

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

AS01SQ IC 935 007 DL FL MW xx
Nom 1" square recessed downlight

Test Number

SP-00828_M-7L

Test Date

3/7/2019

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

Summary of Results

Power

Input Watts	7.7 W
-------------	-------

Lumen Output

Output Lumens	382
Efficacy	49.58 lm/W

Luminous Dimensions

0° - 180° Size	0.07
90° - 270° Size	0.07
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.55
Two luminaires, plane 90°	0.56
Four luminaires	0.6

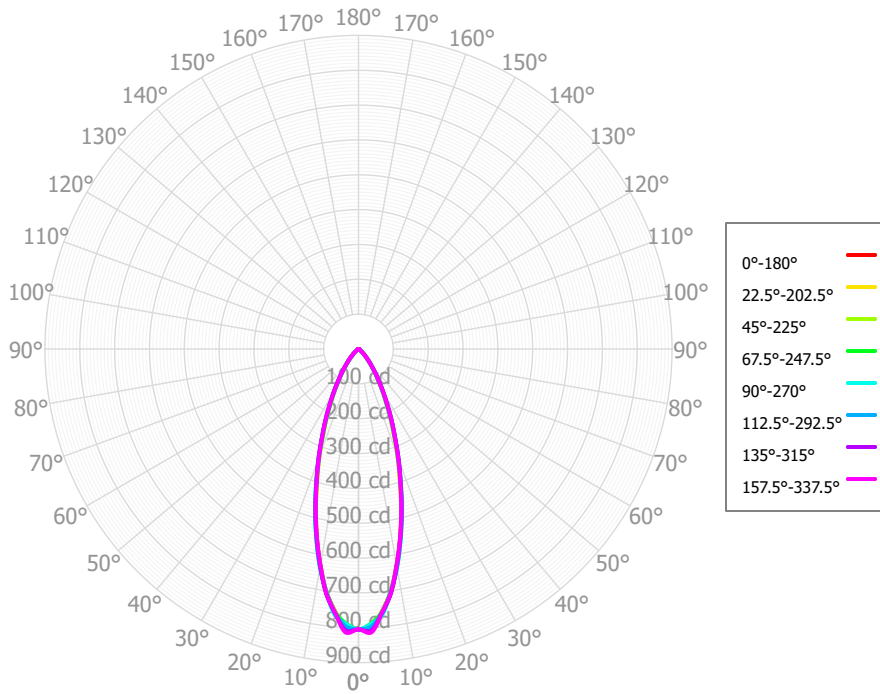
Full Beam Angle

0° - 180°	34°
90° - 270°	35°

IES File Header Contents

Keyword	Value
TEST	SP-00828_M-7L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	3/7/2019
ISSUEDATE	12/29/2021
LUMCAT	AS01SQ IC 935 007 DL FL MW xx
LUMINAIRE	Nom 1" square recessed downlight
OTHER	Beam angle: 33.3 degrees
LAMP	N/A
LAMPCAT	N/A, CRI: 90 min
OTHER	CCT Multipliers: 927 x 0.96, 930 x 0.99, 940 x 1.02
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting
_CRI	90+
_CCTMULT	927 x 0.96, 930 x 0.99, 940 x 1.02
_LAMPMULT	004 x 0.56

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	69.34	18.16%	90.00° - 100.00°	0.08	0.02%
10.00° - 20.00°	130.36	34.14%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	100.56	26.34%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	52.31	13.70%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.40	5.08%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	5.01	1.31%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.08	0.55%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.41	0.37%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.25	0.33%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	381.72	99.98%	0.00° - 180.00°	381.80	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°	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92	804.92
2.50°	804.29	803.77	797.13	789.88	791.51	798.41	809.82	815.15	804.29	803.77	797.13	789.88	791.51	798.41	809.82	815.15	804.29
5.00°	758.60	759.56	759.60	760.51	768.46	763.74	762.58	762.27	758.60	759.56	759.60	760.51	768.46	763.74	762.58	762.27	758.60
7.50°	704.48	708.13	705.68	703.76	705.58	707.10	709.51	707.61	704.48	708.13	705.68	703.76	705.58	707.10	709.51	707.61	704.48
10.00°	629.31	632.35	633.30	635.06	637.36	635.71	632.55	630.43	629.31	632.35	633.30	635.06	637.36	635.71	632.55	630.43	629.31
12.50°	552.37	554.61	555.15	557.71	558.92	557.32	554.50	553.14	552.37	554.61	555.15	557.71	558.92	557.32	554.50	553.14	552.37
15.00°	472.07	474.17	475.90	479.28	479.98	480.05	477.10	475.17	472.07	474.17	475.90	479.28	479.98	480.05	477.10	475.17	472.07
17.50°	396.95	394.41	396.41	400.27	405.11	403.17	400.72	399.57	396.95	394.41	396.41	400.27	405.11	403.17	400.72	399.57	396.95
20.00°	329.26	327.96	329.39	331.73	331.50	336.54	335.94	333.51	329.26	327.96	329.39	331.73	331.50	336.54	335.94	333.51	329.26
22.50°	269.42	263.60	263.95	267.42	273.89	272.42	273.40	271.80	269.42	263.60	263.95	267.42	273.89	272.42	273.40	271.80	269.42
25.00°	218.21	215.12	214.85	216.63	218.42	222.86	223.81	222.16	218.21	215.12	214.85	216.63	218.42	222.86	223.81	222.16	218.21
27.50°	174.69	169.23	166.73	169.85	176.32	175.48	177.23	176.48	174.69	169.23	166.73	169.85	176.32	175.48	177.23	176.48	174.69
30.00°	137.83	134.90	133.86	135.17	136.81	141.03	141.97	138.84	137.83	134.90	133.86	135.17	136.81	141.03	141.97	138.84	137.83
32.50°	107.38	103.36	101.88	102.84	107.31	107.47	109.67	106.62	107.38	103.36	101.88	102.84	107.31	107.47	109.67	106.62	107.38
35.00°	81.16	80.58	80.39	80.58	80.61	84.96	85.27	82.92	81.16	80.58	80.39	80.58	80.61	84.96	85.27	82.92	81.16
37.50°	61.31	60.46	60.11	59.40	61.71	62.97	64.18	62.85	61.31	60.46	60.11	59.40	61.71	62.97	64.18	62.85	61.31
40.00°	44.63	46.32	46.94	45.39	45.00	48.14	49.58	47.12	44.63	46.32	46.94	45.39	45.00	48.14	49.58	47.12	44.63
42.50°	31.89	33.65	34.76	31.80	32.77	34.07	37.07	33.95	31.89	33.65	34.76	31.80	32.77	34.07	37.07	33.95	31.89
45.00°	20.63	23.47	26.46	23.45	21.93	25.24	27.62	23.12	20.63	23.47	26.46	23.45	21.93	25.24	27.62	23.12	20.63
47.50°	13.46	15.72	19.11	15.43	13.22	17.00	19.90	15.21	13.46	15.72	19.11	15.43	13.22	17.00	19.90	15.21	13.46
50.00°	7.34	11.15	14.37	10.67	7.54	11.41	14.18	9.39	7.34	11.15	14.37	10.67	7.54	11.41	14.18	9.39	7.34
52.50°	5.41	7.39	10.15	6.39	5.48	6.74	9.90	6.14	5.41	7.39	10.15	6.39	5.48	6.74	9.90	6.14	5.41
55.00°	4.17	4.42	6.95	4.76	4.04	4.81	6.91	4.28	4.17	4.42	6.95	4.76	4.04	4.81	6.91	4.28	4.17
57.50°	3.46	3.05	4.56	3.35	3.17	3.37	4.83	3.25	3.46	3.05	4.56	3.35	3.17	3.37	4.83	3.25	3.46
60.00°	2.80	2.89	3.37	2.78	2.54	2.97	3.36	2.54	2.80	2.89	3.37	2.78	2.54	2.97	3.36	2.54	2.80
62.50°	2.36	2.71	2.52	2.30	2.07	2.57	2.56	2.19	2.36	2.71	2.52	2.30	2.07	2.57	2.56	2.19	2.36
65.00°	1.93	2.52	2.04	2.03	1.79	2.16	2.11	1.95	1.93	2.52	2.04	2.03	1.79	2.16	2.11	1.95	1.93
67.50°	1.74	1.99	1.69	1.79	1.63	1.80	1.82	1.63	1.74	1.99	1.69	1.79	1.63	1.80	1.82	1.63	1.74
70.00°	1.57	1.36	1.43	1.61	1.59	1.48	1.57	1.36	1.57	1.36	1.43	1.61	1.59	1.48	1.57	1.36	1.57
72.50°	1.49	1.36	1.36	1.53	1.56	1.39	1.45	1.33	1.49	1.36	1.36	1.53	1.56	1.39	1.45	1.33	1.49
75.00°	1.39	1.29	1.30	1.50	1.33	1.31	1.37	1.30	1.39	1.29	1.30	1.50	1.33	1.31	1.37	1.30	1.39
77.50°	1.25	1.16	1.15	1.31	1.19	1.08	1.29	1.26	1.25	1.16	1.15	1.31	1.19	1.08	1.29	1.26	1.25
80.00°	1.19	1.22	1.13	1.30	1.16	1.20	1.00	1.17	1.19	1.22	1.13	1.30	1.16	1.20	1.00	1.17	1.19
82.50°	1.17	1.29	1.24	1.21	1.26	1.36	1.28	1.22	1.17	1.29	1.24	1.21	1.26	1.36	1.28	1.22	1.17
85.00°	1.19	1.30	1.47	1.18	1.26	1.06	1.26	1.17	1.19	1.30	1.47	1.18	1.26	1.06	1.26	1.17	1.19
87.50°	0.94	1.17	1.21	1.41	1.34	1.13	1.07	1.44	0.94	1.17	1.21	1.41	1.34	1.13	1.07	1.44	0.94
90.00°	0.54	0.56	0.60	0.58	0.71	0.63	0.43	0.74	0.54	0.56	0.60	0.58	0.71	0.63	0.43	0.74	0.54
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	455	455	455	455	444	444	444	444	424	424	424	406	406	406	390	390	382
	1	434	424	415	407	425	416	408	401	401	394	388	386	381	377	373	369	362
	2	415	397	383	371	407	391	378	367	379	368	359	367	359	351	357	350	343
	3	396	373	356	342	389	368	352	339	358	345	334	349	338	328	341	331	323
	4	379	352	333	318	372	348	330	316	340	324	312	332	319	308	325	314	308
	5	362	333	312	297	356	329	310	296	323	306	293	316	302	291	311	298	293
	6	346	315	295	280	341	312	293	279	307	290	277	302	287	275	297	284	279
	7	332	300	279	264	327	297	277	263	292	275	262	288	272	261	284	270	266
	8	318	285	264	250	314	283	263	250	279	261	249	275	259	248	272	258	253
	9	306	272	252	238	302	270	251	238	267	249	237	264	248	236	261	246	242
	10	294	260	240	227	290	259	239	226	256	238	226	253	237	225	250	235	232

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	26.6 fc	3.4 ft
6.5 ft	19.1 fc	4.0 ft
7.5 ft	14.3 fc	4.6 ft
8.0 ft	12.6 fc	4.9 ft
10.0 ft	8.0 fc	6.2 ft
12.0 ft	5.6 fc	7.4 ft
14.0 ft	4.1 fc	8.6 ft
16.0 ft	3.1 fc	9.9 ft
20.0 ft	2.0 fc	12.3 ft
24.0 ft	1.4 fc	14.8 ft
28.0 ft	1.0 fc	17.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1768176	1768176	1768176
45.00°	64105	82196	68123
55.00°	15963	26637	15487
65.00°	10020	10599	9326
75.00°	11774	11009	11300
85.00°	30048	37051	31735

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	11.5	12.5	11.9	12.8	13.2	11.8	12.8	12.2	13.1	13.4
	3H	12.8	13.7	13.2	14.0	14.4	13.0	13.8	13.4	14.2	14.5
	4H	13.5	14.4	14.0	14.7	15.1	13.7	14.5	14.1	14.9	15.3
	6H	14.5	15.2	14.9	15.6	16.0	14.6	15.3	15.0	15.7	16.1
	8H	15.1	15.8	15.5	16.2	16.6	15.2	15.9	15.7	16.3	16.7
	12H	15.9	16.6	16.4	17.0	17.4	16.1	16.8	16.5	17.1	17.6
4H	2H	11.9	12.7	12.3	13.1	13.5	12.1	12.9	12.5	13.3	13.7
	3H	13.4	14.0	13.8	14.4	14.8	13.6	14.2	14.0	14.6	15.0
	4H	14.3	14.9	14.7	15.3	15.8	14.5	15.1	15.0	15.5	16.0
	6H	15.5	16.0	16.0	16.4	16.9	15.6	16.1	16.1	16.6	17.1
	8H	16.3	16.7	16.8	17.2	17.7	16.5	16.9	16.9	17.4	17.8
	12H	17.3	17.7	17.8	18.2	18.7	17.5	17.9	18.0	18.4	18.9
8H	4H	14.6	15.1	15.1	15.6	16.0	14.8	15.3	15.3	15.8	16.2
	6H	16.1	16.5	16.6	17.0	17.5	16.3	16.6	16.8	17.1	17.6
	8H	17.2	17.5	17.7	18.0	18.5	17.3	17.7	17.9	18.2	18.7
	12H	18.5	18.8	19.0	19.3	19.9	18.6	18.9	19.2	19.4	20.0
12H	4H	14.7	15.1	15.2	15.6	16.1	14.9	15.3	15.4	15.8	16.3
	6H	16.3	16.7	16.9	17.1	17.7	16.5	16.8	17.0	17.3	17.8
	8H	17.6	17.8	18.1	18.3	18.9	17.7	18.0	18.2	18.5	19.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0