Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

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

Test Number

SP-01404_1

Test Date

9/14/2022

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	1495
Efficacy	56.83 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.5
Two luminaires, plane 90°	0.51
Four luminaires	0.57

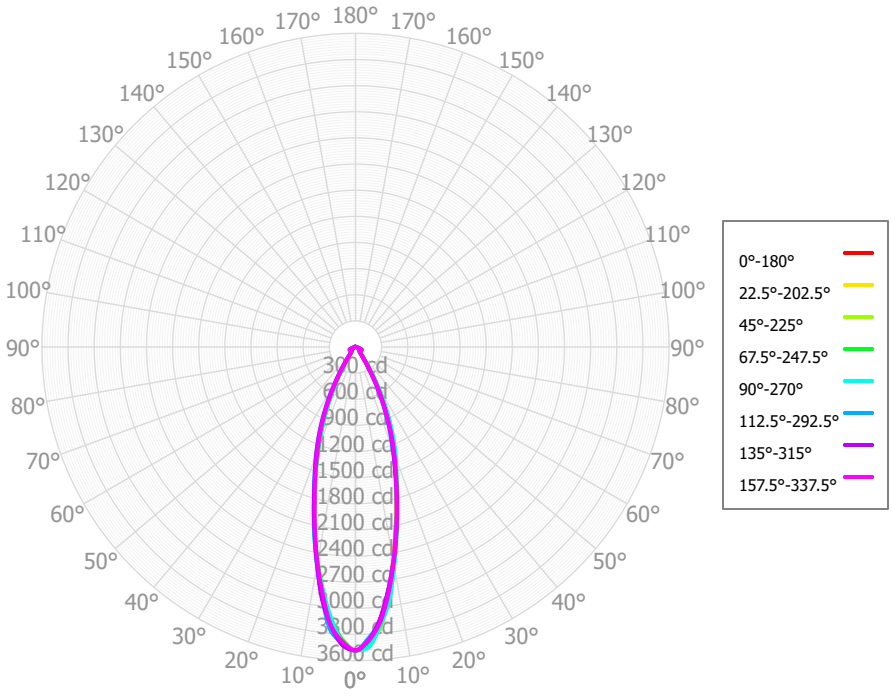
Full Beam Angle

0° - 180°	31°
90° - 270°	32°

IES File Header Contents

Keyword	Value
TEST	SP-01404_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/14/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 25L 35HK MD xx xx RH3F 25L 35HK 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. 90 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	90

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture
0.00° - 10.00°	285.36	19.09%
10.00° - 20.00°	505.85	33.85%
20.00° - 30.00°	375.75	25.14%
30.00° - 40.00°	117.95	7.89%
40.00° - 50.00°	49.45	3.31%
50.00° - 60.00°	49.88	3.34%
60.00° - 70.00°	66.49	4.45%
70.00° - 80.00°	22.54	1.51%
80.00° - 90.00°	9.62	0.64%
0.00° - 90.00°	1482.89	99.22%

Zone	Lumens	% Fixture
90.00° - 100.00°	1.89	0.13%
100.00° - 110.00°	1.78	0.12%
100.00° - 120.00°	3.55	0.24%
120.00° - 130.00°	1.64	0.11%
130.00° - 140.00°	1.49	0.10%
140.00° - 150.00°	1.25	0.08%
150.00° - 160.00°	1.01	0.07%
160.00° - 170.00°	0.59	0.04%
170.00° - 180.00°	0.20	0.01%
0.00° - 180.00°	1494.51	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°	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90	3483.90
2.50°	3389.64	3380.24	3387.33	3413.52	3453.62	3404.92	3427.47	3390.79	3422.06	3381.65	3366.98	3373.56	3404.46	3351.08	3376.77	3380.51	3389.64
5.00°	3160.31	3222.25	3246.65	3213.12	3218.65	3272.60	3215.63	3220.05	3198.05	3228.27	3204.52	3150.36	3148.25	3173.79	3154.20	3186.66	3160.31
7.50°	2841.25	2868.60	2887.96	2935.82	2950.22	2918.89	2928.92	2872.11	2914.20	2872.28	2861.28	2833.48	2844.79	2841.24	2841.27	2872.84	2841.25
10.00°	2494.57	2504.96	2529.11	2547.12	2553.13	2548.44	2536.77	2518.42	2532.75	2516.22	2509.57	2506.03	2520.40	2507.75	2508.38	2517.38	2494.57
12.50°	2132.69	2156.37	2168.28	2181.34	2172.64	2186.32	2171.55	2150.16	2167.11	2159.23	2166.13	2172.11	2191.49	2165.76	2162.73	2168.45	2132.69
15.00°	1815.83	1808.44	1815.67	1847.83	1853.25	1824.75	1842.61	1809.25	1826.10	1809.28	1823.01	1844.77	1858.09	1828.82	1838.12	1821.68	1815.83
17.50°	1522.60	1555.16	1556.88	1562.60	1558.32	1569.06	1554.75	1534.10	1525.15	1535.59	1535.58	1521.33	1523.76	1534.47	1526.37	1548.95	1522.60
20.00°	1278.62	1304.88	1302.23	1343.34	1347.93	1319.21	1320.64	1275.25	1284.77	1265.92	1249.67	1244.81	1260.20	1247.20	1266.97	1299.10	1278.62
22.50°	1059.68	1083.59	1088.86	1122.33	1133.27	1098.19	1089.13	1054.28	1049.96	1034.35	1012.91	994.86	1010.10	1013.43	1038.10	1063.85	1059.68
25.00°	841.52	862.90	875.93	899.05	904.39	878.53	860.92	834.64	823.19	804.89	777.13	767.80	782.83	783.60	812.45	832.93	841.52
27.50°	623.75	650.61	666.84	685.38	683.07	669.19	646.26	617.99	609.79	593.86	573.41	553.12	559.68	581.58	588.62	624.51	623.75
30.00°	435.28	438.44	463.31	483.73	485.35	460.21	448.10	420.33	415.15	391.46	369.97	377.39	385.65	388.99	405.84	422.51	435.28
32.50°	260.55	291.24	305.17	314.60	307.73	305.01	287.38	263.23	262.22	256.52	247.29	222.06	219.73	256.89	245.23	279.03	260.55
35.00°	165.07	145.00	160.41	184.98	190.59	151.31	170.29	145.37	165.32	134.63	125.64	142.01	152.48	139.17	157.80	151.19	165.07
37.50°	104.91	111.16	117.10	103.97	98.56	109.88	98.33	107.35	102.33	108.01	102.30	100.13	100.58	108.20	108.63	106.64	104.91
40.00°	80.33	77.75	78.15	80.36	77.91	70.33	77.47	79.70	83.59	83.78	79.24	81.25	83.56	80.80	85.45	82.94	80.33
42.50°	71.07	70.43	69.01	64.35	61.60	64.08	64.19	72.50	70.81	75.34	73.62	73.47	71.48	73.13	75.22	72.39	71.07
45.00°	64.51	63.15	60.45	56.93	57.18	58.14	59.22	65.50	65.50	67.22	67.94	65.29	63.84	65.71	67.46	64.98	64.51
47.50°	59.06	57.89	55.45	51.11	52.19	52.42	54.44	58.89	60.82	61.13	60.09	56.93	56.76	59.57	60.90	60.15	59.06
50.00°	56.16	52.83	51.26	47.01	45.72	46.75	49.85	53.98	56.92	55.92	52.51	53.17	53.50	54.24	56.12	55.91	56.16
52.50°	54.25	54.41	51.79	45.70	42.00	46.78	48.65	52.21	55.59	55.69	52.42	51.46	50.70	52.82	52.15	55.44	54.25
55.00°	57.75	56.16	53.20	47.30	45.16	46.95	50.88	53.80	57.24	56.48	52.65	53.61	53.26	52.61	53.85	55.78	57.75
57.50°	63.28	61.97	59.52	52.15	49.98	53.80	56.26	61.22	61.72	62.78	59.76	57.39	56.41	57.99	58.06	61.70	63.28
60.00°	69.20	67.74	65.73	60.34	58.72	60.62	64.73	67.67	69.40	68.90	66.83	65.65	66.93	64.16	66.43	68.70	69.20
62.50°	75.28	72.70	71.36	66.69	65.70	65.97	69.60	72.48	72.70	74.13	73.09	75.73	78.16	73.77	76.55	73.76	75.28
65.00°	72.57	76.44	73.87	71.22	68.63	70.80	71.02	71.12	71.28	76.12	78.09	74.01	76.25	78.98	75.40	78.45	72.57
67.50°	66.87	60.86	61.55	65.37	65.25	62.35	63.28	59.71	62.84	62.72	64.20	67.73	73.24	66.58	69.67	64.80	66.87
70.00°	48.29	45.23	47.97	49.79	48.10	53.39	47.17	44.95	47.03	48.03	49.80	49.10	50.75	52.17	51.41	47.91	48.29
72.50°	25.57	28.73	28.74	33.59	32.01	33.43	31.60	24.98	31.88	27.69	28.80	25.86	26.79	30.01	28.31	30.71	25.57
75.00°	16.16	13.52	13.09	16.83	18.15	14.52	16.49	12.98	17.37	11.29	9.56	15.08	17.01	12.22	17.13	13.46	16.16
77.50°	10.87	13.70	12.92	11.54	10.11	13.43	11.93	12.88	11.51	11.42	10.33	8.70	8.17	10.50	10.40	12.26	10.87
80.00°	12.35	13.77	13.06	16.40	13.80	12.39	16.32	13.57	14.12	11.42	10.93	9.47	9.68	9.23	10.21	13.42	12.35
82.50°	15.85	12.70	14.44	15.86	14.62	12.13	14.96	15.39	12.85	10.86	9.78	12.67	11.75	9.55	12.32	11.50	15.85
85.00°	10.97	11.27	14.10	10.76	9.86	11.54	8.84	13.43	7.95	9.55	8.39	9.06	7.19	8.80	8.78	9.15	10.97
87.50°	3.76	6.35	7.32	6.64	5.80	6.69	4.98	6.14	4.50	5.44	4.75	3.27	2.33	4.58	3.32	5.54	3.76
90.00°	1.98	1.91	2.02	3.34	3.03	2.20	2.89	1.84	2.36	2.14	1.50	1.85	1.91	1.43	1.83	1.77	1.98
92.50°	1.63	1.75	2.04	1.78	1.34	1.85	1.89	1.55	1.49	1.75	1.54	1.77	1.65	1.59	1.61	1.53	1.63
95.00°	1.58	1.59	2.05	1.60	1.57	1.53	1.72	1.40	1.72	1.51	1.59	1.86	1.72	1.70	1.61	1.69	1.58
97.50°	1.59	1.58	1.99	1.60	1.71	1.52	1.63	1.43	1.74	1.81	1.83	1.99	1.79	1.65	1.69	1.56	1.59
100.00°	1.63	1.56	1.95	1.73	1.68	1.52	1.60	1.49	1.59	1.98	2.03	1.78	1.82	1.62	1.79	1.40	1.63

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	1776	1776	1776	1776	1734	1734	1734	1734	1654	1654	1654	1581	1581	1581	1514	1514	1514	1483
	1	1687	1643	1604	1568	1649	1609	1574	1542	1547	1518	1492	1489	1466	1446	1436	1418	1402	1389
	2	1602	1527	1465	1412	1568	1500	1443	1395	1450	1403	1363	1403	1365	1332	1360	1330	1302	1302
	3	1525	1428	1353	1293	1494	1406	1337	1281	1365	1307	1259	1327	1279	1238	1292	1252	1218	1227
	4	1454	1342	1260	1198	1426	1324	1249	1190	1291	1226	1175	1260	1204	1160	1231	1184	1145	1161
RCR	5	1389	1268	1183	1120	1364	1253	1174	1115	1225	1156	1104	1199	1140	1093	1175	1124	1083	1103
	6	1330	1202	1116	1055	1307	1190	1109	1051	1167	1096	1043	1145	1083	1035	1125	1070	1027	1051
	7	1275	1144	1058	999	1255	1133	1053	996	1114	1042	990	1095	1031	984	1078	1021	978	1004
	8	1224	1091	1007	950	1206	1082	1003	947	1065	994	943	1050	985	938	1035	977	934	961
	9	1177	1043	961	906	1161	1036	958	904	1021	950	901	1008	943	897	995	937	894	922
	10	1134	1000	920	867	1119	993	917	865	981	911	863	969	905	860	958	899	857	886

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	115.2 fc	3.1 ft
6.5 ft	82.5 fc	3.6 ft
7.5 ft	61.9 fc	4.2 ft
8.0 ft	54.4 fc	4.5 ft
10.0 ft	34.8 fc	5.6 ft
12.0 ft	24.2 fc	6.7 ft
14.0 ft	17.8 fc	7.9 ft
16.0 ft	13.6 fc	9.0 ft
20.0 ft	8.7 fc	11.2 ft
24.0 ft	6.0 fc	13.5 ft
28.0 ft	4.4 fc	15.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2122088	2122088	2122088
45.00°	55574	52072	49257
55.00°	61332	56498	47962
65.00°	104596	106466	98916
75.00°	38026	30811	42706
85.00°	76686	98567	68944

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	22.1	23.1	22.5	23.5	23.8	21.3	22.4	21.7	22.7	23.0
	3H	25.2	26.2	25.6	26.5	26.9	25.1	26.1	25.5	26.4	26.8
	4H	25.4	26.3	25.8	26.6	27.0	25.4	26.3	25.8	26.6	27.0
	6H	25.5	26.3	25.9	26.7	27.1	25.4	26.2	25.8	26.6	27.0
	8H	25.7	26.4	26.1	26.8	27.3	25.6	26.3	26.0	26.7	27.2
	12H	25.9	26.6	26.3	27.0	27.5	25.7	26.4	26.1	26.8	27.3
4H	2H	23.6	24.5	24.0	24.8	25.2	23.1	24.0	23.5	24.4	24.8
	3H	26.2	26.9	26.6	27.3	27.8	26.2	26.9	26.6	27.3	27.7
	4H	26.3	27.0	26.8	27.4	27.9	26.3	27.0	26.8	27.4	27.9
	6H	26.5	27.1	27.0	27.5	28.0	26.4	27.0	26.9	27.5	28.0
	8H	26.7	27.2	27.2	27.7	28.2	26.6	27.1	27.1	27.6	28.1
	12H	27.0	27.5	27.5	28.0	28.4	26.8	27.3	27.3	27.8	28.3
8H	4H	26.3	26.9	26.8	27.3	27.8	26.3	26.9	26.8	27.3	27.8
	6H	26.6	27.0	27.1	27.6	28.1	26.6	27.0	27.1	27.5	28.0
	8H	27.0	27.3	27.5	27.9	28.4	26.8	27.2	27.4	27.7	28.3
	12H	27.4	27.7	27.9	28.2	28.8	27.2	27.5	27.7	28.0	28.6
12H	4H	26.3	26.8	26.8	27.3	27.8	26.3	26.8	26.8	27.3	27.8
	6H	26.6	27.0	27.2	27.5	28.1	26.6	27.0	27.1	27.4	28.0
	8H	27.1	27.4	27.6	27.9	28.5	26.9	27.3	27.5	27.8	28.4

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0