Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

SR3Mx 25L 35K WD xx xx RH3F 25L 35K WD MW GL

Nom. 3" Round Pinhole A-Spec, Wide Beam

Test Number

SP-01412_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	1641
Efficacy	62.41 lm/W

Luminous Dimensions

0° - 180° Size	-0.15
90° - 270° Size	-0.15
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.68
Two luminaires, plane 90°	0.68
Four luminaires	0.66

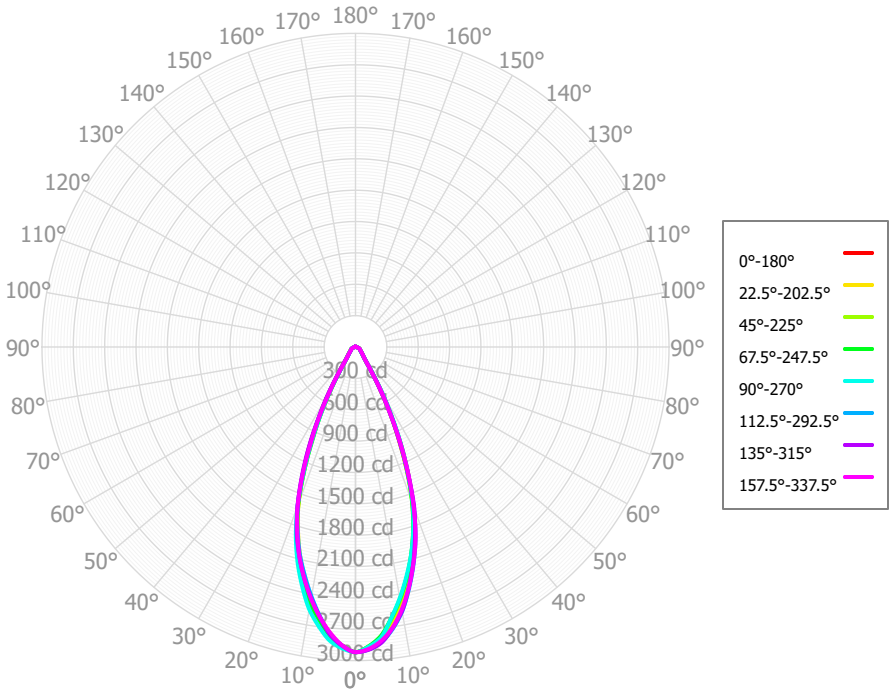
Full Beam Angle

0° - 180°	43°
90° - 270°	42°

IES File Header Contents

Keyword	Value
TEST	SP-01412_2
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 25L 35K WD xx xx RH3F 25L 35K WD MW GL
LUMINAIRE	Nom. 3" Round Pinhole A-Spec, Wide Beam
OTHER	Matte White Trim, Clear Glass lens
OTHER	43 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°	259.32	15.80%
10.00° - 20.00°	573.15	34.92%
20.00° - 30.00°	456.52	27.82%
30.00° - 40.00°	146.64	8.93%
40.00° - 50.00°	69.48	4.23%
50.00° - 60.00°	51.05	3.11%
60.00° - 70.00°	42.31	2.58%
70.00° - 80.00°	23.64	1.44%
80.00° - 90.00°	7.56	0.46%
0.00° - 90.00°	1629.68	99.29%

Zone	Lumens	% Fixture
90.00° - 100.00°	1.90	0.12%
100.00° - 110.00°	1.71	0.10%
100.00° - 120.00°	3.36	0.20%
120.00° - 130.00°	1.58	0.10%
130.00° - 140.00°	1.51	0.09%
140.00° - 150.00°	1.36	0.08%
150.00° - 160.00°	1.05	0.06%
160.00° - 170.00°	0.61	0.04%
170.00° - 180.00°	0.20	0.01%
0.00° - 180.00°	1641.25	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°	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19	2920.19
2.50°	2880.53	2890.08	2871.03	2866.95	2872.01	2862.84	2863.52	2859.34	2861.48	2868.87	2860.49	2863.46	2886.82	2896.94	2899.87	2892.26	2880.53
5.00°	2813.10	2794.15	2789.83	2776.84	2793.14	2764.93	2765.85	2748.12	2774.80	2752.04	2774.13	2774.08	2821.57	2837.21	2840.99	2823.06	2813.10
7.50°	2667.69	2664.19	2632.39	2619.50	2617.62	2601.35	2607.81	2607.16	2623.05	2612.98	2629.50	2640.50	2695.27	2721.86	2713.03	2711.59	2667.69
10.00°	2513.80	2491.11	2463.38	2447.94	2439.71	2424.94	2441.96	2448.23	2460.76	2448.69	2468.80	2492.99	2549.68	2570.08	2565.76	2549.78	2513.80
12.50°	2314.40	2306.24	2264.70	2261.74	2249.64	2240.87	2267.38	2266.23	2279.05	2261.78	2282.48	2302.12	2351.44	2367.37	2356.44	2358.45	2314.40
15.00°	2111.66	2091.65	2063.30	2057.20	2055.54	2055.99	2075.95	2074.82	2079.71	2056.24	2080.65	2103.01	2138.69	2147.52	2137.72	2141.71	2111.66
17.50°	1874.59	1872.72	1831.52	1839.38	1838.95	1840.84	1870.83	1852.29	1857.17	1831.66	1861.47	1858.67	1898.75	1910.81	1894.42	1914.59	1874.59
20.00°	1623.78	1598.68	1591.46	1585.19	1604.77	1618.64	1619.47	1621.49	1603.37	1596.16	1593.19	1609.65	1621.29	1626.98	1646.84	1627.10	1623.78
22.50°	1298.31	1321.18	1287.57	1312.25	1314.61	1318.77	1341.98	1320.83	1320.54	1302.83	1285.07	1282.58	1295.10	1310.50	1318.34	1324.22	1298.31
25.00°	986.04	1016.31	991.83	1028.14	1030.34	1024.54	1052.87	1010.38	1036.19	986.45	996.02	962.16	992.30	1011.45	996.86	1020.92	986.04
27.50°	715.06	721.84	728.35	740.25	758.27	757.80	759.38	749.39	750.83	724.63	717.74	705.68	710.91	720.96	725.85	717.57	715.06
30.00°	476.47	499.61	491.00	516.54	518.13	512.60	527.64	494.64	520.63	476.31	497.72	467.51	486.08	498.15	476.90	498.19	476.47
32.50°	306.01	304.22	317.99	305.62	324.77	329.67	310.80	335.63	315.77	325.46	299.68	312.18	298.67	297.00	315.13	288.97	306.01
35.00°	187.92	212.54	192.45	214.75	199.61	192.33	218.04	192.31	219.68	186.80	208.84	187.37	203.53	211.84	188.83	211.10	187.92
37.50°	145.45	141.26	148.25	135.28	144.70	144.71	140.22	153.29	155.69	150.44	143.83	149.10	150.08	149.21	149.85	140.93	145.45
40.00°	117.03	119.33	116.92	116.52	113.40	111.02	118.28	119.13	126.78	118.45	121.62	118.70	121.84	124.68	119.32	122.09	117.03
42.50°	102.91	100.99	100.99	98.43	99.22	96.24	98.41	102.46	103.97	104.15	104.56	103.04	101.17	103.37	103.24	104.38	102.91
45.00°	90.51	88.56	88.46	87.30	86.61	83.81	86.05	87.47	90.15	90.29	92.15	89.35	89.32	90.55	89.64	90.73	90.51
47.50°	79.38	78.44	78.79	76.78	74.79	73.61	74.23	76.46	77.01	79.09	80.03	78.21	78.94	78.17	79.00	78.84	79.38
50.00°	70.53	71.04	70.34	69.30	67.02	65.92	65.47	67.05	68.98	68.95	71.04	68.51	69.24	70.27	70.13	70.99	70.53
52.50°	62.83	64.42	62.62	62.31	60.63	59.97	57.63	60.19	61.31	62.52	62.54	60.17	59.68	62.61	62.76	63.58	62.83
55.00°	56.48	58.43	57.64	56.77	56.31	54.34	52.89	54.65	56.72	57.00	56.84	55.57	54.63	56.07	56.65	56.87	56.48
57.50°	50.57	54.62	53.78	52.23	52.43	48.86	48.89	50.64	52.23	53.53	52.32	53.45	49.98	50.75	51.30	52.13	50.57
60.00°	48.32	52.08	51.01	49.66	48.89	46.69	46.51	47.36	48.09	50.27	51.81	50.58	48.67	48.93	47.87	49.60	48.32
62.50°	46.81	49.28	48.55	46.89	45.39	45.58	44.70	44.68	44.15	47.34	49.99	47.36	47.00	46.77	45.22	47.02	46.81
65.00°	43.85	46.38	44.56	43.84	41.87	42.31	43.74	41.14	40.72	43.46	45.29	43.65	43.86	43.96	42.32	44.41	43.85
67.50°	40.75	41.29	40.35	39.95	38.09	38.64	40.55	37.11	36.96	38.56	39.97	39.78	39.67	39.82	39.36	39.79	40.75
70.00°	34.88	35.66	35.00	35.24	31.42	33.55	34.94	31.55	32.60	32.84	33.71	34.03	32.79	33.94	34.06	34.03	34.88
72.50°	28.92	29.90	29.56	29.45	25.23	28.34	28.88	25.38	27.22	26.48	27.31	27.96	26.23	27.41	28.42	27.85	28.92
75.00°	22.19	24.12	23.41	22.91	21.42	22.07	22.50	20.35	20.58	21.31	20.76	21.79	20.26	20.28	22.42	21.51	22.19
77.50°	16.21	19.06	17.62	18.14	17.87	16.09	18.12	15.59	15.62	16.81	15.82	15.68	15.22	15.92	16.52	17.12	16.21
80.00°	13.88	14.11	14.17	14.21	15.05	12.73	14.84	12.59	12.18	12.65	12.12	12.63	11.34	13.42	13.39	13.19	13.88
82.50°	11.01	10.79	10.56	11.12	11.68	9.32	11.14	9.81	8.78	8.62	8.86	9.55	7.96	10.19	10.18	10.03	11.01
85.00°	6.54	7.47	6.39	8.29	7.19	5.75	7.30	6.02	5.42	5.76	5.84	6.28	5.04	6.61	6.50	6.95	6.54
87.50°	3.30	4.15	3.20	5.33	3.90	2.89	4.34	2.42	3.37	3.16	3.79	3.45	3.18	4.09	3.44	4.42	3.30
90.00°	2.47	1.55	2.37	2.35	2.25	2.06	1.56	2.21	1.90	2.38	2.09	2.57	2.00	1.90	2.57	2.04	2.47
92.50°	1.95	1.53	1.79	1.78	1.33	1.54	1.53	2.02	1.40	1.81	1.56	1.91	1.75	1.62	1.93	1.94	1.95
95.00°	1.85	1.57	1.62	1.41	1.16	1.56	1.80	1.97	1.18	1.85	1.29	1.83	1.92	1.66	1.86	1.87	1.85
97.50°	1.85	1.73	1.60	1.64	1.25	1.56	1.77	1.86	1.27	1.88	1.59	1.75	1.81	1.84	1.70	2.02	1.85
100.00°	1.94	1.82	1.75	1.82	1.52	1.50	1.73	1.58	1.41	1.66	1.96	1.64	1.62	2.03	1.37	2.08	1.94

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	1951	1951	1951	1951	1904	1904	1904	1904	1817	1817	1817	1737	1737	1737	1664	1664	1664	1630
	1	1856	1808	1766	1727	1814	1771	1733	1699	1703	1672	1644	1640	1616	1593	1581	1563	1545	1530
	2	1764	1682	1615	1558	1726	1653	1592	1540	1598	1548	1504	1547	1506	1470	1500	1467	1438	1437
	3	1678	1573	1492	1427	1645	1549	1475	1414	1505	1442	1390	1463	1411	1367	1425	1382	1345	1354
	4	1600	1478	1389	1320	1569	1458	1376	1312	1422	1351	1295	1388	1328	1279	1356	1305	1263	1280
RCR	5	1527	1394	1301	1232	1500	1378	1291	1226	1347	1272	1214	1319	1254	1202	1293	1236	1191	1213
	6	1459	1319	1224	1157	1435	1305	1217	1152	1280	1202	1144	1256	1188	1135	1234	1174	1127	1153
	7	1396	1251	1157	1091	1374	1240	1151	1088	1219	1139	1082	1198	1128	1075	1180	1117	1069	1098
	8	1338	1191	1098	1034	1318	1181	1093	1031	1163	1083	1026	1145	1074	1022	1129	1065	1017	1048
	9	1284	1135	1044	983	1266	1127	1040	981	1111	1032	977	1096	1025	973	1082	1017	969	1001
	10	1234	1085	996	936	1217	1078	992	935	1064	986	932	1051	979	929	1039	973	926	959

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	96.5 fc	4.3 ft
6.5 ft	69.1 fc	5.1 ft
7.5 ft	51.9 fc	5.8 ft
8.0 ft	45.6 fc	6.2 ft
10.0 ft	29.2 fc	7.8 ft
12.0 ft	20.3 fc	9.3 ft
14.0 ft	14.9 fc	10.9 ft
16.0 ft	11.4 fc	12.5 ft
20.0 ft	7.3 fc	15.6 ft
24.0 ft	5.1 fc	18.7 ft
28.0 ft	3.7 fc	21.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1778727	1778727	1778727
45.00°	77964	76198	74603
55.00°	59976	61207	59802
65.00°	63200	64219	60343
75.00°	52229	55102	50413
85.00°	45720	44629	50259

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	20.6	21.6	21.0	22.0	22.3	20.4	21.4	20.7	21.7	22.1
	3H	22.8	23.7	23.2	24.1	24.5	22.5	23.5	22.9	23.8	24.2
	4H	23.5	24.3	23.9	24.7	25.1	23.2	24.0	23.6	24.4	24.8
	6H	23.9	24.7	24.3	25.1	25.5	23.6	24.4	24.0	24.8	25.2
	8H	24.0	24.8	24.5	25.2	25.6	23.7	24.5	24.2	24.9	25.3
	12H	24.2	24.9	24.6	25.3	25.7	23.8	24.6	24.3	25.0	25.4
4H	2H	21.3	22.1	21.7	22.5	22.9	21.1	22.0	21.6	22.4	22.8
	3H	23.6	24.3	24.1	24.8	25.2	23.4	24.1	23.9	24.6	25.0
	4H	24.4	25.0	24.8	25.5	25.9	24.1	24.8	24.6	25.2	25.7
	6H	24.9	25.5	25.4	25.9	26.4	24.6	25.2	25.1	25.6	26.1
	8H	25.1	25.6	25.6	26.1	26.6	24.8	25.3	25.3	25.8	26.3
	12H	25.3	25.7	25.8	26.2	26.7	25.0	25.4	25.5	25.9	26.4
8H	4H	24.6	25.1	25.1	25.6	26.1	24.4	24.9	24.8	25.3	25.8
	6H	25.3	25.7	25.8	26.2	26.7	25.0	25.4	25.5	25.9	26.4
	8H	25.6	25.9	26.1	26.5	27.0	25.3	25.6	25.8	26.2	26.7
	12H	25.8	26.2	26.4	26.7	27.3	25.5	25.8	26.0	26.3	26.9
12H	4H	24.6	25.0	25.1	25.5	26.0	24.3	24.8	24.9	25.3	25.8
	6H	25.3	25.7	25.9	26.2	26.7	25.0	25.4	25.6	25.9	26.4
	8H	25.7	26.0	26.2	26.5	27.1	25.4	25.7	25.9	26.2	26.8

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0