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 GL

Nom. 3" Round Downlight, Wide Beam

Test Number

SP-01415_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	2382
Efficacy	90.55 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°	0.59
Four luminaires	0.64

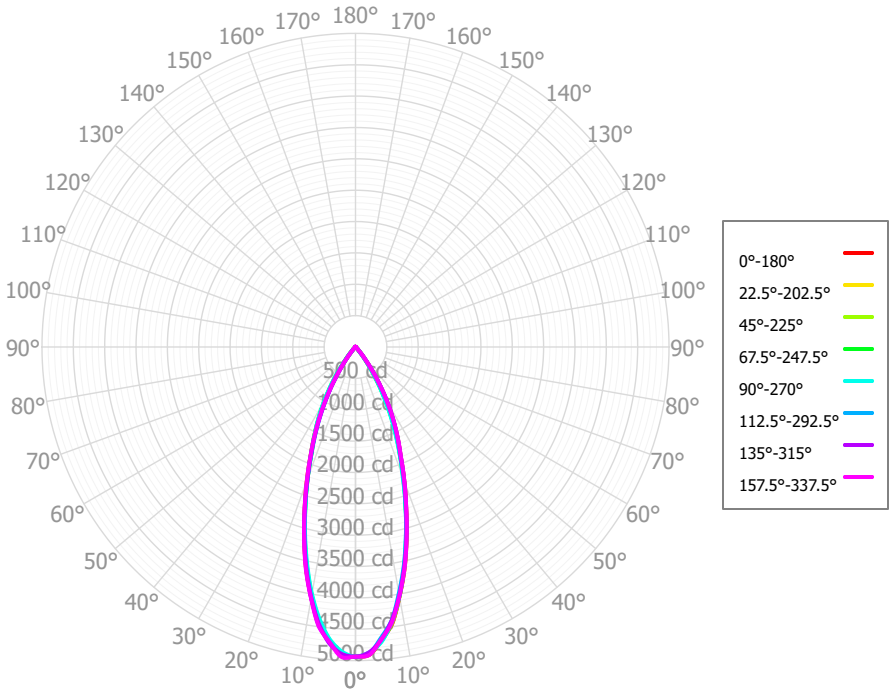
Full Beam Angle

0° - 180°	38°
90° - 270°	37°

IES File Header Contents

Keyword	Value
TEST	SP-01415_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 GL
LUMINAIRE	Nom. 3" Round Downlight, Wide Beam
OTHER	Matte White Trim, Clear glass 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°	433.48	18.20%
10.00° - 20.00°	858.14	36.03%
20.00° - 30.00°	700.68	29.42%
30.00° - 40.00°	291.16	12.23%
40.00° - 50.00°	45.85	1.93%
50.00° - 60.00°	17.73	0.74%
60.00° - 70.00°	12.03	0.50%
70.00° - 80.00°	6.96	0.29%
80.00° - 90.00°	2.76	0.12%
0.00° - 90.00°	2368.79	99.46%

Zone	Lumens	% Fixture
90.00° - 100.00°	1.95	0.08%
100.00° - 110.00°	1.94	0.08%
100.00° - 120.00°	3.70	0.16%
120.00° - 130.00°	1.75	0.07%
130.00° - 140.00°	1.72	0.07%
140.00° - 150.00°	1.54	0.06%
150.00° - 160.00°	1.17	0.05%
160.00° - 170.00°	0.69	0.03%
170.00° - 180.00°	0.23	0.01%
0.00° - 180.00°	2381.54	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°	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30
2.50°	4918.08	4909.62	4908.79	4895.56	4878.95	4930.76	4903.12	4951.81	4929.71	4929.21	4908.08	4907.52	4866.53	4899.26	4877.41	4919.23	4918.08
5.00°	4697.41	4700.33	4701.00	4709.12	4725.41	4722.23	4749.99	4729.01	4720.02	4710.71	4704.45	4696.70	4683.30	4657.57	4691.17	4686.39	4697.41
7.50°	4460.40	4448.38	4439.95	4439.10	4423.99	4481.73	4459.28	4495.30	4473.45	4468.27	4431.57	4418.10	4380.52	4404.98	4404.27	4434.96	4460.40
10.00°	4041.33	4034.44	4035.37	4032.01	4031.00	4055.21	4068.11	4075.26	4061.63	4049.37	4025.20	4018.21	4001.47	3985.78	4030.60	4029.33	4041.33
12.50°	3617.06	3605.93	3599.40	3594.24	3583.37	3617.52	3626.12	3648.36	3634.84	3621.49	3594.53	3584.05	3557.68	3564.02	3595.14	3613.78	3617.06
15.00°	3148.78	3135.99	3131.43	3116.47	3109.17	3135.66	3154.23	3165.84	3159.06	3148.01	3126.33	3123.25	3107.75	3106.67	3144.76	3145.84	3148.78
17.50°	2685.27	2680.68	2658.77	2660.02	2653.60	2666.07	2693.67	2692.91	2695.96	2677.90	2670.91	2657.18	2653.65	2655.11	2685.82	2689.10	2685.27
20.00°	2274.55	2257.15	2255.24	2226.17	2205.10	2232.63	2238.40	2269.76	2264.00	2259.98	2231.20	2238.54	2241.22	2246.57	2275.46	2273.37	2274.55
22.50°	1879.52	1874.41	1857.42	1844.58	1831.37	1830.37	1858.59	1865.43	1867.09	1854.31	1854.21	1825.96	1851.08	1858.78	1886.83	1888.78	1879.52
25.00°	1582.40	1562.03	1537.18	1507.36	1479.20	1497.94	1505.78	1530.59	1536.82	1545.62	1539.01	1540.32	1546.42	1569.58	1581.74	1590.11	1582.40
27.50°	1287.42	1257.81	1219.61	1188.88	1167.06	1179.71	1190.09	1204.69	1217.58	1239.85	1242.73	1262.51	1277.87	1282.04	1305.07	1296.58	1287.42
30.00°	1001.34	964.75	930.03	883.31	863.04	886.26	884.17	903.18	915.16	948.59	961.58	992.03	1007.41	1000.25	1023.16	1013.93	1001.34
32.50°	726.24	696.44	646.70	625.60	617.75	622.34	629.56	626.30	642.78	671.08	703.50	723.61	736.31	730.86	739.92	743.98	726.24
35.00°	484.96	455.62	429.77	393.92	379.98	399.93	384.47	400.91	407.45	441.63	460.36	494.79	504.80	493.23	505.16	495.40	484.96
37.50°	280.93	274.19	230.61	239.34	239.97	234.22	236.99	223.49	235.60	246.51	283.39	278.29	282.58	291.53	278.75	296.80	280.93
40.00°	163.71	145.64	142.86	117.89	106.41	133.20	100.96	126.00	126.47	142.28	140.18	168.04	168.52	161.93	170.48	164.95	163.71
42.50°	79.21	76.52	68.69	69.15	74.85	72.29	70.61	63.08	66.94	66.17	79.38	71.89	71.33	74.24	74.66	83.08	79.21
45.00°	54.99	50.33	51.35	44.06	44.95	48.05	45.89	46.58	46.68	48.24	51.05	52.22	49.78	52.71	54.30	55.42	54.99
47.50°	37.35	37.11	36.49	33.81	35.89	34.07	36.71	34.84	34.49	34.34	36.44	35.10	35.11	37.07	37.21	37.44	37.35
50.00°	29.29	31.33	29.13	27.12	27.33	27.58	27.83	28.19	27.46	26.98	25.95	27.69	27.43	28.94	29.53	27.89	29.29
52.50°	22.68	26.24	22.99	24.04	23.43	22.64	23.90	22.68	22.85	21.55	21.84	21.47	20.11	22.99	22.11	21.84	22.68
55.00°	17.77	21.46	19.67	21.54	19.82	18.61	20.08	18.12	19.47	18.63	19.11	18.63	17.79	19.29	18.25	18.26	17.77
57.50°	14.77	17.79	16.67	19.06	17.83	16.99	17.23	15.00	16.44	16.49	16.15	16.15	15.50	16.70	14.69	16.32	14.77
60.00°	13.58	14.50	14.24	16.59	15.94	16.51	14.67	12.88	13.55	15.17	13.16	14.46	13.61	15.04	13.32	15.29	13.58
62.50°	12.57	12.73	12.73	14.83	14.48	14.91	13.63	12.36	12.94	13.46	12.77	13.19	12.02	13.71	11.98	13.82	12.57
65.00°	11.70	11.36	12.55	13.08	12.87	12.90	12.51	12.76	13.01	11.41	12.58	12.63	12.44	12.58	10.82	12.15	11.70
67.50°	10.63	10.14	11.47	11.03	10.82	11.24	11.07	11.37	11.54	9.77	11.70	11.62	12.44	10.95	9.72	10.99	10.63
70.00°	9.43	8.95	9.35	9.01	8.90	9.67	9.56	9.20	9.73	8.41	10.76	9.97	10.55	9.05	8.87	9.99	9.43
72.50°	8.04	7.81	7.62	7.41	7.29	8.11	7.86	7.39	8.07	7.03	8.45	8.62	8.82	7.50	7.87	8.75	8.04
75.00°	6.55	6.69	6.26	5.89	5.95	6.54	6.16	5.70	6.43	5.64	6.27	7.60	7.63	6.11	6.50	7.46	6.55
77.50°	5.40	5.20	4.93	4.99	5.07	4.81	4.48	4.65	5.56	4.58	5.47	6.33	6.47	5.06	5.37	5.80	5.40
80.00°	4.38	3.70	3.61	4.02	4.07	3.07	3.19	3.74	4.76	3.67	4.59	4.81	5.40	4.12	4.69	4.07	4.38
82.50°	3.36	2.60	2.81	2.76	2.91	2.29	2.55	3.05	3.08	2.87	3.16	3.70	4.14	3.02	3.80	3.13	3.36
85.00°	2.35	1.58	2.33	1.82	2.15	1.57	2.09	2.39	1.45	2.11	2.01	2.86	2.54	1.88	2.57	2.27	2.35
87.50°	2.16	1.82	1.94	1.92	1.84	1.72	1.86	2.05	1.81	1.97	1.97	2.35	1.66	1.84	1.83	2.05	2.16
90.00°	2.12	2.05	1.60	2.00	1.74	1.86	1.78	1.74	2.11	1.98	1.86	2.02	1.85	1.97	1.73	1.86	2.12
92.50°	1.75	2.21	1.44	2.04	1.84	1.78	1.86	1.61	1.72	2.03	1.52	1.89	1.90	1.87	1.81	1.80	1.75
95.00°	1.34	2.31	1.35	2.03	1.75	1.69	1.74	1.48	1.41	2.10	1.32	1.86	1.78	1.75	2.07	1.76	1.34
97.50°	1.87	2.10	1.57	1.97	1.53	1.66	1.46	1.54	1.65	1.64	1.42	1.63	1.74	2.11	2.11	2.05	1.87
100.00°	2.45	1.96	1.88	1.86	1.58	1.66	1.49	1.59	1.85	1.14	1.55	1.33	1.80	2.46	1.95	2.32	2.45

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	2832	2832	2832	2832	2765	2765	2765	2765	2639	2639	2639	2524	2524	2524	2418	2418	2418	2369
	1	2713	2652	2598	2549	2654	2600	2551	2507	2502	2463	2428	2412	2382	2354	2328	2305	2284	2259
	2	2596	2492	2405	2332	2544	2450	2372	2305	2372	2308	2253	2300	2249	2203	2234	2193	2156	2149
	3	2485	2349	2243	2159	2439	2315	2219	2141	2253	2172	2105	2194	2127	2071	2141	2085	2038	2045
	4	2380	2221	2104	2015	2338	2193	2086	2002	2142	2050	1978	2095	2017	1954	2050	1985	1931	1948
RCR	5	2280	2105	1983	1892	2243	2083	1969	1883	2040	1942	1866	2001	1916	1849	1964	1891	1832	1857
	6	2187	2000	1875	1785	2153	1981	1864	1779	1946	1843	1766	1913	1823	1754	1882	1803	1741	1772
	7	2098	1904	1779	1691	2068	1889	1770	1686	1859	1753	1676	1831	1737	1667	1805	1722	1658	1693
	8	2015	1817	1692	1606	1988	1803	1685	1602	1778	1671	1595	1754	1658	1588	1732	1646	1581	1620
	9	1937	1736	1613	1530	1913	1725	1607	1527	1703	1596	1521	1682	1585	1516	1663	1575	1511	1551
	10	1864	1662	1541	1460	1842	1652	1536	1458	1633	1527	1454	1615	1518	1449	1598	1509	1445	1488

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	163.2 fc	3.7 ft
6.5 ft	116.9 fc	4.4 ft
7.5 ft	87.8 fc	5.1 ft
8.0 ft	77.2 fc	5.4 ft
10.0 ft	49.4 fc	6.8 ft
12.0 ft	34.3 fc	8.2 ft
14.0 ft	25.2 fc	9.5 ft
16.0 ft	19.3 fc	10.9 ft
20.0 ft	12.3 fc	13.6 ft
24.0 ft	8.6 fc	16.3 ft
28.0 ft	6.3 fc	19.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1082874	1082874	1082874
45.00°	17053	15925	13941
55.00°	6794	7519	7577
65.00°	6073	6511	6677
75.00°	5546	5304	5040
85.00°	5921	5863	5410

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	7.8	8.8	8.2	9.1	9.4	7.9	8.8	8.2	9.1	9.4
	3H	9.5	10.3	9.9	10.7	11.1	9.7	10.5	10.1	10.9	11.3
	4H	10.2	10.9	10.6	11.3	11.7	10.4	11.1	10.8	11.5	11.9
	6H	10.7	11.4	11.1	11.7	12.2	10.9	11.6	11.3	12.0	12.4
	8H	10.9	11.5	11.3	11.9	12.3	11.1	11.7	11.6	12.2	12.6
	12H	11.0	11.6	11.4	12.0	12.5	11.3	11.9	11.7	12.3	12.7
4H	2H	8.3	9.0	8.7	9.4	9.8	8.4	9.1	8.8	9.5	9.9
	3H	10.2	10.8	10.6	11.2	11.6	10.4	11.1	10.9	11.5	11.9
	4H	11.0	11.6	11.5	12.0	12.5	11.2	11.8	11.7	12.2	12.7
	6H	11.6	12.1	12.1	12.5	13.0	11.9	12.3	12.3	12.8	13.3
	8H	11.8	12.3	12.3	12.7	13.2	12.1	12.5	12.6	13.0	13.5
	12H	12.0	12.4	12.5	12.9	13.4	12.3	12.7	12.8	13.2	13.7
8H	4H	11.2	11.6	11.7	12.1	12.6	11.4	11.8	11.9	12.3	12.8
	6H	11.9	12.3	12.5	12.8	13.3	12.1	12.5	12.7	13.0	13.5
	8H	12.2	12.5	12.8	13.1	13.6	12.5	12.8	13.0	13.3	13.8
	12H	12.5	12.8	13.1	13.3	13.9	12.8	13.0	13.3	13.6	14.2
12H	4H	11.2	11.6	11.7	12.1	12.6	11.4	11.7	11.9	12.2	12.7
	6H	12.0	12.3	12.5	12.8	13.3	12.2	12.5	12.7	13.0	13.5
	8H	12.4	12.6	12.9	13.1	13.7	12.6	12.8	13.1	13.3	13.9

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0