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, Xtra Wide Beam
C0412SQXT-10L-xxK-XW-EX-SO-xx-MW

Test Number

SP-00628_2_M-10L

Test Date

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

Summary of Results

Power

Input Watts	8.3 W

Lumen Output

Output Lumens	647
Efficacy	77.98 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.87
Two luminaires, plane 90°	0.91
Four luminaires	0.9

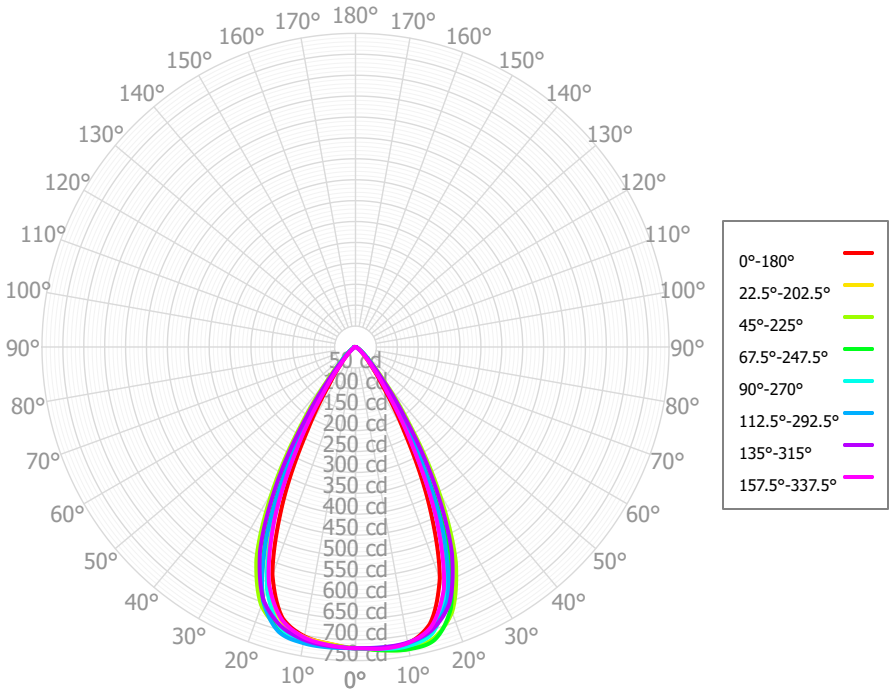
Full Beam Angle

0° - 180°	53°
90° - 270°	55°

IES File Header Contents

Keyword	Value
TEST	SP-00628_2_M-10L
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, Xtra Wide Beam
LUMCAT	C0412SQXT-10L-xxK-XW-EX-SO-xx-MW
OTHER	Matte White finish, Solite lens
OTHER	2.16" Square Aperture
OTHER	57.1 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°	72.91	11.26%	90.00° - 100.00°	0.52	0.08%
10.00° - 20.00°	192.43	29.73%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	216.13	33.39%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	107.70	16.64%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	35.07	5.42%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	12.70	1.96%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	4.91	0.76%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	2.72	0.42%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	2.16	0.33%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	646.73	99.92%	0.00° - 180.00°	647.25	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°	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63	720.63
5.00°	725.51	727.16	728.22	728.29	725.51	721.51	718.05	716.09	713.16	712.52	716.00	716.33	719.09	721.57	721.49	724.66	725.51
10.00°	720.31	727.84	733.61	734.17	726.37	719.28	711.19	705.51	702.79	704.58	710.53	714.18	715.39	719.83	717.94	719.40	720.31
15.00°	686.32	705.63	721.59	726.40	709.61	706.23	690.88	676.90	672.05	680.10	697.45	699.64	694.41	702.70	701.68	694.64	686.32
20.00°	589.57	632.05	675.29	666.53	627.62	646.66	643.74	604.47	580.81	612.08	658.34	644.46	618.50	643.40	655.00	617.82	589.57
25.00°	417.16	479.97	568.04	517.41	462.65	504.59	540.77	461.34	411.95	476.21	561.15	510.08	464.03	501.54	546.20	462.11	417.16
30.00°	231.95	291.75	398.22	322.15	276.71	315.79	375.30	278.80	227.57	300.37	396.63	324.87	282.59	315.36	375.96	271.87	231.95
35.00°	111.63	146.00	224.50	165.89	148.40	159.43	202.45	132.41	109.12	155.90	224.09	168.78	149.38	159.55	205.75	131.00	111.63
40.00°	57.31	69.92	108.01	86.35	82.45	80.33	89.03	58.98	56.76	75.67	106.97	84.15	80.45	77.86	95.46	63.68	57.31
45.00°	31.58	36.74	51.30	48.62	46.88	43.60	39.30	31.11	31.80	40.30	50.82	46.06	46.32	42.37	44.82	34.53	31.58
50.00°	18.91	20.92	26.11	27.33	26.67	25.08	20.70	18.05	18.85	22.93	26.29	26.16	27.22	25.13	23.99	20.03	18.91
55.00°	11.26	12.12	14.14	14.15	15.24	14.68	11.00	10.98	10.33	13.69	15.22	15.55	15.88	13.90	12.88	11.89	11.26
60.00°	6.62	7.25	8.07	7.71	8.08	8.71	6.76	6.71	6.50	8.21	8.45	9.25	9.56	7.30	6.77	6.51	6.62
65.00°	3.19	3.78	4.76	5.05	4.60	5.78	4.73	4.02	4.59	5.10	4.96	5.50	6.01	3.52	3.61	3.32	3.19
70.00°	1.94	2.40	2.63	3.02	2.98	3.93	3.83	3.41	4.08	4.09	4.62	4.02	4.73	2.15	2.27	2.04	1.94
75.00°	1.61	1.69	1.40	1.81	1.55	3.54	3.34	3.11	2.97	3.70	3.38	3.59	3.31	1.56	1.44	1.42	1.61
80.00°	1.09	1.19	1.31	1.14	0.96	3.14	2.73	2.73	3.20	3.51	3.56	2.90	3.18	1.12	1.10	1.12	1.09
85.00°	0.71	0.56	0.80	0.83	0.66	3.38	2.95	2.83	2.90	3.36	3.41	3.27	3.20	0.92	0.90	0.79	0.71
90.00°	0.00	0.00	0.00	0.00	0.00	3.45	3.53	3.75	3.91	3.80	3.23	4.09	4.44	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	770	770	770	770	752	752	752	752	719	719	719	688	688	688	660	660	660	647
	1	734	715	699	684	718	701	687	673	675	663	653	651	642	633	629	621	615	609
	2	697	666	639	617	683	654	631	610	633	614	597	614	598	584	596	583	572	572
	3	663	621	589	563	650	612	582	559	595	570	550	579	558	541	565	547	533	537
	4	630	581	545	518	618	574	541	515	560	531	509	547	522	503	535	514	497	504
RCR	5	599	545	507	480	588	539	504	478	527	497	473	516	490	469	506	483	465	475
	6	570	512	474	447	560	507	471	445	498	466	442	488	460	439	480	455	436	447
	7	542	483	444	417	534	479	442	416	470	438	414	463	433	412	455	429	410	422
	8	517	456	418	391	509	452	416	391	445	412	389	439	409	387	432	406	386	399
	9	493	431	394	368	486	428	392	368	422	389	366	416	387	365	411	384	364	378
	10	471	409	372	347	464	406	371	347	401	368	346	396	366	345	391	364	344	358

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	23.8 fc	5.6 ft
6.5 ft	17.1 fc	6.6 ft
7.5 ft	12.8 fc	7.6 ft
8.0 ft	11.3 fc	8.1 ft
10.0 ft	7.2 fc	10.2 ft
12.0 ft	5.0 fc	12.2 ft
14.0 ft	3.7 fc	14.2 ft
16.0 ft	2.8 fc	16.3 ft
20.0 ft	1.8 fc	20.3 ft
24.0 ft	1.3 fc	24.4 ft
28.0 ft	0.9 fc	28.5 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	239407	239407	239407
45.00°	14837	24100	22023
55.00°	6521	8190	8830
65.00°	2510	3738	3617
75.00°	2064	1803	1986
85.00°	2712	3034	2532

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	12.3	13.3	12.6	13.6	13.9
	3H	10.8	11.6	11.1	12.0	12.3	12.9	13.8	13.3	14.1	14.5
	4H	10.9	11.7	11.3	12.0	12.4	13.2	14.0	13.6	14.4	14.7
	6H	11.0	11.7	11.4	12.1	12.5	13.6	14.3	14.0	14.7	15.1
	8H	11.1	11.8	11.5	12.1	12.6	13.8	14.5	14.3	14.9	15.3
	12H	11.1	11.8	11.5	12.2	12.6	14.3	14.9	14.7	15.3	15.8
4H	2H	10.6	11.4	11.0	11.7	12.1	12.3	13.1	12.7	13.4	13.8
	3H	10.9	11.6	11.3	12.0	12.4	13.1	13.8	13.5	14.2	14.6
	4H	11.1	11.7	11.6	12.1	12.6	13.6	14.2	14.1	14.7	15.1
	6H	11.3	11.9	11.8	12.3	12.8	14.3	14.8	14.8	15.3	15.7
	8H	11.5	11.9	11.9	12.4	12.9	14.7	15.2	15.2	15.7	16.1
	12H	11.6	12.0	12.1	12.5	13.0	15.4	15.8	15.9	16.3	16.7
8H	4H	11.1	11.6	11.6	12.0	12.5	13.9	14.3	14.3	14.8	15.3
	6H	11.5	11.8	12.0	12.3	12.8	14.8	15.2	15.3	15.7	16.2
	8H	11.6	12.0	12.2	12.5	13.0	15.6	15.9	16.1	16.4	16.9
	12H	11.9	12.2	12.4	12.7	13.2	16.5	16.8	17.1	17.3	17.9
12H	4H	11.1	11.5	11.6	12.0	12.5	13.9	14.3	14.4	14.8	15.3
	6H	11.5	11.8	12.0	12.3	12.8	15.0	15.4	15.6	15.8	16.4
	8H	11.7	12.0	12.2	12.5	13.1	15.9	16.2	16.4	16.7	17.3

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0