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 NL

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

Test Number

SP-01413_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	1818
Efficacy	69.13 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.67
Two luminaires, plane 90°	0.69
Four luminaires	0.67

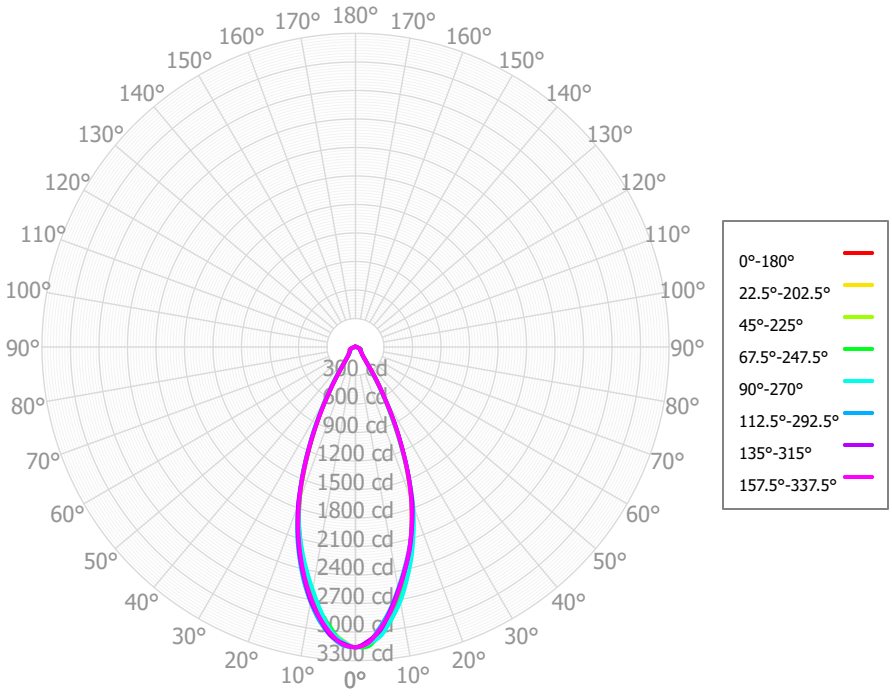
Full Beam Angle

0° - 180°	42°
90° - 270°	43°

IES File Header Contents

Keyword	Value
TEST	SP-01413_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 NL
LUMINAIRE	Nom. 3" Round Pinhole A-Spec, Wide Beam
OTHER	Matte White Trim, No lens
OTHER	42 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°	278.68	15.33%
10.00° - 20.00°	611.54	33.64%
20.00° - 30.00°	510.82	28.10%
30.00° - 40.00°	167.89	9.23%
40.00° - 50.00°	73.80	4.06%
50.00° - 60.00°	61.74	3.40%
60.00° - 70.00°	59.26	3.26%
70.00° - 80.00°	31.91	1.76%
80.00° - 90.00°	9.71	0.53%
0.00° - 90.00°	1805.36	99.30%

Zone	Lumens	% Fixture
90.00° - 100.00°	2.12	0.12%
100.00° - 110.00°	1.97	0.11%
100.00° - 120.00°	3.93	0.22%
120.00° - 130.00°	1.75	0.10%
130.00° - 140.00°	1.63	0.09%
140.00° - 150.00°	1.38	0.08%
150.00° - 160.00°	1.10	0.06%
160.00° - 170.00°	0.66	0.04%
170.00° - 180.00°	0.22	0.01%
0.00° - 180.00°	1818.15	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°	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52	3160.52
2.50°	3103.65	3134.75	3115.85	3151.68	3126.40	3140.75	3119.83	3131.41	3100.19	3125.43	3091.98	3124.03	3101.02	3111.47	3096.17	3117.26	3103.65
5.00°	3009.23	3001.98	3019.13	3022.77	3053.25	3047.27	3045.66	3023.93	3010.45	2983.28	2988.37	2969.47	2995.73	2959.95	2994.44	2977.89	3009.23
7.50°	2834.77	2860.06	2860.81	2891.92	2890.24	2907.71	2881.86	2876.27	2830.86	2826.16	2813.78	2813.53	2800.68	2787.93	2799.44	2817.20	2834.77
10.00°	2644.12	2654.36	2671.09	2691.59	2719.85	2725.51	2712.79	2686.80	2645.35	2630.45	2629.54	2614.67	2594.19	2584.82	2598.14	2612.91	2644.12
12.50°	2426.86	2444.88	2458.44	2490.10	2503.40	2518.40	2491.76	2479.12	2435.68	2430.59	2428.36	2415.63	2392.29	2384.28	2402.06	2405.93	2426.86
15.00°	2204.50	2210.69	2234.65	2255.63	2282.21	2286.90	2268.06	2247.05	2220.61	2210.62	2216.01	2196.97	2190.91	2187.52	2206.29	2193.68	2204.50
17.50°	1962.78	1972.68	1986.17	2018.83	2033.91	2041.59	2020.09	2004.88	1984.48	1988.66	1984.91	1977.67	1971.83	1970.21	1979.45	1967.58	1962.78
20.00°	1717.53	1711.81	1726.07	1732.87	1773.01	1757.32	1764.16	1732.43	1731.87	1718.72	1730.78	1718.35	1750.97	1723.97	1751.14	1715.34	1717.53
22.50°	1427.36	1443.38	1425.03	1444.89	1443.93	1452.00	1441.30	1448.09	1419.07	1444.67	1439.76	1457.83	1457.25	1451.42	1450.84	1443.73	1427.36
25.00°	1129.67	1132.35	1105.36	1122.88	1121.96	1145.69	1122.74	1144.37	1112.44	1135.27	1147.88	1153.42	1156.82	1142.89	1147.98	1137.29	1129.67
27.50°	855.22	832.38	826.90	806.27	836.42	838.86	836.51	833.31	826.96	823.30	854.65	851.36	877.85	857.47	867.43	849.07	855.22
30.00°	584.32	589.80	566.26	569.68	567.18	586.39	562.75	581.46	562.19	583.29	594.84	609.77	600.58	602.24	587.50	592.65	584.32
32.50°	395.77	367.80	377.77	342.63	375.30	361.04	373.89	351.24	365.58	347.94	385.40	373.98	407.00	393.73	398.41	381.35	395.77
35.00°	219.02	247.21	218.89	235.19	209.84	235.99	204.59	232.42	204.89	243.72	235.20	262.32	219.36	244.53	210.84	245.19	219.02
37.50°	162.44	144.54	150.86	135.16	160.91	158.57	160.55	152.06	157.90	146.93	170.42	155.10	165.37	148.95	162.28	150.38	162.44
40.00°	121.39	123.82	118.83	119.12	119.02	123.57	120.84	121.82	119.88	125.88	125.71	129.41	119.23	118.56	115.09	122.37	121.39
42.50°	104.75	105.18	103.02	103.69	106.77	108.05	107.24	107.92	108.64	108.22	108.69	104.67	104.40	97.64	102.80	101.41	104.75
45.00°	91.04	95.55	93.30	94.27	95.22	96.93	94.67	97.65	97.98	97.56	95.29	94.10	91.16	87.90	90.52	91.35	91.04
47.50°	83.28	86.42	85.21	85.26	86.43	87.76	87.73	88.52	88.91	87.13	86.74	83.84	81.80	79.72	81.08	82.06	83.28
50.00°	76.15	79.30	77.71	79.99	78.17	81.10	81.03	82.15	81.26	81.56	79.36	77.41	72.59	73.29	71.73	73.92	76.15
52.50°	70.64	72.69	71.94	74.57	71.92	75.50	75.56	76.60	77.46	76.12	73.50	71.20	67.91	67.49	67.03	67.12	70.64
55.00°	65.29	68.04	66.75	68.02	66.49	71.11	70.66	73.17	74.19	73.15	69.35	67.58	63.37	62.37	62.36	62.23	65.29
57.50°	63.98	64.28	64.67	62.34	63.99	67.21	68.60	70.34	72.36	70.22	67.35	64.22	61.19	59.89	58.90	59.93	63.98
60.00°	63.01	63.70	63.61	63.13	62.38	65.74	66.97	69.16	70.71	69.56	66.02	63.57	59.06	60.20	55.64	61.25	63.01
62.50°	62.42	62.69	63.47	63.59	63.77	65.20	67.41	68.41	69.48	68.90	65.51	62.67	60.59	59.78	57.47	60.83	62.42
65.00°	61.85	60.13	63.61	61.84	63.28	62.51	66.41	64.32	66.50	65.41	62.79	59.64	62.16	58.62	58.92	58.10	61.85
67.50°	55.35	56.25	57.32	58.96	56.68	59.01	59.22	59.38	59.37	61.84	57.52	55.98	54.49	53.27	52.14	53.29	55.35
70.00°	48.47	48.00	49.12	48.82	49.30	50.63	51.59	50.99	51.06	51.35	49.80	47.13	46.79	43.79	45.24	45.80	48.47
72.50°	38.43	39.20	39.26	38.67	39.58	40.53	42.15	41.78	40.07	40.85	39.32	38.20	37.03	34.96	36.14	37.58	38.43
75.00°	28.21	28.62	28.94	28.45	30.18	30.35	32.69	32.04	29.83	29.93	29.83	28.62	27.33	26.73	27.23	28.46	28.21
77.50°	21.62	19.61	21.16	19.24	21.71	20.16	23.14	22.18	21.25	19.32	21.42	19.82	20.99	20.42	21.04	21.39	21.62
80.00°	15.19	15.27	14.05	15.64	14.76	15.42	15.10	17.58	15.10	18.48	16.58	16.49	14.74	15.87	15.12	16.79	15.19
82.50°	12.14	11.00	10.47	11.83	12.09	12.42	12.55	14.08	14.04	17.42	15.43	12.98	12.11	11.62	12.63	12.13	12.14
85.00°	9.21	6.95	7.78	6.98	9.01	8.54	9.63	9.10	11.55	10.97	11.81	8.25	9.43	7.64	10.01	7.42	9.21
87.50°	5.42	3.67	5.11	2.88	4.86	4.38	5.37	3.82	6.22	4.75	5.70	4.04	5.39	4.77	5.87	4.21	5.42
90.00°	1.61	2.49	2.44	2.38	1.81	2.92	2.08	2.60	2.60	3.12	2.43	2.89	1.52	2.85	2.09	2.66	1.61
92.50°	1.66	1.73	2.16	1.95	1.60	2.24	1.87	2.14	2.31	1.58	1.92	1.87	1.57	2.04	1.87	1.83	1.66
95.00°	1.77	2.09	2.42	1.83	1.47	1.94	1.77	1.97	2.06	1.65	1.82	1.60	1.62	2.13	1.73	1.77	1.77
97.50°	2.03	2.21	2.18	1.73	1.59	1.75	1.98	1.85	1.91	1.74	2.09	1.44	1.63	2.01	2.33	1.67	2.03
100.00°	2.29	1.70	1.84	1.69	1.68	1.81	2.14	1.73	1.89	2.02	2.08	1.87	1.63	1.70	2.80	1.54	2.29

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	2161	2161	2161	2161	2110	2110	2110	2110	2013	2013	2013	1925	1925	1925	1844	1844	1844	1805
	1	2052	1998	1949	1906	2005	1957	1913	1874	1881	1846	1814	1811	1783	1757	1746	1725	1704	1689
	2	1947	1854	1777	1713	1905	1821	1752	1692	1760	1703	1653	1704	1657	1616	1651	1614	1580	1581
	3	1850	1730	1637	1563	1812	1704	1618	1550	1654	1582	1523	1608	1548	1498	1565	1515	1473	1485
	4	1761	1622	1521	1444	1727	1601	1507	1434	1560	1480	1416	1522	1454	1398	1487	1429	1381	1401
RCR	5	1679	1528	1423	1345	1648	1510	1412	1338	1476	1391	1325	1445	1370	1312	1415	1351	1300	1326
	6	1603	1444	1338	1261	1576	1429	1329	1256	1401	1312	1247	1374	1297	1237	1349	1281	1228	1258
	7	1533	1369	1263	1188	1508	1356	1256	1185	1332	1243	1178	1310	1230	1171	1289	1218	1164	1197
	8	1468	1301	1197	1125	1446	1291	1191	1122	1270	1180	1116	1251	1170	1111	1233	1160	1106	1141
	9	1408	1240	1137	1068	1388	1231	1133	1066	1213	1124	1061	1196	1115	1057	1181	1107	1053	1090
	10	1352	1184	1083	1017	1333	1176	1080	1015	1161	1072	1012	1146	1065	1008	1132	1059	1005	1043

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	104.5 fc	4.3 ft
6.5 ft	74.8 fc	5.0 ft
7.5 ft	56.2 fc	5.8 ft
8.0 ft	49.4 fc	6.2 ft
10.0 ft	31.6 fc	7.8 ft
12.0 ft	21.9 fc	9.3 ft
14.0 ft	16.1 fc	10.9 ft
16.0 ft	12.3 fc	12.4 ft
20.0 ft	7.9 fc	15.5 ft
24.0 ft	5.5 fc	18.6 ft
28.0 ft	4.0 fc	21.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1925110	1925110	1925110
45.00°	78424	80366	82021
55.00°	69334	70885	70612
65.00°	89144	91680	91210
75.00°	66395	68116	71029
85.00°	64396	54384	62968

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	21.4	22.5	21.8	22.8	23.1	21.7	22.7	22.1	23.1	23.4
	3H	24.1	25.1	24.5	25.4	25.8	24.3	25.3	24.7	25.6	26.0
	4H	24.8	25.7	25.2	26.0	26.5	25.0	25.9	25.4	26.2	26.7
	6H	25.2	26.0	25.6	26.4	26.8	25.3	26.1	25.7	26.5	26.9
	8H	25.3	26.0	25.7	26.5	26.9	25.4	26.2	25.9	26.6	27.0
	12H	25.4	26.1	25.8	26.5	27.0	25.5	26.3	26.0	26.7	27.1
4H	2H	22.4	23.3	22.8	23.6	24.1	22.7	23.6	23.1	24.0	24.4
	3H	25.1	25.8	25.5	26.2	26.7	25.3	26.1	25.8	26.5	26.9
	4H	25.8	26.5	26.3	26.9	27.4	26.0	26.7	26.5	27.1	27.6
	6H	26.2	26.8	26.7	27.3	27.8	26.4	27.0	26.9	27.5	27.9
	8H	26.4	26.9	26.9	27.4	27.9	26.6	27.1	27.1	27.6	28.1
	12H	26.5	27.0	27.0	27.5	28.0	26.7	27.2	27.2	27.7	28.2
8H	4H	26.0	26.5	26.5	27.0	27.5	26.3	26.8	26.8	27.3	27.7
	6H	26.5	27.0	27.1	27.5	28.0	26.8	27.2	27.3	27.7	28.2
	8H	26.8	27.1	27.3	27.7	28.2	27.0	27.4	27.5	27.9	28.4
	12H	27.0	27.3	27.5	27.8	28.4	27.2	27.6	27.8	28.1	28.7
12H	4H	26.0	26.4	26.5	26.9	27.4	26.3	26.7	26.8	27.2	27.7
	6H	26.6	26.9	27.1	27.4	28.0	26.8	27.2	27.3	27.7	28.2
	8H	26.8	27.2	27.4	27.7	28.3	27.1	27.4	27.6	27.9	28.5

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0