21.65	20.09	18.70	19.95	19.22	21.73	19.45	21.53	22.03	21.33	19.70	23.12	20.74	21.32
67.50°	13.30	13.87	16.05	14.20	13.81	13.89	11.43	10.58	13.36	12.03	14.01	12.05	11.87	13.00	12.84	12.94	13.30
70.00°	10.37	10.49	10.09	9.44	9.41	10.17	7.62	7.61	9.22	7.63	8.00	8.51	7.92	8.00	9.18	8.22	10.37
72.50°	7.81	8.02	7.06	6.29	5.91	7.42	5.15	5.91	6.69	5.66	5.68	5.71	4.90	6.90	6.13	6.07	7.81
75.00°	6.30	6.34	5.37	5.36	5.21	5.16	5.42	5.88	5.45	5.16	4.13	4.28	4.06	5.97	5.53	5.37	6.30
77.50°	5.17	5.71	5.04	5.40	5.47	5.62	6.16	6.18	4.55	5.53	3.98	3.66	3.39	5.33	5.10	5.58	5.17
80.00°	4.82	5.16	5.14	4.97	4.81	7.05	4.99	6.83	4.38	6.29	3.83	4.16	3.03	4.57	5.16	5.12	4.82
82.50°	4.04	4.71	3.69	4.39	3.96	5.27	3.64	5.40	4.34	4.87	3.70	3.75	2.67	3.64	4.61	4.34	4.04
85.00°	2.58	3.62	1.89	3.02	2.88	2.71	2.46	2.38	3.34	2.75	3.21	2.38	2.32	2.72	2.79	3.06	2.58
87.50°	1.74	2.04	1.48	1.49	1.78	2.05	1.33	1.45	2.28	2.20	2.35	1.73	2.11	1.79	1.59	1.61	1.74
90.00°	1.61	1.43	1.25	1.70	1.91	1.66	1.26	1.77	1.78	1.99	1.79	1.66	2.06	1.34	1.31	1.38	1.61
92.50°	1.51	1.41	1.35	2.10	2.09	1.92	1.17	1.79	1.33	1.87	1.44	1.56	2.23	1.23	1.36	1.42	1.51
95.00°	1.42	1.21	1.47	1.65	1.64	2.21	1.04	1.68	1.47	1.77	1.76	1.45	2.58	1.34	1.78	1.59	1.42
97.50°	1.49	0.94	1.88	1.19	1.25	1.78	0.99	1.69	1.62	2.11	2.47	1.75	2.57	1.56	1.87	1.77	1.49
100.00°	1.67	1.20	2.22	1.41	1.54	1.38	1.31	1.73	1.82	2.43	2.34	2.23	2.34	1.60	1.67	1.76	1.67

SR3Mx 25L 35K ND xx xx RD3F 25L 35K ND  
 MW NL

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	<b>0</b>	3068	3068	3068	3068	2995	2995	2995	2995	2860	2860	2860	2735	2735	2735	2621	2621	2621	2568
	<b>1</b>	2946	2883	2827	2776	2882	2827	2777	2731	2721	2682	2645	2624	2593	2565	2535	2511	2489	2460
	<b>2</b>	2828	2720	2631	2556	2772	2675	2595	2526	2592	2526	2470	2515	2462	2416	2443	2401	2364	2354
	<b>3</b>	2716	2576	2468	2381	2666	2540	2441	2362	2473	2391	2323	2411	2343	2286	2354	2298	2250	2254
	<b>4</b>	2611	2448	2329	2238	2567	2419	2310	2225	2365	2272	2198	2314	2236	2172	2267	2201	2146	2161
	<b>5</b>	2512	2334	2209	2117	2473	2310	2194	2107	2265	2165	2088	2224	2137	2070	2185	2111	2051	2073
	<b>6</b>	2420	2231	2104	2013	2385	2211	2092	2006	2174	2069	1992	2139	2048	1978	2107	2027	1965	1992
	<b>7</b>	2333	2137	2010	1921	2302	2120	2001	1915	2089	1983	1905	2060	1965	1895	2033	1949	1885	1917
	<b>8</b>	2252	2051	1925	1839	2224	2037	1918	1835	2011	1904	1827	1986	1890	1819	1963	1876	1812	1847
	<b>9</b>	2175	1973	1849	1765	2150	1961	1843	1762	1938	1831	1756	1917	1820	1750	1897	1809	1744	1782
	<b>10</b>	2104	1901	1779	1698	2081	1891	1774	1696	1871	1765	1691	1853	1755	1687	1835	1746	1682	1721

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	309.3 fc	2.3 ft
6.5 ft	221.5 fc	2.7 ft
7.5 ft	166.4 fc	3.1 ft
8.0 ft	146.2 fc	3.3 ft
10.0 ft	93.6 fc	4.1 ft
12.0 ft	65.0 fc	4.9 ft
14.0 ft	47.7 fc	5.8 ft
16.0 ft	36.6 fc	6.6 ft
20.0 ft	23.4 fc	8.2 ft
24.0 ft	16.2 fc	9.9 ft
28.0 ft	11.9 fc	11.5 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	2051935	2051935	2051935
<b>45.00°</b>	9131	9959	8225
<b>55.00°</b>	8727	6734	7057
<b>65.00°</b>	11064	11353	10426
<b>75.00°</b>	5340	4548	4418
<b>85.00°</b>	6501	4751	7252

### 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				
<b>2H</b>	<b>2H</b>	11.5	12.5	11.9	12.8	13.1	11.7	12.6	12.1	13.0	13.3
	<b>3H</b>	12.3	13.1	12.7	13.4	13.8	12.3	13.1	12.7	13.5	13.9
	<b>4H</b>	12.5	13.2	12.9	13.6	14.0	12.4	13.1	12.8	13.5	13.9
	<b>6H</b>	12.7	13.4	13.1	13.7	14.2	12.5	13.2	13.0	13.6	14.0
	<b>8H</b>	12.8	13.4	13.3	13.9	14.3	12.6	13.3	13.1	13.7	14.1
	<b>12H</b>	12.9	13.5	13.3	13.9	14.4	12.7	13.3	13.2	13.7	14.2
<b>4H</b>	<b>2H</b>	12.1	12.9	12.6	13.2	13.7	12.1	12.9	12.6	13.3	13.7
	<b>3H</b>	12.9	13.5	13.3	13.9	14.3	12.8	13.4	13.2	13.8	14.2
	<b>4H</b>	13.1	13.6	13.5	14.1	14.5	12.9	13.4	13.3	13.9	14.3
	<b>6H</b>	13.4	13.9	13.9	14.3	14.8	13.2	13.6	13.6	14.1	14.6
	<b>8H</b>	13.6	14.0	14.1	14.5	15.0	13.3	13.8	13.8	14.2	14.7
	<b>12H</b>	13.8	14.1	14.3	14.6	15.1	13.5	13.8	14.0	14.3	14.8
<b>8H</b>	<b>4H</b>	13.1	13.5	13.6	14.0	14.5	12.8	13.3	13.3	13.7	14.2
	<b>6H</b>	13.6	13.9	14.1	14.4	14.9	13.3	13.7	13.8	14.2	14.7
	<b>8H</b>	13.9	14.2	14.4	14.7	15.2	13.6	13.9	14.2	14.5	15.0
	<b>12H</b>	14.2	14.5	14.7	15.0	15.6	13.9	14.2	14.4	14.7	15.3
<b>12H</b>	<b>4H</b>	13.1	13.4	13.6	13.9	14.4	12.8	13.2	13.3	13.7	14.2
	<b>6H</b>	13.6	13.9	14.2	14.4	14.9	13.4	13.7	13.9	14.1	14.7
	<b>8H</b>	14.0	14.3	14.5	14.8	15.4	13.7	14.0	14.3	14.5	15.1

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0