

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CF04XXPC 15L 35K MD XX NL XX

Nom 4" diam Gamma Cylinder (damp location), MD optic, no lens

Test Number

SP-01068_1_M-15L

Test Date

1/31/2020

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

Summary of Results

Power

Input Watts	9.5 W
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Lumen Output

Output Lumens	1210
Efficacy	127.34 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.43
Two luminaires, plane 90°	0.43
Four luminaires	0.46

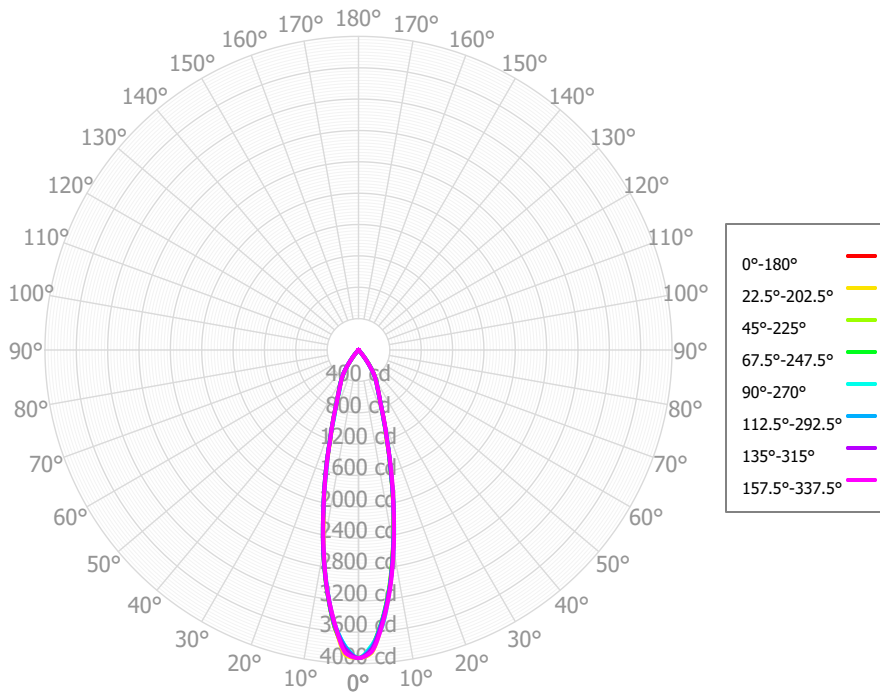
Full Beam Angle

0° - 180°	26°
90° - 270°	26°

IES File Header Contents

Keyword	Value
TEST	SP-01068_1_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/31/2020
ISSUEDATE	3/19/2020
LUMCAT	CF04XXPC 15L 35K MD XX NL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder (damp location), MD optic, no lens
OTHER	Beam Angle: 26 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°	306.11	25.30%	90.00° - 100.00°	1.01	0.08%
10.00° - 20.00°	440.21	36.39%	100.00° - 110.00°	0.89	0.07%
20.00° - 30.00°	284.92	23.55%	100.00° - 120.00°	1.70	0.14%
30.00° - 40.00°	155.97	12.89%	120.00° - 130.00°	0.73	0.06%
40.00° - 50.00°	12.42	1.03%	130.00° - 140.00°	0.78	0.06%
50.00° - 60.00°	0.96	0.08%	140.00° - 150.00°	0.69	0.06%
60.00° - 70.00°	1.17	0.10%	150.00° - 160.00°	0.53	0.04%
70.00° - 80.00°	1.11	0.09%	160.00° - 170.00°	0.30	0.03%
80.00° - 90.00°	1.04	0.09%	170.00° - 180.00°	0.09	0.01%
0.00° - 90.00°	1203.91	99.52%	0.00° - 180.00°	1209.74	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°	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78	3929.78
2.50°	3844.74	3866.51	3789.57	3804.15	3778.03	3792.77	3818.61	3868.10	3845.61	3891.66	3807.02	3824.75	3787.44	3801.17	3824.64	3855.05	3844.74
5.00°	3484.45	3482.82	3467.66	3458.07	3527.84	3502.01	3522.17	3494.60	3534.56	3499.97	3541.11	3529.49	3523.29	3466.83	3481.59	3515.58	3484.45
7.50°	3054.18	3060.72	3029.00	3041.01	3062.11	3071.31	3082.32	3074.60	3081.81	3085.38	3074.61	3092.87	3063.25	3050.14	3057.88	3082.73	3054.18
10.00°	2543.29	2553.31	2535.11	2540.98	2585.80	2587.62	2593.11	2558.23	2583.57	2554.56	2582.83	2596.09	2575.64	2549.73	2553.35	2584.11	2543.29
12.50°	2052.81	2039.73	2050.86	2054.95	2072.13	2068.27	2070.69	2058.69	2058.88	2039.82	2055.92	2064.90	2071.15	2061.13	2063.76	2066.03	2052.81
15.00°	1582.87	1608.73	1570.50	1583.22	1597.55	1620.86	1621.67	1589.65	1615.61	1590.13	1594.55	1615.85	1565.00	1583.04	1587.47	1629.07	1582.87
17.50°	1213.95	1180.94	1222.27	1213.26	1237.61	1215.48	1215.50	1199.04	1213.82	1185.11	1213.81	1207.33	1225.52	1212.78	1218.88	1211.75	1213.95
20.00°	935.19	945.34	919.87	935.49	928.65	939.19	938.10	931.56	944.29	931.16	921.69	933.02	896.65	926.19	933.88	955.66	935.19
22.50°	737.67	714.40	739.22	739.27	748.05	729.01	726.62	722.63	732.52	714.00	724.82	716.30	732.14	730.92	738.77	730.56	737.67
25.00°	603.48	611.31	593.72	607.56	600.83	603.87	600.36	594.80	608.57	600.60	590.38	596.28	572.42	598.27	604.44	615.85	603.48
27.50°	514.12	510.58	517.93	517.54	525.25	516.06	511.51	497.07	517.16	499.78	515.43	511.42	505.72	507.83	511.60	517.79	514.12
30.00°	455.67	446.87	458.53	456.68	446.74	440.96	434.02	435.69	435.56	429.53	433.11	429.02	437.85	442.53	443.49	442.63	455.67
32.50°	369.22	379.25	368.62	370.14	362.72	370.59	360.84	353.34	357.08	346.94	344.66	347.39	340.14	349.69	351.69	369.94	369.22
35.00°	266.01	273.73	272.88	267.99	270.54	270.74	262.17	248.49	253.25	238.76	245.48	246.63	242.53	242.70	247.71	263.68	266.01
37.50°	168.86	171.36	172.73	171.13	165.14	161.51	155.40	153.48	142.82	141.79	138.51	141.00	146.14	147.71	152.58	154.99	168.86
40.00°	74.84	91.42	71.95	77.10	82.53	86.73	84.33	67.68	74.44	64.82	68.19	74.89	56.60	58.10	61.42	83.61	74.84
42.50°	30.22	22.21	35.59	31.68	32.51	21.00	22.62	21.38	15.08	14.50	21.40	17.05	28.10	21.69	23.39	13.53	30.22
45.00°	7.87	10.62	6.13	8.55	3.81	5.79	7.35	7.42	4.20	6.07	3.51	5.54	3.27	5.57	5.62	7.05	7.87
47.50°	1.40	1.22	2.84	1.74	1.70	1.24	2.12	1.44	1.41	1.16	1.69	1.54	2.06	1.31	1.37	1.00	1.40
50.00°	1.01	1.33	1.30	1.29	0.81	0.71	1.12	1.24	1.00	1.06	0.99	1.07	1.03	0.92	1.52	1.16	1.01
52.50°	0.79	1.36	1.25	1.08	1.27	0.86	0.83	1.33	0.90	0.96	0.82	1.03	0.94	0.89	1.32	1.32	0.79
55.00°	0.63	1.07	1.24	0.94	1.36	1.00	0.82	1.59	0.92	0.84	0.85	1.05	0.89	0.95	1.01	1.49	0.63
57.50°	0.86	0.88	1.05	1.00	1.11	1.14	0.85	1.54	0.96	0.88	0.96	1.08	0.98	0.96	1.19	1.62	0.86
60.00°	1.21	0.94	0.87	1.12	1.13	0.90	1.01	1.33	0.99	1.10	1.02	1.17	1.05	0.96	1.47	1.43	1.21
62.50°	1.07	1.00	1.02	1.11	1.37	0.63	1.17	1.58	1.02	1.18	1.06	1.27	1.09	1.11	1.60	1.29	1.07
65.00°	0.83	1.06	1.16	1.07	1.29	0.68	1.26	2.05	1.05	1.13	1.29	1.08	1.10	1.29	1.70	1.53	0.83
67.50°	0.77	1.08	1.30	1.03	0.96	0.74	1.34	1.99	1.06	1.02	1.57	0.89	1.00	1.16	1.62	1.74	0.77
70.00°	0.75	1.02	1.41	0.99	0.74	0.62	1.46	1.72	0.88	0.85	1.39	1.03	1.00	0.99	1.52	1.72	0.75
72.50°	0.73	0.97	1.24	0.84	0.58	0.50	1.58	1.45	0.72	0.82	1.11	1.16	1.26	1.14	1.44	1.68	0.73
75.00°	0.71	0.93	1.08	0.69	0.57	0.69	1.42	1.19	0.88	0.89	1.04	1.13	1.45	1.33	1.37	1.50	0.71
77.50°	0.79	0.85	0.96	0.75	0.64	0.87	1.26	0.95	1.01	0.91	1.00	1.11	1.50	1.10	1.18	1.31	0.79
80.00°	0.88	0.72	0.86	0.84	0.82	1.07	1.06	0.72	0.76	0.90	1.05	1.26	1.50	0.85	0.99	1.07	0.88
82.50°	0.89	0.67	0.92	0.78	1.04	1.22	0.86	0.89	0.55	0.93	1.12	1.39	1.44	0.94	0.99	0.89	0.89
85.00°	0.90	0.72	0.98	0.72	0.95	0.93	0.77	1.16	0.65	0.97	0.95	1.25	1.43	1.03	0.99	0.92	0.90
87.50°	0.89	0.87	1.02	0.86	0.72	0.68	0.69	1.03	0.73	0.92	0.76	1.16	1.51	0.98	1.12	0.97	0.89
90.00°	0.87	1.15	1.12	1.00	0.67	0.63	0.67	0.82	0.70	0.84	0.81	1.37	1.53	0.93	1.23	1.03	0.87
92.50°	0.68	1.33	1.40	0.86	0.69	0.61	0.67	0.75	0.68	0.90	0.87	1.50	1.46	0.87	1.06	1.03	0.68
95.00°	0.51	1.40	1.48	0.72	0.84	0.75	0.77	0.72	0.70	1.03	0.90	1.25	1.32	0.81	0.89	0.88	0.51
97.50°	0.82	1.29	0.97	0.74	1.03	0.84	0.86	0.75	0.70	0.92	0.94	1.07	1.11	0.78	0.77	0.81	0.82
100.00°	1.09	1.02	0.71	0.77	1.07	0.67	0.88	0.80	0.64	0.73	0.81	1.08	0.97	0.77	0.66	0.87	1.09
102.50°	0.84	0.94	1.03	1.02	1.08	0.58	0.89	0.83	0.61	0.77	0.68	1.09	0.90	0.85	0.63	0.86	0.84
105.00°	0.62	1.02	1.17	1.23	0.85	0.74	0.80	0.86	0.64	0.89	0.69	1.04	0.79	0.89	0.68	0.73	0.62
107.50°	0.64	1.01	0.91	0.98	0.58	0.87	0.74	0.78	0.74	0.90	0.70	0.99	0.63	0.78	1.20	0.66	0.64
110.00°	0.68	0.93	0.78	0.77	0.64	0.89	0.77	0.71	1.00	0.89	0.74	0.90	0.62	0.68	1.54	0.64	0.68
112.50°	0.85	0.94	0.87	0.83	0.75	0.89	0.79	0.68	1.16	0.82	0.79	0.87	0.73	0.68	1.06	0.66	0.85

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	1439	1439	1439	1439	1405	1405	1405	1405	1341	1341	1341	1283	1283	1283	1229	1229	1204
	1	1383	1354	1328	1305	1353	1328	1305	1284	1278	1260	1243	1233	1218	1205	1191	1180	1156
	2	1329	1279	1238	1204	1303	1258	1221	1190	1219	1189	1163	1183	1159	1138	1150	1131	1108
	3	1277	1213	1163	1123	1254	1196	1150	1114	1165	1127	1096	1136	1104	1078	1109	1083	1062
	4	1228	1153	1098	1056	1208	1140	1089	1050	1114	1071	1037	1090	1054	1025	1068	1038	1019
	5	1182	1099	1042	999	1164	1088	1035	994	1067	1021	985	1048	1008	977	1030	995	978
	6	1138	1050	991	949	1122	1041	986	946	1024	975	939	1008	965	933	992	955	939
	7	1097	1006	947	905	1082	998	942	903	983	934	898	970	926	893	957	918	903
	8	1058	965	906	866	1045	958	903	864	946	896	860	934	889	857	923	883	869
	9	1022	927	869	830	1010	922	866	829	911	861	826	901	856	823	892	850	838
	10	988	893	836	798	977	888	833	797	879	829	794	870	824	792	862	820	808

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	129.9 fc	2.5 ft
6.5 ft	93.0 fc	3.0 ft
7.5 ft	69.9 fc	3.5 ft
8.0 ft	61.4 fc	3.7 ft
10.0 ft	39.3 fc	4.6 ft
12.0 ft	27.3 fc	5.5 ft
14.0 ft	20.0 fc	6.5 ft
16.0 ft	15.4 fc	7.4 ft
20.0 ft	9.8 fc	9.2 ft
24.0 ft	6.8 fc	11.1 ft
28.0 ft	5.0 fc	12.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	494561	494561	494561
45.00°	1401	1091	678
55.00°	137	272	299
65.00°	247	346	383
75.00°	344	526	278
85.00°	1299	1411	1365

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	-9.8	-8.9	-9.4	-8.6	-8.2	-10.5	-9.6	-10.2	-9.3	-9.0
	3H	-6.8	-6.0	-6.4	-5.6	-5.3	-7.9	-7.2	-7.6	-6.8	-6.4
	4H	-5.5	-4.7	-5.0	-4.4	-4.0	-5.9	-5.2	-5.5	-4.8	-4.4
	6H	-3.9	-3.2	-3.5	-2.9	-2.5	-3.3	-2.6	-2.9	-2.2	-1.8
	8H	-3.0	-2.3	-2.5	-1.9	-1.5	-1.8	-1.2	-1.3	-0.8	-0.3
	12H	-1.8	-1.2	-1.4	-0.8	-0.4	-0.3	0.3	0.2	0.7	1.1
4H	2H	-8.4	-7.6	-7.9	-7.3	-6.9	-9.2	-8.5	-8.8	-8.1	-7.7
	3H	-4.9	-4.3	-4.5	-3.9	-3.5	-6.3	-5.7	-5.9	-5.3	-4.9
	4H	-3.4	-2.8	-2.9	-2.4	-2.0	-4.4	-3.9	-4.0	-3.4	-3.0
	6H	-1.9	-1.4	-1.4	-0.9	-0.5	-1.7	-1.3	-1.2	-0.8	-0.3
	8H	-1.0	-0.6	-0.5	-0.1	0.4	-0.1	0.3	0.4	0.8	1.3
	12H	0.1	0.5	0.6	1.0	1.5	1.5	1.8	2.0	2.3	2.8
8H	4H	-2.7	-2.2	-2.2	-1.8	-1.3	-3.4	-3.0	-2.9	-2.5	-2.0
	6H	-0.9	-0.6	-0.4	-0.1	0.4	-0.6	-0.2	0.0	0.3	0.8
	8H	0.1	0.4	0.6	0.9	1.4	1.2	1.5	1.8	2.0	2.5
	12H	1.4	1.6	1.9	2.1	2.7	3.0	3.2	3.5	3.7	4.3
12H	4H	-2.6	-2.2	-2.1	-1.7	-1.2	-3.2	-2.9	-2.7	-2.4	-1.9
	6H	-0.7	-0.4	-0.1	0.1	0.7	-0.3	0.0	0.3	0.5	1.0
	8H	0.5	0.7	1.0	1.2	1.8	1.6	1.8	2.1	2.3	2.9

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0