

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01135

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	2388
Efficacy	117.07 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.81
Two luminaires, plane 90°	0.81
Four luminaires	0.79

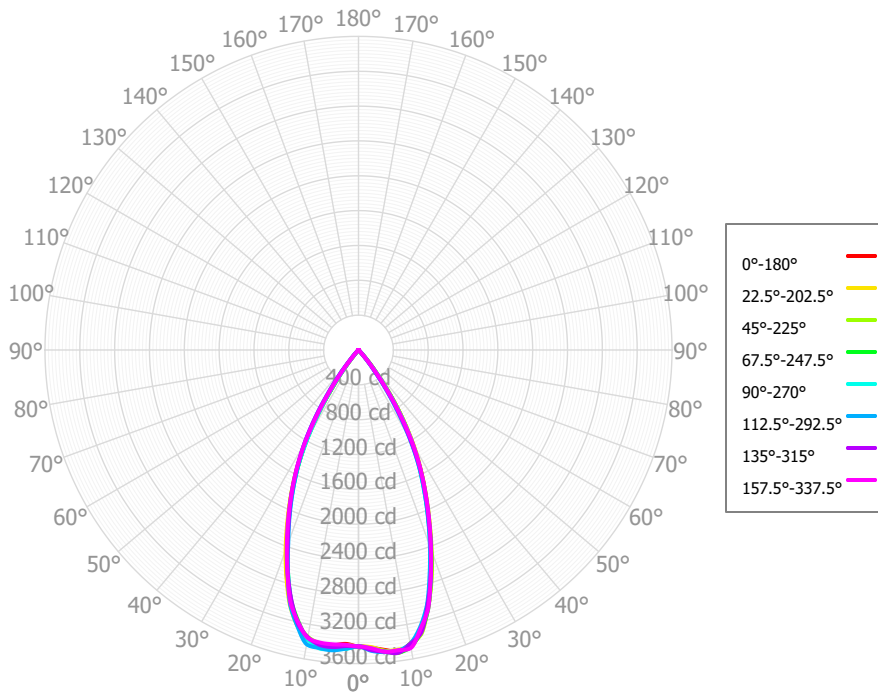
Full Beam Angle

0° - 180°	51°
90° - 270°	51°

IES File Header Contents

Keyword	Value
TEST	SP-01135
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/31/2020
ISSUEDATE	2/16/2021
LUMCAT	CF04XXPC 30L 35K WD XX NL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder, WD optic, no lens
OTHER	Beam Angle: 49.4 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°	332.97	13.94%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	828.33	34.68%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	819.66	34.32%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	374.27	15.67%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	23.57	0.99%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	2.14	0.09%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.28	0.10%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.65	0.11%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.43	0.10%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	2388.30	100.00%	0.00° - 180.00°	2388.30	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°	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06	3404.06
2.50°	3422.98	3415.83	3431.24	3444.18	3433.04	3433.04	3403.08	3388.62	3378.38	3393.70	3391.06	3411.05	3435.90	3458.10	3449.83	3428.26	3422.98
5.00°	3457.36	3467.52	3468.16	3476.47	3477.50	3461.03	3423.81	3392.55	3403.58	3402.38	3407.01	3428.56	3446.66	3482.83	3478.57	3477.31	3457.36
7.50°	3491.20	3470.60	3508.58	3503.70	3482.81	3451.04	3414.88	3388.90	3400.67	3410.91	3398.94	3404.67	3454.94	3483.50	3506.53	3477.48	3491.20
10.00°	3423.43	3453.62	3437.23	3461.50	3448.65	3430.66	3350.89	3357.18	3366.58	3362.37	3345.38	3367.20	3370.82	3425.23	3428.87	3472.70	3423.43
12.50°	3306.72	3289.63	3338.54	3313.41	3301.99	3246.69	3217.14	3201.16	3234.66	3241.47	3219.00	3192.78	3237.20	3263.90	3324.61	3283.18	3306.72
15.00°	3051.74	3079.21	3075.54	3086.02	3060.58	3029.25	2976.57	3011.43	3014.66	3037.45	2982.26	2985.17	2987.76	3036.02	3054.12	3083.96	3051.74
17.50°	2742.94	2769.48	2784.77	2760.98	2755.71	2700.93	2700.05	2708.33	2736.05	2747.95	2713.31	2690.92	2689.41	2714.63	2754.49	2753.59	2742.94
20.00°	2422.66	2435.67	2456.55	2433.14	2407.61	2357.81	2379.06	2407.26	2414.67	2445.90	2403.76	2381.37	2385.90	2397.64	2432.72	2426.04	2422.66
22.50°	2099.00	2128.27	2124.19	2102.49	2090.30	2068.98	2083.88	2111.40	2111.16	2133.05	2108.01	2090.49	2080.73	2085.66	2108.58	2120.46	2099.00
25.00°	1814.60	1825.28	1829.14	1799.06	1789.80	1783.96	1814.59	1820.13	1818.45	1829.21	1826.35	1801.64	1788.30	1786.24	1818.66	1819.27	1814.60
27.50°	1538.60	1546.86	1535.97	1518.37	1509.16	1512.87	1534.00	1538.06	1508.61	1531.63	1518.17	1497.90	1499.07	1498.75	1530.63	1540.20	1538.60
30.00°	1248.24	1270.89	1248.06	1226.00	1237.37	1240.75	1243.94	1231.86	1190.54	1189.29	1187.99	1193.44	1163.16	1179.09	1205.23	1250.78	1248.24
32.50°	955.70	966.18	959.73	925.75	938.12	927.72	933.48	885.99	855.07	822.01	851.53	843.35	819.16	834.63	881.17	924.18	955.70
35.00°	662.19	660.41	664.21	643.24	629.40	620.39	609.18	574.23	513.07	517.78	510.72	499.91	528.75	538.72	581.62	615.43	662.19
37.50°	368.59	410.47	380.36	370.32	384.12	375.92	358.47	307.64	283.38	242.29	273.75	281.61	244.03	272.96	296.76	356.75	368.59
40.00°	197.52	170.03	199.83	190.80	155.10	152.59	147.71	130.65	86.85	108.17	94.31	81.46	125.50	123.60	149.18	151.60	197.52
42.50°	32.57	83.97	43.58	52.46	69.80	73.08	55.15	49.87	31.19	23.97	26.33	39.47	16.00	33.75	21.97	63.02	32.57
45.00°	17.13	6.54	21.34	11.69	11.70	7.34	14.93	9.31	5.60	4.80	7.14	3.56	9.03	6.02	11.33	6.22	17.13
47.50°	2.74	4.32	3.54	4.13	3.96	4.30	3.60	4.82	2.62	2.80	2.01	2.65	2.44	3.22	2.84	4.31	2.74
50.00°	2.33	2.42	2.94	2.46	2.27	2.02	2.15	2.84	2.84	2.06	1.80	2.02	2.57	2.56	2.91	3.17	2.33
52.50°	1.97	2.22	2.49	2.29	2.10	2.29	2.13	2.67	2.62	1.56	2.14	2.44	2.68	2.56	2.87	3.14	1.97
55.00°	1.95	2.09	2.48	2.29	2.02	2.42	2.48	2.50	2.36	2.08	2.63	2.73	2.52	2.67	2.52	2.75	1.95
57.50°	1.97	2.20	2.39	2.32	2.20	2.20	2.45	2.33	2.34	2.74	2.54	2.63	2.40	2.80	2.25	1.96	1.97
60.00°	2.21	2.24	2.11	2.21	2.36	2.13	2.36	2.68	2.33	2.46	2.33	2.54	2.48	2.48	2.18	1.92	2.21
62.50°	2.38	2.05	1.94	2.09	1.88	2.38	2.38	3.27	2.48	2.12	1.89	2.47	2.58	2.09	2.07	2.59	2.38
65.00°	2.32	1.91	1.98	2.17	1.49	2.46	2.42	3.07	2.60	2.01	1.40	2.43	2.76	2.40	1.88	2.72	2.32
67.50°	2.35	1.87	2.01	2.25	2.01	2.25	2.51	2.56	2.37	1.91	1.95	2.44	2.78	2.77	2.07	2.43	2.35
70.00°	2.61	1.90	2.02	2.27	2.36	2.13	2.59	2.51	2.18	2.13	2.55	2.40	2.36	2.90	2.85	3.32	2.61
72.50°	2.84	2.08	2.17	2.29	1.74	2.12	2.53	2.57	2.27	2.30	2.37	2.30	2.11	3.02	3.42	4.96	2.84
75.00°	3.01	2.13	2.47	2.42	1.34	2.27	2.46	2.61	2.31	2.01	2.19	2.26	2.24	2.80	3.74	4.74	3.01
77.50°	2.86	2.00	2.64	2.50	1.92	2.59	2.20	2.64	2.13	1.76	2.19	2.30	2.31	2.59	3.61	3.59	2.86
80.00°	2.15	2.03	2.67	2.07	2.31	2.74	2.00	2.47	1.94	1.75	2.16	2.34	2.25	2.49	3.02	3.06	2.15
82.50°	1.79	2.27	2.69	1.73	2.11	2.74	2.34	2.27	1.77	1.70	1.92	2.39	2.17	2.44	2.51	2.77	1.79
85.00°	1.90	2.38	2.69	1.93	1.98	2.75	2.60	2.39	1.68	1.44	1.70	2.27	2.06	2.73	2.09	2.57	1.90
87.50°	2.01	2.37	2.78	2.04	2.02	2.78	2.44	2.54	1.85	1.33	1.66	2.01	2.07	2.91	2.10	2.39	2.01
90.00°	2.14	2.33	2.94	1.76	2.09	2.64	2.34	2.32	2.03	1.64	1.58	1.91	2.24	2.59	2.42	2.47	2.14

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	2843	2843	2843	2843	2777	2777	2777	2777	2654	2654	2654	2541	2541	2541	2437	2437	2388
	1	2722	2661	2606	2557	2664	2610	2561	2516	2514	2475	2439	2425	2395	2367	2344	2320	2298
	2	2604	2497	2410	2336	2552	2457	2377	2310	2381	2315	2259	2310	2258	2211	2245	2203	2165
	3	2489	2350	2242	2157	2443	2317	2219	2139	2256	2173	2106	2199	2131	2073	2147	2090	2050
	4	2379	2216	2097	2006	2338	2190	2080	1994	2140	2046	1971	2093	2013	1948	2050	1983	1946
	5	2275	2095	1969	1876	2238	2073	1956	1868	2032	1930	1852	1993	1905	1836	1957	1881	1848
	6	2176	1984	1855	1762	2143	1965	1844	1756	1931	1824	1745	1899	1805	1733	1869	1786	1756
	7	2082	1882	1752	1661	2052	1866	1743	1656	1837	1728	1648	1810	1712	1639	1784	1697	1670
	8	1993	1788	1658	1569	1966	1775	1652	1566	1750	1639	1560	1727	1627	1553	1705	1615	1589
	9	1910	1701	1573	1487	1885	1690	1568	1484	1669	1557	1479	1648	1547	1475	1630	1537	1514
	10	1832	1621	1495	1411	1809	1611	1491	1409	1593	1482	1406	1576	1474	1402	1559	1466	1445

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	112.5 fc	5.2 ft
6.5 ft	80.6 fc	6.2 ft
7.5 ft	60.5 fc	7.1 ft
8.0 ft	53.2 fc	7.6 ft
10.0 ft	34.0 fc	9.5 ft
12.0 ft	23.6 fc	11.4 ft
14.0 ft	17.4 fc	13.3 ft
16.0 ft	13.3 fc	15.2 ft
20.0 ft	8.5 fc	19.0 ft
24.0 ft	5.9 fc	22.8 ft
28.0 ft	4.3 fc	26.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	428400	428400	428400
45.00°	3048	3798	2083
55.00°	427	544	442
65.00°	691	590	444
75.00°	1464	1201	653
85.00°	2739	3877	2862

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	-8.5	-7.6	-8.1	-7.3	-6.9	-7.4	-6.5	-7.1	-6.2	-5.9
	3H	-4.2	-3.4	-3.8	-3.1	-2.7	-4.0	-3.2	-3.6	-2.9	-2.5
	4H	-1.2	-0.4	-0.8	-0.1	0.3	-2.6	-1.9	-2.2	-1.5	-1.1
	6H	0.8	1.4	1.2	1.8	2.2	-0.4	0.2	0.0	0.6	1.0
	8H	1.4	2.0	1.9	2.4	2.9	0.7	1.3	1.1	1.7	2.1
	12H	2.3	2.9	2.7	3.2	3.7	1.9	2.5	2.3	2.9	3.3
4H	2H	-7.6	-6.9	-7.2	-6.5	-6.1	-6.8	-6.0	-6.4	-5.7	-5.3
	3H	-2.5	-1.9	-2.1	-1.5	-1.1	-2.9	-2.3	-2.5	-1.9	-1.5
	4H	0.7	1.2	1.1	1.6	2.1	-1.2	-0.6	-0.7	-0.2	0.2
	6H	2.5	3.0	3.0	3.4	3.9	1.2	1.7	1.7	2.1	2.6
	8H	3.3	3.7	3.8	4.2	4.6	2.5	2.9	3.0	3.4	3.8
	12H	4.2	4.6	4.7	5.0	5.5	3.8	4.1	4.3	4.6	5.1
8H	4H	1.5	1.9	2.0	2.3	2.8	-0.4	0.1	0.1	0.5	1.0
	6H	3.6	3.9	4.1	4.4	4.9	2.3	2.7	2.8	3.2	3.6
	8H	4.6	4.9	5.1	5.4	5.9	3.8	4.1	4.4	4.6	5.1
	12H	5.8	6.0	6.3	6.5	7.1	5.4	5.6	5.9	6.1	6.7
12H	4H	1.6	2.0	2.1	2.5	3.0	-0.2	0.2	0.3	0.7	1.2
	6H	3.9	4.2	4.4	4.6	5.2	2.6	2.9	3.1	3.4	3.9
	8H	5.0	5.3	5.6	5.8	6.4	4.2	4.5	4.8	5.0	5.6

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0