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 XW xx SO xx MW

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

Test Number

SP-01454

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

Lumen Output

Output Lumens	507
Efficacy	75.74 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.87
Two luminaires, plane 90°	0.87
Four luminaires	0.89

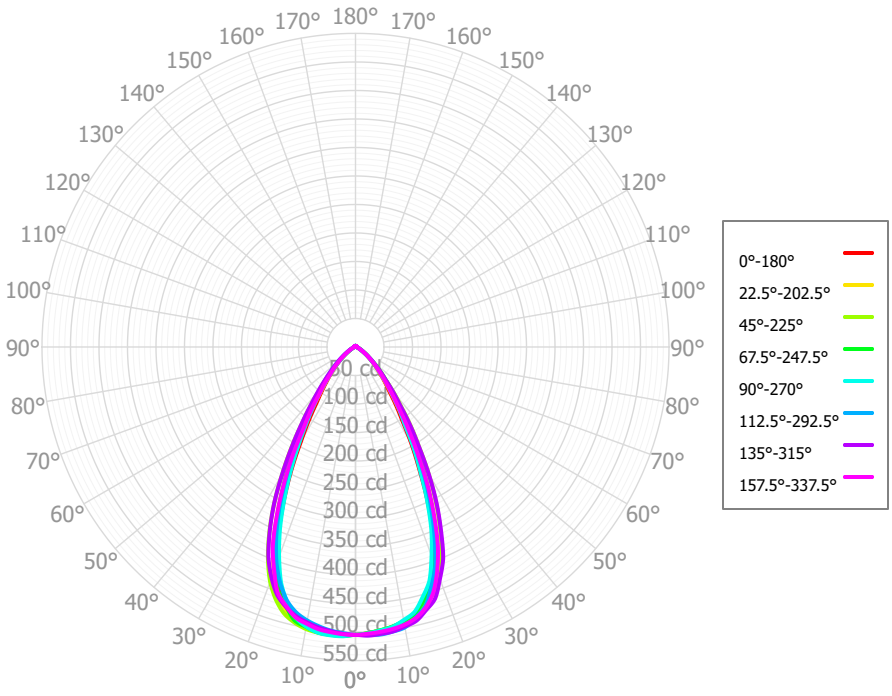
Full Beam Angle

0° - 180°	54°
90° - 270°	54°

IES File Header Contents

Keyword	Value
TEST	SP-01454
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/29/2022
ISSUEDATE	12/1/2022
LUMCAT	CK0407SQPC 10L 35K XW xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Xtra Wide Beam
OTHER	Solite lens, Matte White finish
OTHER	54 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
0.00° - 10.00°	48.46	9.55%
10.00° - 20.00°	130.12	25.64%
20.00° - 30.00°	146.03	28.78%
30.00° - 40.00°	91.27	17.98%
40.00° - 50.00°	45.69	9.00%
50.00° - 60.00°	20.34	4.01%
60.00° - 70.00°	8.50	1.68%
70.00° - 80.00°	3.98	0.78%
80.00° - 90.00°	2.08	0.41%
0.00° - 90.00°	496.48	97.83%

Zone	Lumens	% Fixture
90.00° - 100.00°	1.86	0.37%
100.00° - 110.00°	1.86	0.37%
100.00° - 120.00°	3.58	0.71%
120.00° - 130.00°	1.52	0.30%
130.00° - 140.00°	1.36	0.27%
140.00° - 150.00°	1.13	0.22%
150.00° - 160.00°	0.85	0.17%
160.00° - 170.00°	0.52	0.10%
170.00° - 180.00°	0.18	0.04%
0.00° - 180.00°	507.47	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°	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05	505.05
2.50°	504.84	503.57	502.52	502.35	503.05	502.46	503.63	504.31	505.37	506.09	506.67	507.52	507.92	505.53	506.81	503.49	504.84
5.00°	502.71	501.06	499.05	498.87	499.33	499.41	500.23	502.13	504.50	505.64	506.80	506.49	507.70	506.31	505.30	501.62	502.71
7.50°	499.50	497.17	495.06	494.83	495.38	494.10	496.32	499.23	501.83	504.64	505.41	505.07	505.39	503.47	503.34	498.99	499.50
10.00°	493.04	490.78	489.14	488.13	486.51	487.23	490.56	493.04	497.30	499.41	502.16	498.50	498.09	499.45	497.92	494.71	493.04
12.50°	484.67	481.32	482.27	479.08	476.59	477.66	483.37	486.05	486.21	492.87	495.07	491.63	485.79	486.62	492.15	487.27	484.67
15.00°	465.24	467.18	469.22	461.47	454.66	461.85	471.96	470.28	469.36	475.60	484.00	471.06	463.59	471.47	478.05	474.13	465.24
17.50°	440.34	445.11	453.65	439.82	430.87	436.98	456.36	452.88	440.21	455.73	464.64	449.80	433.96	441.82	463.47	452.74	440.34
20.00°	400.30	412.84	426.01	406.46	390.24	404.86	430.81	417.24	401.89	418.45	438.00	411.13	392.02	409.29	433.03	418.90	400.30
22.50°	354.07	371.46	394.34	368.67	347.86	363.83	399.25	379.19	352.99	377.98	401.40	371.75	346.44	363.20	401.94	377.49	354.07
25.00°	299.95	320.06	351.13	320.35	297.40	318.39	355.75	326.94	297.37	323.68	357.31	321.93	295.71	315.13	354.79	326.37	299.95
27.50°	243.19	267.98	304.82	272.65	246.47	268.32	308.91	273.50	243.96	267.55	308.39	272.49	247.22	267.56	307.39	274.16	243.19
30.00°	196.47	215.26	256.26	226.12	203.10	223.03	256.51	221.77	191.73	217.62	256.42	226.35	201.39	220.04	256.43	220.75	196.47
32.50°	152.40	170.88	207.23	184.12	160.26	181.98	208.03	170.17	152.32	168.19	208.82	181.77	162.81	180.76	206.60	175.15	152.40
35.00°	122.94	133.13	168.29	149.58	133.28	147.65	165.04	137.18	118.61	134.86	163.53	146.41	131.59	141.89	166.22	136.80	122.94
37.50°	96.49	104.94	130.86	120.03	106.82	118.43	129.47	104.80	96.58	102.19	128.90	113.53	105.81	115.70	127.97	107.78	96.49
40.00°	80.32	83.17	104.23	97.40	87.89	95.80	102.79	85.56	78.81	83.72	98.99	91.68	84.73	89.92	102.11	86.15	80.32
42.50°	65.68	66.90	78.66	78.14	69.74	77.38	80.99	66.93	65.15	65.53	77.94	71.53	67.91	72.95	78.23	69.51	65.68
45.00°	54.87	53.76	63.68	62.86	58.25	62.53	64.14	54.80	52.70	53.35	60.11	57.23	54.21	56.42	62.86	56.21	54.87
47.50°	44.44	43.09	49.24	49.51	47.13	49.60	50.74	43.14	43.17	41.54	46.91	44.13	43.08	45.35	48.74	45.36	44.44
50.00°	36.42	33.61	39.33	38.11	38.19	39.56	40.33	34.77	34.31	33.65	35.08	34.38	33.55	34.71	38.91	35.90	36.42
52.50°	28.52	26.80	29.58	29.47	29.80	30.82	31.67	26.82	27.55	26.05	27.04	25.87	26.05	27.47	29.99	28.49	28.52
55.00°	22.55	21.03	23.44	23.16	23.79	24.20	24.28	21.03	21.15	20.45	19.85	20.16	19.61	20.64	23.53	22.04	22.55
57.50°	16.70	16.52	17.51	18.29	18.19	18.36	18.66	15.87	16.54	15.30	15.86	15.28	15.60	16.06	17.71	17.28	16.70
60.00°	13.98	12.41	14.24	14.45	13.94	14.60	14.14	13.14	12.15	12.39	12.42	11.92	12.65	12.01	13.31	13.18	13.98
62.50°	11.30	10.02	11.06	11.35	10.37	11.47	11.08	10.58	9.66	9.64	9.93	9.18	9.98	10.13	9.82	10.28	11.30
65.00°	9.18	8.08	8.64	8.71	8.70	9.24	8.79	8.53	7.31	7.46	7.56	7.42	7.40	8.37	8.06	7.75	9.18
67.50°	7.16	6.84	6.47	6.92	7.12	7.22	7.13	6.71	6.48	5.60	6.02	6.03	6.00	7.00	6.58	6.47	7.16
70.00°	5.92	5.74	5.71	5.58	5.71	6.02	5.73	5.42	5.67	4.66	4.53	5.14	4.95	5.68	5.53	5.50	5.92
72.50°	4.74	4.66	4.89	4.61	4.49	4.95	4.75	4.31	4.60	3.84	4.08	4.23	4.15	4.47	4.74	4.65	4.74
75.00°	3.94	3.59	3.82	3.79	3.61	3.78	3.92	3.56	3.56	3.31	3.64	3.31	3.40	3.47	4.27	3.83	3.94
77.50°	3.17	2.80	2.89	3.15	2.90	2.60	3.42	2.87	3.13	2.77	3.01	2.61	2.71	2.91	3.67	3.05	3.17
80.00°	2.58	2.04	2.43	2.58	2.46	2.33	3.02	2.27	2.71	2.20	2.38	2.12	2.04	2.40	2.90	2.27	2.58
82.50°	2.13	1.84	2.05	2.22	2.08	2.13	2.53	1.85	2.32	1.78	1.93	1.86	1.81	1.96	2.35	1.95	2.13
85.00°	2.14	1.65	1.88	1.92	1.79	1.86	2.02	1.67	1.97	1.62	1.51	1.77	1.64	1.71	1.99	1.66	2.14
87.50°	2.11	1.76	1.76	1.81	1.67	1.59	1.89	1.58	1.90	1.56	1.46	1.63	1.66	1.73	1.83	1.74	2.11
90.00°	1.95	1.85	1.76	1.75	1.74	1.57	1.84	1.57	1.82	1.63	1.43	1.45	1.69	1.74	1.82	1.84	1.95
92.50°	1.82	1.77	1.78	1.78	1.80	1.56	1.90	1.53	1.71	1.66	1.48	1.40	1.70	1.73	1.76	1.68	1.82
95.00°	1.73	1.70	1.84	1.83	1.83	1.69	1.99	1.44	1.66	1.64	1.52	1.41	1.71	1.69	1.67	1.53	1.73
97.50°	1.70	1.68	1.82	1.71	1.85	1.80	2.02	1.49	1.81	1.68	1.52	1.49	1.82	1.61	1.76	1.64	1.70
100.00°	1.78	1.66	1.70	1.57	1.86	1.69	2.06	1.66	1.91	1.77	1.53	1.60	1.92	1.58	1.95	1.74	1.78

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	602	602	602	602	586	586	586	586	558	558	558	532	532	532	508	508	508	496
	1	570	554	540	528	556	542	529	518	519	509	500	498	491	483	479	473	467	463
	2	538	511	488	469	526	501	481	463	483	466	451	466	452	440	450	439	429	429
	3	508	472	445	423	497	464	439	419	449	428	410	435	417	403	422	408	395	399
	4	480	438	408	384	469	432	403	382	419	395	376	407	387	370	396	379	365	371
RCR	5	454	408	376	352	444	402	372	350	392	366	346	382	359	342	373	353	338	346
	6	429	381	348	325	421	376	345	323	367	340	320	359	335	317	351	330	314	324
	7	407	356	324	301	399	352	322	300	345	317	297	338	313	295	331	309	293	304
	8	386	335	302	280	379	331	301	279	325	297	277	318	294	276	313	290	274	285
	9	367	315	283	262	360	312	282	261	306	279	260	301	276	258	296	273	257	269
	10	349	297	266	246	343	295	265	245	290	263	244	285	260	243	280	258	242	254

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	16.7 fc	5.6 ft
6.5 ft	12.0 fc	6.6 ft
7.5 ft	9.0 fc	7.7 ft
8.0 ft	7.9 fc	8.2 ft
10.0 ft	5.1 fc	10.2 ft
12.0 ft	3.5 fc	12.2 ft
14.0 ft	2.6 fc	14.3 ft
16.0 ft	2.0 fc	16.3 ft
20.0 ft	1.3 fc	20.4 ft
24.0 ft	0.9 fc	24.5 ft
28.0 ft	0.6 fc	28.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	135909	135909	135909
45.00°	20882	24233	22168
55.00°	10579	10998	11163
65.00°	5846	5501	5542
75.00°	4093	3971	3753
85.00°	6610	5802	5523

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	14.5	15.6	14.9	15.9	16.3	14.5	15.6	14.9	16.0	16.3
	3H	15.2	16.1	15.6	16.5	17.0	15.1	16.1	15.6	16.5	16.9
	4H	15.5	16.3	15.9	16.7	17.2	15.4	16.2	15.8	16.6	17.1
	6H	15.7	16.5	16.1	16.9	17.3	15.5	16.3	16.0	16.7	17.2
	8H	15.8	16.5	16.2	17.0	17.4	15.6	16.4	16.1	16.8	17.3
	12H	15.9	16.7	16.4	17.1	17.6	15.7	16.4	16.2	16.9	17.4
4H	2H	14.6	15.5	15.1	15.9	16.4	14.6	15.5	15.1	15.9	16.4
	3H	15.5	16.2	16.0	16.7	17.1	15.4	16.2	15.9	16.6	17.1
	4H	15.9	16.5	16.3	17.0	17.5	15.7	16.4	16.2	16.9	17.4
	6H	16.2	16.7	16.7	17.2	17.7	16.0	16.6	16.5	17.0	17.6
	8H	16.3	16.8	16.8	17.3	17.9	16.1	16.7	16.7	17.1	17.7
	12H	16.6	17.0	17.1	17.6	18.1	16.3	16.8	16.9	17.3	17.8
8H	4H	16.0	16.5	16.5	17.0	17.5	15.8	16.3	16.3	16.8	17.3
	6H	16.4	16.8	16.9	17.3	17.9	16.2	16.6	16.7	17.1	17.7
	8H	16.6	17.0	17.2	17.5	18.1	16.4	16.8	17.0	17.3	17.9
	12H	17.0	17.3	17.5	17.8	18.5	16.8	17.1	17.3	17.6	18.3
12H	4H	15.9	16.4	16.5	16.9	17.4	15.8	16.2	16.3	16.8	17.3
	6H	16.4	16.8	17.0	17.3	17.9	16.2	16.6	16.8	17.1	17.7
	8H	16.7	17.0	17.2	17.5	18.2	16.5	16.8	17.1	17.4	18.0

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0