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 SO

Nom. 3" Round Downlight, Wide Beam

Test Number

SP-01417_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

Lumen Output

Output Lumens	2442
Efficacy	92.85 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.6
Two luminaires, plane 90°	0.6
Four luminaires	0.64

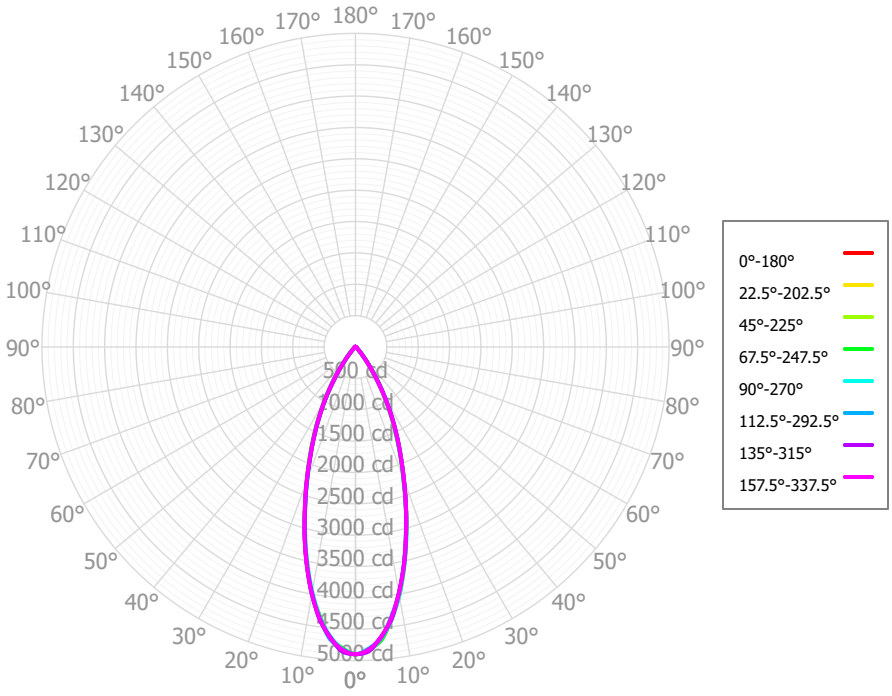
Full Beam Angle

0° - 180°	38°
90° - 270°	38°

IES File Header Contents

Keyword	Value
TEST	SP-01417_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2022
ISSUEDATE	10/24/2022
LUMCAT	SR3Mx 25L 35K WD xx xx RD3F 25L 35K WD MW SO
LUMINAIRE	Nom. 3" Round Downlight, Wide Beam
OTHER	Matte White Trim, Solite lens
OTHER	38 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°	427.83	17.52%
10.00° - 20.00°	854.30	34.98%
20.00° - 30.00°	705.58	28.89%
30.00° - 40.00°	311.46	12.75%
40.00° - 50.00°	68.00	2.78%
50.00° - 60.00°	27.86	1.14%
60.00° - 70.00°	19.52	0.80%
70.00° - 80.00°	10.22	0.42%
80.00° - 90.00°	3.29	0.13%
0.00° - 90.00°	2428.06	99.43%

Zone	Lumens	% Fixture
90.00° - 100.00°	2.17	0.09%
100.00° - 110.00°	2.08	0.09%
100.00° - 120.00°	4.10	0.17%
120.00° - 130.00°	1.91	0.08%
130.00° - 140.00°	1.87	0.08%
140.00° - 150.00°	1.59	0.07%
150.00° - 160.00°	1.28	0.05%
160.00° - 170.00°	0.77	0.03%
170.00° - 180.00°	0.25	0.01%
0.00° - 180.00°	2441.99	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°	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59	4899.59
2.50°	4835.88	4826.40	4836.79	4828.27	4847.79	4824.19	4859.96	4831.60	4834.08	4815.58	4818.78	4807.60	4825.76	4815.58	4857.62	4831.81	4835.88
5.00°	4654.13	4687.71	4680.91	4697.69	4664.74	4676.27	4641.83	4656.42	4651.25	4665.78	4647.64	4656.50	4631.67	4662.43	4642.00	4653.16	4654.13
7.50°	4373.71	4370.41	4382.19	4378.03	4389.57	4361.53	4386.05	4367.28	4368.08	4349.44	4342.49	4335.82	4353.72	4348.76	4386.54	4364.20	4373.71
10.00°	3991.41	4013.26	4008.99	4024.76	4015.84	4009.77	3992.42	4006.33	4000.79	4001.68	3985.35	3989.49	3966.12	3987.75	3983.34	3987.89	3991.41
12.50°	3570.94	3573.12	3574.96	3582.28	3586.07	3572.50	3576.73	3577.16	3573.20	3563.03	3555.57	3553.14	3549.03	3552.29	3568.01	3565.79	3570.94
15.00°	3114.43	3117.18	3112.25	3127.08	3136.05	3129.99	3125.37	3136.69	3131.46	3122.73	3118.40	3115.73	3097.26	3097.58	3113.16	3111.08	3114.43
17.50°	2675.90	2675.66	2667.65	2678.51	2675.75	2676.59	2669.35	2686.54	2680.47	2678.15	2671.95	2675.12	2664.64	2664.76	2670.22	2676.45	2675.90
20.00°	2252.65	2236.36	2230.60	2230.69	2261.77	2251.53	2266.88	2273.15	2273.47	2258.81	2263.03	2258.90	2252.62	2236.71	2261.70	2254.84	2252.65
22.50°	1876.77	1876.09	1863.71	1869.60	1868.64	1878.94	1869.68	1888.50	1892.59	1896.83	1897.17	1907.34	1884.48	1888.27	1878.10	1886.98	1876.77
25.00°	1537.12	1525.72	1523.00	1515.68	1535.10	1532.77	1550.46	1552.59	1563.70	1558.14	1562.58	1571.11	1559.50	1554.64	1557.56	1550.35	1537.12
27.50°	1225.22	1224.99	1224.89	1225.13	1225.66	1230.96	1236.51	1250.92	1262.39	1266.42	1260.79	1271.28	1255.32	1256.98	1247.76	1240.21	1225.22
30.00°	932.69	928.89	940.66	938.19	949.42	947.59	962.68	973.01	983.87	984.86	977.43	983.01	969.58	964.72	961.94	944.02	932.69
32.50°	679.61	684.13	696.25	697.52	684.96	691.96	690.55	710.06	716.11	721.84	711.49	719.43	715.13	713.49	698.29	690.49	679.61
35.00°	451.23	442.82	463.30	458.18	481.02	473.43	488.52	496.38	501.28	492.62	490.43	488.45	485.64	467.06	479.30	456.94	451.23
37.50°	292.63	302.09	312.24	313.61	296.15	305.81	288.62	310.92	308.93	319.43	307.57	319.37	318.03	318.67	300.23	300.46	292.63
40.00°	173.70	165.21	181.31	171.48	192.11	183.14	194.89	195.81	196.84	188.67	188.30	188.60	195.45	179.07	193.95	176.47	173.70
42.50°	109.19	116.80	121.01	120.79	110.00	115.94	103.43	117.21	115.30	120.96	118.46	122.78	122.23	124.78	115.05	112.50	109.19
45.00°	72.28	70.08	75.67	71.59	75.25	71.08	77.05	77.11	76.83	74.47	76.26	75.33	81.75	75.92	80.75	70.78	72.28
47.50°	53.35	55.65	56.78	55.48	51.68	51.38	51.65	54.77	52.68	56.28	53.65	56.22	58.92	58.57	56.02	52.74	53.35
50.00°	42.66	41.49	42.50	40.08	41.83	38.36	42.90	42.15	41.29	43.11	41.16	42.38	46.58	42.32	45.27	42.50	42.66
52.50°	36.04	34.93	35.64	34.14	34.70	32.13	34.49	33.48	33.57	36.03	35.12	35.96	37.97	36.32	36.91	35.44	36.04
55.00°	31.07	28.62	29.86	28.44	30.34	28.12	30.05	28.73	29.40	30.24	30.86	30.88	31.35	30.44	31.76	29.29	31.07
57.50°	27.81	26.01	26.93	25.26	26.45	26.17	25.74	25.41	26.12	25.88	27.60	27.49	27.56	27.90	28.11	26.23	27.81
60.00°	25.16	23.48	24.33	22.45	24.73	23.94	22.57	23.60	24.07	22.45	25.04	24.92	25.14	25.36	26.27	23.95	25.16
62.50°	23.00	21.75	21.86	22.44	23.29	21.48	19.54	22.27	22.30	19.96	22.84	23.29	22.45	23.16	23.34	21.81	23.00
65.00°	20.99	20.01	19.41	21.87	20.49	19.31	17.42	19.73	20.13	17.92	20.73	20.95	19.64	20.92	19.23	19.70	20.99
67.50°	18.27	18.24	16.97	17.84	17.55	17.37	15.29	16.85	17.90	16.29	18.66	17.89	17.41	18.07	16.21	17.04	18.27
70.00°	15.34	16.23	14.53	14.06	15.34	15.10	13.07	14.15	14.95	14.36	15.91	14.84	15.40	15.26	14.26	14.28	15.34
72.50°	11.99	12.63	12.03	11.53	13.19	12.60	10.80	11.50	11.90	12.17	12.88	11.83	13.21	12.86	11.69	11.60	11.99
75.00°	8.55	9.19	9.54	9.05	10.36	10.24	8.26	8.72	10.06	9.75	9.67	9.37	10.96	10.41	8.56	8.93	8.55
77.50°	6.91	6.61	8.18	6.73	7.50	7.95	5.98	5.93	8.37	7.16	6.40	7.40	8.30	7.62	6.54	6.97	6.91
80.00°	5.64	4.31	6.81	4.59	5.68	5.90	4.69	4.43	6.12	5.10	4.70	5.32	5.51	5.02	5.43	5.09	5.64
82.50°	4.23	3.34	4.92	3.09	3.87	3.97	3.47	3.16	3.83	3.39	3.50	3.16	3.79	3.65	4.15	3.56	4.23
85.00°	2.80	2.58	3.09	1.97	2.89	2.69	2.48	2.64	3.08	2.50	2.78	2.23	2.35	2.44	2.76	2.07	2.80
87.50°	2.37	2.61	2.50	2.08	1.94	1.74	1.75	2.23	2.43	2.10	2.19	2.16	2.22	2.07	2.15	2.02	2.37
90.00°	2.07	2.55	1.97	2.12	2.03	1.65	1.80	1.96	2.35	1.93	1.85	2.00	2.37	1.78	2.07	2.06	2.07
92.50°	1.97	2.17	2.06	1.96	2.12	1.96	1.91	1.71	2.28	1.87	1.56	1.80	2.25	1.84	1.96	2.30	1.97
95.00°	1.89	1.88	2.12	1.91	2.00	2.00	2.21	1.60	2.03	1.92	1.82	1.79	2.08	1.92	1.81	2.55	1.89
97.50°	2.18	1.85	2.00	2.13	1.90	1.92	2.35	1.50	1.79	2.02	2.19	1.88	1.99	2.05	1.77	2.13	2.18
100.00°	2.49	1.79	1.90	2.28	2.02	1.98	2.14	1.43	2.00	2.15	2.06	2.09	1.92	2.09	1.79	1.71	2.49

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	2904	2904	2904	2904	2835	2835	2835	2835	2706	2706	2706	2587	2587	2587	2479	2479	2479	2428
	1	2778	2714	2657	2606	2717	2660	2609	2563	2559	2519	2482	2466	2435	2405	2381	2357	2334	2309
	2	2654	2544	2453	2376	2600	2501	2419	2349	2421	2353	2295	2347	2292	2244	2278	2235	2196	2190
	3	2537	2393	2282	2193	2488	2359	2257	2175	2294	2209	2139	2234	2163	2104	2178	2120	2070	2079
	4	2426	2258	2135	2042	2383	2230	2117	2029	2177	2080	2004	2128	2046	1979	2082	2013	1956	1975
RCR	5	2321	2137	2008	1913	2283	2114	1994	1904	2070	1966	1886	2029	1939	1869	1991	1914	1851	1879
	6	2223	2027	1896	1801	2188	2008	1884	1795	1971	1863	1782	1937	1842	1769	1905	1822	1756	1790
	7	2131	1927	1795	1703	2100	1911	1786	1698	1880	1769	1688	1851	1752	1679	1824	1736	1669	1707
	8	2044	1836	1705	1615	2016	1822	1698	1611	1796	1684	1604	1771	1671	1597	1748	1657	1590	1631
	9	1963	1753	1623	1536	1938	1741	1618	1533	1718	1606	1528	1697	1595	1522	1677	1584	1517	1560
	10	1888	1676	1549	1465	1864	1666	1544	1463	1646	1535	1458	1627	1526	1454	1610	1517	1449	1495

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	162.0 fc	3.8 ft
6.5 ft	116.0 fc	4.4 ft
7.5 ft	87.1 fc	5.1 ft
8.0 ft	76.6 fc	5.5 ft
10.0 ft	49.0 fc	6.8 ft
12.0 ft	34.0 fc	8.2 ft
14.0 ft	25.0 fc	9.6 ft
16.0 ft	19.1 fc	10.9 ft
20.0 ft	12.2 fc	13.7 ft
24.0 ft	8.5 fc	16.4 ft
28.0 ft	6.2 fc	19.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1074384	1074384	1074384
45.00°	22414	23467	23335
55.00°	11878	11414	11601
65.00°	10893	10069	10632
75.00°	7240	8083	8776
85.00°	7050	7768	7276

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	11.0	11.9	11.3	12.2	12.6	11.1	12.0	11.4	12.3	12.7
	3H	12.8	13.6	13.2	13.9	14.3	12.8	13.6	13.2	14.0	14.3
	4H	13.2	14.0	13.6	14.4	14.8	13.4	14.2	13.8	14.5	14.9
	6H	13.5	14.2	13.9	14.6	15.0	13.7	14.4	14.2	14.8	15.2
	8H	13.6	14.3	14.1	14.7	15.1	13.8	14.5	14.3	14.9	15.3
	12H	13.7	14.3	14.1	14.7	15.2	13.9	14.5	14.3	14.9	15.3
4H	2H	11.5	12.2	11.9	12.6	13.0	11.5	12.3	11.9	12.7	13.1
	3H	13.4	14.1	13.8	14.5	14.9	13.4	14.0	13.8	14.5	14.9
	4H	14.0	14.5	14.4	15.0	15.4	14.1	14.7	14.6	15.1	15.6
	6H	14.3	14.8	14.8	15.3	15.8	14.6	15.0	15.0	15.5	16.0
	8H	14.5	14.9	15.0	15.4	15.9	14.7	15.1	15.2	15.6	16.1
	12H	14.6	15.0	15.1	15.5	16.0	14.8	15.2	15.3	15.7	16.1
8H	4H	14.1	14.6	14.6	15.0	15.5	14.2	14.7	14.7	15.1	15.6
	6H	14.6	14.9	15.1	15.5	16.0	14.8	15.1	15.3	15.6	16.1
	8H	14.8	15.1	15.3	15.6	16.1	15.0	15.3	15.5	15.8	16.3
	12H	15.0	15.2	15.5	15.8	16.3	15.1	15.4	15.7	15.9	16.5
12H	4H	14.1	14.5	14.6	15.0	15.5	14.2	14.6	14.7	15.1	15.6
	6H	14.6	14.9	15.2	15.4	16.0	14.8	15.1	15.3	15.6	16.1
	8H	14.9	15.1	15.4	15.6	16.2	15.0	15.3	15.5	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