

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01440_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	973
Efficacy	102.39 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.49
Two luminaires, plane 90°	0.5
Four luminaires	0.53

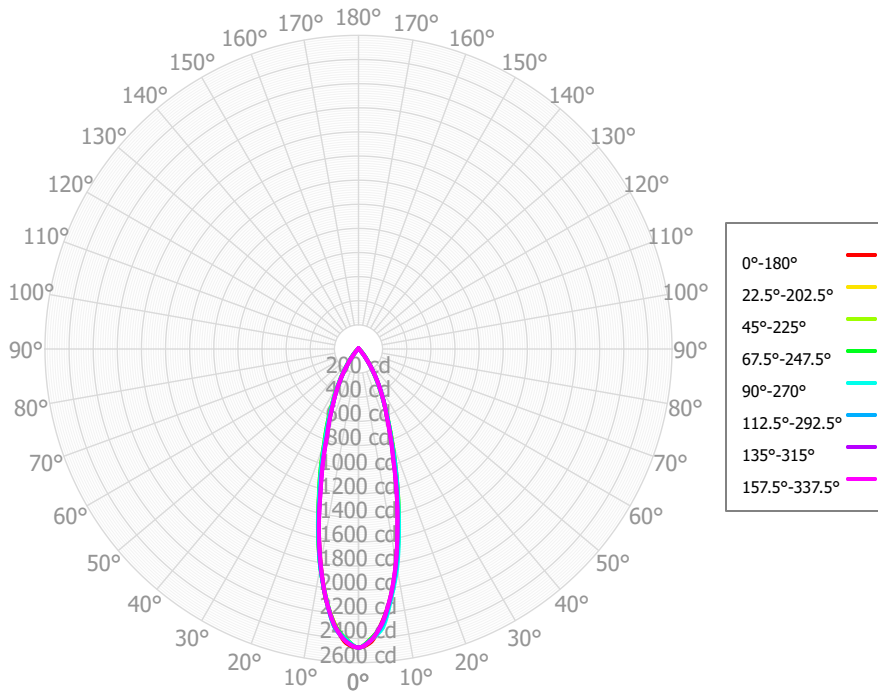
Full Beam Angle

0° - 180°	30°
90° - 270°	31°

IES File Header Contents

Keyword	Value
TEST	SP-01440_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 MD xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Round Cylinder, Medium Beam
OTHER	Solite lens, Matte White finish
OTHER	30 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°	204.78	21.05%	90.00° - 100.00°	2.26	0.23%
10.00° - 20.00°	341.68	35.13%	100.00° - 110.00°	2.27	0.23%
20.00° - 30.00°	236.77	24.34%	100.00° - 120.00°	4.32	0.44%
30.00° - 40.00°	111.43	11.46%	120.00° - 130.00°	1.93	0.20%
40.00° - 50.00°	33.97	3.49%	130.00° - 140.00°	1.79	0.18%
50.00° - 60.00°	13.64	1.40%	140.00° - 150.00°	1.41	0.14%
60.00° - 70.00°	8.78	0.90%	150.00° - 160.00°	1.07	0.11%
70.00° - 80.00°	5.29	0.54%	160.00° - 170.00°	0.66	0.07%
80.00° - 90.00°	2.73	0.28%	170.00° - 180.00°	0.22	0.02%
0.00° - 90.00°	959.07	98.60%	0.00° - 180.00°	972.72	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°	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06	2476.06
2.50°	2430.95	2403.20	2418.37	2403.43	2413.61	2419.64	2426.56	2426.82	2438.53	2409.02	2422.12	2405.16	2410.54	2412.75	2415.95	2417.73	2430.95
5.00°	2268.71	2291.87	2279.61	2288.59	2320.73	2312.82	2298.32	2300.91	2286.75	2311.07	2286.92	2296.27	2306.20	2293.90	2274.53	2280.47	2268.71
7.50°	2069.29	2056.93	2074.14	2068.49	2085.47	2081.63	2084.18	2079.90	2087.95	2069.09	2081.98	2074.67	2074.87	2064.45	2059.30	2057.00	2069.29
10.00°	1792.83	1809.23	1817.71	1823.60	1845.56	1827.53	1811.58	1810.79	1805.26	1821.29	1821.41	1829.87	1830.39	1809.96	1792.07	1791.20	1792.83
12.50°	1502.35	1521.18	1534.54	1538.78	1551.84	1532.54	1517.37	1515.63	1520.70	1531.36	1550.34	1550.67	1539.90	1512.42	1491.59	1490.50	1502.35
15.00°	1234.26	1248.24	1270.89	1268.92	1264.67	1233.87	1212.43	1211.19	1233.69	1248.26	1273.10	1267.75	1264.45	1236.84	1217.31	1217.44	1234.26
17.50°	968.14	1008.41	1014.50	1017.44	1021.67	998.41	975.09	975.42	989.79	1019.73	1042.61	1045.70	1024.89	989.94	955.18	961.23	968.14
20.00°	791.97	800.79	818.99	808.65	796.59	769.38	761.33	756.47	788.09	805.45	832.60	828.53	815.64	790.66	773.83	774.76	791.97
22.50°	620.23	644.30	639.18	638.95	642.29	629.84	620.37	619.33	630.83	657.31	675.97	678.17	659.93	637.72	618.51	620.03	620.23
25.00°	508.83	510.32	513.35	504.97	501.68	495.80	496.78	493.74	506.90	520.09	535.43	532.85	526.05	515.07	508.91	506.70	508.83
27.50°	401.01	403.58	395.71	395.29	398.42	398.66	401.48	400.60	403.80	415.55	426.17	426.51	420.57	414.37	409.19	406.42	401.01
30.00°	316.91	313.44	313.82	306.53	305.10	306.01	310.02	309.45	312.19	320.06	323.13	325.76	327.30	325.18	321.83	319.23	316.91
32.50°	237.09	238.29	234.34	228.49	230.95	231.79	234.12	234.77	237.08	243.49	248.29	250.36	245.85	242.30	235.92	234.80	237.09
35.00°	173.98	177.44	179.21	171.13	167.53	164.54	159.55	162.54	168.46	177.08	176.33	181.88	180.59	176.03	171.90	172.64	173.98
37.50°	118.77	126.48	125.88	121.26	119.29	116.23	113.62	115.59	121.83	126.60	132.76	133.73	127.35	116.26	109.68	112.98	118.77
40.00°	84.86	89.95	93.19	88.53	82.58	76.43	70.23	72.63	81.27	88.13	90.68	92.71	88.86	80.15	77.79	80.57	84.86
42.50°	56.98	60.70	62.93	59.89	58.34	53.53	51.77	51.57	58.17	63.64	67.52	66.36	58.43	50.24	48.06	49.64	56.98
45.00°	40.62	43.78	46.80	43.68	41.00	36.62	34.85	33.54	37.97	45.37	45.83	45.65	40.84	36.19	36.22	36.39	40.62
47.50°	28.08	31.25	32.60	29.27	29.23	28.41	26.07	25.78	28.55	32.49	34.94	33.64	28.23	24.75	25.41	24.15	28.08
50.00°	21.05	23.80	25.31	23.44	21.87	21.93	18.94	19.36	19.94	24.55	25.13	24.81	21.74	20.32	19.29	19.89	21.05
52.50°	16.56	17.60	19.31	18.13	17.20	17.30	17.26	16.06	17.34	19.88	19.82	19.62	16.92	16.41	14.15	15.90	16.56
55.00°	14.79	15.40	16.40	14.87	14.24	14.37	15.48	13.33	14.78	16.01	15.48	15.91	14.92	14.06	11.98	13.09	14.79
57.50°	13.16	13.75	14.04	11.82	12.03	12.84	13.48	11.61	12.38	12.54	13.92	13.51	13.38	11.79	10.28	10.74	13.16
60.00°	11.65	12.40	12.65	10.96	10.77	11.07	11.55	10.43	10.17	11.01	12.19	11.83	11.67	10.66	9.60	9.75	11.65
62.50°	10.52	11.06	11.08	10.05	9.80	9.15	9.73	9.97	9.17	10.13	10.11	10.62	9.95	9.59	8.99	8.96	10.52
65.00°	9.61	9.74	9.27	8.83	8.72	8.12	8.32	8.88	8.22	9.30	8.62	8.98	8.93	8.87	8.49	8.59	9.61
67.50°	8.64	8.48	7.56	7.59	7.61	7.49	7.44	7.19	7.51	8.49	8.01	7.15	7.92	8.09	7.59	7.93	8.64
70.00°	7.64	7.93	5.92	6.30	6.80	6.73	6.25	6.09	6.73	7.50	7.11	6.44	6.99	7.13	6.21	6.80	7.64
72.50°	6.14	7.19	4.77	5.24	6.03	5.94	4.77	5.42	5.80	6.49	5.90	6.11	6.07	6.21	5.57	6.12	6.14
75.00°	4.48	5.42	3.97	4.76	4.94	4.85	4.08	4.78	4.91	5.00	5.01	5.19	5.24	5.39	5.59	5.93	4.48
77.50°	3.62	3.92	3.46	4.17	3.86	3.69	3.97	4.17	4.08	3.52	4.39	4.14	4.40	4.59	4.87	5.20	3.62
80.00°	2.91	3.34	3.10	3.41	3.12	2.84	3.63	3.65	3.32	3.27	3.63	3.33	3.51	3.80	3.66	3.98	2.91
82.50°	2.92	2.73	2.83	2.75	2.46	2.02	3.16	3.16	2.65	2.97	2.77	2.55	2.75	3.10	2.87	3.21	2.92
85.00°	3.00	2.06	2.58	2.20	2.39	1.94	2.73	2.59	2.20	2.23	2.33	2.26	2.26	2.53	2.28	2.74	3.00
87.50°	2.37	1.66	2.36	2.13	2.33	1.88	2.31	1.99	1.98	1.62	2.09	1.99	1.94	2.24	2.23	2.46	2.37
90.00°	1.76	1.73	2.14	2.50	2.32	2.09	1.97	2.01	1.97	1.68	2.17	1.94	1.94	2.23	2.37	2.28	1.76
92.50°	1.74	1.85	2.19	2.45	2.28	2.25	1.66	2.12	2.10	1.77	2.34	1.87	1.96	2.19	2.33	2.25	1.74
95.00°	1.75	2.03	2.28	2.10	2.14	2.08	1.79	2.07	2.11	1.94	2.40	1.74	2.00	2.14	2.25	2.28	1.75
97.50°	1.94	2.20	2.13	2.07	2.02	1.96	2.00	2.00	2.05	2.01	2.43	1.67	2.02	2.06	2.00	2.34	1.94
100.00°	2.05	2.38	1.95	2.22	1.97	2.12	1.93	2.28	1.97	1.85	2.08	1.88	2.03	1.97	1.74	2.39	2.05

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	1155	1155	1155	1155	1126	1126	1126	1126	1073	1073	1073	1025	1025	1025	980	980	959
	1	1104	1079	1056	1036	1079	1057	1036	1018	1015	999	984	977	964	953	941	932	912
	2	1056	1012	976	946	1033	994	962	934	961	934	912	930	909	890	902	885	867
	3	1010	953	909	874	990	939	899	866	912	879	851	887	859	836	864	841	824
	4	967	901	853	816	949	889	845	810	867	829	799	847	815	789	828	801	785
	5	927	854	804	766	911	845	798	762	826	786	755	809	774	747	794	764	749
	6	889	812	761	724	875	804	756	721	789	747	715	775	738	709	761	729	716
	7	854	774	723	687	841	768	719	684	755	711	680	742	704	676	731	697	685
	8	821	740	689	654	809	734	686	652	723	680	649	713	674	645	703	668	657
	9	790	708	658	624	780	703	655	623	694	650	620	685	646	617	676	641	631
	10	761	679	630	597	752	675	628	596	667	624	594	659	620	592	651	616	607

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	81.9 fc	2.9 ft
6.5 ft	58.6 fc	3.5 ft
7.5 ft	44.0 fc	4.0 ft
8.0 ft	38.7 fc	4.3 ft
10.0 ft	24.8 fc	5.3 ft
12.0 ft	17.2 fc	6.4 ft
14.0 ft	12.6 fc	7.5 ft
16.0 ft	9.7 fc	8.6 ft
20.0 ft	6.2 fc	10.7 ft
24.0 ft	4.3 fc	12.8 ft
28.0 ft	3.2 fc	15.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	235004	235004	235004
45.00°	5452	6281	5504
55.00°	2447	2714	2356
65.00°	2159	2083	1958
75.00°	1644	1456	1811
85.00°	3267	2814	2599

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	5.9	6.9	6.3	7.3	7.6	6.3	7.2	6.7	7.6	7.9
	3H	7.8	8.6	8.2	9.0	9.4	7.7	8.5	8.1	8.9	9.3
	4H	8.4	9.2	8.9	9.6	10.0	8.3	9.1	8.8	9.5	9.9
	6H	8.9	9.6	9.3	10.0	10.4	8.8	9.5	9.3	10.0	10.4
	8H	9.1	9.8	9.6	10.2	10.6	9.0	9.7	9.5	10.1	10.6
	12H	9.5	10.1	9.9	10.5	11.0	9.3	9.9	9.7	10.3	10.8
4H	2H	6.4	7.2	6.8	7.6	8.0	6.6	7.4	7.1	7.8	8.2
	3H	8.4	9.1	8.9	9.5	10.0	8.3	8.9	8.7	9.4	9.8
	4H	9.3	9.9	9.7	10.3	10.8	9.1	9.6	9.5	10.1	10.6
	6H	9.9	10.4	10.4	10.9	11.4	9.7	10.2	10.2	10.7	11.2
	8H	10.2	10.7	10.7	11.1	11.6	10.0	10.4	10.5	10.9	11.4
	12H	10.7	11.0	11.2	11.6	12.1	10.3	10.7	10.8	11.2	11.7
8H	4H	9.5	10.0	10.0	10.4	10.9	9.3	9.7	9.8	10.2	10.7
	6H	10.3	10.7	10.8	11.2	11.7	10.1	10.4	10.6	11.0	11.5
	8H	10.8	11.1	11.3	11.6	12.2	10.4	10.7	11.0	11.3	11.8
	12H	11.4	11.7	11.9	12.2	12.8	10.9	11.2	11.4	11.7	12.3
12H	4H	9.5	9.9	10.0	10.4	10.9	9.3	9.7	9.8	10.2	10.7
	6H	10.4	10.7	10.9	11.2	11.8	10.2	10.5	10.7	11.0	11.6
	8H	10.9	11.2	11.5	11.7	12.3	10.6	10.9	11.1	11.4	12.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0