

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01069_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
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Lumen Output

Output Lumens	719
Efficacy	110.68 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.33
Two luminaires, plane 90°	0.33
Four luminaires	0.34

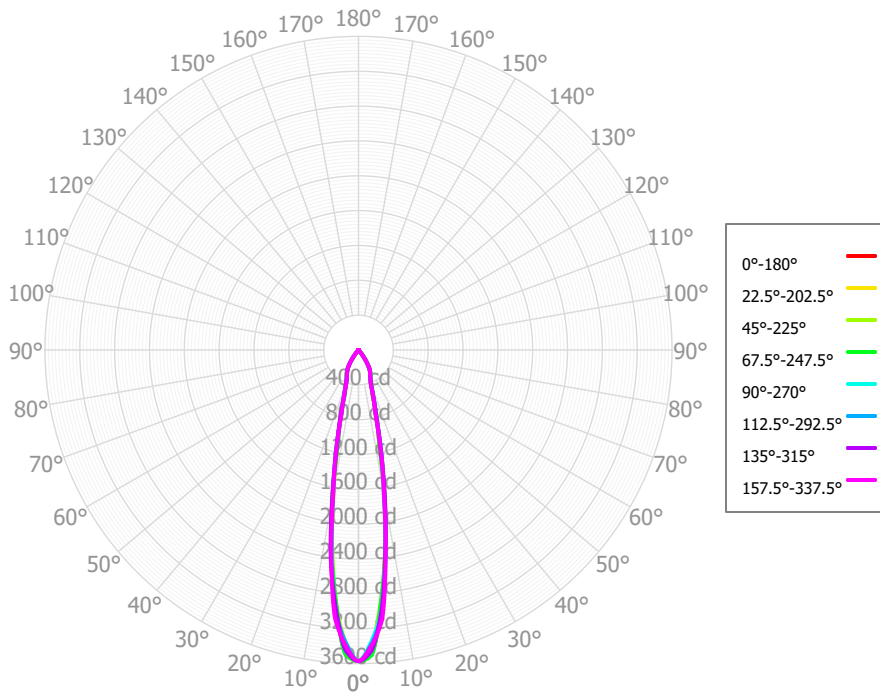
Full Beam Angle

0° - 180°	20°
90° - 270°	19°

IES File Header Contents

Keyword	Value
TEST	SP-01069_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 ND XX CL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder, ND optic, clear glass lens
OTHER	Beam Angle: 19.6 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°	243.03	33.78%	90.00° - 100.00°	0.05	0.01%
10.00° - 20.00°	229.52	31.90%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	147.50	20.50%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	83.92	11.67%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	8.18	1.14%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	3.70	0.51%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.68	0.23%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.06	0.15%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.79	0.11%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	719.39	99.99%	0.00° - 180.00°	719.44	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°	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56	3571.56
2.50°	3484.29	3386.63	3408.94	3503.71	3355.81	3368.54	3448.65	3395.68	3475.78	3362.73	3396.17	3493.65	3364.95	3382.00	3454.41	3399.01	3484.29
5.00°	2978.53	3030.59	2921.54	2924.65	3017.21	3011.48	2987.87	3092.44	2953.68	2960.80	2950.29	2928.68	3057.01	3065.67	3016.90	3109.03	2978.53
7.50°	2345.41	2332.13	2365.88	2344.53	2364.68	2377.67	2432.96	2395.79	2399.12	2361.29	2306.64	2359.55	2363.17	2369.93	2357.09	2387.68	2345.41
10.00°	1727.21	1693.01	1689.36	1726.18	1668.89	1672.01	1731.24	1663.79	1720.09	1650.62	1704.88	1725.51	1690.31	1710.56	1746.47	1681.21	1727.21
12.50°	1113.41	1169.21	1133.23	1107.55	1201.96	1187.33	1160.54	1190.66	1114.98	1148.71	1128.95	1090.62	1204.60	1210.63	1170.18	1199.59	1113.41
15.00°	783.50	754.06	795.56	821.85	769.32	762.00	799.01	743.64	803.18	767.14	770.83	799.05	748.25	767.01	792.55	735.77	783.50
17.50°	541.47	558.97	537.83	540.51	576.07	560.14	533.71	561.30	533.44	546.99	550.10	513.96	571.04	579.64	558.92	568.89	541.47
20.00°	428.39	410.12	431.14	444.44	420.46	421.63	425.70	407.47	436.53	422.13	424.16	428.90	405.48	415.48	421.91	408.08	428.39
22.50°	356.47	357.31	350.79	352.56	361.98	357.80	346.14	354.48	352.09	352.49	360.36	349.55	358.35	363.87	356.55	360.27	356.47
25.00°	319.18	313.50	321.48	323.48	319.50	315.82	314.94	313.04	322.05	316.73	319.25	321.05	312.72	316.08	314.43	313.33	319.18
27.50°	293.28	288.87	289.12	296.19	286.91	283.08	281.42	281.90	289.87	281.27	293.36	294.30	284.28	287.55	289.91	286.19	293.28
30.00°	248.37	254.37	250.75	250.03	256.07	253.14	243.86	252.01	248.05	245.99	249.87	246.26	253.46	254.02	248.64	257.83	248.37
32.50°	196.89	197.93	203.62	203.22	198.09	198.16	197.49	194.75	202.17	193.54	194.29	197.36	193.18	194.28	194.17	196.76	196.89
35.00°	137.71	140.78	138.37	140.04	135.09	135.22	135.40	133.85	137.20	130.03	135.73	134.81	133.43	135.16	136.25	135.92	137.71
37.50°	75.78	82.03	81.27	76.13	81.88	81.90	80.96	82.04	77.04	77.70	75.06	71.58	80.77	79.57	75.53	82.33	75.78
40.00°	39.94	35.59	41.47	42.83	30.55	31.74	40.74	31.50	41.01	32.85	36.97	40.16	30.50	30.10	36.68	29.62	39.94
42.50°	13.64	18.05	12.64	11.08	14.29	13.49	12.57	15.71	10.21	11.56	15.34	10.54	17.56	16.78	15.84	17.36	13.64
45.00°	5.53	5.30	7.68	6.53	5.26	6.02	7.37	5.22	6.73	6.40	5.40	6.69	5.28	5.27	5.58	5.27	5.53
47.50°	4.39	4.13	4.14	3.52	3.89	4.06	3.84	3.63	3.74	4.20	4.17	4.46	4.51	4.88	4.37	4.37	4.39
50.00°	4.36	3.52	3.80	3.70	4.15	4.05	3.58	3.47	3.43	4.06	3.91	4.41	3.78	4.66	3.99	3.48	4.36
52.50°	4.78	4.29	3.78	4.10	4.26	3.70	3.55	3.96	3.29	4.13	4.38	4.52	3.96	5.57	4.33	4.28	4.78
55.00°	4.84	4.60	4.52	4.92	4.33	3.24	3.99	4.57	4.07	4.36	4.55	4.57	4.11	6.12	4.48	5.07	4.84
57.50°	4.75	3.74	4.65	5.77	3.82	2.81	3.89	3.91	4.54	3.96	4.48	4.61	3.54	4.26	4.46	4.83	4.75
60.00°	3.94	2.83	3.35	3.84	3.16	2.39	2.66	3.03	3.13	3.08	3.69	3.41	2.96	2.52	3.76	4.59	3.94
62.50°	2.84	1.80	2.19	1.69	2.25	1.78	1.65	2.34	1.83	2.18	2.31	2.11	2.16	1.74	2.41	3.14	2.84
65.00°	2.09	1.06	1.39	1.21	1.28	1.10	1.06	1.68	1.19	1.27	1.44	1.40	1.40	1.07	1.74	1.68	2.09
67.50°	1.49	1.05	0.87	0.88	1.01	0.86	0.76	1.57	0.74	0.97	0.98	0.75	1.22	1.27	1.69	1.72	1.49
70.00°	1.06	0.98	0.86	1.06	0.86	0.74	0.83	1.48	0.83	1.05	1.06	0.90	1.11	1.40	1.58	1.77	1.06
72.50°	0.69	0.80	0.78	1.02	0.82	0.71	0.83	1.18	0.78	1.01	1.38	1.06	1.30	1.27	1.42	1.84	0.69
75.00°	0.84	0.68	0.64	0.56	0.86	0.83	0.81	0.94	0.62	0.88	1.25	1.16	1.41	1.15	1.25	1.84	0.84
77.50°	0.92	0.61	1.08	0.63	0.93	1.15	0.79	0.78	0.74	0.59	1.03	1.28	1.44	1.02	1.08	1.75	0.92
80.00°	0.87	0.67	1.22	0.69	0.77	0.70	0.68	0.82	0.76	0.62	0.78	1.33	1.41	1.09	0.87	1.15	0.87
82.50°	0.82	0.84	1.06	0.67	0.84	0.74	0.71	0.93	0.79	0.62	0.81	1.13	1.48	1.05	0.94	0.67	0.82
85.00°	0.86	0.47	0.82	0.62	0.62	0.38	0.90	0.63	0.52	0.79	0.37	0.86	1.16	0.94	0.82	0.55	0.86
87.50°	0.52	0.87	0.94	0.57	0.47	0.69	0.55	0.48	0.47	0.76	0.63	0.79	0.93	0.95	0.57	0.85	0.52
90.00°	0.73	0.53	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.79	0.74	0.48	0.54	0.73
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	856	856	856	856	837	837	837	837	799	799	799	765	765	765	734	734	719
	1	825	808	793	780	807	793	779	767	764	753	744	737	729	722	713	707	693
	2	794	766	742	722	779	754	732	714	731	714	699	710	696	684	691	680	667
	3	765	728	700	677	752	719	693	672	701	679	661	684	666	651	668	654	642
	4	738	695	664	640	726	687	659	636	673	648	629	659	639	622	647	630	618
	5	712	666	633	609	702	659	629	606	647	621	601	636	614	596	626	607	596
	6	688	639	606	582	679	634	602	580	624	596	576	615	591	572	606	585	575
	7	666	614	581	558	658	610	579	557	602	574	554	594	570	551	587	565	556
	8	645	592	559	537	637	589	557	536	582	554	534	575	550	532	569	547	538
	9	625	572	540	518	618	569	538	517	563	535	515	558	532	514	552	529	522
	10	607	553	522	500	601	551	520	500	546	518	499	541	515	498	536	513	506

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	118.1 fc	1.9 ft
6.5 ft	84.5 fc	2.2 ft
7.5 ft	63.5 fc	2.6 ft
8.0 ft	55.8 fc	2.7 ft
10.0 ft	35.7 fc	3.4 ft
12.0 ft	24.8 fc	4.1 ft
14.0 ft	18.2 fc	4.8 ft
16.0 ft	14.0 fc	5.5 ft
20.0 ft	8.9 fc	6.8 ft
24.0 ft	6.2 fc	8.2 ft
28.0 ft	4.6 fc	9.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	449480	449480	449480
45.00°	984	1368	936
55.00°	1062	991	951
65.00°	623	415	381
75.00°	410	312	416
85.00°	1247	1178	901

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	0.9	1.8	1.2	2.1	2.4	-0.2	0.7	0.1	1.0	1.3
	3H	1.2	2.0	1.6	2.4	2.7	0.0	0.7	0.3	1.1	1.5
	4H	1.5	2.2	1.9	2.6	2.9	0.4	1.1	0.8	1.5	1.9
	6H	1.9	2.6	2.3	2.9	3.3	1.3	2.0	1.7	2.3	2.7
	8H	2.1	2.8	2.6	3.2	3.6	1.9	2.6	2.4	2.9	3.4
	12H	2.5	3.1	3.0	3.5	3.9	2.5	3.1	3.0	3.5	4.0
4H	2H	0.8	1.5	1.2	1.9	2.2	-0.4	0.4	0.1	0.7	1.1
	3H	1.4	2.0	1.8	2.4	2.8	0.0	0.6	0.4	1.0	1.4
	4H	1.9	2.5	2.4	2.9	3.3	0.7	1.2	1.1	1.6	2.1
	6H	2.6	3.1	3.1	3.5	4.0	2.0	2.4	2.4	2.9	3.4
	8H	2.9	3.4	3.4	3.8	4.3	2.8	3.2	3.3	3.6	4.1
	12H	3.5	3.8	3.9	4.3	4.8	3.6	3.9	4.1	4.4	4.9
8H	4H	2.1	2.5	2.5	2.9	3.4	0.9	1.3	1.4	1.8	2.2
	6H	3.0	3.3	3.5	3.8	4.3	2.4	2.7	2.9	3.3	3.7
	8H	3.5	3.8	4.0	4.3	4.8	3.4	3.7	3.9	4.2	4.7
	12H	4.1	4.4	4.6	4.9	5.5	4.4	4.6	4.9	5.1	5.7
12H	4H	2.1	2.4	2.6	2.9	3.4	0.9	1.2	1.4	1.7	2.2
	6H	3.1	3.4	3.7	3.9	4.4	2.5	2.8	3.0	3.3	3.8
	8H	3.7	4.0	4.2	4.5	5.0	3.6	3.8	4.1	4.3	4.9

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0