

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01134

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	2364
Efficacy	115.86 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

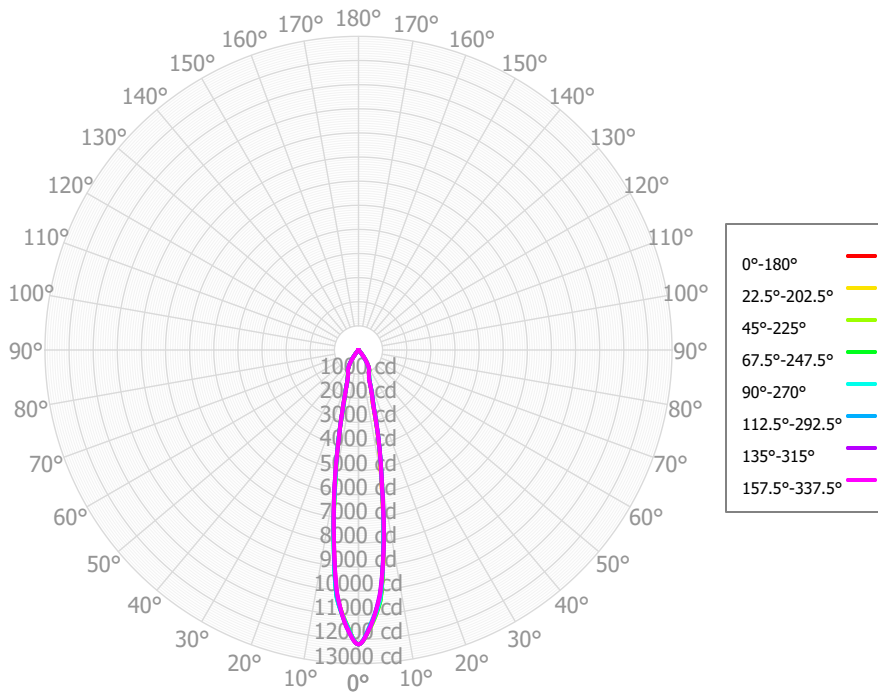
Full Beam Angle

0° - 180°	19°
90° - 270°	19°

IES File Header Contents

Keyword	Value
TEST	SP-01134
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/31/2020
ISSUEDATE	2/16/2021
LUMCAT	CF04XXPC 30L 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 0.78, 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°	816.54	34.55%	90.00° - 100.00°	0.00	0.00%
10.00° - 20.00°	740.92	31.35%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	478.79	20.26%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	296.37	12.54%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	22.15	0.94%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.88	0.08%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.54	0.11%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.48	0.10%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.89	0.08%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	2363.55	100.00%	0.00° - 180.00°	2363.55	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°	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42	12202.42
2.50°	11451.15	11467.10	11519.25	11469.74	11463.44	11441.25	11509.04	11468.60	11415.74	11411.74	11358.96	11386.13	11390.52	11381.54	11470.59	11467.97	11451.15
5.00°	10376.26	10389.62	10449.20	10432.30	10373.48	10278.06	10145.98	10158.59	10230.47	10203.77	10262.36	10326.25	10327.27	10237.84	10143.57	10218.50	10376.26
7.50°	7972.40	7986.72	7923.72	7934.28	7913.76	7887.33	7822.89	7821.54	7839.38	7824.04	7871.72	7890.47	7903.05	7936.95	8033.56	8032.83	7972.40
10.00°	5422.98	5415.16	5601.47	5584.61	5627.31	5681.63	5703.47	5694.10	5643.21	5636.16	5448.27	5541.15	5509.81	5520.06	5586.97	5548.43	5422.98
12.50°	3814.92	3809.33	3819.16	3858.71	3878.79	3869.06	3765.01	3802.25	3847.08	3817.77	3834.32	3862.23	3882.79	3910.67	3900.79	3872.98	3814.92
15.00°	2283.38	2282.70	2429.26	2428.00	2477.67	2498.69	2524.18	2522.74	2496.12	2470.33	2334.59	2388.89	2397.53	2377.45	2433.07	2356.73	2283.38
17.50°	1758.99	1756.13	1765.14	1797.01	1811.13	1798.65	1735.04	1747.72	1798.94	1775.27	1789.15	1802.25	1807.33	1811.42	1787.15	1764.89	1758.99
20.00°	1284.39	1274.86	1309.72	1323.75	1334.73	1338.55	1338.81	1328.21	1342.45	1330.46	1315.37	1326.38	1309.84	1301.51	1285.34	1264.98	1284.39
22.50°	1142.52	1138.74	1136.74	1151.81	1149.48	1143.71	1126.64	1124.51	1147.68	1139.20	1158.67	1156.68	1152.50	1153.20	1134.45	1133.84	1142.52
25.00°	1017.74	1017.59	1022.01	1026.94	1022.28	1022.84	1022.85	1018.71	1024.06	1019.27	1022.94	1021.62	1020.86	1021.69	1011.01	1011.57	1017.74
27.50°	958.16	960.24	964.97	966.78	959.89	962.76	953.59	954.91	957.13	953.00	946.36	952.89	951.64	952.70	946.41	950.92	958.16
30.00°	870.99	875.84	863.51	862.48	849.15	842.62	824.83	821.52	826.11	818.08	832.75	838.54	843.96	852.82	872.58	874.76	870.99
32.50°	713.45	717.37	729.87	713.77	698.85	686.65	684.11	668.18	657.51	645.89	645.88	660.46	669.56	677.17	692.07	701.98	713.45
35.00°	535.44	540.68	541.34	527.21	509.47	491.43	474.33	463.23	461.75	447.49	451.33	467.48	479.81	490.23	507.52	521.79	535.44
37.50°	320.88	328.89	323.75	312.40	296.54	279.68	257.72	249.24	254.78	239.18	245.86	259.27	270.76	283.50	301.24	314.67	320.88
40.00°	156.56	163.79	174.97	164.12	152.64	143.40	132.91	129.77	129.11	120.72	106.41	121.48	126.73	130.82	126.89	143.18	156.56
42.50°	57.09	63.47	51.48	51.67	38.12	28.67	16.38	18.20	26.12	24.78	36.45	36.39	42.59	46.72	56.69	58.97	57.09
45.00°	6.39	10.07	17.26	13.62	8.23	7.55	8.48	9.83	6.98	7.97	4.75	4.63	6.40	5.10	7.29	4.90	6.39
47.50°	2.45	4.29	4.14	3.96	2.37	2.26	1.69	2.10	1.55	2.26	2.54	2.10	2.93	3.53	4.47	2.75	2.45
50.00°	1.12	2.00	2.65	2.02	1.42	1.76	1.80	1.74	1.50	1.75	2.00	1.50	1.85	2.70	2.60	1.64	1.12
52.50°	1.60	2.35	2.70	1.99	1.31	1.62	1.95	1.47	1.81	1.51	2.39	1.63	1.94	2.38	2.24	1.86	1.60
55.00°	1.87	2.34	2.18	2.14	1.42	2.27	2.23	1.64	2.11	1.85	2.30	2.12	2.38	2.27	2.28	2.05	1.87
57.50°	2.03	2.15	1.68	2.31	1.54	2.83	2.44	1.90	2.36	2.13	2.02	2.70	2.95	2.25	2.79	2.19	2.03
60.00°	2.33	1.74	1.91	2.35	1.83	2.36	2.44	2.42	2.10	1.83	2.75	2.02	2.84	2.27	3.01	2.62	2.33
62.50°	2.69	1.26	2.20	2.36	2.08	1.95	2.71	3.27	1.89	1.64	3.75	1.15	2.60	2.31	3.00	3.25	2.69
65.00°	2.33	1.34	2.94	2.04	1.73	1.89	3.45	4.81	1.90	1.95	4.42	2.09	3.04	2.06	2.80	3.33	2.33
67.50°	1.82	1.56	3.41	1.75	1.48	1.96	3.82	5.53	1.81	2.11	5.05	3.04	3.56	1.75	2.49	3.14	1.82
70.00°	1.67	1.78	2.96	1.63	1.58	2.36	3.80	5.11	1.45	1.89	4.27	2.74	2.76	1.86	2.33	3.56	1.67
72.50°	1.60	2.03	2.89	1.74	1.63	2.22	3.41	3.97	1.45	2.09	3.64	2.59	2.25	2.09	2.23	4.07	1.60
75.00°	1.79	2.39	3.27	2.18	1.63	1.62	2.87	2.59	1.75	2.66	3.48	2.85	2.61	2.79	2.47	2.94	1.79
77.50°	1.46	2.27	2.25	1.45	1.92	1.35	2.32	2.38	1.57	2.18	2.78	2.51	2.92	2.44	2.50	2.22	1.46
80.00°	0.96	1.95	1.94	1.53	1.58	1.37	1.68	2.00	1.37	2.29	2.05	2.10	2.90	1.73	2.23	1.99	0.96
82.50°	1.15	1.86	2.30	2.11	1.16	1.31	2.32	1.63	2.10	2.48	1.76	1.97	2.20	2.00	2.06	2.10	1.15
85.00°	1.77	2.12	1.96	1.90	1.49	1.54	2.72	1.73	2.41	1.85	2.04	1.13	2.52	2.09	1.62	1.87	1.77
87.50°	1.75	1.55	2.11	2.09	1.67	1.80	1.90	2.42	1.39	1.24	2.07	1.66	2.33	1.80	1.50	1.82	1.75
90.00°	1.19	1.11	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	1.68	1.37	1.40	1.79	1.40	1.19

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	2814	2814	2814	2814	2748	2748	2748	2748	2626	2626	2626	2514	2514	2514	2412	2412	2364
	1	2710	2657	2609	2565	2654	2606	2563	2525	2512	2478	2447	2425	2399	2375	2345	2325	2307
	2	2611	2519	2443	2379	2562	2480	2411	2353	2406	2350	2302	2337	2293	2254	2274	2239	2207
	3	2518	2398	2306	2233	2474	2367	2283	2215	2308	2238	2180	2253	2196	2147	2202	2155	2115
	4	2429	2291	2189	2112	2391	2265	2172	2100	2218	2139	2076	2174	2107	2053	2132	2076	2030
	5	2346	2194	2088	2010	2312	2174	2075	2001	2135	2050	1984	2099	2025	1968	2065	2002	1952
	6	2268	2107	1999	1921	2238	2090	1989	1915	2058	1969	1903	2028	1950	1891	2000	1932	1879
	7	2194	2028	1919	1843	2168	2013	1911	1839	1987	1896	1830	1962	1881	1821	1938	1867	1812
	8	2126	1955	1848	1774	2102	1943	1841	1771	1921	1829	1764	1899	1817	1757	1879	1806	1751
	9	2061	1889	1783	1712	2040	1879	1778	1709	1859	1768	1704	1841	1758	1699	1824	1749	1694
	10	2001	1828	1724	1655	1981	1819	1720	1653	1803	1712	1649	1787	1704	1645	1772	1696	1642

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	403.4 fc	1.8 ft
6.5 ft	288.8 fc	2.2 ft
7.5 ft	216.9 fc	2.5 ft
8.0 ft	190.7 fc	2.7 ft
10.0 ft	122.0 fc	3.3 ft
12.0 ft	84.7 fc	4.0 ft
14.0 ft	62.3 fc	4.6 ft
16.0 ft	47.7 fc	5.3 ft
20.0 ft	30.5 fc	6.6 ft
24.0 ft	21.2 fc	8.0 ft
28.0 ft	15.6 fc	9.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1535671	1535671	1535671
45.00°	1137	3072	1466
55.00°	410	479	310
65.00°	695	874	516
75.00°	869	1591	791
85.00°	2550	2827	2152

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	-8.1	-7.3	-7.8	-6.9	-6.6	-6.7	-5.8	-6.4	-5.5	-5.2
	3H	-4.6	-3.8	-4.2	-3.5	-3.1	-3.4	-2.6	-3.0	-2.3	-1.9
	4H	-2.8	-2.1	-2.4	-1.7	-1.3	-2.0	-1.2	-1.6	-0.9	-0.5
	6H	-1.7	-1.0	-1.3	-0.6	-0.2	-0.1	0.6	0.4	1.0	1.4
	8H	-1.1	-0.5	-0.7	-0.1	0.3	0.7	1.3	1.1	1.7	2.1
	12H	0.0	0.6	0.5	1.0	1.5	1.7	2.2	2.1	2.6	3.1
4H	2H	-6.4	-5.7	-6.0	-5.3	-4.9	-4.6	-3.9	-4.2	-3.5	-3.1
	3H	-2.6	-2.0	-2.2	-1.6	-1.2	-1.5	-0.9	-1.1	-0.5	-0.1
	4H	-0.7	-0.2	-0.2	0.3	0.7	-0.1	0.4	0.3	0.8	1.3
	6H	0.5	1.0	1.0	1.4	1.9	1.6	2.0	2.0	2.5	2.9
	8H	1.1	1.6	1.6	2.0	2.5	2.3	2.7	2.8	3.2	3.6
	12H	2.3	2.7	2.8	3.1	3.6	3.3	3.6	3.8	4.1	4.6
8H	4H	0.1	0.5	0.6	1.0	1.5	0.7	1.1	1.2	1.6	2.1
	6H	1.7	2.0	2.2	2.5	3.0	2.4	2.8	2.9	3.3	3.8
	8H	2.6	2.9	3.2	3.4	3.9	3.3	3.6	3.8	4.1	4.6
	12H	4.0	4.3	4.6	4.8	5.4	4.4	4.6	4.9	5.1	5.7
12H	4H	0.2	0.6	0.7	1.1	1.6	0.8	1.2	1.3	1.7	2.2
	6H	2.0	2.3	2.6	2.8	3.3	2.7	3.0	3.2	3.4	4.0
	8H	3.1	3.4	3.6	3.9	4.5	3.7	3.9	4.2	4.4	5.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0