

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, Medium Beam
C0412SQXT-13L-xxK-MD-EX-SO-xx-MW

Test Number

SP-00628_8_M-13L

Test Date

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

Summary of Results

Power

Input Watts	11.9 W
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Lumen Output

Output Lumens	790
Efficacy	66.4 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.6
Two luminaires, plane 90°	0.6
Four luminaires	0.69

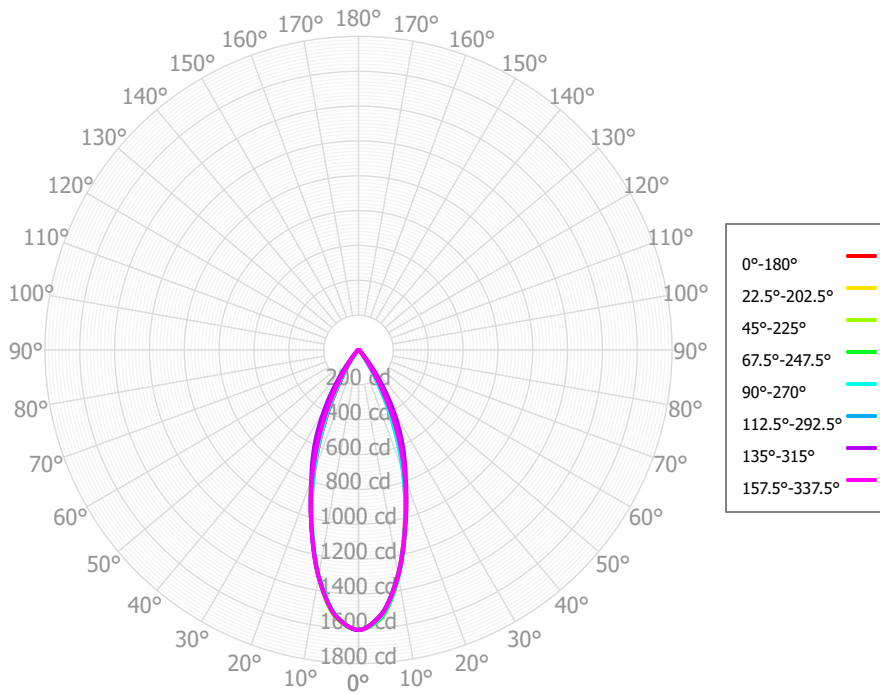
Full Beam Angle

0° - 180°	38°
90° - 270°	38°

IES File Header Contents

Keyword	Value
TEST	SP-00628_8_M-13L
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, Medium Beam
LUMCAT	C0412SQXT-13L-xxK-MD-EX-SO-xx-MW
OTHER	Matte White finish, Solite lens
OTHER	2.16" Square Aperture
OTHER	38.7 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, scaled from 20L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	145.40	18.40%	90.00° - 100.00°	0.63	0.08%
10.00° - 20.00°	282.38	35.74%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	235.61	29.82%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	91.16	11.54%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	19.92	2.52%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	6.70	0.85%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	3.40	0.43%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.54	0.32%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.47	0.31%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	789.56	99.92%	0.00° - 180.00°	790.18	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°	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06	1607.06
5.00°	1521.61	1536.94	1527.21	1540.73	1530.61	1529.98	1530.26	1530.19	1529.27	1539.02	1526.72	1536.34	1526.17	1522.31	1522.40	1525.60	1521.61
10.00°	1306.35	1317.33	1317.60	1323.93	1318.06	1321.49	1320.98	1321.73	1318.87	1324.15	1318.38	1322.96	1313.68	1309.69	1314.30	1313.17	1306.35
15.00°	1028.16	1032.87	1039.56	1034.53	1034.29	1045.17	1043.98	1046.55	1038.59	1044.05	1042.26	1040.10	1032.10	1032.40	1041.72	1034.63	1028.16
20.00°	752.88	775.17	791.76	771.08	744.80	771.31	792.89	778.32	748.52	772.17	792.22	772.06	745.99	772.17	794.52	778.86	752.88
25.00°	480.11	539.61	598.38	518.06	462.28	515.19	594.30	519.56	457.61	515.01	589.32	523.34	468.47	529.22	597.79	531.69	480.11
30.00°	237.27	308.35	399.43	283.38	221.61	284.19	386.13	282.94	213.30	280.48	382.22	291.28	231.94	296.76	401.17	290.05	237.27
35.00°	92.94	130.36	198.89	118.01	79.39	122.41	192.24	119.28	79.91	115.78	189.57	124.73	89.73	122.07	209.38	116.29	92.94
40.00°	38.77	48.06	69.24	43.28	34.54	46.66	72.87	46.64	35.41	43.96	69.56	46.88	35.83	44.05	82.62	44.78	38.77
45.00°	20.49	21.72	23.58	20.07	18.43	20.81	27.86	22.39	20.29	21.22	25.57	21.28	17.64	20.61	30.73	21.85	20.49
50.00°	11.06	10.87	11.28	11.79	11.52	11.62	13.44	11.83	12.09	11.73	12.27	11.72	10.33	10.69	15.03	12.05	11.06
55.00°	6.48	6.58	7.02	7.15	5.77	7.40	7.40	7.83	7.75	7.51	6.96	7.47	6.14	5.94	7.32	7.10	6.48
60.00°	4.14	4.54	4.62	4.41	3.85	4.69	4.98	5.67	5.21	4.88	4.54	4.58	4.37	3.75	3.74	4.79	4.14
65.00°	2.96	3.19	2.99	2.91	2.38	4.38	3.72	4.17	3.51	3.42	4.37	3.47	3.78	2.70	2.54	3.07	2.96
70.00°	1.86	1.95	2.06	1.85	1.96	2.65	3.11	3.34	3.64	3.45	3.20	2.87	3.30	1.91	1.43	2.04	1.86
75.00°	1.56	1.95	1.90	1.61	1.96	2.94	3.31	3.31	2.84	3.06	3.34	3.53	3.14	1.71	1.30	1.40	1.56
80.00°	1.21	0.78	1.12	1.11	1.04	3.01	2.66	3.66	3.29	3.59	3.86	3.22	3.35	1.43	1.03	1.04	1.21
85.00°	1.38	0.99	0.98	0.99	1.09	3.24	3.54	3.57	3.70	3.55	3.42	3.22	3.93	0.96	0.96	0.93	1.38
90.00°	0.00	0.00	0.00	0.00	0.00	4.71	4.66	4.56	4.60	4.83	4.40	4.61	4.24	0.00	0.00	0.00	0.00
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	941	941	941	941	919	919	919	919	878	878	878	840	840	840	806	806	790
	1	900	880	862	845	881	863	847	832	831	818	806	802	792	782	775	767	752
	2	862	827	798	773	845	813	787	765	788	766	748	765	747	732	743	729	715
	3	825	779	744	716	810	768	736	710	748	721	699	729	707	688	712	693	680
	4	790	737	698	668	776	728	692	664	711	681	656	696	670	649	682	660	648
	5	757	698	658	628	745	691	653	625	678	645	619	665	636	614	653	628	617
	6	726	664	622	592	715	658	619	590	646	612	586	636	605	582	626	599	589
	7	696	632	590	561	687	627	587	559	617	582	556	608	577	554	600	572	563
	8	669	603	561	533	660	599	559	532	590	555	530	583	551	527	576	547	538
	9	643	576	535	508	635	573	533	507	566	530	505	559	527	503	553	523	516
	10	619	552	511	485	612	548	510	484	542	507	483	537	504	481	531	502	494

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	53.1 fc	3.8 ft
6.5 ft	38.0 fc	4.5 ft
7.5 ft	28.6 fc	5.2 ft
8.0 ft	25.1 fc	5.5 ft
10.0 ft	16.1 fc	6.9 ft
12.0 ft	11.2 fc	8.3 ft
14.0 ft	8.2 fc	9.7 ft
16.0 ft	6.3 fc	11.0 ft
20.0 ft	4.0 fc	13.8 ft
24.0 ft	2.8 fc	16.6 ft
28.0 ft	2.0 fc	19.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	533898	533898	533898
45.00°	9626	11077	8658
55.00°	3752	4064	3340
65.00°	2328	2348	1872
75.00°	2006	2434	2516
85.00°	5256	3751	4166

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	6.5	7.4	6.8	7.7	8.0	6.7	7.6	7.0	7.9	8.2
	3H	7.2	8.0	7.6	8.3	8.7	7.9	8.7	8.2	9.0	9.4
	4H	7.6	8.3	8.0	8.7	9.1	8.8	9.6	9.2	9.9	10.3
	6H	7.9	8.6	8.4	9.0	9.4	10.0	10.7	10.5	11.1	11.5
	8H	8.2	8.9	8.7	9.3	9.7	10.9	11.5	11.3	11.9	12.3
	12H	8.8	9.4	9.2	9.8	10.2	12.0	12.6	12.4	13.0	13.4
4H	2H	6.5	7.3	6.9	7.7	8.0	7.1	7.8	7.5	8.2	8.6
	3H	7.5	8.1	7.9	8.5	8.9	8.6	9.2	9.0	9.7	10.1
	4H	8.0	8.6	8.5	9.0	9.5	10.0	10.5	10.4	10.9	11.4
	6H	8.5	9.0	9.0	9.5	10.0	11.5	12.0	12.0	12.4	12.9
	8H	8.9	9.4	9.4	9.8	10.3	12.5	12.9	12.9	13.4	13.8
	12H	9.6	10.0	10.1	10.5	11.0	13.7	14.1	14.2	14.6	15.1
8H	4H	8.2	8.6	8.6	9.1	9.5	10.6	11.1	11.1	11.5	12.0
	6H	8.8	9.2	9.3	9.7	10.2	12.6	12.9	13.1	13.4	13.9
	8H	9.3	9.6	9.9	10.2	10.7	13.8	14.1	14.3	14.6	15.1
	12H	10.2	10.5	10.8	11.0	11.6	15.3	15.6	15.8	16.1	16.7
12H	4H	8.2	8.6	8.7	9.0	9.5	10.8	11.2	11.3	11.7	12.2
	6H	8.9	9.2	9.4	9.7	10.2	13.0	13.3	13.5	13.7	14.3
	8H	9.5	9.8	10.0	10.3	10.8	14.3	14.6	14.9	15.1	15.7

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0