

## **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 SO  
Nom. 3" Round Downlight, Narrow Beam

### **Test Number**

SP-01417\_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	2390
Efficacy	90.87 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.4
Two luminaires, plane 90°	0.4
Four luminaires	0.44

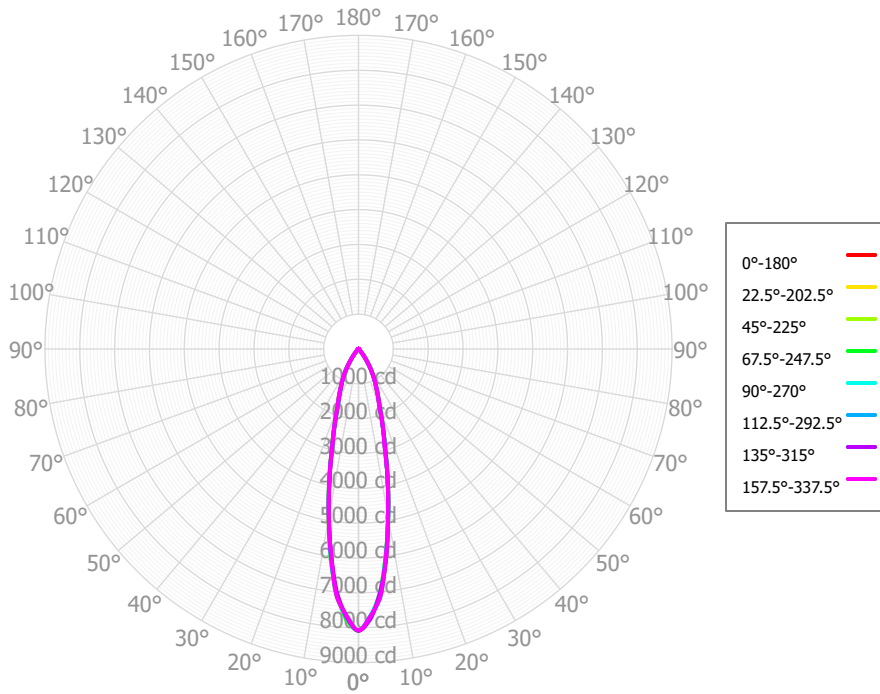
#### Full Beam Angle

0° - 180°	24°
90° - 270°	24°

### IES File Header Contents

Keyword	Value
TEST	SP-01417_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 SO
LUMINAIRE	Nom. 3" Round Downlight, Narrow Beam
OTHER	Matte White Trim, Solite lens
OTHER	24 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	Zone	Lumens	% Fixture
0.00° - 10.00°	606.07	25.36%	90.00° - 100.00°	2.14	0.09%
10.00° - 20.00°	826.04	34.56%	100.00° - 110.00°	2.13	0.09%
20.00° - 30.00°	551.11	23.06%	100.00° - 120.00°	4.06	0.17%
30.00° - 40.00°	256.53	10.73%	120.00° - 130.00°	1.89	0.08%
40.00° - 50.00°	60.08	2.51%	130.00° - 140.00°	1.78	0.07%
50.00° - 60.00°	37.48	1.57%	140.00° - 150.00°	1.64	0.07%
60.00° - 70.00°	24.85	1.04%	150.00° - 160.00°	1.21	0.05%
70.00° - 80.00°	10.86	0.45%	160.00° - 170.00°	0.71	0.03%
80.00° - 90.00°	3.22	0.13%	170.00° - 180.00°	0.23	0.01%
0.00° - 90.00°	2376.27	99.43%	0.00° - 180.00°	2389.93	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°	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48	8082.48
2.50°	7711.38	7703.56	7685.17	7724.03	7673.10	7675.40	7713.83	7679.95	7690.86	7739.14	7699.52	7795.18	7718.80	7689.56	7763.36	7692.04	7711.38
5.00°	7097.97	7074.83	7093.94	7023.54	7082.38	7124.12	7043.45	7139.04	7110.79	7068.90	7155.01	7063.81	7112.05	7161.93	7044.15	7147.87	7097.97
7.50°	6045.59	5986.87	6020.16	5974.76	5986.85	6014.53	5991.64	6011.44	6005.76	6066.31	6031.43	6107.12	6065.26	6020.32	6070.57	6024.77	6045.59
10.00°	4882.04	4912.65	4875.93	4912.60	4908.35	4875.70	4917.82	4896.38	4915.47	4895.13	4923.58	4922.47	4900.68	4893.01	4890.43	4867.34	4882.04
12.50°	3884.00	3858.25	3897.12	3840.57	3872.82	3877.66	3823.74	3866.46	3864.79	3882.64	3880.09	3872.01	3884.10	3871.88	3865.40	3876.48	3884.00
15.00°	2921.49	2966.67	2937.12	2993.79	2957.14	2883.56	2944.31	2901.62	2937.15	2941.84	2926.76	2945.97	2902.09	2911.12	2955.69	2891.52	2921.49
17.50°	2304.97	2290.14	2339.54	2298.92	2313.95	2298.07	2243.29	2294.56	2301.59	2298.39	2289.89	2253.45	2279.68	2309.00	2292.98	2310.69	2304.97
20.00°	1751.88	1771.86	1773.58	1821.21	1780.65	1719.77	1754.29	1744.32	1774.53	1776.04	1739.56	1756.47	1727.80	1758.31	1798.15	1737.34	1751.88
22.50°	1453.91	1444.96	1474.48	1475.13	1469.58	1449.83	1426.64	1460.68	1476.18	1458.16	1452.88	1412.27	1430.68	1466.37	1454.29	1459.58	1453.91
25.00°	1193.90	1176.30	1190.87	1210.94	1195.38	1183.25	1176.31	1193.03	1208.34	1213.62	1190.32	1183.48	1175.80	1190.24	1202.67	1184.66	1193.90
27.50°	980.97	971.25	977.32	991.22	987.81	983.03	978.99	988.94	998.78	1000.14	993.33	973.54	970.47	981.01	980.31	980.62	980.97
30.00°	773.51	766.05	766.17	779.00	782.17	782.82	777.16	784.83	790.44	796.59	794.33	776.64	771.70	773.58	773.99	776.95	773.51
32.50°	575.53	560.70	570.61	570.48	579.71	582.66	572.49	580.66	584.19	595.39	590.49	584.09	576.19	572.83	579.40	578.64	575.53
35.00°	378.41	387.80	376.21	400.95	402.19	389.71	402.00	393.98	402.07	394.84	406.57	394.26	381.03	388.57	390.65	386.56	378.41
37.50°	257.64	244.23	255.48	248.82	261.55	265.18	250.72	260.29	257.57	263.23	265.04	259.30	259.03	257.04	259.77	261.17	257.64
40.00°	141.50	149.98	137.97	160.29	158.01	150.10	159.58	149.57	150.66	147.94	154.46	155.41	142.52	146.98	154.49	144.50	141.50
42.50°	98.18	95.99	98.90	96.87	103.87	106.29	98.65	100.92	96.49	97.82	103.55	100.11	97.88	97.99	100.66	100.40	98.18
45.00°	57.53	67.02	61.80	69.17	68.44	67.43	70.50	63.48	62.24	61.01	66.84	69.40	56.58	60.29	66.96	61.29	57.53
47.50°	52.74	56.75	53.20	53.85	55.83	58.34	57.24	52.75	53.55	51.72	55.04	55.16	50.53	50.83	52.36	54.75	52.74
50.00°	48.34	49.79	45.26	48.79	48.88	50.11	50.86	45.13	48.05	47.06	47.04	48.48	45.28	43.80	44.46	48.80	48.34
52.50°	46.82	45.06	44.31	46.88	48.24	46.15	47.31	44.11	46.24	44.65	45.04	45.07	43.11	42.17	41.59	45.94	46.82
55.00°	45.18	40.98	43.20	43.25	45.53	42.34	43.61	42.75	43.48	42.56	42.41	43.00	40.91	39.86	40.29	42.77	45.18
57.50°	40.40	37.29	40.80	39.15	40.74	39.18	39.86	40.72	39.73	38.13	38.92	38.67	37.80	36.18	36.20	38.20	40.40
60.00°	35.64	32.92	37.68	35.42	35.52	35.52	35.18	37.03	35.75	33.44	34.92	33.54	34.57	32.13	31.35	33.65	35.64
62.50°	31.13	28.18	29.94	31.77	29.93	29.99	30.21	30.43	31.55	29.27	30.27	29.10	29.15	27.42	27.94	29.16	31.13
65.00°	26.56	23.99	22.81	26.02	25.80	24.64	25.66	24.54	27.04	25.14	26.25	24.88	23.78	22.92	24.86	24.58	26.56
67.50°	21.29	20.08	18.86	19.86	22.89	19.88	21.23	19.79	22.25	20.71	22.97	20.51	19.01	18.78	20.67	19.68	21.29
70.00°	16.16	16.58	15.25	16.39	18.41	15.49	17.58	15.99	17.73	16.26	19.20	16.10	14.41	15.25	16.27	15.27	16.16
72.50°	12.18	13.27	13.12	13.36	12.74	12.12	14.11	13.53	13.40	12.53	14.88	12.81	11.34	12.65	12.38	12.31	12.18
75.00°	8.50	10.46	10.76	10.71	9.66	9.15	10.90	10.72	10.48	8.83	10.86	9.79	8.49	9.97	8.58	9.60	8.50
77.50°	6.83	7.84	7.49	8.11	8.34	7.22	7.75	7.47	8.54	7.05	7.13	8.20	7.19	7.18	7.14	7.55	6.83
80.00°	5.15	5.47	4.69	5.57	6.30	5.29	5.31	4.93	6.23	5.28	4.72	6.91	5.84	4.84	6.02	5.59	5.15
82.50°	3.32	3.18	3.42	3.04	3.80	3.38	2.99	3.19	3.66	3.72	3.47	4.65	4.17	3.07	4.20	3.84	3.32
85.00°	1.81	2.49	2.48	2.72	2.62	2.00	2.33	2.24	2.33	2.21	2.92	2.23	2.70	2.10	2.30	2.58	1.81
87.50°	1.75	2.27	2.52	2.57	2.17	1.70	1.92	2.13	1.73	1.97	2.93	1.88	2.27	2.03	2.08	2.34	1.75
90.00°	1.69	2.11	2.40	2.38	1.89	1.51	1.93	1.91	1.98	1.75	2.71	1.83	2.03	1.84	1.98	2.08	1.69
92.50°	1.61	1.96	1.85	2.19	1.69	1.54	1.98	1.59	2.68	1.80	2.34	1.82	2.59	1.54	2.09	1.79	1.61
95.00°	1.60	1.98	1.58	1.97	1.89	1.60	1.87	1.41	2.82	1.86	2.17	1.82	2.87	1.50	2.21	1.72	1.60
97.50°	1.79	2.04	1.95	1.75	2.28	1.73	1.75	1.37	2.69	2.05	2.16	1.82	2.15	1.70	2.20	2.02	1.79
100.00°	1.87	2.26	2.23	1.73	2.53	1.75	1.83	1.46	2.57	2.19	2.21	1.82	1.70	1.81	2.20	2.10	1.87

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

### 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%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	2842	2842	2842	2842	2774	2774	2774	2774	2648	2648	2648	2532	2532	2532	2426	2426	2376
	<b>1</b>	2724	2664	2610	2562	2665	2612	2564	2520	2513	2475	2440	2422	2393	2365	2339	2316	2295
	<b>2</b>	2610	2507	2421	2349	2557	2465	2388	2322	2387	2324	2270	2315	2264	2219	2248	2208	2172
	<b>3</b>	2502	2368	2264	2182	2456	2335	2240	2163	2272	2193	2128	2214	2148	2093	2160	2106	2065
	<b>4</b>	2402	2246	2132	2045	2360	2219	2113	2032	2168	2078	2007	2120	2044	1983	2076	2012	1975
	<b>5</b>	2307	2137	2017	1930	2270	2114	2003	1920	2072	1976	1903	2033	1950	1885	1996	1925	1891
	<b>6</b>	2219	2039	1917	1830	2186	2020	1906	1824	1985	1885	1811	1952	1865	1798	1922	1845	1814
	<b>7</b>	2137	1950	1829	1744	2108	1935	1820	1739	1905	1803	1729	1877	1787	1720	1852	1771	1742
	<b>8</b>	2060	1869	1749	1667	2034	1856	1742	1663	1831	1729	1656	1808	1716	1649	1786	1703	1676
	<b>9</b>	1989	1796	1678	1598	1965	1785	1672	1595	1763	1661	1589	1743	1650	1584	1724	1640	1615
	<b>10</b>	1922	1728	1613	1536	1900	1719	1608	1533	1700	1599	1529	1683	1590	1525	1666	1581	1559

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	267.2 fc	2.4 ft
6.5 ft	191.3 fc	2.8 ft
7.5 ft	143.7 fc	3.2 ft
8.0 ft	126.3 fc	3.4 ft
10.0 ft	80.8 fc	4.3 ft
12.0 ft	56.1 fc	5.1 ft
14.0 ft	41.2 fc	6.0 ft
16.0 ft	31.6 fc	6.9 ft
20.0 ft	20.2 fc	8.6 ft
24.0 ft	14.0 fc	10.3 ft
28.0 ft	10.3 fc	12.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	1772330	1772330	1772330
<b>45.00°</b>	17842	19166	21224
<b>55.00°</b>	17273	16516	17407
<b>65.00°</b>	13783	11835	13385
<b>75.00°</b>	7199	9118	8180
<b>85.00°</b>	4557	6238	6587

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	13.6	14.5	13.9	14.8	15.2	13.7	14.7	14.1	15.0	15.3
	<b>3H</b>	14.7	15.5	15.1	15.9	16.3	14.8	15.6	15.2	16.0	16.4
	<b>4H</b>	14.9	15.7	15.4	16.1	16.5	15.0	15.8	15.5	16.2	16.6
	<b>6H</b>	15.1	15.8	15.5	16.2	16.6	15.2	16.0	15.7	16.3	16.8
	<b>8H</b>	15.1	15.8	15.6	16.2	16.6	15.3	16.0	15.7	16.4	16.8
	<b>12H</b>	15.1	15.7	15.6	16.1	16.6	15.3	15.9	15.8	16.3	16.8
<b>4H</b>	<b>2H</b>	13.9	14.7	14.3	15.0	15.4	14.1	14.9	14.5	15.2	15.6
	<b>3H</b>	15.1	15.8	15.6	16.2	16.6	15.3	16.0	15.7	16.4	16.8
	<b>4H</b>	15.5	16.1	15.9	16.5	17.0	15.6	16.2	16.1	16.6	17.1
	<b>6H</b>	15.7	16.2	16.2	16.7	17.2	15.9	16.4	16.4	16.9	17.4
	<b>8H</b>	15.8	16.2	16.3	16.7	17.2	16.0	16.5	16.5	16.9	17.4
	<b>12H</b>	15.8	16.2	16.3	16.7	17.2	16.1	16.4	16.6	16.9	17.4
<b>8H</b>	<b>4H</b>	15.6	16.0	16.0	16.5	17.0	15.7	16.2	16.2	16.6	17.1
	<b>6H</b>	15.9	16.2	16.4	16.8	17.3	16.1	16.5	16.6	17.0	17.5
	<b>8H</b>	16.0	16.3	16.5	16.8	17.3	16.2	16.5	16.8	17.1	17.6
	<b>12H</b>	16.1	16.3	16.6	16.8	17.4	16.3	16.6	16.9	17.1	17.7
<b>12H</b>	<b>4H</b>	15.5	15.9	16.0	16.4	16.9	15.7	16.1	16.2	16.6	17.1
	<b>6H</b>	15.9	16.2	16.4	16.7	17.2	16.1	16.4	16.6	16.9	17.4
	<b>8H</b>	16.0	16.3	16.5	16.8	17.4	16.2	16.5	16.8	17.0	17.6

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0