

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407SQPC 20L 35K XW xx NL xx MW
Nom. 4.5" Diam x 7"H Square Cylinder, Xtra Wide Beam

Test Number

SP-01453

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	561
Efficacy	83.67 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.91
Two luminaires, plane 90°	0.91
Four luminaires	0.93

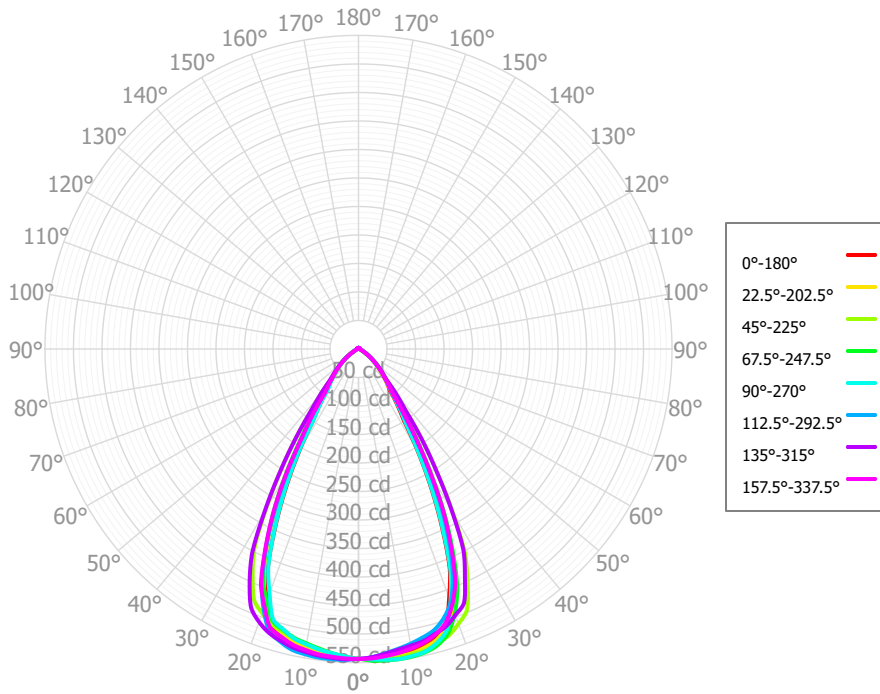
Full Beam Angle

0° - 180°	55°
90° - 270°	56°

IES File Header Contents

Keyword	Value
TEST	SP-01453
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/29/2022
ISSUEDATE	12/1/2022
LUMCAT	CK0407SQPC 20L 35K XW xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Xtra Wide Beam
OTHER	No lens, Matte White finish
OTHER	56 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°	52.26	9.32%	90.00° - 100.00°	1.89	0.34%
10.00° - 20.00°	145.97	26.04%	100.00° - 110.00°	1.82	0.32%
20.00° - 30.00°	174.54	31.14%	100.00° - 120.00°	3.53	0.63%
30.00° - 40.00°	94.85	16.92%	120.00° - 130.00°	1.60	0.29%
40.00° - 50.00°	45.10	8.05%	130.00° - 140.00°	1.37	0.25%
50.00° - 60.00°	22.32	3.98%	140.00° - 150.00°	1.14	0.20%
60.00° - 70.00°	8.30	1.48%	150.00° - 160.00°	0.85	0.15%
70.00° - 80.00°	3.91	0.70%	160.00° - 170.00°	0.52	0.09%
80.00° - 90.00°	2.23	0.40%	170.00° - 180.00°	0.18	0.03%
0.00° - 90.00°	549.47	98.02%	0.00° - 180.00°	560.56	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°	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65	543.65
2.50°	543.67	545.44	546.17	547.31	545.26	545.84	544.87	543.32	543.13	540.74	540.64	540.71	539.83	541.26	541.19	543.31	543.67
5.00°	542.82	544.87	545.73	548.37	547.20	546.20	543.68	541.87	540.67	537.52	535.78	535.65	535.78	535.99	536.73	540.81	542.82
7.50°	541.93	543.62	545.25	548.73	548.53	545.81	542.28	540.12	538.09	534.42	530.90	530.05	531.57	530.61	532.06	537.87	541.93
10.00°	537.65	541.80	543.50	547.66	546.67	543.61	539.35	536.07	533.49	530.26	525.65	524.60	526.10	525.12	528.54	533.53	537.65
12.50°	533.13	536.51	541.55	544.51	543.33	540.31	535.92	531.54	528.47	525.16	520.27	519.21	520.50	518.61	525.09	527.96	533.13
15.00°	522.07	528.53	534.38	537.56	533.43	531.41	529.61	522.87	518.60	516.11	513.26	510.25	509.30	510.95	517.75	519.08	522.07
17.50°	509.03	511.33	526.80	522.53	516.48	519.39	522.24	513.46	505.27	503.87	505.72	500.17	497.70	495.82	510.29	505.27	509.03
20.00°	464.94	487.66	512.98	494.19	472.25	486.66	509.72	481.92	461.99	475.56	493.46	471.66	456.48	473.11	496.93	479.61	464.94
22.50°	418.73	443.06	496.62	452.73	421.95	443.57	491.87	447.06	415.46	435.44	477.94	438.11	413.83	433.57	483.11	443.65	418.73
25.00°	348.26	384.96	452.39	391.46	351.36	383.95	451.91	386.75	346.69	379.97	439.59	383.18	347.84	378.34	441.76	385.23	348.26
27.50°	278.09	318.03	404.82	326.69	281.37	316.87	404.34	323.42	278.09	314.29	396.55	323.23	281.33	316.82	399.24	323.40	278.09
30.00°	210.47	245.97	329.52	257.13	213.13	250.00	329.29	254.72	210.45	247.97	325.98	257.92	213.44	249.98	327.10	254.89	210.47
32.50°	147.59	184.43	255.82	194.51	154.77	183.23	257.09	185.52	148.93	181.27	256.80	191.51	146.42	188.83	255.59	191.84	147.59
35.00°	117.24	128.39	192.54	140.47	122.43	139.48	193.90	139.82	116.66	134.33	194.33	141.85	115.75	132.04	194.22	138.32	117.24
37.50°	89.59	97.08	133.73	103.10	95.64	104.00	138.14	95.65	88.63	98.25	137.19	95.02	86.05	97.94	135.22	98.77	89.59
40.00°	77.22	77.56	99.71	84.66	81.86	84.43	103.06	80.59	77.83	78.34	102.10	77.68	75.72	79.81	102.26	81.63	77.22
42.50°	65.41	64.18	69.50	69.60	69.12	69.93	74.27	66.65	67.38	66.40	71.78	64.39	65.52	67.12	71.62	67.17	65.41
45.00°	56.22	53.42	56.94	58.00	58.54	59.77	61.13	57.19	58.16	57.19	58.84	55.00	56.82	57.89	60.15	56.58	56.22
47.50°	47.05	44.33	45.21	47.78	48.10	50.82	49.45	47.81	49.19	49.20	47.11	46.05	48.19	49.01	49.03	47.05	47.05
50.00°	37.98	35.86	36.76	38.87	37.91	41.39	41.06	39.71	41.03	41.01	39.20	39.05	40.21	40.34	40.31	38.89	37.98
52.50°	29.50	28.49	28.80	30.87	29.06	31.84	33.15	31.65	33.07	32.73	31.57	32.21	32.35	32.67	31.94	31.14	29.50
55.00°	23.15	21.51	22.54	23.67	22.50	24.53	26.22	24.90	25.67	25.87	24.70	25.53	25.42	25.54	25.54	23.85	23.15
57.50°	17.29	16.32	16.69	17.94	16.98	17.69	19.87	18.27	19.05	19.52	18.63	18.86	18.89	20.02	19.49	17.90	17.29
60.00°	12.98	11.67	12.08	13.36	13.09	13.35	14.59	13.78	14.38	15.01	14.54	14.76	14.80	15.26	14.99	13.39	12.98
62.50°	9.43	9.09	8.23	10.09	9.81	9.45	10.47	9.49	10.43	11.09	10.81	10.73	10.99	11.70	10.93	10.08	9.43
65.00°	8.00	7.05	6.42	7.75	7.41	7.54	8.26	7.64	8.08	8.39	7.90	8.53	8.65	8.64	8.61	7.94	8.00
67.50°	6.55	5.83	4.91	6.25	5.81	5.91	6.43	5.89	6.25	6.02	5.61	6.36	6.52	6.92	6.54	6.23	6.55
70.00°	5.06	4.80	4.14	5.29	5.23	4.98	5.16	5.05	5.43	4.93	4.58	5.44	5.34	5.72	5.42	4.90	5.06
72.50°	3.94	4.04	3.49	4.40	4.62	4.13	4.23	4.24	4.58	4.14	3.83	4.52	4.27	4.78	4.37	4.21	3.94
75.00°	3.63	3.34	3.10	3.54	3.97	3.51	3.77	3.69	3.68	3.58	3.60	3.77	3.64	3.92	3.58	4.05	3.63
77.50°	3.24	2.76	2.72	2.95	3.39	2.91	3.27	3.16	2.93	3.08	3.18	3.05	3.08	3.25	2.90	3.60	3.24
80.00°	2.67	2.20	2.32	2.49	2.88	2.61	2.72	2.71	2.45	2.80	2.42	2.71	2.74	2.64	2.52	2.92	2.67
82.50°	2.24	1.96	1.99	2.13	2.41	2.32	2.37	2.28	2.11	2.56	1.88	2.38	2.38	2.17	2.24	2.42	2.24
85.00°	2.05	1.77	1.80	1.81	1.98	2.04	2.27	1.91	1.96	2.17	1.66	2.13	1.95	1.74	2.15	2.05	2.05
87.50°	1.89	1.67	1.67	1.67	1.76	1.77	2.19	1.63	1.82	1.77	1.58	1.92	1.64	1.67	2.07	1.81	1.89
90.00°	1.76	1.58	1.65	1.60	1.72	1.74	2.12	1.76	1.67	1.69	1.71	1.94	1.65	1.67	2.00	1.67	1.76
92.50°	1.69	1.55	1.64	1.62	1.65	1.70	2.03	1.85	1.68	1.66	1.74	1.93	1.65	1.79	1.96	1.65	1.69
95.00°	1.74	1.52	1.62	1.68	1.55	1.79	1.90	1.78	1.89	1.65	1.63	1.74	1.64	1.93	1.95	1.71	1.74
97.50°	1.82	1.57	1.65	1.69	1.55	1.87	1.91	1.70	1.95	1.63	1.56	1.62	1.61	1.86	1.93	1.77	1.82
100.00°	1.95	1.63	1.73	1.68	1.62	1.73	2.03	1.57	1.88	1.69	1.54	1.80	1.54	1.75	1.86	1.83	1.95

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	665	665	665	665	648	648	648	648	617	617	617	588	588	588	562	562	549
	1	630	613	598	584	615	600	586	574	575	564	554	552	543	535	531	524	513
	2	596	566	541	521	582	555	533	514	535	517	501	517	502	489	499	487	477
	3	563	524	494	470	550	515	488	465	499	476	456	483	464	448	469	453	444
	4	532	487	453	428	521	479	449	425	466	439	419	453	431	412	441	422	413
	5	503	453	419	393	493	447	415	390	436	408	386	425	401	381	415	394	377
	6	477	424	388	363	467	419	385	361	409	379	357	400	374	354	391	369	351
	7	452	397	361	336	444	393	359	335	384	354	333	377	350	330	369	346	327
	8	429	373	338	313	421	369	336	312	362	332	310	355	328	308	349	325	306
	9	408	351	317	293	401	348	315	292	342	312	291	336	309	289	330	306	288
	10	388	332	298	275	382	329	296	275	323	294	273	318	291	272	313	289	271

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	18.0 fc	5.8 ft
6.5 ft	12.9 fc	6.8 ft
7.5 ft	9.7 fc	7.9 ft
8.0 ft	8.5 fc	8.4 ft
10.0 ft	5.4 fc	10.5 ft
12.0 ft	3.8 fc	12.6 ft
14.0 ft	2.8 fc	14.7 ft
16.0 ft	2.1 fc	16.8 ft
20.0 ft	1.4 fc	20.9 ft
24.0 ft	0.9 fc	25.1 ft
28.0 ft	0.7 fc	29.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	146294	146294	146294
45.00°	21395	21668	22280
55.00°	10861	10575	10555
65.00°	5094	4089	4718
75.00°	3776	3227	4129
85.00°	6345	5543	6115

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	14.3	15.3	14.7	15.7	16.1	14.7	15.8	15.1	16.1	16.5
	3H	14.8	15.7	15.2	16.1	16.5	15.2	16.1	15.6	16.5	16.9
	4H	15.0	15.9	15.5	16.3	16.7	15.4	16.2	15.8	16.6	17.1
	6H	15.3	16.1	15.7	16.5	16.9	15.6	16.4	16.1	16.8	17.3
	8H	15.4	16.1	15.9	16.6	17.0	15.7	16.5	16.2	16.9	17.4
	12H	15.6	16.3	16.0	16.7	17.2	15.9	16.6	16.4	17.0	17.5
4H	2H	14.3	15.2	14.8	15.6	16.0	14.8	15.7	15.2	16.0	16.5
	3H	15.0	15.7	15.5	16.2	16.6	15.4	16.1	15.8	16.5	17.0
	4H	15.3	16.0	15.8	16.4	16.9	15.7	16.3	16.2	16.8	17.3
	6H	15.7	16.3	16.2	16.8	17.3	16.0	16.6	16.5	17.1	17.6
	8H	15.9	16.4	16.4	16.9	17.4	16.2	16.7	16.7	17.2	17.8
	12H	16.2	16.6	16.7	17.2	17.7	16.5	16.9	17.0	17.5	18.0
8H	4H	15.4	15.9	15.9	16.4	16.9	15.7	16.2	16.2	16.7	17.2
	6H	15.9	16.3	16.4	16.8	17.4	16.2	16.6	16.8	17.2	17.7
	8H	16.2	16.6	16.8	17.1	17.7	16.5	16.9	17.1	17.4	18.0
	12H	16.6	17.0	17.2	17.5	18.1	16.9	17.3	17.5	17.8	18.4
12H	4H	15.4	15.8	15.9	16.3	16.9	15.7	16.2	16.2	16.7	17.2
	6H	15.9	16.3	16.5	16.8	17.4	16.2	16.6	16.8	17.1	17.7
	8H	16.3	16.6	16.9	17.2	17.8	16.6	16.9	17.2	17.5	18.1

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0