

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

ES03SMFxx 930 013 xxx WW WF LW MW
Nom 3 inch diam round recessed wall wash estimator

Test Number

SP-00876

Test Date

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

Summary of Results

Power

Input Watts	14.5 W
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Lumen Output

Output Lumens	480
Efficacy	33.07 lm/W

Luminous Dimensions

0° - 180° Size	0.22
90° - 270° Size	0.22
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.52
Two luminaires, plane 90°	0.81
Four luminaires	1.07

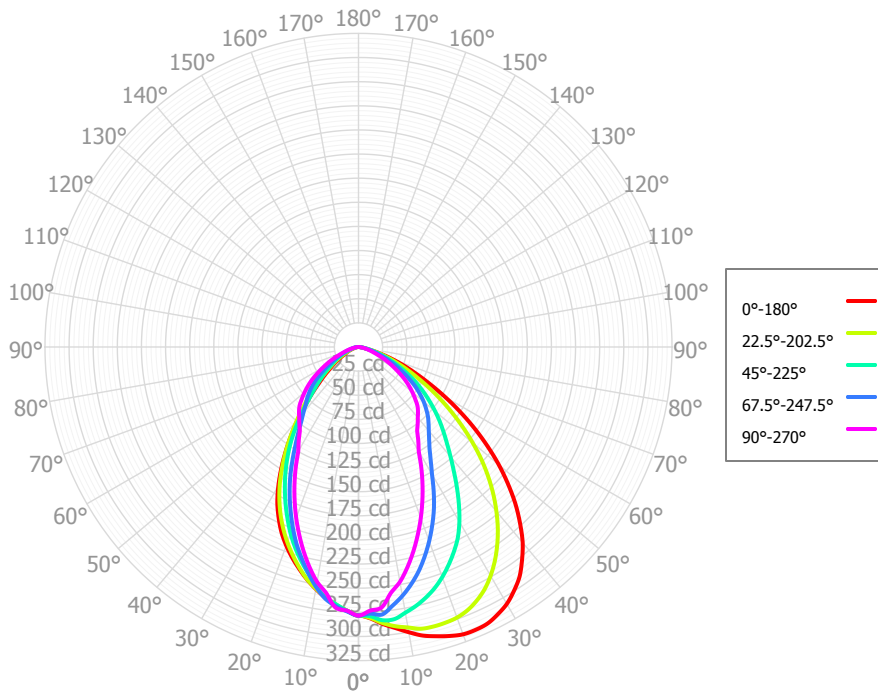
Full Beam Angle

0° - 180°	85°
90° - 270°	49°

IES File Header Contents

Keyword	Value
TEST	SP-00876
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/6/2019
UPDATE	7/26/2019
LUMCAT	ES03SMFxx 930 013 xxx WW WF LW MW
LUMINAIRE	Nom 3 inch diam round recessed wall wash estimator
LAMPCAT	N/A
LAMP	N/A; CRI: 90
OTHER	Asymmetrical Beam: 83.8 degrees x 51.5 degrees
OTHER	CCT Output Multipliers: 27HK x 0.97
OTHER	This report prepared by Spectrum Lighting
_CRI	90
_CCTMULT	27HK x 0.97
_LAMPMULT	7L x 0.49

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	26.64	5.55%	90.00° - 100.00°	0.14	0.03%
10.00° - 20.00°	69.96	14.58%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	94.97	19.79%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	96.65	20.14%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	83.60	17.42%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	60.45	12.60%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	33.00	6.88%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	12.08	2.52%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.50	0.52%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	479.85	100.00%	0.00° - 180.00°	479.85	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°
0.00°	278.45	278.45	278.45	278.45	278.45	278.45	278.45	278.45	278.45
2.50°	281.62	281.19	279.35	276.66	273.63	274.35	273.67	273.57	273.58
5.00°	288.21	287.26	284.32	278.41	271.35	269.71	267.74	267.90	268.80
7.50°	293.89	291.97	284.55	270.48	257.15	263.24	261.97	261.52	262.16
10.00°	300.25	295.25	279.69	261.98	247.26	252.70	251.96	254.42	254.76
12.50°	306.38	299.15	274.96	252.00	234.01	240.03	240.58	246.56	246.80
15.00°	310.41	300.00	269.10	240.79	219.49	227.13	229.57	236.76	237.96
17.50°	314.11	299.68	262.22	227.90	204.22	213.82	218.16	226.44	228.84
20.00°	316.98	298.52	253.85	214.19	188.76	199.08	205.80	215.54	219.04
22.50°	317.35	295.36	244.30	199.80	172.90	183.92	192.39	203.85	208.36
25.00°	316.37	290.08	234.06	184.98	156.96	168.82	178.94	191.30	195.78
27.50°	312.52	283.12	222.98	168.80	140.95	153.50	165.27	177.67	182.25
30.00°	307.53	273.87	209.17	152.38	124.93	137.41	151.61	163.03	166.10
32.50°	299.87	263.01	193.73	139.25	115.33	122.15	137.65	147.01	148.78
35.00°	290.97	250.70	177.86	128.35	106.04	109.03	123.42	130.78	131.17
37.50°	278.48	237.22	162.34	120.23	100.77	97.45	108.61	114.65	113.75
40.00°	264.80	222.40	148.37	113.34	95.62	88.76	93.31	99.39	97.11
42.50°	247.89	206.84	135.80	107.49	91.29	81.15	79.76	85.47	81.16
45.00°	230.07	190.22	124.70	101.77	86.49	75.21	68.17	72.69	67.92
47.50°	210.24	172.97	114.27	95.14	79.70	69.00	58.84	61.59	55.61
50.00°	189.78	154.56	103.70	88.23	72.85	62.33	51.15	51.31	46.40
52.50°	168.17	136.13	93.25	80.36	65.81	55.03	44.11	42.42	37.87
55.00°	146.45	118.14	83.25	72.28	58.40	47.15	37.41	34.99	31.88
57.50°	124.70	100.67	73.29	63.24	50.20	39.75	31.97	29.22	26.08
60.00°	103.80	84.20	63.20	54.32	42.49	32.98	27.42	23.88	20.51
62.50°	84.05	68.87	53.47	45.87	35.56	27.32	23.08	19.13	15.69
65.00°	66.69	55.96	44.41	37.70	28.74	22.44	18.86	15.23	13.20
67.50°	52.06	43.92	35.81	30.21	22.04	18.27	15.12	12.20	10.91
70.00°	38.70	33.30	27.51	23.35	16.87	14.57	11.78	9.81	8.43
72.50°	26.58	23.86	20.53	17.79	13.10	11.52	9.39	7.83	6.25
75.00°	16.78	16.54	14.85	12.88	9.99	8.84	7.62	6.02	4.67
77.50°	8.17	10.29	10.34	9.00	7.34	6.70	5.99	4.44	3.35
80.00°	4.27	5.90	6.62	5.78	4.77	4.82	4.53	3.30	2.36
82.50°	1.90	3.08	4.00	3.48	2.23	3.52	3.35	2.36	1.65
85.00°	1.18	1.74	2.33	2.03	1.69	2.40	2.40	1.60	1.19
87.50°	1.05	1.23	1.36	1.28	1.42	1.71	1.59	1.12	1.12
90.00°	0.00	0.87	1.15	1.19	0.85	1.23	1.02	1.10	1.00

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	0	571	571	571	571	558	558	558	558	533	533	533	511	511	511	490	490	480
	1	533	514	497	483	520	503	488	475	483	471	460	465	455	446	448	440	431
	2	493	460	433	410	481	451	426	405	435	414	396	420	402	387	406	392	383
	3	456	413	380	354	445	406	375	350	392	366	345	380	357	339	368	349	342
	4	423	373	337	309	412	367	333	307	355	326	303	345	319	299	335	313	307
	5	393	338	301	273	383	333	298	271	324	293	269	315	287	266	306	282	277
	6	366	309	271	244	357	305	269	243	296	264	241	289	260	239	282	256	251
	7	342	283	246	219	334	280	244	219	273	241	217	266	237	216	260	234	230
	8	320	261	224	199	313	258	223	198	252	220	197	246	217	196	241	215	211
	9	301	242	206	182	294	239	205	181	234	203	180	229	200	180	225	198	195
	10	283	225	190	167	277	223	189	167	218	187	166	214	185	165	210	184	181

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	9.2 fc	10.0 ft
6.5 ft	6.6 fc	11.8 ft
7.5 ft	5.0 fc	13.6 ft
8.0 ft	4.4 fc	14.5 ft
10.0 ft	2.8 fc	18.2 ft
12.0 ft	1.9 fc	21.8 ft
14.0 ft	1.4 fc	25.4 ft
16.0 ft	1.1 fc	29.1 ft
20.0 ft	0.7 fc	36.3 ft
24.0 ft	0.5 fc	43.6 ft
28.0 ft	0.4 fc	50.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	61,925	61,925	61,925
45.00°	72,360	39,220	27,203
55.00°	56,785	32,278	22,644
65.00°	35,094	23,367	15,122
75.00°	14,415	12,764	8,587
85.00°	3,016	5,948	4,323

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	26.5	27.9	26.8	28.2	28.5	20.0	21.5	20.4	21.8	22.1
	3H	27.3	28.6	27.7	28.9	29.3	21.0	22.3	21.4	22.6	23.0
	4H	27.5	28.6	27.9	29.0	29.4	21.3	22.5	21.7	22.8	23.2
	6H	27.4	28.5	27.8	28.9	29.3	21.5	22.6	21.9	22.9	23.3
	8H	27.4	28.4	27.8	28.8	29.2	21.5	22.5	21.9	22.9	23.3
	12H	27.4	28.4	27.8	28.7	29.2	21.5	22.5	21.9	22.8	23.3
4H	2H	26.6	27.8	27.0	28.1	28.5	20.2	21.4	20.6	21.7	22.1
	3H	27.5	28.5	28.0	28.9	29.3	21.3	22.3	21.7	22.7	23.1
	4H	27.7	28.6	28.2	29.0	29.5	21.7	22.6	22.1	23.0	23.4
	6H	27.7	28.5	28.2	28.9	29.4	21.9	22.7	22.4	23.1	23.6
	8H	27.7	28.4	28.2	28.9	29.3	22.0	22.7	22.4	23.1	23.6
	12H	27.7	28.3	28.2	28.8	29.2	22.0	22.6	22.5	23.1	23.6
8H	4H	27.7	28.4	28.2	28.9	29.3	21.7	22.4	22.2	22.9	23.3
	6H	27.7	28.3	28.2	28.8	29.3	22.0	22.6	22.5	23.1	23.6
	8H	27.7	28.2	28.2	28.7	29.2	22.1	22.6	22.6	23.1	23.6
	12H	27.7	28.1	28.2	28.6	29.2	22.2	22.6	22.7	23.1	23.7
12H	4H	27.7	28.3	28.2	28.8	29.2	21.7	22.3	22.2	22.8	23.3
	6H	27.7	28.2	28.2	28.7	29.2	22.0	22.5	22.5	23.0	23.5
	8H	27.7	28.1	28.2	28.6	29.2	22.1	22.6	22.6	23.1	23.6

Corrected UGR values based on total output lumens

SHR = 1.0