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 SO

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

Test Number

SP-01414

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	1618
Efficacy	61.53 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.53
Two luminaires, plane 90°	0.53
Four luminaires	0.58

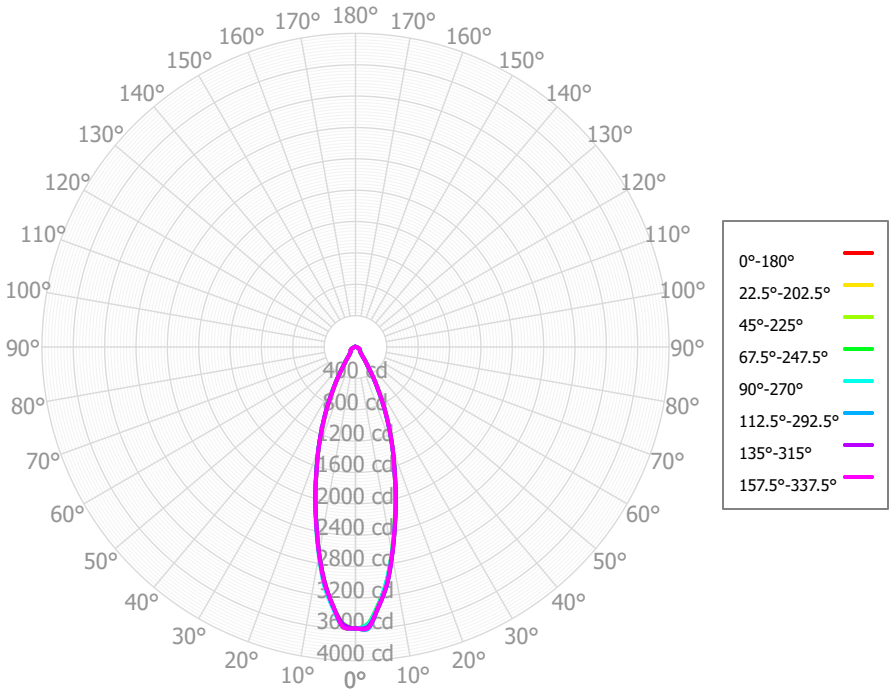
Full Beam Angle

0° - 180°	33°
90° - 270°	33°

IES File Header Contents

Keyword	Value
TEST	SP-01414
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 25L 35K MD xx xx RH3F 25L 35K MD MW SO
LUMINAIRE	Nom. 3" Round Pinhole A-Spec, Medium Beam
OTHER	Matte White Trim, Solite lens
OTHER	33 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°	299.95	18.54%
10.00° - 20.00°	542.57	33.53%
20.00° - 30.00°	395.88	24.46%
30.00° - 40.00°	142.23	8.79%
40.00° - 50.00°	68.79	4.25%
50.00° - 60.00°	62.99	3.89%
60.00° - 70.00°	54.27	3.35%
70.00° - 80.00°	29.75	1.84%
80.00° - 90.00°	8.18	0.51%
0.00° - 90.00°	1604.61	99.16%

Zone	Lumens	% Fixture
90.00° - 100.00°	2.31	0.14%
100.00° - 110.00°	2.08	0.13%
100.00° - 120.00°	4.03	0.25%
120.00° - 130.00°	1.85	0.11%
130.00° - 140.00°	1.75	0.11%
140.00° - 150.00°	1.57	0.10%
150.00° - 160.00°	1.18	0.07%
160.00° - 170.00°	0.68	0.04%
170.00° - 180.00°	0.22	0.01%
0.00° - 180.00°	1618.20	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°	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03	3591.03
2.50°	3594.15	3563.38	3557.43	3537.39	3546.68	3572.30	3542.40	3578.85	3579.81	3540.19	3566.24	3536.23	3579.38	3603.16	3574.58	3591.71	3594.15
5.00°	3327.44	3328.08	3310.11	3302.79	3314.93	3309.04	3315.76	3310.25	3309.15	3316.42	3313.93	3320.61	3340.67	3337.90	3337.90	3330.60	3327.44
7.50°	3056.50	3054.28	3025.23	3030.78	3015.68	3032.81	3018.57	3039.47	3038.48	3015.45	3048.00	3023.11	3068.19	3069.92	3064.66	3057.01	3056.50
10.00°	2688.16	2685.84	2667.57	2669.89	2670.43	2671.64	2673.85	2676.45	2673.91	2671.43	2679.68	2675.35	2694.92	2696.38	2692.07	2688.63	2688.16
12.50°	2317.19	2325.45	2296.26	2315.94	2306.23	2304.50	2307.82	2313.67	2308.34	2306.59	2314.68	2302.48	2329.14	2323.33	2328.06	2314.20	2317.19
15.00°	1980.84	1986.36	1968.23	1979.70	1974.91	1978.07	1976.58	1979.71	1977.91	1974.47	1977.63	1968.17	1987.04	1985.77	1988.72	1978.77	1980.84
17.50°	1645.98	1665.38	1649.00	1660.74	1657.87	1655.03	1661.77	1645.75	1648.39	1659.26	1646.52	1654.10	1659.68	1648.41	1665.33	1646.51	1645.98
20.00°	1384.85	1395.06	1378.92	1388.37	1379.82	1382.53	1382.54	1375.81	1372.51	1374.76	1374.32	1372.65	1383.00	1381.81	1391.59	1380.31	1384.85
22.50°	1127.78	1131.51	1119.90	1122.92	1119.91	1115.11	1121.27	1106.04	1098.65	1107.20	1104.94	1109.48	1114.28	1115.22	1124.95	1120.32	1127.78
25.00°	887.41	888.04	880.33	877.63	877.36	875.37	876.89	865.03	855.95	863.30	867.88	867.46	874.74	877.71	881.80	882.62	887.41
27.50°	648.17	657.22	645.48	647.13	643.29	638.79	641.47	624.53	614.92	633.09	634.95	638.06	646.63	640.56	651.02	647.31	648.17
30.00°	469.25	467.03	464.64	462.26	460.90	460.63	455.93	451.85	444.42	450.65	460.64	457.18	463.33	464.14	463.81	469.80	469.25
32.50°	295.44	299.99	298.14	299.91	305.53	290.22	298.60	281.15	278.61	297.19	291.71	306.67	298.49	289.38	297.61	299.56	295.44
35.00°	214.88	213.68	210.33	213.02	211.09	210.16	203.74	205.80	204.96	203.79	215.91	211.01	213.12	210.42	212.23	215.40	214.88
37.50°	143.84	140.78	144.81	140.01	150.08	143.40	145.93	134.77	139.01	149.18	142.45	151.32	138.62	135.22	138.58	143.71	143.84
40.00°	117.84	117.81	115.65	116.53	116.44	117.55	113.79	115.47	116.53	117.04	120.28	116.03	115.81	112.57	114.39	115.71	117.84
42.50°	97.06	97.42	97.69	96.30	98.82	98.53	97.87	99.15	98.25	100.11	98.48	97.75	95.13	92.61	93.14	94.68	97.06
45.00°	86.60	87.28	87.66	88.71	86.80	87.06	86.74	89.17	88.64	89.08	88.65	85.72	85.36	83.59	85.28	85.78	86.60
47.50°	77.48	78.19	80.24	81.65	78.20	76.96	78.77	79.67	80.02	82.29	78.91	78.32	76.65	75.32	77.76	79.01	77.48
50.00°	73.94	73.70	76.05	76.80	73.91	73.06	74.14	75.37	76.11	76.58	75.03	73.51	73.85	71.42	71.93	73.74	73.94
52.50°	71.23	69.88	72.98	72.79	72.41	70.43	71.85	71.53	72.81	71.67	71.15	70.72	71.10	67.88	67.09	68.77	71.23
55.00°	70.31	69.35	71.19	72.67	71.49	71.13	71.49	72.55	73.30	70.01	69.99	68.37	68.72	67.06	67.63	67.82	70.31
57.50°	69.69	68.14	69.90	71.87	70.96	72.56	72.56	74.08	74.35	70.93	68.83	66.37	66.22	66.51	67.54	67.75	69.69
60.00°	65.60	63.43	66.30	67.62	67.81	68.50	69.39	69.50	70.32	67.98	65.15	62.89	62.85	62.87	63.51	64.02	65.60
62.50°	60.87	58.82	61.79	63.01	62.75	63.11	62.91	64.20	65.47	61.80	61.45	58.13	59.27	58.89	59.36	59.44	60.87
65.00°	56.24	54.73	56.19	56.40	56.22	56.18	55.65	57.44	57.62	54.66	54.81	53.07	54.15	53.10	54.35	53.79	56.24
67.50°	51.64	50.20	50.13	49.84	48.59	48.85	47.75	50.48	49.22	46.67	48.11	47.73	48.74	47.07	49.21	47.87	51.64
70.00°	44.33	42.86	43.64	43.60	41.25	40.95	40.51	42.93	41.24	39.61	40.74	40.89	40.71	40.79	43.09	42.30	44.33
72.50°	36.41	35.59	36.95	37.08	34.14	32.89	33.85	35.30	33.35	33.39	33.35	32.62	32.86	34.47	36.82	36.83	36.41
75.00°	29.63	28.79	30.07	28.56	27.89	26.72	27.69	28.52	26.51	26.91	26.72	25.62	26.91	27.86	29.27	29.73	29.63
77.50°	23.12	22.13	23.10	20.52	22.35	21.11	21.98	21.88	19.91	20.18	20.14	19.88	20.98	21.20	21.87	22.15	23.12
80.00°	17.14	16.57	16.65	16.16	16.69	15.93	16.86	15.94	14.89	14.64	15.03	14.52	15.47	15.47	16.16	16.09	17.14
82.50°	11.30	11.15	10.46	11.79	10.93	10.89	12.31	10.13	10.24	10.34	10.02	9.57	10.07	9.90	10.58	10.51	11.30
85.00°	7.20	7.17	6.43	7.30	6.70	7.44	8.15	6.47	6.67	6.76	6.23	5.88	6.62	6.14	6.60	6.75	7.20
87.50°	3.59	3.46	3.56	3.14	3.91	4.54	4.38	3.27	3.37	3.98	2.55	3.58	3.30	2.73	2.85	3.60	3.59
90.00°	2.53	2.73	2.30	2.36	2.31	3.19	2.34	2.57	2.34	2.42	2.07	2.28	2.65	2.11	2.24	2.59	2.53
92.50°	2.24	2.04	1.94	1.67	1.90	2.41	2.12	2.43	1.94	2.27	1.90	2.15	2.01	2.11	1.70	2.37	2.24
95.00°	2.19	1.97	1.98	1.97	1.81	2.05	2.01	2.37	1.80	2.15	1.89	2.00	1.84	2.26	2.24	2.33	2.19
97.50°	2.22	1.93	2.26	2.23	2.06	1.85	2.03	2.33	1.74	2.06	1.89	1.81	1.66	2.46	2.76	2.36	2.22
100.00°	2.01	2.21	2.41	1.90	2.06	1.73	1.98	2.19	1.79	2.00	1.96	1.70	1.83	2.28	2.72	2.10	2.01

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	1923	1923	1923	1923	1877	1877	1877	1877	1790	1790	1790	1711	1711	1711	1639	1639	1639	1605
	1	1827	1779	1736	1698	1785	1742	1704	1669	1674	1644	1615	1612	1587	1565	1554	1535	1517	1503
	2	1734	1652	1585	1528	1697	1623	1562	1509	1568	1518	1474	1518	1477	1440	1471	1438	1408	1408
	3	1649	1544	1462	1397	1616	1520	1445	1385	1476	1413	1361	1434	1382	1338	1396	1353	1315	1326
	4	1572	1450	1361	1293	1541	1431	1348	1284	1394	1324	1268	1360	1300	1251	1329	1278	1236	1253
RCR	5	1500	1368	1276	1207	1473	1352	1266	1201	1322	1247	1189	1294	1229	1178	1267	1211	1166	1189
	6	1435	1296	1202	1135	1411	1282	1195	1131	1257	1180	1122	1233	1165	1114	1211	1152	1105	1131
	7	1375	1231	1138	1073	1353	1220	1132	1070	1199	1120	1063	1179	1109	1057	1160	1098	1051	1079
	8	1319	1173	1082	1019	1299	1164	1077	1016	1146	1067	1011	1128	1058	1006	1112	1049	1002	1032
	9	1267	1121	1031	971	1249	1113	1027	969	1097	1019	965	1082	1012	961	1068	1004	957	989
	10	1219	1073	986	928	1203	1066	982	926	1053	976	923	1040	970	920	1028	963	917	949

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	118.7 fc	3.2 ft
6.5 ft	85.0 fc	3.8 ft
7.5 ft	63.8 fc	4.4 ft
8.0 ft	56.1 fc	4.7 ft
10.0 ft	35.9 fc	5.9 ft
12.0 ft	24.9 fc	7.0 ft
14.0 ft	18.3 fc	8.2 ft
16.0 ft	14.0 fc	9.4 ft
20.0 ft	9.0 fc	11.7 ft
24.0 ft	6.2 fc	14.1 ft
28.0 ft	4.6 fc	16.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2187342	2187342	2187342
45.00°	74599	75515	74767
55.00°	74666	75606	75921
65.00°	81064	80983	81036
75.00°	69721	70775	65629
85.00°	50347	44927	46826

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	22.4	23.4	22.7	23.8	24.1	22.5	23.6	22.9	23.9	24.2
	3H	24.5	25.4	24.9	25.8	26.2	24.4	25.3	24.8	25.7	26.1
	4H	25.1	26.0	25.6	26.4	26.8	25.0	25.8	25.4	26.2	26.6
	6H	25.6	26.4	26.0	26.8	27.2	25.4	26.2	25.8	26.6	27.0
	8H	25.7	26.5	26.1	26.9	27.3	25.5	26.2	25.9	26.6	27.1
	12H	25.8	26.5	26.2	26.9	27.4	25.5	26.3	26.0	26.7	27.1
4H	2H	23.0	23.9	23.4	24.3	24.7	23.1	24.0	23.5	24.4	24.8
	3H	25.3	26.0	25.7	26.4	26.9	25.1	25.9	25.6	26.3	26.7
	4H	26.0	26.7	26.5	27.2	27.6	25.8	26.5	26.3	26.9	27.4
	6H	26.6	27.2	27.1	27.6	28.1	26.3	26.9	26.8	27.3	27.8
	8H	26.7	27.3	27.2	27.7	28.2	26.4	27.0	26.9	27.4	27.9
	12H	26.8	27.3	27.3	27.8	28.3	26.5	27.0	27.0	27.5	28.0
8H	4H	26.3	26.8	26.8	27.3	27.8	26.0	26.5	26.5	27.0	27.5
	6H	26.9	27.3	27.4	27.9	28.4	26.6	27.0	27.1	27.6	28.1
	8H	27.1	27.5	27.7	28.0	28.6	26.8	27.2	27.4	27.7	28.2
	12H	27.3	27.6	27.8	28.1	28.7	27.0	27.3	27.5	27.8	28.4
12H	4H	26.3	26.7	26.8	27.2	27.7	26.0	26.5	26.5	27.0	27.5
	6H	26.9	27.3	27.5	27.8	28.4	26.7	27.0	27.2	27.5	28.1
	8H	27.2	27.5	27.7	28.0	28.6	26.9	27.2	27.4	27.7	28.3

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0