

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CK0407SQPC 30L 35K XW xx NL xx MW
Nom. 4.5" Diam x 7"H Square Cylinder, Xtra Wide Beam

Test Number

SP-01453_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	1452
Efficacy	81.59 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.91
Two luminaires, plane 90°	0.92
Four luminaires	0.94

Full Beam Angle

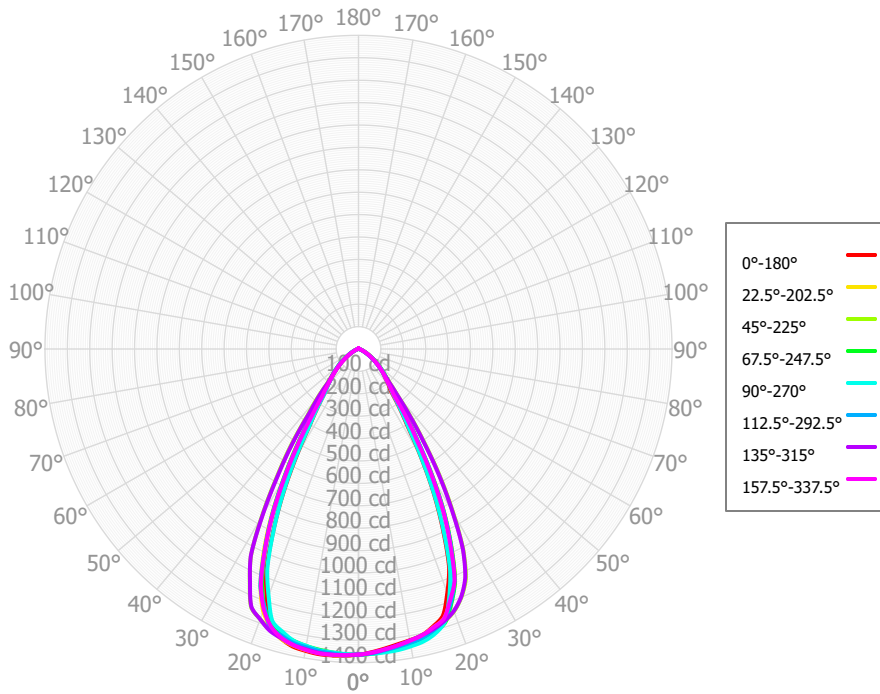
0° - 180°	56°
90° - 270°	56°

IES File Header Contents

Keyword	Value
TEST	SP-01453_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/26/2022
ISSUEDATE	11/22/2022
LUMCAT	CK0407SQPC 30L 35K XW xx NL xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Xtra Wide Beam
OTHER	No lens, Matte White finish
OTHER	56 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°	131.17	9.03%	90.00° - 100.00°	1.89	0.13%
10.00° - 20.00°	367.32	25.29%	100.00° - 110.00°	1.89	0.13%
20.00° - 30.00°	447.96	30.84%	100.00° - 120.00°	3.75	0.26%
30.00° - 40.00°	254.33	17.51%	120.00° - 130.00°	1.67	0.11%
40.00° - 50.00°	127.03	8.75%	130.00° - 140.00°	1.49	0.10%
50.00° - 60.00°	70.71	4.87%	140.00° - 150.00°	1.23	0.08%
60.00° - 70.00°	28.90	1.99%	150.00° - 160.00°	0.92	0.06%
70.00° - 80.00°	10.14	0.70%	160.00° - 170.00°	0.56	0.04%
80.00° - 90.00°	3.09	0.21%	170.00° - 180.00°	0.20	0.01%
0.00° - 90.00°	1440.66	99.19%	0.00° - 180.00°	1452.37	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°	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67	1364.67
2.50°	1355.13	1362.30	1360.49	1362.13	1362.64	1367.30	1370.43	1368.02	1371.98	1372.13	1368.40	1364.31	1363.55	1359.84	1358.36	1356.91	1355.13
5.00°	1342.85	1350.94	1351.21	1356.11	1359.67	1363.89	1370.10	1370.67	1373.34	1371.27	1365.31	1359.88	1360.14	1350.68	1346.92	1346.69	1342.85
7.50°	1330.58	1337.43	1340.76	1348.17	1356.02	1359.69	1368.17	1370.58	1373.99	1368.98	1360.02	1354.19	1356.51	1341.48	1335.10	1335.41	1330.58
10.00°	1320.50	1323.50	1328.11	1338.53	1348.10	1352.04	1361.27	1363.76	1368.35	1364.36	1353.61	1346.80	1345.96	1332.13	1322.45	1322.82	1320.50
12.50°	1309.36	1309.43	1314.07	1328.16	1337.91	1344.13	1353.29	1353.05	1360.35	1355.09	1346.88	1335.08	1334.80	1320.22	1309.11	1309.97	1309.36
15.00°	1283.50	1287.99	1297.84	1307.34	1317.02	1325.38	1336.61	1334.30	1337.71	1339.27	1331.80	1318.35	1308.06	1299.78	1294.47	1287.85	1283.50
17.50°	1250.79	1264.59	1275.99	1282.92	1279.71	1305.20	1318.58	1299.39	1300.12	1303.83	1314.84	1282.27	1276.08	1267.86	1274.18	1264.48	1250.79
20.00°	1159.46	1199.90	1246.87	1210.99	1183.67	1227.47	1284.28	1236.99	1195.78	1245.31	1283.74	1227.40	1173.93	1205.68	1244.87	1195.01	1159.46
22.50°	1057.43	1126.63	1200.08	1125.72	1069.02	1145.34	1248.23	1139.01	1076.01	1144.26	1250.33	1126.24	1064.62	1119.49	1198.04	1121.80	1057.43
25.00°	894.22	985.81	1133.55	983.26	902.12	990.27	1146.56	989.22	903.75	1001.33	1148.71	987.42	899.39	980.38	1127.93	973.75	894.22
27.50°	729.61	835.10	1014.36	828.66	733.85	833.55	1041.21	828.55	730.75	842.05	1039.85	831.41	733.41	830.89	1010.53	822.63	729.61
30.00°	559.11	669.53	845.89	663.53	562.38	662.25	856.08	654.66	555.65	668.91	861.85	663.37	563.41	662.64	839.00	655.98	559.11
32.50°	406.91	502.62	680.03	496.81	417.39	497.66	670.42	497.80	407.19	511.17	679.51	508.75	409.32	505.97	671.63	491.66	406.91
35.00°	315.89	380.06	516.30	379.24	322.92	372.45	512.19	358.26	318.45	364.35	524.50	361.92	321.03	366.66	508.24	371.67	315.89
37.50°	241.00	259.66	384.36	266.76	251.98	262.57	359.16	267.36	248.80	276.00	371.37	278.24	245.95	267.45	376.60	258.64	241.00
40.00°	208.74	221.19	273.82	227.51	218.12	221.43	272.93	219.12	214.19	223.17	283.63	224.71	212.94	219.80	270.42	218.46	208.74
42.50°	180.00	183.51	209.07	192.08	188.95	184.13	192.83	182.98	183.47	186.01	199.60	188.79	182.98	183.00	204.25	180.78	180.00
45.00°	158.81	159.69	169.86	169.07	166.12	159.96	162.81	155.71	158.85	156.70	167.92	159.94	161.01	157.86	165.68	159.56	158.81
47.50°	138.30	136.30	142.85	146.22	143.22	136.57	134.02	132.14	135.00	134.33	137.39	137.92	139.22	135.76	137.31	138.62	138.30
50.00°	119.04	117.92	121.62	124.74	120.25	115.35	112.00	110.82	112.14	114.79	116.23	118.07	117.79	116.40	114.79	119.06	119.04
52.50°	100.15	99.62	101.96	103.44	99.37	94.65	90.76	90.58	91.00	94.49	95.60	98.18	96.61	97.28	96.00	99.65	100.15
55.00°	81.83	81.85	82.91	84.49	80.47	75.14	72.65	70.89	71.79	73.94	78.05	78.26	75.85	78.33	78.98	80.77	81.83
57.50°	65.79	64.80	66.23	66.01	63.40	58.34	56.12	56.24	55.71	58.13	61.32	62.46	58.98	62.00	63.24	63.76	65.79
60.00°	52.69	51.49	50.26	51.29	47.82	46.53	44.75	43.72	42.58	43.58	48.00	47.44	47.91	47.35	47.99	52.18	52.69
62.50°	41.33	39.22	38.60	37.53	36.26	35.68	34.32	33.51	32.76	33.96	35.65	37.17	37.74	37.14	36.91	41.02	41.33
65.00°	31.84	31.01	27.98	28.89	27.44	26.35	26.34	24.11	25.55	25.32	26.41	27.52	28.71	29.38	27.13	30.87	31.84
67.50°	23.88	23.37	21.35	21.21	20.83	18.99	19.51	18.92	19.53	19.99	18.79	21.53	21.75	22.35	21.33	22.35	23.88
70.00°	17.28	17.43	15.43	17.33	15.51	14.21	15.09	14.90	14.33	15.15	15.47	15.85	16.95	15.66	16.50	17.06	17.28
72.50°	12.91	12.41	11.90	13.47	12.16	10.37	11.28	11.54	10.74	12.02	12.27	12.40	13.04	11.53	12.93	12.54	12.91
75.00°	10.29	9.67	8.67	9.71	9.76	7.57	8.54	8.32	8.05	9.05	9.36	9.03	9.92	8.34	9.60	9.25	10.29
77.50°	7.84	7.25	6.43	6.74	7.35	5.82	6.23	6.52	6.50	7.07	6.70	7.17	7.43	6.67	7.25	6.86	7.84
80.00°	5.51	5.48	4.26	5.74	4.94	5.07	4.57	4.94	5.45	5.13	4.51	5.31	5.42	5.46	5.02	5.69	5.51
82.50°	3.63	3.92	3.07	4.64	3.30	3.92	3.25	3.35	4.15	3.43	2.94	3.61	3.76	3.81	3.54	4.40	3.63
85.00°	2.00	2.73	1.93	3.31	1.92	2.47	2.36	1.75	2.73	1.80	2.29	2.04	2.33	2.05	2.11	2.97	2.00
87.50°	1.59	1.89	2.01	2.38	1.70	1.72	1.86	1.99	2.07	1.67	1.96	1.82	1.96	1.83	1.93	2.13	1.59
90.00°	1.74	1.59	2.07	2.16	1.77	1.45	1.78	2.31	1.64	1.56	2.02	1.61	2.16	1.85	1.78	1.86	1.74
92.50°	1.65	1.55	1.84	2.04	1.69	1.43	1.69	1.93	1.57	1.69	1.96	1.47	2.03	1.87	1.76	1.74	1.65
95.00°	1.47	1.85	1.61	2.06	1.57	1.55	1.60	1.55	1.59	1.80	1.79	1.39	1.76	1.89	1.74	1.75	1.47
97.50°	1.71	1.89	1.48	1.98	1.54	1.70	1.73	1.63	1.76	1.79	1.67	1.59	1.58	1.76	1.86	1.81	1.71
100.00°	2.07	1.70	1.37	1.76	1.52	1.86	2.02	1.71	1.96	1.79	1.59	1.74	1.44	1.63	1.96	1.90	2.07

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	1726	1726	1726	1726	1685	1685	1685	1685	1607	1607	1607	1536	1536	1536	1471	1471	1471	1441
	1	1636	1592	1552	1516	1599	1559	1523	1491	1498	1469	1443	1441	1419	1397	1389	1372	1355	1343
	2	1545	1467	1402	1348	1511	1440	1382	1332	1391	1343	1301	1345	1306	1271	1303	1271	1242	1245
	3	1458	1355	1276	1213	1427	1334	1261	1202	1293	1232	1181	1256	1204	1161	1221	1178	1142	1154
	4	1376	1257	1169	1102	1348	1239	1157	1095	1205	1135	1080	1174	1114	1066	1145	1094	1052	1073
	5	1300	1169	1077	1009	1275	1154	1068	1004	1126	1051	993	1100	1034	983	1075	1019	973	999
	6	1230	1090	997	929	1207	1078	990	926	1054	976	918	1032	963	911	1011	951	904	933
	7	1165	1020	927	861	1144	1010	921	858	990	910	852	971	900	847	953	890	842	874
	8	1105	958	865	801	1086	948	860	799	931	851	794	915	843	790	899	835	786	821
	9	1050	901	810	748	1032	893	806	746	878	799	743	864	792	740	851	785	737	772
	10	999	850	761	701	983	843	757	700	830	751	697	817	745	695	806	740	692	728

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	45.1 fc	5.9 ft
6.5 ft	32.3 fc	6.9 ft
7.5 ft	24.3 fc	8.0 ft
8.0 ft	21.3 fc	8.6 ft
10.0 ft	13.6 fc	10.7 ft
12.0 ft	9.5 fc	12.8 ft
14.0 ft	7.0 fc	15.0 ft
16.0 ft	5.3 fc	17.1 ft
20.0 ft	3.4 fc	21.4 ft
24.0 ft	2.4 fc	25.7 ft
28.0 ft	1.7 fc	29.9 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	367230	367230	367230
45.00°	60437	64643	63217
55.00°	38393	38900	37751
65.00°	20277	17816	17471
75.00°	10700	9015	10152
85.00°	6168	5948	5937

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	20.2	21.4	20.6	21.7	22.0	19.8	20.9	20.2	21.2	21.6
	3H	20.7	21.7	21.1	22.0	22.4	20.2	21.2	20.6	21.5	21.9
	4H	20.8	21.7	21.2	22.1	22.5	20.3	21.2	20.7	21.6	22.0
	6H	20.8	21.7	21.3	22.1	22.5	20.3	21.2	20.8	21.6	22.0
	8H	20.8	21.6	21.3	22.0	22.5	20.3	21.1	20.8	21.5	22.0
	12H	20.8	21.6	21.3	22.0	22.4	20.3	21.1	20.8	21.5	21.9
4H	2H	20.3	21.2	20.7	21.6	22.0	19.8	20.7	20.3	21.1	21.5
	3H	20.9	21.6	21.3	22.0	22.5	20.4	21.1	20.8	21.5	21.9
	4H	21.0	21.7	21.5	22.1	22.6	20.5	21.2	20.9	21.6	22.1
	6H	21.1	21.7	21.6	22.1	22.6	20.6	21.2	21.1	21.6	22.1
	8H	21.1	21.6	21.6	22.1	22.6	20.6	21.1	21.1	21.6	22.1
	12H	21.1	21.6	21.6	22.1	22.6	20.6	21.1	21.1	21.6	22.1
8H	4H	21.0	21.5	21.4	21.9	22.4	20.5	21.0	20.9	21.4	21.9
	6H	21.1	21.5	21.6	22.0	22.5	20.6	21.0	21.1	21.5	22.0
	8H	21.1	21.5	21.7	22.0	22.6	20.6	21.0	21.2	21.6	22.1
	12H	21.2	21.5	21.7	22.0	22.6	20.7	21.0	21.2	21.5	22.1
12H	4H	20.9	21.4	21.4	21.9	22.4	20.4	20.9	20.9	21.4	21.9
	6H	21.1	21.4	21.6	21.9	22.5	20.6	20.9	21.1	21.4	22.0
	8H	21.1	21.5	21.7	22.0	22.6	20.6	21.0	21.2	21.5	22.1

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0