

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

4" Nom. Sq. x 12" H LED Cylinder XT Series, Narrow Beam
C0412SQXT-20L-xxK-ND-EX-GL-xx-MW

Test Number

SP-00628_9_M-20L

Test Date

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	19 W
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Lumen Output

Output Lumens	1437
Efficacy	75.63 lm/W

Luminous Dimensions

0° - 180° Size	0.18
90° - 270° Size	0.18
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.38
Two luminaires, plane 90°	0.38
Four luminaires	0.41

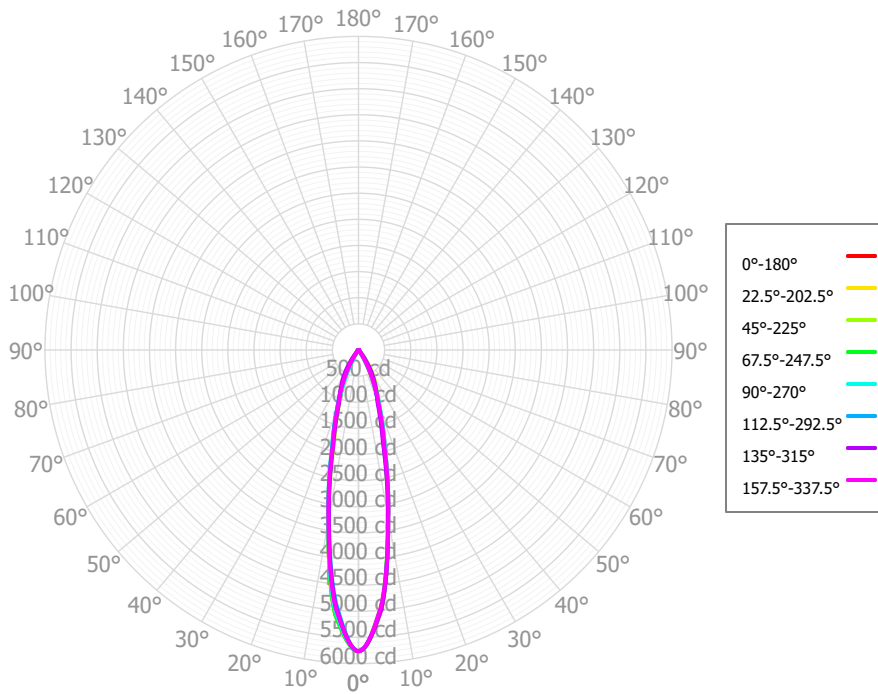
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-00628_9_M-20L
TESTLAB	VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	11/13/2017
UPDATE	11/1/2021
LUMINAIRE	4" Nom. Sq. x 12" H LED Cylinder XT Series, Narrow Beam
LUMCAT	C0412SQXT-20L-xxK-ND-EX-GL-xx-MW
OTHER	Matte White finish, Clear Glass lens
OTHER	2.16" Square Aperture
OTHER	22 Degree Beam Angle
LAMP	N/A
LAMPCAT	N/A, Min. 83 CRI
OTHER	Total Luminaire Watts is approximate
OTHER	LEDXT lumen output is the same for all available CCT's
OTHER	This report prepared by Spectrum Lighting

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	428.48	29.82%	90.00° - 100.00°	0.26	0.02%
10.00° - 20.00°	532.70	37.07%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	325.46	22.65%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	100.69	7.01%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	17.16	1.19%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	17.66	1.23%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	6.30	0.44%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	4.02	0.28%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	4.16	0.29%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	1436.63	99.98%	0.00° - 180.00°	1436.89	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°	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19	5763.19
5.00°	4993.09	4922.97	4971.38	4964.66	4945.70	4888.41	4940.11	4969.66	5076.79	5003.60	5087.25	5087.67	5025.45	4963.20	4983.61	4934.97	4993.09
10.00°	3254.22	3273.63	3218.33	3217.94	3265.17	3258.16	3267.27	3308.14	3316.44	3317.39	3284.75	3293.15	3326.26	3267.26	3253.71	3279.73	3254.22
15.00°	1947.90	1929.67	1827.83	1891.90	1962.31	1933.49	1860.91	1910.91	1939.88	1909.89	1806.81	1901.69	1981.08	1864.28	1793.63	1911.38	1947.90
20.00°	1172.47	1184.46	1106.15	1178.89	1216.87	1197.61	1099.75	1159.59	1179.29	1159.68	1069.22	1134.12	1165.28	1112.27	1065.11	1151.00	1172.47
25.00°	645.33	741.20	804.07	756.80	711.98	747.54	798.98	721.98	659.79	708.37	786.13	665.77	607.21	667.09	758.61	695.91	645.33
30.00°	256.12	378.91	563.37	400.11	313.51	387.76	552.62	365.89	254.03	345.96	512.81	316.15	227.59	330.26	505.08	335.44	256.12
35.00°	59.03	121.72	282.19	136.44	83.27	124.83	269.49	115.09	48.26	102.46	230.54	81.13	54.25	108.61	237.71	102.73	59.03
40.00°	20.81	27.96	88.54	26.86	19.71	30.76	77.76	28.64	19.09	25.63	56.40	23.55	19.80	28.11	71.11	26.87	20.81
45.00°	15.82	16.25	23.91	16.73	15.36	16.58	25.49	15.75	14.72	15.50	19.35	15.44	14.56	17.83	23.85	17.28	15.82
50.00°	15.78	17.36	22.12	18.92	16.43	18.76	19.54	18.02	14.70	17.50	17.92	17.97	16.30	15.78	21.90	17.41	15.78
55.00°	20.53	21.94	25.76	21.35	19.75	26.06	27.87	26.03	23.26	23.88	27.26	26.20	22.39	20.24	24.21	21.21	20.53
60.00°	13.99	12.81	14.76	13.30	10.60	15.21	16.49	14.34	12.95	14.50	14.74	13.41	13.24	13.32	16.50	12.40	13.99
65.00°	4.30	4.05	4.01	3.44	2.93	4.97	3.93	4.86	4.30	5.20	4.79	4.76	5.18	4.00	5.14	3.56	4.30
70.00°	2.74	2.42	3.38	3.39	2.86	2.98	3.70	4.66	4.34	3.74	3.88	3.79	3.58	2.53	2.33	2.23	2.74
75.00°	3.09	2.50	1.57	1.89	3.26	4.95	6.50	6.37	5.56	4.02	4.19	4.95	4.39	2.06	2.70	2.15	3.09
80.00°	1.47	2.46	2.52	2.58	2.18	5.11	6.58	7.59	7.34	6.16	5.59	6.78	6.96	2.21	2.25	2.41	1.47
85.00°	1.61	1.26	1.67	1.69	1.08	7.99	7.95	9.31	8.34	8.91	8.11	9.22	7.64	1.68	1.34	1.67	1.61
90.00°	2.37	1.34	1.91	1.40	2.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77	1.74	2.44	2.37
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	1711	1711	1711	1711	1671	1671	1671	1671	1596	1596	1596	1528	1528	1528	1466	1466	1437
	1	1645	1611	1580	1553	1610	1580	1553	1528	1522	1501	1481	1469	1453	1437	1421	1408	1396
	2	1582	1524	1476	1436	1552	1500	1457	1420	1455	1420	1390	1413	1385	1360	1374	1352	1332
	3	1524	1449	1391	1345	1497	1430	1377	1334	1394	1350	1314	1360	1324	1293	1329	1299	1274
	4	1469	1382	1319	1271	1445	1367	1308	1263	1338	1288	1249	1311	1269	1235	1285	1250	1221
	5	1417	1323	1257	1208	1397	1310	1249	1202	1286	1233	1192	1264	1218	1182	1243	1204	1172
	6	1369	1269	1202	1153	1351	1259	1196	1150	1239	1184	1142	1220	1172	1135	1203	1161	1128
	7	1324	1220	1153	1106	1308	1212	1148	1103	1195	1139	1097	1180	1130	1092	1165	1121	1087
	8	1282	1176	1109	1063	1267	1168	1105	1061	1154	1098	1057	1141	1090	1053	1129	1083	1049
	9	1242	1135	1069	1025	1228	1128	1066	1023	1117	1060	1020	1105	1054	1017	1095	1048	1014
	10	1204	1097	1032	990	1192	1092	1030	988	1081	1025	986	1072	1020	984	1063	1015	981

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	190.5 fc	2.2 ft
6.5 ft	136.4 fc	2.6 ft
7.5 ft	102.5 fc	3.0 ft
8.0 ft	90.0 fc	3.2 ft
10.0 ft	57.6 fc	4.1 ft
12.0 ft	40.0 fc	4.9 ft
14.0 ft	29.4 fc	5.7 ft
16.0 ft	22.5 fc	6.5 ft
20.0 ft	14.4 fc	8.1 ft
24.0 ft	10.0 fc	9.7 ft
28.0 ft	7.4 fc	11.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1914642	1914642	1914642
45.00°	7434	11235	7216
55.00°	11889	14922	11438
65.00°	3384	3150	2306
75.00°	3967	2017	4187
85.00°	6151	6347	4122

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	12.0	13.0	12.4	13.3	13.6	12.9	13.9	13.3	14.2	14.5
	3H	12.0	12.8	12.4	13.2	13.6	13.0	13.8	13.3	14.1	14.5
	4H	12.1	12.9	12.5	13.2	13.6	13.2	13.9	13.6	14.3	14.7
	6H	12.2	12.9	12.6	13.3	13.7	13.9	14.6	14.3	14.9	15.3
	8H	12.3	12.9	12.7	13.3	13.7	14.5	15.2	14.9	15.5	16.0
	12H	12.4	13.0	12.8	13.4	13.8	15.4	16.0	15.8	16.4	16.8
4H	2H	11.9	12.6	12.3	13.0	13.4	12.7	13.5	13.1	13.8	14.2
	3H	11.9	12.5	12.3	12.9	13.4	12.9	13.5	13.3	13.9	14.3
	4H	12.1	12.6	12.5	13.0	13.5	13.4	13.9	13.8	14.3	14.8
	6H	12.3	12.8	12.8	13.2	13.7	14.5	15.0	15.0	15.5	15.9
	8H	12.4	12.9	12.9	13.3	13.8	15.5	15.9	16.0	16.4	16.9
	12H	12.6	13.0	13.1	13.5	14.0	16.8	17.1	17.2	17.6	18.1
8H	4H	12.0	12.5	12.5	12.9	13.4	13.7	14.1	14.2	14.6	15.1
	6H	12.4	12.8	12.9	13.3	13.8	15.4	15.7	15.9	16.2	16.7
	8H	12.7	13.0	13.2	13.5	14.0	16.7	17.1	17.3	17.6	18.1
	12H	13.0	13.3	13.6	13.8	14.4	18.5	18.7	19.0	19.2	19.8
12H	4H	12.0	12.4	12.5	12.9	13.3	13.9	14.2	14.4	14.7	15.2
	6H	12.5	12.8	13.0	13.3	13.8	15.7	16.0	16.3	16.5	17.1
	8H	12.8	13.1	13.3	13.6	14.1	17.3	17.6	17.9	18.1	18.7

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0