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 GL

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

Test Number

SP-01412

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	1583
Efficacy	60.17 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	0.56

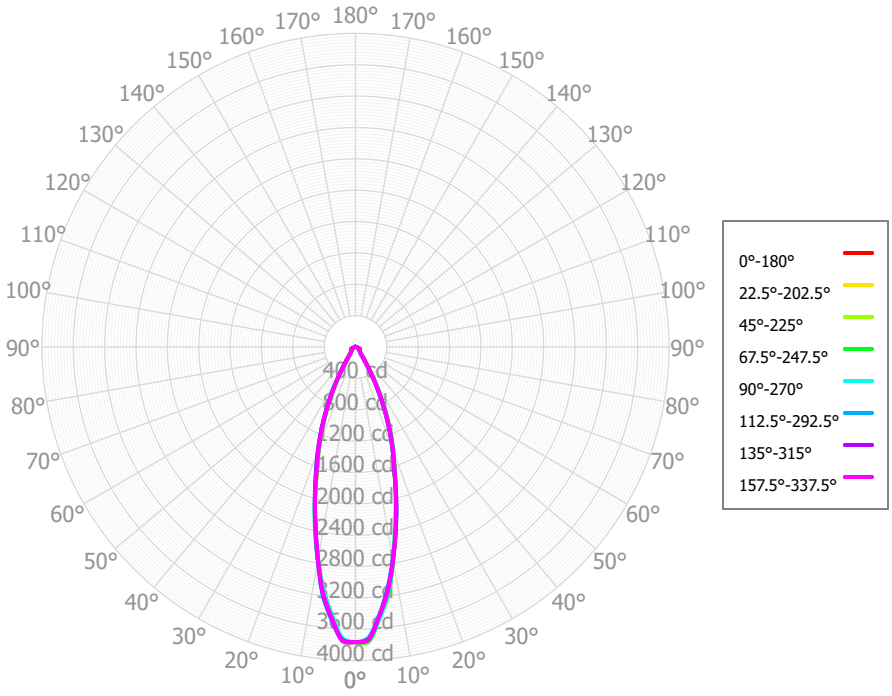
Full Beam Angle

0° - 180°	32°
90° - 270°	32°

IES File Header Contents

Keyword	Value
TEST	SP-01412
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 GL
LUMINAIRE	Nom. 3" Round Pinhole A-Spec, Medium Beam
OTHER	Matte White Trim, Clear Glass lens
OTHER	32 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	Zone	Lumens	% Fixture
0.00° - 10.00°	311.83	19.70%	90.00° - 100.00°	2.08	0.13%
10.00° - 20.00°	548.06	34.63%	100.00° - 110.00°	1.88	0.12%
20.00° - 30.00°	391.55	24.74%	100.00° - 120.00°	3.79	0.24%
30.00° - 40.00°	122.79	7.76%	120.00° - 130.00°	1.76	0.11%
40.00° - 50.00°	59.77	3.78%	130.00° - 140.00°	1.62	0.10%
50.00° - 60.00°	50.94	3.22%	140.00° - 150.00°	1.42	0.09%
60.00° - 70.00°	55.69	3.52%	150.00° - 160.00°	1.15	0.07%
70.00° - 80.00°	21.95	1.39%	160.00° - 170.00°	0.64	0.04%
80.00° - 90.00°	7.33	0.46%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	1569.91	99.20%	0.00° - 180.00°	1582.60	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°	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19	3765.19
2.50°	3740.12	3762.54	3768.54	3759.13	3738.94	3744.61	3745.48	3757.31	3734.09	3753.44	3754.08	3735.15	3718.50	3716.98	3739.43	3740.09	3740.12
5.00°	3466.42	3469.20	3484.20	3482.95	3487.20	3499.49	3481.59	3472.09	3462.70	3460.00	3445.76	3435.30	3442.20	3440.77	3450.45	3452.15	3466.42
7.50°	3163.05	3166.31	3187.46	3192.69	3170.70	3199.36	3184.55	3168.86	3160.56	3154.03	3132.63	3130.43	3134.71	3112.21	3130.71	3147.48	3163.05
10.00°	2751.33	2752.56	2765.15	2761.14	2760.48	2764.78	2760.81	2758.08	2765.13	2758.01	2751.79	2753.77	2764.25	2746.74	2755.90	2755.09	2751.33
12.50°	2353.08	2343.38	2351.38	2340.80	2330.40	2357.51	2355.38	2348.99	2363.86	2365.36	2371.41	2376.80	2387.78	2375.56	2378.12	2367.45	2353.08
15.00°	1991.56	1984.24	1990.19	1989.21	1986.76	2003.27	2002.88	1993.04	1993.82	1988.93	1994.56	1997.46	2001.56	2007.23	2008.27	1997.31	1991.56
17.50°	1659.35	1640.24	1649.06	1657.56	1655.51	1678.10	1674.56	1645.05	1628.53	1637.22	1633.58	1635.20	1659.97	1639.16	1644.15	1654.34	1659.35
20.00°	1390.00	1391.73	1393.93	1408.99	1397.53	1397.81	1400.00	1372.74	1369.54	1370.61	1350.55	1357.35	1376.61	1367.88	1384.83	1386.07	1390.00
22.50°	1126.60	1141.91	1139.82	1158.35	1145.23	1130.71	1131.53	1104.45	1111.12	1107.32	1076.27	1085.45	1106.54	1100.49	1125.79	1122.18	1126.60
25.00°	873.31	886.36	888.90	901.26	893.18	879.95	873.91	859.89	858.37	852.80	832.60	834.87	850.66	853.59	869.27	867.75	873.31
27.50°	639.16	643.11	651.14	658.43	642.80	648.99	636.32	623.71	613.88	615.46	602.11	599.66	621.13	610.62	621.91	631.40	639.16
30.00°	431.36	438.85	444.70	449.45	444.77	438.12	427.18	421.47	417.42	413.37	406.89	405.74	414.34	418.86	424.67	425.91	431.36
32.50°	273.90	268.02	276.62	278.53	256.69	280.81	268.90	250.58	245.40	255.88	248.82	249.05	270.08	242.28	252.13	266.12	273.90
35.00°	172.28	179.28	181.31	179.54	177.12	168.07	169.64	173.05	173.28	171.93	169.06	171.13	169.89	175.89	175.92	169.61	172.28
37.50°	114.49	115.36	116.34	113.23	106.63	111.76	113.03	114.29	115.10	117.33	113.85	116.07	119.93	117.81	115.29	112.22	114.49
40.00°	96.55	99.06	97.87	96.07	95.04	93.24	96.42	99.10	99.64	101.54	99.59	99.23	98.25	100.07	99.62	98.51	96.55
42.50°	84.84	85.91	84.32	82.52	83.79	81.45	84.30	85.61	86.27	89.36	88.00	85.67	86.81	84.47	86.21	87.60	84.84
45.00°	77.71	77.65	76.84	73.39	74.05	73.24	75.59	75.27	77.77	81.04	80.01	76.58	79.98	76.33	77.90	79.27	77.71
47.50°	70.16	69.55	69.79	64.72	65.04	65.60	66.65	66.28	69.53	73.06	72.45	68.71	71.63	68.43	70.06	71.06	70.16
50.00°	62.36	61.65	63.18	56.52	58.38	58.20	57.57	59.27	61.75	65.35	65.39	62.18	62.75	61.20	63.06	62.93	62.36
52.50°	57.64	57.35	58.45	53.23	52.81	53.57	52.72	54.73	56.37	60.06	60.92	58.40	57.42	55.96	57.70	58.46	57.64
55.00°	54.37	56.70	55.24	53.93	49.91	49.85	49.98	53.14	54.55	56.47	58.75	57.11	53.02	54.84	54.69	56.20	54.37
57.50°	57.13	57.79	56.35	55.89	49.68	52.61	51.47	54.22	55.09	58.22	59.63	58.23	56.53	56.15	55.80	57.57	57.13
60.00°	62.13	60.31	60.30	58.67	54.65	56.94	54.61	57.90	58.49	63.02	62.70	61.12	61.49	61.50	61.67	60.67	62.13
62.50°	63.86	61.16	60.63	59.22	57.37	59.04	56.82	59.06	59.71	63.63	63.02	62.54	63.99	64.65	64.46	62.39	63.86
65.00°	64.68	60.87	59.05	58.59	56.57	60.77	58.78	58.23	58.81	62.37	61.75	63.11	66.21	64.89	64.31	63.59	64.68
67.50°	54.81	52.47	50.92	50.64	50.62	50.72	50.70	50.56	50.95	52.56	51.28	52.86	54.00	57.60	55.69	53.98	54.81
70.00°	42.78	39.72	40.08	39.67	38.19	39.48	40.49	38.52	37.58	39.73	36.55	37.57	41.00	42.25	40.57	41.36	42.78
72.50°	30.60	28.44	30.00	28.75	27.35	27.23	28.45	27.16	25.96	28.09	24.80	25.50	27.46	29.10	28.48	28.67	30.60
75.00°	18.40	17.79	20.18	17.86	18.13	15.05	16.15	16.15	15.46	16.76	14.14	14.58	14.50	17.88	18.29	15.97	18.40
77.50°	14.94	14.19	16.62	14.22	13.36	14.00	13.11	12.02	11.64	13.12	11.42	11.56	12.13	12.62	13.83	13.08	14.94
80.00°	12.09	12.89	14.53	12.26	12.31	12.84	10.80	10.66	11.29	10.91	10.84	10.68	9.87	11.57	12.21	11.47	12.09
82.50°	9.38	10.13	11.17	10.00	10.00	9.89	8.76	8.10	8.83	8.77	8.61	8.13	8.64	9.36	9.57	9.07	9.38
85.00°	6.69	7.00	7.60	7.68	6.84	6.95	6.72	5.16	5.52	6.63	6.05	5.26	7.14	6.48	6.54	6.62	6.69
87.50°	4.27	4.63	4.72	5.29	4.46	3.99	4.53	3.43	3.62	4.22	3.97	3.35	4.21	4.14	4.48	4.14	4.27
90.00°	2.05	2.40	1.91	2.90	2.52	1.55	2.50	1.96	2.17	1.80	1.95	1.56	1.83	2.04	2.70	1.76	2.05
92.50°	1.82	2.07	1.85	2.26	1.87	1.78	2.21	1.83	1.75	2.36	1.85	1.40	1.60	1.86	2.18	1.95	1.82
95.00°	1.67	1.94	1.89	1.69	1.78	1.90	1.95	1.90	1.56	2.88	1.89	1.33	1.45	2.36	1.94	2.12	1.67
97.50°	1.93	2.01	1.81	1.64	1.72	1.60	1.91	2.24	1.54	2.35	1.83	1.60	1.47	2.17	1.97	2.08	1.93
100.00°	2.12	2.09	1.74	1.59	1.67	1.42	1.87	2.60	1.53	1.86	1.77	1.85	1.51	1.79	2.04	1.99	2.12

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	1881	1881	1881	1881	1836	1836	1836	1836	1751	1751	1751	1674	1674	1674	1603	1603	1603	1570
	1	1790	1745	1704	1667	1749	1709	1673	1640	1643	1614	1587	1581	1559	1537	1525	1507	1491	1476
	2	1703	1625	1561	1507	1666	1596	1538	1489	1543	1495	1454	1494	1455	1421	1449	1417	1389	1388
	3	1622	1522	1444	1382	1590	1499	1428	1370	1456	1396	1347	1416	1366	1324	1379	1338	1302	1311
	4	1548	1433	1348	1283	1519	1414	1336	1275	1379	1312	1259	1346	1289	1243	1315	1267	1227	1243
RCR	5	1480	1355	1267	1202	1454	1339	1257	1196	1310	1239	1184	1283	1221	1173	1257	1204	1161	1182
	6	1418	1286	1197	1133	1395	1273	1189	1129	1248	1175	1120	1225	1161	1112	1204	1147	1103	1127
	7	1360	1224	1135	1073	1340	1213	1130	1070	1192	1118	1064	1173	1107	1057	1155	1096	1051	1078
	8	1307	1168	1081	1021	1288	1159	1076	1019	1142	1067	1014	1125	1058	1009	1110	1049	1004	1032
	9	1258	1118	1033	975	1241	1110	1029	973	1095	1021	969	1081	1014	965	1067	1006	962	991
	10	1211	1072	989	933	1196	1065	985	932	1052	979	929	1040	973	926	1028	967	923	953

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	124.5 fc	3.1 ft
6.5 ft	89.1 fc	3.7 ft
7.5 ft	66.9 fc	4.2 ft
8.0 ft	58.8 fc	4.5 ft
10.0 ft	37.7 fc	5.7 ft
12.0 ft	26.1 fc	6.8 ft
14.0 ft	19.2 fc	7.9 ft
16.0 ft	14.7 fc	9.0 ft
20.0 ft	9.4 fc	11.3 ft
24.0 ft	6.5 fc	13.6 ft
28.0 ft	4.8 fc	15.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	2293426	2293426	2293426
45.00°	66945	66187	63789
55.00°	57741	58663	53004
65.00°	93229	85105	81528
75.00°	43297	47485	42658
85.00°	46737	53109	47789

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	21.3	22.4	21.7	22.7	23.1	21.0	22.1	21.4	22.4	22.8
	3H	24.1	25.1	24.5	25.4	25.8	23.8	24.8	24.2	25.1	25.5
	4H	24.5	25.3	24.9	25.7	26.1	24.1	25.0	24.5	25.3	25.8
	6H	24.7	25.5	25.1	25.9	26.3	24.3	25.1	24.7	25.5	25.9
	8H	24.8	25.5	25.2	25.9	26.4	24.4	25.1	24.8	25.5	26.0
	12H	24.8	25.6	25.3	26.0	26.4	24.5	25.2	24.9	25.6	26.0
4H	2H	22.5	23.4	23.0	23.8	24.2	22.3	23.2	22.7	23.5	23.9
	3H	25.0	25.8	25.5	26.2	26.6	24.7	25.5	25.2	25.9	26.3
	4H	25.4	26.0	25.8	26.4	26.9	25.0	25.6	25.5	26.1	26.6
	6H	25.6	26.2	26.1	26.7	27.1	25.2	25.8	25.7	26.3	26.8
	8H	25.8	26.3	26.2	26.7	27.2	25.4	25.9	25.9	26.4	26.8
	12H	25.9	26.3	26.4	26.8	27.3	25.5	26.0	26.0	26.5	27.0
8H	4H	25.5	26.0	25.9	26.4	26.9	25.1	25.6	25.5	26.0	26.5
	6H	25.8	26.3	26.4	26.8	27.3	25.4	25.8	25.9	26.3	26.8
	8H	26.0	26.4	26.6	26.9	27.5	25.6	26.0	26.2	26.5	27.0
	12H	26.3	26.6	26.8	27.1	27.7	25.8	26.2	26.4	26.7	27.3
12H	4H	25.4	25.9	25.9	26.4	26.9	25.0	25.5	25.5	26.0	26.5
	6H	25.9	26.2	26.4	26.7	27.3	25.4	25.8	26.0	26.3	26.8
	8H	26.1	26.4	26.7	26.9	27.5	25.7	26.0	26.2	26.5	27.1

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0