

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407PC 10L 35K ND xx NL xx MW
Nom. 4.5" Diam x 7"H Round Cylinder, Narrow Beam

Test Number

SP-01441

Test Date

11/23/2022

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

Summary of Results

Power

Input Watts	6.7 W
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Lumen Output

Output Lumens	790
Efficacy	117.87 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.39
Two luminaires, plane 90°	0.39
Four luminaires	0.42

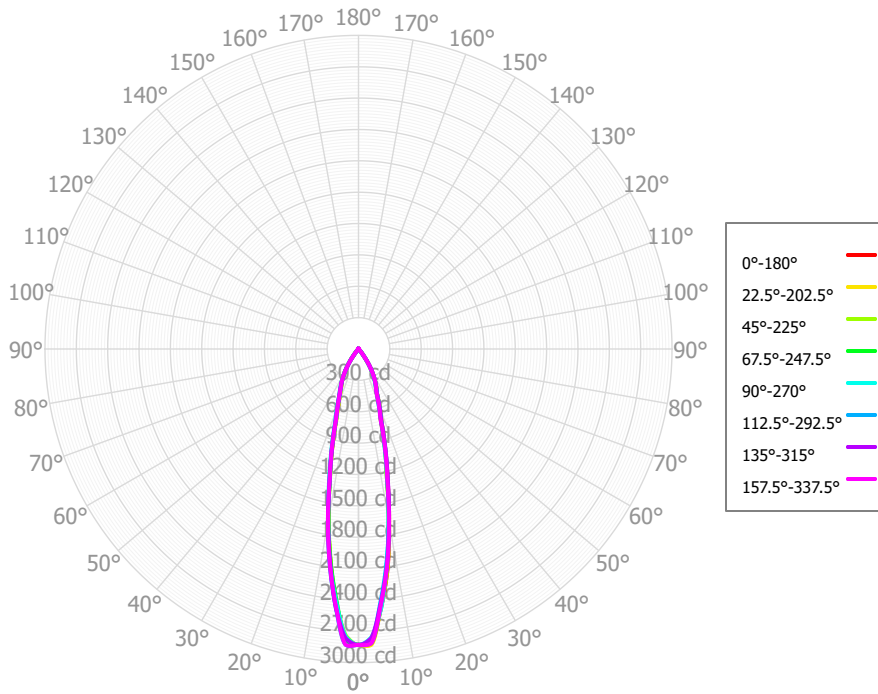
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-01441
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/23/2022
ISSUEDATE	11/23/2022
LUMCAT	CK0407PC 10L 35K ND xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Round Cylinder, Narrow Beam
OTHER	No lens, Matte White finish
OTHER	23 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°	210.65	26.67%	90.00° - 100.00°	2.23	0.28%
10.00° - 20.00°	271.22	34.34%	100.00° - 110.00°	2.15	0.27%
20.00° - 30.00°	183.55	23.24%	100.00° - 120.00°	4.17	0.53%
30.00° - 40.00°	87.01	11.02%	120.00° - 130.00°	1.83	0.23%
40.00° - 50.00°	8.79	1.11%	130.00° - 140.00°	1.69	0.21%
50.00° - 60.00°	4.80	0.61%	140.00° - 150.00°	1.39	0.18%
60.00° - 70.00°	4.97	0.63%	150.00° - 160.00°	1.02	0.13%
70.00° - 80.00°	3.05	0.39%	160.00° - 170.00°	0.63	0.08%
80.00° - 90.00°	2.49	0.32%	170.00° - 180.00°	0.21	0.03%
0.00° - 90.00°	776.54	98.33%	0.00° - 180.00°	789.72	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°	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23	2831.23
2.50°	2800.18	2832.41	2798.92	2816.67	2763.91	2832.09	2772.62	2832.04	2766.18	2794.38	2747.29	2784.13	2758.44	2788.26	2770.44	2817.96	2800.18
5.00°	2482.79	2472.03	2470.08	2458.88	2489.71	2485.94	2485.30	2475.72	2471.70	2446.02	2439.25	2417.17	2436.95	2424.77	2446.23	2455.37	2482.79
7.50°	2126.78	2108.36	2115.52	2082.32	2066.86	2097.55	2074.05	2094.43	2056.58	2063.86	2040.54	2050.21	2081.02	2059.63	2094.37	2091.62	2126.78
10.00°	1687.19	1679.36	1677.25	1667.86	1661.39	1683.79	1672.72	1683.19	1659.00	1663.88	1649.85	1654.37	1671.75	1667.54	1682.57	1680.87	1687.19
12.50°	1289.46	1254.56	1271.02	1250.26	1270.86	1266.33	1277.62	1268.84	1272.44	1261.52	1262.79	1258.50	1302.30	1279.53	1300.33	1270.13	1289.46
15.00°	991.67	979.45	982.31	970.49	958.92	981.53	976.42	984.88	969.02	969.77	966.35	985.45	1002.43	998.31	991.47	982.81	991.67
17.50°	734.66	705.33	722.83	705.59	720.38	719.80	739.47	717.83	722.60	696.97	715.18	715.10	753.99	718.37	725.96	696.00	734.66
20.00°	589.67	582.39	585.22	571.25	552.40	578.97	580.25	583.28	561.43	559.25	560.90	590.72	603.96	589.05	579.81	569.23	589.67
22.50°	465.20	459.45	460.57	454.41	458.22	464.04	480.77	469.51	465.88	448.60	459.72	472.78	480.86	459.72	455.63	446.56	465.20
25.00°	403.53	399.69	401.38	390.03	382.62	395.37	402.22	402.36	392.59	386.83	389.96	407.04	414.36	401.93	398.87	391.88	403.53
27.50°	341.07	341.34	340.86	334.67	328.11	338.07	341.19	344.34	337.94	336.92	339.65	345.28	347.89	345.03	340.55	341.02	341.07
30.00°	275.79	273.63	272.48	268.24	267.77	271.21	274.58	276.54	275.62	274.02	278.07	277.18	281.50	277.45	276.64	274.81	275.79
32.50°	209.68	205.50	204.19	199.60	200.19	201.69	202.90	206.52	206.31	207.54	208.88	208.45	214.52	209.41	211.68	207.37	209.68
35.00°	140.19	137.64	136.42	135.10	135.18	134.95	135.54	139.99	139.77	141.36	141.71	142.54	145.97	141.35	142.43	139.91	140.19
37.50°	76.64	69.80	72.06	71.56	73.70	69.12	72.56	74.41	76.04	75.27	76.03	76.98	84.44	73.28	78.76	72.45	76.64
40.00°	40.80	39.21	40.12	39.30	30.72	35.64	31.75	40.18	34.44	39.82	35.76	41.86	44.52	42.03	42.61	40.00	40.80
42.50°	9.83	12.37	10.33	15.69	15.69	13.96	15.44	15.52	17.36	15.43	16.46	11.70	12.55	14.07	11.27	12.47	9.83
45.00°	6.87	7.17	7.14	7.99	5.96	6.51	6.16	7.53	7.15	7.12	6.48	5.52	8.05	8.61	7.73	6.88	6.87
47.50°	4.31	4.70	4.14	5.23	4.98	5.04	5.32	5.24	5.47	5.25	4.85	3.94	4.47	5.95	4.64	4.97	4.31
50.00°	4.43	3.95	4.35	4.50	4.43	4.46	4.64	4.51	4.48	4.81	4.17	3.81	4.49	5.22	4.54	4.86	4.43
52.50°	4.64	3.48	4.57	4.49	4.71	4.30	4.16	4.40	4.41	4.99	4.43	4.00	4.71	4.78	4.52	5.09	4.64
55.00°	5.63	5.08	5.09	5.53	5.21	4.73	4.44	4.61	4.99	5.39	4.85	4.68	5.88	5.59	5.19	6.23	5.63
57.50°	6.59	7.07	5.61	6.99	6.19	5.47	5.86	4.97	6.54	5.91	5.46	5.50	6.86	6.62	5.84	7.60	6.59
60.00°	7.04	7.64	5.70	6.77	6.77	5.52	6.45	5.20	7.10	5.79	5.66	5.79	6.78	6.66	6.16	7.54	7.04
62.50°	7.36	7.91	5.79	5.81	6.47	5.17	5.74	5.37	6.02	5.33	5.37	5.93	6.57	6.48	6.37	7.10	7.36
65.00°	5.59	6.23	4.42	4.87	5.91	4.48	4.88	4.86	5.07	4.57	4.80	5.18	5.47	5.57	4.55	5.90	5.59
67.50°	3.90	4.03	3.02	3.93	4.69	3.59	3.78	3.96	4.37	3.63	3.84	4.13	4.40	4.49	2.80	4.47	3.90
70.00°	4.05	3.13	2.74	3.37	3.72	2.81	2.97	3.43	3.75	3.11	3.19	3.35	3.64	3.85	3.13	3.68	4.05
72.50°	4.20	2.62	2.53	3.02	3.43	2.12	2.72	3.11	3.28	2.89	3.01	2.68	2.96	3.35	3.46	3.13	4.20
75.00°	3.70	2.45	2.78	2.69	3.11	1.87	2.61	2.77	2.88	2.84	2.92	2.35	3.08	3.12	3.22	2.84	3.70
77.50°	3.21	2.39	3.06	2.38	2.64	1.96	2.84	2.41	2.60	2.94	2.99	2.17	3.19	2.97	2.98	2.66	3.21
80.00°	2.95	2.38	2.59	2.25	2.30	2.02	2.86	2.32	2.35	2.77	2.93	2.08	3.18	2.84	2.97	2.49	2.95
82.50°	2.69	2.39	2.03	2.24	2.39	2.05	2.34	2.44	2.13	2.37	2.61	2.02	3.17	2.72	2.96	2.33	2.69
85.00°	2.57	2.19	1.99	2.31	2.43	2.05	1.94	2.35	1.97	2.14	2.27	1.88	2.94	2.71	2.34	2.29	2.57
87.50°	2.46	1.89	2.01	2.44	2.23	2.02	1.89	2.10	1.98	2.04	1.86	1.71	2.71	2.76	1.69	2.32	2.46
90.00°	2.49	1.78	1.87	2.39	2.03	1.98	1.91	1.93	2.03	1.94	1.60	1.69	2.44	2.53	1.78	2.32	2.49
92.50°	2.53	1.77	1.71	2.20	1.86	1.91	2.15	1.85	2.26	1.84	1.65	1.75	2.17	2.17	1.92	2.30	2.53
95.00°	2.48	1.97	1.90	2.15	1.72	1.91	2.32	1.84	2.36	1.87	1.79	1.84	2.19	2.02	1.89	2.23	2.48
97.50°	2.43	2.28	2.15	2.25	1.78	1.96	2.21	1.89	2.00	2.03	2.19	1.96	2.21	1.98	1.86	2.12	2.43
100.00°	2.36	2.24	2.15	2.14	1.84	1.97	2.08	2.06	1.74	2.11	2.41	1.99	2.20	1.98	2.06	2.09	2.36

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	937	937	937	937	914	914	914	914	870	870	870	830	830	830	794	794	777
	1	899	879	862	846	878	861	845	831	827	815	803	795	786	777	767	759	743
	2	862	829	801	778	844	815	790	769	787	767	750	762	746	732	739	726	711
	3	828	785	752	725	812	773	743	719	752	726	706	731	711	693	712	696	682
	4	796	746	710	682	782	737	703	677	719	690	668	702	678	659	687	667	654
	5	766	711	673	645	753	703	668	641	689	658	635	675	649	628	662	640	628
	6	738	680	641	613	727	673	637	610	661	629	605	649	622	601	639	615	604
	7	711	651	612	585	701	646	609	583	635	603	579	626	597	576	616	591	581
	8	687	625	587	560	678	621	584	559	612	579	556	603	574	553	595	569	560
	9	663	601	563	538	655	597	561	536	590	557	534	582	553	532	576	549	541
	10	642	579	542	517	634	576	540	516	569	537	514	563	533	513	557	530	522

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	93.6 fc	2.3 ft
6.5 ft	67.0 fc	2.7 ft
7.5 ft	50.3 fc	3.1 ft
8.0 ft	44.2 fc	3.3 ft
10.0 ft	28.3 fc	4.1 ft
12.0 ft	19.7 fc	4.9 ft
14.0 ft	14.4 fc	5.8 ft
16.0 ft	11.1 fc	6.6 ft
20.0 ft	7.1 fc	8.2 ft
24.0 ft	4.9 fc	9.9 ft
28.0 ft	3.6 fc	11.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	268712	268712	268712
45.00°	923	959	800
55.00°	932	843	862
65.00°	1256	993	1327
75.00°	1358	1019	1140
85.00°	2798	2162	2646

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	3.0	3.9	3.4	4.2	4.6	1.3	2.2	1.7	2.6	2.9
	3H	4.3	5.1	4.7	5.5	5.9	3.3	4.1	3.7	4.5	4.9
	4H	5.2	5.9	5.6	6.3	6.8	4.1	4.8	4.5	5.2	5.6
	6H	6.2	6.8	6.6	7.2	7.7	5.1	5.8	5.6	6.2	6.7
	8H	6.7	7.4	7.2	7.8	8.2	5.9	6.5	6.3	6.9	7.4
	12H	7.4	8.0	7.9	8.4	8.9	6.8	7.4	7.3	7.8	8.3
4H	2H	3.3	4.0	3.7	4.4	4.8	2.0	2.8	2.5	3.2	3.6
	3H	4.8	5.4	5.3	5.9	6.3	4.0	4.6	4.4	5.0	5.5
	4H	5.8	6.3	6.2	6.8	7.3	4.8	5.3	5.3	5.8	6.3
	6H	7.0	7.4	7.5	7.9	8.4	6.0	6.5	6.5	7.0	7.5
	8H	7.7	8.1	8.2	8.6	9.1	6.9	7.3	7.4	7.8	8.3
	12H	8.6	8.9	9.1	9.5	10.0	8.0	8.4	8.5	8.9	9.4
8H	4H	6.1	6.5	6.6	7.0	7.5	5.2	5.6	5.7	6.1	6.6
	6H	7.5	7.9	8.1	8.4	8.9	6.7	7.0	7.2	7.6	8.1
	8H	8.4	8.7	9.0	9.3	9.8	7.7	8.0	8.2	8.5	9.1
	12H	9.5	9.8	10.1	10.3	11.0	9.0	9.2	9.5	9.8	10.4
12H	4H	6.2	6.6	6.7	7.1	7.6	5.3	5.7	5.9	6.2	6.7
	6H	7.7	8.0	8.3	8.5	9.1	6.9	7.2	7.5	7.7	8.3
	8H	8.7	9.0	9.3	9.5	10.1	8.0	8.3	8.6	8.8	9.4

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0