Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

CK0407SQPC 15L 35K XW xx NL xx MW

Nom. 4.5" Diam x 7"H Square Cylinder, Xtra Wide Beam

Test Number

SP-01453_M-15L

Test Date

11/29/2022

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

Summary of Results

Power

Input Watts	9.5 W

Lumen Output

Output Lumens	744
Efficacy	78.35 lm/W

Luminous Dimensions

0° - 180° Size	0.2
90° - 270° Size	0.2
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.9
Two luminaires, plane 90°	0.9
Four luminaires	0.92

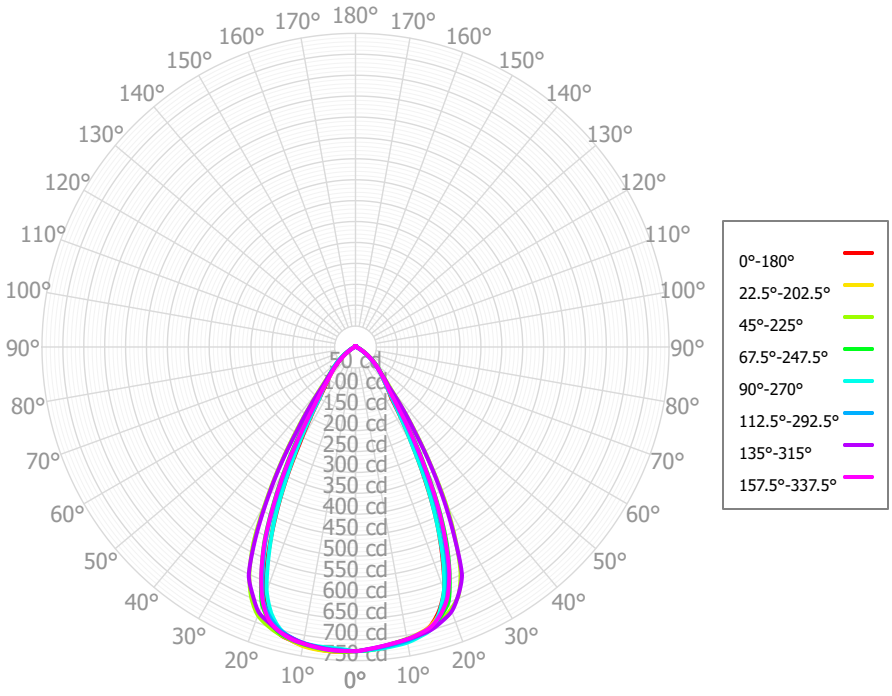
Full Beam Angle

0° - 180°	55°
90° - 270°	55°

IES File Header Contents

Keyword	Value
TEST	SP-01453_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/29/2022
ISSUEDATE	12/1/2022
LUMCAT	CK0407SQPC 15L 35K XW xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Xtra Wide Beam
OTHER	No lens, Matte White finish
OTHER	56 Degree Beam Angle
OTHER	Reference Project SL378
LAMP	N/A
LAMPCAT	N/A, Min. 80 CRI
OTHER	Total Luminaire Watts is approximate
OTHER	CCT Output Multipliers: 27K x 0.95, 30K x 0.97, 40K x 1.03
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	69.92	9.39%	90.00° - 100.00°	2.01	0.27%
10.00° - 20.00°	195.22	26.23%	100.00° - 110.00°	1.95	0.26%
20.00° - 30.00°	230.03	30.90%	100.00° - 120.00°	3.75	0.50%
30.00° - 40.00°	124.47	16.72%	120.00° - 130.00°	1.65	0.22%
40.00° - 50.00°	62.10	8.34%	130.00° - 140.00°	1.51	0.20%
50.00° - 60.00°	31.72	4.26%	140.00° - 150.00°	1.23	0.17%
60.00° - 70.00°	11.68	1.57%	150.00° - 160.00°	0.94	0.13%
70.00° - 80.00°	4.85	0.65%	160.00° - 170.00°	0.57	0.08%
80.00° - 90.00°	2.49	0.33%	170.00° - 180.00°	0.19	0.03%
0.00° - 90.00°	732.50	98.41%	0.00° - 180.00°	744.35	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°	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61	727.61
2.50°	724.65	724.70	724.15	726.37	725.76	725.97	727.61	727.85	730.20	729.89	729.35	728.66	723.53	724.11	723.25	723.45	724.65
5.00°	720.65	719.72	719.63	722.29	723.91	725.17	726.53	727.25	730.27	730.55	728.57	727.54	721.90	721.10	718.83	718.74	720.65
7.50°	716.90	715.01	714.30	718.41	721.14	722.88	723.21	724.58	728.19	729.66	726.30	724.97	721.49	717.49	714.47	714.25	716.90
10.00°	712.06	710.43	708.88	714.60	717.74	719.12	719.35	720.72	725.00	726.34	722.56	721.73	718.86	713.63	710.13	709.98	712.06
12.50°	704.94	702.06	703.36	707.07	709.93	711.39	712.33	715.52	718.18	717.78	717.25	716.07	712.68	706.47	705.89	703.12	704.94
15.00°	691.17	691.76	695.30	698.36	699.11	700.00	704.54	704.23	709.43	705.99	710.35	707.04	697.87	697.95	700.30	693.72	691.17
17.50°	663.12	668.80	684.41	676.37	666.68	678.50	690.90	686.06	675.21	686.97	698.96	685.45	668.82	672.11	688.15	673.11	663.12
20.00°	619.75	639.22	667.48	650.04	619.12	645.52	675.77	648.74	627.29	652.90	682.91	654.48	621.58	638.92	672.98	641.20	619.75
22.50°	542.37	578.28	643.75	588.52	546.78	580.10	642.47	589.16	550.32	584.44	650.66	587.99	543.67	575.58	642.64	586.35	542.37
25.00°	459.13	500.71	594.84	515.08	456.74	507.44	604.34	514.56	457.38	508.36	601.35	516.67	459.59	499.00	602.80	507.95	459.13
27.50°	362.72	413.64	516.79	427.55	364.87	413.53	520.54	422.14	362.74	414.48	528.69	426.23	364.89	412.17	512.56	422.56	362.72
30.00°	274.38	321.37	430.92	335.17	271.66	322.15	424.23	330.90	267.13	323.03	430.98	336.94	278.29	320.78	422.39	329.80	274.38
32.50°	204.81	242.91	335.80	255.82	204.52	238.45	332.16	241.10	200.47	237.47	338.15	252.33	206.06	242.54	332.52	249.13	204.81
35.00°	149.18	172.17	252.45	181.10	156.95	167.32	241.28	172.93	150.58	166.61	250.71	177.23	151.11	170.36	246.51	181.39	149.18
37.50°	126.75	131.89	183.29	142.36	126.53	135.17	177.74	131.71	120.52	131.83	181.22	142.30	127.21	131.58	182.59	135.33	126.75
40.00°	107.28	109.00	132.66	116.78	109.14	106.93	122.23	101.94	102.20	102.70	131.78	110.90	106.80	108.54	124.58	113.14	107.28
42.50°	95.01	93.01	105.00	99.11	94.45	91.29	94.69	86.59	87.19	87.91	97.17	95.19	92.88	92.20	101.79	95.23	95.01
45.00°	82.84	81.07	84.05	84.42	81.86	76.68	75.50	72.64	74.22	74.00	79.62	80.11	79.88	79.10	80.46	82.14	82.84
47.50°	70.89	69.44	71.50	72.06	69.22	65.46	61.53	60.50	61.12	62.34	64.75	67.89	68.65	67.33	68.15	69.77	70.89
50.00°	59.19	57.98	59.68	60.62	56.53	54.23	49.20	49.06	47.94	51.01	53.02	56.00	57.41	56.23	56.13	58.22	59.19
52.50°	48.11	47.93	48.78	49.36	45.23	42.90	39.56	38.53	37.55	40.52	42.25	45.71	46.17	45.72	46.07	47.44	48.11
55.00°	37.75	38.75	38.66	38.17	35.05	32.53	30.78	29.38	28.94	30.92	32.62	35.63	35.84	35.53	36.26	37.56	37.75
57.50°	29.30	30.34	29.55	29.13	26.51	25.51	23.72	22.10	22.40	23.82	24.84	26.63	27.31	27.25	28.06	28.85	29.30
60.00°	21.65	22.42	22.08	20.97	19.33	18.93	17.23	16.23	17.22	17.58	19.32	18.56	20.19	19.97	20.24	21.52	21.65
62.50°	16.22	16.60	16.81	16.05	14.12	13.93	12.95	12.32	13.61	13.76	14.40	15.13	15.92	14.76	15.20	15.71	16.22
65.00°	11.59	12.13	12.49	12.50	10.58	9.59	9.43	9.32	11.04	10.46	10.25	11.87	12.08	10.66	10.48	11.77	11.59
67.50°	9.22	8.92	9.48	9.69	7.96	7.77	7.47	7.60	9.04	8.69	7.35	9.50	9.13	8.00	8.16	8.64	9.22
70.00°	6.99	6.53	7.15	7.19	6.16	6.10	6.05	6.24	7.41	7.09	6.04	7.26	6.72	6.12	6.00	6.53	6.99
72.50°	5.16	5.29	5.77	5.82	4.81	5.06	5.05	5.38	6.23	6.02	5.04	5.79	5.48	4.81	5.10	4.91	5.16
75.00°	3.73	4.83	4.64	4.93	3.86	4.13	4.19	4.62	5.35	5.04	4.42	4.44	4.38	3.81	4.25	3.92	3.73
77.50°	3.47	4.24	3.87	4.05	3.18	3.61	3.47	3.99	4.48	4.34	3.82	3.73	3.59	3.39	3.70	3.18	3.47
80.00°	3.09	3.57	3.14	3.17	2.73	3.09	2.81	3.32	3.61	3.62	3.24	3.08	2.84	3.29	3.16	2.78	3.09
82.50°	2.37	2.94	2.48	2.56	2.34	2.53	2.38	2.55	2.99	2.82	2.74	2.77	2.19	2.77	2.61	2.35	2.37
85.00°	1.83	2.35	2.04	2.09	2.02	2.06	2.05	2.04	2.56	2.17	2.35	2.47	1.74	2.00	2.09	1.89	1.83
87.50°	1.90	2.10	1.94	1.95	1.80	1.93	1.85	1.92	2.22	2.01	2.04	2.22	1.75	1.80	1.90	1.72	1.90
90.00°	1.93	2.09	1.88	1.96	1.68	1.82	1.71	1.84	1.96	1.87	1.84	2.00	1.74	1.94	1.73	1.94	1.93
92.50°	1.87	2.06	1.89	1.99	1.69	1.78	1.65	1.83	1.91	1.83	1.71	1.96	1.72	1.91	1.72	1.98	1.87
95.00°	1.83	2.02	1.94	2.03	1.84	1.73	1.63	1.83	2.02	1.81	1.69	1.93	1.75	1.78	1.72	1.78	1.83
97.50°	1.86	1.94	2.05	2.02	1.80	1.67	1.66	1.89	2.06	1.90	1.76	1.96	1.89	1.63	1.73	1.70	1.86
100.00°	1.89	1.82	2.09	1.99	1.58	1.60	1.71	1.85	2.06	1.97	1.97	1.99	1.94	1.48	1.74	1.80	1.89

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	883	883	883	883	861	861	861	861	820	820	820	783	783	783	749	749	749	732
	1	838	815	795	777	818	798	780	763	765	751	737	735	724	713	708	699	691	684
	2	792	752	720	692	774	738	709	684	712	688	667	688	668	651	665	649	635	636
	3	748	696	656	625	732	685	648	619	663	633	607	643	618	596	625	604	585	591
	4	707	647	602	569	692	637	596	565	619	584	557	603	573	549	587	562	541	551
RCR	5	669	602	556	522	655	595	551	519	580	542	513	566	533	507	553	524	502	514
	6	633	563	516	482	621	556	512	479	544	504	475	532	497	471	521	490	467	481
	7	600	527	480	447	589	522	477	445	511	471	442	501	465	439	491	460	436	451
	8	570	496	449	416	560	491	446	415	481	441	413	473	437	410	464	432	408	425
	9	542	467	421	390	533	463	419	389	454	415	387	447	411	385	440	407	383	400
	10	516	441	396	366	508	437	394	365	430	390	363	423	387	362	417	384	360	378

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	24.1 fc	5.7 ft
6.5 ft	17.2 fc	6.7 ft
7.5 ft	12.9 fc	7.8 ft
8.0 ft	11.4 fc	8.3 ft
10.0 ft	7.3 fc	10.4 ft
12.0 ft	5.1 fc	12.5 ft
14.0 ft	3.7 fc	14.5 ft
16.0 ft	2.8 fc	16.6 ft
20.0 ft	1.8 fc	20.8 ft
24.0 ft	1.3 fc	24.9 ft
28.0 ft	0.9 fc	29.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	195798	195798	195798
45.00°	31524	31985	31153
55.00°	17713	18136	16445
65.00°	7379	7955	6734
75.00°	3875	4826	4017
85.00°	5659	6286	6241

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	17.1	18.2	17.5	18.5	18.9	16.3	17.3	16.6	17.7	18.0
	3H	17.4	18.3	17.8	18.7	19.1	16.6	17.6	17.0	17.9	18.4
	4H	17.4	18.3	17.9	18.7	19.1	16.7	17.6	17.2	18.0	18.4
	6H	17.5	18.3	18.0	18.7	19.2	16.8	17.6	17.3	18.0	18.5
	8H	17.5	18.3	18.0	18.7	19.2	16.9	17.6	17.3	18.1	18.5
	12H	17.6	18.3	18.0	18.7	19.2	16.9	17.6	17.4	18.1	18.5
4H	2H	17.1	18.0	17.5	18.3	18.8	16.2	17.1	16.7	17.5	17.9
	3H	17.5	18.2	17.9	18.6	19.1	16.7	17.4	17.2	17.9	18.3
	4H	17.6	18.2	18.1	18.7	19.2	16.9	17.5	17.4	18.0	18.5
	6H	17.8	18.3	18.3	18.8	19.3	17.1	17.7	17.6	18.1	18.6
	8H	17.8	18.3	18.3	18.8	19.3	17.2	17.7	17.7	18.2	18.7
	12H	17.9	18.4	18.4	18.9	19.4	17.3	17.8	17.8	18.3	18.8
8H	4H	17.6	18.1	18.1	18.6	19.1	16.9	17.4	17.4	17.9	18.4
	6H	17.8	18.2	18.4	18.8	19.3	17.2	17.6	17.7	18.1	18.7
	8H	18.0	18.3	18.5	18.9	19.4	17.4	17.8	17.9	18.3	18.8
	12H	18.2	18.5	18.7	19.0	19.6	17.6	18.0	18.2	18.5	19.1
12H	4H	17.5	18.0	18.1	18.5	19.0	16.9	17.3	17.4	17.8	18.4
	6H	17.8	18.2	18.4	18.7	19.3	17.2	17.6	17.8	18.1	18.7
	8H	18.0	18.3	18.6	18.9	19.5	17.5	17.8	18.0	18.3	18.9

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0