

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407PC 15L 35K ND xx SO xx MW
Nom. 4.5" Diam x 7"H Round Cylinder, Narrow Beam

Test Number

SP-01442_M-15L

Test Date

11/22/2022

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	970
Efficacy	102.14 lm/W

Luminous Dimensions

0° - 180° Size	-0.38
90° - 270° Size	-0.38
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.44
Two luminaires, plane 90°	0.44
Four luminaires	0.49

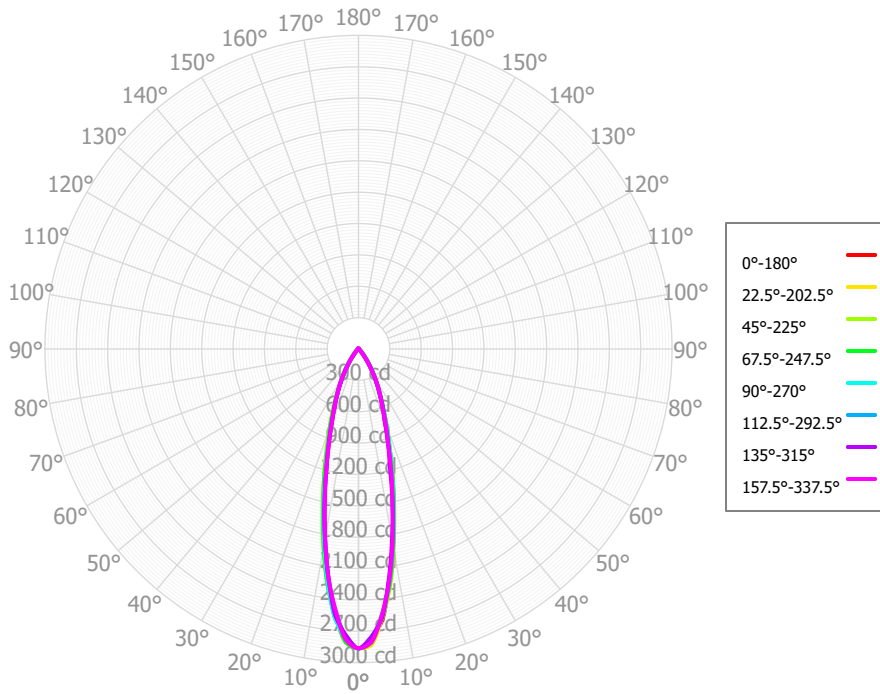
Full Beam Angle

0° - 180°	27°
90° - 270°	27°

IES File Header Contents

Keyword	Value
TEST	SP-01442_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/22/2022
ISSUEDATE	11/22/2022
LUMCAT	CK0407PC 15L 35K ND xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Round Cylinder, Narrow Beam
OTHER	Solite lens, Matte White finish
OTHER	27 Degree Beam Angle
OTHER	Reference Project SL378
LAMP	N/A
LAMPCAT	N/A, Min. 80 CRI
OTHER	Total Luminaire Watts is approximate
OTHER	CCT Multipliers: 27K x 0.95, 30K x 0.97, 40K x 1.03
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	224.16	23.10%	90.00° - 100.00°	2.10	0.22%
10.00° - 20.00°	338.33	34.87%	100.00° - 110.00°	2.09	0.22%
20.00° - 30.00°	227.29	23.43%	100.00° - 120.00°	4.01	0.41%
30.00° - 40.00°	104.17	10.74%	120.00° - 130.00°	1.85	0.19%
40.00° - 50.00°	31.99	3.30%	130.00° - 140.00°	1.63	0.17%
50.00° - 60.00°	14.38	1.48%	140.00° - 150.00°	1.35	0.14%
60.00° - 70.00°	9.23	0.95%	150.00° - 160.00°	1.02	0.11%
70.00° - 80.00°	5.30	0.55%	160.00° - 170.00°	0.62	0.06%
80.00° - 90.00°	2.62	0.27%	170.00° - 180.00°	0.22	0.02%
0.00° - 90.00°	957.48	98.68%	0.00° - 180.00°	970.29	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°	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96	2863.96
2.50°	2763.94	2834.67	2777.25	2813.82	2760.40	2765.25	2743.48	2784.95	2750.41	2806.48	2765.01	2809.20	2772.47	2787.63	2761.57	2809.24	2763.94
5.00°	2606.34	2579.75	2588.10	2552.42	2577.87	2517.68	2556.33	2511.35	2578.44	2539.38	2583.53	2550.62	2584.71	2575.64	2580.94	2559.33	2606.34
7.50°	2249.38	2299.97	2280.40	2278.59	2237.82	2208.87	2200.51	2209.98	2227.61	2259.32	2263.66	2274.23	2254.28	2243.24	2223.83	2242.48	2249.38
10.00°	1889.32	1931.06	1921.06	1913.03	1895.14	1838.07	1846.59	1837.41	1877.85	1899.59	1933.36	1916.35	1887.40	1886.49	1847.46	1877.69	1889.32
12.50°	1541.36	1556.45	1580.85	1557.56	1545.81	1499.93	1501.43	1488.07	1539.14	1551.12	1586.28	1555.15	1543.24	1512.33	1501.25	1500.88	1541.36
15.00°	1198.33	1257.54	1247.86	1260.01	1229.08	1191.21	1179.53	1190.46	1213.09	1261.00	1276.96	1264.24	1204.14	1205.43	1157.54	1208.40	1198.33
17.50°	967.50	961.03	999.99	981.91	984.04	944.87	946.48	930.98	981.79	990.71	1023.06	975.87	967.29	942.47	939.83	933.38	967.50
20.00°	742.93	783.69	780.86	793.97	770.65	749.99	737.41	748.36	763.91	804.46	809.42	795.52	748.87	753.40	728.39	757.52	742.93
22.50°	609.92	608.73	6277.9	619.74	620.27	599.46	605.69	592.25	623.81	632.25	648.20	617.75	611.20	607.00	605.97	599.11	609.92
25.00°	480.62	496.17	493.70	500.62	487.68	481.44	483.27	483.13	490.70	509.79	510.24	500.34	484.91	492.75	485.99	491.87	480.62
27.50°	387.48	385.20	393.57	389.82	386.22	381.31	387.55	382.32	391.96	395.02	399.21	384.96	388.02	394.84	393.01	391.64	387.48
30.00°	296.91	305.06	301.62	30716	296.06	292.79	297.46	294.52	298.00	304.40	304.45	299.84	294.46	307.36	300.66	305.40	296.91
32.50°	224.82	226.63	232.85	230.51	223.35	217.93	221.30	216.51	223.47	222.21	226.93	217.59	224.45	224.67	226.79	220.69	224.82
35.00°	156.94	170.61	168.90	171.91	160.92	151.15	153.74	152.47	155.33	162.67	165.02	163.71	156.29	161.77	154.46	161.80	156.94
37.50°	114.09	117.14	126.44	120.38	113.01	105.32	105.34	101.88	108.93	111.70	117.84	112.68	114.16	106.80	108.83	104.83	114.09
40.00°	75.09	86.68	87.57	87.06	76.40	70.41	66.56	68.34	69.36	80.69	83.44	83.99	73.32	73.27	65.48	74.18	75.09
42.50°	54.43	58.18	64.50	59.00	53.94	49.48	46.55	44.69	50.38	55.31	60.09	57.66	54.67	47.14	47.09	44.63	54.43
45.00°	36.21	42.90	43.46	42.72	37.87	34.95	31.54	32.53	34.57	41.79	44.09	45.53	36.58	34.84	30.16	34.54	36.21
47.50°	28.09	29.09	33.53	29.73	28.92	25.90	25.13	24.31	26.99	30.64	33.75	34.31	29.89	26.78	24.74	24.88	28.09
50.00°	20.97	23.60	24.72	23.39	21.90	19.12	20.09	20.16	20.48	23.90	26.47	27.39	23.26	22.51	19.71	21.20	20.97
52.50°	17.34	18.58	20.17	18.39	16.87	16.00	17.19	17.22	16.37	18.63	21.29	21.33	19.04	19.22	17.23	17.60	17.34
55.00°	14.29	15.73	15.90	15.74	13.82	14.19	14.79	15.39	13.33	15.77	17.75	18.78	14.95	16.35	14.89	15.98	14.29
57.50°	12.93	13.27	13.94	13.63	12.56	12.65	13.09	13.62	12.49	13.71	15.24	16.30	13.03	13.57	13.34	14.34	12.93
60.00°	11.90	12.36	12.06	12.36	11.01	11.19	11.23	11.92	11.22	12.86	12.93	13.99	11.19	12.16	11.89	12.44	11.90
62.50°	11.74	11.37	10.44	10.91	9.21	10.09	9.19	10.24	9.20	11.09	10.73	11.89	10.20	10.99	10.83	10.67	11.74
65.00°	11.18	10.15	8.83	9.18	7.78	9.09	7.76	8.57	7.58	8.08	9.49	10.37	9.24	10.04	9.84	10.20	11.18
67.50°	9.68	8.90	7.53	7.83	6.61	7.34	7.02	7.34	6.60	6.38	8.70	8.92	8.64	9.11	9.03	9.64	9.68
70.00°	8.11	7.52	6.25	6.97	5.79	5.41	6.13	6.40	5.67	6.24	7.45	7.66	7.90	7.67	8.12	8.43	8.11
72.50°	6.39	6.22	5.49	6.08	5.18	4.61	5.07	5.34	4.84	5.63	6.01	6.58	6.34	6.17	6.88	7.16	6.39
75.00°	5.02	5.10	4.74	5.15	4.35	4.03	4.36	4.21	4.06	4.51	5.23	5.93	4.92	5.52	5.73	5.61	5.02
77.50°	4.29	4.12	4.04	4.31	3.38	3.49	3.94	3.53	3.37	3.67	4.69	5.24	4.13	4.93	4.83	4.26	4.29
80.00°	3.56	3.47	3.35	3.56	2.74	2.96	3.29	3.10	2.89	3.10	3.62	4.43	3.33	3.65	3.93	3.85	3.56
82.50°	2.82	2.82	2.69	2.89	2.29	2.45	2.44	2.68	2.65	2.59	2.37	3.47	2.52	2.34	2.99	3.37	2.82
85.00°	2.30	2.19	2.07	2.28	2.25	1.93	2.09	2.28	2.39	2.13	1.98	2.24	1.86	2.37	2.32	2.61	2.30
87.50°	2.07	1.80	1.79	1.99	2.39	2.00	2.11	2.11	2.13	1.87	1.84	1.62	1.75	2.44	2.17	2.01	2.07
90.00°	1.87	1.86	1.59	1.98	2.28	2.13	2.02	2.05	1.99	1.77	1.88	2.00	1.65	2.16	2.07	1.96	1.87
92.50°	1.71	1.91	1.85	1.95	2.06	1.98	1.86	2.12	1.96	1.76	1.96	2.14	1.60	1.89	2.08	1.94	1.71
95.00°	1.76	1.92	2.02	1.91	1.78	1.82	1.99	2.24	1.90	1.82	1.92	1.95	1.57	1.86	2.03	2.00	1.76
97.50°	2.05	2.01	1.79	2.01	1.49	1.67	2.29	2.16	1.83	1.97	1.85	1.98	1.60	1.83	1.90	2.08	2.05
100.00°	2.14	2.22	1.60	2.22	1.60	1.52	2.39	2.00	1.84	2.17	1.77	2.32	1.69	1.91	1.85	2.19	2.14

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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	1152	1152	1152	1152	1124	1124	1124	1124	1071	1071	1071	1023	1023	1023	978	978	957
	1	1103	1077	1055	1035	1078	1055	1035	1017	1014	998	984	976	964	952	941	931	912
	2	1055	1012	976	946	1033	994	962	935	961	935	913	931	910	891	903	886	868
	3	1010	954	911	877	990	940	901	869	913	881	854	889	862	839	866	844	827
	4	968	903	856	820	951	892	848	814	870	833	803	850	818	793	831	804	789
	5	929	858	808	772	913	848	802	768	830	790	760	813	779	752	798	768	754
	6	892	817	767	730	878	809	762	727	794	753	722	780	744	716	767	735	722
	7	858	780	730	694	845	773	726	692	761	718	688	749	711	683	737	704	692
	8	826	746	696	662	815	741	693	660	730	687	657	720	682	654	710	676	665
	9	796	716	667	633	786	711	664	632	702	659	630	693	654	627	684	650	640
	10	768	688	640	608	759	684	638	606	675	633	604	668	629	602	660	626	616

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	94.7 fc	2.6 ft
6.5 ft	67.8 fc	3.1 ft
7.5 ft	50.9 fc	3.5 ft
8.0 ft	44.7 fc	3.8 ft
10.0 ft	28.6 fc	4.7 ft
12.0 ft	19.9 fc	5.7 ft
14.0 ft	14.6 fc	6.6 ft
16.0 ft	11.2 fc	7.6 ft
20.0 ft	7.2 fc	9.5 ft
24.0 ft	5.0 fc	11.4 ft
28.0 ft	3.7 fc	13.2 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	271819	271819	271819
45.00°	4860	5833	5083
55.00°	2364	2632	2287
65.00°	2510	1984	1747
75.00°	1842	1738	1593
85.00°	2504	2258	2446

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	6.6	7.6	7.0	7.9	8.2	6.9	7.8	7.3	8.2	8.5
	3H	8.5	9.3	8.9	9.7	10.1	8.2	9.0	8.6	9.4	9.8
	4H	9.0	9.8	9.5	10.2	10.6	8.7	9.4	9.1	9.8	10.2
	6H	9.5	10.2	9.9	10.6	11.0	9.1	9.8	9.5	10.2	10.6
	8H	9.7	10.4	10.1	10.8	11.2	9.3	9.9	9.7	10.3	10.8
	12H	9.9	10.5	10.4	11.0	11.4	9.4	10.1	9.9	10.5	10.9
4H	2H	7.0	7.8	7.4	8.2	8.6	7.1	7.9	7.6	8.3	8.7
	3H	9.1	9.7	9.5	10.2	10.6	8.7	9.3	9.1	9.7	10.2
	4H	9.8	10.3	10.2	10.8	11.3	9.3	9.9	9.8	10.4	10.8
	6H	10.4	10.9	10.9	11.3	11.9	10.0	10.5	10.5	10.9	11.4
	8H	10.7	11.1	11.2	11.6	12.1	10.2	10.7	10.7	11.1	11.7
	12H	10.9	11.3	11.5	11.9	12.4	10.5	10.9	11.0	11.4	11.9
8H	4H	10.0	10.4	10.5	10.9	11.4	9.5	10.0	10.0	10.5	11.0
	6H	10.8	11.1	11.3	11.7	12.2	10.4	10.7	10.9	11.3	11.8
	8H	11.2	11.5	11.7	12.0	12.6	10.8	11.1	11.3	11.6	12.2
	12H	11.6	11.9	12.2	12.4	13.0	11.2	11.4	11.7	12.0	12.6
12H	4H	10.0	10.4	10.5	10.9	11.4	9.5	9.9	10.1	10.4	11.0
	6H	10.8	11.1	11.4	11.6	12.2	10.4	10.7	11.0	11.2	11.8
	8H	11.3	11.6	11.9	12.1	12.7	10.9	11.2	11.4	11.7	12.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0