

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

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

### **Test Number**

SP-01416\_2

### **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	2606
Efficacy	99.1 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.58
Two luminaires, plane 90°	0.58
Four luminaires	0.62

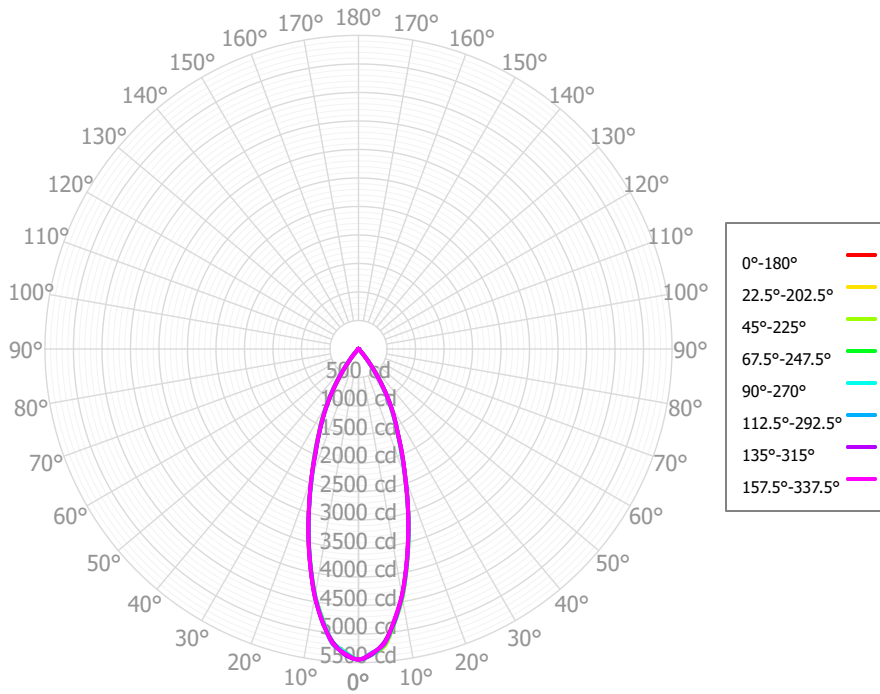
#### Full Beam Angle

0° - 180°	37°
90° - 270°	37°

### IES File Header Contents

Keyword	Value
TEST	SP-01416_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2022
ISSUDATE	10/24/2022
LUMCAT	SR3Mx 25L 35K WD xx xx RD3F 25L 35K WD MW NL
LUMINAIRE	Nom. 3" Round Downlight, Wide Beam
OTHER	Matte White Trim, No lens
OTHER	37 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°	473.25	18.16%	90.00° - 100.00°	2.01	0.08%
10.00° - 20.00°	925.68	35.52%	100.00° - 110.00°	1.96	0.08%
20.00° - 30.00°	755.40	28.98%	100.00° - 120.00°	3.82	0.15%
30.00° - 40.00°	347.99	13.35%	120.00° - 130.00°	1.75	0.07%
40.00° - 50.00°	48.89	1.88%	130.00° - 140.00°	1.61	0.06%
50.00° - 60.00°	17.78	0.68%	140.00° - 150.00°	1.55	0.06%
60.00° - 70.00°	14.15	0.54%	150.00° - 160.00°	1.15	0.04%
70.00° - 80.00°	7.56	0.29%	160.00° - 170.00°	0.69	0.03%
80.00° - 90.00°	2.80	0.11%	170.00° - 180.00°	0.23	0.01%
0.00° - 90.00°	2593.50	99.51%	0.00° - 180.00°	2606.31	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°	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22	5448.22
2.50°	5351.96	5354.54	5352.02	5366.78	5363.80	5348.55	5372.33	5350.97	5360.01	5338.88	5330.43	5327.13	5330.59	5337.04	5363.24	5343.50	5351.96
5.00°	5176.52	5207.65	5234.40	5203.54	5192.32	5198.75	5163.39	5187.99	5173.90	5189.60	5180.28	5165.63	5167.52	5198.27	5167.60	5192.44	5176.52
7.50°	4807.77	4830.01	4844.37	4839.17	4831.91	4824.79	4841.27	4822.92	4820.66	4797.52	4794.15	4797.62	4803.11	4805.28	4825.61	4800.19	4807.77
10.00°	4393.59	4422.03	4436.34	4416.97	4405.85	4415.82	4401.97	4415.96	4403.04	4392.16	4385.13	4392.45	4391.33	4401.42	4387.31	4393.22	4393.59
12.50°	3884.36	3901.45	3907.19	3909.51	3896.96	3898.10	3898.14	3904.34	3904.12	3890.13	3886.68	3891.72	3887.26	3887.16	3892.84	3880.21	3884.36
15.00°	3363.95	3385.22	3383.12	3399.74	3386.04	3382.96	3388.76	3393.32	3395.49	3387.02	3385.76	3383.76	3371.91	3374.75	3372.91	3370.00	3363.95
17.50°	2871.22	2879.25	2878.11	2887.50	2873.28	2873.07	2877.31	2883.31	2878.03	2879.65	2878.72	2883.65	2870.02	2871.29	2877.01	2878.14	2871.22
20.00°	2384.92	2405.22	2397.02	2413.16	2404.03	2398.99	2414.19	2412.32	2412.07	2403.08	2411.41	2394.99	2375.77	2393.56	2388.14	2404.65	2384.92
22.50°	1992.27	1982.75	1972.86	1967.31	1962.76	1975.67	1962.29	1988.58	1979.26	2002.86	2011.67	2014.66	2001.07	1991.98	2000.97	1998.65	1992.27
25.00°	1617.63	1627.86	1608.58	1625.69	1623.58	1618.95	1639.18	1638.80	1644.31	1645.67	1660.68	1651.93	1640.62	1635.91	1631.07	1632.42	1617.63
27.50°	1351.13	1351.04	1341.56	1338.76	1330.23	1330.12	1330.92	1352.68	1353.32	1362.10	1367.98	1369.07	1365.81	1369.14	1364.74	1361.09	1351.13
30.00°	1083.79	1081.18	1079.17	1073.05	1057.93	1052.31	1051.82	1067.91	1070.42	1075.93	1073.93	1084.38	1089.29	1097.57	1105.13	1089.14	1083.79
32.50°	813.66	817.12	822.14	814.91	791.73	782.49	775.50	783.99	789.87	786.67	778.71	794.55	806.90	819.47	830.29	816.15	813.66
35.00°	559.70	573.33	581.47	575.61	552.37	538.50	530.63	534.80	539.97	529.77	523.95	530.53	545.67	565.74	562.23	564.39	559.70
37.50°	341.87	341.41	354.50	340.48	317.49	307.73	301.98	300.22	295.20	300.96	293.78	315.05	331.72	335.99	351.08	337.00	341.87
40.00°	177.21	199.09	204.10	199.69	184.86	172.48	169.23	171.00	172.95	161.23	162.26	161.00	172.56	187.49	166.92	183.03	177.21
42.50°	95.40	92.38	98.83	68.92	61.08	69.62	62.58	70.55	60.59	75.99	72.31	88.78	97.57	96.44	99.38	89.86	95.40
45.00°	45.84	52.31	52.98	47.89	43.29	41.98	43.47	44.84	45.19	42.71	44.23	47.52	51.17	53.73	47.19	46.12	45.84
47.50°	31.78	29.19	30.91	29.10	26.86	29.92	28.89	30.24	31.04	31.50	32.75	35.56	36.27	34.75	36.67	31.59	31.78
50.00°	23.82	22.89	22.86	23.69	21.60	24.21	24.34	26.20	27.26	27.16	28.54	28.30	27.95	26.91	28.40	23.67	23.82
52.50°	20.64	18.92	18.41	18.67	17.23	19.09	20.86	22.72	23.69	24.68	25.42	24.23	24.85	22.68	24.26	18.39	20.64
55.00°	18.15	16.49	16.33	15.85	16.66	17.31	19.01	20.18	21.00	22.59	23.77	22.02	22.29	20.69	21.20	16.69	18.15
57.50°	16.06	14.23	14.58	13.69	16.07	15.63	17.37	18.01	18.91	20.55	22.19	20.68	20.02	19.12	19.51	15.90	16.06
60.00°	14.91	14.02	13.85	13.65	15.40	14.90	15.96	18.57	18.38	19.02	20.28	19.08	18.59	17.77	17.55	15.54	14.91
62.50°	14.13	13.58	13.19	13.43	14.52	14.06	15.77	18.43	17.44	17.51	18.46	17.40	17.48	16.45	15.35	15.24	14.13
65.00°	13.27	11.56	12.95	12.86	13.29	12.65	16.53	15.54	15.76	15.91	17.28	15.74	16.46	15.41	14.12	12.88	13.27
67.50°	12.40	10.01	12.49	11.65	11.93	11.34	14.68	12.85	13.73	14.23	15.75	14.08	15.46	14.21	13.55	10.53	12.40
70.00°	10.66	10.21	10.58	9.47	10.38	10.36	11.39	10.68	11.24	11.93	12.84	11.39	12.60	11.25	11.53	9.97	10.66
72.50°	8.82	9.59	8.68	7.84	8.62	9.12	9.11	8.70	9.12	9.57	10.07	8.64	9.51	8.44	8.87	9.22	8.82
75.00°	6.83	7.02	6.85	6.76	6.65	7.35	7.22	7.05	7.33	7.01	7.63	6.32	7.22	6.32	6.95	7.16	6.83
77.50°	4.91	5.22	5.26	5.47	5.42	5.76	5.42	5.30	5.80	4.93	5.42	4.17	5.05	4.50	5.25	5.26	4.91
80.00°	4.30	4.67	4.24	4.00	4.66	4.44	3.65	3.41	4.42	4.06	3.60	3.69	4.33	3.54	4.10	3.89	4.30
82.50°	3.60	3.71	3.33	3.15	3.56	3.42	2.79	2.29	3.18	3.29	2.48	3.13	3.61	2.65	3.05	2.73	3.60
85.00°	2.38	2.26	2.62	2.63	2.32	2.70	2.04	1.82	2.00	2.70	2.20	2.18	2.94	1.90	2.27	2.05	2.38
87.50°	1.50	1.67	2.14	2.24	2.10	2.28	2.02	1.75	1.58	2.24	1.98	1.53	2.30	1.57	1.53	1.63	1.50
90.00°	1.83	1.78	1.95	1.90	2.16	2.07	2.02	1.93	1.38	1.95	1.80	1.69	1.79	1.79	1.78	1.64	1.83
92.50°	1.97	1.89	1.70	1.84	1.82	1.86	1.90	2.10	1.62	1.87	1.67	1.80	1.50	1.83	2.01	1.75	1.97
95.00°	1.69	1.99	1.39	1.85	1.40	1.64	1.82	2.27	1.94	1.98	1.57	1.81	1.71	1.68	1.94	2.00	1.69
97.50°	1.63	2.10	1.36	1.76	1.93	1.76	1.96	2.06	2.15	2.14	1.57	1.80	1.80	1.89	1.87	2.06	1.63
100.00°	1.92	2.20	1.48	1.65	2.50	1.99	2.04	1.74	2.35	2.32	1.62	1.78	1.73	2.35	1.75	1.96	1.92

### 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%	10%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
	<b>0</b>	3100	3100	3100	3100	3026	3026	3026	3026	2889	2889	2889	2763	2763	2763	2648	2648	2648
	<b>1</b>	2969	2902	2843	2789	2904	2845	2792	2743	2738	2696	2657	2639	2606	2576	2548	2523	2499
	<b>2</b>	2840	2725	2630	2550	2783	2680	2594	2521	2595	2525	2464	2516	2460	2410	2444	2398	2358
	<b>3</b>	2718	2568	2452	2360	2667	2532	2425	2340	2463	2374	2301	2400	2326	2264	2341	2280	2228
	<b>4</b>	2602	2427	2299	2201	2557	2397	2279	2187	2341	2240	2160	2289	2204	2134	2241	2169	2109
	<b>5</b>	2492	2300	2165	2066	2452	2275	2150	2056	2229	2120	2037	2186	2092	2018	2146	2065	2000
	<b>6</b>	2389	2184	2047	1948	2353	2164	2035	1941	2125	2012	1927	2089	1990	1913	2055	1968	1900
	<b>7</b>	2292	2079	1940	1844	2259	2062	1931	1838	2029	1913	1828	1999	1895	1818	1970	1878	1808
	<b>8</b>	2201	1982	1845	1750	2171	1968	1837	1746	1940	1823	1739	1914	1808	1731	1889	1795	1724
	<b>9</b>	2115	1894	1758	1666	2088	1881	1752	1663	1857	1740	1657	1835	1728	1652	1814	1717	1646
	<b>10</b>	2034	1812	1679	1590	2010	1801	1674	1588	1780	1664	1583	1761	1654	1579	1742	1645	1574

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	180.1 fc	3.6 ft
6.5 ft	129.0 fc	4.3 ft
7.5 ft	96.9 fc	5.0 ft
8.0 ft	85.1 fc	5.3 ft
10.0 ft	54.5 fc	6.6 ft
12.0 ft	37.8 fc	7.9 ft
14.0 ft	27.8 fc	9.3 ft
16.0 ft	21.3 fc	10.6 ft
20.0 ft	13.6 fc	13.2 ft
24.0 ft	9.5 fc	15.9 ft
28.0 ft	6.9 fc	18.5 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	1194690	1194690	1194690
<b>45.00°</b>	14214	16429	13424
<b>55.00°</b>	6940	6242	6370
<b>65.00°</b>	6887	6719	6897
<b>75.00°</b>	5785	5803	5638
<b>85.00°</b>	5977	6588	5840

### 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>	7.0	7.9	7.4	8.2	8.6	8.2	9.1	8.6	9.5	9.8
	<b>3H</b>	9.2	10.0	9.5	10.3	10.7	10.2	11.0	10.6	11.4	11.8
	<b>4H</b>	9.9	10.7	10.3	11.0	11.4	10.8	11.5	11.2	11.9	12.3
	<b>6H</b>	10.3	11.0	10.8	11.4	11.8	11.1	11.8	11.5	12.2	12.6
	<b>8H</b>	10.6	11.2	11.0	11.6	12.0	11.3	11.9	11.7	12.3	12.7
	<b>12H</b>	10.7	11.3	11.2	11.7	12.2	11.4	12.0	11.9	12.4	12.9
<b>4H</b>	<b>2H</b>	7.8	8.5	8.2	8.9	9.3	9.1	9.8	9.5	10.2	10.6
	<b>3H</b>	10.1	10.7	10.5	11.1	11.5	11.1	11.7	11.5	12.1	12.6
	<b>4H</b>	10.9	11.5	11.4	11.9	12.4	11.7	12.2	12.1	12.7	13.1
	<b>6H</b>	11.4	11.9	11.9	12.4	12.9	12.1	12.6	12.6	13.0	13.5
	<b>8H</b>	11.7	12.1	12.2	12.6	13.1	12.3	12.7	12.8	13.2	13.7
	<b>12H</b>	11.9	12.3	12.4	12.8	13.3	12.5	12.9	13.0	13.4	13.9
<b>8H</b>	<b>4H</b>	11.1	11.6	11.6	12.0	12.5	11.9	12.3	12.4	12.8	13.2
	<b>6H</b>	11.8	12.2	12.3	12.7	13.2	12.4	12.7	12.9	13.2	13.7
	<b>8H</b>	12.2	12.5	12.7	13.0	13.5	12.7	13.0	13.2	13.5	14.0
	<b>12H</b>	12.5	12.7	13.0	13.2	13.8	13.0	13.2	13.5	13.7	14.3
<b>12H</b>	<b>4H</b>	11.1	11.5	11.6	12.0	12.5	11.8	12.2	12.3	12.7	13.2
	<b>6H</b>	11.8	12.1	12.4	12.6	13.2	12.4	12.7	12.9	13.2	13.7
	<b>8H</b>	12.3	12.5	12.8	13.0	13.6	12.7	13.0	13.3	13.5	14.1

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0