Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR3Mx 25L 35K ND xx xx RH3F 25L 35K ND MW GL

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

Test Number

SP-01412_1

Test Date

9/21/2022

The results contained in this report pertain only to this IES file.

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Summary of Results

Power

Input Watts	26.3 W

Lumen Output

Output Lumens	1595
Efficacy	60.64 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.4
Two luminaires, plane 90°	0.4
Four luminaires	0.47

Full Beam Angle

0° - 180°	24°
90° - 270°	24°

IES File Header Contents

Keyword	Value
TEST	SP-01412_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	9/21/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 25L 35K ND xx xx RH3F 25L 35K ND MW GL
LUMINAIRE	Nom. 3" Round Pinhole A-Spec, Narrow Beam
OTHER	Matte White Trim, Clear Glass lens
OTHER	24 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

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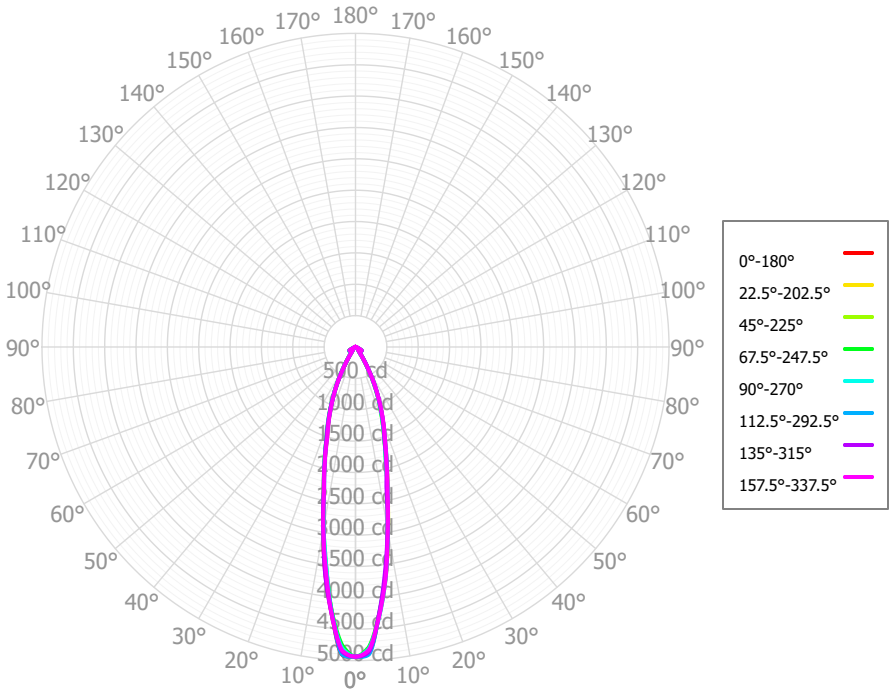
Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	368.95	23.13%	90.00° - 100.00°	1.78	0.11%
10.00° - 20.00°	529.92	33.23%	100.00° - 110.00°	1.74	0.11%
20.00° - 30.00°	362.35	22.72%	100.00° - 120.00°	3.42	0.21%
30.00° - 40.00°	108.06	6.78%	120.00° - 130.00°	1.49	0.09%
40.00° - 50.00°	44.61	2.80%	130.00° - 140.00°	1.44	0.09%
50.00° - 60.00°	83.82	5.26%	140.00° - 150.00°	1.37	0.09%
60.00° - 70.00°	59.13	3.71%	150.00° - 160.00°	1.04	0.07%
70.00° - 80.00°	17.68	1.11%	160.00° - 170.00°	0.61	0.04%
80.00° - 90.00°	9.01	0.57%	170.00° - 180.00°	0.19	0.01%
0.00° - 90.00°	1583.53	99.29%	0.00° - 180.00°	1594.87	100.00%

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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°	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30	4938.30
2.50°	4893.07	4834.57	4886.18	4797.16	4821.88	4909.61	4865.37	4845.15	4911.52	4841.08	4883.60	4768.15	4813.10	4907.77	4869.99	4836.86	4893.07
5.00°	4294.37	4302.40	4290.82	4312.52	4324.53	4278.57	4300.82	4304.22	4294.73	4295.11	4260.36	4270.19	4285.39	4289.54	4285.68	4316.10	4294.37
7.50°	3681.42	3693.99	3678.53	3683.58	3699.26	3642.24	3684.33	3602.12	3668.28	3618.68	3632.62	3560.34	3556.39	3657.21	3610.63	3697.58	3681.42
10.00°	2978.58	2970.83	2981.76	2944.56	2954.96	2952.47	2958.97	2951.52	2973.04	2968.92	2962.25	2928.72	2926.13	2958.54	2941.57	2958.01	2978.58
12.50°	2339.53	2372.23	2348.11	2361.27	2361.92	2310.03	2347.97	2312.54	2333.11	2323.39	2337.96	2331.81	2329.76	2336.69	2279.86	2369.25	2339.53
15.00°	1921.10	1904.99	1899.30	1860.12	1867.46	1891.20	1901.14	1888.62	1900.42	1902.04	1919.35	1911.30	1917.48	1930.25	1896.44	1911.96	1921.10
17.50°	1552.22	1547.62	1514.73	1527.19	1529.72	1513.89	1541.08	1487.72	1518.46	1498.74	1542.13	1540.50	1542.35	1570.57	1528.77	1573.73	1552.22
20.00°	1292.67	1271.73	1255.21	1252.68	1261.43	1253.43	1268.44	1242.84	1255.95	1257.32	1276.54	1274.31	1280.70	1297.60	1286.06	1307.94	1292.67
22.50°	1044.69	1032.56	1015.29	1022.43	1026.40	1006.11	1021.95	1001.86	1010.24	1018.00	1025.17	1024.08	1029.21	1048.06	1046.81	1062.77	1044.69
25.00°	814.11	812.15	801.69	801.27	800.74	783.49	793.96	785.79	791.31	793.27	799.30	804.19	811.85	828.61	821.45	826.16	814.11
27.50°	597.51	601.08	593.91	593.05	589.99	571.43	582.75	573.63	582.32	576.39	586.74	587.07	597.32	618.32	604.32	611.63	597.51
30.00°	395.65	393.14	391.60	386.32	381.51	373.12	379.68	381.50	384.41	388.42	390.74	402.04	410.00	416.30	407.65	402.82	395.65
32.50°	250.66	256.38	248.39	248.76	245.92	229.00	241.78	218.87	242.05	232.35	246.32	231.29	242.24	269.00	250.00	263.04	250.66
35.00°	147.82	133.78	144.24	121.49	118.27	134.46	124.39	144.35	143.22	150.41	147.08	158.12	162.34	156.26	158.26	132.52	147.82
37.50°	98.91	101.26	97.38	95.48	93.78	87.08	90.85	89.82	96.86	93.56	96.70	96.67	98.38	103.75	98.78	101.26	98.91
40.00°	77.56	76.53	76.32	72.08	71.16	69.89	72.31	74.36	78.96	76.64	76.19	77.99	78.14	77.00	77.25	74.17	77.56
42.50°	64.48	65.12	62.57	60.62	61.32	59.37	61.09	61.50	65.78	63.33	63.95	62.44	62.27	61.88	62.37	63.90	64.48
45.00°	54.18	54.69	50.92	51.44	52.77	51.73	50.58	52.15	54.33	54.03	55.11	54.10	54.38	49.89	53.01	54.82	54.18
47.50°	54.23	53.32	49.97	48.49	48.89	50.16	48.79	49.55	52.93	52.70	54.11	52.32	52.41	49.48	51.63	52.84	54.23
50.00°	56.30	56.42	50.73	53.48	52.24	50.26	49.79	53.34	53.73	57.63	55.12	60.83	57.93	50.72	54.87	56.37	56.30
52.50°	79.93	79.35	75.10	72.92	72.22	72.98	73.19	72.02	77.99	79.02	81.60	79.15	76.88	74.88	75.25	78.23	79.93
55.00°	105.09	99.06	100.02	91.03	90.68	99.08	94.83	100.60	104.62	109.33	111.54	108.18	107.76	99.33	102.24	97.77	105.09
57.50°	110.61	110.16	106.17	107.49	106.77	105.78	109.41	108.93	110.65	114.92	114.37	117.37	116.69	110.60	110.84	112.35	110.61
60.00°	112.72	108.02	108.18	103.04	104.32	110.06	111.74	108.09	113.63	111.63	114.55	111.29	112.00	116.55	115.10	110.87	112.72
62.50°	83.01	82.02	81.06	80.07	81.41	81.09	83.46	83.53	84.00	84.98	85.03	88.76	88.54	88.52	88.02	85.97	83.01
65.00°	55.02	57.35	55.44	57.09	57.43	53.49	57.43	52.12	55.70	53.33	56.72	57.48	57.22	61.30	57.33	60.69	55.02
67.50°	34.64	34.35	35.39	34.12	32.62	34.96	35.22	33.73	33.83	34.63	35.63	36.19	36.51	36.90	37.90	35.01	34.64
70.00°	19.35	21.77	20.66	23.73	21.06	19.80	21.14	17.41	17.05	17.20	18.59	18.41	18.63	18.92	19.90	21.11	19.35
72.50°	17.68	18.36	18.38	18.63	16.62	16.69	16.67	15.83	14.88	15.76	15.10	14.71	14.83	15.17	17.99	15.67	17.68
75.00°	17.07	18.68	17.53	18.55	16.60	14.95	15.22	15.07	13.96	14.57	13.51	13.94	13.02	13.65	16.45	15.81	17.07
77.50°	18.37	21.29	18.96	19.82	18.15	16.30	16.28	16.11	15.41	15.40	15.98	14.49	14.36	15.50	16.91	18.71	18.37
80.00°	17.14	18.50	17.46	17.42	15.80	15.60	15.03	16.43	14.82	15.32	16.00	15.14	15.54	15.07	16.47	17.22	17.14
82.50°	12.77	13.46	12.72	14.51	12.62	11.73	12.44	11.66	11.59	10.86	12.39	11.11	11.86	12.18	13.29	14.32	12.77
85.00°	8.22	8.32	7.97	8.35	7.52	7.80	8.32	7.21	7.86	6.86	8.44	7.20	8.16	8.32	9.54	8.66	8.22
87.50°	3.51	3.14	3.21	2.38	2.24	3.80	3.62	3.99	3.69	4.18	4.15	4.43	4.44	3.71	4.64	2.49	3.51
90.00°	1.77	1.97	1.48	1.92	1.75	2.01	2.12	1.69	1.91	2.19	2.04	2.08	1.53	1.93	1.74	1.87	1.77
92.50°	1.85	1.34	1.38	1.55	1.32	1.88	1.39	1.59	1.68	1.49	1.51	1.68	1.41	1.61	1.59	1.69	1.85
95.00°	1.87	1.38	1.48	1.67	1.49	1.79	1.38	1.58	1.78	1.30	1.23	1.45	1.34	1.77	1.54	1.57	1.87
97.50°	1.85	1.44	1.64	1.74	1.65	1.73	1.46	1.71	2.03	1.78	1.09	1.65	1.35	2.08	1.60	1.45	1.85
100.00°	1.83	1.55	1.79	1.62	1.72	1.60	1.48	1.81	2.01	1.90	1.33	1.73	1.40	1.87	1.69	1.37	1.83

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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	1896	1896	1896	1896	1851	1851	1851	1851	1766	1766	1766	1688	1688	1688	1617	1617	1617	1584
	1	1805	1759	1718	1682	1764	1723	1687	1654	1657	1628	1601	1595	1572	1551	1539	1521	1504	1490
	2	1717	1639	1575	1521	1681	1611	1552	1503	1557	1509	1468	1508	1469	1435	1463	1431	1403	1402
	3	1637	1536	1459	1397	1604	1513	1442	1385	1470	1410	1361	1430	1380	1338	1393	1352	1316	1325
	4	1563	1448	1363	1298	1534	1429	1350	1290	1394	1327	1273	1361	1304	1258	1330	1282	1242	1257
RCR	5	1496	1371	1283	1218	1470	1355	1273	1212	1326	1255	1200	1299	1237	1189	1273	1220	1178	1198
	6	1435	1303	1214	1151	1412	1290	1207	1146	1266	1192	1138	1243	1179	1129	1222	1165	1121	1145
	7	1379	1243	1155	1093	1358	1232	1149	1090	1212	1138	1084	1192	1127	1077	1174	1116	1071	1097
	8	1327	1189	1103	1043	1308	1180	1098	1041	1163	1089	1036	1146	1080	1031	1131	1071	1026	1054
	9	1279	1141	1056	999	1262	1133	1052	997	1118	1045	993	1104	1037	990	1091	1030	986	1015
	10	1235	1097	1014	960	1220	1090	1011	958	1077	1005	955	1065	999	952	1053	993	949	978

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	163.2 fc	2.3 ft
6.5 ft	116.9 fc	2.8 ft
7.5 ft	87.8 fc	3.2 ft
8.0 ft	77.2 fc	3.4 ft
10.0 ft	49.4 fc	4.2 ft
12.0 ft	34.3 fc	5.1 ft
14.0 ft	25.2 fc	5.9 ft
16.0 ft	19.3 fc	6.8 ft
20.0 ft	12.3 fc	8.5 ft
24.0 ft	8.6 fc	10.2 ft
28.0 ft	6.3 fc	11.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	3007983	3007983	3007983
45.00°	46675	43861	45455
55.00°	111599	106213	96297
65.00°	79307	79911	82769
75.00°	40181	41263	39065
85.00°	57461	55702	52563

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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	25.8	26.9	26.2	27.2	27.6	25.9	26.9	26.2	27.3	27.6
	3H	26.1	27.0	26.5	27.4	27.7	26.1	27.0	26.5	27.4	27.8
	4H	26.1	27.0	26.5	27.4	27.8	26.1	27.0	26.5	27.4	27.8
	6H	26.4	27.2	26.8	27.6	28.0	26.3	27.1	26.7	27.5	27.9
	8H	26.5	27.2	26.9	27.7	28.1	26.4	27.1	26.8	27.5	28.0
	12H	26.6	27.3	27.0	27.7	28.1	26.4	27.2	26.9	27.6	28.0
4H	2H	26.0	26.9	26.4	27.2	27.6	26.0	26.9	26.4	27.3	27.7
	3H	26.2	27.0	26.7	27.4	27.8	26.3	27.0	26.7	27.4	27.8
	4H	26.4	27.0	26.8	27.5	27.9	26.3	27.0	26.8	27.4	27.9
	6H	26.8	27.4	27.3	27.8	28.3	26.6	27.2	27.1	27.6	28.1
	8H	27.0	27.5	27.5	28.0	28.5	26.8	27.3	27.3	27.8	28.3
	12H	27.1	27.6	27.6	28.1	28.6	26.9	27.4	27.4	27.9	28.4
8H	4H	26.4	26.9	26.9	27.4	27.9	26.3	26.8	26.8	27.3	27.8
	6H	27.0	27.4	27.5	27.9	28.4	26.7	27.1	27.2	27.7	28.2
	8H	27.3	27.7	27.8	28.2	28.7	27.0	27.3	27.5	27.9	28.4
	12H	27.5	27.8	28.1	28.4	29.0	27.2	27.5	27.7	28.0	28.6
12H	4H	26.4	26.8	26.9	27.3	27.8	26.3	26.7	26.8	27.2	27.7
	6H	27.0	27.4	27.6	27.9	28.4	26.8	27.1	27.3	27.6	28.2
	8H	27.4	27.7	27.9	28.2	28.8	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

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