

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01439_M-30L

Test Date

10/26/2022

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	1949
Efficacy	109.51 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.47
Two luminaires, plane 90°	0.46
Four luminaires	0.47

Full Beam Angle

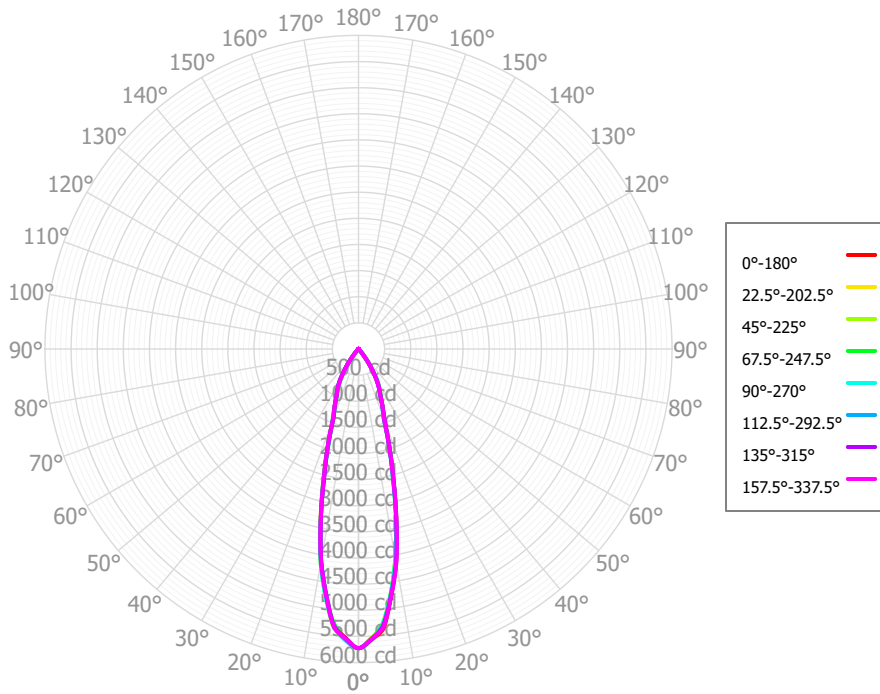
0° - 180°	28°
90° - 270°	28°

IES File Header Contents

Keyword	Value
TEST	SP-01439_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/26/2022
ISSUEDATE	11/22/2022
LUMCAT	CK0407PC 30L 35K MD xx NL xx MW
LUMINAIRE	Norm. 4.5" Diam x 7"H Round Cylinder, Medium Beam
OTHER	No lens, Matte White finish
OTHER	28 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

CK0407PC 30L 35K MD xx NL xx MW

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	471.04	24.17%	90.00° - 100.00°	1.80	0.09%
10.00° - 20.00°	705.22	36.18%	100.00° - 110.00°	1.73	0.09%
20.00° - 30.00°	466.71	23.94%	100.00° - 120.00°	3.42	0.18%
30.00° - 40.00°	235.93	12.10%	120.00° - 130.00°	1.52	0.08%
40.00° - 50.00°	29.80	1.53%	130.00° - 140.00°	1.41	0.07%
50.00° - 60.00°	10.85	0.56%	140.00° - 150.00°	1.28	0.07%
60.00° - 70.00°	11.02	0.57%	150.00° - 160.00°	0.99	0.05%
70.00° - 80.00°	4.98	0.26%	160.00° - 170.00°	0.62	0.03%
80.00° - 90.00°	2.43	0.12%	170.00° - 180.00°	0.19	0.01%
0.00° - 90.00°	1937.97	99.42%	0.00° - 180.00°	1949.21	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°	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19	5725.19
2.50°	5569.21	5544.88	5541.73	5561.87	5561.76	5571.41	5550.38	5553.48	5539.44	5571.86	5561.27	5570.97	5588.63	5568.90	5570.50	5556.33	5569.21
5.00°	5386.17	5325.28	5340.17	5283.26	5314.18	5347.99	5327.83	5349.11	5320.10	5351.02	5362.37	5292.19	5336.96	5325.58	5334.19	5360.37	5386.17
7.50°	4771.85	4741.95	4732.28	4724.68	4741.99	4736.37	4749.96	4748.09	4746.78	4765.95	4779.13	4779.83	4799.71	4748.86	4773.97	4773.37	4771.85
10.00°	4142.02	4137.63	4111.21	4058.29	4089.27	4111.70	4119.75	4124.98	4145.36	4136.47	4162.02	4138.89	4159.98	4132.46	4142.45	4164.40	4142.02
12.50°	3344.84	3341.21	3319.01	3313.87	3316.08	3324.21	3330.46	3333.45	3346.09	3340.67	3337.53	3330.42	3334.03	3331.60	3334.02	3348.07	3344.84
15.00°	2574.64	2555.09	2551.32	2546.78	2522.32	2552.77	2528.19	2571.43	2578.42	2587.37	2551.78	2579.77	2575.87	2571.13	2585.01	2562.98	2574.64
17.50°	1973.36	1965.01	1956.19	1968.95	1949.06	1948.16	1954.33	1954.60	1957.35	1952.79	1927.73	1890.00	1916.12	1945.93	1951.22	1956.59	1973.36
20.00°	1442.43	1414.75	1427.94	1430.47	1398.39	1398.69	1395.99	1423.88	1426.45	1440.87	1401.64	1432.30	1443.62	1431.54	1464.99	1426.46	1442.43
22.50°	1210.09	1206.50	1209.91	1198.46	1189.55	1185.89	1196.64	1195.17	1197.05	1193.65	1175.43	1172.18	1190.19	1198.02	1209.11	1198.05	1210.09
25.00°	1001.07	1009.68	1010.84	1007.92	995.85	992.01	1003.21	993.77	995.84	990.48	978.16	991.80	996.41	994.66	1004.18	992.55	1001.07
27.50°	864.40	874.21	875.15	873.03	871.48	876.91	877.02	865.42	866.02	862.44	848.69	866.13	859.08	851.67	863.21	854.05	864.40
30.00°	717.77	729.74	728.92	742.09	743.85	747.82	744.35	723.97	720.48	715.25	704.38	707.44	699.59	694.87	704.65	705.13	717.77
32.50°	547.48	551.51	556.05	565.35	569.88	575.93	569.62	555.32	543.89	541.89	532.78	530.64	523.14	516.10	528.24	532.75	547.48
35.00°	381.90	379.32	387.79	388.83	398.43	407.55	398.49	390.19	376.27	375.44	368.70	363.48	357.75	348.64	361.70	367.36	381.90
37.50°	225.07	224.06	228.66	237.52	245.64	247.39	242.99	230.86	222.72	216.61	215.78	200.47	199.15	195.63	203.24	214.36	225.07
40.00°	110.02	102.93	109.92	96.23	111.06	123.67	112.75	115.39	111.87	111.95	109.71	112.31	106.97	94.93	105.38	104.42	110.02
42.50°	57.01	55.68	54.59	56.51	64.22	66.89	62.65	57.82	55.52	56.15	59.67	48.85	47.52	48.25	47.54	55.53	57.01
45.00°	25.00	23.57	21.34	21.81	26.16	28.98	24.85	24.52	23.10	27.25	29.93	27.47	25.87	23.64	24.12	25.75	25.00
47.50°	18.10	17.35	16.28	17.19	18.38	18.72	16.80	17.10	15.38	17.92	19.83	16.30	18.72	17.44	18.81	17.81	18.10
50.00°	13.54	13.05	12.93	13.32	12.39	12.26	11.16	12.92	11.83	14.19	14.31	14.03	15.77	14.32	16.10	13.47	13.54
52.50°	11.24	11.39	11.34	12.54	11.05	10.33	10.13	11.54	11.77	13.73	12.37	13.25	14.04	13.27	14.45	12.50	11.24
55.00°	10.79	10.57	10.59	11.78	10.25	9.60	9.67	10.60	11.59	13.29	12.07	13.29	13.69	13.50	13.49	12.49	10.79
57.50°	11.80	10.69	10.54	11.11	10.53	10.02	10.07	9.97	11.34	12.86	12.78	13.42	13.62	14.43	12.74	13.21	11.80
60.00°	12.29	11.37	10.49	10.80	10.79	10.36	10.10	10.38	11.66	12.94	12.34	13.84	13.09	14.63	13.10	13.39	12.29
62.50°	12.47	12.55	10.43	11.35	11.02	10.63	9.66	11.38	12.29	13.20	11.32	14.24	12.49	14.52	13.71	13.26	12.47
65.00°	11.90	12.04	9.93	11.20	10.79	10.21	9.56	11.41	11.96	12.26	11.04	12.92	12.14	13.28	12.38	12.25	11.90
67.50°	10.96	10.33	9.20	9.79	9.95	9.37	9.79	11.02	11.23	11.00	11.06	11.45	11.81	11.68	10.76	10.82	10.96
70.00°	8.65	8.32	7.67	7.95	8.59	7.84	8.37	8.76	8.60	8.03	8.37	8.09	8.68	8.60	8.45	8.69	8.65
72.50°	5.78	6.14	5.79	5.48	6.69	5.98	5.64	5.87	5.36	4.75	4.86	5.02	5.60	5.16	6.07	6.30	5.78
75.00°	4.29	4.57	4.43	3.93	5.07	4.62	4.02	4.25	3.91	4.20	3.67	4.15	4.31	3.83	4.54	5.06	4.29
77.50°	3.19	3.29	3.23	3.47	3.68	3.44	3.10	2.95	2.88	3.98	2.96	3.36	3.14	2.84	3.07	4.14	3.19
80.00°	2.73	2.84	2.85	3.03	3.10	3.30	2.77	2.78	2.77	3.28	2.65	2.96	3.20	2.89	2.77	3.47	2.73
82.50°	2.40	2.68	2.67	2.60	3.06	3.48	2.74	2.81	2.80	2.55	2.40	2.53	3.17	3.04	2.45	2.83	2.40
85.00°	2.10	2.19	2.29	2.20	2.62	2.68	2.25	2.20	2.16	1.92	2.00	2.03	2.64	2.28	1.94	2.01	2.10
87.50°	1.80	1.61	1.88	1.83	1.95	1.67	1.57	1.52	1.46	1.31	1.60	1.68	2.17	1.51	1.48	1.17	1.80
90.00°	2.05	1.79	1.65	1.69	1.68	1.64	1.51	1.55	1.68	1.35	1.37	1.74	1.92	1.59	1.47	1.37	2.05
92.50°	2.34	2.12	1.43	1.70	1.57	1.75	1.63	1.61	1.93	1.39	1.17	1.74	1.71	1.67	1.46	1.63	2.34
95.00°	2.10	2.03	1.47	1.64	1.48	1.58	1.67	1.53	1.99	1.44	1.46	1.64	1.59	1.60	1.40	1.88	2.10
97.50°	1.86	1.89	1.52	1.54	1.41	1.38	1.69	1.47	2.05	1.50	1.72	1.56	1.52	1.54	1.42	2.12	1.86
100.00°	1.95	1.84	1.32	1.44	1.46	1.55	1.62	1.68	2.07	1.62	1.67	1.49	1.53	1.53	1.63	2.04	1.95

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%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	2318	2318	2318	2318	2263	2263	2263	2263	2160	2160	2160	2065	2065	2065	1979	1979	1979	1938
	1	2224	2177	2134	2095	2176	2134	2096	2061	2053	2023	1996	1980	1956	1935	1912	1894	1877	1855
	2	2134	2052	1984	1927	2091	2018	1956	1904	1954	1904	1861	1896	1855	1820	1841	1809	1781	1774
	3	2048	1941	1859	1793	2011	1914	1839	1778	1863	1800	1749	1816	1764	1720	1772	1729	1693	1696
	4	1967	1843	1752	1683	1934	1821	1737	1672	1780	1708	1652	1741	1681	1632	1705	1654	1612	1624
	5	1891	1755	1659	1589	1861	1737	1648	1581	1702	1626	1567	1671	1605	1553	1641	1584	1539	1556
	6	1820	1675	1577	1508	1793	1660	1568	1502	1631	1551	1492	1605	1535	1481	1580	1519	1471	1493
	7	1752	1602	1504	1436	1728	1589	1497	1432	1565	1484	1424	1543	1470	1416	1522	1458	1409	1434
	8	1689	1535	1438	1372	1668	1525	1433	1369	1504	1422	1363	1485	1411	1357	1467	1401	1351	1379
	9	1630	1474	1379	1314	1610	1465	1374	1312	1448	1365	1307	1431	1356	1303	1416	1348	1298	1328
	10	1574	1418	1324	1262	1557	1410	1320	1260	1395	1313	1257	1381	1306	1253	1367	1299	1249	1280

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	189.3 fc	2.8 ft
6.5 ft	135.5 fc	3.3 ft
7.5 ft	101.8 fc	3.8 ft
8.0 ft	89.5 fc	4.0 ft
10.0 ft	57.3 fc	5.0 ft
12.0 ft	39.8 fc	6.0 ft
14.0 ft	29.2 fc	7.0 ft
16.0 ft	22.4 fc	8.0 ft
20.0 ft	14.3 fc	10.0 ft
24.0 ft	9.9 fc	12.0 ft
28.0 ft	7.3 fc	14.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	543379	543379	543379
45.00°	3356	2864	3512
55.00°	1786	1753	1696
65.00°	2673	2231	2422
75.00°	1571	1625	1858
85.00°	2289	2496	2852

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	3.4	4.3	3.8	4.7	5.0	3.4	4.3	3.8	4.6	5.0
	3H	6.1	6.9	6.5	7.2	7.6	6.0	6.8	6.4	7.2	7.5
	4H	6.5	7.3	6.9	7.6	8.0	6.5	7.2	6.9	7.6	8.0
	6H	6.8	7.5	7.2	7.9	8.3	6.8	7.5	7.2	7.8	8.3
	8H	6.9	7.6	7.4	8.0	8.4	7.0	7.6	7.5	8.1	8.5
	12H	7.1	7.7	7.6	8.1	8.6	7.3	7.9	7.8	8.3	8.8
4H	2H	4.3	5.1	4.7	5.4	5.8	4.1	4.9	4.5	5.2	5.6
	3H	6.9	7.5	7.3	7.9	8.3	6.7	7.3	7.1	7.7	8.1
	4H	7.4	7.9	7.8	8.4	8.8	7.2	7.7	7.6	8.2	8.6
	6H	7.8	8.2	8.2	8.7	9.2	7.6	8.1	8.1	8.5	9.0
	8H	8.0	8.4	8.5	8.9	9.3	7.9	8.4	8.4	8.8	9.3
	12H	8.2	8.6	8.7	9.1	9.6	8.3	8.7	8.8	9.2	9.7
8H	4H	7.5	7.9	8.0	8.4	8.9	7.3	7.7	7.8	8.2	8.6
	6H	8.0	8.4	8.5	8.9	9.4	7.9	8.2	8.4	8.7	9.2
	8H	8.3	8.6	8.9	9.2	9.7	8.3	8.6	8.9	9.2	9.7
	12H	8.8	9.0	9.3	9.5	10.1	8.9	9.2	9.5	9.7	10.3
12H	4H	7.5	7.8	8.0	8.3	8.8	7.2	7.6	7.8	8.1	8.6
	6H	8.0	8.3	8.6	8.8	9.4	7.9	8.2	8.4	8.7	9.2
	8H	8.5	8.7	9.0	9.2	9.8	8.5	8.7	9.0	9.2	9.8

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0