

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01448_M-15L

Test Date

11/30/2022

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	658
Efficacy	69.3 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.53
Two luminaires, plane 90°	0.55
Four luminaires	0.59

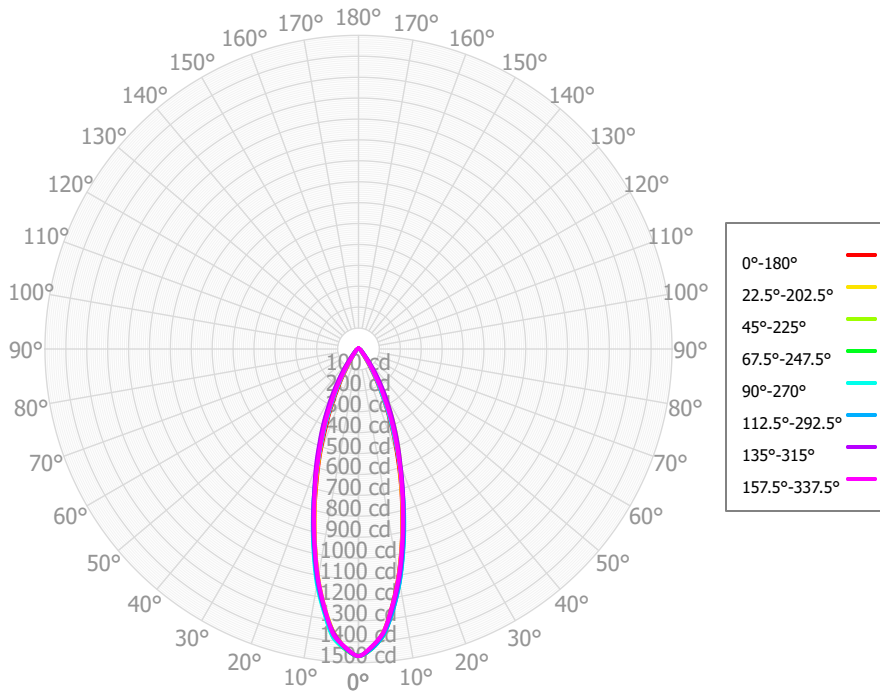
Full Beam Angle

0° - 180°	33°
90° - 270°	34°

IES File Header Contents

Keyword	Value
TEST	SP-01448_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/30/2022
ISSUEDATE	12/1/2022
LUMCAT	CK0407SQPC 15L 35K MD xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Medium Beam
OTHER	Solite lens, Matte White finish
OTHER	33 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°	123.56	18.77%	90.00° - 100.00°	2.21	0.34%
10.00° - 20.00°	226.73	34.44%	100.00° - 110.00°	2.14	0.33%
20.00° - 30.00°	165.30	25.11%	100.00° - 120.00°	4.20	0.64%
30.00° - 40.00°	68.53	10.41%	120.00° - 130.00°	1.86	0.28%
40.00° - 50.00°	25.04	3.80%	130.00° - 140.00°	1.66	0.25%
50.00° - 60.00°	15.48	2.35%	140.00° - 150.00°	1.38	0.21%
60.00° - 70.00°	11.13	1.69%	150.00° - 160.00°	1.05	0.16%
70.00° - 80.00°	6.59	1.00%	160.00° - 170.00°	0.65	0.10%
80.00° - 90.00°	2.75	0.42%	170.00° - 180.00°	0.21	0.03%
0.00° - 90.00°	645.10	97.99%	0.00° - 180.00°	658.32	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°	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68	1468.68
2.50°	1429.29	1434.99	1431.99	1436.13	1430.37	1431.15	1432.93	1428.42	1432.00	1433.39	1432.93	1438.35	1435.65	1435.85	1428.60	1425.69	1429.29
5.00°	1362.06	1360.11	1375.57	1372.34	1370.20	1374.77	1364.92	1373.14	1363.28	1362.79	1369.84	1383.25	1386.92	1374.05	1363.69	1362.23	1362.06
7.50°	1237.69	1245.96	1247.49	1260.02	1259.06	1257.99	1254.25	1246.51	1250.91	1245.57	1252.57	1262.14	1267.60	1262.36	1247.49	1239.28	1237.69
10.00°	1102.39	1106.73	1116.10	1130.48	1134.55	1132.98	1121.59	1115.56	1114.68	1111.55	1120.52	1134.36	1143.50	1132.07	1118.35	1107.37	1102.39
12.50°	954.44	955.82	964.94	982.61	990.05	983.98	975.38	965.27	961.02	962.57	968.31	982.67	992.54	985.12	973.92	960.59	954.44
15.00°	807.76	815.01	821.19	837.29	845.04	836.94	837.37	820.51	813.42	811.55	827.07	833.81	843.72	840.82	830.00	820.80	807.76
17.50°	673.43	676.37	697.39	693.55	699.61	699.32	702.02	687.69	668.18	679.11	694.29	695.27	700.09	697.87	704.48	687.52	673.43
20.00°	544.56	563.98	585.08	572.63	566.61	568.69	593.08	565.78	540.55	550.45	583.00	567.09	565.62	575.57	585.07	569.39	544.56
22.50°	431.48	454.71	489.66	458.92	439.38	453.79	487.89	456.74	415.93	442.76	480.67	458.09	443.43	458.33	487.86	459.33	431.48
25.00°	328.45	363.16	401.77	363.23	338.67	351.66	399.79	359.25	317.41	341.35	392.80	362.28	339.76	364.26	397.43	364.16	328.45
27.50°	241.05	276.07	320.12	270.63	243.87	265.19	314.62	269.68	223.57	255.52	307.69	280.09	250.16	273.99	319.19	272.85	241.05
30.00°	170.00	203.04	248.81	207.82	181.52	197.22	243.62	198.14	158.45	182.25	237.82	212.65	182.61	209.97	249.63	204.22	170.00
32.50°	113.29	140.60	182.19	149.24	123.28	142.09	179.51	133.13	102.46	125.73	171.40	154.02	124.05	151.28	189.05	139.38	113.29
35.00°	77.50	95.78	133.15	110.21	91.49	103.69	130.57	94.63	70.98	85.91	127.57	112.51	89.52	111.43	140.40	101.81	77.50
37.50°	51.98	64.49	87.90	77.04	63.26	71.65	92.44	60.09	47.93	58.69	88.62	76.18	59.41	78.34	98.67	68.56	51.98
40.00°	38.33	45.85	65.50	56.80	46.60	53.29	67.35	46.09	36.88	43.42	63.76	56.67	43.92	57.54	72.67	51.45	38.33
42.50°	27.48	34.99	45.06	41.72	34.03	37.04	50.13	33.34	29.05	33.17	45.16	39.29	30.03	42.00	51.25	37.31	27.48
45.00°	23.20	28.16	34.02	32.87	28.22	32.12	38.41	27.57	23.79	28.22	36.00	31.65	25.70	31.81	40.79	28.76	23.20
47.50°	19.47	24.61	25.19	26.80	23.45	27.29	30.73	22.63	20.61	24.23	29.09	24.83	21.96	25.53	31.65	23.34	19.47
50.00°	17.98	21.92	23.33	22.63	19.69	23.05	24.53	19.67	18.37	21.70	24.14	21.61	19.85	21.46	26.59	21.18	17.98
52.50°	16.62	19.80	21.52	20.23	17.47	19.21	21.09	17.42	16.80	19.25	20.86	18.78	17.92	18.63	21.88	18.84	16.62
55.00°	15.69	17.70	19.77	18.49	16.06	16.37	18.09	16.08	15.36	17.21	18.39	16.76	16.27	16.15	18.67	16.38	15.69
57.50°	14.87	15.23	17.26	15.90	15.01	14.49	16.29	14.85	13.92	15.46	16.74	15.22	14.75	14.85	16.07	14.57	14.87
60.00°	14.22	13.24	14.04	13.19	14.04	13.93	14.57	13.68	12.52	14.48	15.28	14.25	13.33	13.68	14.73	12.96	14.22
62.50°	12.91	13.07	11.95	11.96	13.38	12.87	13.25	12.20	11.53	13.14	13.30	12.64	11.88	12.90	13.34	11.05	12.91
65.00°	10.93	12.28	10.45	10.71	12.61	11.40	11.66	10.59	10.61	11.26	11.39	10.59	10.40	11.99	11.87	9.19	10.93
67.50°	10.06	10.37	10.03	9.39	10.11	9.79	9.37	10.09	9.90	9.74	10.30	9.62	9.25	10.54	10.88	9.20	10.06
70.00°	9.81	8.63	9.88	8.07	7.91	8.12	7.98	9.80	8.69	8.55	9.28	9.01	8.17	9.14	10.20	9.03	9.81
72.50°	7.57	7.07	8.82	6.73	6.77	6.75	7.80	7.86	6.65	7.37	8.45	7.79	7.11	7.86	8.90	8.11	7.57
75.00°	4.79	5.72	7.64	5.69	5.58	5.43	6.83	6.00	4.99	6.19	7.18	6.48	6.05	6.45	7.39	6.96	4.79
77.50°	3.96	4.49	5.78	5.04	4.26	4.54	5.24	4.82	3.66	4.88	5.16	4.94	5.10	4.88	5.88	5.35	3.96
80.00°	3.30	4.05	4.14	4.00	3.16	3.66	3.93	3.66	2.77	3.53	3.76	3.51	4.15	3.79	4.37	4.07	3.30
82.50°	2.52	3.84	3.25	2.66	2.28	2.71	2.73	2.56	2.11	3.03	2.95	2.72	3.19	3.01	3.20	3.16	2.52
85.00°	1.85	2.93	2.53	2.24	1.92	2.01	2.26	1.90	1.92	2.59	2.50	2.12	2.47	2.71	2.20	2.45	1.85
87.50°	1.64	1.99	2.15	2.21	1.88	2.08	1.92	1.89	1.85	2.37	2.24	1.98	2.16	2.57	2.06	1.88	1.64
90.00°	1.55	2.04	1.94	2.21	1.97	2.13	1.99	1.93	1.93	2.17	2.09	2.01	2.02	2.34	1.97	1.82	1.55
92.50°	1.73	2.10	1.93	2.21	2.11	2.13	2.06	1.99	2.01	1.99	1.97	2.24	2.04	2.11	2.02	1.95	1.73
95.00°	1.73	2.17	1.93	2.11	2.28	2.15	2.03	2.08	1.94	1.95	2.25	2.22	2.08	1.87	2.03	1.67	1.73
97.50°	1.54	2.16	1.93	2.04	2.45	2.18	2.07	2.18	1.87	2.17	2.51	2.00	2.12	1.72	1.99	1.35	1.54
100.00°	1.62	2.00	2.17	2.14	2.40	2.26	2.29	1.92	1.83	2.16	2.13	1.86	1.98	1.99	1.98	1.54	1.62

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	781	781	781	781	761	761	761	761	724	724	724	690	690	690	660	660	645
	1	744	726	709	695	727	710	696	682	681	670	659	655	646	637	630	623	609
	2	709	678	652	630	693	665	642	622	642	623	606	620	605	592	601	588	576
	3	676	636	604	579	662	626	597	574	607	583	563	589	569	553	573	557	545
	4	646	599	565	538	633	591	559	534	575	548	527	561	538	519	547	528	517
	5	618	566	530	504	606	559	526	501	546	518	496	534	510	490	523	502	492
	6	591	537	501	475	581	531	497	472	520	491	468	510	484	464	501	478	469
	7	567	511	474	449	558	506	472	447	497	466	444	488	461	441	480	456	448
	8	544	487	451	426	536	483	449	425	475	444	423	467	440	420	460	436	429
	9	523	465	430	406	516	462	428	405	455	424	403	448	421	401	442	418	399
	10	503	446	411	388	496	442	409	387	436	406	386	431	403	384	425	400	394

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	48.6 fc	3.2 ft
6.5 ft	34.8 fc	3.8 ft
7.5 ft	26.1 fc	4.4 ft
8.0 ft	22.9 fc	4.7 ft
10.0 ft	14.7 fc	5.9 ft
12.0 ft	10.2 fc	7.0 ft
14.0 ft	7.5 fc	8.2 ft
16.0 ft	5.7 fc	9.4 ft
20.0 ft	3.7 fc	11.7 ft
24.0 ft	2.5 fc	14.1 ft
28.0 ft	1.9 fc	16.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	395219	395219	395219
45.00°	8830	12948	10738
55.00°	7361	9277	7536
65.00°	6961	6657	8027
75.00°	4983	7940	5799
85.00°	5723	7822	5936

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	12.9	13.9	13.3	14.3	14.6	12.9	13.9	13.3	14.3	14.6
	3H	14.8	15.7	15.2	16.1	16.5	14.6	15.5	15.0	15.9	16.3
	4H	15.3	16.2	15.8	16.6	17.0	15.2	16.1	15.7	16.5	16.9
	6H	15.7	16.5	16.2	16.9	17.3	15.7	16.5	16.2	16.9	17.3
	8H	15.9	16.6	16.3	17.0	17.5	15.9	16.6	16.3	17.0	17.5
	12H	16.0	16.7	16.5	17.1	17.6	16.0	16.7	16.5	17.1	17.6
4H	2H	13.5	14.3	13.9	14.7	15.1	13.5	14.3	14.0	14.7	15.2
	3H	15.6	16.3	16.1	16.7	17.2	15.4	16.1	15.9	16.5	17.0
	4H	16.3	16.9	16.8	17.4	17.9	16.2	16.8	16.6	17.2	17.7
	6H	16.8	17.3	17.3	17.8	18.3	16.7	17.2	17.2	17.7	18.3
	8H	17.0	17.5	17.5	18.0	18.5	16.9	17.4	17.4	17.9	18.4
	12H	17.2	17.6	17.7	18.2	18.7	17.1	17.6	17.7	18.1	18.6
8H	4H	16.7	17.1	17.2	17.6	18.1	16.5	16.9	17.0	17.4	17.9
	6H	17.3	17.7	17.9	18.3	18.8	17.2	17.5	17.7	18.1	18.6
	8H	17.7	18.0	18.2	18.6	19.1	17.4	17.8	18.0	18.3	18.9
	12H	18.0	18.3	18.6	18.9	19.5	17.8	18.1	18.3	18.6	19.2
12H	4H	16.7	17.1	17.2	17.6	18.1	16.5	16.9	17.0	17.4	17.9
	6H	17.4	17.7	18.0	18.2	18.8	17.2	17.5	17.8	18.0	18.6
	8H	17.8	18.1	18.4	18.7	19.3	17.6	17.8	18.1	18.4	19.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0