

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SR3Mx 25L 35K ND xx xx RDD3F 25L 35K ND MW SO  
Nom. 3" Round Deep Downlight A-Spec, Narrow Beam

### **Test Number**

SP-01411\_1

### **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
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#### Lumen Output

Output Lumens	2412
Efficacy	91.69 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

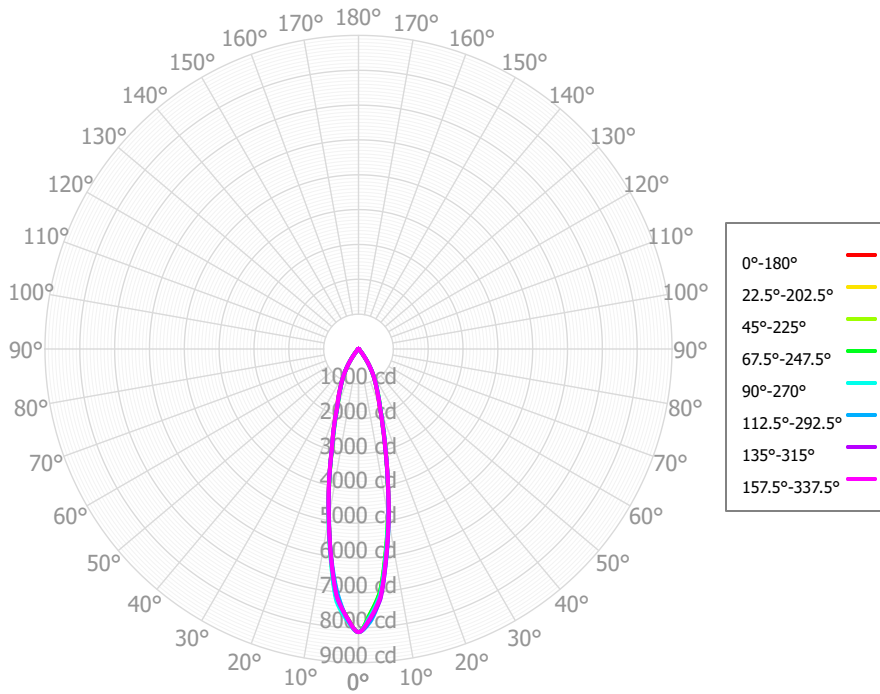
0° - 180°	24°
90° - 270°	24°

### IES File Header Contents

Keyword	Value
TEST	SP-01411_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/19/2022
ISSUDATE	10/25/2022
LUMCAT	SR3Mx 25L 35K ND xx xx RDD3F 25L 35K ND MW SO
LUMINAIRE	Nom. 3" Round Deep Downlight A-Spec, 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	This report prepared by Spectrum Lighting
_CRI	80

SR3Mx 25L 35K ND xx xx RDD3F 25L 35K ND  
MW SO

**Candela Polar Plot**



**Zonal Lumen Summary**

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	607.31	25.18%	90.00° - 100.00°	1.79	0.07%
10.00° - 20.00°	833.70	34.57%	100.00° - 110.00°	1.68	0.07%
20.00° - 30.00°	568.82	23.59%	100.00° - 120.00°	3.35	0.14%
30.00° - 40.00°	268.54	11.14%	120.00° - 130.00°	1.57	0.07%
40.00° - 50.00°	57.94	2.40%	130.00° - 140.00°	1.46	0.06%
50.00° - 60.00°	36.18	1.50%	140.00° - 150.00°	1.42	0.06%
60.00° - 70.00°	19.68	0.82%	150.00° - 160.00°	1.05	0.04%
70.00° - 80.00°	5.59	0.23%	160.00° - 170.00°	0.61	0.03%
80.00° - 90.00°	2.30	0.10%	170.00° - 180.00°	0.21	0.01%
0.00° - 90.00°	2400.06	99.52%	0.00° - 180.00°	2411.53	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°	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98	8125.98
2.50°	7690.96	7702.04	7614.77	7608.90	7677.16	7733.45	7708.81	7712.71	7702.78	7756.55	7697.46	7714.75	7783.15	7832.73	7759.82	7730.66	7690.96
5.00°	7113.40	7018.27	7033.28	7009.53	7086.19	7009.07	7140.51	7133.05	7152.81	7070.13	7179.49	7216.85	7268.14	7174.16	7208.33	7154.05	7113.40
7.50°	6017.71	5990.74	5947.61	5925.70	5977.48	6012.51	6027.79	6039.29	6032.73	6067.39	6038.99	6058.33	6103.31	6095.49	6074.18	6047.49	6017.71
10.00°	4935.37	4935.74	4875.68	4861.98	4884.94	4875.46	4907.16	4908.19	4902.85	4892.95	4916.38	4913.53	4957.64	4983.10	4957.18	4956.67	4935.37
12.50°	3886.92	3862.84	3880.89	3875.25	3903.94	3887.82	3898.10	3910.10	3895.01	3888.28	3870.97	3861.66	3884.45	3847.66	3884.99	3898.64	3886.92
15.00°	2974.87	3023.10	2973.30	2991.18	2998.03	2952.20	2945.74	2950.65	2945.39	2946.28	2935.76	2901.15	2937.09	2996.98	2965.75	2994.31	2974.87
17.50°	2300.22	2287.56	2352.32	2354.95	2370.57	2333.96	2328.32	2348.74	2346.77	2332.62	2297.81	2275.55	2295.84	2282.61	2315.50	2314.64	2300.22
20.00°	1784.46	1836.68	1830.74	1836.20	1836.25	1781.90	1784.00	1802.49	1814.58	1794.71	1778.18	1749.16	1780.29	1838.32	1811.15	1806.52	1784.46
22.50°	1465.20	1469.24	1521.42	1513.21	1521.20	1491.67	1488.67	1510.40	1511.88	1501.49	1475.74	1458.15	1472.46	1478.40	1489.02	1475.60	1465.20
25.00°	1210.63	1233.52	1249.18	1238.72	1245.59	1226.35	1222.47	1240.50	1237.28	1235.98	1218.81	1205.19	1214.67	1239.89	1228.18	1220.08	1210.63
27.50°	1012.79	1019.41	1032.31	1021.80	1034.25	1023.13	1021.40	1032.03	1026.20	1027.22	1020.16	1013.74	1015.83	1023.80	1021.60	1019.69	1012.79
30.00°	813.85	813.22	818.35	809.98	825.14	820.43	819.28	823.51	816.54	819.85	818.94	818.72	815.25	814.68	815.35	818.28	813.85
32.50°	614.25	608.00	607.45	602.44	618.60	620.35	615.56	614.87	609.05	619.14	615.38	619.64	613.21	606.31	609.31	616.35	614.25
35.00°	427.83	419.98	419.92	418.00	430.99	427.40	429.55	424.30	421.43	425.35	429.76	432.66	426.03	416.69	420.85	427.10	427.83
37.50°	247.04	243.03	249.83	247.19	258.97	270.93	262.69	257.38	255.50	270.29	255.77	255.57	247.68	236.92	239.99	242.17	247.04
40.00°	154.13	153.29	150.08	151.52	155.61	142.30	155.94	149.12	150.04	141.23	156.12	150.86	149.71	148.16	145.70	152.54	154.13
42.50°	85.09	78.20	87.42	86.41	91.91	97.66	95.89	95.23	92.04	97.31	89.55	88.25	84.11	73.44	75.77	82.25	85.09
45.00°	64.61	63.66	63.71	65.87	66.20	65.34	68.58	68.18	66.10	64.89	64.94	61.83	60.96	61.21	58.16	63.01	64.61
47.50°	51.49	52.48	53.89	56.72	55.55	57.89	59.01	58.94	57.99	56.96	52.57	49.61	48.52	51.13	48.64	48.62	51.49
50.00°	49.16	50.06	50.83	51.10	50.59	52.89	53.26	52.01	52.76	50.34	47.40	44.56	43.88	46.96	46.03	45.66	49.16
52.50°	47.19	46.25	49.22	45.97	47.02	51.31	48.92	46.17	48.60	45.68	43.41	41.26	40.30	42.39	43.66	42.64	47.19
55.00°	41.04	40.02	42.98	41.44	42.43	47.01	43.75	41.95	44.14	41.67	39.57	37.90	36.82	37.06	38.02	38.21	41.04
57.50°	34.95	34.20	36.27	36.90	37.71	40.03	38.39	38.21	39.61	38.34	35.68	34.53	33.27	31.98	32.52	33.39	34.95
60.00°	29.22	28.88	29.86	31.49	31.57	33.50	31.50	32.75	32.81	32.65	30.09	29.21	28.21	27.24	27.95	26.61	29.22
62.50°	23.73	23.63	23.66	26.15	25.42	27.31	24.45	26.99	25.74	25.19	24.53	23.88	23.24	22.31	23.48	20.68	23.73
65.00°	19.12	18.44	20.10	21.32	19.80	20.96	21.08	21.77	20.42	20.52	19.25	19.14	18.80	17.20	19.41	17.30	19.12
67.50°	14.38	15.03	16.39	16.43	14.53	14.54	17.70	16.59	15.23	17.30	14.30	14.56	14.39	13.06	15.14	13.67	14.38
70.00°	9.29	12.74	11.87	11.38	11.44	10.27	13.23	12.01	11.24	12.24	10.70	10.95	10.06	9.57	10.40	9.52	9.29
72.50°	5.43	8.65	7.82	7.18	8.30	6.70	8.91	7.63	7.47	6.51	7.37	7.48	6.45	6.37	6.47	6.15	5.43
75.00°	3.64	3.79	5.23	4.98	4.96	5.04	5.42	5.01	4.93	4.36	4.73	4.50	4.51	3.31	3.91	3.85	3.64
77.50°	2.58	2.69	3.41	3.61	2.67	3.75	2.67	2.81	2.92	2.97	2.90	2.36	2.94	2.15	2.46	2.57	2.58
80.00°	2.40	2.62	3.18	3.58	2.73	2.77	2.37	2.41	2.72	2.24	2.46	2.14	1.98	1.56	2.32	2.29	2.40
82.50°	2.31	2.09	2.83	3.20	2.61	1.83	2.17	2.10	2.59	1.58	2.15	2.00	1.56	1.62	2.28	2.41	2.31
85.00°	2.31	1.49	2.31	2.44	2.23	2.23	2.20	2.03	2.60	1.95	1.98	1.98	1.74	1.78	2.33	2.80	2.31
87.50°	2.19	1.31	1.83	1.78	2.02	2.54	2.06	2.02	2.42	2.29	1.62	2.01	1.65	1.73	1.90	2.50	2.19
90.00°	2.00	1.17	1.39	1.22	2.01	2.01	1.68	2.11	1.93	2.34	1.08	2.12	1.34	1.66	1.18	1.84	2.00
92.50°	2.03	1.40	1.29	1.18	1.75	1.55	1.63	2.12	1.70	2.39	1.01	1.87	1.30	1.64	1.43	1.52	2.03
95.00°	2.15	1.60	1.43	1.43	1.30	1.47	1.95	2.04	1.74	2.45	1.22	1.34	1.40	1.59	2.08	1.30	2.15
97.50°	2.04	1.61	1.52	1.65	1.35	1.42	1.88	1.77	1.77	2.34	1.31	1.45	1.63	1.32	1.98	1.39	2.04
100.00°	1.86	1.61	1.59	1.86	1.69	1.48	1.51	1.31	1.80	1.72	1.35	1.90	1.91	1.17	1.67	1.54	1.86

### 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>	2868	2868	2868	2868	2800	2800	2800	2800	2673	2673	2673	2557	2557	2557	2450	2450	2450	2400
	<b>1</b>	2751	2692	2638	2590	2692	2639	2591	2548	2540	2502	2468	2449	2420	2392	2365	2343	2322	2295
	<b>2</b>	2637	2534	2449	2378	2585	2492	2415	2350	2414	2351	2297	2342	2291	2247	2275	2235	2199	2191
	<b>3</b>	2529	2395	2292	2209	2483	2362	2267	2191	2299	2220	2155	2241	2175	2120	2187	2133	2087	2092
	<b>4</b>	2428	2272	2158	2071	2386	2245	2139	2058	2194	2104	2033	2146	2070	2009	2102	2038	1985	2000
	<b>5</b>	2333	2162	2042	1954	2296	2139	2028	1945	2097	2001	1927	2058	1975	1910	2021	1950	1893	1915
	<b>6</b>	2244	2062	1941	1853	2211	2044	1930	1847	2009	1909	1834	1976	1888	1821	1945	1869	1809	1837
	<b>7</b>	2160	1972	1851	1765	2131	1957	1842	1760	1927	1825	1751	1900	1809	1741	1874	1793	1732	1764
	<b>8</b>	2083	1891	1770	1687	2056	1877	1763	1683	1852	1749	1676	1829	1736	1669	1807	1724	1662	1697
	<b>9</b>	2010	1816	1697	1616	1986	1804	1691	1614	1783	1680	1608	1763	1670	1603	1744	1659	1597	1634
	<b>10</b>	1942	1747	1631	1553	1920	1737	1626	1551	1719	1617	1546	1701	1608	1542	1685	1599	1538	1577

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	268.6 fc	2.4 ft
6.5 ft	192.3 fc	2.8 ft
7.5 ft	144.5 fc	3.2 ft
8.0 ft	127.0 fc	3.4 ft
10.0 ft	81.3 fc	4.3 ft
12.0 ft	56.4 fc	5.1 ft
14.0 ft	41.5 fc	6.0 ft
16.0 ft	31.7 fc	6.8 ft
20.0 ft	20.3 fc	8.6 ft
24.0 ft	14.1 fc	10.3 ft
28.0 ft	10.4 fc	12.0 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	1781870	1781870	1781870
<b>45.00°</b>	20037	19756	20530
<b>55.00°</b>	15692	16432	16222
<b>65.00°</b>	9922	10431	10274
<b>75.00°</b>	3083	4434	4206
<b>85.00°</b>	5824	5800	5605

**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>	12.7	13.7	13.1	14.0	14.3	13.3	14.3	13.7	14.6	14.9
	<b>3H</b>	13.3	14.2	13.7	14.5	14.9	13.8	14.7	14.2	15.0	15.4
	<b>4H</b>	13.3	14.1	13.8	14.5	14.9	13.9	14.7	14.3	15.0	15.4
	<b>6H</b>	13.3	14.0	13.7	14.4	14.8	13.8	14.5	14.3	14.9	15.3
	<b>8H</b>	13.3	13.9	13.7	14.3	14.8	13.8	14.5	14.3	14.9	15.3
	<b>12H</b>	13.3	13.9	13.7	14.3	14.8	13.8	14.4	14.3	14.8	15.3
<b>4H</b>	<b>2H</b>	12.9	13.7	13.4	14.1	14.5	13.5	14.3	13.9	14.6	15.0
	<b>3H</b>	13.7	14.3	14.1	14.7	15.1	14.1	14.7	14.5	15.2	15.6
	<b>4H</b>	13.7	14.2	14.1	14.7	15.1	14.2	14.7	14.6	15.2	15.6
	<b>6H</b>	13.7	14.1	14.1	14.6	15.1	14.2	14.6	14.6	15.1	15.6
	<b>8H</b>	13.7	14.1	14.2	14.6	15.1	14.1	14.6	14.6	15.0	15.5
	<b>12H</b>	13.7	14.1	14.2	14.6	15.1	14.2	14.5	14.7	15.0	15.5
<b>8H</b>	<b>4H</b>	13.6	14.0	14.1	14.5	15.0	14.1	14.5	14.6	15.0	15.5
	<b>6H</b>	13.6	14.0	14.1	14.5	15.0	14.1	14.4	14.6	15.0	15.5
	<b>8H</b>	13.7	14.0	14.2	14.5	15.0	14.1	14.4	14.7	14.9	15.5
	<b>12H</b>	13.8	14.1	14.3	14.6	15.2	14.2	14.5	14.7	15.0	15.6
<b>12H</b>	<b>4H</b>	13.5	13.9	14.0	14.4	14.9	14.0	14.4	14.5	14.9	15.4
	<b>6H</b>	13.6	13.9	14.1	14.4	14.9	14.0	14.4	14.6	14.8	15.4
	<b>8H</b>	13.7	13.9	14.2	14.4	15.0	14.1	14.4	14.6	14.9	15.5

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0