

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-13L-xxK-ND-EX-GL-xx-MW

Test Number

SP-00628_9_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	934
Efficacy	78.49 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

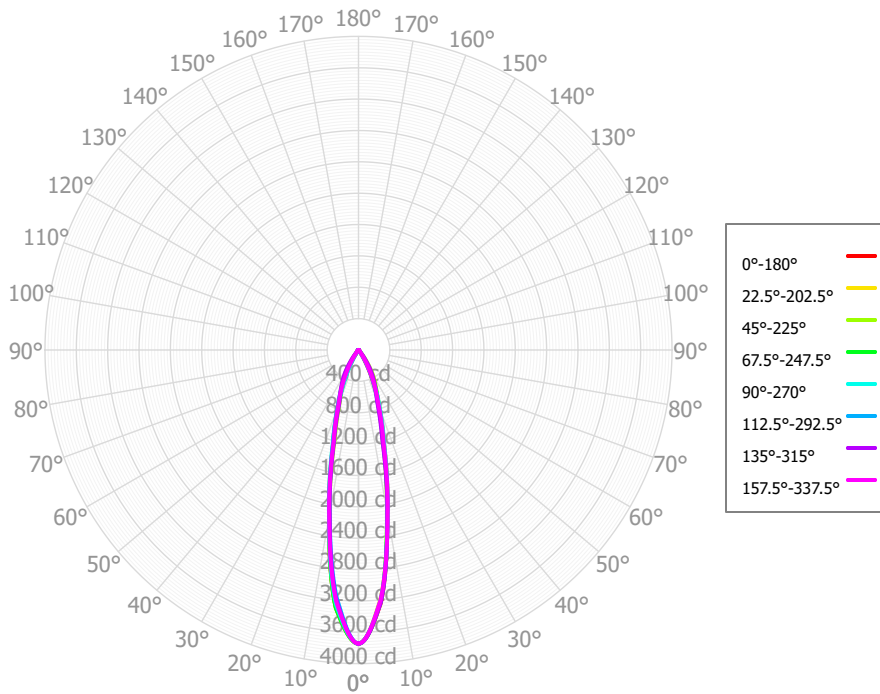
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-00628_9_M-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, Narrow Beam
LUMCAT	C0412SQXT-13L-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, scaled from 20L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	278.51	29.82%	90.00° - 100.00°	0.17	0.02%
10.00° - 20.00°	346.25	37.07%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	211.55	22.65%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	65.45	7.01%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	11.16	1.19%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	11.48	1.23%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	4.10	0.44%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.61	0.28%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.70	0.29%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	933.81	99.98%	0.00° - 180.00°	933.98	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°	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07	3746.07
5.00°	3245.51	3199.93	3231.40	3227.03	3214.70	3177.46	3211.07	3230.28	3299.91	3252.34	3306.71	3306.98	3266.54	3226.08	3239.35	3207.73	3245.51
10.00°	2115.24	2127.86	2091.91	2091.66	2122.36	2117.80	2123.72	2150.29	2155.69	2156.30	2135.09	2140.54	2162.07	2123.72	2114.91	2131.82	2115.24
15.00°	1266.13	1254.28	1188.09	1229.73	1275.50	1256.77	1209.59	1242.09	1260.92	1241.43	1174.43	1236.10	1287.70	1211.78	1165.86	1242.40	1266.13
20.00°	762.11	769.90	719.00	766.28	790.97	778.45	714.84	753.74	766.54	753.79	694.99	737.18	757.43	722.97	692.32	748.15	762.11
25.00°	419.46	481.78	522.65	491.92	462.79	485.90	519.34	469.29	428.86	460.44	510.98	432.75	394.69	433.61	493.10	452.34	419.46
30.00°	166.48	246.29	366.19	260.07	203.78	252.05	359.21	237.83	165.12	224.88	333.32	205.50	147.93	214.67	328.30	218.03	166.48
35.00°	38.37	79.12	183.43	88.69	54.13	81.14	175.17	74.81	31.37	66.60	149.85	52.73	35.26	70.59	154.51	66.78	38.37
40.00°	13.53	18.18	57.55	17.46	12.81	20.00	50.55	18.62	12.41	16.66	36.66	15.31	12.87	18.27	46.22	17.46	13.53
45.00°	10.29	10.56	15.54	10.88	9.98	10.78	16.57	10.24	9.57	10.08	12.58	10.03	9.46	11.59	15.51	11.23	10.29
50.00°	10.26	11.28	14.38	12.30	10.68	12.19	12.70	11.72	9.56	11.38	11.65	11.68	10.59	10.26	14.24	11.32	10.26
55.00°	13.34	14.26	16.75	13.87	12.84	16.94	18.11	16.92	15.12	15.52	17.72	17.03	14.55	13.16	15.73	13.78	13.34
60.00°	9.09	8.33	9.59	8.65	6.89	9.88	10.72	9.32	8.41	9.42	9.58	8.72	8.61	8.66	10.73	8.06	9.09
65.00°	2.80	2.64	2.60	2.24	1.91	3.23	2.56	3.16	2.79	3.38	3.11	3.10	3.37	2.60	3.34	2.31	2.80
70.00°	1.78	1.57	2.20	2.21	1.86	1.94	2.40	3.03	2.82	2.43	2.52	2.46	2.33	1.65	1.52	1.45	1.78
75.00°	2.01	1.62	1.02	1.23	2.12	3.22	4.22	4.14	3.61	2.61	2.73	3.22	2.85	1.34	1.75	1.40	2.01
80.00°	0.96	1.60	1.64	1.68	1.42	3.32	4.27	4.93	4.77	4.00	3.64	4.40	4.52	1.44	1.46	1.57	0.96
85.00°	1.05	0.82	1.08	1.10	0.70	5.19	5.17	6.05	5.42	5.79	5.27	5.99	4.97	1.09	0.87	1.09	1.05
90.00°	1.54	0.87	1.24	0.91	1.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	1.13	1.58	1.54
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%	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	1112	1112	1112	1112	1086	1086	1086	1086	1038	1038	1038	993	993	993	953	953	953	934
	1	1069	1047	1027	1009	1046	1027	1009	993	989	975	963	955	944	934	923	915	907	897
	2	1028	991	960	934	1009	975	947	923	946	923	903	918	900	884	893	879	866	862
	3	990	942	904	874	973	929	895	867	906	877	854	884	861	841	864	845	828	829
	4	955	899	857	826	940	888	850	821	869	837	812	852	825	803	835	813	794	798
	5	921	860	817	785	908	852	812	782	836	801	775	822	792	768	808	783	762	769
	6	890	825	781	750	878	818	777	747	805	769	742	793	762	738	782	755	733	742
	7	861	793	749	719	850	787	746	717	777	740	713	767	734	710	757	729	706	717
	8	833	764	721	691	823	759	718	690	750	713	687	742	709	684	734	704	682	693
	9	807	737	695	666	799	733	693	665	726	689	663	719	685	661	712	681	659	671
	10	783	713	671	643	775	709	669	643	703	666	641	697	663	639	691	660	638	651

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	123.8 fc	2.2 ft
6.5 ft	88.7 fc	2.6 ft
7.5 ft	66.6 fc	3.0 ft
8.0 ft	58.5 fc	3.2 ft
10.0 ft	37.5 fc	4.1 ft
12.0 ft	26.0 fc	4.9 ft
14.0 ft	19.1 fc	5.7 ft
16.0 ft	14.6 fc	6.5 ft
20.0 ft	9.4 fc	8.1 ft
24.0 ft	6.5 fc	9.7 ft
28.0 ft	4.8 fc	11.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	1244517	1244517	1244517
45.00°	4832	7303	4690
55.00°	7728	9699	7434
65.00°	2200	2048	1499
75.00°	2579	1311	2721
85.00°	3998	4126	2680

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	10.5	11.5	10.9	11.8	12.1	11.4	12.4	11.8	12.7	13.0
	3H	10.5	11.3	10.9	11.7	12.1	11.5	12.3	11.8	12.6	13.0
	4H	10.6	11.4	11.0	11.7	12.1	11.7	12.4	12.1	12.8	13.2
	6H	10.7	11.4	11.1	11.8	12.2	12.4	13.1	12.8	13.4	13.8
	8H	10.8	11.4	11.2	11.8	12.2	13.0	13.7	13.4	14.0	14.5
	12H	10.9	11.5	11.3	11.9	12.3	13.9	14.5	14.3	14.9	15.3
4H	2H	10.4	11.1	10.8	11.5	11.9	11.2	12.0	11.6	12.3	12.7
	3H	10.4	11.0	10.8	11.4	11.9	11.4	12.0	11.8	12.4	12.8
	4H	10.6	11.1	11.0	11.5	12.0	11.9	12.4	12.3	12.8	13.3
	6H	10.8	11.3	11.3	11.7	12.2	13.0	13.5	13.5	14.0	14.4
	8H	10.9	11.4	11.4	11.8	12.3	14.0	14.4	14.5	14.9	15.4
	12H	11.1	11.5	11.6	12.0	12.5	15.3	15.6	15.7	16.1	16.6
8H	4H	10.5	11.0	11.0	11.4	11.9	12.2	12.6	12.7	13.1	13.6
	6H	10.9	11.3	11.5	11.8	12.3	13.9	14.2	14.4	14.7	15.2
	8H	11.2	11.5	11.7	12.0	12.5	15.3	15.6	15.8	16.1	16.6
	12H	11.6	11.8	12.1	12.3	12.9	17.0	17.2	17.5	17.7	18.3
12H	4H	10.5	10.9	11.0	11.4	11.8	12.4	12.7	12.9	13.2	13.7
	6H	11.0	11.3	11.5	11.8	12.3	14.2	14.5	14.8	15.0	15.6
	8H	11.3	11.6	11.8	12.1	12.6	15.8	16.1	16.4	16.6	17.2

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0