

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

4" Nom. Sq. x 12" H LED Cylinder XT Series, Xtra Narrow Beam
C0412SQXT-10L-xxK-XN-EX-GL-xx-MW

Test Number

SP-00628_3_M-10L

Test Date

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

Summary of Results

Power

Input Watts	13.6 W
-------------	--------

Lumen Output

Output Lumens	867
Efficacy	63.74 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.22
Two luminaires, plane 90°	0.22
Four luminaires	0.22

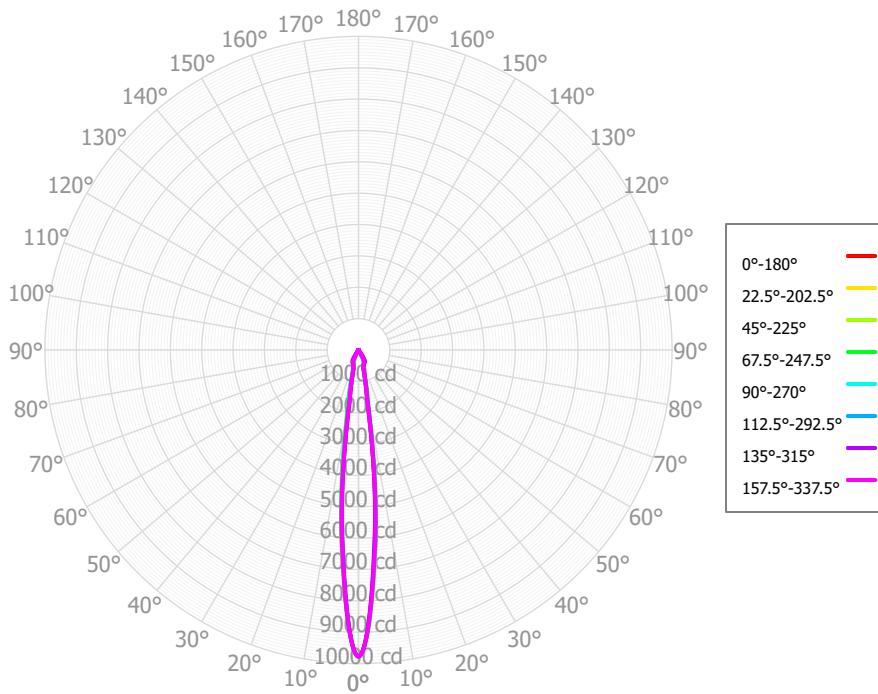
Full Beam Angle

0° - 180°	13°
90° - 270°	13°

IES File Header Contents

Keyword	Value
TEST	SP-00628_3_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 Narrow Beam
LUMCAT	C0412SQXT-10L-xxK-XN-EX-GL-xx-MW
OTHER	Matte White finish, Clear Glass lens
OTHER	2.16" Square Aperture
OTHER	12.2 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 13L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	430.07	49.61%	90.00° - 100.00°	0.11	0.01%
10.00° - 20.00°	215.49	24.86%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	164.82	19.01%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	44.27	5.11%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	3.17	0.37%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	3.79	0.44%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.16	0.25%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.40	0.16%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.58	0.18%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	866.74	99.99%	0.00° - 180.00°	866.85	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°	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11	9771.11
5.00°	6110.35	6253.54	6149.01	6156.10	6228.47	5899.27	6030.28	6025.31	6140.66	6049.53	6152.66	6076.96	6060.54	6015.36	5930.66	6132.63	6110.35
10.00°	1581.04	1637.87	1508.83	1843.13	1680.41	1653.09	1571.61	1624.32	1779.42	1904.93	1650.14	2139.82	1839.04	1607.25	1595.05	1543.80	1581.04
15.00°	595.92	610.84	591.24	645.59	616.19	618.10	619.42	617.09	643.76	672.11	621.45	724.19	654.61	621.97	614.52	606.53	595.92
20.00°	482.89	485.60	484.12	483.00	475.18	491.15	484.33	485.70	470.29	487.39	483.28	492.54	487.51	483.30	486.80	483.61	482.89
25.00°	394.15	416.61	443.02	392.86	347.98	406.73	450.20	402.43	293.56	367.75	445.94	393.39	343.49	402.21	455.30	426.79	394.15
30.00°	115.93	214.11	399.30	193.93	89.50	126.94	372.33	128.92	44.59	86.09	366.04	153.55	58.24	165.22	414.83	226.35	115.93
35.00°	10.39	24.92	212.17	30.49	7.44	6.72	143.56	8.78	5.80	6.26	116.48	23.81	7.32	11.61	184.30	24.68	10.39
40.00°	4.90	5.06	19.96	5.05	3.68	3.79	8.34	4.56	3.28	3.88	6.58	4.11	2.99	3.57	10.27	3.71	4.90
45.00°	3.77	2.54	4.03	3.99	3.23	4.23	3.69	3.48	2.73	3.37	3.99	3.95	2.82	3.82	5.60	3.28	3.77
50.00°	3.46	4.07	4.98	4.26	3.68	2.59	4.81	2.39	2.20	2.16	4.32	2.12	2.46	2.96	4.82	3.35	3.46
55.00°	3.40	4.60	4.08	5.59	5.13	3.37	6.20	2.99	3.28	3.00	4.62	4.17	3.40	4.09	5.08	5.43	3.40
60.00°	4.42	4.53	4.46	4.24	4.75	3.33	5.66	4.69	5.31	4.48	3.78	5.58	4.52	4.47	7.97	5.23	4.42
65.00°	2.01	1.08	1.04	1.42	1.83	1.60	1.41	1.82	1.66	1.20	1.35	1.40	1.42	0.98	1.16	1.35	2.01
70.00°	0.94	0.57	1.48	0.59	0.89	1.23	0.92	1.24	1.62	1.80	1.83	1.44	1.32	0.85	0.99	1.08	0.94
75.00°	0.87	1.16	1.61	1.09	0.80	1.88	1.41	1.30	1.56	1.50	1.61	1.89	1.32	1.37	0.77	1.33	0.87
80.00°	1.00	0.66	0.93	0.97	0.77	1.31	2.67	1.71	2.27	1.53	1.93	2.31	1.80	1.26	0.99	1.10	1.00
85.00°	1.23	0.79	0.68	0.56	1.34	2.86	3.82	3.21	2.37	3.51	3.08	2.46	3.51	0.53	0.98	0.73	1.23
90.00°	1.42	0.80	0.71	0.62	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.50	0.47	1.42
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	1032	1032	1032	1032	1008	1008	1008	1008	963	963	963	922	922	922	884	884	867
	1	998	980	964	949	977	961	947	934	927	916	905	895	887	879	866	860	843
	2	966	936	911	890	949	922	899	880	895	877	861	870	856	843	847	836	820
	3	937	898	868	844	922	887	860	838	866	843	825	846	828	812	828	813	798
	4	910	866	833	808	897	857	827	803	840	814	794	824	803	785	809	792	778
	5	886	837	803	778	874	830	798	774	816	789	768	803	780	762	791	771	758
	6	862	811	777	752	852	805	773	750	794	766	745	783	759	740	773	752	740
	7	841	788	754	729	832	783	751	728	774	745	724	765	740	721	757	735	723
	8	820	767	733	710	812	763	731	708	755	726	706	748	722	703	741	718	707
	9	802	747	714	692	794	744	713	691	737	709	689	731	706	687	725	702	692
	10	784	730	697	676	778	727	696	675	721	693	674	716	690	672	711	688	678

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	323.0 fc	1.2 ft
6.5 ft	231.3 fc	1.5 ft
7.5 ft	173.7 fc	1.7 ft
8.0 ft	152.7 fc	1.8 ft
10.0 ft	97.7 fc	2.2 ft
12.0 ft	67.9 fc	2.7 ft
14.0 ft	49.9 fc	3.1 ft
16.0 ft	38.2 fc	3.6 ft
20.0 ft	24.4 fc	4.5 ft
24.0 ft	17.0 fc	5.4 ft
28.0 ft	12.5 fc	6.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	3246152	3246152	3246152
45.00°	1770	1895	1520
55.00°	1968	2363	2974
65.00°	1577	820	1437
75.00°	1111	2072	1030
85.00°	4671	2595	5106

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	5.1	6.0	5.5	6.3	6.6	4.3	5.2	4.6	5.5	5.8
	3H	5.2	6.0	5.6	6.3	6.7	4.6	5.4	5.0	5.8	6.1
	4H	5.4	6.1	5.8	6.5	6.9	5.1	5.9	5.5	6.2	6.6
	6H	5.8	6.4	6.2	6.8	7.2	6.1	6.8	6.5	7.2	7.6
	8H	6.2	6.8	6.6	7.2	7.6	7.3	7.9	7.7	8.3	8.7
	12H	6.8	7.4	7.3	7.8	8.3	9.2	9.8	9.7	10.2	10.6
4H	2H	4.9	5.6	5.3	6.0	6.4	4.1	4.9	4.5	5.2	5.6
	3H	5.1	5.7	5.6	6.2	6.6	4.8	5.4	5.3	5.8	6.3
	4H	5.6	6.1	6.0	6.5	7.0	5.9	6.4	6.3	6.8	7.3
	6H	6.2	6.7	6.7	7.1	7.6	7.4	7.8	7.9	8.3	8.8
	8H	6.7	7.2	7.2	7.6	8.1	8.8	9.2	9.2	9.6	10.1
	12H	7.7	8.0	8.1	8.5	9.0	10.9	11.3	11.4	11.8	12.3
8H	4H	5.7	6.2	6.2	6.6	7.1	6.4	6.8	6.9	7.3	7.8
	6H	6.6	6.9	7.1	7.4	7.9	8.6	8.9	9.1	9.4	9.9
	8H	7.3	7.6	7.8	8.1	8.6	10.3	10.6	10.8	11.1	11.6
	12H	8.4	8.6	8.9	9.1	9.7	12.6	12.9	13.1	13.4	14.0
12H	4H	5.8	6.1	6.3	6.6	7.1	6.7	7.0	7.2	7.5	8.0
	6H	6.7	7.0	7.2	7.5	8.0	9.2	9.5	9.7	9.9	10.5
	8H	7.5	7.7	8.0	8.2	8.8	11.1	11.4	11.6	11.9	12.4

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0