

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 MD xx NL xx MW
Nom. 4.5" Diam x 7"H Square Cylinder, Medium Beam

Test Number

SP-01447_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
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Lumen Output

Output Lumens	694
Efficacy	73.11 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.52
Two luminaires, plane 90°	0.51
Four luminaires	0.58

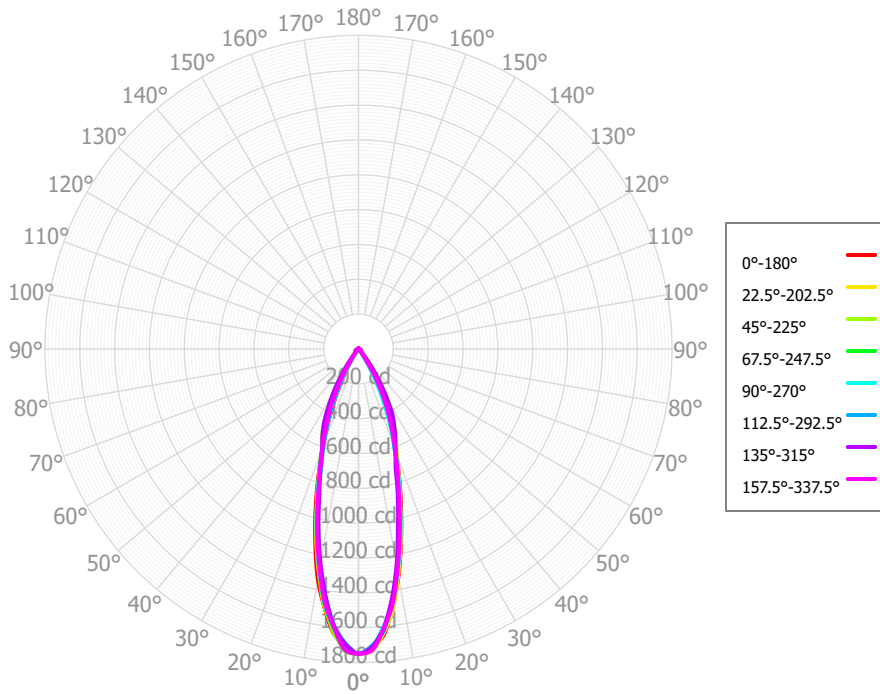
Full Beam Angle

0° - 180°	32°
90° - 270°	31°

IES File Header Contents

Keyword	Value
TEST	SP-01447_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 MD xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Medium Beam
OTHER	No lens, Matte White finish
OTHER	32 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°	145.46	20.94%	90.00° - 100.00°	2.00	0.29%
10.00° - 20.00°	250.05	36.00%	100.00° - 110.00°	1.98	0.28%
20.00° - 30.00°	182.46	26.27%	100.00° - 120.00°	3.89	0.56%
30.00° - 40.00°	58.38	8.41%	120.00° - 130.00°	1.71	0.25%
40.00° - 50.00°	12.86	1.85%	130.00° - 140.00°	1.48	0.21%
50.00° - 60.00°	11.32	1.63%	140.00° - 150.00°	1.26	0.18%
60.00° - 70.00°	13.96	2.01%	150.00° - 160.00°	0.97	0.14%
70.00° - 80.00°	5.35	0.77%	160.00° - 170.00°	0.58	0.08%
80.00° - 90.00°	2.57	0.37%	170.00° - 180.00°	0.19	0.03%
0.00° - 90.00°	682.42	98.26%	0.00° - 180.00°	694.50	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°	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20	1749.20
2.50°	1716.71	1737.05	1721.52	1728.23	1713.06	1693.13	1698.94	1731.31	1707.75	1734.79	1716.43	1733.06	1718.53	1708.19	1716.13	1733.67	1716.71
5.00°	1650.47	1639.83	1634.45	1617.75	1610.02	1595.61	1602.54	1606.35	1638.70	1621.49	1636.01	1616.14	1609.07	1630.41	1618.25	1620.09	1650.47
7.50°	1492.29	1508.45	1475.69	1480.17	1472.71	1438.80	1440.45	1472.78	1496.74	1494.70	1469.46	1485.91	1473.98	1465.68	1455.00	1484.79	1492.29
10.00°	1323.78	1315.27	1290.45	1289.97	1294.64	1261.29	1255.05	1284.56	1343.15	1308.25	1290.07	1291.52	1293.14	1280.39	1260.25	1287.20	1323.78
12.50°	1127.69	1120.16	1077.85	1098.49	1111.56	1066.58	1062.89	1095.26	1144.67	1120.45	1090.39	1097.46	1107.58	1081.76	1046.51	1092.31	1127.69
15.00°	943.13	922.94	896.44	905.53	924.87	885.89	869.58	902.15	950.10	922.99	895.85	905.40	924.01	885.11	871.10	901.78	943.13
17.50°	776.16	766.30	734.56	748.67	760.96	712.12	735.99	732.21	763.52	739.27	745.54	731.65	746.62	739.29	708.67	743.23	776.16
20.00°	627.75	637.26	637.12	618.06	607.01	583.17	609.78	606.73	596.35	597.79	614.17	609.64	605.82	601.74	623.31	616.97	627.75
22.50°	496.58	528.63	562.56	507.81	477.94	465.96	541.83	491.88	453.42	468.68	545.31	494.80	470.61	504.31	549.46	506.15	496.58
25.00°	378.34	428.01	491.03	406.22	354.38	362.99	468.39	389.22	328.93	360.76	468.03	391.46	350.68	407.58	484.88	404.76	378.34
27.50°	267.55	331.39	420.02	312.67	250.55	261.97	375.10	291.24	218.48	260.63	374.99	294.04	242.16	312.53	417.20	310.47	267.55
30.00°	176.65	235.53	328.88	220.82	150.54	176.72	284.29	196.62	136.62	168.79	284.20	202.53	151.96	223.38	323.14	218.62	176.65
32.50°	92.09	154.28	238.73	144.29	90.02	98.24	198.32	124.95	67.55	101.39	195.94	128.45	88.20	142.48	232.96	142.26	92.09
35.00°	55.35	77.79	162.72	71.83	38.62	56.87	125.94	62.89	41.71	49.77	123.98	64.91	50.19	83.86	155.64	68.43	55.35
37.50°	25.51	48.26	94.57	44.91	28.42	25.66	69.79	39.73	26.21	29.64	63.46	37.73	29.79	44.75	90.70	43.13	25.51
40.00°	20.61	23.68	54.91	22.28	20.41	21.84	38.18	24.67	21.09	21.13	34.60	22.89	19.74	24.98	48.93	20.77	20.61
42.50°	16.19	18.41	26.29	18.27	17.56	18.60	24.46	20.79	16.88	17.03	18.63	17.29	15.56	15.33	23.58	16.78	16.19
45.00°	14.62	14.31	19.19	14.93	15.29	16.27	18.67	17.59	15.02	13.73	14.15	13.17	13.38	12.55	16.63	13.44	14.62
47.50°	12.90	12.70	14.82	13.17	13.84	14.43	16.26	14.50	13.40	13.88	11.96	12.69	11.67	11.80	13.40	12.39	12.90
50.00°	10.72	11.66	13.70	12.24	12.65	13.06	15.00	12.11	12.93	13.94	12.35	12.31	10.03	11.24	12.78	11.52	10.72
52.50°	9.48	11.34	13.27	12.45	11.69	12.18	13.99	12.71	12.14	11.93	12.84	12.25	10.41	10.71	13.00	10.98	9.48
55.00°	9.95	11.74	13.36	13.12	11.81	11.61	15.07	13.34	10.57	10.44	12.93	12.49	10.92	10.89	13.57	10.97	9.95
57.50°	11.30	12.71	15.30	14.15	12.48	12.93	16.34	14.06	10.76	10.88	13.26	13.70	12.38	11.25	13.91	11.58	11.30
60.00°	13.61	13.76	18.03	15.23	14.41	14.87	18.49	15.14	13.44	11.96	14.58	14.59	13.74	12.74	14.21	12.70	13.61
62.50°	15.12	14.85	16.97	16.33	16.70	16.83	19.72	16.71	15.14	14.30	15.34	14.84	14.76	13.88	14.71	14.16	15.12
65.00°	16.10	15.00	15.06	15.61	16.95	18.80	16.82	15.76	15.98	14.45	14.87	13.93	14.48	13.99	14.99	13.57	16.10
67.50°	14.38	14.93	11.99	14.39	16.87	13.63	13.48	12.71	14.38	11.89	13.08	11.69	11.83	12.67	12.36	12.12	14.38
70.00°	11.62	10.22	8.90	10.28	11.38	8.67	9.17	9.26	11.49	8.97	9.58	9.11	9.07	9.03	9.61	9.35	11.62
72.50°	8.31	5.28	6.76	5.94	6.45	5.51	5.85	5.61	7.62	5.77	6.58	6.30	6.20	6.12	6.35	6.29	8.31
75.00°	4.90	4.04	4.75	4.46	4.87	3.03	3.92	3.97	3.45	4.15	3.96	4.49	4.84	3.96	3.99	4.90	4.90
77.50°	4.41	3.11	3.39	3.27	3.71	2.75	2.99	2.86	2.91	3.24	2.85	3.08	4.51	3.36	3.61	3.68	4.41
80.00°	3.98	3.72	2.42	3.72	3.77	2.47	2.89	2.77	2.79	3.02	2.47	2.99	3.81	3.73	3.01	3.49	3.98
82.50°	2.90	3.79	2.38	3.70	3.36	2.21	2.69	2.76	2.21	2.97	2.28	3.17	2.96	3.06	2.11	3.19	2.90
85.00°	2.04	2.50	2.21	2.34	2.20	2.01	2.43	2.19	1.71	2.65	2.13	2.48	2.44	2.03	1.76	2.39	2.04
87.50°	2.09	1.78	1.89	1.53	1.68	1.89	2.18	1.72	1.67	2.31	1.87	1.78	1.99	1.86	1.83	1.82	2.09
90.00°	2.06	1.93	1.82	1.56	1.78	1.77	1.93	1.77	1.66	2.05	1.61	1.80	1.85	1.84	1.80	1.80	2.06
92.50°	1.86	1.94	1.96	1.58	1.80	1.67	1.99	1.86	1.71	1.89	1.73	1.78	1.73	1.75	1.72	1.75	1.86
95.00°	1.81	1.83	1.98	1.57	1.78	1.67	2.08	2.02	1.83	2.25	1.85	1.58	1.65	1.66	1.82	1.64	1.81
97.50°	1.92	1.92	1.94	1.60	1.73	1.71	2.20	2.09	2.05	2.42	1.95	1.48	1.63	1.57	1.96	1.61	1.92
100.00°	1.78	2.11	2.16	1.65	1.68	1.84	2.28	2.02	2.07	2.13	1.99	1.61	1.78	1.51	1.91	1.64	1.78

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%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	824	824	824	824	803	803	803	803	765	765	765	730	730	730	698	698	698	682
	1	787	769	752	737	769	753	738	724	722	711	700	695	685	677	669	662	655	648
	2	752	720	694	672	736	708	684	664	683	664	648	661	646	632	641	628	617	615
	3	719	679	647	622	705	668	639	616	649	624	605	630	611	594	614	597	583	585
	4	689	642	607	581	676	633	601	577	617	590	569	602	579	561	588	569	553	558
	5	661	609	573	546	649	602	568	543	589	560	538	576	551	532	565	543	526	533
	6	634	580	543	517	624	574	540	515	563	533	510	552	526	506	543	520	502	510
	7	610	553	517	491	601	548	514	489	539	508	486	530	503	483	522	498	480	489
	8	587	529	493	468	579	525	491	467	517	486	464	509	482	462	502	478	459	470
	9	566	507	472	448	558	504	470	447	497	466	445	490	463	443	484	459	441	452
	10	545	487	452	429	539	484	451	428	478	448	427	472	445	425	467	442	423	435

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	57.8 fc	3.2 ft
6.5 ft	41.4 fc	3.7 ft
7.5 ft	31.1 fc	4.3 ft
8.0 ft	27.3 fc	4.6 ft
10.0 ft	17.5 fc	5.7 ft
12.0 ft	12.1 fc	6.9 ft
14.0 ft	8.9 fc	8.0 ft
16.0 ft	6.8 fc	9.2 ft
20.0 ft	4.4 fc	11.5 ft
24.0 ft	3.0 fc	13.8 ft
28.0 ft	2.2 fc	16.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	470706	470706	470706
45.00°	5562	7304	5820
55.00°	4667	6267	5540
65.00°	10253	9588	10792
75.00°	5093	4941	5060
85.00°	6301	6837	6779

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	11.4	12.4	11.8	12.7	13.1	12.0	13.0	12.4	13.4	13.7
	3H	15.1	15.9	15.5	16.3	16.7	15.1	15.9	15.5	16.3	16.7
	4H	15.5	16.3	15.9	16.7	17.1	15.4	16.2	15.8	16.6	17.0
	6H	15.8	16.6	16.3	17.0	17.4	15.7	16.4	16.1	16.8	17.2
	8H	16.0	16.7	16.5	17.1	17.6	15.8	16.5	16.3	17.0	17.4
	12H	16.2	16.8	16.6	17.2	17.7	16.0	16.7	16.5	17.1	17.6
4H	2H	13.0	13.8	13.4	14.2	14.6	13.5	14.3	14.0	14.7	15.2
	3H	16.0	16.6	16.4	17.1	17.5	16.0	16.6	16.4	17.1	17.5
	4H	16.4	16.9	16.8	17.4	17.9	16.3	16.8	16.7	17.3	17.8
	6H	16.8	17.3	17.3	17.8	18.3	16.6	17.1	17.1	17.6	18.1
	8H	17.0	17.5	17.5	18.0	18.5	16.8	17.3	17.3	17.8	18.3
	12H	17.2	17.6	17.8	18.2	18.7	17.1	17.5	17.6	18.0	18.5
8H	4H	16.4	16.9	16.9	17.4	17.9	16.3	16.8	16.8	17.2	17.8
	6H	17.0	17.3	17.5	17.9	18.4	16.7	17.1	17.3	17.6	18.1
	8H	17.4	17.7	17.9	18.2	18.8	17.1	17.4	17.6	17.9	18.5
	12H	17.7	18.0	18.3	18.6	19.2	17.5	17.7	18.0	18.3	18.9
12H	4H	16.4	16.8	16.9	17.3	17.8	16.3	16.7	16.8	17.2	17.7
	6H	17.0	17.3	17.6	17.8	18.4	16.7	17.1	17.3	17.6	18.1
	8H	17.4	17.7	18.0	18.3	18.9	17.1	17.4	17.7	17.9	18.6

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0