

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407SQPC 30L 35K ND xx SO xx MW
Nom. 4.5" Diam x 7"H Square Cylinder, Narrow Beam

Test Number

SP-01450_M-30L

Test Date

11/29/2022

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	1263
Efficacy	70.96 lm/W

Luminous Dimensions

0° - 180° Size	0.2
90° - 270° Size	0.2
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.46
Two luminaires, plane 90°	0.48
Four luminaires	0.52

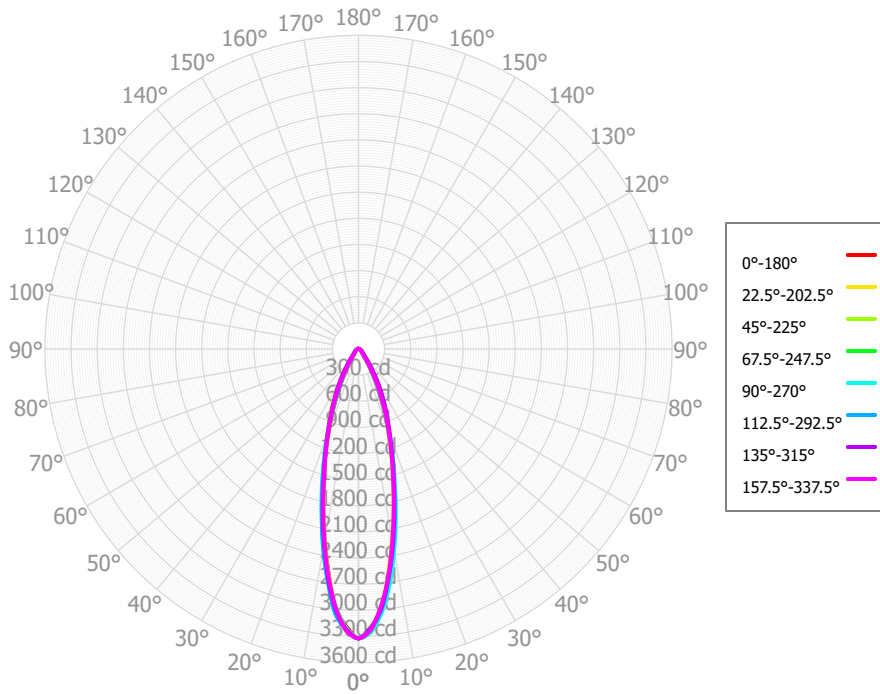
Full Beam Angle

0° - 180°	28°
90° - 270°	29°

IES File Header Contents

Keyword	Value
TEST	SP-01450_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/29/2022
ISSUEDATE	12/1/2022
LUMCAT	CK0407SQPC 30L 35K ND xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Narrow Beam
OTHER	Solite 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	CCT Output Multipliers: 27K x 0.xx, 30K x 0.xx, 40K x 1.xx
OTHER	This report prepared by Spectrum Lighting
_CRI	80
_CCTMULT	27K x 0.95, 30K x 0.97, 40K x 1.03

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	264.34	20.93%	90.00° - 100.00°	1.79	0.14%
10.00° - 20.00°	430.70	34.10%	100.00° - 110.00°	1.84	0.15%
20.00° - 30.00°	295.24	23.37%	100.00° - 120.00°	3.52	0.28%
30.00° - 40.00°	122.65	9.71%	120.00° - 130.00°	1.56	0.12%
40.00° - 50.00°	52.90	4.19%	130.00° - 140.00°	1.40	0.11%
50.00° - 60.00°	41.09	3.25%	140.00° - 150.00°	1.20	0.09%
60.00° - 70.00°	28.29	2.24%	150.00° - 160.00°	0.91	0.07%
70.00° - 80.00°	13.62	1.08%	160.00° - 170.00°	0.56	0.04%
80.00° - 90.00°	3.12	0.25%	170.00° - 180.00°	0.18	0.01%
0.00° - 90.00°	1251.95	99.12%	0.00° - 180.00°	1263.08	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°	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73	3321.73
2.50°	3200.35	3214.49	3220.32	3254.36	3248.72	3231.86	3223.77	3237.55	3192.37	3212.41	3212.99	3221.70	3213.33	3207.51	3213.43	3229.18	3200.35
5.00°	3010.68	2969.98	3007.29	3025.91	3042.65	3052.99	3005.72	2987.35	3000.20	2985.20	2980.14	2986.60	2992.91	3007.38	2994.16	2966.41	3010.68
7.50°	2620.12	2622.84	2656.96	2710.67	2732.35	2697.36	2664.06	2637.97	2615.32	2622.43	2636.87	2662.93	2668.97	2660.85	2640.19	2637.84	2620.12
10.00°	2235.77	2223.12	2282.11	2311.52	2351.34	2331.30	2262.02	2258.51	2232.81	2250.18	2241.11	2297.51	2319.16	2291.29	2270.11	2238.11	2235.77
12.50°	1877.55	1864.15	1885.51	1933.88	1979.05	1944.99	1891.23	1867.57	1876.52	1870.08	1877.84	1913.84	1952.94	1933.58	1885.88	1872.81	1877.55
15.00°	1538.93	1520.39	1552.16	1571.90	1611.19	1592.64	1531.30	1551.70	1532.43	1545.31	1525.71	1587.27	1620.70	1576.82	1562.47	1535.57	1538.93
17.50°	1256.52	1254.05	1261.50	1276.74	1307.47	1289.02	1265.00	1255.25	1255.62	1255.41	1270.47	1278.11	1304.53	1302.56	1279.12	1260.15	1256.52
20.00°	995.78	1007.23	1040.43	1018.23	1027.07	1026.66	1020.77	1030.94	992.54	1020.49	1037.20	1040.89	1043.75	1033.71	1058.89	1022.42	995.78
22.50°	779.22	809.13	854.03	814.65	807.34	809.42	843.60	818.25	778.00	810.98	865.19	817.71	801.84	834.62	869.77	821.27	779.22
25.00°	584.76	618.60	698.65	633.20	602.41	627.39	675.60	648.67	579.63	636.03	701.36	647.34	614.04	642.84	712.76	636.70	584.76
27.50°	424.02	472.92	554.48	494.14	454.78	474.40	543.96	482.42	420.64	472.56	565.05	482.60	438.42	496.42	567.02	485.19	424.02
30.00°	293.88	330.45	432.21	366.81	315.67	353.89	414.98	362.93	287.04	351.39	430.79	371.46	325.52	361.20	443.46	344.40	293.88
32.50°	198.76	240.00	315.25	276.17	233.09	253.71	321.03	247.14	198.99	239.44	325.40	263.78	220.63	268.30	325.20	247.28	198.76
35.00°	133.88	153.45	234.54	191.82	154.61	184.40	230.27	180.29	132.65	171.70	224.21	198.71	164.55	188.28	244.31	159.38	133.88
37.50°	95.44	115.93	159.16	143.70	116.55	129.26	174.30	119.01	95.29	109.52	165.42	137.55	111.49	142.04	168.63	118.47	95.44
40.00°	71.03	81.70	123.57	98.70	80.42	98.96	123.20	93.08	70.32	85.26	112.15	107.55	89.62	105.10	130.64	83.01	71.03
42.50°	55.84	67.56	90.61	83.08	68.15	76.84	98.81	70.66	57.99	63.10	88.60	80.99	69.19	85.69	95.20	70.48	55.84
45.00°	50.19	55.73	78.50	68.34	57.08	66.69	77.71	62.05	51.96	58.50	69.23	70.28	63.23	71.17	81.67	59.08	50.19
47.50°	49.24	52.50	66.75	61.78	53.01	59.10	68.19	55.01	50.78	54.12	64.08	61.13	57.32	63.58	68.62	55.63	49.24
50.00°	49.41	50.12	59.14	55.46	49.19	52.84	59.59	52.12	49.32	51.75	58.43	56.78	51.65	56.61	61.07	52.29	49.41
52.50°	49.98	49.97	52.03	50.77	46.29	46.74	53.20	49.12	47.71	49.14	51.62	52.21	46.93	50.29	53.88	49.89	49.98
55.00°	48.22	48.43	47.90	46.16	43.17	42.43	47.56	45.88	44.90	45.31	45.48	47.14	45.43	45.35	48.62	47.02	48.22
57.50°	45.90	44.29	43.66	41.92	39.48	38.21	43.22	42.09	41.59	41.37	40.55	41.93	42.61	41.56	43.06	41.90	45.90
60.00°	41.02	39.45	38.99	37.84	35.72	35.00	38.33	37.50	37.79	37.05	35.82	36.50	36.64	36.67	36.41	37.24	41.02
62.50°	35.78	33.64	34.17	34.20	31.85	31.72	32.72	33.35	33.84	33.04	31.38	31.93	31.24	31.13	30.99	34.01	35.78
65.00°	29.05	28.41	28.95	30.12	27.84	27.78	28.49	29.71	28.85	29.72	26.95	28.40	26.83	26.88	28.57	30.42	29.05
67.50°	22.31	23.79	24.90	25.17	23.62	23.84	25.67	25.29	23.67	25.93	22.54	24.22	22.67	23.22	25.81	26.02	22.31
70.00°	19.97	19.77	22.99	21.12	19.66	19.91	22.23	20.23	18.49	21.31	18.81	19.45	18.80	19.84	22.45	21.72	19.97
72.50°	17.38	16.22	19.83	18.42	15.97	16.02	18.31	16.23	13.31	16.93	15.59	15.30	14.68	16.56	18.56	17.59	17.38
75.00°	12.22	12.75	14.93	14.65	12.30	12.26	14.53	12.88	10.84	12.86	12.71	11.58	10.33	12.26	13.98	13.25	12.22
77.50°	7.50	9.32	10.62	9.67	8.64	8.79	10.82	9.72	8.43	9.12	10.01	8.44	7.40	7.75	10.15	8.65	7.50
80.00°	5.26	6.46	6.91	6.10	5.70	5.98	7.16	6.65	5.95	5.69	6.78	5.59	5.55	5.04	7.10	5.38	5.26
82.50°	3.29	3.84	4.33	3.76	3.21	3.71	3.53	4.29	3.63	3.47	3.33	3.64	3.81	2.53	4.59	3.36	3.29
85.00°	2.30	2.77	2.63	2.66	1.92	2.33	2.35	2.17	2.55	2.16	2.12	2.02	2.13	1.95	2.52	2.21	2.30
87.50°	1.65	2.18	1.81	2.37	1.16	1.50	1.88	1.85	1.67	1.52	1.56	1.65	1.40	1.47	1.66	1.70	1.65
90.00°	1.85	1.83	1.50	2.11	1.22	1.37	1.64	1.91	1.71	1.26	1.61	1.60	1.07	1.63	1.50	1.50	1.85
92.50°	1.87	1.54	1.58	1.87	1.53	1.31	1.43	1.80	1.75	1.27	1.77	1.57	1.27	1.78	1.38	1.45	1.87
95.00°	1.59	1.72	1.82	1.61	1.73	1.31	1.54	1.67	1.77	1.39	1.80	1.54	1.63	1.83	1.28	1.51	1.59
97.50°	1.52	1.96	2.12	1.34	1.90	1.47	1.67	1.60	1.72	1.59	1.81	1.64	1.72	1.87	1.74	1.60	1.52
100.00°	1.73	1.98	2.43	1.33	1.59	1.75	1.84	1.53	1.53	1.82	1.88	1.75	1.76	1.83	2.38	1.68	1.73

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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	1501	1501	1501	1501	1465	1465	1465	1465	1397	1397	1397	1335	1335	1335	1279	1279	1252
	1	1432	1397	1366	1338	1399	1368	1341	1315	1315	1293	1273	1267	1249	1233	1222	1208	1183
	2	1364	1304	1255	1213	1335	1282	1237	1198	1239	1202	1171	1200	1170	1144	1164	1140	1117
	3	1301	1223	1163	1115	1275	1205	1150	1106	1171	1125	1087	1139	1101	1068	1109	1078	1057
	4	1243	1153	1087	1037	1220	1138	1077	1030	1110	1058	1017	1084	1040	1004	1060	1022	991
	5	1189	1091	1022	972	1169	1079	1015	967	1055	1000	957	1034	986	948	1013	972	939
	6	1140	1036	966	916	1121	1026	960	913	1006	949	906	988	937	899	971	927	892
	7	1093	986	917	868	1077	978	912	866	961	903	860	946	894	855	931	885	850
	8	1051	942	873	826	1036	934	869	824	920	862	820	907	855	816	895	848	812
	9	1011	901	834	789	998	895	831	787	883	825	784	872	819	781	861	813	778
	10	974	865	799	755	962	859	796	754	849	791	751	839	786	749	829	781	747

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	109.8 fc	2.8 ft
6.5 ft	78.6 fc	3.3 ft
7.5 ft	59.1 fc	3.8 ft
8.0 ft	51.9 fc	4.0 ft
10.0 ft	33.2 fc	5.0 ft
12.0 ft	23.1 fc	6.0 ft
14.0 ft	16.9 fc	7.0 ft
16.0 ft	13.0 fc	8.0 ft
20.0 ft	8.3 fc	10.0 ft
24.0 ft	5.8 fc	12.0 ft
28.0 ft	4.2 fc	14.0 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	893870	893870	893870
45.00°	19102	29875	21721
55.00°	22621	22474	20255
65.00°	18499	18434	17725
75.00°	12703	15527	12787
85.00°	7089	8127	5923

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	18.1	19.2	18.5	19.5	19.8	17.6	18.6	18.0	19.0	19.3
	3H	19.4	20.3	19.8	20.6	21.0	19.0	19.9	19.4	20.2	20.6
	4H	19.8	20.6	20.2	21.0	21.4	19.3	20.2	19.8	20.6	21.0
	6H	19.9	20.7	20.3	21.1	21.5	19.5	20.3	19.9	20.7	21.1
	8H	19.9	20.6	20.3	21.0	21.5	19.5	20.3	20.0	20.7	21.1
	12H	19.9	20.6	20.3	21.0	21.4	19.5	20.2	20.0	20.6	21.1
4H	2H	18.5	19.4	18.9	19.7	20.1	18.0	18.9	18.4	19.2	19.7
	3H	20.0	20.7	20.4	21.1	21.5	19.6	20.3	20.0	20.7	21.1
	4H	20.5	21.1	20.9	21.5	22.0	20.0	20.7	20.5	21.1	21.6
	6H	20.7	21.2	21.2	21.7	22.2	20.3	20.8	20.8	21.3	21.8
	8H	20.7	21.2	21.2	21.7	22.2	20.3	20.8	20.8	21.3	21.8
	12H	20.7	21.1	21.2	21.6	22.1	20.3	20.8	20.8	21.3	21.8
8H	4H	20.6	21.1	21.1	21.6	22.1	20.2	20.7	20.7	21.2	21.7
	6H	20.9	21.3	21.4	21.8	22.3	20.5	20.9	21.1	21.4	22.0
	8H	21.0	21.3	21.5	21.8	22.4	20.6	21.0	21.2	21.5	22.0
	12H	21.0	21.3	21.5	21.8	22.4	20.7	21.0	21.2	21.5	22.1
12H	4H	20.6	21.0	21.1	21.5	22.0	20.2	20.6	20.7	21.1	21.6
	6H	20.9	21.2	21.4	21.7	22.3	20.5	20.9	21.1	21.4	21.9
	8H	21.0	21.3	21.5	21.8	22.4	20.6	20.9	21.2	21.4	22.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0