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, Wide Beam
C0412SQXT-13L-xxK-WD-EX-SO-xx-MW

Test Number

SP-00628_14_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

Lumen Output

Output Lumens	831
Efficacy	69.86 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.73
Two luminaires, plane 90°	0.73
Four luminaires	0.78

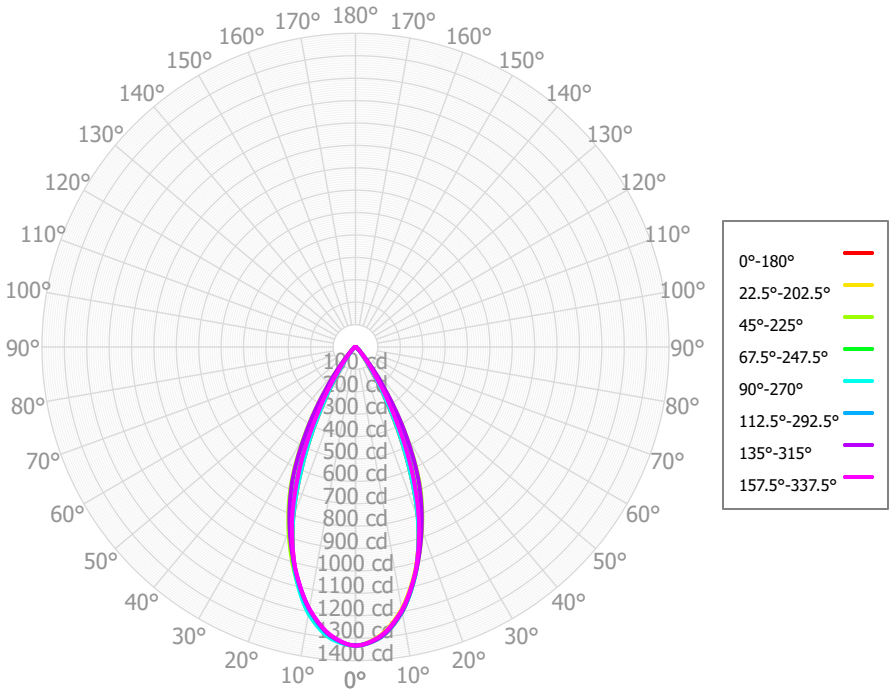
Full Beam Angle

0° - 180°	45°
90° - 270°	45°

IES File Header Contents

Keyword	Value
TEST	SP-00628_14_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, Wide Beam
LUMCAT	C0412SQXT-13L-xxK-WD-EX-SO-xx-MW
OTHER	Matte White finish, Solite lens
OTHER	2.16" Square Aperture
OTHER	47.3 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°	126.87	15.26%	90.00° - 100.00°	0.61	0.07%
10.00° - 20.00°	282.75	34.01%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	263.62	31.71%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	109.31	13.15%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	27.69	3.33%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	10.15	1.22%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	4.65	0.56%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	3.01	0.36%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.64	0.32%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	830.70	99.93%	0.00° - 180.00°	831.31	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°	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22	1333.22
5.00°	1301.27	1291.39	1298.51	1296.55	1301.44	1295.13	1293.39	1290.17	1298.44	1294.08	1298.81	1298.28	1305.31	1296.95	1299.55	1294.49	1301.27
10.00°	1201.92	1187.77	1193.99	1197.86	1201.92	1192.63	1187.39	1187.54	1199.32	1196.07	1198.40	1197.59	1209.56	1197.05	1198.15	1192.55	1201.92
15.00°	1038.09	1031.28	1038.97	1043.37	1041.91	1036.78	1033.21	1032.07	1039.64	1042.53	1047.74	1040.14	1044.07	1038.17	1041.26	1035.94	1038.09
20.00°	815.77	834.37	867.83	835.08	812.60	833.27	859.96	829.29	813.47	840.76	873.21	833.81	812.86	829.48	862.75	829.69	815.77
25.00°	529.69	597.71	680.62	582.03	528.67	586.25	671.96	580.57	531.96	595.93	682.68	585.35	528.62	585.09	671.43	579.53	529.69
30.00°	263.99	346.18	446.46	331.70	268.35	332.97	442.90	327.73	270.15	343.98	451.93	331.18	269.32	340.77	442.60	324.86	263.99
35.00°	106.44	156.78	218.75	149.17	111.74	150.54	230.79	146.70	112.76	156.91	234.00	147.47	111.43	156.72	222.51	143.36	106.44
40.00°	49.92	64.76	80.54	60.43	50.04	61.13	94.94	62.05	53.67	66.77	95.62	62.14	48.73	63.65	86.34	59.78	49.92
45.00°	27.50	31.44	33.30	29.23	28.25	30.34	38.44	31.28	30.35	34.47	38.99	30.98	27.75	29.84	35.06	29.84	27.50
50.00°	16.80	16.87	18.20	16.43	16.22	16.92	20.00	18.33	18.33	20.16	20.06	17.94	16.87	16.19	18.14	16.90	16.80
55.00°	9.57	10.34	10.72	10.17	10.44	10.23	11.80	11.56	11.63	12.04	13.00	11.57	9.55	9.27	10.09	9.60	9.57
60.00°	6.05	6.23	6.17	6.86	5.67	7.96	7.46	7.23	7.30	8.02	7.85	6.88	6.16	6.02	6.70	5.61	6.05
65.00°	3.84	3.16	3.91	3.97	3.51	5.73	5.31	4.92	5.13	5.49	5.29	5.44	4.36	3.71	3.49	3.26	3.84
70.00°	2.38	2.72	2.53	2.43	2.46	5.05	4.16	3.84	4.15	4.39	4.21	3.82	3.22	2.52	3.03	2.01	2.38
75.00°	1.72	1.91	1.79	2.03	1.90	4.11	3.84	3.21	3.92	4.62	3.72	3.71	3.38	1.88	2.27	1.67	1.72
80.00°	1.15	1.22	1.23	1.17	1.38	4.05	3.66	3.45	3.70	2.74	3.77	3.52	3.35	1.10	1.55	1.43	1.15
85.00°	1.11	0.91	1.01	0.84	1.25	4.60	4.12	3.86	3.78	3.90	4.22	3.57	3.71	1.22	1.21	0.94	1.11
90.00°	0.00	0.00	0.00	0.00	0.00	5.03	4.31	4.63	4.34	4.31	4.24	4.32	4.65	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.

	ρfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	ρcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	ρw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	990	990	990	990	966	966	966	966	923	923	923	884	884	884	848	848	848	831
	1	945	923	903	886	925	905	888	871	872	858	845	841	830	819	812	804	796	788
	2	903	864	833	806	884	850	821	797	823	800	780	799	780	763	776	761	747	746
	3	862	812	773	742	845	800	765	736	779	749	725	759	734	713	740	720	702	706
	4	823	765	722	689	808	755	716	685	738	704	677	721	693	669	706	682	662	669
RCR	5	786	722	677	644	773	714	673	641	700	664	636	686	655	630	674	646	625	635
	6	752	684	638	605	740	677	634	603	665	627	599	654	620	595	643	614	591	603
	7	719	648	602	570	709	643	600	569	633	594	566	623	589	563	614	583	560	574
	8	689	616	571	539	679	612	568	538	603	564	536	595	559	534	587	555	532	547
	9	660	587	542	511	652	583	540	511	575	536	509	568	533	507	562	529	506	521
	10	634	560	516	486	626	556	514	485	550	511	484	544	508	483	538	505	482	498

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	44.1 fc	4.6 ft
6.5 ft	31.6 fc	5.4 ft
7.5 ft	23.7 fc	6.2 ft
8.0 ft	20.8 fc	6.7 ft
10.0 ft	13.3 fc	8.3 ft
12.0 ft	9.3 fc	10.0 ft
14.0 ft	6.8 fc	11.6 ft
16.0 ft	5.2 fc	13.3 ft
20.0 ft	3.3 fc	16.6 ft
24.0 ft	2.3 fc	20.0 ft
28.0 ft	1.7 fc	23.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	442922	442922	442922
45.00°	12918	15646	13274
55.00°	5541	6211	6048
65.00°	3016	3077	2761
75.00°	2202	2292	2443
85.00°	4239	3837	4749

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	8.5	9.5	8.9	9.8	10.1	9.4	10.4	9.8	10.7	11.0
	3H	9.1	9.9	9.4	10.2	10.6	10.3	11.2	10.7	11.5	11.9
	4H	9.3	10.1	9.7	10.4	10.8	10.9	11.7	11.3	12.0	12.4
	6H	9.5	10.2	9.9	10.6	11.0	11.7	12.4	12.1	12.8	13.2
	8H	9.7	10.3	10.1	10.7	11.1	12.2	12.9	12.6	13.3	13.7
	12H	9.9	10.5	10.3	10.9	11.3	13.0	13.6	13.4	14.0	14.4
4H	2H	8.6	9.4	9.0	9.7	10.1	9.7	10.5	10.1	10.8	11.2
	3H	9.3	10.0	9.7	10.4	10.8	11.0	11.6	11.4	12.1	12.5
	4H	9.7	10.2	10.1	10.7	11.1	11.9	12.5	12.3	12.9	13.3
	6H	10.1	10.5	10.5	11.0	11.5	13.0	13.5	13.5	14.0	14.4
	8H	10.3	10.7	10.7	11.2	11.6	13.7	14.2	14.2	14.6	15.1
	12H	10.6	11.0	11.1	11.5	12.0	14.7	15.1	15.2	15.5	16.0
8H	4H	9.8	10.2	10.3	10.7	11.2	12.3	12.8	12.8	13.3	13.7
	6H	10.3	10.7	10.8	11.2	11.7	13.9	14.3	14.4	14.8	15.3
	8H	10.7	11.0	11.2	11.5	12.0	15.0	15.3	15.5	15.8	16.3
	12H	11.2	11.4	11.7	11.9	12.5	16.3	16.6	16.8	17.1	17.6
12H	4H	9.8	10.2	10.3	10.7	11.1	12.5	12.8	12.9	13.3	13.8
	6H	10.4	10.7	10.9	11.2	11.7	14.2	14.5	14.7	15.0	15.6
	8H	10.8	11.1	11.3	11.6	12.2	15.5	15.7	16.0	16.2	16.8

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0