

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

SR3Mx 25L 35K MD xx xx RH3F 25L 35K MD MW NL  
Nom. 3" Round Pinhole A-Spec, Medium Beam

### **Test Number**

SP-01413

### **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
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#### Lumen Output

Output Lumens	1786
Efficacy	67.9 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.51
Two luminaires, plane 90°	0.51
Four luminaires	0.57

#### Full Beam Angle

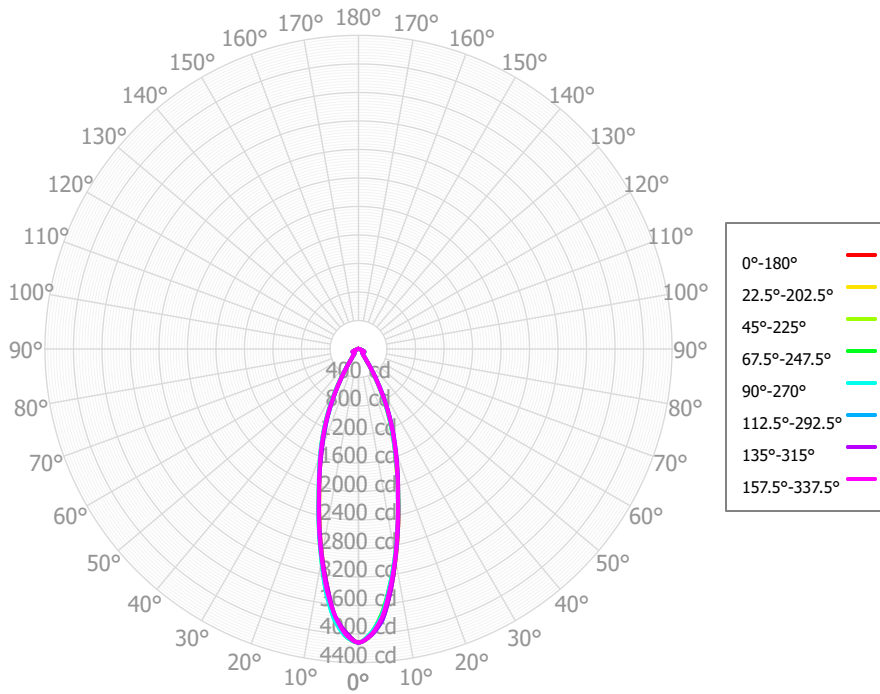
0° - 180°	31°
90° - 270°	31°

### IES File Header Contents

Keyword	Value
TEST	SP-01413
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2022
ISSUDATE	10/25/2022
LUMCAT	SR3Mx 25L 35K MD xx xx RH3F 25L 35K MD MW NL
LUMINAIRE	Nom. 3" Round Pinhole A-Spec, Medium Beam
OTHER	Matte White Trim, No lens
OTHER	31 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

SR3Mx 25L 35K MD xx xx RH3F 25L 35K MD  
MW NL

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	336.98	18.87%	90.00° - 100.00°	2.00	0.11%
10.00° - 20.00°	595.16	33.33%	100.00° - 110.00°	1.85	0.10%
20.00° - 30.00°	450.96	25.25%	100.00° - 120.00°	3.58	0.20%
30.00° - 40.00°	144.87	8.11%	120.00° - 130.00°	1.66	0.09%
40.00° - 50.00°	59.93	3.36%	130.00° - 140.00°	1.49	0.08%
50.00° - 60.00°	63.92	3.58%	140.00° - 150.00°	1.31	0.07%
60.00° - 70.00°	81.58	4.57%	150.00° - 160.00°	1.02	0.06%
70.00° - 80.00°	27.99	1.57%	160.00° - 170.00°	0.60	0.03%
80.00° - 90.00°	12.49	0.70%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	1773.88	99.34%	0.00° - 180.00°	1785.74	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°	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01	4119.01
2.50°	4017.22	4025.09	3997.49	3993.29	3989.46	3994.97	3983.35	4015.62	3985.97	4033.57	3994.51	4038.75	4040.40	4020.22	4025.82	4013.44	4017.22
5.00°	3818.08	3762.57	3794.10	3731.02	3753.52	3764.11	3763.76	3763.38	3775.05	3762.04	3800.81	3789.65	3829.44	3825.10	3821.64	3780.50	3818.08
7.50°	3433.08	3382.83	3406.83	3349.70	3355.40	3392.01	3362.69	3411.40	3361.36	3421.90	3385.71	3453.27	3465.58	3405.77	3438.13	3388.31	3433.08
10.00°	2995.07	2971.09	2981.43	2950.37	2952.08	2973.08	2955.73	2975.68	2945.98	2972.64	2968.16	2998.40	3003.31	2980.38	2984.26	2971.98	2995.07
12.50°	2567.42	2540.28	2565.10	2538.43	2541.11	2558.16	2534.45	2555.81	2524.99	2546.59	2539.59	2565.49	2573.92	2537.83	2562.21	2528.32	2567.42
15.00°	2142.65	2151.14	2150.61	2153.79	2154.06	2144.54	2139.68	2149.02	2128.32	2156.80	2133.31	2162.19	2165.33	2129.73	2152.38	2136.10	2142.65
17.50°	1816.33	1786.39	1819.97	1787.92	1802.05	1816.52	1808.02	1818.64	1810.36	1817.48	1824.66	1820.13	1843.48	1816.78	1829.86	1801.15	1816.33
20.00°	1516.74	1493.58	1505.70	1479.89	1486.79	1516.03	1500.64	1550.94	1508.37	1556.51	1527.66	1559.31	1575.52	1520.16	1540.19	1504.75	1516.74
22.50°	1250.84	1242.14	1233.61	1210.92	1224.45	1244.78	1249.92	1286.10	1256.86	1295.11	1280.28	1300.31	1313.10	1267.73	1271.77	1250.54	1250.84
25.00°	993.85	982.95	969.51	952.73	965.98	982.71	998.93	1023.55	1005.81	1033.05	1032.10	1043.71	1054.07	1015.96	1011.18	993.77	993.85
27.50°	749.13	719.40	726.34	701.70	713.01	743.06	747.33	774.20	756.23	781.57	780.58	796.64	804.59	765.90	764.58	734.23	749.13
30.00°	507.56	497.11	487.00	486.24	489.52	510.30	516.50	535.32	522.26	545.97	541.42	561.79	560.82	531.72	523.02	506.31	507.56
32.50°	336.53	297.69	323.11	293.98	307.01	341.31	332.25	349.25	335.48	350.37	352.18	365.78	368.53	338.70	343.48	311.83	336.53
35.00°	183.22	187.43	172.62	182.81	180.70	191.45	189.58	204.37	183.17	213.68	190.54	218.69	206.54	184.67	185.82	185.14	183.22
37.50°	128.39	125.67	125.05	123.60	131.19	131.54	138.31	126.89	132.68	123.16	137.42	124.88	126.53	129.57	123.44	128.98	128.39
40.00°	97.67	97.11	95.16	95.19	98.02	97.98	99.26	101.08	92.82	99.49	93.20	97.04	93.93	87.90	93.95	95.60	97.67
42.50°	85.71	86.29	85.08	86.19	86.78	85.00	86.86	85.45	84.08	83.02	83.60	78.81	77.90	79.59	82.06	85.52	85.71
45.00°	78.23	78.30	78.28	78.84	77.44	77.90	76.86	77.47	76.03	76.81	74.74	72.26	71.30	72.18	76.12	76.95	78.23
47.50°	72.88	71.80	72.71	72.51	70.58	71.98	71.99	71.45	69.94	71.44	68.70	66.71	66.63	66.99	70.31	69.90	72.88
50.00°	68.02	68.34	67.34	68.89	66.30	66.39	68.41	66.87	65.79	67.25	64.29	62.36	63.04	63.33	64.54	65.98	68.02
52.50°	67.11	66.45	68.13	66.93	65.40	66.31	67.52	66.00	67.06	66.85	65.89	61.42	62.13	63.34	64.85	65.16	67.11
55.00°	67.08	70.39	69.88	71.03	68.30	67.75	69.26	67.85	69.71	71.71	68.94	64.53	62.68	65.85	67.12	68.42	67.08
57.50°	75.36	77.30	77.25	78.74	76.12	75.45	76.39	73.84	76.16	78.01	77.24	70.85	69.82	74.32	74.80	75.70	75.36
60.00°	85.45	84.11	85.45	85.99	84.33	84.85	83.85	82.81	82.96	86.28	84.74	80.92	80.54	81.86	84.18	83.09	85.45
62.50°	88.55	90.89	89.43	92.96	93.05	89.97	91.93	88.88	90.71	91.08	89.41	87.01	86.74	87.26	88.71	90.58	88.55
65.00°	90.17	86.75	92.81	89.11	92.15	93.97	92.15	92.88	92.44	91.19	89.87	88.51	90.55	87.10	91.74	88.45	90.17
67.50°	74.44	77.23	76.43	78.98	79.28	79.15	76.76	81.80	78.35	81.07	75.81	79.40	79.18	74.28	77.36	77.15	74.44
70.00°	55.04	57.05	57.25	58.50	59.85	59.51	58.59	60.18	61.06	57.43	59.55	58.28	59.88	58.34	57.66	58.60	55.04
72.50°	35.90	31.71	36.68	32.11	32.41	38.37	34.99	39.60	35.49	36.88	35.91	38.60	39.43	35.48	38.23	33.28	35.90
75.00°	16.80	19.94	15.91	18.83	16.18	16.85	18.27	19.74	16.52	20.34	17.34	20.51	18.39	19.25	18.87	19.73	16.80
77.50°	16.38	14.60	15.26	12.92	13.49	14.13	14.67	13.37	14.18	13.40	15.41	13.66	14.03	17.54	17.44	16.98	16.38
80.00°	19.66	15.69	17.23	13.66	13.31	15.97	13.25	16.11	13.25	18.72	14.28	19.11	18.09	16.81	21.22	16.74	19.66
82.50°	15.88	19.77	14.75	18.08	16.10	13.83	15.91	14.81	15.77	18.52	15.74	18.26	16.47	18.20	17.63	18.75	15.88
85.00°	10.75	14.54	11.71	13.95	13.92	10.74	14.91	10.82	15.23	11.39	15.06	10.63	12.04	16.36	11.93	15.02	10.75
87.50°	6.55	5.08	7.05	5.19	5.97	6.83	7.16	6.94	7.29	6.20	7.66	5.45	7.55	7.73	7.20	6.18	6.55
90.00°	2.52	1.97	2.21	2.11	1.73	2.73	2.11	3.14	1.71	3.40	2.00	2.87	3.04	1.91	2.74	2.05	2.52
92.50°	1.96	1.74	1.75	2.04	1.74	1.99	1.91	1.72	1.73	1.79	1.67	1.57	1.54	1.93	1.81	2.08	1.96
95.00°	2.02	1.63	1.79	1.80	1.81	2.00	1.75	1.81	1.69	1.61	1.45	1.60	1.49	1.88	1.83	2.09	2.02
97.50°	1.92	1.58	1.71	1.46	1.92	1.83	1.67	1.68	1.53	1.62	1.58	1.69	1.69	1.68	1.88	2.08	1.92
100.00°	1.79	1.65	1.62	1.44	2.02	1.61	1.67	1.41	1.41	1.85	1.65	1.83	2.02	1.64	1.95	1.98	1.79

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	2123	2123	2123	2123	2072	2072	2072	2072	1978	1978	1978	1891	1891	1891	1811	1811	1774
	<b>1</b>	2015	1962	1914	1871	1969	1922	1879	1840	1847	1813	1781	1778	1751	1726	1715	1694	1659
	<b>2</b>	1913	1822	1746	1683	1872	1790	1721	1663	1730	1673	1625	1674	1628	1588	1623	1586	1554
	<b>3</b>	1819	1702	1611	1539	1782	1676	1593	1526	1627	1557	1500	1582	1524	1475	1540	1492	1462
	<b>4</b>	1734	1599	1500	1425	1700	1578	1486	1416	1538	1460	1398	1501	1434	1380	1466	1410	1383
	<b>5</b>	1656	1509	1407	1331	1626	1492	1396	1325	1459	1376	1312	1428	1356	1299	1399	1337	1312
	<b>6</b>	1584	1430	1327	1253	1557	1416	1319	1248	1388	1303	1239	1362	1287	1230	1338	1272	1250
	<b>7</b>	1518	1360	1257	1186	1494	1348	1251	1182	1324	1238	1175	1303	1226	1168	1282	1214	1193
	<b>8</b>	1457	1297	1196	1127	1436	1286	1191	1124	1267	1180	1119	1248	1170	1113	1230	1160	1142
	<b>9</b>	1401	1240	1141	1074	1382	1231	1137	1072	1214	1128	1068	1198	1120	1064	1183	1112	1095
	<b>10</b>	1349	1188	1092	1027	1331	1180	1088	1026	1165	1081	1023	1151	1074	1019	1138	1067	1052

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	136.2 fc	3.1 ft
6.5 ft	97.5 fc	3.6 ft
7.5 ft	73.2 fc	4.2 ft
8.0 ft	64.4 fc	4.5 ft
10.0 ft	41.2 fc	5.6 ft
12.0 ft	28.6 fc	6.7 ft
14.0 ft	21.0 fc	7.8 ft
16.0 ft	16.1 fc	8.9 ft
20.0 ft	10.3 fc	11.2 ft
24.0 ft	7.2 fc	13.4 ft
28.0 ft	5.3 fc	15.6 ft

### Average Luminaire Luminance [cd/m<sup>2</sup>]

	0.00°	45.00°	90.00°
<b>0.00°</b>	2508943	2508943	2508943
<b>45.00°</b>	67387	67433	66704
<b>55.00°</b>	71241	74208	72536
<b>65.00°</b>	129958	133764	132815
<b>75.00°</b>	39545	37441	38088
<b>85.00°</b>	75119	81807	97299

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	22.9	24.0	23.3	24.3	24.6	22.6	23.7	23.0	24.0	24.4
	<b>3H</b>	25.8	26.8	26.2	27.2	27.5	25.9	26.9	26.3	27.2	27.6
	<b>4H</b>	26.0	26.9	26.4	27.3	27.7	26.1	27.0	26.5	27.4	27.8
	<b>6H</b>	26.2	27.0	26.6	27.4	27.8	26.2	27.1	26.7	27.4	27.9
	<b>8H</b>	26.4	27.2	26.8	27.6	28.0	26.4	27.2	26.8	27.6	28.0
	<b>12H</b>	26.5	27.3	27.0	27.7	28.1	26.6	27.3	27.0	27.7	28.1
<b>4H</b>	<b>2H</b>	24.4	25.3	24.8	25.6	26.1	24.2	25.1	24.6	25.5	25.9
	<b>3H</b>	26.8	27.6	27.3	28.0	28.4	26.9	27.7	27.4	28.1	28.5
	<b>4H</b>	27.0	27.7	27.5	28.1	28.6	27.1	27.8	27.5	28.2	28.7
	<b>6H</b>	27.3	27.8	27.7	28.3	28.8	27.3	27.8	27.7	28.3	28.8
	<b>8H</b>	27.5	28.0	28.0	28.5	29.0	27.5	28.0	28.0	28.5	29.0
	<b>12H</b>	27.7	28.2	28.2	28.7	29.2	27.7	28.2	28.2	28.7	29.2
<b>8H</b>	<b>4H</b>	27.0	27.6	27.5	28.0	28.5	27.1	27.6	27.6	28.1	28.6
	<b>6H</b>	27.4	27.9	28.0	28.4	28.9	27.4	27.8	27.9	28.3	28.8
	<b>8H</b>	27.8	28.2	28.4	28.7	29.2	27.7	28.1	28.3	28.6	29.2
	<b>12H</b>	28.2	28.6	28.8	29.1	29.7	28.1	28.4	28.6	28.9	29.5
<b>12H</b>	<b>4H</b>	27.0	27.5	27.5	28.0	28.5	27.1	27.6	27.6	28.1	28.5
	<b>6H</b>	27.5	27.9	28.0	28.3	28.9	27.4	27.8	28.0	28.3	28.9
	<b>8H</b>	28.0	28.3	28.5	28.8	29.4	27.8	28.2	28.4	28.7	29.3

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0