

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CF04XXPC 10L 35K ND XX NL XX
Nom 4" diam Gamma Cylinder, ND optic, no lens

Test Number

SP-01069_1_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	788
Efficacy	121.21 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.32
Two luminaires, plane 90°	0.32
Four luminaires	0.33

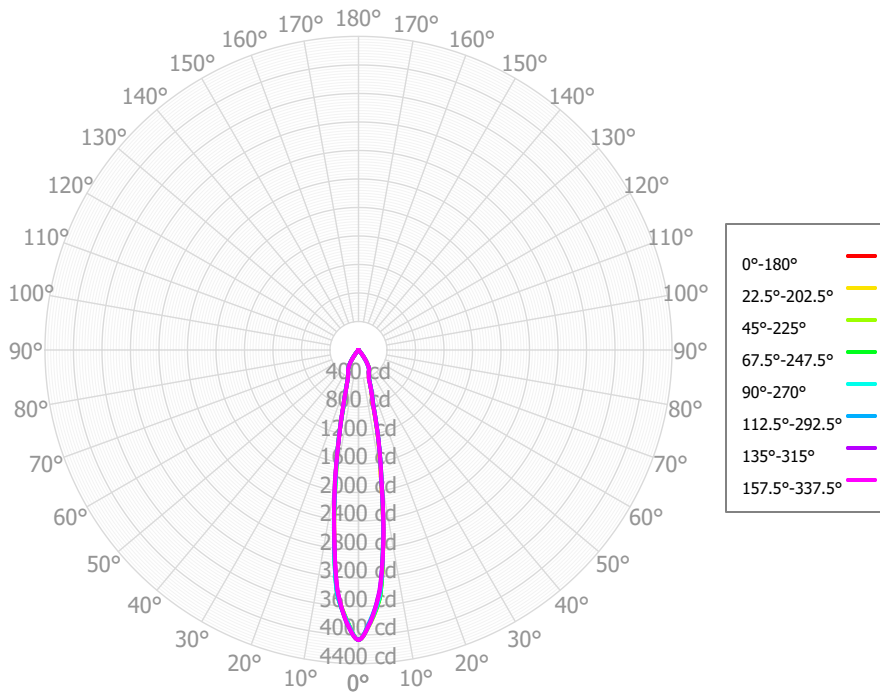
Full Beam Angle

0° - 180°	19°
90° - 270°	19°

IES File Header Contents

Keyword	Value
TEST	SP-01069_1_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 NL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder, ND optic, no lens
OTHER	Beam Angle: 18.9 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 0.89, 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°	272.18	34.55%	90.00° - 100.00°	0.03	0.00%
10.00° - 20.00°	246.97	31.35%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	159.60	20.26%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	98.79	12.54%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	7.38	0.94%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	0.63	0.08%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	0.85	0.11%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.83	0.10%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.63	0.08%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	787.85	100.00%	0.00° - 180.00°	787.88	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°	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47	4067.47
2.50°	3817.05	3822.37	3839.75	3823.24	3821.15	3813.75	3836.35	3822.87	3805.25	3803.91	3786.32	3795.38	3796.84	3793.85	3823.53	3822.66	3817.05
5.00°	3458.75	3463.21	3483.07	3477.43	3457.83	3426.02	3381.99	3386.20	3410.16	3401.26	3420.79	3442.08	3442.42	3412.61	3381.19	3406.17	3458.75
7.50°	2657.47	2662.24	2641.24	2644.76	2637.92	2629.11	2607.63	2607.18	2613.13	2608.01	2623.91	2630.16	2634.35	2645.65	2677.85	2677.61	2657.47
10.00°	1807.66	1805.05	1867.16	1861.54	1875.77	1893.88	1901.16	1898.03	1881.07	1878.72	1816.09	1847.05	1836.60	1840.02	1862.32	1849.48	1807.66
12.50°	1271.64	1269.78	1273.05	1286.24	1292.93	1289.69	1255.00	1267.42	1282.36	1272.59	1278.11	1287.41	1294.26	1303.56	1300.26	1290.99	1271.64
15.00°	761.13	760.90	809.75	809.33	825.89	832.90	841.39	840.91	832.04	823.44	778.20	796.30	799.18	792.48	811.02	785.58	761.13
17.50°	586.33	585.38	588.38	599.00	603.71	599.55	578.35	582.57	599.65	591.76	596.38	600.75	602.44	603.81	595.72	588.30	586.33
20.00°	428.13	424.95	436.57	441.25	444.91	446.18	446.27	442.74	447.48	443.49	438.46	442.13	436.61	433.84	428.45	421.66	428.13
22.50°	380.84	379.58	378.92	383.94	383.16	381.24	375.55	374.84	382.56	379.73	386.22	385.56	384.17	384.40	378.15	377.95	380.84
25.00°	339.25	339.20	340.67	342.31	340.76	340.95	340.95	339.57	341.35	339.76	340.98	340.54	340.29	340.56	337.00	337.19	339.25
27.50°	319.39	320.08	321.66	322.26	319.96	320.92	317.86	318.30	319.04	317.67	315.45	317.63	317.21	317.57	315.47	316.97	319.39
30.00°	290.33	291.95	287.84	287.49	283.05	280.87	274.94	273.84	275.37	272.69	277.58	279.51	281.32	284.27	290.86	291.59	290.33
32.50°	237.82	239.12	243.29	237.92	232.95	228.88	228.04	222.73	219.17	215.30	215.29	220.15	223.19	225.72	230.69	233.99	237.82
35.00°	178.48	180.23	180.45	175.74	169.82	163.81	158.11	154.41	153.92	149.16	150.44	155.83	159.94	163.41	169.17	173.93	178.48
37.50°	106.96	109.63	107.92	104.13	98.85	93.23	85.91	83.08	84.93	79.73	81.95	86.42	90.25	94.50	100.41	104.89	106.96
40.00°	52.19	54.60	58.32	54.71	50.88	47.80	44.30	43.26	43.04	40.24	35.47	40.49	42.24	43.61	42.30	47.73	52.19
42.50°	19.03	21.16	17.16	17.22	12.71	9.56	5.46	6.07	8.71	8.26	12.15	12.13	14.20	15.57	18.90	19.66	19.03
45.00°	2.13	3.36	5.75	4.54	2.74	2.52	2.83	3.28	2.32	2.66	1.58	1.54	2.13	1.70	2.43	1.63	2.13
47.50°	0.82	1.43	1.38	1.32	0.79	0.75	0.56	0.70	0.52	0.75	0.85	0.70	0.98	1.18	1.49	0.92	0.82
50.00°	0.37	0.67	0.88	0.67	0.47	0.59	0.60	0.58	0.50	0.58	0.67	0.50	0.62	0.90	0.87	0.55	0.37
52.50°	0.53	0.78	0.90	0.66	0.44	0.54	0.65	0.49	0.60	0.50	0.80	0.54	0.65	0.79	0.75	0.62	0.53
55.00°	0.62	0.78	0.73	0.71	0.47	0.76	0.75	0.55	0.70	0.62	0.77	0.71	0.79	0.76	0.76	0.68	0.62
57.50°	0.68	0.72	0.56	0.77	0.51	0.94	0.81	0.63	0.79	0.71	0.67	0.90	0.98	0.75	0.93	0.73	0.68
60.00°	0.78	0.58	0.64	0.78	0.61	0.79	0.81	0.81	0.70	0.61	0.92	0.67	0.95	0.76	1.00	0.87	0.78
62.50°	0.90	0.42	0.73	0.79	0.69	0.65	0.90	1.09	0.63	0.55	1.25	0.38	0.86	0.77	1.00	1.08	0.90
65.00°	0.78	0.45	0.98	0.68	0.58	0.63	1.15	1.60	0.63	0.65	1.47	0.70	1.01	0.69	0.93	1.11	0.78
67.50°	0.61	0.52	1.14	0.58	0.49	0.65	1.27	1.84	0.60	0.70	1.68	1.01	1.19	0.58	0.83	1.04	0.61
70.00°	0.56	0.59	0.99	0.54	0.53	0.79	1.27	1.70	0.48	0.63	1.42	0.91	0.92	0.62	0.78	1.19	0.56
72.50°	0.53	0.68	0.96	0.58	0.54	0.74	1.14	1.32	0.48	0.70	1.21	0.86	0.75	0.70	0.74	1.36	0.53
75.00°	0.60	0.80	1.09	0.73	0.54	0.54	0.96	0.86	0.58	0.88	1.16	0.95	0.87	0.93	0.82	0.98	0.60
77.50°	0.49	0.76	0.75	0.48	0.64	0.45	0.77	0.79	0.52	0.73	0.93	0.84	0.97	0.82	0.83	0.74	0.49
80.00°	0.32	0.65	0.65	0.51	0.53	0.46	0.56	0.67	0.46	0.76	0.68	0.70	0.97	0.58	0.74	0.66	0.32
82.50°	0.38	0.62	0.76	0.70	0.39	0.43	0.77	0.54	0.70	0.83	0.59	0.66	0.73	0.67	0.69	0.70	0.38
85.00°	0.59	0.71	0.65	0.63	0.50	0.51	0.91	0.58	0.80	0.62	0.68	0.38	0.84	0.70	0.54	0.62	0.59
87.50°	0.58	0.51	0.70	0.70	0.56	0.60	0.63	0.81	0.46	0.41	0.69	0.55	0.78	0.60	0.50	0.61	0.58
90.00°	0.40	0.37	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.56	0.45	0.47	0.60	0.46	0.40
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	938	938	938	938	916	916	916	916	875	875	875	838	838	838	804	804	788
	1	904	886	870	855	885	869	855	842	837	826	816	808	800	792	782	775	760
	2	870	840	814	793	854	827	804	784	802	783	767	779	764	751	758	746	732
	3	839	799	769	744	825	789	761	738	769	746	727	751	732	716	734	718	705
	4	810	764	730	704	797	755	724	700	739	713	692	725	702	684	711	692	680
	5	782	731	696	670	771	725	692	667	712	683	661	700	675	656	688	667	656
	6	756	702	666	640	746	697	663	638	686	656	634	676	650	630	667	644	633
	7	732	676	640	614	723	671	637	613	662	632	610	654	627	607	646	622	612
	8	709	652	616	591	701	648	614	590	640	610	588	633	606	586	626	602	593
	9	687	630	594	571	680	626	593	570	620	589	568	614	586	566	608	583	575
	10	667	609	575	552	660	606	573	551	601	571	550	596	568	548	591	565	558

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	134.5 fc	1.8 ft
6.5 ft	96.3 fc	2.2 ft
7.5 ft	72.3 fc	2.5 ft
8.0 ft	63.6 fc	2.7 ft
10.0 ft	40.7 fc	3.3 ft
12.0 ft	28.2 fc	4.0 ft
14.0 ft	20.8 fc	4.6 ft
16.0 ft	15.9 fc	5.3 ft
20.0 ft	10.2 fc	6.6 ft
24.0 ft	7.1 fc	8.0 ft
28.0 ft	5.2 fc	9.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	511890	511890	511890
45.00°	379	1024	489
55.00°	137	160	103
65.00°	232	291	172
75.00°	290	530	264
85.00°	849	942	717

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	-12.0	-11.1	-11.6	-10.8	-10.4	-10.5	-9.7	-10.2	-9.3	-9.0
	3H	-8.4	-7.6	-8.0	-7.3	-6.9	-7.2	-6.5	-6.9	-6.1	-5.7
	4H	-6.6	-5.9	-6.2	-5.5	-5.1	-5.8	-5.1	-5.4	-4.7	-4.3
	6H	-5.5	-4.8	-5.1	-4.5	-4.1	-3.9	-3.2	-3.5	-2.8	-2.4
	8H	-5.0	-4.3	-4.5	-3.9	-3.5	-3.1	-2.5	-2.7	-2.1	-1.7
	12H	-3.8	-3.2	-3.3	-2.8	-2.4	-2.2	-1.6	-1.7	-1.2	-0.8
4H	2H	-10.2	-9.5	-9.8	-9.1	-8.7	-8.4	-7.7	-8.0	-7.3	-6.9
	3H	-6.4	-5.9	-6.0	-5.4	-5.0	-5.3	-4.7	-4.9	-4.3	-3.9
	4H	-4.5	-4.0	-4.1	-3.5	-3.1	-3.9	-3.4	-3.5	-3.0	-2.5
	6H	-3.3	-2.8	-2.8	-2.4	-1.9	-2.3	-1.8	-1.8	-1.4	-0.9
	8H	-2.7	-2.3	-2.2	-1.8	-1.3	-1.5	-1.1	-1.0	-0.6	-0.2
	12H	-1.5	-1.2	-1.0	-0.7	-0.2	-0.5	-0.2	0.0	0.3	0.8
8H	4H	-3.7	-3.3	-3.2	-2.8	-2.3	-3.1	-2.7	-2.6	-2.2	-1.7
	6H	-2.1	-1.8	-1.6	-1.3	-0.8	-1.4	-1.1	-0.9	-0.6	-0.1
	8H	-1.2	-0.9	-0.7	-0.4	0.1	-0.5	-0.2	0.0	0.3	0.8
	12H	0.2	0.5	0.7	1.0	1.5	0.6	0.8	1.1	1.3	1.9
12H	4H	-3.6	-3.2	-3.1	-2.7	-2.2	-3.0	-2.6	-2.5	-2.1	-1.6
	6H	-1.8	-1.5	-1.3	-1.0	-0.5	-1.2	-0.9	-0.6	-0.4	0.2
	8H	-0.7	-0.4	-0.2	0.1	0.6	-0.2	0.1	0.4	0.6	1.2

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0