Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Nom. 3" Round Deep Downlight A-Spec, Wide Beam

Test Number

SP-01411_2

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

Lumen Output

Output Lumens	2457
Efficacy	93.44 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

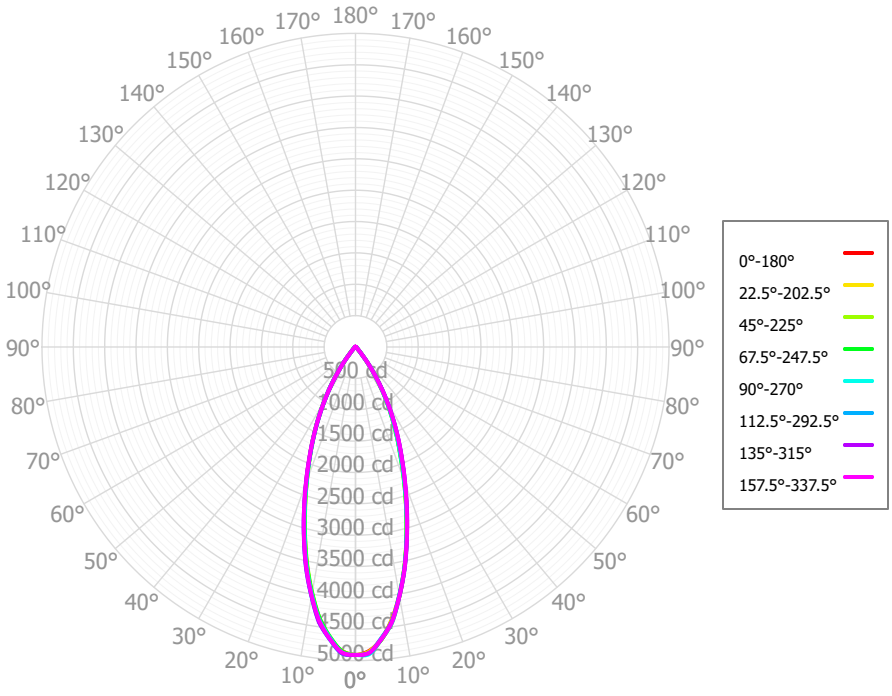
Full Beam Angle

0° - 180°	38°
90° - 270°	38°

IES File Header Contents

Keyword	Value
TEST	SP-01411_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/19/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 25L 35K WD xx xx RDD3F 25L 35K WD MW SO
LUMINAIRE	Nom. 3" Round Deep Downlight A-Spec, 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	This report prepared by Spectrum Lighting
_CRI	80

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture
0.00° - 10.00°	430.85	17.53%
10.00° - 20.00°	862.85	35.11%
20.00° - 30.00°	719.86	29.29%
30.00° - 40.00°	319.47	13.00%
40.00° - 50.00°	60.98	2.48%
50.00° - 60.00°	27.45	1.12%
60.00° - 70.00°	15.76	0.64%
70.00° - 80.00°	5.11	0.21%
80.00° - 90.00°	2.35	0.10%
0.00° - 90.00°	2444.68	99.48%

Zone	Lumens	% Fixture
90.00° - 100.00°	1.98	0.08%
100.00° - 110.00°	1.90	0.08%
100.00° - 120.00°	3.76	0.15%
120.00° - 130.00°	1.76	0.07%
130.00° - 140.00°	1.67	0.07%
140.00° - 150.00°	1.45	0.06%
150.00° - 160.00°	1.17	0.05%
160.00° - 170.00°	0.68	0.03%
170.00° - 180.00°	0.22	0.01%
0.00° - 180.00°	2457.37	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°	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90	4911.90
2.50°	4855.80	4866.39	4878.77	4888.37	4906.12	4893.26	4889.82	4875.66	4858.54	4853.64	4859.36	4858.52	4878.94	4889.73	4886.52	4884.99	4855.80
5.00°	4688.98	4678.04	4690.30	4684.96	4681.66	4685.25	4675.12	4678.01	4674.82	4668.75	4644.41	4645.51	4659.20	4667.10	4682.51	4679.87	4688.98
7.50°	4398.39	4402.02	4415.08	4440.21	4437.63	4428.74	4435.79	4409.65	4397.44	4374.45	4372.71	4369.10	4399.43	4424.02	4421.70	4433.49	4398.39
10.00°	4032.04	4021.79	4037.01	4029.97	4032.26	4041.08	4035.63	4029.49	4022.82	4003.58	3977.00	3989.49	4009.38	4018.42	4035.70	4032.34	4032.04
12.50°	3606.68	3599.23	3607.71	3603.81	3617.53	3627.48	3629.06	3615.85	3601.50	3577.90	3557.36	3571.86	3596.24	3606.56	3621.47	3615.24	3606.68
15.00°	3158.52	3144.52	3137.93	3140.36	3154.22	3169.21	3175.80	3167.15	3154.92	3127.11	3111.29	3113.30	3136.75	3151.64	3166.53	3161.17	3158.52
17.50°	2719.56	2682.20	2689.30	2681.80	2700.70	2723.49	2729.48	2730.79	2701.06	2693.52	2665.83	2679.40	2695.57	2707.95	2730.63	2713.00	2719.56
20.00°	2282.59	2280.85	2251.76	2261.27	2274.59	2291.99	2313.64	2303.15	2302.78	2264.59	2275.76	2263.42	2278.33	2302.31	2312.98	2314.14	2282.59
22.50°	1929.47	1886.12	1884.62	1862.74	1884.95	1911.59	1920.15	1932.37	1912.51	1912.61	1896.01	1909.30	1910.19	1925.18	1945.43	1931.51	1929.47
25.00°	1584.49	1571.04	1540.53	1544.66	1560.07	1570.39	1583.29	1587.52	1593.35	1570.70	1580.83	1584.30	1584.84	1606.24	1609.72	1610.74	1584.49
27.50°	1286.09	1260.28	1252.64	1242.24	1256.52	1263.10	1265.51	1281.00	1278.85	1276.63	1272.26	1283.84	1282.89	1301.30	1305.66	1300.15	1286.09
30.00°	992.57	985.19	974.33	974.31	977.91	972.77	978.35	985.01	997.27	986.66	985.22	990.41	994.58	1015.20	1014.59	1012.33	992.57
32.50°	735.53	720.74	731.40	723.11	723.95	719.72	715.83	729.35	725.09	734.11	716.97	734.69	738.60	752.24	757.78	744.10	735.53
35.00°	494.29	496.57	493.61	495.67	489.47	478.17	479.84	478.92	497.71	493.70	485.80	484.20	494.61	510.33	509.19	504.51	494.29
37.50°	309.36	303.43	318.41	311.97	310.59	305.36	300.04	308.12	299.05	307.31	299.43	314.66	319.38	326.56	330.06	315.80	309.36
40.00°	164.41	180.52	161.58	170.17	160.41	143.26	160.51	148.93	177.76	158.18	170.74	156.38	158.19	177.72	159.06	177.22	164.41
42.50°	105.76	96.47	108.60	96.21	96.41	98.80	95.33	101.63	92.21	104.36	96.44	109.29	107.87	109.38	111.44	102.10	105.76
45.00°	65.50	69.78	65.44	65.33	60.08	60.77	65.15	60.99	67.08	66.16	69.49	68.12	66.57	71.47	67.50	68.45	65.50
47.50°	51.28	51.60	51.57	49.80	46.96	50.18	50.01	50.54	49.86	53.22	52.94	54.38	53.75	55.85	54.70	51.27	51.28
50.00°	41.10	41.77	40.38	40.57	37.69	40.16	39.09	41.13	41.57	43.12	42.45	42.87	41.99	45.01	43.26	40.95	41.10
52.50°	34.70	35.13	34.13	34.08	33.20	33.19	32.95	34.39	34.80	36.10	35.94	37.24	37.54	37.95	37.13	35.37	34.70
55.00°	29.87	30.56	29.06	28.24	29.00	27.23	27.47	28.87	29.19	30.37	30.87	32.17	32.85	31.27	31.60	30.96	29.87
57.50°	26.01	26.39	25.43	25.53	25.80	24.14	24.86	25.35	25.35	25.59	26.31	28.06	27.35	27.00	27.42	26.58	26.01
60.00°	23.16	22.38	21.88	23.11	22.55	21.03	22.24	21.57	22.40	22.09	21.85	24.18	22.73	22.76	23.79	22.21	23.16
62.50°	20.72	19.42	18.41	19.40	19.06	17.90	18.63	17.53	19.22	19.21	18.55	20.55	19.92	18.71	20.98	19.59	20.72
65.00°	17.02	16.72	15.39	15.69	15.62	14.88	15.17	14.64	15.98	15.59	15.35	16.80	16.86	15.17	17.32	16.91	17.02
67.50°	13.02	13.59	12.63	12.03	12.33	11.99	12.39	12.59	12.63	11.77	12.42	12.96	13.46	13.40	12.81	13.69	13.02
70.00°	9.76	10.42	9.52	8.60	9.07	8.72	9.39	9.63	9.26	9.31	9.51	9.38	9.84	10.71	8.95	10.47	9.76
72.50°	6.59	7.27	6.30	6.04	5.87	5.15	5.81	6.22	6.52	7.04	6.73	5.92	6.04	6.02	5.53	7.31	6.59
75.00°	4.77	4.34	4.62	3.97	3.80	3.59	3.37	4.26	3.95	4.90	4.40	3.99	4.05	3.13	3.61	4.73	4.77
77.50°	3.13	3.48	3.22	3.01	3.10	3.06	2.82	2.71	3.35	2.88	3.58	2.51	3.14	2.75	2.34	3.51	3.13
80.00°	2.98	2.73	2.59	2.40	2.52	2.30	2.42	2.38	2.85	2.44	2.88	2.51	2.72	2.50	2.35	2.62	2.98
82.50°	2.77	2.44	2.04	2.32	2.04	1.48	2.18	2.21	2.88	2.03	2.39	2.74	2.47	2.37	2.68	2.21	2.77
85.00°	2.35	2.21	2.13	2.23	1.78	1.80	2.08	1.77	2.71	1.76	2.11	2.31	2.32	2.16	2.22	1.97	2.35
87.50°	2.08	2.12	2.21	2.13	1.64	2.32	2.10	1.38	1.99	1.69	2.11	1.89	2.19	1.89	1.68	1.90	2.08
90.00°	2.11	2.03	2.28	1.87	1.84	1.86	1.80	1.73	1.58	2.14	1.98	1.90	2.03	1.68	1.68	1.83	2.11
92.50°	2.16	1.94	2.27	1.48	2.14	1.39	1.35	1.96	1.70	2.26	1.74	1.87	1.87	1.49	1.69	1.77	2.16
95.00°	2.23	1.86	2.05	1.53	1.80	1.51	1.68	1.69	1.74	1.82	1.76	1.63	1.93	1.94	1.72	1.84	2.23
97.50°	2.12	1.79	1.93	1.75	1.35	1.61	2.24	1.52	1.66	1.58	1.94	1.47	1.95	2.54	1.74	1.97	2.12
100.00°	1.82	1.74	2.02	1.65	1.66	1.56	2.08	1.64	1.64	1.56	2.01	1.52	1.73	2.12	1.75	1.93	1.82

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	2922	2922	2922	2922	2853	2853	2853	2853	2723	2723	2723	2605	2605	2605	2496	2496	2496	2445
	1	2798	2734	2678	2627	2736	2680	2630	2584	2579	2539	2502	2486	2455	2426	2400	2376	2354	2328
	2	2675	2565	2475	2399	2621	2522	2440	2371	2442	2375	2317	2368	2313	2266	2299	2256	2217	2211
	3	2558	2414	2304	2215	2509	2380	2278	2197	2315	2230	2160	2255	2185	2125	2199	2141	2092	2100
	4	2446	2279	2157	2063	2403	2251	2138	2051	2198	2102	2025	2149	2067	2001	2103	2034	1977	1996
RCR	5	2341	2157	2029	1934	2303	2134	2014	1925	2090	1986	1907	2050	1960	1889	2012	1934	1872	1899
	6	2243	2047	1916	1821	2208	2028	1904	1815	1991	1883	1802	1957	1862	1789	1925	1842	1776	1810
	7	2150	1946	1814	1722	2119	1930	1806	1717	1899	1788	1707	1870	1772	1698	1843	1756	1689	1726
	8	2063	1854	1723	1633	2035	1841	1716	1630	1814	1702	1622	1790	1689	1615	1766	1676	1608	1649
	9	1981	1770	1641	1553	1956	1758	1635	1551	1736	1624	1545	1714	1613	1539	1694	1602	1534	1578
	10	1905	1693	1566	1481	1882	1682	1561	1479	1663	1551	1475	1644	1542	1470	1627	1533	1466	1511

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	162.4 fc	3.8 ft
6.5 ft	116.3 fc	4.5 ft
7.5 ft	87.3 fc	5.2 ft
8.0 ft	76.7 fc	5.5 ft
10.0 ft	49.1 fc	6.9 ft
12.0 ft	34.1 fc	8.3 ft
14.0 ft	25.1 fc	9.7 ft
16.0 ft	19.2 fc	11.0 ft
20.0 ft	12.3 fc	13.8 ft
24.0 ft	8.5 fc	16.5 ft
28.0 ft	6.3 fc	19.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1077083	1077083	1077083
45.00°	20312	20295	18631
55.00°	11420	11109	11086
65.00°	8829	7987	8105
75.00°	4041	3912	3220
85.00°	5919	5355	4483

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	10.9	11.8	11.3	12.2	12.5	10.9	11.8	11.3	12.1	12.5
	3H	11.9	12.7	12.3	13.0	13.4	11.7	12.6	12.1	12.9	13.3
	4H	12.0	12.8	12.4	13.1	13.5	11.8	12.6	12.2	12.9	13.3
	6H	12.0	12.7	12.5	13.1	13.5	11.8	12.5	12.2	12.9	13.3
	8H	12.1	12.7	12.5	13.1	13.5	11.8	12.5	12.3	12.9	13.3
	12H	12.1	12.8	12.6	13.1	13.6	11.9	12.5	12.3	12.9	13.3
4H	2H	11.2	12.0	11.6	12.3	12.7	11.1	11.9	11.5	12.2	12.6
	3H	12.3	12.9	12.7	13.3	13.7	12.0	12.7	12.5	13.1	13.5
	4H	12.4	13.0	12.9	13.4	13.9	12.1	12.7	12.6	13.1	13.6
	6H	12.5	13.0	13.0	13.4	13.9	12.2	12.7	12.7	13.1	13.6
	8H	12.6	13.0	13.1	13.5	14.0	12.2	12.7	12.7	13.1	13.6
	12H	12.7	13.1	13.2	13.6	14.0	12.3	12.7	12.8	13.2	13.7
8H	4H	12.3	12.8	12.8	13.2	13.7	12.1	12.5	12.6	13.0	13.5
	6H	12.5	12.8	13.0	13.4	13.9	12.2	12.5	12.7	13.1	13.5
	8H	12.6	12.9	13.2	13.5	14.0	12.3	12.6	12.8	13.1	13.6
	12H	12.8	13.1	13.4	13.6	14.2	12.5	12.7	13.0	13.3	13.8
12H	4H	12.3	12.7	12.8	13.2	13.7	12.0	12.4	12.5	12.9	13.4
	6H	12.5	12.8	13.0	13.3	13.8	12.2	12.5	12.7	13.0	13.5
	8H	12.6	12.9	13.2	13.4	14.0	12.3	12.6	12.8	13.1	13.7

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0