

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

CW04XXPC 10L 35K XW XX CL XX

Nom 4" diam Gamma Cylinder (wet location), XW optic, clear glass lens

### Test Number

SP-01074\_M-10L

### Test Date

1/30/2020

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

### Summary of Results

#### Power

Input Watts	6.5 W
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#### Lumen Output

Output Lumens	614
Efficacy	94.4 lm/W

#### Luminous Dimensions

0° - 180° Size	-0.33
90° - 270° Size	-0.33
Height	0

#### Spacing Criterion

Two luminaires, plane 0°	0.95
Two luminaires, plane 90°	0.94
Four luminaires	0.83

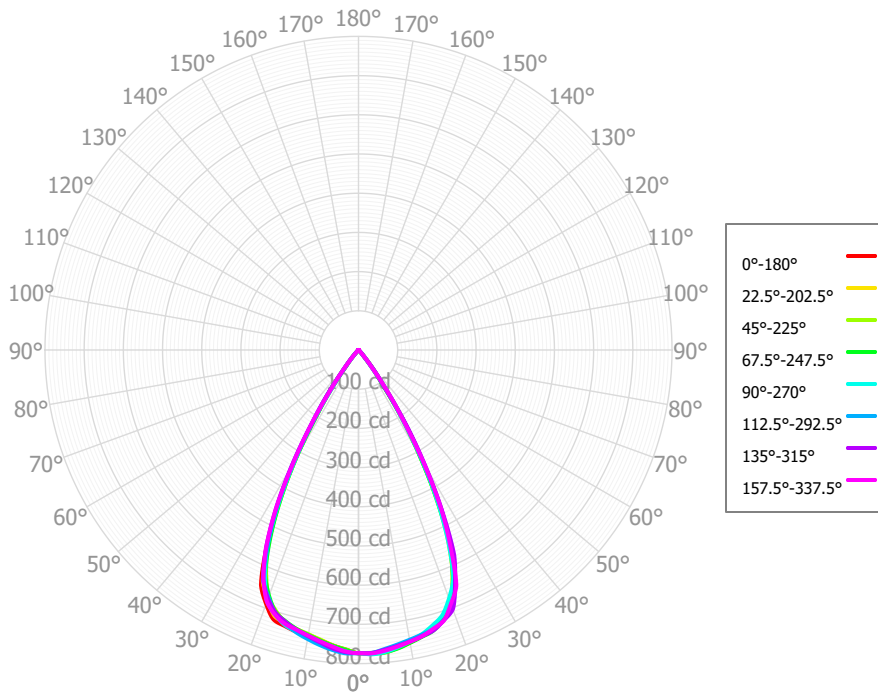
#### Full Beam Angle

0° - 180°	58°
90° - 270°	57°

### IES File Header Contents

Keyword	Value
TEST	SP-01074_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/30/2020
ISSUEDATE	3/24/2020
LUMCAT	CW04XXPC 10L 35K XW XX CL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder (wet location), XW optic, clear glass lens
OTHER	Beam Angle: 57.2 deg
OTHER	Extra Wide optic
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: 27K x 0.97, 30K x 0.98, 40K x 1.04
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 20L

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	73.59	11.99%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	204.27	33.29%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	241.47	39.35%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	84.60	13.79%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	5.84	0.95%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.20	0.20%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	0.96	0.16%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.89	0.15%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.72	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	613.54	99.99%	0.00° - 180.00°	613.58	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°	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63	773.63
2.50°	774.07	775.03	773.62	775.79	777.28	774.59	771.55	769.62	764.90	766.60	764.40	765.83	770.07	773.73	773.79	774.96	774.07
5.00°	771.92	771.96	775.19	774.28	773.62	768.17	764.24	759.65	756.63	756.50	756.99	757.38	760.58	765.88	767.81	770.22	771.92
7.50°	766.43	767.33	766.13	768.19	765.47	759.32	752.58	749.71	747.21	745.50	746.52	747.89	751.98	758.23	761.51	763.46	766.43
10.00°	757.41	757.95	757.07	758.63	755.27	748.77	741.48	739.82	740.82	737.44	736.44	738.59	744.10	750.84	755.09	755.99	757.41
12.50°	747.42	747.65	748.03	749.54	743.66	737.61	731.14	731.04	735.98	729.71	729.27	729.44	735.56	744.00	747.96	748.33	747.42
15.00°	736.61	735.21	737.43	740.75	728.03	721.74	718.40	723.97	728.91	720.90	719.79	717.01	726.61	737.78	740.60	736.56	736.61
17.50°	716.36	715.67	716.09	719.28	710.19	704.51	703.07	708.76	720.95	712.03	698.96	702.61	707.30	722.85	723.42	724.04	716.36
20.00°	689.42	682.85	687.77	691.60	675.11	671.63	674.98	683.52	689.32	676.76	670.94	667.53	682.41	699.82	704.00	689.43	689.42
22.50°	632.68	629.59	627.02	629.73	632.21	635.46	635.30	633.58	650.07	638.42	616.29	622.46	623.54	644.71	644.09	652.30	632.68
25.00°	558.67	544.77	553.09	554.26	543.45	546.72	558.41	558.86	555.55	540.94	546.12	535.75	550.18	564.72	577.90	556.49	558.67
27.50°	450.89	442.62	434.63	440.03	438.56	450.65	454.04	457.19	447.89	441.32	432.65	433.29	441.87	456.22	460.86	457.05	450.89
30.00°	327.55	318.81	317.72	314.01	322.51	333.25	339.89	333.19	328.59	320.45	319.74	318.31	322.05	329.85	339.21	333.16	327.55
32.50°	219.10	210.31	204.95	206.39	203.52	214.21	219.90	223.61	207.39	205.24	208.05	199.59	215.23	219.94	225.66	210.99	219.10
35.00°	115.99	117.38	111.63	102.85	123.06	133.37	133.70	123.87	127.64	123.77	117.54	122.10	111.71	118.29	113.24	129.22	115.99
37.50°	63.50	57.50	58.89	56.78	49.79	54.96	64.06	64.99	52.31	53.39	63.62	53.60	62.30	62.22	66.21	52.67	63.50
40.00°	25.28	25.77	21.80	19.34	26.03	31.29	30.94	28.52	28.92	28.84	26.33	28.74	22.59	24.74	21.56	29.80	25.28
42.50°	12.00	9.89	10.76	9.97	8.58	9.14	11.85	12.37	8.10	9.21	12.87	10.27	11.89	11.10	11.75	9.56	12.00
45.00°	3.79	4.96	3.67	3.26	4.77	5.36	5.25	5.04	4.95	5.24	4.93	5.64	4.43	4.94	2.99	5.54	3.79
47.50°	2.22	2.59	2.03	2.25	1.86	1.98	2.29	2.60	1.96	2.30	3.39	2.28	3.11	2.96	2.27	2.18	2.22
50.00°	1.54	1.64	1.16	1.45	1.48	1.55	1.54	1.86	1.82	1.85	2.40	1.77	2.14	1.95	1.63	1.62	1.54
52.50°	1.51	1.19	1.14	1.42	1.14	1.19	1.27	1.61	1.67	1.51	1.93	1.36	1.84	1.56	1.43	1.22	1.51
55.00°	1.53	0.98	1.11	1.39	1.10	1.15	1.27	1.50	1.41	1.36	1.59	1.19	1.54	1.28	1.24	1.34	1.53
57.50°	1.28	0.99	1.05	1.25	1.06	1.12	1.32	1.39	1.17	1.20	1.36	1.03	1.24	1.33	1.14	1.39	1.28
60.00°	1.03	1.09	0.94	1.10	1.01	1.11	1.12	1.29	1.06	1.04	1.17	1.05	0.95	1.40	1.04	1.28	1.03
62.50°	1.07	1.00	0.77	0.89	0.97	1.06	0.89	1.05	0.98	0.98	1.00	1.05	0.81	1.23	0.94	1.15	1.07
65.00°	1.09	0.85	0.78	0.72	0.94	0.94	0.96	0.80	0.96	1.04	1.00	0.95	0.72	1.04	0.90	0.97	1.09
67.50°	0.94	0.99	0.90	0.69	0.87	0.85	0.99	0.94	0.94	1.10	1.08	0.88	0.90	0.94	0.97	0.90	0.94
70.00°	0.85	1.18	0.92	0.73	0.70	0.82	0.75	1.00	0.91	1.16	1.11	0.88	1.02	0.87	1.05	0.99	0.85
72.50°	1.04	0.91	0.91	0.89	0.61	0.68	0.67	0.86	0.78	0.98	1.08	0.82	1.00	0.92	1.14	1.06	1.04
75.00°	1.00	0.70	0.91	1.05	0.58	0.54	0.74	0.70	0.66	0.81	0.86	0.70	0.94	0.85	1.20	1.11	1.00
77.50°	0.71	0.64	0.82	1.11	0.65	0.64	0.84	0.58	0.79	0.75	0.78	1.01	0.90	0.63	1.20	0.95	0.71
80.00°	0.68	0.68	0.61	0.78	0.64	0.70	0.77	0.58	0.53	0.52	0.76	1.03	1.10	0.57	0.76	0.86	0.68
82.50°	0.65	0.70	0.82	0.76	0.68	0.71	0.54	0.74	0.60	0.57	0.71	0.87	1.36	0.72	0.77	0.87	0.65
85.00°	0.59	0.66	0.70	0.69	0.77	0.63	0.62	0.77	0.62	0.95	0.61	0.74	0.75	0.83	0.84	0.64	0.59
87.50°	0.58	0.56	0.58	0.67	0.60	0.44	0.81	0.50	0.54	0.65	0.63	1.00	0.71	0.67	0.86	0.51	0.58
90.00°	0.51	0.67	0.58	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.59	0.65	0.62	0.51
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 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>	730	730	730	730	713	713	713	713	682	682	682	653	653	653	626	626	614
	<b>1</b>	699	683	669	656	684	670	657	645	645	635	626	622	614	607	601	595	583
	<b>2</b>	668	640	617	598	655	630	609	591	610	593	579	592	578	566	575	564	553
	<b>3</b>	638	602	574	551	626	593	568	547	578	556	538	563	545	530	549	535	524
	<b>4</b>	609	567	536	512	599	560	531	509	547	523	503	535	514	497	524	506	497
	<b>5</b>	582	535	502	478	572	529	499	476	519	492	472	509	486	468	500	480	471
	<b>6</b>	556	506	472	448	547	501	470	447	492	464	444	484	459	441	476	455	447
	<b>7</b>	531	479	445	422	524	475	443	420	468	439	418	461	435	416	454	431	424
	<b>8</b>	508	455	421	398	501	451	419	397	445	416	395	439	413	393	433	409	403
	<b>9</b>	486	432	398	376	480	429	397	375	423	394	374	418	392	373	413	389	383
	<b>10</b>	466	411	378	356	460	408	377	355	403	374	355	399	372	354	395	370	365

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	25.6 fc	6.0 ft
6.5 ft	18.3 fc	7.1 ft
7.5 ft	13.8 fc	8.2 ft
8.0 ft	12.1 fc	8.7 ft
10.0 ft	7.7 fc	10.9 ft
12.0 ft	5.4 fc	13.1 ft
14.0 ft	3.9 fc	15.3 ft
16.0 ft	3.0 fc	17.5 ft
20.0 ft	1.9 fc	21.9 ft
24.0 ft	1.3 fc	26.2 ft
28.0 ft	1.0 fc	30.6 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	97361	97361	97361
<b>45.00°</b>	674	653	850
<b>55.00°</b>	336	243	241
<b>65.00°</b>	324	233	279
<b>75.00°</b>	487	445	284
<b>85.00°</b>	854	1012	1108

### 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	-7.4	-6.5	-7.1	-6.2	-5.9	-8.2	-7.3	-7.9	-7.0	-6.7
	3H	-4.9	-4.1	-4.6	-3.8	-3.4	-5.7	-4.9	-5.3	-4.5	-4.2
	4H	-3.2	-2.5	-2.8	-2.2	-1.8	-4.4	-3.7	-4.0	-3.3	-2.9
	6H	-2.1	-1.4	-1.7	-1.1	-0.7	-2.4	-1.7	-2.0	-1.4	-1.0
	8H	-1.4	-0.8	-1.0	-0.4	0.0	-0.9	-0.3	-0.5	0.1	0.5
	12H	-0.7	-0.1	-0.2	0.3	0.8	0.2	0.8	0.6	1.2	1.6
4H	2H	-7.1	-6.3	-6.6	-6.0	-5.6	-7.4	-6.7	-7.0	-6.3	-5.9
	3H	-3.9	-3.3	-3.5	-2.9	-2.5	-4.6	-4.0	-4.2	-3.6	-3.2
	4H	-2.1	-1.5	-1.6	-1.1	-0.7	-3.3	-2.8	-2.9	-2.3	-1.9
	6H	-0.7	-0.2	-0.2	0.2	0.7	-1.0	-0.5	-0.5	-0.1	0.4
	8H	0.1	0.5	0.6	1.0	1.5	0.5	1.0	1.0	1.4	1.9
	12H	1.0	1.3	1.5	1.8	2.3	1.8	2.1	2.3	2.6	3.1
8H	4H	-1.4	-0.9	-0.9	-0.5	0.0	-2.6	-2.2	-2.1	-1.7	-1.2
	6H	0.3	0.6	0.8	1.1	1.6	0.0	0.3	0.5	0.8	1.3
	8H	1.3	1.6	1.8	2.1	2.6	1.6	1.8	2.1	2.4	2.9
	12H	2.4	2.6	2.9	3.1	3.7	3.0	3.2	3.5	3.7	4.3
12H	4H	-1.3	-0.9	-0.8	-0.4	0.1	-2.5	-2.1	-2.0	-1.6	-1.1
	6H	0.5	0.8	1.0	1.2	1.8	0.2	0.5	0.7	0.9	1.5
	8H	1.7	1.9	2.2	2.4	3.0	1.8	2.1	2.4	2.6	3.2

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0