

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR12SQLEDOA 11L 35K xx RT1212 MW xx FO
12" square recessed LED downlight, regressed extruded aluminum door

Test Number

SP-01643

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	861
Efficacy	81.25 lm/W

Luminous Dimensions

0° - 180° Size	0.88
90° - 270° Size	0.88
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.24
Two luminaires, plane 90°	1.15
Four luminaires	1.31

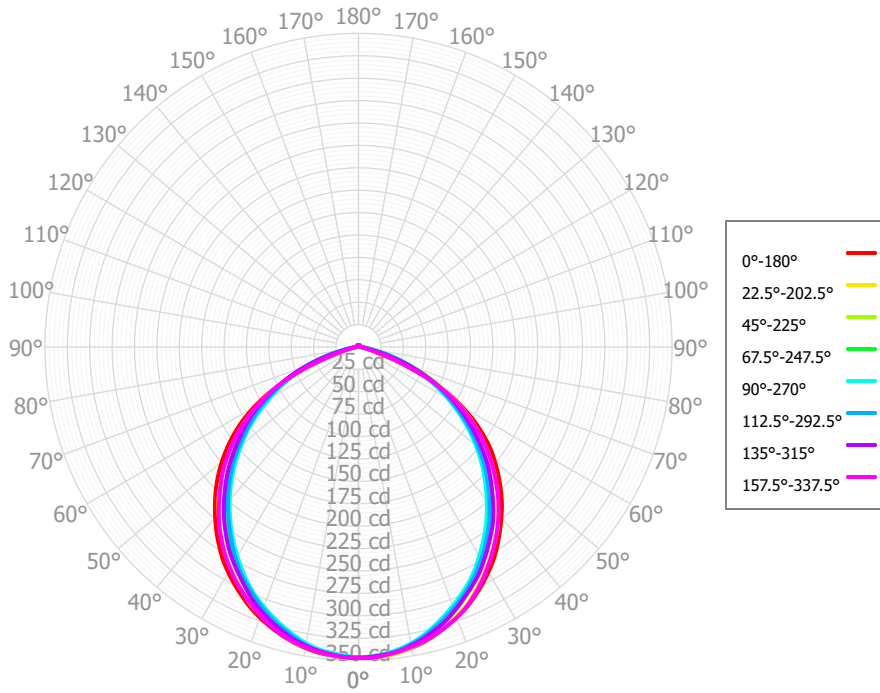
Full Beam Angle

0° - 180°	109°
90° - 270°	99°

IES File Header Contents

Keyword	Value
TEST	SP-01643
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/12/2024
ISSUEDATE	2/28/2024
LUMCAT	SR12SQLEDOA 11L 35K xx RT1212 MW xx FO
LUMINAIRE	12" square recessed LED downlight, regressed extruded aluminum door
OTHER	Beam Angle: 109 x 99 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°	33.21	3.86%	90.00° - 100.00°	2.17	0.25%
10.00° - 20.00°	92.45	10.73%	100.00° - 110.00°	2.04	0.24%
20.00° - 30.00°	137.25	15.94%	100.00° - 120.00°	3.95	0.46%
30.00° - 40.00°	161.20	18.72%	120.00° - 130.00°	1.75	0.20%
40.00° - 50.00°	161.56	18.76%	130.00° - 140.00°	1.52	0.18%
50.00° - 60.00°	137.97	16.02%	140.00° - 150.00°	1.24	0.14%
60.00° - 70.00°	89.44	10.38%	150.00° - 160.00°	0.92	0.11%
70.00° - 80.00°	30.07	3.49%	160.00° - 170.00°	0.56	0.06%
80.00° - 90.00°	5.80	0.67%	170.00° - 180.00°	0.19	0.02%
0.00° - 90.00°	848.95	98.57%	0.00° - 180.00°	861.25	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°	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94	346.94
2.50°	347.06	347.31	345.56	346.57	345.61	346.28	346.51	346.83	346.64	347.31	346.63	346.32	344.75	347.10	346.07	347.21	347.06
5.00°	345.75	345.95	343.83	344.53	343.60	344.66	344.44	345.22	345.64	345.19	344.90	344.05	342.80	344.77	344.61	345.21	345.75
7.50°	343.89	344.45	341.78	341.93	340.44	342.73	341.99	343.05	344.06	342.99	342.16	341.35	340.18	341.71	342.86	342.84	343.89
10.00°	340.88	340.53	338.28	337.13	336.10	338.01	338.50	340.12	341.17	340.04	338.79	337.34	335.83	337.23	338.68	339.90	340.88
12.50°	337.42	336.55	332.68	331.71	330.34	332.05	334.33	336.76	337.64	337.07	333.35	332.58	329.97	331.99	333.75	336.30	337.42
15.00°	332.51	331.50	327.03	325.54	323.19	325.60	328.36	331.91	332.73	331.33	326.69	325.66	323.37	325.35	327.70	331.73	332.51
17.50°	327.05	326.36	321.29	319.16	315.58	318.93	322.05	326.24	327.48	325.55	320.00	318.41	316.15	318.28	321.31	326.75	327.05
20.00°	321.04	319.99	314.45	310.65	307.53	310.94	314.88	319.34	321.56	318.93	313.30	310.21	308.56	310.47	313.39	321.17	321.04
22.50°	314.84	313.39	306.14	301.59	299.17	302.40	306.98	311.77	315.00	312.31	305.32	301.73	300.66	302.27	305.04	314.33	314.84
25.00°	307.12	304.21	297.25	291.95	290.53	293.49	297.32	303.74	307.20	303.17	296.63	292.51	291.33	293.40	296.72	305.75	307.12
27.50°	298.89	294.98	287.61	282.17	280.61	284.42	287.76	295.47	299.18	294.03	287.23	283.06	280.89	283.99	288.42	296.55	298.89
30.00°	290.00	285.16	277.62	271.93	269.55	273.71	278.44	286.17	290.76	284.91	277.46	273.02	270.17	273.67	278.30	286.51	290.00
32.50°	280.90	275.33	267.20	261.59	258.44	262.38	268.57	276.37	281.64	275.75	266.66	262.40	259.22	263.01	267.72	276.23	280.90
35.00°	270.30	265.31	256.70	250.45	247.27	250.65	257.49	265.78	271.22	265.03	255.35	250.42	247.76	251.80	257.14	265.64	270.30
37.50°	259.23	255.03	246.09	239.13	235.32	238.79	246.05	254.82	260.39	254.28	244.05	238.59	235.93	240.04	246.57	254.66	259.23
40.00°	248.11	242.56	234.25	226.83	222.73	226.71	233.82	242.67	248.83	242.78	232.77	227.13	223.71	227.44	234.08	243.21	248.11
42.50°	236.97	230.07	221.00	214.33	210.14	214.56	221.42	229.99	237.13	231.21	220.37	215.02	211.23	214.80	221.16	230.99	236.97
45.00°	224.56	217.42	208.02	201.45	197.55	201.85	208.66	217.57	225.16	217.96	207.46	201.49	198.07	202.13	208.57	217.86	224.56
47.50°	211.80	204.63	195.36	188.50	184.48	188.96	195.48	205.26	212.58	204.69	194.48	188.04	184.44	188.94	196.05	204.66	211.80
50.00°	198.63	190.83	181.89	174.81	171.04	175.03	181.49	191.47	198.99	190.89	181.46	174.76	171.08	175.01	181.82	191.39	198.63
52.50°	185.35	176.89	167.56	160.99	157.41	160.78	167.83	177.07	184.81	177.00	167.62	161.21	157.89	161.06	167.26	177.23	185.35
55.00°	169.28	162.10	153.21	147.34	143.65	147.31	154.78	162.04	169.70	161.71	153.42	147.12	143.57	147.09	153.08	162.08	169.28
57.50°	152.53	146.97	138.86	133.71	129.48	134.06	140.91	146.77	153.36	146.32	138.74	132.86	128.54	132.97	138.98	146.16	152.53
60.00°	133.46	129.92	124.53	119.18	115.03	119.74	125.57	130.04	135.17	129.49	123.85	118.24	114.16	118.62	124.12	129.43	133.46
62.50°	113.87	112.49	110.20	104.51	100.64	105.11	110.14	112.75	115.07	112.35	108.37	103.70	100.18	104.18	109.13	110.83	113.87
65.00°	89.72	92.95	94.99	89.77	86.30	90.92	94.59	92.62	92.20	91.46	92.65	89.32	85.89	89.62	92.66	90.32	89.72
67.50°	64.58	73.04	78.93	75.03	72.40	76.84	78.51	71.45	68.86	70.50	76.06	74.97	71.43	75.09	75.96	69.07	64.58
70.00°	43.37	51.20	62.48	61.39	58.80	62.48	61.57	50.76	44.84	48.71	59.13	60.70	57.16	60.59	58.47	47.08	43.37
72.50°	22.95	31.27	45.68	47.89	45.39	48.04	45.07	30.23	26.76	28.11	42.37	46.74	42.98	46.65	40.86	30.20	22.95
75.00°	14.84	20.37	30.83	35.05	32.10	34.93	29.30	19.51	16.63	19.13	25.68	33.34	30.59	33.37	27.57	18.17	14.84
77.50°	9.06	11.01	17.74	22.30	21.61	22.14	17.32	12.03	9.90	10.80	16.26	21.90	19.16	22.32	14.86	11.09	9.06
80.00°	6.93	8.55	9.98	14.97	12.81	14.82	11.14	8.63	7.57	8.29	9.32	13.69	12.24	13.82	10.02	8.54	6.93
82.50°	5.45	6.25	6.80	8.19	7.71	8.71	6.62	6.51	5.67	5.90	6.18	7.61	7.61	8.08	6.14	6.42	5.45
85.00°	4.14	4.65	4.52	5.55	4.78	5.59	4.53	4.82	4.30	4.42	4.26	4.93	4.86	5.42	4.51	4.70	4.14
87.50°	2.85	3.24	2.97	3.29	3.14	3.09	3.02	3.25	3.29	3.07	3.09	3.01	3.03	3.55	3.13	3.42	2.85
90.00°	2.35	2.59	2.15	2.54	2.21	2.33	2.35	2.54	2.71	2.59	2.13	2.26	2.20	2.53	2.55	2.52	2.35
92.50°	1.96	2.08	1.89	1.91	1.75	1.90	1.97	2.07	2.30	2.17	1.87	1.79	1.84	2.08	2.06	2.06	1.96
95.00°	1.98	2.09	1.79	1.87	1.54	1.90	1.97	1.92	2.11	2.10	1.81	1.74	1.82	2.19	1.93	1.96	1.98
97.50°	2.06	2.10	1.83	1.87	1.55	1.97	1.94	1.86	2.02	2.04	1.67	1.70	1.94	2.14	1.83	1.95	2.06
100.00°	1.97	2.06	1.90	1.94	1.67	1.95	1.89	1.94	2.03	2.06	1.52	1.65	2.00	1.93	1.80	2.02	1.97
102.50°	1.85	2.05	2.00	2.01	1.67	1.92	1.89	2.06	2.04	2.08	1.62	1.66	2.03	1.79	1.78	2.10	1.85
105.00°	1.84	2.10	2.07	1.99	1.61	1.89	1.96	2.08	2.03	2.09	1.79	1.74	1.99	1.74	1.80	2.20	1.84

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	1022	1022	1022	1022	997	997	997	997	950	950	950	907	907	907	868	868	849
	1	945	908	875	846	920	887	858	831	849	825	802	814	794	776	781	766	748
	2	865	800	747	702	842	783	734	692	751	710	675	722	688	658	694	666	651
	3	793	708	643	591	771	694	633	585	667	615	573	642	598	562	619	582	569
	4	728	631	560	505	708	619	552	501	596	538	493	575	525	485	555	513	501
	5	671	566	492	438	653	555	486	435	536	475	429	518	465	423	501	455	445
	6	621	511	437	384	604	502	432	382	486	424	377	470	415	373	456	407	398
	7	576	464	391	340	561	457	388	339	442	381	335	429	374	332	417	367	359
	8	537	424	353	304	523	418	350	303	406	344	301	394	339	298	383	333	327
	9	502	390	321	275	489	384	319	274	374	314	272	364	309	270	354	304	299
	10	471	360	294	250	459	355	292	249	346	287	247	337	283	245	329	280	274

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	11.5 fc	15.3 ft
6.5 ft	8.2 fc	18.1 ft
7.5 ft	6.2 fc	20.9 ft
8.0 ft	5.4 fc	22.3 ft
10.0 ft	3.5 fc	27.9 ft
12.0 ft	2.4 fc	33.4 ft
14.0 ft	1.8 fc	39.0 ft
16.0 ft	1.4 fc	44.6 ft
20.0 ft	0.9 fc	55.7 ft
24.0 ft	0.6 fc	66.9 ft
28.0 ft	0.4 fc	78.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	4822	4822	4822
45.00°	4414	4089	3883
55.00°	4102	3713	3481
65.00°	2951	3124	2838
75.00°	797	1656	1724
85.00°	660	720	763

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	17.0	18.5	17.4	18.9	19.2	16.2	17.8	16.6	18.1	18.5
	3H	17.8	19.2	18.2	19.5	19.9	17.5	18.9	18.0	19.3	19.7
	4H	17.8	19.1	18.2	19.5	19.9	17.9	19.1	18.3	19.5	19.9
	6H	17.8	19.0	18.2	19.4	19.8	18.0	19.1	18.4	19.5	20.0
	8H	17.8	18.9	18.2	19.3	19.8	18.0	19.1	18.4	19.5	19.9
	12H	17.8	18.8	18.2	19.3	19.7	18.0	19.0	18.4	19.4	19.9
4H	2H	17.4	18.7	17.8	19.1	19.5	16.8	18.1	17.2	18.5	18.9
	3H	18.4	19.4	18.8	19.8	20.3	18.3	19.3	18.7	19.8	20.2
	4H	18.4	19.4	18.9	19.8	20.3	18.7	19.6	19.1	20.1	20.5
	6H	18.4	19.3	18.9	19.7	20.2	18.8	19.6	19.3	20.1	20.6
	8H	18.4	19.2	18.9	19.7	20.2	18.8	19.6	19.3	20.1	20.6
	12H	18.4	19.1	18.9	19.6	20.1	18.8	19.5	19.3	20.0	20.5
8H	4H	18.5	19.3	19.0	19.7	20.2	18.7	19.5	19.2	19.9	20.4
	6H	18.5	19.1	19.0	19.7	20.2	18.9	19.5	19.4	20.0	20.6
	8H	18.5	19.1	19.0	19.6	20.1	18.9	19.5	19.5	20.0	20.6
	12H	18.5	19.0	19.1	19.5	20.1	19.0	19.5	19.5	20.0	20.6
12H	4H	18.5	19.2	19.0	19.7	20.2	18.7	19.4	19.2	19.9	20.4
	6H	18.5	19.1	19.0	19.6	20.1	18.9	19.4	19.4	19.9	20.5
	8H	18.5	19.0	19.0	19.5	20.1	18.9	19.4	19.5	19.9	20.5

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0