

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01442_M-30L

Test Date

11/21/2022

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	1752
Efficacy	98.42 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	0.47

Full Beam Angle

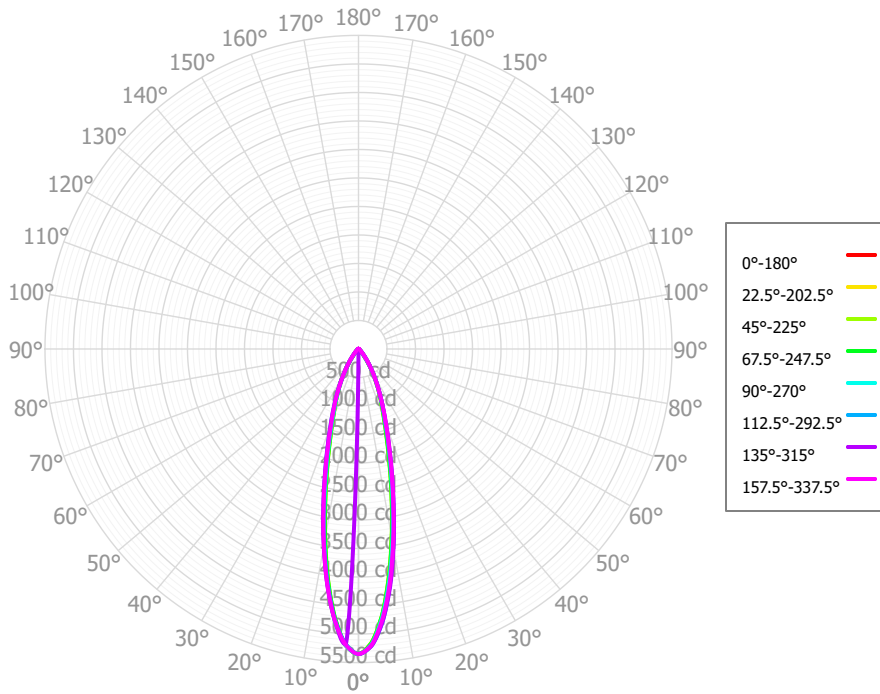
0° - 180°	26°
90° - 270°	26°

IES File Header Contents

Keyword	Value
TEST	SP-01442_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/21/2022
ISSUEDATE	12/01/2022
LUMCAT	CK0407PC 30L 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	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 ND xx SO xx MW

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	412.79	23.56%	90.00° - 100.00°	2.02	0.12%
10.00° - 20.00°	606.33	34.61%	100.00° - 110.00°	2.06	0.12%
20.00° - 30.00°	410.04	23.41%	100.00° - 120.00°	4.02	0.23%
30.00° - 40.00°	188.03	10.73%	120.00° - 130.00°	1.70	0.10%
40.00° - 50.00°	60.30	3.44%	130.00° - 140.00°	1.63	0.09%
50.00° - 60.00°	30.21	1.72%	140.00° - 150.00°	1.42	0.08%
60.00° - 70.00°	19.15	1.09%	150.00° - 160.00°	1.07	0.06%
70.00° - 80.00°	9.32	0.53%	160.00° - 170.00°	0.65	0.04%
80.00° - 90.00°	2.91	0.17%	170.00° - 180.00°	0.21	0.01%
0.00° - 90.00°	1739.08	99.27%	0.00° - 180.00°	1751.80	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°	5349.49	5349.49	5349.49	5349.49	5349.49	5349.49	0.49	5349.49	5349.49	5349.49	5349.49	5349.49	5349.49	5349.49	5349.49	5349.49	5349.49
2.50°	5179.06	5159.68	5168.24	5166.93	5188.87	5180.94	5182.61	5194.43	5201.74	5199.13	5194.31	5193.67	5206.35	5211.09	5214.52	5199.31	5179.06
5.00°	4730.60	4709.12	4704.50	4706.19	4737.29	4767.58	4773.67	4780.97	4770.10	4767.90	4744.87	4734.76	4785.48	4810.19	4810.01	4769.73	4730.60
7.50°	4107.39	4054.91	4046.74	4069.77	4113.70	4151.28	4179.45	4182.49	4153.94	4110.14	4086.44	4101.97	4156.80	4197.28	4224.70	4169.51	4107.39
10.00°	3414.81	3362.60	3348.09	3361.37	3427.50	3481.30	3508.04	3496.63	3442.24	3394.39	3363.17	3377.47	3457.07	3501.95	3536.35	3484.83	3414.81
12.50°	2759.78	2700.85	2678.67	2695.56	2766.52	2819.52	2852.34	2826.33	2762.64	2701.16	2678.70	2697.06	2765.03	2828.02	2848.90	2823.47	2759.78
15.00°	2191.10	2128.56	2100.34	2119.95	2188.38	2251.42	2273.34	2241.81	2171.55	2117.32	2093.93	2117.43	2179.00	2238.68	2268.95	2241.57	2191.10
17.50°	1727.71	1672.35	1639.56	1664.08	1730.42	1788.15	1803.61	1763.41	1703.48	1655.96	1649.39	1663.20	1717.77	1759.31	1787.42	1772.02	1727.71
20.00°	1376.95	1332.33	1306.63	1321.90	1378.96	1430.26	1436.12	1405.70	1352.22	1321.95	1315.16	1325.31	1357.76	1389.50	1419.39	1410.33	1376.95
22.50°	1100.73	1074.17	1059.61	1071.08	1114.74	1146.52	1150.96	1129.10	1090.16	1079.89	1074.17	1075.25	1094.11	1116.96	1132.61	1127.04	1100.73
25.00°	886.21	872.68	873.01	873.63	898.41	915.73	920.08	904.36	886.16	883.09	882.97	878.19	880.42	892.71	904.99	901.62	886.21
27.50°	699.67	697.66	702.68	701.37	711.80	717.71	719.05	710.31	705.93	713.92	709.38	704.33	704.73	709.34	713.84	711.75	699.67
30.00°	539.97	535.53	544.43	544.03	545.75	545.23	546.84	542.31	548.16	552.89	549.59	545.23	540.70	548.04	554.54	551.43	539.97
32.50°	400.60	396.70	399.58	398.99	403.51	405.32	406.89	407.68	406.26	407.53	400.29	397.12	406.86	415.28	421.36	414.98	400.60
35.00°	289.61	278.50	278.06	276.40	286.61	288.07	296.99	294.57	290.76	283.42	276.72	276.52	290.24	302.69	309.39	303.16	289.61
37.50°	202.32	188.44	181.55	184.66	198.41	206.42	212.65	210.39	200.76	188.68	181.72	185.98	203.18	214.70	223.73	215.57	202.32
40.00°	138.10	125.70	120.59	120.93	133.72	144.46	152.79	151.31	139.10	124.18	115.82	125.91	139.49	152.79	158.02	153.47	138.10
42.50°	97.73	86.98	83.16	81.19	92.65	105.50	111.69	108.90	96.00	86.25	83.77	87.80	99.36	108.25	116.13	108.12	97.73
45.00°	69.82	65.18	60.88	60.94	70.18	79.08	86.49	84.53	72.19	63.79	59.37	64.84	73.71	79.63	86.36	79.18	69.82
47.50°	56.78	50.91	46.49	48.94	53.30	61.96	68.59	63.85	57.27	49.92	49.71	51.42	58.29	60.48	62.29	61.79	56.78
50.00°	44.50	42.41	40.76	41.41	45.57	48.79	54.74	53.07	47.10	41.50	40.32	42.58	45.39	48.43	50.19	47.85	44.50
52.50°	36.00	36.75	36.10	35.60	37.33	40.04	44.59	44.84	39.54	35.38	36.26	38.08	38.70	38.70	41.30	39.35	36.00
55.00°	31.06	31.74	32.00	29.97	31.44	32.41	36.53	36.99	31.42	31.23	32.89	32.19	32.33	33.30	35.32	32.18	31.06
57.50°	25.62	27.42	28.37	26.14	26.83	28.88	31.83	31.35	29.35	27.89	29.23	29.58	27.38	30.35	30.97	28.52	25.62
60.00°	21.11	24.52	24.28	23.79	23.28	26.34	28.81	26.83	25.51	25.32	25.57	24.77	24.79	27.18	27.49	25.09	21.11
62.50°	17.52	21.91	20.46	19.49	19.69	23.67	25.70	22.77	21.80	22.64	22.39	22.02	24.03	23.72	24.58	22.26	17.52
65.00°	16.22	18.45	17.28	16.04	16.30	20.12	21.71	20.79	19.49	19.97	21.04	19.80	21.83	19.95	20.84	20.42	16.22
67.50°	14.39	14.01	14.27	13.37	13.62	16.59	17.90	18.69	17.14	17.33	18.19	17.59	19.06	17.68	17.23	17.34	14.39
70.00°	11.89	11.68	11.33	11.02	11.19	13.18	14.18	15.49	14.79	14.39	14.20	15.00	15.82	15.56	14.29	13.78	11.89
72.50°	9.56	10.27	9.11	8.77	9.05	10.82	11.61	12.51	12.07	11.29	11.31	12.16	12.77	12.66	11.37	10.39	9.56
75.00°	7.35	7.68	7.00	7.67	7.18	9.88	9.18	9.85	9.37	9.27	8.72	9.78	10.41	9.80	8.48	7.02	7.35
77.50°	5.69	4.78	5.33	6.76	5.54	7.75	6.88	7.40	6.84	7.49	6.98	7.54	7.92	7.11	6.19	5.71	5.69
80.00°	4.32	3.56	3.69	5.06	4.16	4.46	4.63	5.18	4.50	5.37	5.34	5.33	5.12	4.74	4.53	4.44	4.32
82.50°	3.34	2.60	2.83	3.30	2.94	2.76	3.29	3.73	3.16	3.21	3.76	3.12	3.02	3.22	3.46	3.07	3.34
85.00°	2.50	2.14	2.03	2.67	2.25	2.24	2.09	2.88	2.06	2.37	2.23	2.36	2.14	2.23	2.85	1.88	2.50
87.50°	2.10	1.72	2.09	2.08	1.79	2.12	1.95	2.22	1.75	1.61	1.74	1.76	1.66	2.25	2.39	1.98	2.10
90.00°	1.80	1.93	2.10	1.94	1.80	2.23	1.92	1.68	1.55	1.70	1.33	1.92	1.69	2.35	2.02	2.02	1.80
92.50°	1.69	2.09	1.82	1.83	1.94	1.96	2.41	1.50	1.60	1.81	1.62	2.10	1.70	2.56	1.78	1.80	1.69
95.00°	1.61	1.72	1.63	1.88	1.65	1.54	2.70	1.50	1.58	2.19	1.86	1.90	1.68	2.43	1.61	1.74	1.61
97.50°	1.75	1.45	1.78	1.93	1.27	1.65	2.36	1.79	1.46	2.43	1.88	1.73	1.84	1.92	1.71	2.15	1.75
100.00°	1.91	1.81	1.89	2.02	1.48	1.91	2.06	2.19	1.43	1.98	1.91	1.88	2.13	1.65	1.89	2.43	1.91

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	2082	2082	2082	2082	2033	2033	2033	2033	1939	1939	1939	1854	1854	1854	1776	1776	1776	1739
	1	1994	1949	1909	1872	1950	1910	1874	1841	1837	1809	1783	1770	1748	1727	1709	1692	1676	1657
	2	1908	1830	1766	1712	1869	1799	1741	1692	1742	1694	1654	1688	1650	1617	1639	1608	1581	1576
	3	1827	1726	1648	1586	1792	1701	1630	1573	1655	1595	1546	1611	1562	1521	1571	1531	1496	1501
	4	1751	1634	1548	1483	1720	1614	1535	1474	1576	1508	1455	1540	1483	1437	1507	1459	1420	1432
	5	1680	1552	1462	1396	1652	1535	1452	1390	1504	1432	1376	1474	1412	1363	1447	1394	1351	1369
	6	1614	1478	1387	1322	1589	1464	1379	1317	1438	1363	1307	1414	1348	1298	1391	1333	1288	1310
	7	1552	1411	1320	1257	1530	1400	1314	1253	1378	1301	1246	1357	1289	1239	1338	1278	1232	1256
	8	1494	1351	1261	1199	1474	1341	1256	1196	1322	1245	1191	1305	1236	1185	1288	1226	1180	1207
	9	1440	1296	1207	1147	1423	1287	1203	1145	1271	1195	1141	1256	1187	1137	1242	1179	1133	1161
	10	1390	1245	1158	1101	1374	1238	1155	1099	1224	1148	1096	1211	1141	1092	1198	1135	1089	1118

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	176.8 fc	2.5 ft
6.5 ft	126.6 fc	3.0 ft
7.5 ft	95.1 fc	3.4 ft
8.0 ft	83.6 fc	3.7 ft
10.0 ft	53.5 fc	4.6 ft
12.0 ft	37.1 fc	5.5 ft
14.0 ft	27.3 fc	6.4 ft
16.0 ft	20.9 fc	7.3 ft
20.0 ft	13.4 fc	9.1 ft
24.0 ft	9.3 fc	11.0 ft
28.0 ft	6.8 fc	12.8 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	507721	507721	507721
45.00°	9372	8172	9420
55.00°	5140	5295	5203
65.00°	3642	3881	3659
75.00°	2693	2567	2634
85.00°	2724	2207	2450

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	9.4	10.4	9.8	10.7	11.1	9.7	10.7	10.1	11.0	11.4
	3H	10.6	11.5	11.0	11.8	12.2	11.1	12.0	11.5	12.3	12.7
	4H	11.0	11.8	11.4	12.1	12.5	11.6	12.3	12.0	12.7	13.1
	6H	11.1	11.9	11.6	12.3	12.7	11.8	12.5	12.2	12.9	13.3
	8H	11.2	11.9	11.7	12.3	12.7	11.9	12.5	12.3	12.9	13.4
	12H	11.3	11.9	11.7	12.3	12.8	11.9	12.5	12.3	12.9	13.4
4H	2H	9.9	10.7	10.3	11.0	11.4	10.3	11.1	10.7	11.4	11.8
	3H	11.2	11.9	11.7	12.3	12.7	11.8	12.4	12.2	12.8	13.3
	4H	11.6	12.2	12.1	12.6	13.1	12.3	12.9	12.8	13.4	13.8
	6H	11.9	12.4	12.4	12.9	13.3	12.7	13.2	13.2	13.7	14.1
	8H	12.0	12.4	12.5	12.9	13.4	12.7	13.2	13.2	13.7	14.2
	12H	12.1	12.5	12.6	13.0	13.5	12.8	13.2	13.3	13.7	14.2
8H	4H	11.7	12.2	12.2	12.7	13.1	12.5	12.9	13.0	13.4	13.9
	6H	12.1	12.4	12.6	13.0	13.5	12.9	13.3	13.4	13.8	14.3
	8H	12.2	12.5	12.8	13.1	13.6	13.0	13.3	13.6	13.9	14.4
	12H	12.4	12.7	12.9	13.2	13.8	13.1	13.4	13.7	13.9	14.5
12H	4H	11.7	12.1	12.2	12.6	13.1	12.4	12.8	13.0	13.3	13.8
	6H	12.1	12.4	12.6	12.9	13.4	12.9	13.2	13.5	13.7	14.3
	8H	12.3	12.5	12.8	13.1	13.6	13.1	13.3	13.6	13.9	14.4

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0