

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

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

Test Number

SP-01454_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	1290
Efficacy	72.47 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.87
Two luminaires, plane 90°	0.86
Four luminaires	0.89

Full Beam Angle

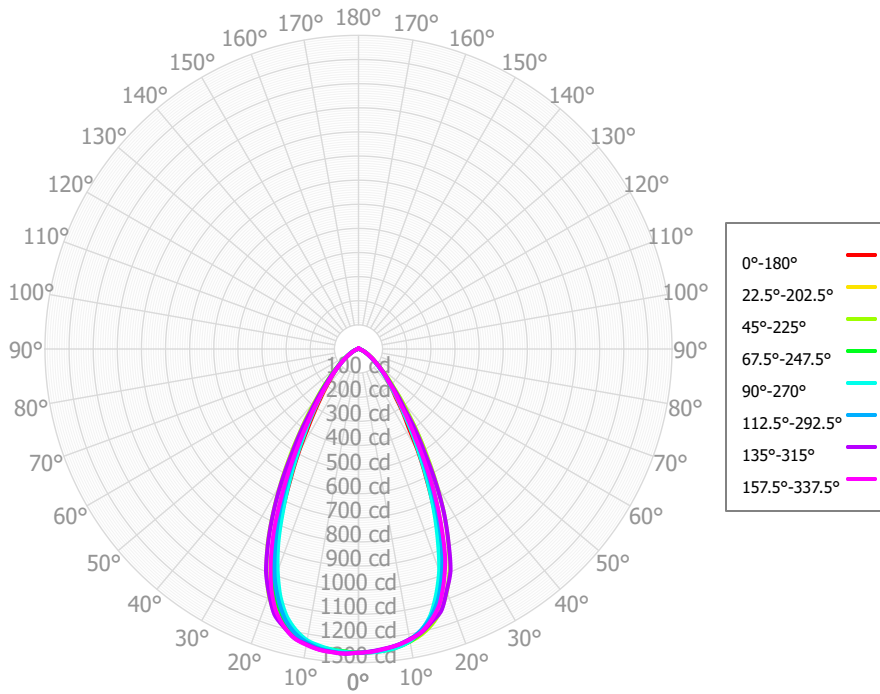
0° - 180°	54°
90° - 270°	54°

IES File Header Contents

Keyword	Value
TEST	SP-01454_M-30L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	11/28/2022
ISSUEDATE	12/1/2022
LUMCAT	CK0407SQPC 30L 35K XW xx SO xx MW
LUMINAIRE	Nom. 4.5" Diam x 7"H Square Cylinder, Xtra Wide Beam
OTHER	Solite lens, Matte White finish
OTHER	54 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°	120.83	9.37%	90.00° - 100.00°	2.29	0.18%
10.00° - 20.00°	324.29	25.14%	100.00° - 110.00°	2.26	0.17%
20.00° - 30.00°	365.39	28.33%	100.00° - 120.00°	4.34	0.34%
30.00° - 40.00°	234.15	18.15%	120.00° - 130.00°	1.86	0.14%
40.00° - 50.00°	125.16	9.70%	130.00° - 140.00°	1.68	0.13%
50.00° - 60.00°	63.72	4.94%	140.00° - 150.00°	1.40	0.11%
60.00° - 70.00°	29.06	2.25%	150.00° - 160.00°	1.04	0.08%
70.00° - 80.00°	10.85	0.84%	160.00° - 170.00°	0.62	0.05%
80.00° - 90.00°	3.05	0.24%	170.00° - 180.00°	0.22	0.02%
0.00° - 90.00°	1276.52	98.96%	0.00° - 180.00°	1289.98	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°	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64	1259.64
2.50°	1258.22	1257.03	1256.45	1257.32	1259.41	1262.42	1264.93	1263.82	1260.05	1260.46	1256.93	1255.15	1257.37	1255.49	1254.59	1256.72	1258.22
5.00°	1250.82	1251.50	1252.72	1255.25	1255.67	1259.82	1261.29	1262.13	1258.13	1258.74	1254.15	1251.25	1251.60	1248.76	1246.81	1248.44	1250.82
7.50°	1241.75	1240.30	1245.05	1246.30	1247.77	1251.62	1256.62	1257.61	1255.66	1253.69	1249.63	1245.23	1240.94	1237.76	1238.47	1238.13	1241.75
10.00°	1223.71	1225.88	1231.87	1230.88	1229.90	1235.22	1243.09	1245.77	1240.05	1243.43	1238.78	1232.33	1226.27	1222.23	1221.72	1224.29	1223.71
12.50°	1201.51	1201.41	1211.66	1202.35	1196.14	1208.71	1228.26	1228.42	1220.68	1220.79	1222.01	1209.92	1194.80	1194.95	1204.35	1202.27	1201.51
15.00°	1152.83	1170.71	1180.70	1160.35	1146.59	1165.11	1194.06	1191.42	1169.29	1187.03	1192.80	1172.15	1148.28	1153.91	1172.31	1164.54	1152.83
17.50°	1098.01	1111.30	1136.43	1099.92	1069.44	1098.55	1156.44	1138.27	1107.56	1123.87	1150.93	1111.13	1076.52	1093.20	1139.52	1113.21	1098.01
20.00°	993.72	1032.37	1069.85	1018.82	978.09	1014.78	1082.87	1057.01	1002.99	1046.98	1086.27	1032.98	980.08	1007.36	1068.36	1033.05	993.72
22.50°	886.52	926.15	988.48	921.16	859.40	905.70	1001.85	950.55	882.89	929.44	996.32	926.40	868.24	906.92	997.21	939.56	886.52
25.00°	749.32	799.65	879.83	803.23	739.90	791.15	887.32	828.92	750.03	808.17	890.71	813.92	739.96	786.09	882.72	814.26	749.32
27.50°	613.62	672.46	767.08	686.58	618.70	667.79	764.77	692.44	612.02	674.44	766.15	690.70	619.68	666.29	768.13	688.40	613.62
30.00°	498.77	544.73	646.02	571.62	505.97	552.57	640.20	566.27	497.61	546.85	645.30	574.76	508.69	548.07	640.37	561.10	498.77
32.50°	386.10	438.28	531.58	466.78	413.17	451.74	515.07	451.12	393.77	442.53	529.36	473.47	413.93	443.39	512.24	443.94	386.10
35.00°	319.91	350.73	432.02	376.75	329.76	361.88	415.64	356.30	319.32	346.07	426.94	382.70	339.80	361.41	413.11	356.91	319.91
37.50°	254.36	281.41	341.97	300.04	270.88	293.34	324.19	285.18	259.43	283.78	344.07	315.30	277.33	290.02	315.49	278.96	254.36
40.00°	216.08	229.74	275.63	244.68	217.67	233.38	259.00	227.47	214.36	225.71	272.73	254.21	231.05	238.12	255.37	231.39	216.08
42.50°	177.81	187.66	216.13	196.15	181.05	191.81	202.97	186.85	177.38	188.95	219.61	208.63	190.25	192.10	198.12	187.47	177.81
45.00°	152.58	155.70	175.61	159.62	147.22	154.33	164.04	152.09	148.78	153.84	173.99	167.19	157.76	157.98	163.70	157.44	152.58
47.50°	127.36	128.24	138.51	127.77	122.78	126.57	131.78	125.49	125.21	128.49	141.40	137.11	128.57	127.56	131.62	128.97	127.36
50.00°	107.70	105.98	112.11	105.14	99.91	101.58	106.73	101.97	103.50	104.06	112.52	109.69	104.87	105.42	108.61	107.26	107.70
52.50°	88.15	86.52	87.96	84.87	83.06	83.91	84.80	83.11	83.03	86.42	90.74	90.46	84.40	85.17	86.77	86.64	88.15
55.00°	72.18	70.57	71.78	69.72	67.08	67.68	68.14	66.75	66.40	69.27	71.51	72.33	69.88	69.59	70.06	71.57	72.18
57.50°	56.36	56.86	56.68	55.93	54.90	55.73	54.04	54.56	52.53	56.63	57.67	58.01	56.70	55.36	54.17	57.20	56.36
60.00°	47.17	46.23	45.90	45.41	43.56	44.59	43.27	43.36	41.78	44.33	45.23	44.95	46.24	44.87	44.16	47.00	47.17
62.50°	38.43	36.72	35.86	35.90	36.45	36.14	34.29	34.01	33.47	36.20	36.05	36.87	36.73	35.16	35.25	37.14	38.43
65.00°	29.98	28.89	29.30	29.08	29.44	28.34	27.59	25.99	26.75	28.18	27.96	29.26	29.35	27.86	28.53	29.81	29.98
67.50°	21.55	22.06	23.17	22.78	23.00	22.97	22.24	20.72	21.38	22.04	22.73	23.79	22.78	21.28	22.29	22.73	21.55
70.00°	17.23	16.88	19.35	17.99	16.81	17.71	18.07	15.88	16.62	15.98	17.83	18.59	18.25	17.20	17.88	17.88	17.23
72.50°	13.41	12.47	15.52	13.62	12.39	12.92	14.67	11.98	12.41	12.14	13.95	14.86	13.88	13.20	13.93	13.17	13.41
75.00°	9.48	9.44	11.50	10.67	8.24	8.54	11.15	8.68	8.96	8.32	10.27	11.18	9.96	9.51	10.86	10.02	9.48
77.50°	5.53	6.82	7.65	7.89	6.46	6.24	7.55	6.90	6.28	6.30	7.27	7.90	6.60	6.20	8.06	6.94	5.53
80.00°	3.96	5.01	5.21	5.76	4.72	4.10	4.97	5.10	4.28	4.27	4.62	4.84	4.96	4.66	5.60	4.97	3.96
82.50°	2.83	3.51	2.95	3.85	3.47	2.93	3.19	3.26	3.04	3.19	3.27	3.48	3.49	3.29	3.25	3.05	2.83
85.00°	2.25	2.67	2.50	2.93	2.28	1.92	2.25	1.89	2.25	2.11	2.18	2.23	2.64	2.81	2.44	2.74	2.25
87.50°	1.79	2.12	2.07	2.16	2.09	2.02	2.04	2.03	2.00	2.26	2.27	2.14	1.96	2.41	2.18	2.44	1.79
90.00°	1.76	2.28	1.87	2.12	1.91	2.11	2.06	2.13	1.85	2.45	2.31	2.04	1.94	2.46	2.02	2.27	1.76
92.50°	1.83	2.40	1.68	2.11	1.92	2.07	2.29	2.10	1.83	2.37	2.06	1.94	1.95	2.49	1.90	2.09	1.83
95.00°	2.06	2.40	1.69	2.30	1.93	2.04	2.24	2.10	1.94	2.28	1.85	1.86	2.06	2.27	2.09	2.05	2.06
97.50°	2.35	2.32	1.70	2.45	2.07	2.24	1.89	2.21	2.25	2.01	1.95	2.06	2.17	2.08	2.40	2.01	2.35
100.00°	2.22	2.01	1.90	2.35	2.22	2.41	1.79	2.31	2.39	1.72	2.04	2.26	2.30	2.14	2.37	2.08	2.22

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	1532	1532	1532	1532	1495	1495	1495	1495	1426	1426	1426	1362	1362	1362	1304	1304	1277
	1	1451	1411	1375	1343	1417	1382	1350	1320	1327	1301	1277	1276	1256	1237	1229	1213	1188
	2	1369	1299	1241	1192	1338	1275	1222	1177	1230	1187	1149	1189	1153	1122	1151	1122	1099
	3	1291	1198	1127	1070	1263	1179	1113	1061	1142	1087	1042	1109	1062	1023	1077	1039	1017
	4	1217	1110	1031	971	1192	1094	1021	964	1063	1001	951	1035	982	938	1009	964	944
	5	1150	1031	949	888	1126	1018	941	883	993	925	874	969	910	864	947	896	879
	6	1087	962	877	817	1066	950	871	814	929	859	807	909	847	800	890	836	820
	7	1029	899	815	756	1010	890	810	754	871	800	749	854	791	743	838	782	768
	8	976	844	760	703	959	835	756	701	820	748	697	805	741	693	791	733	721
	9	927	793	712	657	911	786	708	655	773	702	652	760	695	649	748	689	678
	10	882	748	669	615	867	742	666	614	730	660	612	719	655	609	708	650	639

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	41.6 fc	5.6 ft
6.5 ft	29.8 fc	6.7 ft
7.5 ft	22.4 fc	7.7 ft
8.0 ft	19.7 fc	8.2 ft
10.0 ft	12.6 fc	10.3 ft
12.0 ft	8.7 fc	12.3 ft
14.0 ft	6.4 fc	14.4 ft
16.0 ft	4.9 fc	16.4 ft
20.0 ft	3.1 fc	20.5 ft
24.0 ft	2.2 fc	24.6 ft
28.0 ft	1.6 fc	28.7 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	338965	338965	338965
45.00°	58067	66829	56027
55.00°	33863	33678	31471
65.00°	19089	18657	18747
75.00°	9855	11952	8565
85.00°	6950	7724	7047

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	19.8	20.9	20.1	21.2	21.6	19.7	20.8	20.1	21.2	21.5
	3H	20.3	21.3	20.7	21.7	22.1	20.4	21.4	20.8	21.7	22.1
	4H	20.5	21.4	20.9	21.8	22.2	20.5	21.4	20.9	21.8	22.2
	6H	20.5	21.3	20.9	21.7	22.1	20.5	21.4	21.0	21.8	22.2
	8H	20.5	21.2	20.9	21.7	22.1	20.5	21.3	21.0	21.7	22.2
	12H	20.4	21.2	20.9	21.6	22.1	20.5	21.3	21.0	21.7	22.1
4H	2H	19.9	20.8	20.3	21.2	21.6	19.8	20.8	20.3	21.1	21.6
	3H	20.6	21.4	21.1	21.8	22.2	20.7	21.4	21.1	21.8	22.3
	4H	20.8	21.5	21.3	21.9	22.4	20.8	21.5	21.3	21.9	22.4
	6H	20.9	21.5	21.4	21.9	22.4	20.9	21.5	21.4	22.0	22.5
	8H	20.9	21.4	21.4	21.9	22.4	20.9	21.5	21.4	21.9	22.4
	12H	20.9	21.3	21.4	21.8	22.3	20.9	21.4	21.4	21.9	22.4
8H	4H	20.8	21.4	21.3	21.8	22.3	20.8	21.4	21.3	21.8	22.3
	6H	20.9	21.4	21.5	21.9	22.4	21.0	21.4	21.5	21.9	22.4
	8H	21.0	21.3	21.5	21.9	22.4	21.0	21.4	21.5	21.9	22.4
	12H	21.0	21.3	21.5	21.9	22.5	21.0	21.4	21.6	21.9	22.5
12H	4H	20.8	21.3	21.3	21.8	22.3	20.8	21.3	21.3	21.8	22.3
	6H	20.9	21.3	21.5	21.8	22.4	20.9	21.3	21.5	21.8	22.4
	8H	21.0	21.3	21.5	21.8	22.4	21.0	21.3	21.5	21.8	22.4

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0