

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01442

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	714
Efficacy	106.54 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.43
Two luminaires, plane 90°	0.43
Four luminaires	0.48

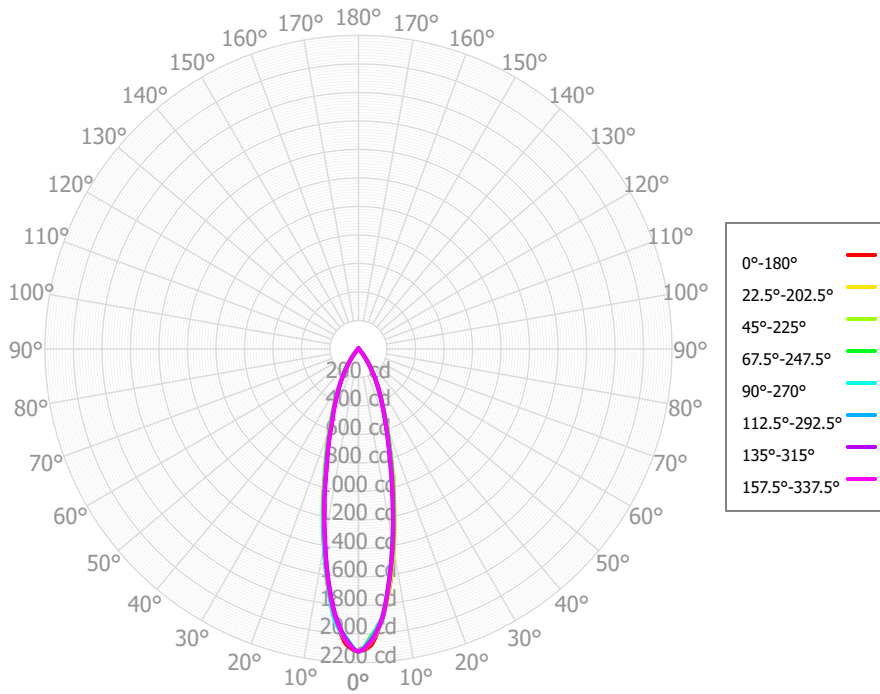
Full Beam Angle

0° - 180°	27°
90° - 270°	26°

IES File Header Contents

Keyword	Value
TEST	SP-01442
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 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°	165.12	23.13%	90.00° - 100.00°	2.12	0.30%
10.00° - 20.00°	249.31	34.93%	100.00° - 110.00°	2.04	0.29%
20.00° - 30.00°	167.48	23.46%	100.00° - 120.00°	3.94	0.55%
30.00° - 40.00°	75.63	10.60%	120.00° - 130.00°	1.75	0.25%
40.00° - 50.00°	21.67	3.04%	130.00° - 140.00°	1.57	0.22%
50.00° - 60.00°	9.40	1.32%	140.00° - 150.00°	1.29	0.18%
60.00° - 70.00°	6.26	0.88%	150.00° - 160.00°	0.98	0.14%
70.00° - 80.00°	4.01	0.56%	160.00° - 170.00°	0.59	0.08%
80.00° - 90.00°	2.44	0.34%	170.00° - 180.00°	0.20	0.03%
0.00° - 90.00°	701.33	98.25%	0.00° - 180.00°	713.79	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°	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42	2121.42
2.50°	2078.60	2053.03	2055.15	2019.63	2033.52	2028.81	2038.50	2047.01	2070.39	2043.64	2046.04	2026.72	2045.06	2039.95	2048.45	2052.70	2078.60
5.00°	1895.46	1915.65	1902.76	1892.98	1887.10	1890.12	1869.63	1883.63	1879.34	1893.66	1882.46	1910.81	1912.12	1912.06	1896.92	1902.06	1895.46
7.50°	1679.41	1678.28	1674.90	1645.77	1636.62	1625.08	1627.05	1642.69	1663.05	1662.47	1664.31	1654.84	1657.87	1639.47	1641.59	1650.51	1679.41
10.00°	1408.38	1426.74	1424.08	1397.19	1371.57	1361.82	1351.85	1366.63	1389.20	1398.51	1402.14	1397.08	1399.00	1368.47	1377.59	1389.59	1408.38
12.50°	1131.47	1160.80	1160.77	1143.77	1125.97	1108.42	1101.73	1115.49	1133.61	1152.36	1156.59	1143.75	1130.78	1109.12	1105.42	1120.00	1131.47
15.00°	915.45	932.30	939.59	912.08	883.05	873.31	859.32	872.22	908.25	911.09	920.98	900.29	895.13	866.63	882.22	895.41	915.45
17.50°	704.35	733.17	734.87	732.43	717.16	701.50	689.76	700.85	718.14	738.42	740.31	727.82	709.23	694.93	693.49	702.79	704.35
20.00°	574.26	582.14	589.49	576.79	556.67	549.94	535.15	544.75	572.66	577.95	583.49	567.66	559.94	543.16	557.23	562.34	574.26
22.50°	449.29	459.08	459.79	462.68	453.82	448.24	439.85	445.03	455.52	468.68	469.34	461.10	452.34	446.89	449.04	449.19	449.29
25.00°	365.02	365.49	370.37	364.57	355.94	357.22	351.04	351.82	365.29	363.81	368.53	362.48	362.15	359.23	364.39	362.30	365.02
27.50°	284.41	284.29	287.74	287.56	284.71	285.12	283.05	284.49	289.42	290.17	291.61	286.61	287.27	289.16	288.74	285.21	284.41
30.00°	220.88	221.57	226.22	220.80	217.00	218.96	216.10	218.42	223.74	217.96	219.46	217.83	222.96	223.21	223.22	220.44	220.88
32.50°	162.10	164.40	166.35	164.17	161.63	160.57	161.13	164.93	168.17	165.49	167.50	163.44	165.59	163.41	160.43	158.88	162.10
35.00°	117.69	123.21	126.26	119.18	112.72	112.36	108.57	113.49	118.05	115.82	117.64	117.34	119.72	113.77	114.04	114.01	117.69
37.50°	79.76	85.04	87.24	83.06	79.32	74.44	75.59	79.53	82.98	84.95	87.42	83.94	79.36	75.46	70.32	71.76	79.76
40.00°	55.59	61.22	63.60	57.90	52.26	48.25	45.97	48.84	53.72	57.22	58.41	58.10	53.73	48.48	48.16	50.84	55.59
42.50°	36.55	38.77	41.77	38.91	36.20	30.96	32.30	33.42	38.01	42.59	43.21	40.90	33.26	31.25	27.60	31.38	36.55
45.00°	25.74	28.95	31.43	28.19	24.64	21.68	20.97	20.71	25.98	29.93	28.93	29.29	23.60	21.14	21.15	23.41	25.74
47.50°	17.99	19.72	22.24	20.82	19.04	16.89	16.81	16.53	19.32	22.69	22.34	22.46	16.43	15.60	15.03	15.87	17.99
50.00°	13.90	16.13	17.44	16.06	14.74	13.81	13.31	13.01	13.55	16.93	16.46	17.42	13.61	12.47	12.53	13.87	13.90
52.50°	11.31	12.78	13.46	12.04	11.75	11.43	11.20	10.97	11.72	14.07	13.86	13.55	11.37	10.50	10.22	11.88	11.31
55.00°	10.06	11.11	11.66	10.32	9.48	9.59	9.73	9.18	10.18	11.50	11.46	11.39	9.96	9.09	9.01	9.93	10.06
57.50°	8.93	9.57	10.03	9.00	7.75	7.91	9.28	7.81	8.45	9.36	9.68	10.05	8.61	7.86	7.99	8.18	8.93
60.00°	7.88	8.60	8.70	7.86	6.82	6.85	8.36	6.97	6.81	7.81	8.19	8.61	8.31	7.20	7.71	7.18	7.88
62.50°	7.33	7.64	7.50	6.73	6.35	5.91	6.87	6.77	6.65	6.92	7.36	7.14	7.95	6.67	7.30	6.50	7.33
65.00°	7.04	6.72	6.47	5.98	5.42	5.64	5.72	6.24	6.33	6.19	6.71	6.59	7.11	6.28	6.58	6.63	7.04
67.50°	6.12	5.89	5.62	5.24	4.32	5.44	4.86	5.42	5.01	5.62	6.34	6.25	6.20	5.90	5.80	6.45	6.12
70.00°	4.97	5.28	4.97	4.40	4.40	5.02	4.57	4.84	3.97	4.95	5.66	4.99	4.94	5.49	4.88	5.65	4.97
72.50°	4.16	4.58	4.34	3.64	4.80	4.58	4.69	4.42	3.99	4.23	4.64	3.60	3.79	5.07	4.16	4.92	4.16
75.00°	3.42	3.77	3.71	3.32	4.37	3.70	4.29	3.73	3.82	3.58	3.78	3.55	3.03	4.23	3.73	4.31	3.42
77.50°	3.05	3.20	3.21	3.01	3.79	2.87	3.62	2.91	3.10	2.96	3.07	3.56	2.43	3.45	3.37	3.76	3.05
80.00°	2.74	2.92	2.79	2.77	3.00	2.49	3.05	2.47	2.48	2.64	2.61	3.03	2.18	3.19	3.07	3.30	2.74
82.50°	2.51	2.47	2.35	2.55	2.19	2.15	2.50	2.18	2.08	2.42	2.34	2.52	2.05	2.90	2.67	2.82	2.51
85.00°	2.29	1.89	1.89	2.43	2.13	2.00	2.28	1.93	1.86	2.21	2.16	2.21	2.15	2.43	2.17	2.35	2.29
87.50°	2.20	1.81	1.76	2.34	2.09	1.91	2.14	1.69	1.89	2.01	2.02	1.94	2.15	2.06	2.03	1.98	2.20
90.00°	2.12	2.06	1.74	2.31	1.94	2.02	2.15	1.76	1.90	2.04	2.02	1.85	2.03	2.04	2.09	1.67	2.12
92.50°	2.09	2.13	1.84	2.21	1.81	2.04	2.17	1.88	1.86	2.10	2.08	1.79	1.91	2.04	2.10	1.62	2.09
95.00°	2.06	2.11	1.98	2.01	1.75	1.92	1.98	1.81	1.87	1.99	2.10	1.80	1.78	2.08	2.10	1.69	2.06
97.50°	1.98	2.09	2.05	1.95	1.72	1.86	1.77	1.72	1.91	1.87	2.12	1.83	1.72	2.02	1.99	1.81	1.98
100.00°	1.85	2.08	2.11	2.05	1.88	1.91	2.03	1.67	1.88	1.98	2.12	1.89	1.72	1.77	1.85	1.94	1.85

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	847	847	847	847	826	826	826	826	786	786	786	750	750	750	717	717	701
	1	810	792	775	760	792	775	760	747	744	733	722	716	707	698	689	683	668
	2	775	744	718	696	759	731	707	687	706	687	670	683	667	654	662	650	636
	3	743	702	670	645	728	691	662	639	671	647	627	652	632	616	635	619	606
	4	712	664	629	603	699	656	623	599	639	612	590	624	601	582	610	590	579
	5	683	631	595	568	671	624	590	565	610	581	559	598	572	553	586	564	554
	6	656	601	564	537	646	595	560	535	584	553	531	573	547	526	563	540	530
	7	631	574	537	511	622	569	534	509	559	528	506	550	523	503	542	518	499
	8	608	549	513	488	599	545	510	486	537	506	484	529	501	481	522	497	489
	9	586	527	491	466	578	523	489	465	516	485	463	509	481	461	503	478	470
	10	565	506	471	447	558	503	469	447	497	466	445	491	463	443	486	460	453

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	70.1 fc	2.6 ft
6.5 ft	50.2 fc	3.1 ft
7.5 ft	37.7 fc	3.5 ft
8.0 ft	33.1 fc	3.8 ft
10.0 ft	21.2 fc	4.7 ft
12.0 ft	14.7 fc	5.7 ft
14.0 ft	10.8 fc	6.6 ft
16.0 ft	8.3 fc	7.6 ft
20.0 ft	5.3 fc	9.5 ft
24.0 ft	3.7 fc	11.4 ft
28.0 ft	2.7 fc	13.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	201344	201344	201344
45.00°	3455	4219	3308
55.00°	1664	1930	1568
65.00°	1580	1453	1218
75.00°	1254	1362	1602
85.00°	2498	2063	2324

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	4.7	5.6	5.1	6.0	6.3	4.6	5.6	5.0	5.9	6.3
	3H	6.5	7.4	6.9	7.7	8.2	6.3	7.1	6.7	7.5	7.9
	4H	7.2	7.9	7.6	8.3	8.8	6.9	7.7	7.4	8.1	8.6
	6H	7.8	8.5	8.2	8.9	9.4	7.6	8.3	8.0	8.7	9.1
	8H	8.2	8.8	8.6	9.2	9.7	7.9	8.5	8.3	9.0	9.4
	12H	8.6	9.2	9.0	9.6	10.1	8.2	8.9	8.7	9.3	9.8
4H	2H	5.2	5.9	5.6	6.3	6.8	5.1	5.9	5.5	6.3	6.7
	3H	7.2	7.9	7.7	8.3	8.8	7.0	7.6	7.4	8.0	8.5
	4H	8.1	8.6	8.6	9.1	9.6	7.8	8.4	8.3	8.8	9.3
	6H	8.9	9.4	9.4	9.9	10.4	8.6	9.1	9.1	9.6	10.1
	8H	9.4	9.8	9.9	10.3	10.8	9.0	9.4	9.5	9.9	10.4
	12H	9.9	10.3	10.4	10.8	11.3	9.5	9.9	10.0	10.4	10.9
8H	4H	8.4	8.8	8.9	9.3	9.8	8.1	8.6	8.6	9.1	9.6
	6H	9.4	9.8	10.0	10.3	10.8	9.1	9.5	9.7	10.0	10.6
	8H	10.0	10.4	10.6	10.9	11.5	9.7	10.0	10.2	10.5	11.1
	12H	10.8	11.0	11.3	11.6	12.2	10.3	10.6	10.9	11.2	11.8
12H	4H	8.4	8.8	8.9	9.3	9.8	8.1	8.5	8.7	9.0	9.6
	6H	9.5	9.9	10.1	10.4	11.0	9.2	9.6	9.8	10.1	10.6
	8H	10.3	10.5	10.8	11.1	11.7	9.9	10.1	10.4	10.7	11.3

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0