

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

CK0407PC 10L 35K XW xx NL xx MW  
Nom. 4.5" Diam x 7"H Round Cylinder, Xtra Wide Beam

### **Test Number**

SP-01445

### **Test Date**

11/23/2022

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	716
Efficacy	106.92 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.38
90° - 270° Size	-0.38
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	1
Two luminaires, plane 90°	0.99
Four luminaires	0.93

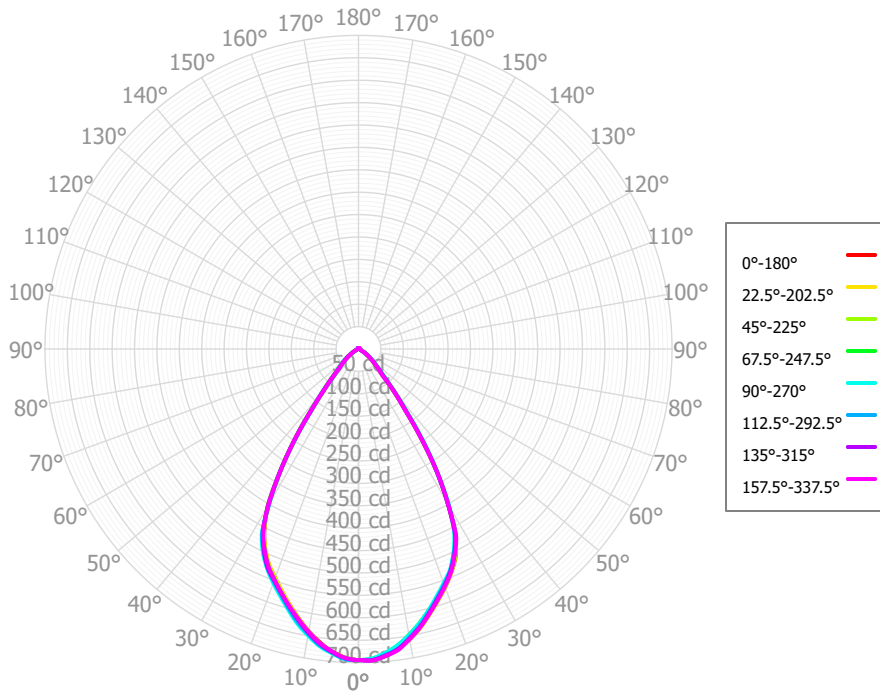
#### Full Beam Angle

0° - 180°	64°
90° - 270°	64°

### IES File Header Contents

Keyword	Value
TEST	SP-01445
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/23/2022
ISSUEDATE	11/23/2022
LUMCAT	CK0407PC 10L 35K XW xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Round Cylinder, Xtra Wide Beam
OTHER	No lens, Matte White finish
OTHER	64 Degree Beam Angle
OTHER	Reference Project SL378
LAMP	N/A
LAMPCAT	N/A, Min. 80 CRI
OTHER	Total Luminaire Watts is approximate
OTHER	CCT 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°	65.01	9.07%	90.00° - 100.00°	1.98	0.28%
10.00° - 20.00°	169.22	23.62%	100.00° - 110.00°	1.93	0.27%
20.00° - 30.00°	226.40	31.60%	100.00° - 120.00°	3.74	0.52%
30.00° - 40.00°	154.92	21.63%	120.00° - 130.00°	1.63	0.23%
40.00° - 50.00°	53.51	7.47%	130.00° - 140.00°	1.45	0.20%
50.00° - 60.00°	23.18	3.24%	140.00° - 150.00°	1.20	0.17%
60.00° - 70.00°	7.41	1.03%	150.00° - 160.00°	0.89	0.12%
70.00° - 80.00°	2.97	0.41%	160.00° - 170.00°	0.54	0.08%
80.00° - 90.00°	2.12	0.30%	170.00° - 180.00°	0.19	0.03%
0.00° - 90.00°	704.74	98.38%	0.00° - 180.00°	716.37	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°	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60	694.60
2.50°	694.84	695.37	693.35	692.52	691.60	692.73	690.46	690.30	689.82	689.61	690.33	690.51	692.87	695.58	695.33	696.28	694.84
5.00°	688.23	686.89	684.92	681.77	681.32	679.80	679.19	677.54	678.71	677.67	680.01	679.00	682.08	685.76	687.49	688.24	688.23
7.50°	675.81	675.83	671.84	669.00	667.01	666.88	663.60	662.29	660.67	662.64	663.82	664.48	668.70	675.53	675.65	677.94	675.81
10.00°	658.25	657.08	653.50	648.29	648.46	645.82	643.48	641.33	640.30	641.27	644.26	644.83	649.45	654.32	656.63	657.28	658.25
12.50°	637.12	637.13	633.14	627.21	627.38	624.68	619.98	618.46	616.43	616.90	620.78	623.24	628.59	632.40	635.54	636.08	637.12
15.00°	612.55	613.10	610.25	604.43	604.16	599.88	596.18	595.01	592.35	592.18	596.32	599.65	603.58	608.00	610.35	611.90	612.55
17.50°	588.70	589.11	587.46	581.77	579.52	574.95	572.14	571.35	567.95	567.28	570.60	575.22	579.09	583.36	585.73	587.79	588.70
20.00°	565.64	565.34	564.78	559.83	556.20	552.50	549.86	548.28	544.25	543.85	546.38	550.74	556.15	559.20	562.39	564.12	565.64
22.50°	540.37	540.17	539.81	536.66	533.87	530.21	529.17	525.47	521.85	521.27	524.27	526.23	532.03	535.11	537.13	539.56	540.37
25.00°	512.48	508.62	511.32	505.34	502.18	498.85	499.64	495.52	494.11	491.93	495.88	495.64	504.09	503.14	507.07	507.68	512.48
27.50°	467.51	470.76	468.24	469.79	462.90	466.68	461.33	462.18	455.52	458.21	457.72	461.85	467.61	469.99	466.99	472.43	467.51
30.00°	400.30	399.19	400.65	398.88	404.61	398.99	404.75	401.76	405.23	400.94	405.61	401.93	399.39	401.34	398.78	400.11	400.30
32.50°	326.67	326.40	328.23	327.30	329.44	327.16	328.32	327.11	328.26	326.88	329.58	326.82	329.17	326.22	327.49	327.27	326.67
35.00°	243.88	245.52	246.83	248.15	253.63	249.13	252.53	251.60	252.51	251.72	254.46	252.49	250.25	249.66	246.44	246.01	243.88
37.50°	172.42	168.29	175.10	170.95	177.21	170.19	177.50	175.57	179.89	175.70	181.12	178.67	176.11	172.78	172.28	166.06	172.42
40.00°	118.92	121.32	123.40	124.66	121.50	122.71	120.16	123.28	118.26	121.77	121.47	126.63	126.63	125.68	123.33	121.30	118.92
42.50°	78.73	77.09	82.31	79.52	88.26	80.86	86.31	86.25	88.32	86.93	91.10	90.07	82.02	86.20	80.70	76.95	78.73
45.00°	61.99	62.31	65.87	64.10	64.45	63.09	61.62	63.71	62.76	63.71	66.26	67.55	67.52	66.72	65.07	62.75	61.99
47.50°	47.86	47.90	51.15	48.78	51.84	50.48	50.30	51.52	51.47	51.57	54.61	56.08	53.66	53.10	50.48	48.54	47.86
50.00°	38.82	39.18	40.90	40.46	41.20	41.34	40.32	41.47	40.91	41.34	44.07	45.94	44.69	43.28	41.05	40.08	38.82
52.50°	30.34	30.50	31.29	32.15	33.10	33.07	32.48	33.10	33.08	33.12	36.47	36.95	35.80	34.73	32.05	31.67	30.34
55.00°	23.09	23.03	23.51	24.72	25.26	25.40	25.10	25.76	25.62	25.97	28.91	28.68	27.71	26.65	25.59	23.99	23.09
57.50°	16.67	15.61	16.62	17.30	17.80	17.91	18.52	19.32	19.75	20.07	21.50	21.09	19.82	18.74	19.27	16.33	16.67
60.00°	12.23	11.59	12.66	12.65	12.08	13.24	12.96	14.07	14.21	14.99	14.93	15.28	14.72	13.48	13.90	11.85	12.23
62.50°	8.47	7.58	9.09	8.11	9.15	9.49	9.47	9.97	10.31	10.94	11.28	11.29	9.75	9.36	8.86	7.56	8.47
65.00°	6.56	5.88	7.00	6.20	6.63	6.81	6.54	7.04	6.72	7.78	7.99	8.03	7.58	6.93	6.96	6.35	6.56
67.50°	4.85	4.21	5.09	4.44	4.83	4.53	4.84	5.34	5.05	5.87	6.12	5.63	5.43	5.32	5.13	5.42	4.85
70.00°	3.75	3.50	3.94	3.58	3.44	3.43	3.45	3.96	3.54	4.52	4.43	3.91	4.25	4.08	4.08	4.28	3.75
72.50°	2.87	2.82	2.91	2.80	2.87	2.83	2.79	2.97	3.25	4.01	3.61	3.06	3.07	3.03	3.08	3.12	2.87
75.00°	2.81	2.77	2.52	2.52	2.42	2.54	2.27	2.42	2.96	3.44	2.89	2.49	2.65	2.52	2.97	2.60	2.81
77.50°	2.69	2.76	2.19	2.30	2.25	2.41	2.15	2.43	2.66	2.80	2.73	2.29	2.24	2.32	2.86	2.18	2.69
80.00°	2.31	2.39	2.14	2.14	2.10	2.14	2.02	2.30	2.36	2.37	2.57	2.15	2.03	2.11	2.52	1.95	2.31
82.50°	1.97	1.99	2.09	1.99	1.99	1.81	1.85	1.98	2.09	2.36	2.45	2.08	1.82	1.89	2.18	1.76	1.97
85.00°	1.83	1.82	2.02	1.90	1.90	1.70	1.68	1.74	1.83	2.25	2.36	1.99	1.81	1.78	2.08	1.77	1.83
87.50°	1.75	1.68	1.94	1.82	1.86	1.73	1.53	1.61	1.86	1.95	2.49	1.86	1.82	1.75	1.97	1.84	1.75
90.00°	1.94	1.81	1.80	1.74	1.84	1.80	1.40	1.54	1.89	1.78	2.60	1.74	1.75	1.74	2.00	1.70	1.94
92.50°	2.10	1.98	1.66	1.67	1.88	1.89	1.44	1.60	1.85	1.91	2.55	1.62	1.68	1.75	2.03	1.52	2.10
95.00°	1.93	2.04	1.68	1.56	1.91	1.87	1.48	1.64	1.81	1.99	2.48	1.56	1.72	1.80	2.01	1.58	1.93
97.50°	1.77	2.08	1.71	1.45	1.87	1.76	1.59	1.68	1.83	1.96	2.20	1.62	1.77	1.88	1.98	1.70	1.77
100.00°	1.71	2.15	1.77	1.60	1.84	1.78	1.66	1.70	1.86	1.93	1.95	1.66	1.81	1.96	1.94	1.71	1.71

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	850	850	850	850	829	829	829	829	790	790	790	753	753	753	720	720	705
	<b>1</b>	807	785	766	749	788	768	751	736	737	723	711	708	698	687	682	673	666
	<b>2</b>	763	725	694	668	746	712	684	660	686	663	643	663	644	628	642	626	613
	<b>3</b>	721	671	633	603	705	660	625	597	640	610	586	621	596	575	603	582	570
	<b>4</b>	681	623	581	548	667	614	575	544	597	563	537	581	552	529	566	542	531
	<b>5</b>	644	580	535	502	631	572	531	500	558	522	494	545	513	489	532	505	495
	<b>6</b>	609	541	496	463	597	535	492	461	523	485	457	511	478	453	500	471	462
	<b>7</b>	577	506	461	428	566	501	458	427	490	452	424	481	446	421	471	441	433
	<b>8</b>	547	475	429	398	537	470	427	397	461	422	395	453	418	392	445	413	406
	<b>9</b>	519	446	402	371	510	442	400	370	434	396	369	427	392	367	420	388	382
	<b>10</b>	494	420	377	348	485	417	375	347	410	372	345	404	369	344	398	365	360

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	23.0 fc	6.8 ft
6.5 ft	16.4 fc	8.1 ft
7.5 ft	12.3 fc	9.3 ft
8.0 ft	10.9 fc	9.9 ft
10.0 ft	6.9 fc	12.4 ft
12.0 ft	4.8 fc	14.9 ft
14.0 ft	3.5 fc	17.4 ft
16.0 ft	2.7 fc	19.9 ft
20.0 ft	1.7 fc	24.8 ft
24.0 ft	1.2 fc	29.8 ft
28.0 ft	0.9 fc	34.7 ft

### Average Luminaire Luminance [cd/m<sup>2</sup>]

	0.00°	45.00°	90.00°
<b>0.00°</b>	65924	65924	65924
<b>45.00°</b>	8320	8841	8650
<b>55.00°</b>	3821	3890	4180
<b>65.00°</b>	1473	1573	1488
<b>75.00°</b>	1032	925	888
<b>85.00°</b>	1996	2201	2072

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	8.6	9.6	9.0	10.0	10.3	9.9	10.9	10.3	11.3	11.6
	<b>3H</b>	8.9	9.8	9.3	10.2	10.6	10.1	11.0	10.5	11.3	11.8
	<b>4H</b>	9.0	9.8	9.4	10.2	10.7	10.1	10.9	10.5	11.3	11.8
	<b>6H</b>	9.2	10.0	9.6	10.4	10.8	10.2	10.9	10.6	11.4	11.8
	<b>8H</b>	9.3	10.0	9.8	10.5	10.9	10.2	11.0	10.7	11.4	11.8
	<b>12H</b>	9.5	10.2	9.9	10.6	11.1	10.4	11.1	10.8	11.5	11.9
<b>4H</b>	<b>2H</b>	8.6	9.5	9.1	9.9	10.3	9.9	10.7	10.3	11.1	11.5
	<b>3H</b>	9.0	9.7	9.5	10.2	10.6	10.1	10.8	10.6	11.2	11.7
	<b>4H</b>	9.2	9.8	9.7	10.3	10.8	10.2	10.8	10.7	11.3	11.8
	<b>6H</b>	9.6	10.1	10.1	10.6	11.1	10.4	10.9	10.9	11.4	11.9
	<b>8H</b>	9.7	10.2	10.2	10.7	11.2	10.5	11.0	11.0	11.5	12.0
	<b>12H</b>	10.0	10.4	10.5	11.0	11.5	10.7	11.1	11.2	11.7	12.2
<b>8H</b>	<b>4H</b>	9.2	9.7	9.7	10.2	10.7	10.2	10.6	10.7	11.1	11.6
	<b>6H</b>	9.7	10.1	10.2	10.6	11.1	10.4	10.8	11.0	11.4	11.9
	<b>8H</b>	10.0	10.3	10.6	10.9	11.4	10.7	11.0	11.2	11.6	12.1
	<b>12H</b>	10.5	10.8	11.0	11.3	11.9	11.1	11.4	11.6	11.9	12.5
<b>12H</b>	<b>4H</b>	9.2	9.6	9.7	10.2	10.7	10.1	10.6	10.7	11.1	11.6
	<b>6H</b>	9.7	10.1	10.3	10.6	11.2	10.5	10.8	11.0	11.3	11.9
	<b>8H</b>	10.1	10.4	10.7	10.9	11.6	10.8	11.1	11.3	11.6	12.2

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0