

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

CF04XXPC 10L 35K XW XX CL XX
Nom 4" diam Gamma Cylinder, XW optic, clear glass lens

Test Number

SP-01071_M-10L

Test Date

1/31/2020

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

Summary of Results

Power

Input Watts	6.5 W
-------------	-------

Lumen Output

Output Lumens	734
Efficacy	112.94 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.98
Two luminaires, plane 90°	1
Four luminaires	0.88

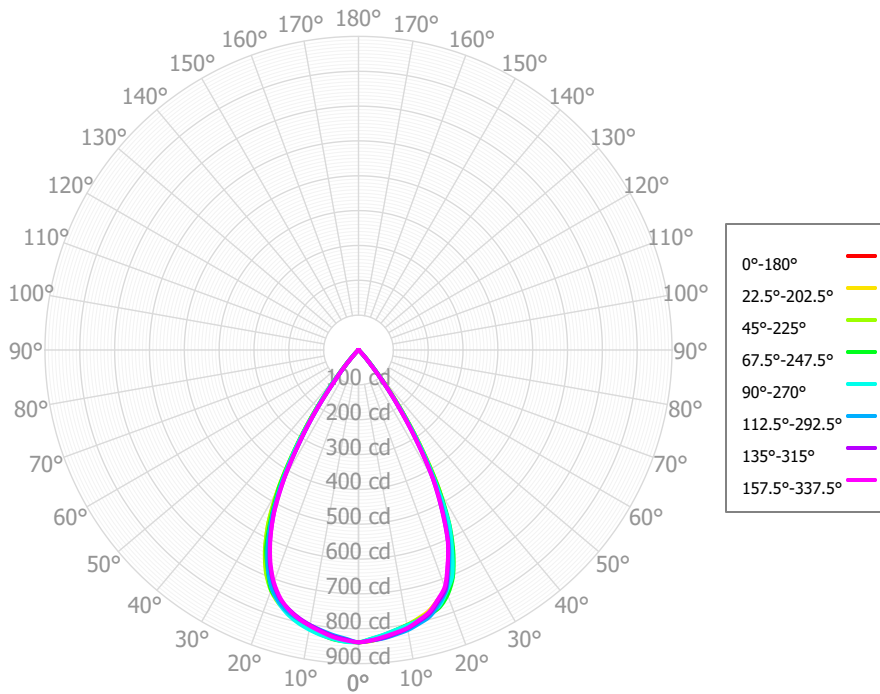
Full Beam Angle

0° - 180°	61°
90° - 270°	61°

IES File Header Contents

Keyword	Value
TEST	SP-01071_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/31/2020
ISSUEDATE	3/19/2020
LUMCAT	CF04XXPC 10L 35K XW XX CL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder, XW optic, clear glass lens
OTHER	Beam Angle: 61.1 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 0.89, 30HK x 0.83
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	79.46	10.82%	90.00° - 100.00°	0.05	0.01%
10.00° - 20.00°	218.44	29.76%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	276.94	37.72%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	140.96	19.20%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	13.51	1.84%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.73	0.24%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.17	0.16%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.04	0.14%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.81	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	734.06	99.99%	0.00° - 180.00°	734.11	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°	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90	838.90
2.50°	835.43	836.01	832.73	830.26	829.73	829.66	831.87	834.33	834.85	836.70	837.20	837.48	838.64	834.72	834.80	834.26	835.43
5.00°	828.24	826.73	822.87	821.50	820.70	821.70	824.61	827.55	828.14	829.76	832.31	833.59	832.64	830.97	829.51	826.61	828.24
7.50°	817.71	815.14	812.17	811.38	811.06	811.92	813.61	816.21	817.48	819.26	821.98	823.84	825.37	823.77	820.93	818.52	817.71
10.00°	806.64	803.18	801.39	802.55	802.92	802.12	801.66	804.21	805.70	807.30	810.51	812.76	815.03	816.31	811.64	810.37	806.64
12.50°	793.03	789.79	791.43	795.79	794.95	792.29	788.18	790.76	791.69	792.37	796.20	797.14	802.32	804.65	798.29	795.50	793.03
15.00°	779.21	776.29	781.15	786.60	783.13	779.16	770.95	772.57	774.59	775.75	780.51	780.91	785.29	791.75	784.41	780.08	779.21
17.50°	754.39	753.88	762.45	774.31	770.47	758.51	748.93	746.43	752.88	756.52	762.28	757.37	761.26	765.70	758.33	753.09	754.39
20.00°	727.94	729.95	740.75	747.78	738.45	727.50	713.28	710.06	721.56	728.48	734.58	733.18	727.66	735.11	730.98	723.87	727.94
22.50°	676.63	682.34	693.91	707.53	703.12	678.97	664.35	660.71	679.31	690.04	693.72	681.43	678.66	678.04	669.96	668.09	676.63
25.00°	621.60	630.39	640.92	644.89	636.65	616.25	600.40	598.48	620.63	633.67	636.00	627.24	613.60	614.79	606.81	607.89	621.60
27.50°	538.74	548.62	557.31	565.80	562.41	535.40	525.29	523.80	547.26	561.15	560.44	543.49	534.09	528.77	518.87	521.60	538.74
30.00°	449.67	460.14	464.86	458.73	448.40	436.29	426.77	428.96	449.27	461.10	462.86	455.55	442.76	435.48	426.96	429.31	449.67
32.50°	333.37	343.85	343.53	335.71	334.33	318.88	314.72	318.83	334.55	341.90	347.00	342.68	338.83	323.60	311.99	314.75	333.37
35.00°	223.26	233.01	229.93	224.95	220.02	213.26	212.82	216.13	227.63	232.31	237.66	234.12	227.10	218.95	203.61	207.41	223.26
37.50°	131.41	138.08	134.17	119.33	121.79	116.63	115.24	117.69	124.69	127.82	132.43	142.32	139.98	128.22	119.39	119.31	131.41
40.00°	58.91	63.41	61.49	63.46	62.04	58.61	61.46	61.60	65.68	67.64	70.03	66.53	64.19	61.22	51.24	51.94	58.91
42.50°	28.82	31.35	29.40	22.27	20.23	22.84	20.85	23.36	23.50	24.60	27.67	33.65	30.23	28.51	25.59	24.80	28.82
45.00°	8.87	10.16	9.31	10.47	10.49	8.83	9.60	10.10	10.27	10.71	11.95	10.47	10.59	9.47	7.72	7.56	8.87
47.50°	5.42	5.99	5.14	4.59	4.31	4.38	4.40	4.57	4.71	4.63	5.51	6.21	5.07	5.45	4.81	4.70	5.42
50.00°	3.11	3.23	2.77	2.94	2.91	2.84	3.07	2.96	3.28	2.97	3.54	3.30	2.82	3.24	2.86	2.83	3.11
52.50°	2.19	2.21	2.24	1.78	2.11	2.21	2.18	2.13	2.52	2.10	2.63	2.43	2.39	2.59	2.31	2.10	2.19
55.00°	1.68	1.57	1.92	1.54	1.92	1.80	1.81	1.67	1.95	1.77	1.97	1.86	2.21	2.15	1.83	1.62	1.68
57.50°	1.57	1.29	1.76	1.35	1.62	1.43	1.46	1.25	1.40	1.50	1.35	1.62	1.83	1.84	1.45	1.36	1.57
60.00°	1.48	1.22	1.61	1.32	1.23	1.31	1.27	1.25	1.50	1.44	1.23	1.49	1.44	1.62	1.17	1.30	1.48
62.50°	1.42	1.30	1.47	1.28	1.03	1.21	1.09	1.26	1.60	1.38	1.15	1.45	1.28	1.45	0.97	1.36	1.42
65.00°	1.26	1.19	1.26	1.18	0.93	1.10	0.95	1.14	1.49	1.31	1.03	1.37	1.12	1.33	0.91	1.24	1.26
67.50°	1.04	0.99	1.02	1.07	0.87	1.00	0.84	1.03	1.33	1.24	0.93	1.26	0.94	1.23	0.93	1.03	1.04
70.00°	1.01	0.87	0.99	0.99	0.81	1.15	0.82	1.07	0.98	1.20	0.91	1.09	0.86	1.15	1.25	1.19	1.01
72.50°	1.04	0.79	0.99	0.91	0.75	1.18	0.79	1.10	0.80	1.07	0.87	0.89	1.15	1.12	1.67	1.44	1.04
75.00°	1.07	0.74	0.91	0.83	0.82	1.02	0.76	1.13	0.81	0.84	0.80	1.09	1.26	1.34	1.45	1.41	1.07
77.50°	1.01	0.80	0.96	0.82	1.00	0.91	0.93	0.85	0.69	0.71	0.77	1.24	1.19	1.09	1.17	1.15	1.01
80.00°	0.82	0.94	0.99	0.70	0.58	0.76	0.80	0.71	0.73	0.65	0.81	1.31	1.40	0.72	0.88	0.71	0.82
82.50°	0.63	0.83	0.74	0.59	0.72	0.60	0.69	0.73	0.78	0.76	0.79	1.16	1.36	0.80	0.95	0.50	0.63
85.00°	0.60	0.83	0.80	0.79	0.62	0.57	0.82	0.72	0.66	0.86	0.68	1.13	1.11	1.03	0.93	0.68	0.60
87.50°	0.59	0.73	0.89	0.75	0.55	0.79	0.79	0.78	0.68	0.87	0.70	0.84	1.02	0.80	0.72	0.60	0.59
90.00°	0.52	0.70	0.69	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.12	0.74	1.10	0.72	0.83	0.48	0.52
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.

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	874	874	874	874	854	854	854	854	816	816	816	781	781	781	749	749	734
	1	835	815	798	782	817	799	784	769	770	757	746	743	733	723	717	710	696
	2	796	762	733	710	780	749	723	702	726	704	686	704	687	672	684	670	657
	3	758	713	679	651	744	703	671	646	684	657	635	667	644	625	650	632	620
	4	722	669	631	601	709	661	625	598	646	615	591	631	605	584	618	595	584
	5	688	629	589	558	676	623	584	556	610	576	551	598	569	546	586	562	551
	6	655	593	551	521	645	587	548	519	576	542	516	566	536	512	557	530	521
	7	625	559	517	488	615	555	515	486	545	510	484	537	505	481	529	500	492
	8	596	529	487	458	587	525	484	457	517	481	455	509	477	453	502	473	465
	9	568	500	459	431	560	497	457	430	490	454	428	484	451	427	478	448	441
	10	543	474	433	406	536	471	432	406	465	429	404	460	427	403	455	424	418

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	27.7 fc	6.5 ft
6.5 ft	19.9 fc	7.7 ft
7.5 ft	14.9 fc	8.9 ft
8.0 ft	13.1 fc	9.5 ft
10.0 ft	8.4 fc	11.8 ft
12.0 ft	5.8 fc	14.2 ft
14.0 ft	4.3 fc	16.6 ft
16.0 ft	3.3 fc	19.0 ft
20.0 ft	2.1 fc	23.7 ft
24.0 ft	1.5 fc	28.4 ft
28.0 ft	1.1 fc	33.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	105575	105575	105575
45.00°	1579	1657	1867
55.00°	368	420	422
65.00°	375	374	278
75.00°	523	444	398
85.00°	871	1161	888

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	-7.3	-6.4	-6.9	-6.0	-5.7	-6.4	-5.4	-6.0	-5.1	-4.8
	3H	-4.9	-4.1	-4.5	-3.8	-3.4	-4.5	-3.7	-4.1	-3.4	-3.0
	4H	-3.2	-2.5	-2.8	-2.1	-1.8	-3.1	-2.4	-2.7	-2.0	-1.6
	6H	-1.7	-1.1	-1.3	-0.7	-0.3	-1.2	-0.5	-0.8	-0.1	0.2
	8H	-1.2	-0.6	-0.8	-0.2	0.2	-0.2	0.5	0.3	0.9	1.3
	12H	-0.6	0.0	-0.2	0.4	0.8	0.9	1.5	1.3	1.8	2.3
4H	2H	-6.6	-5.9	-6.2	-5.5	-5.2	-6.1	-5.3	-5.6	-5.0	-4.6
	3H	-3.7	-3.1	-3.3	-2.7	-2.3	-3.7	-3.1	-3.3	-2.7	-2.3
	4H	-1.9	-1.3	-1.4	-0.9	-0.5	-2.0	-1.5	-1.6	-1.1	-0.6
	6H	-0.3	0.2	0.2	0.6	1.1	0.2	0.6	0.6	1.1	1.6
	8H	0.3	0.7	0.8	1.2	1.7	1.3	1.7	1.8	2.2	2.6
	12H	1.0	1.4	1.5	1.9	2.3	2.4	2.8	2.9	3.3	3.8
8H	4H	-1.1	-0.7	-0.7	-0.3	0.2	-1.6	-1.1	-1.1	-0.7	-0.2
	6H	0.6	1.0	1.1	1.5	1.9	0.9	1.2	1.4	1.7	2.2
	8H	1.3	1.6	1.9	2.2	2.7	2.2	2.5	2.7	3.0	3.5
	12H	2.3	2.5	2.8	3.0	3.6	3.6	3.8	4.1	4.3	4.9
12H	4H	-1.0	-0.7	-0.5	-0.2	0.3	-1.5	-1.1	-1.0	-0.6	-0.1
	6H	0.8	1.1	1.4	1.6	2.2	1.0	1.3	1.6	1.8	2.4
	8H	1.7	1.9	2.2	2.4	3.0	2.5	2.7	3.0	3.2	3.8

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0