

## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

### Luminaire

CF04XXPC 30L 35K XW XX NL XX  
Nom 4" diam Gamma Cylinder, XW optic, no lens

### Test Number

SP-01136

### Test Date

1/31/2020

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

### Summary of Results

#### Power

Input Watts	20.4 W
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#### Lumen Output

Output Lumens	2442
Efficacy	119.71 lm/W

#### Luminous Dimensions

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

#### Spacing Criterion

Two luminaires, plane 0°	0.99
Two luminaires, plane 90°	0.99
Four luminaires	0.9

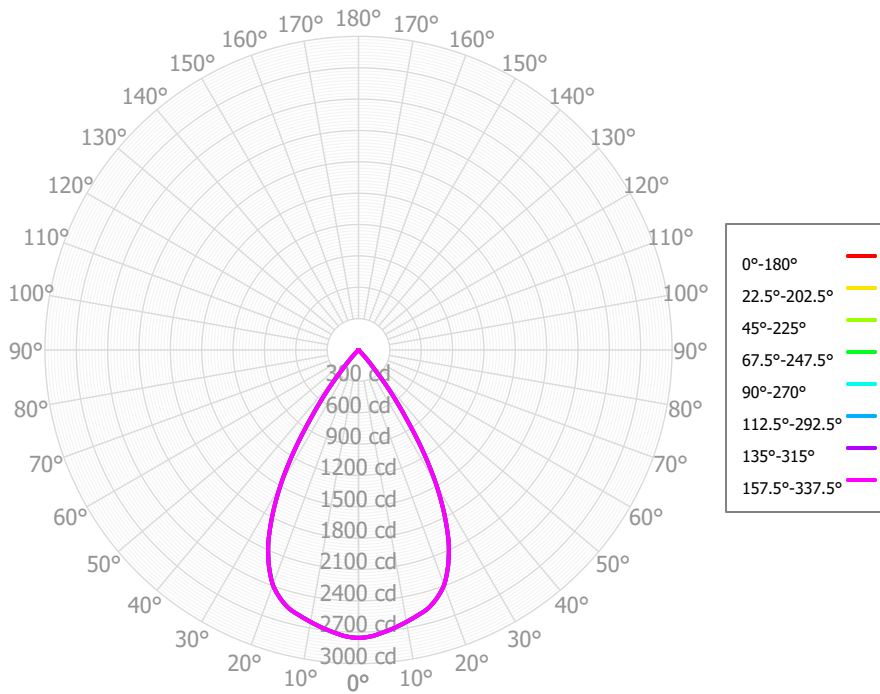
#### Full Beam Angle

0° - 180°	62°
90° - 270°	62°

### IES File Header Contents

Keyword	Value
TEST	SP-01136
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/31/2020
ISSUEDATE	2/16/2021
LUMCAT	CF04XXPC 30L 35K XW XX NL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder, XW optic, no lens
OTHER	Beam Angle: 61.9 deg
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: 27K x 0.972, 30K x 0.981, 40K x 1.04, 27HK x 0.78, 30HK x 0.82
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 30L
_CRI	80
_CCTMULT	27K x 0.972, 30K x 0.981, 40K x 1.04
_CCTMULTA	27HK x 0.78, 30HK x 0.82
_LAMPMULT	10L x 0.33, 15L x 0.49, 20L x 0.67

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	260.49	10.67%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	716.69	29.35%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	912.01	37.35%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	496.88	20.35%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	46.76	1.91%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	2.27	0.09%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.38	0.10%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.38	0.10%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.12	0.09%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	2441.98	100.00%	0.00° - 180.00°	2441.98	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°	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77	2754.77
2.50°	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12	2743.12
5.00°	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76	2712.76
7.50°	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36	2679.36
10.00°	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95	2641.95
12.50°	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91	2602.91
15.00°	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12	2562.12
17.50°	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15	2491.15
20.00°	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90	2393.90
22.50°	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24	2239.24
25.00°	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64	2043.64
27.50°	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15	1785.15
30.00°	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47	1490.47
32.50°	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69	1148.69
35.00°	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33	785.33
37.50°	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60	492.60
40.00°	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36	225.36
42.50°	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84	105.84
45.00°	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54	26.54
47.50°	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94
50.00°	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38
52.50°	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
55.00°	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32
57.50°	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38
60.00°	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
62.50°	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47
65.00°	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48	2.48
67.50°	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31
70.00°	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
72.50°	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35
75.00°	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32
77.50°	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13
80.00°	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22
82.50°	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13
85.00°	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96
87.50°	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92
90.00°	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30

### 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>	2907	2907	2907	2907	2840	2840	2840	2840	2713	2713	2713	2598	2598	2598	2492	2492	2442
	<b>1</b>	2777	2712	2653	2601	2717	2659	2607	2559	2561	2519	2481	2470	2437	2407	2387	2361	2337
	<b>2</b>	2648	2534	2439	2360	2594	2492	2406	2334	2413	2343	2283	2341	2284	2234	2274	2228	2187
	<b>3</b>	2522	2372	2256	2164	2474	2338	2232	2146	2275	2186	2112	2216	2142	2079	2162	2100	2060
	<b>4</b>	2401	2225	2096	1998	2358	2198	2078	1986	2146	2043	1962	2098	2010	1940	2053	1979	1942
	<b>5</b>	2286	2091	1955	1854	2247	2069	1941	1846	2025	1915	1830	1985	1889	1814	1948	1865	1798
	<b>6</b>	2177	1969	1829	1728	2142	1950	1818	1723	1914	1798	1711	1880	1778	1699	1848	1759	1688
	<b>7</b>	2074	1857	1715	1617	2042	1840	1707	1612	1810	1691	1604	1781	1675	1595	1754	1660	1587
	<b>8</b>	1977	1754	1613	1516	1948	1740	1606	1513	1714	1593	1507	1689	1580	1500	1666	1568	1494
	<b>9</b>	1886	1659	1520	1426	1860	1647	1514	1423	1625	1503	1419	1603	1493	1414	1583	1483	1409
	<b>10</b>	1801	1572	1435	1344	1777	1562	1430	1342	1542	1421	1338	1524	1413	1335	1506	1404	1331

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	91.1 fc	6.6 ft
6.5 ft	65.2 fc	7.8 ft
7.5 ft	49.0 fc	9.0 ft
8.0 ft	43.0 fc	9.5 ft
10.0 ft	27.5 fc	11.9 ft
12.0 ft	19.1 fc	14.3 ft
14.0 ft	14.1 fc	16.7 ft
16.0 ft	10.8 fc	19.1 ft
20.0 ft	6.9 fc	23.9 ft
24.0 ft	4.8 fc	28.6 ft
28.0 ft	3.5 fc	33.4 ft

### Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
<b>0.00°</b>	346687	346687	346687
<b>45.00°</b>	4723	4723	4723
<b>55.00°</b>	509	509	509
<b>65.00°</b>	738	738	738
<b>75.00°</b>	1130	1130	1130
<b>85.00°</b>	2836	2836	2836

### 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	-7.6	-6.7	-7.2	-6.3	-6.0	-7.6	-6.7	-7.2	-6.3	-6.0
	3H	-4.3	-3.5	-3.9	-3.1	-2.8	-4.3	-3.5	-3.9	-3.1	-2.8
	4H	-2.4	-1.6	-2.0	-1.3	-0.9	-2.4	-1.6	-2.0	-1.3	-0.9
	6H	-0.5	0.2	-0.1	0.6	1.0	-0.5	0.2	-0.1	0.6	1.0
	8H	0.6	1.2	1.0	1.6	2.0	0.6	1.2	1.0	1.6	2.0
	12H	1.7	2.3	2.1	2.6	3.1	1.7	2.3	2.1	2.6	3.1
4H	2H	-6.5	-5.7	-6.0	-5.4	-5.0	-6.5	-5.7	-6.0	-5.4	-5.0
	3H	-3.0	-2.4	-2.6	-2.0	-1.6	-3.0	-2.4	-2.6	-2.0	-1.6
	4H	-1.0	-0.5	-0.6	0.0	0.4	-1.0	-0.5	-0.6	0.0	0.4
	6H	1.0	1.5	1.5	1.9	2.4	1.0	1.5	1.5	1.9	2.4
	8H	2.2	2.6	2.6	3.0	3.5	2.2	2.6	2.6	3.0	3.5
	12H	3.4	3.7	3.9	4.2	4.7	3.4	3.7	3.9	4.2	4.7
8H	4H	-0.3	0.1	0.2	0.6	1.0	-0.3	0.1	0.2	0.6	1.0
	6H	2.0	2.3	2.5	2.9	3.3	2.0	2.3	2.5	2.9	3.3
	8H	3.3	3.6	3.9	4.1	4.6	3.3	3.6	3.9	4.1	4.6
	12H	4.7	5.0	5.3	5.5	6.1	4.7	5.0	5.3	5.5	6.1
12H	4H	-0.1	0.3	0.4	0.7	1.2	-0.1	0.3	0.4	0.7	1.2
	6H	2.3	2.6	2.9	3.1	3.6	2.3	2.6	2.9	3.1	3.6
	8H	3.7	4.0	4.3	4.5	5.1	3.7	4.0	4.3	4.5	5.1

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0