

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407PC 30L 35K MD xx SO xx MW
Nom. 4.5" Diam x 7"H Round Cylinder, Medium Beam

Test Number

SP-01440_M-30L

Test Date

11/28/2022

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

Summary of Results

Power

Input Watts	17.8 W
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Lumen Output

Output Lumens	1796
Efficacy	100.9 lm/W

Luminous Dimensions

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

Spacing Criterion

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

Full Beam Angle

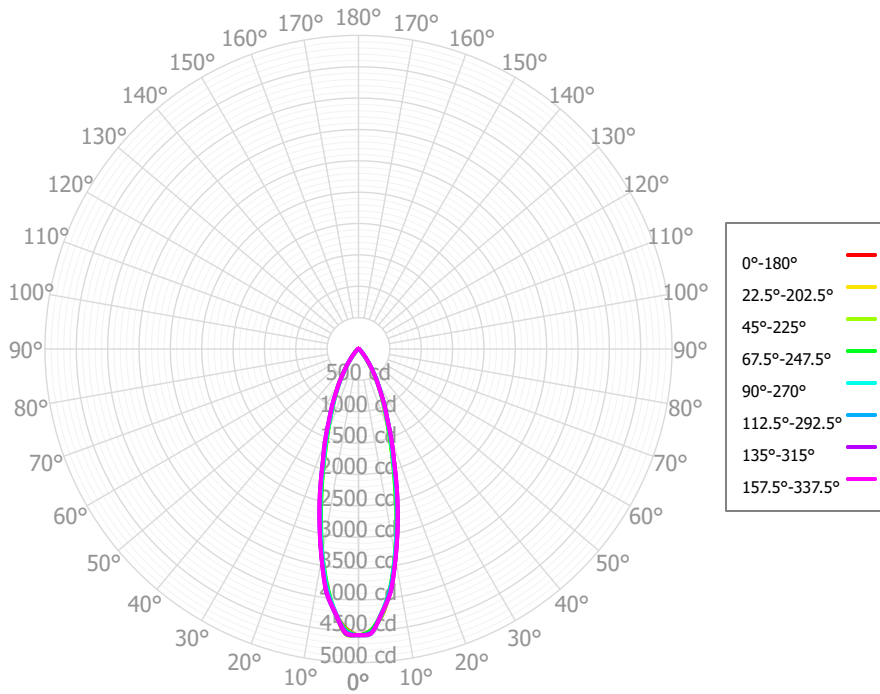
0° - 180°	31°
90° - 270°	30°

IES File Header Contents

Keyword	Value
TEST	SP-01440_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/28/2022
ISSUEDATE	12/01/2022
LUMCAT	CK0407PC 30L 35K MD xx SO xx MW
LUMINAIRE	Norm. 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	This report prepared by Spectrum Lighting
_CRI	80
_CCTMULT	27K x 0.95, 30K x 0.97, 40K x 1.03
_LAMPMULT	10L x 0.34, 15L x 0.49, 20L x 0.67

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Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	380.76	21.20%	90.00° - 100.00°	1.86	0.10%
10.00° - 20.00°	634.15	35.31%	100.00° - 110.00°	1.76	0.10%
20.00° - 30.00°	438.44	24.41%	100.00° - 120.00°	3.41	0.19%
30.00° - 40.00°	207.69	11.56%	120.00° - 130.00°	1.63	0.09%
40.00° - 50.00°	66.59	3.71%	130.00° - 140.00°	1.51	0.08%
50.00° - 60.00°	28.24	1.57%	140.00° - 150.00°	1.27	0.07%
60.00° - 70.00°	17.46	0.97%	150.00° - 160.00°	0.97	0.05%
70.00° - 80.00°	8.64	0.48%	160.00° - 170.00°	0.58	0.03%
80.00° - 90.00°	2.69	0.15%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	1784.67	99.36%	0.00° - 180.00°	1796.10	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°	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93	4563.93
2.50°	4491.76	4539.37	4495.81	4492.67	4549.92	4507.77	4548.47	4530.58	4465.77	4560.33	4475.08	4491.79	4550.08	4524.76	4532.71	4546.92	4491.76
5.00°	4272.20	4228.65	4270.11	4228.75	4221.52	4231.30	4240.06	4220.60	4237.19	4233.47	4233.99	4222.22	4208.69	4247.75	4230.50	4236.41	4272.20
7.50°	3880.25	3895.83	3865.06	3850.45	3879.27	3876.72	3924.83	3905.38	3841.42	3886.37	3821.44	3813.11	3856.45	3868.61	3915.21	3914.97	3880.25
10.00°	3392.23	3361.72	3341.37	3336.35	3350.40	3373.51	3392.24	3390.73	3383.22	3342.87	3336.82	3315.94	3332.53	3375.06	3401.49	3394.94	3392.23
12.50°	2870.97	2827.71	2795.24	2804.79	2823.28	2865.99	2860.31	2876.52	2838.22	2791.51	2767.14	2760.87	2806.92	2836.13	2888.46	2876.38	2870.97
15.00°	2332.54	2294.33	2235.31	2254.12	2313.94	2350.96	2378.18	2377.39	2329.91	2293.49	2248.98	2261.87	2313.01	2346.58	2383.17	2377.37	2332.54
17.50°	1887.14	1787.04	1790.67	1794.37	1822.98	1894.05	1901.73	1886.06	1868.59	1796.78	1786.92	1796.72	1823.63	1874.72	1893.22	1890.72	1887.14
20.00°	1485.57	1444.63	1411.05	1426.45	1481.53	1530.06	1565.49	1547.26	1488.00	1470.84	1422.36	1443.88	1486.12	1515.30	1538.01	1529.33	1485.57
22.50°	1187.04	1124.19	1138.36	1138.12	1157.00	1217.46	1235.27	1216.27	1202.68	1147.77	1155.69	1153.25	1154.90	1192.11	1198.34	1182.46	1187.04
25.00°	932.70	921.99	920.87	923.93	946.13	980.36	1000.90	991.00	962.46	951.91	934.45	933.05	945.56	958.72	970.16	953.12	932.70
27.50°	737.24	727.74	737.54	736.75	743.03	768.88	771.83	770.93	771.33	757.59	755.31	748.54	740.33	751.19	751.67	733.47	737.24
30.00°	564.66	570.52	570.31	572.78	584.04	592.42	604.27	604.19	601.25	600.85	591.73	588.97	590.17	592.61	591.48	578.53	564.66
32.50°	431.07	421.76	430.86	430.39	433.16	442.47	442.57	443.95	452.30	446.56	441.45	440.93	443.64	446.53	440.46	431.04	431.07
35.00°	311.18	307.50	303.32	305.08	321.89	325.91	335.60	336.75	330.34	330.91	318.24	324.72	333.95	339.01	336.68	325.75	311.18
37.50°	227.10	205.34	213.64	212.56	219.99	233.03	234.37	235.57	233.65	219.43	216.34	222.06	229.44	240.14	240.63	228.27	227.10
40.00°	154.31	146.77	138.68	143.95	158.01	167.67	176.53	174.86	162.89	156.09	146.07	155.90	168.10	176.69	179.13	168.78	154.31
42.50°	111.12	96.41	96.55	98.86	103.49	118.89	122.76	118.90	114.52	96.81	98.73	103.83	111.11	120.15	123.77	115.12	111.12
45.00°	76.24	72.43	65.94	69.56	77.03	87.86	94.67	89.90	81.46	73.93	69.39	75.47	84.03	89.44	92.91	86.25	76.24
47.50°	58.40	52.17	50.07	51.37	53.95	64.92	68.58	63.64	60.58	52.43	52.06	55.38	59.08	63.03	65.56	60.79	58.40
50.00°	44.81	42.60	38.91	40.12	42.18	49.97	53.17	50.82	46.14	41.00	41.10	43.71	46.47	49.81	50.59	48.36	44.81
52.50°	36.79	34.31	32.81	33.10	32.46	39.13	39.63	39.44	36.43	30.70	34.07	34.68	35.42	38.43	37.86	37.43	36.79
55.00°	29.98	29.35	28.15	28.51	28.88	32.05	34.71	34.19	29.59	27.34	28.71	29.00	32.12	32.40	32.17	31.58	29.98
57.50°	25.46	25.11	25.10	24.98	25.63	27.62	29.86	29.21	24.69	24.24	24.30	24.25	28.74	26.99	26.94	26.38	25.46
60.00°	21.36	22.61	22.46	22.01	23.28	25.43	25.33	25.19	21.78	22.48	21.18	22.44	25.02	23.60	23.02	23.14	21.36
62.50°	18.75	19.83	19.19	18.91	20.73	22.40	21.19	21.57	20.09	20.62	18.72	21.36	21.63	20.40	19.65	19.77	18.75
65.00°	16.38	16.46	15.78	15.75	17.68	18.71	18.45	19.28	18.27	18.33	16.87	18.50	19.43	17.51	17.69	16.09	16.38
67.50°	13.83	13.46	12.69	13.39	14.86	15.42	15.82	17.02	16.37	16.01	15.32	15.26	17.23	14.66	15.31	12.96	13.83
70.00°	11.26	11.19	9.67	11.39	12.53	12.40	13.59	14.81	13.58	13.62	13.17	12.92	14.98	12.70	11.94	11.21	11.26
72.50°	9.40	9.24	8.54	8.89	10.04	10.36	11.30	12.25	10.34	11.28	10.76	10.76	12.49	10.79	9.02	9.42	9.40
75.00°	7.61	7.83	7.72	6.21	7.23	8.96	8.81	8.71	8.01	9.14	8.53	8.61	9.28	8.26	7.02	7.53	7.61
77.50°	5.43	6.32	5.96	4.63	4.92	7.01	6.45	5.79	6.10	7.09	6.39	6.47	6.43	5.71	5.39	5.74	5.43
80.00°	3.22	4.64	4.08	3.45	3.56	4.70	4.42	4.39	4.60	5.32	4.60	4.58	4.56	4.59	4.46	4.15	3.22
82.50°	2.31	3.24	2.91	2.55	2.66	3.12	2.77	3.12	3.27	3.77	2.93	2.72	2.99	3.47	3.43	2.84	2.31
85.00°	1.47	2.28	1.83	1.75	2.53	1.94	2.05	2.12	2.49	2.86	2.10	2.09	2.18	2.57	2.20	2.06	1.47
87.50°	1.56	1.63	1.68	1.70	2.32	1.75	1.49	1.44	1.92	2.10	1.53	1.59	1.66	1.70	1.48	1.56	1.56
90.00°	1.69	1.40	1.62	1.87	1.98	2.07	1.27	1.41	1.67	1.75	1.85	1.56	1.80	1.82	1.60	1.57	1.69
92.50°	1.57	1.36	1.70	1.76	1.83	2.03	1.21	1.44	1.53	1.55	2.41	1.57	1.93	1.92	1.74	1.53	1.57
95.00°	1.46	1.56	1.80	1.59	1.94	1.81	1.48	1.59	1.63	1.71	2.27	1.71	2.03	1.71	1.89	1.42	1.46
97.50°	1.39	1.80	1.81	1.61	1.84	1.72	1.60	1.69	1.80	1.82	1.96	1.87	2.02	1.52	1.77	1.43	1.39
100.00°	1.32	2.09	1.82	1.67	1.48	1.69	1.47	1.72	1.82	1.87	1.89	1.69	1.79	1.59	1.29	1.61	1.32

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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	2135	2135	2135	2135	2084	2084	2084	2084	1989	1989	1989	1902	1902	1902	1822	1822	1785
	1	2044	1997	1956	1918	1999	1958	1920	1887	1883	1854	1827	1815	1792	1770	1752	1734	1699
	2	1954	1874	1808	1752	1914	1842	1782	1732	1783	1734	1692	1729	1689	1654	1678	1647	1614
	3	1870	1765	1684	1620	1834	1740	1666	1606	1692	1630	1580	1648	1597	1554	1607	1565	1534
	4	1790	1669	1580	1512	1758	1648	1566	1502	1609	1539	1484	1573	1513	1465	1539	1489	1461
	5	1716	1582	1489	1420	1687	1565	1479	1414	1533	1458	1400	1503	1438	1387	1475	1419	1394
	6	1646	1505	1410	1342	1620	1490	1401	1337	1464	1385	1327	1438	1370	1318	1415	1355	1332
	7	1581	1434	1339	1273	1558	1422	1333	1269	1400	1320	1262	1379	1308	1255	1359	1296	1274
	8	1520	1370	1276	1212	1499	1360	1271	1209	1341	1261	1203	1323	1251	1198	1306	1241	1221
	9	1463	1312	1219	1157	1445	1303	1215	1155	1287	1207	1150	1271	1198	1146	1256	1190	1172
	10	1410	1258	1168	1107	1393	1251	1164	1106	1237	1157	1102	1223	1150	1099	1210	1144	1127

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	150.9 fc	3.0 ft
6.5 ft	108.0 fc	3.5 ft
7.5 ft	81.1 fc	4.1 ft
8.0 ft	71.3 fc	4.4 ft
10.0 ft	45.6 fc	5.5 ft
12.0 ft	31.7 fc	6.6 ft
14.0 ft	23.3 fc	7.6 ft
16.0 ft	17.8 fc	8.7 ft
20.0 ft	11.4 fc	10.9 ft
24.0 ft	7.9 fc	13.1 ft
28.0 ft	5.8 fc	15.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	433164	433164	433164
45.00°	10233	8850	10339
55.00°	4961	4658	4779
65.00°	3679	3543	3971
75.00°	2792	2832	2650
85.00°	1604	1989	2753

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	8.9	9.8	9.2	10.2	10.5	9.0	10.0	9.4	10.3	10.6
	3H	10.0	10.8	10.4	11.2	11.6	10.5	11.3	10.9	11.7	12.1
	4H	10.4	11.2	10.8	11.6	12.0	10.9	11.7	11.4	12.1	12.5
	6H	10.6	11.3	11.0	11.7	12.1	11.1	11.9	11.6	12.3	12.7
	8H	10.6	11.3	11.1	11.7	12.1	11.2	11.9	11.6	12.3	12.7
	12H	10.6	11.3	11.1	11.7	12.1	11.2	11.9	11.7	12.3	12.7
4H	2H	9.2	10.0	9.6	10.4	10.8	9.4	10.2	9.8	10.6	11.0
	3H	10.5	11.2	10.9	11.6	12.0	11.0	11.7	11.5	12.1	12.5
	4H	11.0	11.6	11.5	12.0	12.5	11.6	12.2	12.1	12.6	13.1
	6H	11.3	11.8	11.8	12.3	12.8	11.9	12.4	12.4	12.9	13.4
	8H	11.4	11.9	11.9	12.3	12.8	12.0	12.5	12.5	12.9	13.4
	12H	11.4	11.8	11.9	12.3	12.8	12.1	12.5	12.6	13.0	13.5
8H	4H	11.1	11.6	11.6	12.1	12.5	11.8	12.2	12.3	12.7	13.2
	6H	11.6	11.9	12.1	12.4	12.9	12.2	12.6	12.7	13.1	13.6
	8H	11.7	12.0	12.2	12.5	13.1	12.3	12.6	12.9	13.2	13.7
	12H	11.8	12.1	12.3	12.6	13.2	12.4	12.7	13.0	13.2	13.8
12H	4H	11.1	11.5	11.6	12.0	12.5	11.7	12.1	12.3	12.6	13.1
	6H	11.6	11.9	12.1	12.4	12.9	12.2	12.5	12.7	13.0	13.6
	8H	11.7	12.0	12.3	12.5	13.1	12.3	12.6	12.9	13.1	13.7

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0