

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR12SQLEDOA 11L 35K xx FT1212 MW xx FO
12" square recessed LED downlight, flush extruded aluminum door

Test Number

SP-01642

Test Date

2/12/2024

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

Summary of Results

Power

Input Watts	10.6 W
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Lumen Output

Output Lumens	744
Efficacy	70.18 lm/W

Luminous Dimensions

0° - 180° Size	0.85
90° - 270° Size	0.85
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.21
Two luminaires, plane 90°	1.21
Four luminaires	1.33

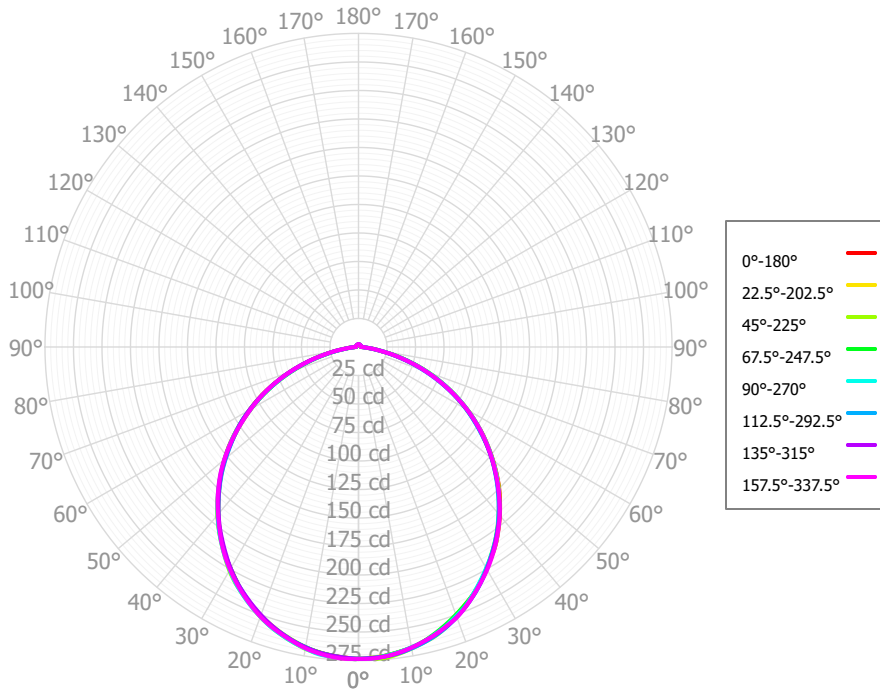
Full Beam Angle

0° - 180°	108°
90° - 270°	108°

IES File Header Contents

Keyword	Value
TEST	SP-01642
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/12/2024
ISSUEDATE	2/28/2024
LUMCAT	SR12SQLEDOA 11L 35K xx FT1212 MW xx FO
LUMINAIRE	12" square recessed LED downlight, flush extruded aluminum door
OTHER	Beam Angle: 108 deg
OTHER	80 CRI, 3500K tested
OTHER	CCT Output Multipliers: 30K x .97, 40K x 1.02, 50K x 1.01
OTHER	Total luminaire wattages are approximate
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	26.23	3.53%	90.00° - 100.00°	2.38	0.32%
10.00° - 20.00°	73.50	9.88%	100.00° - 110.00°	2.24	0.30%
20.00° - 30.00°	110.03	14.79%	100.00° - 120.00°	4.33	0.58%
30.00° - 40.00°	130.73	17.57%	120.00° - 130.00°	1.90	0.26%
40.00° - 50.00°	133.31	17.92%	130.00° - 140.00°	1.65	0.22%
50.00° - 60.00°	117.69	15.82%	140.00° - 150.00°	1.33	0.18%
60.00° - 70.00°	85.90	11.55%	150.00° - 160.00°	0.99	0.13%
70.00° - 80.00°	43.32	5.82%	160.00° - 170.00°	0.61	0.08%
80.00° - 90.00°	9.75	1.31%	170.00° - 180.00°	0.21	0.03%
0.00° - 90.00°	730.45	98.20%	0.00° - 180.00°	743.86	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°	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53	273.53
2.50°	273.09	272.56	273.94	273.50	273.59	272.85	272.73	273.81	272.69	272.71	273.51	272.98	273.17	272.88	273.10	273.68	273.09
5.00°	271.85	271.80	273.60	271.79	272.01	271.73	271.64	272.78	271.54	271.91	272.66	271.64	272.69	272.30	272.41	272.43	271.85
7.50°	269.96	270.03	271.48	269.85	270.07	270.09	270.02	270.98	269.95	269.87	271.13	269.90	271.64	270.97	270.69	270.34	269.96
10.00°	267.72	267.94	268.57	267.67	267.45	267.35	267.48	268.36	267.73	267.36	268.85	267.32	268.60	268.50	267.92	267.73	267.72
12.50°	264.55	264.87	265.42	264.36	264.70	264.08	264.24	264.77	264.63	263.76	265.28	264.16	265.35	265.55	264.73	264.50	264.55
15.00°	260.94	261.54	262.17	259.94	260.60	260.06	260.15	260.89	260.86	259.88	261.37	260.31	261.45	261.92	261.15	260.91	260.94
17.50°	256.14	256.12	257.10	255.11	256.29	255.70	255.47	256.69	256.22	255.40	256.95	256.04	257.16	257.48	256.96	256.74	256.14
20.00°	250.84	250.22	251.39	249.89	251.02	250.43	250.09	251.66	251.11	250.50	251.86	250.83	251.78	251.99	252.25	252.26	250.84
22.50°	244.96	244.48	245.45	244.44	245.62	244.79	244.27	245.79	245.45	244.81	245.83	245.08	246.17	246.14	246.36	246.28	244.96
25.00°	238.87	238.79	239.45	238.79	238.54	238.36	238.14	239.44	238.94	238.70	239.76	238.80	240.00	239.85	239.58	239.59	238.87
27.50°	231.96	231.81	232.28	231.99	231.30	231.65	231.83	232.66	231.50	231.86	233.65	232.24	233.41	232.77	232.42	232.70	231.96
30.00°	224.75	224.62	224.79	224.32	223.98	224.38	224.28	225.46	224.23	224.65	226.51	224.86	225.87	224.84	225.00	225.73	224.75
32.50°	217.46	217.43	217.43	216.50	216.65	216.92	216.09	217.89	217.11	216.84	218.17	217.09	218.08	216.95	217.16	218.09	217.46
35.00°	210.14	210.24	210.10	208.59	208.63	208.86	207.92	209.49	209.36	208.75	209.81	208.77	209.78	209.11	209.07	210.21	210.14
37.50°	201.67	201.32	201.14	200.11	200.57	200.63	199.76	200.46	201.02	200.28	201.40	200.22	201.22	200.52	200.77	201.53	201.67
40.00°	192.90	192.20	191.83	191.27	191.56	191.33	190.91	191.64	192.12	191.42	192.46	191.06	192.20	191.25	192.36	192.59	192.90
42.50°	183.70	182.66	182.93	182.15	182.52	181.76	181.76	182.97	182.74	182.02	182.99	181.68	182.99	181.79	182.88	183.01	183.70
45.00°	174.40	173.09	174.09	172.87	173.06	172.03	172.48	173.77	173.19	172.42	173.33	172.36	173.48	172.17	172.83	173.24	174.40
47.50°	164.21	163.02	163.84	163.02	163.58	162.25	163.16	164.24	163.50	162.56	163.48	163.06	163.67	162.46	162.70	163.18	164.21
50.00°	153.85	152.93	153.39	152.88	153.32	151.88	152.84	153.83	153.53	152.49	153.23	152.83	153.42	152.69	152.52	153.03	153.85
52.50°	143.34	142.34	142.71	142.30	143.04	141.41	142.18	142.91	143.37	142.20	142.64	142.30	143.00	142.03	142.16	142.59	143.34
55.00°	132.81	131.73	131.99	131.51	132.35	131.47	131.76	131.56	132.52	131.57	132.04	131.40	132.38	130.74	131.71	132.08	132.81
57.50°	121.66	121.13	121.22	120.49	121.62	121.61	121.42	119.99	121.24	120.60	121.42	120.38	121.31	119.82	120.84	121.11	121.66
60.00°	110.43	110.52	110.44	109.37	110.50	110.00	110.29	109.06	110.19	109.27	110.31	109.08	109.70	109.11	109.82	110.05	110.43
62.50°	99.13	98.72	99.04	98.25	99.36	98.20	98.97	98.43	99.28	97.61	98.86	97.70	98.01	97.67	98.32	98.48	99.13
65.00°	87.82	86.94	87.60	87.14	87.92	86.69	87.47	87.14	87.75	86.18	87.25	85.87	86.23	85.82	86.65	86.83	87.82
67.50°	76.08	75.55	76.48	75.63	76.45	75.21	75.93	75.58	75.88	74.95	75.53	73.95	74.68	73.87	75.05	75.13	76.08
70.00°	64.29	64.15	65.38	63.99	64.78	63.42	64.44	63.82	64.09	63.45	63.74	61.92	63.36	61.89	63.46	63.44	64.29
72.50°	52.59	52.56	53.19	52.73	53.14	51.62	52.96	52.00	52.34	51.77	51.90	49.87	51.87	50.29	51.90	51.88	52.59
75.00°	40.89	41.03	40.99	41.58	41.65	40.57	41.69	40.89	41.27	40.66	40.62	38.94	40.22	38.87	40.34	40.34	40.89
77.50°	30.62	30.07	30.53	30.65	30.50	29.54	30.46	30.03	30.48	29.95	29.63	28.17	29.45	28.71	30.09	29.73	30.62
80.00°	20.40	19.53	20.18	19.78	21.10	20.57	21.33	20.94	21.49	20.79	20.65	19.58	19.44	19.07	20.16	19.21	20.40
82.50°	13.73	12.78	13.37	12.92	12.59	11.68	12.49	12.40	13.18	12.60	12.61	11.23	12.27	12.38	13.44	12.87	13.73
85.00°	7.16	6.59	6.80	6.99	8.13	7.87	8.02	7.75	8.18	7.55	7.66	7.22	7.36	6.80	7.36	6.78	7.16
87.50°	4.79	4.33	4.56	4.41	4.34	4.16	4.03	4.13	4.31	4.31	4.00	3.58	4.45	4.16	4.77	4.56	4.79
90.00°	2.51	2.37	2.48	2.48	3.17	3.11	2.99	2.85	2.84	2.78	2.58	2.71	3.00	2.51	2.78	2.47	2.51
92.50°	2.38	2.16	2.22	2.14	2.25	2.11	2.19	2.11	2.10	2.16	2.01	1.99	2.35	2.10	2.33	2.24	2.38
95.00°	2.27	1.99	2.00	2.05	2.24	2.08	2.15	1.98	1.93	1.98	1.90	1.92	2.23	2.07	2.11	2.02	2.27
97.50°	2.31	2.03	2.12	2.00	2.23	2.05	2.15	1.96	1.91	2.01	1.93	1.87	2.15	2.09	2.18	2.04	2.31
100.00°	2.34	2.04	2.22	1.95	2.25	2.02	2.22	2.05	2.01	2.01	1.93	2.00	2.08	2.13	2.29	2.05	2.34
102.50°	2.32	1.93	2.16	2.02	2.24	2.00	2.30	2.16	2.13	2.00	1.92	2.13	2.17	2.09	2.31	2.11	2.32
105.00°	2.28	1.84	2.09	2.10	2.17	1.98	2.27	2.22	2.22	1.97	1.90	2.11	2.34	2.05	2.32	2.16	2.28

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	ptc	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	882	882	882	882	860	860	860	860	819	819	819	781	781	781	747	747	730
	1	809	775	744	717	788	757	729	704	723	700	679	692	673	656	663	648	633
	2	737	678	628	587	717	662	617	579	634	596	563	608	576	549	584	558	544
	3	673	596	537	490	654	584	529	485	560	513	474	538	498	464	517	483	472
	4	617	529	465	416	599	518	459	412	498	446	405	479	435	398	462	423	413
	5	568	473	408	359	551	464	403	356	447	393	351	431	383	346	416	375	366
	6	524	427	361	314	509	419	357	312	404	349	308	390	342	304	378	334	327
	7	486	387	323	277	473	380	319	276	368	313	273	356	307	270	345	301	294
	8	453	353	291	248	441	348	288	246	337	283	244	327	278	242	317	273	267
	9	423	324	264	223	412	320	262	222	310	257	220	301	253	218	293	249	244
	10	397	299	241	202	387	295	239	202	287	236	200	279	232	199	272	228	224

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	9.0 fc	15.1 ft
6.5 ft	6.5 fc	17.9 ft
7.5 ft	4.9 fc	20.6 ft
8.0 ft	4.3 fc	22.0 ft
10.0 ft	2.7 fc	27.5 ft
12.0 ft	1.9 fc	33.0 ft
14.0 ft	1.4 fc	38.5 ft
16.0 ft	1.1 fc	44.0 ft
20.0 ft	0.7 fc	55.0 ft
24.0 ft	0.5 fc	66.1 ft
28.0 ft	0.3 fc	77.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	4075	4075	4075
45.00°	3674	3668	3646
55.00°	3450	3428	3438
65.00°	3096	3088	3099
75.00°	2354	2359	2398
85.00°	1224	1162	1390

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	16.3	17.9	16.7	18.2	18.6	16.3	17.9	16.7	18.2	18.6
	3H	17.9	19.4	18.3	19.7	20.1	17.9	19.3	18.3	19.7	20.1
	4H	18.5	19.8	18.9	20.2	20.6	18.4	19.8	18.9	20.1	20.6
	6H	18.8	20.0	19.2	20.4	20.8	18.7	19.9	19.2	20.3	20.8
	8H	18.8	20.0	19.3	20.4	20.9	18.8	19.9	19.2	20.4	20.8
	12H	18.9	20.0	19.3	20.4	20.9	18.8	19.9	19.3	20.3	20.8
4H	2H	16.9	18.2	17.3	18.6	19.0	16.9	18.2	17.3	18.6	19.0
	3H	18.7	19.8	19.2	20.3	20.7	18.7	19.8	19.1	20.2	20.7
	4H	19.3	20.3	19.8	20.8	21.3	19.3	20.3	19.8	20.8	21.2
	6H	19.7	20.6	20.2	21.1	21.6	19.7	20.6	20.2	21.0	21.5
	8H	19.8	20.6	20.3	21.1	21.6	19.8	20.6	20.2	21.1	21.6
	12H	19.9	20.6	20.4	21.1	21.6	19.8	20.5	20.3	21.1	21.6
8H	4H	19.6	20.4	20.1	20.9	21.4	19.5	20.3	20.0	20.8	21.3
	6H	20.0	20.7	20.5	21.2	21.7	20.0	20.7	20.5	21.2	21.7
	8H	20.2	20.8	20.7	21.3	21.8	20.1	20.7	20.6	21.2	21.8
	12H	20.2	20.8	20.8	21.3	21.9	20.2	20.7	20.7	21.2	21.8
12H	4H	19.6	20.3	20.1	20.8	21.3	19.5	20.3	20.0	20.8	21.3
	6H	20.0	20.7	20.6	21.1	21.7	20.0	20.6	20.6	21.1	21.7
	8H	20.2	20.7	20.7	21.3	21.9	20.1	20.7	20.7	21.2	21.8

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0