

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SR14SQLEDOA 11L 35K xx FT1414 MW xx FO
14" square recessed LED downlight, flush extruded aluminum door

Test Number

SP-01644

Test Date

2/14/2024

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	811
Efficacy	76.52 lm/W

Luminous Dimensions

0° - 180° Size	1.02
90° - 270° Size	1.02
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.21
Two luminaires, plane 90°	1.19
Four luminaires	1.33

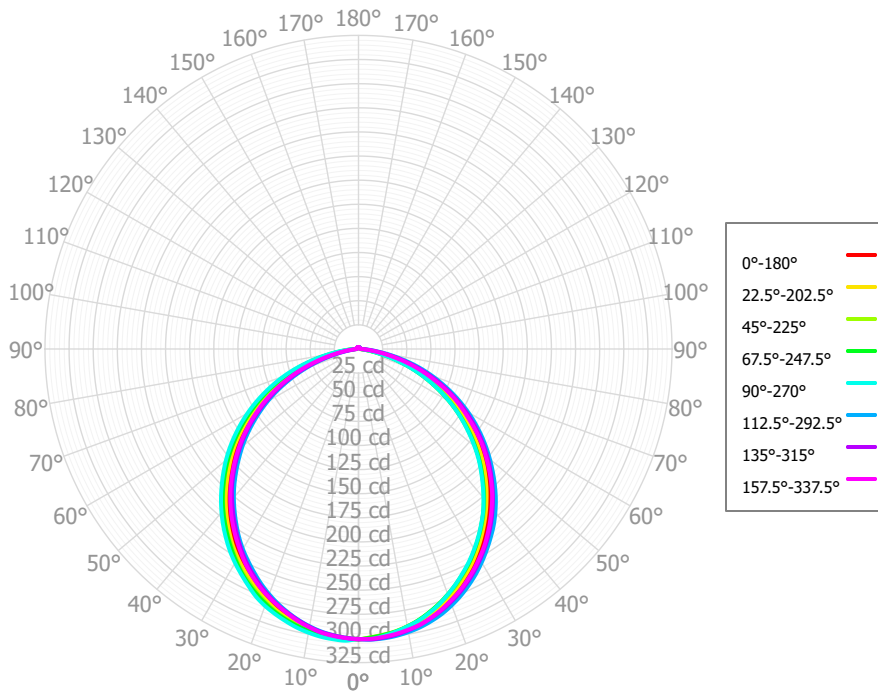
Full Beam Angle

0° - 180°	107°
90° - 270°	107°

IES File Header Contents

Keyword	Value
TEST	SP-01644
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	2/14/2024
ISSUEDATE	2/28/2024
LUMCAT	SR14SQLEDOA 11L 35K xx FT1414 MW xx FO
LUMINAIRE	14" square recessed LED downlight, flush extruded aluminum door
OTHER	Beam Angle: 107 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°	28.85	3.56%	90.00° - 100.00°	2.14	0.26%
10.00° - 20.00°	80.79	9.96%	100.00° - 110.00°	1.92	0.24%
20.00° - 30.00°	120.95	14.91%	100.00° - 120.00°	3.73	0.46%
30.00° - 40.00°	143.53	17.69%	120.00° - 130.00°	1.67	0.21%
40.00° - 50.00°	146.12	18.01%	130.00° - 140.00°	1.44	0.18%
50.00° - 60.00°	128.72	15.87%	140.00° - 150.00°	1.17	0.14%
60.00° - 70.00°	93.57	11.54%	150.00° - 160.00°	0.86	0.11%
70.00° - 80.00°	46.74	5.76%	160.00° - 170.00°	0.52	0.06%
80.00° - 90.00°	10.14	1.25%	170.00° - 180.00°	0.18	0.02%
0.00° - 90.00°	799.41	98.55%	0.00° - 180.00°	811.13	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°	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84	300.84
2.50°	300.45	299.99	299.04	299.38	300.98	299.72	299.73	300.01	300.15	301.02	301.07	301.10	302.66	301.50	301.35	300.67	300.45
5.00°	299.52	298.26	297.30	297.60	298.61	297.95	297.97	298.64	299.05	299.77	300.46	300.59	302.02	301.12	300.37	299.58	299.52
7.50°	297.60	296.14	295.11	295.43	295.64	295.41	295.89	296.53	297.44	298.08	299.27	299.25	300.82	299.97	298.74	297.91	297.60
10.00°	294.53	293.00	291.90	292.05	292.12	291.92	292.38	293.03	294.71	295.53	296.68	296.86	298.58	298.01	296.14	295.60	294.53
12.50°	290.82	289.42	288.06	287.84	288.35	287.69	288.06	288.99	291.14	292.45	293.57	293.98	295.79	295.48	292.98	292.99	290.82
15.00°	286.41	284.74	282.89	282.74	283.26	282.62	283.26	284.01	286.68	288.39	289.69	290.52	292.04	291.99	289.03	288.78	286.41
17.50°	281.30	279.61	277.47	277.06	277.61	276.92	278.21	278.81	281.59	283.73	285.53	286.26	287.98	287.87	284.55	283.89	281.30
20.00°	275.45	273.65	271.56	270.67	270.84	270.54	272.11	273.27	275.75	277.99	280.03	281.07	283.40	282.72	279.36	278.26	275.45
22.50°	269.01	267.39	265.06	263.87	263.61	263.47	265.47	267.14	269.42	271.81	274.07	275.35	277.78	276.92	273.56	272.34	269.01
25.00°	261.98	260.16	257.44	256.58	256.00	255.68	258.13	260.08	262.91	264.87	267.56	269.05	270.55	270.33	266.97	265.48	261.98
27.50°	254.56	252.60	249.40	249.02	248.24	247.73	250.46	252.41	256.29	257.72	260.87	261.89	263.28	263.25	259.82	258.26	254.56
30.00°	246.80	244.05	240.64	240.51	239.74	239.62	241.80	243.81	248.17	250.25	252.71	253.84	255.98	255.44	252.01	250.46	246.80
32.50°	238.31	235.18	231.89	231.49	230.98	230.69	232.68	235.03	239.15	242.15	244.13	245.41	248.12	247.23	243.80	242.45	238.31
35.00°	229.18	225.81	223.13	222.09	221.68	220.99	223.21	225.99	229.94	233.10	235.67	236.59	239.46	238.79	235.15	233.53	229.18
37.50°	219.79	216.29	213.66	212.50	212.21	211.11	213.60	216.59	220.63	223.74	227.24	227.53	230.43	230.24	225.97	224.31	219.79
40.00°	210.19	206.35	203.06	202.17	201.59	201.04	203.90	206.69	210.90	213.95	217.64	218.24	220.91	220.71	216.22	214.74	210.19
42.50°	199.99	196.29	192.21	191.49	190.60	190.41	194.17	196.33	200.95	203.73	207.75	208.38	210.99	210.66	206.18	205.07	199.99
45.00°	189.30	185.83	180.98	180.66	179.67	179.28	183.37	185.39	190.28	192.92	197.34	198.01	200.58	199.94	195.85	194.32	189.30
47.50°	178.26	175.27	169.78	169.77	168.75	168.15	172.15	174.30	179.26	182.24	186.82	187.26	190.04	188.91	185.30	183.26	178.26
50.00°	166.94	163.83	158.62	158.08	156.99	157.01	160.83	163.02	168.11	171.73	175.86	176.20	179.34	177.80	174.54	172.13	166.94
52.50°	155.10	152.18	147.07	146.04	145.00	145.36	149.48	151.45	156.90	160.59	164.82	164.78	168.21	166.68	163.36	160.97	155.10
55.00°	142.88	139.98	134.97	133.77	133.14	133.30	137.38	139.52	145.54	148.66	153.10	153.07	156.57	155.18	151.78	148.72	142.88
57.50°	130.57	127.65	122.84	121.42	121.31	121.16	125.02	127.49	134.12	136.57	141.24	141.03	144.71	143.53	139.92	136.22	130.57
60.00°	118.18	115.23	110.66	108.76	108.96	108.97	112.34	115.35	121.74	124.30	128.62	128.72	132.61	131.40	127.79	124.45	118.18
62.50°	105.94	102.79	98.13	95.97	96.50	96.35	99.55	102.89	108.97	111.78	115.88	116.68	120.22	119.08	115.36	112.85	105.94
65.00°	93.81	90.08	85.18	83.41	83.78	83.42	86.79	90.09	96.07	99.00	103.39	104.83	107.54	106.44	102.66	99.78	93.81
67.50°	81.07	77.33	72.26	70.92	71.01	70.57	74.05	77.28	83.13	86.07	90.93	92.25	94.88	93.67	89.86	86.40	81.07
70.00°	67.97	64.66	59.38	58.72	57.94	57.75	60.97	64.47	70.31	72.97	78.45	79.16	82.26	81.04	76.98	73.62	67.97
72.50°	55.24	52.01	46.94	46.61	44.82	45.19	47.81	51.61	57.54	60.03	65.96	66.23	69.32	68.46	63.97	60.95	55.24
75.00°	42.73	39.73	35.00	34.43	32.94	32.77	36.00	38.70	44.91	47.27	53.10	53.40	56.07	55.43	50.86	48.32	42.73
77.50°	31.08	27.49	24.40	22.23	21.29	22.59	24.55	27.67	32.33	35.15	40.21	41.09	43.61	42.24	38.65	35.69	31.08
80.00°	19.92	18.14	15.23	14.36	13.80	13.73	16.00	18.36	22.14	23.65	28.63	29.10	31.87	30.89	27.10	25.03	19.92
82.50°	12.25	9.16	8.62	7.74	6.97	8.10	8.13	11.32	12.74	14.85	17.18	19.42	21.81	20.10	17.83	14.67	12.25
85.00°	6.43	5.62	4.60	4.72	4.36	4.29	4.81	6.23	7.55	8.52	11.00	11.10	13.20	12.88	10.11	9.08	6.43
87.50°	3.65	2.71	2.45	2.66	2.35	2.64	2.48	3.38	3.65	4.57	5.30	6.26	7.49	6.70	5.51	4.12	3.65
90.00°	2.40	2.20	2.08	2.08	2.04	2.15	1.87	2.35	2.30	2.69	3.44	3.39	4.12	4.03	2.94	2.79	2.40
92.50°	1.94	1.93	1.85	1.85	1.94	1.93	1.61	1.93	1.67	1.81	1.88	2.15	2.45	2.30	1.91	1.88	1.94
95.00°	1.85	1.91	1.75	1.85	1.98	1.84	1.59	2.00	1.64	1.76	1.75	1.77	2.07	1.96	1.82	1.84	1.85
97.50°	1.75	1.91	1.76	1.89	2.03	1.82	1.62	2.00	1.77	1.75	1.71	1.71	1.90	1.96	1.77	1.90	1.75
100.00°	1.63	1.88	1.86	1.85	1.95	1.83	1.67	1.97	1.78	1.77	1.67	1.81	1.87	1.89	1.74	1.85	1.63
102.50°	1.68	1.85	1.89	1.78	1.86	1.85	1.73	1.98	1.76	1.79	1.63	1.78	1.86	1.80	1.79	1.80	1.68
105.00°	1.79	1.83	1.86	1.75	1.81	1.86	1.79	2.01	1.75	1.82	1.68	1.70	1.86	1.83	1.87	1.85	1.79

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	963	963	963	963	939	939	939	939	895	895	895	854	854	854	817	817	799
	1	883	846	813	783	860	827	797	769	790	765	743	757	737	718	726	710	694
	2	805	740	687	642	783	724	675	633	693	652	617	665	631	601	639	611	597
	3	735	652	587	536	714	638	578	530	612	561	519	589	545	509	566	530	518
	4	674	578	509	455	654	567	502	451	545	489	444	525	476	437	506	464	453
	5	620	517	446	393	602	508	440	390	489	430	385	472	420	380	456	411	401
	6	573	466	395	343	557	458	391	341	442	382	338	428	374	334	414	367	359
	7	531	423	353	304	517	416	349	302	403	343	299	390	336	296	378	330	323
	8	495	386	318	271	482	380	315	270	369	310	268	358	304	265	347	299	293
	9	463	355	289	244	451	350	286	243	339	282	241	330	277	240	321	273	268
	10	434	328	264	222	423	323	262	221	314	258	219	306	254	218	298	251	246

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	9.9 fc	14.9 ft
6.5 ft	7.1 fc	17.6 ft
7.5 ft	5.3 fc	20.3 ft
8.0 ft	4.7 fc	21.6 ft
10.0 ft	3.0 fc	27.0 ft
12.0 ft	2.1 fc	32.4 ft
14.0 ft	1.5 fc	37.8 ft
16.0 ft	1.2 fc	43.2 ft
20.0 ft	0.8 fc	54.1 ft
24.0 ft	0.5 fc	64.9 ft
28.0 ft	0.4 fc	75.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	3113	3113	3113
45.00°	2770	2648	2629
55.00°	2577	2435	2401
65.00°	2296	2085	2051
75.00°	1708	1399	1317
85.00°	764	546	518

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	15.3	16.9	15.7	17.2	17.6	15.3	16.9	15.7	17.3	17.6
	3H	16.9	18.4	17.3	18.7	19.1	17.0	18.4	17.4	18.8	19.2
	4H	17.4	18.8	17.9	19.1	19.6	17.5	18.9	18.0	19.2	19.7
	6H	17.7	18.9	18.1	19.3	19.8	17.9	19.1	18.3	19.5	19.9
	8H	17.7	18.9	18.2	19.3	19.8	17.9	19.1	18.4	19.5	20.0
	12H	17.8	18.9	18.2	19.3	19.8	18.0	19.1	18.4	19.5	20.0
4H	2H	15.9	17.2	16.3	17.6	18.0	15.9	17.3	16.4	17.6	18.1
	3H	17.7	18.8	18.1	19.3	19.7	17.8	18.9	18.2	19.3	19.8
	4H	18.3	19.3	18.8	19.8	20.2	18.4	19.4	18.9	19.9	20.3
	6H	18.7	19.6	19.2	20.0	20.5	18.8	19.7	19.3	20.2	20.7
	8H	18.7	19.6	19.2	20.0	20.5	18.9	19.8	19.4	20.2	20.7
	12H	18.8	19.5	19.3	20.0	20.5	19.0	19.8	19.5	20.3	20.8
8H	4H	18.6	19.4	19.0	19.8	20.3	18.6	19.5	19.1	19.9	20.4
	6H	19.0	19.7	19.5	20.2	20.7	19.1	19.8	19.7	20.3	20.8
	8H	19.1	19.7	19.6	20.2	20.7	19.3	19.9	19.8	20.4	21.0
	12H	19.1	19.7	19.7	20.2	20.8	19.4	20.0	19.9	20.5	21.1
12H	4H	18.6	19.3	19.1	19.8	20.3	18.6	19.4	19.2	19.9	20.4
	6H	19.0	19.6	19.5	20.1	20.7	19.2	19.8	19.7	20.3	20.8
	8H	19.1	19.7	19.7	20.2	20.8	19.3	19.9	19.9	20.4	21.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0