

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

CK0407SQPC 10L 35K WD xx NL xx MW
Nom. 4.5" Diam x 7"H Square Cylinder, Wide Beam

Test Number

SP-01451

Test Date

11/29/2022

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

Summary of Results

Power

Input Watts	6.7 W
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Lumen Output

Output Lumens	541
Efficacy	80.75 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.65
Two luminaires, plane 90°	0.66
Four luminaires	0.71

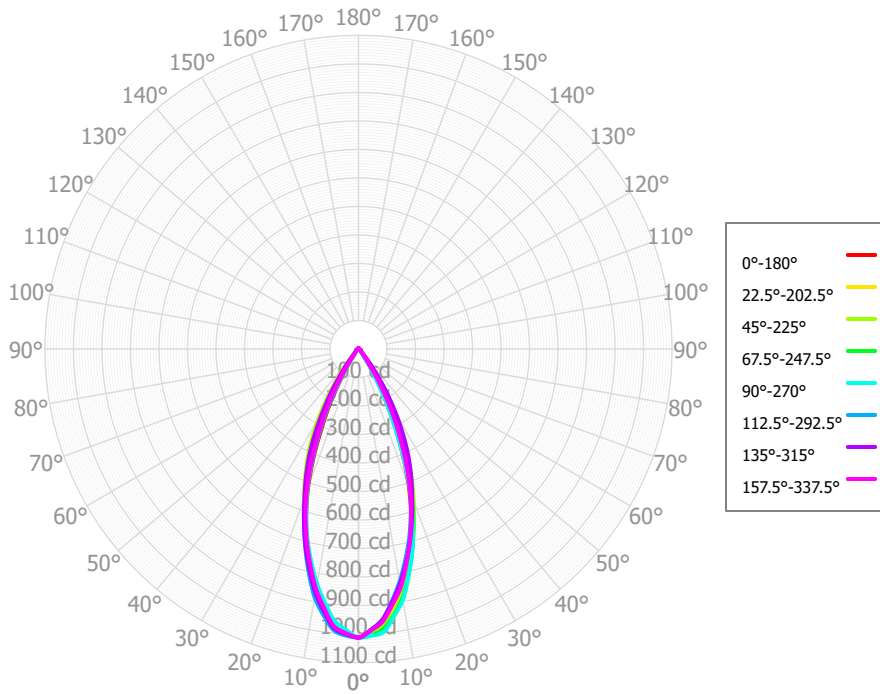
Full Beam Angle

0° - 180°	41°
90° - 270°	41°

IES File Header Contents

Keyword	Value
TEST	SP-01451
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/29/2022
ISSUEDATE	12/1/2022
LUMCAT	CK0407SQPC 10L 35K WD xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Wide Beam
OTHER	No lens, Matte White finish
OTHER	41 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°	89.97	16.63%	90.00° - 100.00°	1.93	0.36%
10.00° - 20.00°	193.78	35.82%	100.00° - 110.00°	1.90	0.35%
20.00° - 30.00°	159.78	29.53%	100.00° - 120.00°	3.68	0.68%
30.00° - 40.00°	51.85	9.58%	120.00° - 130.00°	1.61	0.30%
40.00° - 50.00°	11.78	2.18%	130.00° - 140.00°	1.42	0.26%
50.00° - 60.00°	8.18	1.51%	140.00° - 150.00°	1.16	0.21%
60.00° - 70.00°	7.53	1.39%	150.00° - 160.00°	0.89	0.16%
70.00° - 80.00°	4.43	0.82%	160.00° - 170.00°	0.54	0.10%
80.00° - 90.00°	2.29	0.42%	170.00° - 180.00°	0.19	0.04%
0.00° - 90.00°	529.60	97.89%	0.00° - 180.00°	541.02	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°	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33	1012.33
2.50°	994.23	995.93	1004.00	1005.46	1007.25	1006.49	1001.67	998.24	994.93	995.46	998.73	992.22	987.36	986.93	986.85	989.39	994.23
5.00°	968.62	972.93	974.93	987.46	997.84	991.19	983.98	977.93	968.70	972.80	961.52	961.55	958.49	953.70	955.14	961.61	968.62
7.50°	920.30	921.07	936.14	943.04	947.31	941.89	929.25	918.18	915.80	915.77	913.71	904.35	898.58	893.47	897.00	906.69	920.30
10.00°	862.09	863.59	875.30	888.44	894.84	885.51	870.15	856.17	854.10	852.69	845.36	840.06	837.93	829.12	836.90	850.78	862.09
12.50°	784.77	788.55	807.21	810.59	813.99	804.76	794.74	778.81	779.32	775.62	775.43	768.20	765.88	758.33	768.86	773.51	784.77
15.00°	703.43	711.03	727.27	729.41	731.32	721.59	718.03	700.64	700.88	696.69	702.80	694.70	692.84	686.83	699.09	696.06	703.43
17.50°	615.32	626.93	644.07	641.60	631.00	631.33	636.25	618.16	610.60	616.15	630.48	617.31	610.07	609.79	623.53	614.25	615.32
20.00°	519.24	538.06	564.73	547.33	528.53	536.95	554.23	532.90	517.56	535.45	558.62	539.25	525.30	532.34	550.05	531.79	519.24
22.50°	411.49	438.27	486.27	441.73	411.15	432.32	479.94	435.70	412.28	442.30	489.21	453.50	426.11	442.79	482.50	438.87	411.49
25.00°	309.70	341.81	401.76	341.49	297.77	332.48	405.57	341.29	304.71	348.37	422.97	366.71	328.46	352.75	413.02	346.83	309.70
27.50°	215.68	251.93	316.15	249.46	205.83	242.86	323.00	256.64	217.57	265.18	351.91	285.99	239.28	272.32	338.81	263.71	215.68
30.00°	138.46	170.79	237.53	168.51	122.17	162.81	241.17	177.02	133.36	182.35	275.25	205.83	155.30	192.31	264.95	182.92	138.46
32.50°	80.44	104.63	159.89	102.46	74.55	100.66	173.70	112.38	82.98	119.14	204.15	139.24	93.99	126.17	191.82	118.89	80.44
35.00°	44.20	56.75	105.89	56.74	35.29	54.86	108.54	59.67	36.20	57.41	138.70	73.42	42.94	62.43	127.52	61.47	44.20
37.50°	29.89	36.57	54.23	35.28	25.91	35.74	69.38	37.18	26.40	37.94	86.73	46.42	29.23	40.47	79.40	41.03	29.89
40.00°	20.97	22.72	33.82	21.94	18.06	22.37	33.57	20.72	19.14	19.58	46.84	20.55	18.09	20.03	43.22	23.33	20.97
42.50°	16.87	17.25	15.44	17.12	14.74	17.22	23.94	17.36	16.24	16.91	24.63	17.11	14.86	16.29	26.31	17.83	16.87
45.00°	13.73	13.54	13.47	13.66	12.05	13.51	15.46	14.62	13.48	14.30	16.50	13.72	12.22	12.85	15.22	13.22	13.73
47.50°	11.35	11.87	12.00	11.45	10.95	11.62	13.87	13.06	11.79	12.24	12.25	11.38	11.10	11.68	12.35	11.85	11.35
50.00°	9.92	10.49	10.83	10.01	9.95	10.47	12.32	11.46	10.14	10.34	10.71	9.18	9.98	10.59	10.80	10.60	9.92
52.50°	9.15	9.44	9.66	9.18	9.14	10.13	10.97	9.80	9.41	9.50	9.94	8.79	8.84	9.98	10.87	9.70	9.15
55.00°	8.82	8.65	8.77	8.78	8.36	9.61	9.88	8.97	8.69	8.70	9.63	8.42	7.87	9.34	10.62	8.85	8.82
57.50°	8.75	8.11	7.96	8.68	7.67	8.91	9.78	9.35	8.09	8.04	9.13	8.23	7.22	8.56	10.00	8.16	8.75
60.00°	8.60	7.88	8.24	8.81	7.37	8.45	9.60	9.17	7.62	7.59	8.52	8.05	7.00	8.02	9.68	7.71	8.60
62.50°	8.42	7.88	8.41	9.08	7.73	8.20	9.12	8.26	8.35	7.96	8.19	7.90	7.52	8.40	9.65	7.79	8.42
65.00°	7.77	7.25	7.59	8.36	7.65	7.97	8.46	7.32	8.79	7.99	8.00	7.67	7.49	8.44	8.91	7.62	7.77
67.50°	6.90	6.18	6.75	7.10	6.93	7.76	7.32	6.34	7.19	6.84	7.24	7.03	6.67	7.37	7.57	6.91	6.90
70.00°	5.84	5.38	5.72	5.90	6.10	6.97	6.30	5.65	5.68	5.79	6.27	6.32	6.02	6.28	6.42	6.00	5.84
72.50°	4.70	4.76	4.70	4.72	5.12	5.80	5.55	5.25	4.62	5.04	4.99	5.32	5.58	5.08	5.40	4.72	4.70
75.00°	3.65	3.97	3.71	3.79	4.18	4.68	4.69	4.51	3.72	4.25	3.60	4.29	4.74	4.04	4.47	3.63	3.65
77.50°	2.62	3.10	2.82	2.95	3.27	3.58	3.59	3.47	3.50	3.36	3.28	3.20	3.44	3.34	3.60	2.83	2.62
80.00°	2.38	2.71	2.34	2.44	2.63	2.91	2.75	2.80	3.12	2.72	3.28	2.35	2.69	2.75	2.91	2.29	2.38
82.50°	2.36	2.56	1.98	2.05	2.26	2.47	2.36	2.42	2.17	2.65	2.68	2.20	2.49	2.36	2.32	2.10	2.36
85.00°	2.01	2.25	2.03	1.79	1.92	2.16	2.13	2.05	1.54	2.45	1.94	2.01	2.18	2.07	2.04	1.88	2.01
87.50°	1.58	1.87	2.03	1.56	1.61	1.90	2.13	1.68	1.90	2.01	1.87	1.71	1.77	1.95	1.91	1.64	1.58
90.00°	1.61	1.77	1.87	1.64	1.55	1.75	2.09	1.56	2.12	1.70	1.93	1.49	1.56	1.94	1.87	1.63	1.61
92.50°	1.72	1.77	1.71	1.78	1.68	1.64	1.98	1.59	1.96	1.62	1.86	1.44	1.53	2.10	1.87	1.88	1.72
95.00°	1.76	1.59	1.53	1.85	1.78	1.59	1.99	1.80	1.86	1.63	1.77	1.47	1.54	2.16	1.91	1.86	1.76
97.50°	1.79	1.35	1.54	1.91	1.84	1.56	2.14	2.10	1.89	1.77	1.80	1.65	1.60	2.07	1.96	1.60	1.79
100.00°	1.70	1.48	1.94	1.73	1.79	1.68	2.14	2.07	1.87	1.85	1.85	1.74	1.62	1.95	2.04	1.58	1.70

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	641	641	641	641	625	625	625	625	595	595	595	567	567	567	542	542	542	530
	1	612	597	584	572	597	584	573	562	560	551	543	538	531	524	518	513	507	501
	2	584	559	538	520	571	548	530	514	529	514	501	511	499	488	495	485	476	475
	3	558	525	500	479	546	517	493	475	501	482	466	487	471	457	473	460	449	451
	4	533	495	467	446	523	488	463	443	475	454	436	463	445	430	452	437	424	428
	5	510	468	439	418	501	463	436	416	452	429	411	442	422	406	433	416	402	408
	6	488	444	415	394	480	440	412	392	431	406	388	422	401	385	414	396	382	389
	7	468	423	393	372	461	418	391	371	411	386	368	404	382	366	397	378	363	371
	8	449	403	373	353	442	399	372	352	393	368	350	387	364	348	381	361	346	355
	9	431	384	356	336	425	381	354	335	376	351	334	371	348	332	365	345	330	340
	10	415	368	339	321	409	365	338	320	360	336	319	356	333	317	351	331	316	326

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	33.5 fc	4.1 ft
6.5 ft	24.0 fc	4.8 ft
7.5 ft	18.0 fc	5.5 ft
8.0 ft	15.8 fc	5.9 ft
10.0 ft	10.1 fc	7.4 ft
12.0 ft	7.0 fc	8.9 ft
14.0 ft	5.2 fc	10.4 ft
16.0 ft	4.0 fc	11.8 ft
20.0 ft	2.5 fc	14.8 ft
24.0 ft	1.8 fc	17.7 ft
28.0 ft	1.3 fc	20.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	272415	272415	272415
45.00°	5225	5128	4584
55.00°	4138	4117	3923
65.00°	4945	4834	4874
75.00°	3793	3858	4347
85.00°	6206	6275	5926

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	9.6	10.5	10.0	10.9	11.3	9.7	10.6	10.1	11.0	11.4
	3H	12.0	12.8	12.4	13.2	13.6	12.3	13.2	12.7	13.5	14.0
	4H	12.7	13.5	13.1	13.8	14.3	13.2	14.0	13.6	14.4	14.8
	6H	13.1	13.8	13.6	14.2	14.7	13.7	14.4	14.2	14.9	15.3
	8H	13.4	14.1	13.9	14.5	15.0	14.0	14.6	14.4	15.1	15.5
	12H	13.7	14.4	14.2	14.8	15.3	14.3	14.9	14.8	15.4	15.8
4H	2H	10.6	11.4	11.1	11.8	12.3	10.7	11.5	11.1	11.9	12.3
	3H	13.0	13.6	13.5	14.1	14.6	13.3	14.0	13.8	14.4	14.9
	4H	13.7	14.3	14.2	14.8	15.3	14.3	14.9	14.8	15.3	15.8
	6H	14.3	14.8	14.8	15.3	15.8	14.9	15.4	15.4	15.9	16.4
	8H	14.6	15.1	15.1	15.6	16.1	15.2	15.7	15.7	16.2	16.7
	12H	15.1	15.5	15.6	16.0	16.5	15.6	16.0	16.1	16.5	17.0
8H	4H	14.0	14.5	14.5	15.0	15.5	14.5	15.0	15.0	15.5	16.0
	6H	14.7	15.1	15.3	15.6	16.2	15.3	15.7	15.9	16.2	16.8
	8H	15.2	15.6	15.8	16.1	16.7	15.8	16.1	16.3	16.6	17.2
	12H	15.9	16.2	16.4	16.7	17.3	16.3	16.6	16.9	17.1	17.8
12H	4H	14.0	14.4	14.6	14.9	15.5	14.5	14.9	15.1	15.5	16.0
	6H	14.8	15.1	15.4	15.6	16.2	15.4	15.7	16.0	16.2	16.8
	8H	15.4	15.7	16.0	16.2	16.8	15.9	16.2	16.5	16.8	17.4

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0