Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

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

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

Test Number

SP-01403

Test Date

9/14/2022

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	1351
Efficacy	51.39 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-01403
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 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. 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

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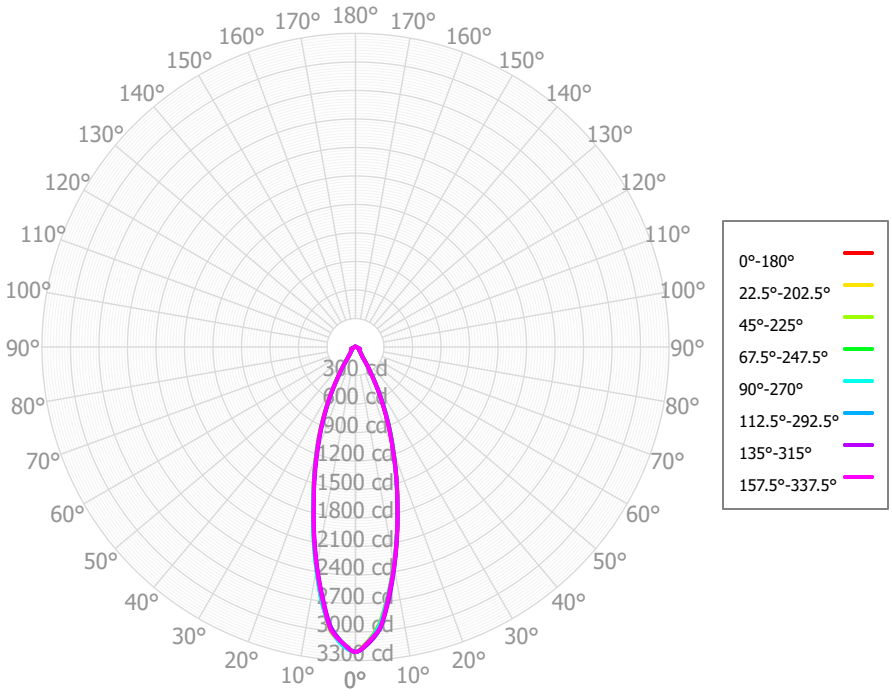
Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	264.23	19.55%	90.00° - 100.00°	2.07	0.15%
10.00° - 20.00°	470.25	34.79%	100.00° - 110.00°	1.93	0.14%
20.00° - 30.00°	333.77	24.70%	100.00° - 120.00°	3.73	0.28%
30.00° - 40.00°	106.59	7.89%	120.00° - 130.00°	1.70	0.13%
40.00° - 50.00°	51.01	3.77%	130.00° - 140.00°	1.57	0.12%
50.00° - 60.00°	42.67	3.16%	140.00° - 150.00°	1.41	0.10%
60.00° - 70.00°	46.90	3.47%	150.00° - 160.00°	1.07	0.08%
70.00° - 80.00°	17.52	1.30%	160.00° - 170.00°	0.61	0.04%
80.00° - 90.00°	6.20	0.46%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	1339.15	99.09%	0.00° - 180.00°	1351.50	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°	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65	3209.65
2.50°	3099.87	3102.20	3096.42	3104.71	3109.93	3114.92	3117.49	3118.91	3119.82	3138.76	3124.95	3137.35	3144.70	3121.37	3123.95	3106.87	3099.87
5.00°	2951.53	2915.99	2949.37	2927.23	2932.40	2963.99	2963.99	2988.53	2987.05	2970.54	3003.04	2976.89	2983.25	2977.70	2973.22	2965.34	2951.53
7.50°	2643.73	2629.67	2646.13	2634.76	2638.38	2673.06	2652.62	2676.12	2680.51	2706.98	2687.86	2707.42	2711.75	2668.22	2682.71	2650.99	2643.73
10.00°	2333.97	2328.23	2340.82	2331.47	2332.94	2348.00	2336.82	2348.80	2348.26	2360.17	2354.25	2366.45	2375.43	2351.77	2351.16	2335.90	2333.97
12.50°	2015.39	2012.99	2023.20	2014.69	2012.16	2024.62	2009.38	2022.30	2024.13	2031.49	2030.84	2038.43	2044.00	2014.68	2027.67	2016.06	2015.39
15.00°	1704.69	1710.47	1712.53	1709.29	1704.60	1701.63	1697.83	1695.85	1700.99	1717.80	1708.24	1718.18	1715.29	1695.75	1706.26	1701.86	1704.69
17.50°	1425.73	1418.63	1437.05	1416.90	1413.32	1438.63	1423.85	1442.37	1448.26	1447.11	1451.93	1448.60	1444.00	1425.03	1426.11	1420.67	1425.73
20.00°	1157.88	1160.07	1170.94	1157.57	1153.99	1187.14	1168.63	1191.99	1202.18	1208.98	1199.26	1206.73	1201.71	1167.39	1155.30	1148.14	1157.88
22.50°	929.31	927.14	945.84	932.98	930.76	962.97	953.58	976.75	982.94	983.59	976.17	978.43	971.42	941.58	927.14	918.74	929.31
25.00°	709.62	713.88	726.30	721.34	720.86	743.23	746.12	762.25	765.80	767.30	754.25	757.11	746.81	724.48	707.75	697.59	709.62
27.50°	518.92	514.93	528.97	522.57	525.19	555.30	553.90	571.15	572.74	572.38	562.78	559.25	548.74	526.86	522.09	511.91	518.92
30.00°	346.66	352.73	348.70	355.65	360.33	371.94	382.10	381.12	380.99	391.45	372.14	372.34	362.05	351.79	342.36	340.45	346.66
32.50°	228.09	215.02	228.48	217.79	225.70	253.65	247.62	258.12	256.09	257.51	249.44	244.78	238.36	222.49	231.13	225.03	228.09
35.00°	134.87	140.86	130.67	136.96	142.64	142.95	149.99	138.63	133.26	151.72	128.53	142.31	139.07	128.92	129.98	130.04	134.87
37.50°	107.86	106.65	105.81	103.95	107.46	111.39	113.80	110.21	107.05	101.45	102.83	100.70	100.46	103.46	102.67	106.02	107.86
40.00°	86.01	87.37	84.88	84.76	86.10	87.71	87.12	82.91	82.50	82.52	77.80	83.15	83.74	84.04	84.90	85.78	86.01
42.50°	76.76	76.68	75.35	76.53	76.50	77.95	75.38	73.91	73.26	70.43	69.19	72.54	73.06	75.12	75.47	77.26	76.76
45.00°	67.49	66.60	66.12	68.39	67.33	69.22	65.39	65.00	64.03	61.85	60.67	64.39	64.33	66.30	66.90	68.70	67.49
47.50°	58.20	56.86	57.65	60.31	58.50	60.74	57.92	57.31	55.70	54.40	53.57	57.43	56.71	57.67	59.56	60.02	58.20
50.00°	50.94	50.91	50.59	54.44	52.65	52.27	51.51	49.99	47.57	47.48	46.81	50.87	49.41	50.77	52.33	52.65	50.94
52.50°	47.76	46.83	46.98	50.08	49.00	49.15	46.50	46.19	44.27	44.02	44.19	47.64	46.59	46.45	48.85	48.60	47.76
55.00°	46.13	45.94	45.26	49.13	48.09	46.22	44.91	43.06	41.33	42.07	42.10	45.39	44.94	45.63	45.61	46.39	46.13
57.50°	47.45	46.46	47.69	50.33	49.03	49.71	47.59	45.49	43.89	44.33	44.92	47.57	48.00	49.61	49.77	48.58	47.45
60.00°	49.28	49.30	50.45	51.90	51.43	53.24	50.25	47.90	46.44	48.26	47.67	50.90	52.14	52.02	54.21	51.07	49.28
62.50°	51.96	53.07	53.86	53.70	54.73	53.23	52.88	50.25	48.90	49.86	49.78	51.73	52.86	52.48	54.37	54.20	51.96
65.00°	50.95	50.24	52.85	50.80	51.03	53.00	51.64	51.05	50.48	50.63	50.58	51.97	52.87	49.43	54.44	53.17	50.95
67.50°	43.96	44.92	43.53	45.38	43.25	43.17	46.19	43.07	43.90	43.45	42.75	43.08	42.76	42.22	42.80	43.94	43.96
70.00°	34.50	33.51	33.33	34.44	32.28	33.27	35.93	34.40	36.66	33.64	34.19	32.31	30.83	32.55	31.17	33.77	34.50
72.50°	21.35	20.04	21.62	20.79	19.61	21.99	20.89	22.23	24.57	24.31	21.58	22.76	21.61	20.20	21.25	21.86	21.35
75.00°	12.76	14.19	13.48	14.39	13.03	11.30	12.75	12.06	13.71	15.13	11.04	13.42	12.81	12.81	11.62	13.44	12.76
77.50°	10.33	10.73	10.94	11.22	9.41	10.17	10.92	10.78	11.02	11.04	10.94	11.00	10.96	10.55	10.42	10.91	10.33
80.00°	8.40	9.00	8.97	9.32	8.19	9.02	9.28	9.51	8.52	8.34	10.50	9.67	10.03	9.05	9.22	8.90	8.40
82.50°	7.13	7.75	7.86	7.95	8.07	7.44	7.81	8.28	7.14	6.85	8.57	7.61	7.81	8.28	8.02	7.68	7.13
85.00°	5.54	5.21	6.07	5.64	5.84	5.82	5.72	6.78	5.66	5.65	6.51	5.47	5.45	6.38	6.75	5.92	5.54
87.50°	3.57	2.35	3.38	2.97	2.75	3.77	3.15	4.30	3.66	3.83	4.02	3.69	3.88	3.49	4.34	3.35	3.57
90.00°	2.42	1.90	1.84	2.07	1.91	1.95	2.01	2.42	2.03	1.87	2.02	1.94	2.37	2.20	2.15	1.94	2.42
92.50°	2.17	1.99	1.78	1.76	1.93	1.90	1.93	2.43	2.04	1.69	1.75	1.94	1.86	2.23	2.18	2.10	2.17
95.00°	1.92	1.96	1.70	1.68	1.73	1.85	1.84	2.38	2.04	1.83	1.59	2.08	1.41	2.16	2.18	2.07	1.92
97.50°	1.67	1.91	1.58	1.67	1.46	1.81	1.77	2.14	2.02	1.73	1.77	1.74	1.79	2.01	1.88	1.82	1.67
100.00°	1.73	1.86	1.59	1.54	1.56	1.77	1.71	1.95	1.95	1.60	1.96	1.37	2.19	1.89	1.64	1.84	1.73

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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	1606	1606	1606	1606	1567	1567	1567	1567	1495	1495	1495	1429	1429	1429	1368	1368	1368	1339
	1	1528	1490	1455	1424	1494	1459	1428	1400	1402	1378	1355	1350	1330	1312	1302	1286	1272	1260
	2	1454	1388	1333	1287	1423	1363	1314	1272	1318	1277	1242	1276	1243	1213	1237	1210	1186	1185
	3	1385	1300	1234	1181	1358	1280	1220	1171	1243	1192	1151	1209	1167	1131	1177	1142	1112	1119
	4	1322	1224	1152	1097	1297	1208	1141	1089	1177	1120	1075	1149	1101	1061	1123	1082	1048	1061
RCR	5	1264	1157	1082	1027	1242	1144	1074	1022	1119	1058	1011	1095	1043	1002	1073	1028	992	1009
	6	1211	1098	1022	968	1191	1087	1016	964	1066	1003	957	1046	991	949	1028	980	942	962
	7	1162	1045	970	917	1144	1036	965	914	1018	955	909	1002	945	903	986	936	898	920
	8	1116	998	923	872	1100	990	919	870	975	911	866	961	903	862	947	896	857	881
	9	1074	955	882	832	1059	948	878	831	935	872	827	923	865	824	911	859	821	846
	10	1034	915	844	797	1021	909	841	795	898	836	793	888	830	790	877	825	788	813

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	106.1 fc	3.1 ft
6.5 ft	76.0 fc	3.7 ft
7.5 ft	57.1 fc	4.3 ft
8.0 ft	50.2 fc	4.6 ft
10.0 ft	32.1 fc	5.7 ft
12.0 ft	22.3 fc	6.8 ft
14.0 ft	16.4 fc	8.0 ft
16.0 ft	12.5 fc	9.1 ft
20.0 ft	8.0 fc	11.4 ft
24.0 ft	5.6 fc	13.7 ft
28.0 ft	4.1 fc	16.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1955040	1955040	1955040
45.00°	58138	56958	58002
55.00°	48992	48062	51070
65.00°	73430	76174	73550
75.00°	30021	31735	30674
85.00°	38691	42424	40837

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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	20.6	21.6	20.9	21.9	22.3	20.7	21.8	21.1	22.1	22.5
	3H	23.3	24.2	23.7	24.6	25.0	23.2	24.2	23.6	24.5	24.9
	4H	23.6	24.4	24.0	24.8	25.2	23.5	24.4	23.9	24.7	25.1
	6H	23.7	24.5	24.1	24.9	25.3	23.6	24.4	24.1	24.8	25.2
	8H	23.8	24.5	24.2	24.9	25.4	23.7	24.5	24.2	24.9	25.3
	12H	23.8	24.6	24.3	25.0	25.4	23.8	24.5	24.3	24.9	25.4
4H	2H	21.9	22.8	22.3	23.1	23.5	21.9	22.7	22.3	23.1	23.5
	3H	24.2	25.0	24.7	25.4	25.8	24.2	24.9	24.6	25.3	25.7
	4H	24.5	25.1	25.0	25.6	26.1	24.4	25.0	24.8	25.5	25.9
	6H	24.7	25.2	25.2	25.7	26.2	24.6	25.2	25.1	25.6	26.1
	8H	24.8	25.3	25.3	25.8	26.3	24.7	25.2	25.2	25.7	26.2
	12H	24.9	25.3	25.4	25.9	26.4	24.9	25.3	25.4	25.8	26.3
8H	4H	24.5	25.1	25.0	25.5	26.0	24.4	25.0	24.9	25.4	25.9
	6H	24.8	25.2	25.4	25.8	26.3	24.8	25.2	25.3	25.7	26.2
	8H	25.0	25.4	25.6	25.9	26.4	25.0	25.3	25.5	25.9	26.4
	12H	25.2	25.5	25.8	26.1	26.7	25.2	25.5	25.7	26.0	26.6
12H	4H	24.5	25.0	25.0	25.5	26.0	24.4	24.9	24.9	25.4	25.9
	6H	24.8	25.2	25.4	25.7	26.3	24.8	25.1	25.3	25.6	26.2
	8H	25.1	25.4	25.6	25.9	26.5	25.0	25.4	25.6	25.9	26.5

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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