

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407SQPC 15L 35K ND xx SO xx MW
Nom. 4.5" Diam x 7"H Square Cylinder, Narrow Beam

Test Number

SP-01450_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	666
Efficacy	70.15 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.46
Two luminaires, plane 90°	0.48
Four luminaires	0.52

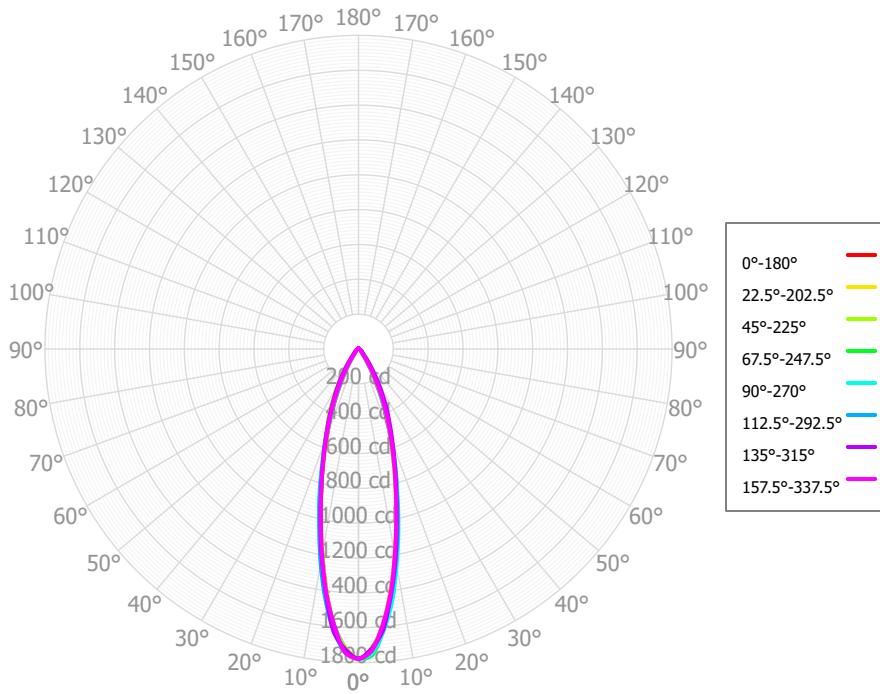
Full Beam Angle

0° - 180°	28°
90° - 270°	29°

IES File Header Contents

Keyword	Value
TEST	SP-01450_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 ND xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Narrow Beam
OTHER	Solite lens, Matte White finish
OTHER	28 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°	141.87	21.29%	90.00° - 100.00°	1.96	0.29%
10.00° - 20.00°	230.35	34.57%	100.00° - 110.00°	1.86	0.28%
20.00° - 30.00°	156.93	23.55%	100.00° - 120.00°	3.61	0.54%
30.00° - 40.00°	62.91	9.44%	120.00° - 130.00°	1.66	0.25%
40.00° - 50.00°	24.55	3.68%	130.00° - 140.00°	1.46	0.22%
50.00° - 60.00°	17.71	2.66%	140.00° - 150.00°	1.22	0.18%
60.00° - 70.00°	11.71	1.76%	150.00° - 160.00°	0.90	0.13%
70.00° - 80.00°	6.34	0.95%	160.00° - 170.00°	0.53	0.08%
80.00° - 90.00°	2.53	0.38%	170.00° - 180.00°	0.18	0.03%
0.00° - 90.00°	654.91	98.27%	0.00° - 180.00°	666.42	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°	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77	1777.77
2.50°	1721.83	1729.37	1733.00	1761.18	1751.10	1742.15	1726.23	1745.57	1719.80	1733.20	1717.24	1745.15	1733.91	1727.99	1724.81	1736.22	1721.83
5.00°	1598.31	1589.44	1623.40	1625.72	1629.60	1626.59	1631.72	1594.56	1596.13	1595.94	1601.15	1596.85	1597.28	1607.60	1619.88	1590.61	1598.31
7.50°	1406.35	1407.28	1425.72	1460.90	1468.40	1451.68	1422.63	1415.27	1407.82	1411.72	1405.61	1431.84	1432.97	1433.79	1422.93	1415.30	1406.35
10.00°	1207.10	1192.52	1220.10	1243.74	1259.05	1249.68	1213.99	1204.91	1195.99	1204.02	1197.37	1227.71	1238.91	1233.82	1221.57	1199.38	1207.10
12.50°	1003.49	998.09	1006.50	1038.27	1057.73	1035.44	1009.82	995.21	1006.35	990.30	1003.97	1026.71	1042.33	1040.54	1012.39	1003.05	1003.49
15.00°	830.00	813.24	828.70	845.37	862.40	853.27	820.14	828.14	820.45	822.81	816.54	849.61	865.59	849.07	833.90	823.54	830.00
17.50°	666.95	670.70	673.45	684.96	698.95	678.56	677.26	669.39	671.73	660.91	680.78	683.77	694.29	697.65	689.03	676.70	666.95
20.00°	536.07	538.60	556.81	545.82	549.41	549.26	549.83	547.89	527.30	541.37	554.82	553.94	554.72	551.52	570.47	546.68	536.07
22.50°	410.21	433.28	454.02	436.67	430.51	425.22	450.01	434.47	413.69	426.17	463.13	436.29	425.30	444.84	469.47	440.87	410.21
25.00°	312.97	331.05	372.40	339.20	318.70	333.53	361.56	340.06	306.68	334.52	376.42	340.91	323.52	342.20	383.26	341.80	312.97
27.50°	219.47	250.61	294.28	263.42	240.88	247.06	285.37	255.89	223.67	249.07	299.18	258.84	234.97	263.08	302.74	260.70	219.47
30.00°	155.36	174.84	228.38	191.71	166.92	185.87	220.72	185.86	151.74	179.67	229.40	191.41	167.63	191.61	234.55	182.23	155.36
32.50°	98.84	123.24	164.98	144.06	120.88	131.65	163.89	130.80	102.20	122.00	168.37	139.22	116.24	140.90	168.75	131.82	98.84
35.00°	68.45	79.37	121.95	98.95	78.97	94.74	120.74	88.73	66.28	82.37	120.35	97.27	80.40	98.91	126.54	84.82	68.45
37.50°	44.58	55.61	83.25	72.91	56.96	65.95	82.93	61.53	46.79	55.34	81.65	70.44	56.80	70.86	86.82	59.51	44.58
40.00°	32.96	38.19	60.64	49.91	39.39	48.87	62.38	42.06	34.58	40.11	58.55	49.68	40.64	51.20	64.54	39.03	32.96
42.50°	25.76	30.28	43.28	38.94	32.51	36.90	45.09	33.85	27.72	31.15	42.00	39.89	32.91	39.70	45.15	32.44	25.76
45.00°	23.71	26.05	36.39	30.41	27.41	29.44	37.65	28.80	23.58	25.74	34.18	32.25	28.07	33.27	37.44	27.34	23.71
47.50°	22.02	25.20	30.61	27.13	24.91	24.84	30.82	25.25	20.66	23.93	28.28	29.41	25.71	29.83	31.11	24.68	22.02
50.00°	20.58	24.09	26.15	24.39	22.06	21.80	26.11	21.94	19.89	23.31	25.64	26.61	23.72	27.30	27.73	22.78	20.58
52.50°	20.21	22.83	23.21	22.33	18.92	19.91	21.84	21.51	19.62	21.59	23.17	21.63	21.86	25.08	24.39	21.67	20.21
55.00°	20.28	21.31	21.42	20.31	17.18	18.38	19.42	20.64	19.24	19.72	20.51	17.39	19.92	21.02	21.13	20.22	20.28
57.50°	19.19	19.71	19.40	18.30	16.19	16.93	16.98	17.05	18.72	17.79	17.89	16.14	17.23	16.68	18.10	18.56	19.19
60.00°	17.86	17.11	17.28	15.72	14.54	15.49	14.51	14.14	15.93	15.81	15.41	14.85	14.75	15.07	15.26	16.33	17.86
62.50°	15.14	14.38	14.78	12.86	12.70	13.22	12.28	13.19	13.32	13.43	13.11	13.44	12.93	13.50	13.19	13.89	15.14
65.00°	12.41	12.26	12.19	11.91	11.40	11.12	10.39	11.90	11.64	11.28	11.20	11.75	11.14	11.99	11.49	12.27	12.41
67.50°	10.91	10.29	11.04	11.43	10.16	10.18	9.34	10.05	9.86	9.89	9.29	9.70	9.40	10.33	10.15	10.79	10.91
70.00°	9.33	9.36	9.97	9.19	8.67	9.07	8.98	8.54	7.82	8.56	7.39	8.20	7.79	8.16	8.90	8.70	9.33
72.50°	7.44	8.27	8.61	6.85	7.18	7.46	8.06	7.37	6.28	7.33	6.30	7.14	6.32	6.51	8.17	6.71	7.44
75.00°	5.68	6.70	7.26	5.94	5.63	5.81	6.88	5.98	5.43	5.77	5.91	5.81	5.01	5.86	7.42	5.77	5.68
77.50°	4.22	5.22	5.93	5.01	4.23	4.09	5.39	4.44	4.59	3.83	5.00	4.36	3.80	4.67	5.23	4.87	4.22
80.00°	3.14	3.91	4.52	3.92	3.27	2.82	3.83	3.28	3.75	2.91	3.82	3.47	3.14	2.89	3.26	4.08	3.14
82.50°	2.58	2.90	2.93	2.93	2.43	2.02	2.72	2.25	3.04	2.67	2.80	2.72	2.70	2.15	2.58	3.30	2.58
85.00°	2.22	2.22	2.11	2.18	1.79	1.80	1.71	2.00	2.41	2.24	1.82	2.20	2.06	2.14	2.06	2.50	2.22
87.50°	2.02	2.00	2.39	1.70	1.53	1.95	1.88	1.88	1.96	1.73	1.97	1.73	1.37	1.83	1.97	1.91	2.02
90.00°	1.97	2.09	2.25	1.62	1.69	1.79	2.00	1.64	1.56	1.67	2.23	1.86	1.76	1.41	1.92	1.56	1.97
92.50°	2.00	1.94	1.74	1.79	1.75	1.50	1.83	1.42	1.62	1.71	2.31	1.92	2.18	1.47	1.93	1.55	2.00
95.00°	2.01	1.70	1.64	2.20	1.74	1.62	1.73	1.41	1.74	1.95	2.32	1.67	2.00	1.64	1.89	1.77	2.01
97.50°	2.02	1.66	1.76	2.17	1.69	1.81	1.78	1.42	1.81	2.16	1.89	1.58	1.83	1.55	1.81	1.87	2.02
100.00°	1.80	1.66	1.93	1.89	1.63	2.00	1.76	1.49	1.84	1.75	1.63	1.93	1.75	1.47	1.67	1.90	1.80

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%	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	791	791	791	791	771	771	771	771	734	734	734	700	700	700	669	669	655
	1	754	736	720	705	737	721	706	693	692	680	670	665	656	648	640	634	620
	2	720	689	663	641	704	676	653	633	653	634	618	631	616	603	612	599	587
	3	687	647	616	591	673	637	608	585	618	594	575	601	581	564	584	568	557
	4	657	611	576	550	645	602	571	547	587	560	539	573	550	532	559	540	529
	5	629	578	543	517	618	572	539	514	559	530	508	547	522	503	536	514	505
	6	604	550	514	488	593	544	510	486	533	504	482	523	497	477	514	491	482
	7	580	524	488	463	570	519	485	461	510	480	458	501	475	455	493	470	462
	8	557	501	465	441	549	497	463	439	489	458	437	481	454	435	474	450	443
	9	536	479	444	421	529	476	443	420	469	439	418	463	436	416	457	432	425
	10	517	460	426	403	510	457	424	402	451	421	401	446	418	399	440	416	409

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	58.8 fc	2.8 ft
6.5 ft	42.1 fc	3.3 ft
7.5 ft	31.6 fc	3.8 ft
8.0 ft	27.8 fc	4.0 ft
10.0 ft	17.8 fc	5.0 ft
12.0 ft	12.3 fc	6.0 ft
14.0 ft	9.1 fc	7.0 ft
16.0 ft	6.9 fc	8.0 ft
20.0 ft	4.4 fc	10.1 ft
24.0 ft	3.1 fc	12.1 ft
28.0 ft	2.3 fc	14.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	478393	478393	478393
45.00°	9023	13848	10433
55.00°	9515	10048	8062
65.00°	7905	7762	7259
75.00°	5908	7550	5854
85.00°	6842	6521	5515

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	14.6	15.6	15.0	16.0	16.3	13.6	14.6	14.0	15.0	15.3
	3H	15.9	16.8	16.3	17.2	17.6	15.1	16.0	15.5	16.3	16.7
	4H	16.4	17.2	16.8	17.6	18.0	15.6	16.4	16.0	16.8	17.2
	6H	16.6	17.4	17.1	17.8	18.2	15.9	16.6	16.3	17.0	17.5
	8H	16.7	17.4	17.2	17.8	18.3	16.0	16.7	16.4	17.1	17.6
	12H	16.8	17.5	17.3	17.9	18.4	16.1	16.8	16.5	17.2	17.7
4H	2H	14.9	15.7	15.4	16.1	16.6	14.0	14.8	14.4	15.2	15.6
	3H	16.5	17.1	16.9	17.6	18.0	15.7	16.4	16.1	16.8	17.3
	4H	17.0	17.6	17.5	18.1	18.6	16.3	16.9	16.8	17.4	17.9
	6H	17.4	18.0	17.9	18.4	19.0	16.7	17.2	17.2	17.7	18.2
	8H	17.6	18.1	18.1	18.6	19.1	16.9	17.3	17.4	17.8	18.3
	12H	17.8	18.2	18.3	18.7	19.2	17.0	17.4	17.5	18.0	18.5
8H	4H	17.3	17.7	17.8	18.2	18.7	16.5	17.0	17.0	17.5	18.0
	6H	17.8	18.2	18.3	18.7	19.2	17.0	17.4	17.6	18.0	18.5
	8H	18.1	18.4	18.6	18.9	19.5	17.3	17.6	17.8	18.2	18.7
	12H	18.4	18.6	18.9	19.2	19.8	17.6	17.8	18.1	18.4	19.0
12H	4H	17.2	17.7	17.8	18.2	18.7	16.5	16.9	17.0	17.5	18.0
	6H	17.8	18.2	18.4	18.7	19.3	17.1	17.4	17.6	17.9	18.5
	8H	18.1	18.4	18.7	19.0	19.6	17.4	17.7	17.9	18.2	18.8

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0