Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR3Mx 20L 35K WW xx xx RNW3F 20L 35K WW MB NL

Nom 3 inch dia round open wall wash, matte black finish, no lens

Test Number

SP-01423_1

Test Date

10/11/2022

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

Summary of Results

Power

Input Watts	21.2 W

Lumen Output

Output Lumens	1551
Efficacy	73.15 lm/W

Luminous Dimensions

0° - 180° Size	-0.25
90° - 270° Size	-0.25
Height	0

Spacing Criterion

Two luminaires, plane 0°	1
Two luminaires, plane 90°	1.17
Four luminaires	0.99

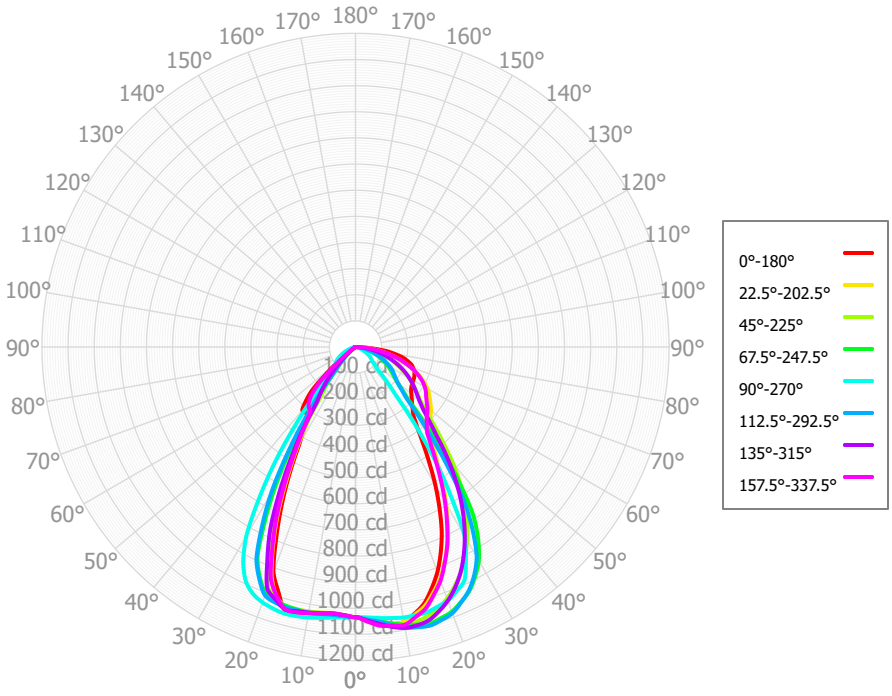
Full Beam Angle

0° - 180°	59°
90° - 270°	69°

IES File Header Contents

Keyword	Value
TEST	SP-01423_1
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/11/2022
ISSUEDATE	10/25/2022
LUMCAT	SR3Mx 20L 35K WW xx xx RNW3F 20L 35K WW MB NL
LUMINAIRE	Nom 3 inch dia round open wall wash, matte black finish, no lens
OTHER	Beam Angle: 61 x 72 degrees
LAMPCAT	N/A, 19mm LES
LAMP	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
OTHER	CCT Output Multipliers: 27K x 0.95, 30K x 0.97, 40K x 1.03
_CRI	80

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	101.61	6.55%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	293.03	18.89%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	387.68	25.00%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	300.01	19.35%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	177.88	11.47%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	119.07	7.68%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	93.89	6.05%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	59.55	3.84%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	18.13	1.17%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1550.85	100.00%	0.00° - 180.00°	1550.85	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°	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30	1034.30
2.50°	1051.33	1050.96	1049.28	1044.67	1036.20	1031.46	1027.13	1027.62	1027.98	1026.56	1029.56	1034.62	1035.59	1044.52	1048.35	1051.76	1051.33
5.00°	1066.66	1068.62	1061.60	1053.81	1041.50	1028.84	1023.94	1022.87	1024.71	1021.80	1023.86	1033.54	1039.59	1055.20	1063.97	1070.71	1066.66
7.50°	1070.56	1070.67	1073.68	1066.75	1046.51	1030.57	1027.30	1028.88	1029.11	1026.61	1025.15	1033.59	1045.74	1073.58	1080.40	1075.93	1070.56
10.00°	1068.37	1068.19	1080.38	1079.42	1051.48	1032.18	1032.13	1034.85	1034.37	1032.05	1028.18	1033.28	1051.34	1090.87	1091.57	1080.11	1068.37
12.50°	1045.53	1048.88	1076.06	1088.60	1051.67	1032.18	1036.03	1040.53	1038.71	1038.60	1028.91	1029.66	1054.86	1098.45	1091.13	1059.16	1045.53
15.00°	1016.14	1025.87	1066.74	1095.82	1051.65	1031.46	1039.79	1038.60	1042.99	1031.54	1029.22	1025.59	1055.90	1103.80	1083.10	1036.55	1016.14
17.50°	969.15	987.21	1048.89	1088.06	1042.64	1025.24	1014.42	1000.93	982.12	1003.82	1005.32	1018.75	1049.74	1095.60	1061.13	995.29	969.15
20.00°	916.71	946.01	1024.68	1078.03	1033.08	1012.09	986.00	946.36	918.43	938.71	978.38	1004.24	1040.40	1084.08	1033.33	951.81	916.71
22.50°	852.41	890.11	991.43	1056.08	1011.72	961.93	881.76	831.68	793.61	825.70	869.15	956.14	1023.57	1057.66	996.64	893.05	852.41
25.00°	780.99	832.67	952.28	1030.63	985.97	897.37	773.23	713.19	668.96	702.49	753.68	887.92	991.70	1027.43	952.02	831.90	780.99
27.50°	696.72	763.63	906.15	991.23	915.16	775.83	635.24	583.90	546.67	568.33	611.43	751.22	930.96	984.19	897.32	758.89	696.72
30.00°	611.81	693.97	854.07	944.30	834.21	645.85	497.47	464.13	430.63	450.59	468.82	610.32	835.84	927.99	836.74	685.38	611.81
32.50°	525.97	622.28	796.02	874.16	685.17	489.98	374.00	366.37	363.59	347.62	347.37	457.98	686.12	836.84	769.83	609.99	525.97
35.00°	450.69	551.01	730.20	785.37	534.50	344.52	256.79	300.31	308.38	293.20	230.24	317.54	534.36	729.53	697.28	538.03	450.69
37.50°	388.63	493.56	657.81	650.73	376.08	224.95	216.28	293.50	316.75	275.77	182.42	203.29	379.88	586.53	619.64	476.06	388.63
40.00°	346.10	438.95	579.09	517.30	237.50	132.79	175.30	278.32	316.54	248.29	135.53	118.77	259.97	456.75	539.64	425.95	346.10
42.50°	324.27	419.41	495.89	386.34	170.26	96.06	130.83	250.03	282.11	214.42	96.62	88.04	179.27	350.97	457.86	403.96	324.27
45.00°	306.30	400.85	426.82	287.35	115.65	66.25	88.25	202.19	235.77	161.37	60.34	64.05	130.60	272.95	397.16	385.20	306.30
47.50°	291.75	389.50	366.13	241.84	97.18	47.95	55.41	128.54	152.09	98.24	39.44	50.32	112.39	236.68	349.90	372.70	291.75
50.00°	279.24	377.50	327.93	206.88	82.52	34.10	26.96	71.09	80.71	55.71	21.05	39.01	100.54	209.20	318.95	359.04	279.24
52.50°	268.25	362.08	300.87	186.62	76.64	26.47	15.68	31.54	40.03	22.15	13.54	30.77	93.77	192.88	296.59	343.53	268.25
55.00°	261.82	347.08	277.94	169.73	69.99	19.86	6.62	9.80	10.97	9.18	7.29	23.86	85.64	179.04	276.55	330.12	261.82
57.50°	258.26	333.74	256.64	156.81	61.93	14.44	4.44	4.56	5.52	3.44	5.34	18.38	76.58	167.86	257.52	319.55	258.26
60.00°	255.50	318.58	234.96	142.54	53.36	10.40	2.80	2.12	1.97	2.13	3.81	14.45	67.32	153.78	237.71	306.39	255.50
62.50°	253.17	297.86	213.15	126.94	44.00	7.71	2.49	1.88	1.64	2.04	3.39	11.92	57.93	137.10	217.63	290.28	253.17
65.00°	248.86	275.41	190.47	111.35	35.29	5.76	2.24	1.81	1.46	1.97	2.96	9.24	48.30	120.62	196.07	270.95	248.86
67.50°	243.72	248.71	167.58	95.77	27.44	4.43	2.08	1.85	1.48	1.91	2.50	6.46	38.54	104.30	174.08	248.56	243.72
70.00°	234.79	221.52	146.39	80.65	20.76	3.38	1.91	1.68	1.54	1.97	2.17	5.00	30.15	88.71	152.21	223.35	234.79
72.50°	224.56	193.36	125.52	65.85	15.39	2.55	1.70	1.40	1.62	2.04	2.06	4.38	22.28	73.58	130.37	195.86	224.56
75.00°	205.84	164.65	105.37	52.44	10.86	2.26	1.62	1.45	1.66	1.93	1.95	3.82	16.29	58.77	109.47	167.04	205.84
77.50°	184.82	135.04	85.31	39.84	7.12	2.29	1.70	1.66	1.66	1.81	1.82	3.31	10.86	44.12	88.72	137.31	184.82
80.00°	152.92	105.12	65.04	27.82	4.81	2.10	1.81	1.70	1.70	1.75	1.78	2.91	7.45	31.20	67.83	106.46	152.92
82.50°	118.81	74.76	44.74	16.08	3.64	1.80	1.93	1.68	1.78	1.70	1.84	2.57	4.50	19.05	46.94	74.97	118.81
85.00°	69.95	45.55	26.02	8.97	2.72	1.69	1.94	1.77	1.66	1.68	1.88	2.29	3.27	10.74	26.10	44.08	69.95
87.50°	18.94	17.66	7.57	3.68	1.95	1.65	1.82	1.90	1.41	1.66	1.91	2.03	2.34	3.76	5.28	13.47	18.94
90.00°	8.50	3.23	4.56	2.13	1.78	1.47	1.75	1.97	1.45	1.71	1.89	1.93	2.05	1.99	3.30	3.90	8.50

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	1846	1846	1846	1846	1803	1803	1803	1803	1723	1723	1723	1650	1650	1650	1583	1583	1583	1551
	1	1722	1663	1610	1562	1682	1629	1581	1537	1564	1525	1489	1505	1473	1444	1450	1425	1402	1396
	2	1602	1500	1416	1345	1565	1472	1395	1329	1420	1355	1299	1371	1318	1271	1326	1282	1243	1256
	3	1493	1362	1260	1179	1459	1339	1244	1169	1295	1215	1149	1255	1187	1130	1218	1161	1112	1137
	4	1395	1244	1133	1048	1363	1224	1121	1041	1188	1099	1028	1155	1077	1015	1123	1057	1003	1036
RCR	5	1306	1142	1027	942	1277	1126	1018	938	1095	1001	928	1067	984	919	1041	969	911	950
	6	1226	1053	938	855	1199	1040	931	852	1014	917	845	990	904	839	968	892	832	875
	7	1153	976	862	781	1129	965	856	779	943	845	774	922	835	770	903	825	765	810
	8	1087	908	796	719	1065	898	791	717	880	783	713	862	774	710	845	766	706	753
	9	1026	848	738	664	1007	839	735	663	823	727	660	808	720	658	794	714	655	702
	10	972	794	688	617	954	787	685	616	773	679	614	759	673	612	747	667	610	657

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	34.2 fc	6.3 ft
6.5 ft	24.5 fc	7.4 ft
7.5 ft	18.4 fc	8.5 ft
8.0 ft	16.2 fc	9.1 ft
10.0 ft	10.3 fc	11.4 ft
12.0 ft	7.2 fc	13.6 ft
14.0 ft	5.3 fc	15.9 ft
16.0 ft	4.0 fc	18.2 ft
20.0 ft	2.6 fc	22.7 ft
24.0 ft	1.8 fc	27.3 ft
28.0 ft	1.3 fc	31.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	226803	226803	226803
45.00°	94986	132361	35864
55.00°	100096	106256	26758
65.00°	129126	98828	18311
75.00°	174391	89273	9198
85.00°	176002	65458	6831

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	29.3	30.7	29.7	31.0	31.3	12.0	13.3	12.3	13.6	13.9
	3H	31.8	33.0	32.2	33.3	33.6	14.0	15.2	14.4	15.5	15.9
	4H	32.9	34.0	33.3	34.4	34.8	14.6	15.7	15.0	16.1	16.5
	6H	34.0	35.0	34.4	35.4	35.8	15.0	16.0	15.4	16.4	16.8
	8H	34.4	35.4	34.8	35.7	36.2	15.1	16.0	15.5	16.4	16.8
	12H	34.7	35.6	35.1	36.0	36.4	15.2	16.1	15.6	16.5	16.9
4H	2H	29.7	30.8	30.1	31.1	31.5	11.7	12.9	12.1	13.2	13.6
	3H	32.4	33.3	32.8	33.7	34.1	13.8	14.7	14.2	15.1	15.5
	4H	33.7	34.5	34.1	34.9	35.4	14.4	15.3	14.9	15.7	16.1
	6H	34.9	35.6	35.3	36.0	36.5	14.9	15.6	15.3	16.0	16.5
	8H	35.4	36.0	35.8	36.5	36.9	15.0	15.7	15.5	16.1	16.6
	12H	35.7	36.3	36.2	36.8	37.3	15.2	15.8	15.7	16.3	16.7
8H	4H	33.8	34.4	34.2	34.9	35.4	14.3	15.0	14.8	15.4	15.9
	6H	35.1	35.6	35.6	36.1	36.6	14.8	15.3	15.3	15.8	16.3
	8H	35.7	36.1	36.2	36.7	37.2	15.0	15.5	15.5	16.0	16.5
	12H	36.1	36.5	36.6	37.0	37.6	15.2	15.7	15.8	16.2	16.7
12H	4H	33.8	34.3	34.2	34.8	35.3	14.3	14.9	14.8	15.4	15.8
	6H	35.1	35.6	35.6	36.0	36.6	14.8	15.2	15.3	15.7	16.3
	8H	35.7	36.1	36.2	36.6	37.2	15.0	15.4	15.5	15.9	16.5

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0