

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-7L-xxK-ND-EX-GL-xx-MW

Test Number

SP-00628_9_M-7L

Test Date

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

Summary of Results

Power

Input Watts	5.6 W
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Lumen Output

Output Lumens	517
Efficacy	92.37 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

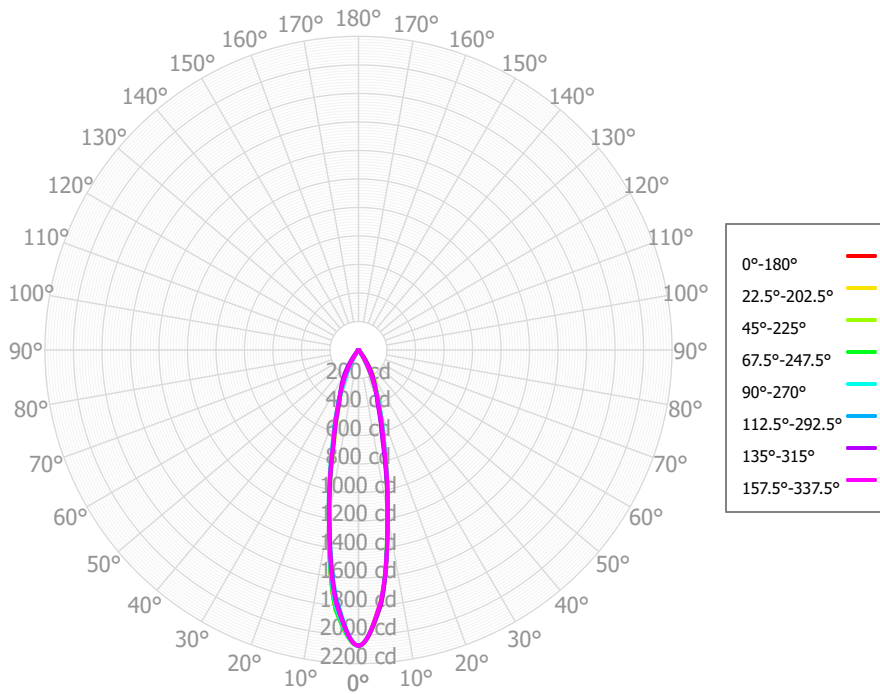
Full Beam Angle

0° - 180°	23°
90° - 270°	23°

IES File Header Contents

Keyword	Value
TEST	SP-00628_9_M-7L
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-7L-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°	154.25	29.82%	90.00° - 100.00°	0.09	0.02%
10.00° - 20.00°	191.77	37.07%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	117.16	22.65%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	36.25	7.01%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	6.18	1.19%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	6.36	1.23%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	2.27	0.44%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.45	0.28%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.50	0.29%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	517.19	99.98%	0.00° - 180.00°	517.28	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°	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75	2074.75
5.00°	1797.51	1772.27	1789.70	1787.28	1780.45	1759.83	1778.44	1789.08	1827.64	1801.30	1831.41	1831.56	1809.16	1786.75	1794.10	1776.59	1797.51
10.00°	1171.52	1178.51	1158.60	1158.46	1175.46	1172.94	1176.22	1190.93	1193.92	1194.26	1182.51	1185.53	1197.46	1176.22	1171.34	1180.70	1171.52
15.00°	701.24	694.68	658.02	681.08	706.43	696.06	669.93	687.93	698.36	687.56	650.45	684.61	713.19	671.14	645.71	688.10	701.24
20.00°	422.09	426.40	398.21	424.40	438.07	431.14	395.91	417.45	424.54	417.48	384.92	408.28	419.50	400.42	383.44	414.36	422.09
25.00°	232.32	266.83	289.47	272.45	256.31	269.11	287.63	259.91	237.52	255.01	283.01	239.68	218.60	240.15	273.10	250.53	232.32
30.00°	92.20	136.41	202.81	144.04	112.86	139.59	198.94	131.72	91.45	124.55	184.61	113.81	81.93	118.89	181.83	120.76	92.20
35.00°	21.25	43.82	101.59	49.12	29.98	44.94	97.01	41.43	17.37	36.89	82.99	29.21	19.53	39.10	85.58	36.98	21.25
40.00°	7.49	10.07	31.87	9.67	7.10	11.07	27.99	10.31	6.87	9.23	20.30	8.48	7.13	10.12	25.60	9.67	7.49
45.00°	5.70	5.85	8.61	6.02	5.53	5.97	9.17	5.67	5.30	5.58	6.97	5.56	5.24	6.42	8.59	6.22	5.70
50.00°	5.68	6.25	7.96	6.81	5.91	6.75	7.04	6.49	5.29	6.30	6.45	6.47	5.87	5.68	7.88	6.27	5.68
55.00°	7.39	7.90	9.27	7.68	7.11	9.38	10.03	9.37	8.37	8.60	9.81	9.43	8.06	7.29	8.71	7.63	7.39
60.00°	5.04	4.61	5.31	4.79	3.82	5.47	5.93	5.16	4.66	5.22	5.31	4.83	4.77	4.79	5.94	4.46	5.04
65.00°	1.55	1.46	1.44	1.24	1.06	1.79	1.42	1.75	1.55	1.87	1.72	1.71	1.87	1.44	1.85	1.28	1.55
70.00°	0.99	0.87	1.22	1.22	1.03	1.07	1.33	1.68	1.56	1.35	1.40	1.36	1.29	0.91	0.84	0.80	0.99
75.00°	1.11	0.90	0.57	0.68	1.17	1.78	2.34	2.29	2.00	1.45	1.51	1.78	1.58	0.74	0.97	0.77	1.11
80.00°	0.53	0.89	0.91	0.93	0.78	1.84	2.37	2.73	2.64	2.22	2.01	2.44	2.50	0.80	0.81	0.87	0.53
85.00°	0.58	0.45	0.60	0.61	0.39	2.87	2.86	3.35	3.00	3.21	2.92	3.32	2.75	0.60	0.48	0.60	0.58
90.00°	0.85	0.48	0.69	0.50	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.63	0.88	0.85
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	616	616	616	616	601	601	601	601	575	575	575	550	550	550	528	528	517
	1	592	580	569	559	580	569	559	550	548	540	533	529	523	517	511	507	497
	2	570	549	532	517	559	540	525	511	524	511	500	509	499	490	495	487	477
	3	549	522	501	484	539	515	496	480	502	486	473	490	477	466	478	468	459
	4	529	498	475	457	520	492	471	455	482	464	450	472	457	444	463	450	442
	5	510	476	452	435	503	472	449	433	463	444	429	455	439	426	448	433	426
	6	493	457	433	415	486	453	430	414	446	426	411	439	422	409	433	418	411
	7	477	439	415	398	471	436	413	397	430	410	395	425	407	393	419	403	397
	8	461	423	399	383	456	421	398	382	416	395	381	411	393	379	406	390	384
	9	447	408	385	369	442	406	384	368	402	382	367	398	379	366	394	377	372
	10	434	395	372	356	429	393	371	356	389	369	355	386	367	354	383	366	360

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	68.6 fc	2.2 ft
6.5 ft	49.1 fc	2.6 ft
7.5 ft	36.9 fc	3.0 ft
8.0 ft	32.4 fc	3.2 ft
10.0 ft	20.7 fc	4.1 ft
12.0 ft	14.4 fc	4.9 ft
14.0 ft	10.6 fc	5.7 ft
16.0 ft	8.1 fc	6.5 ft
20.0 ft	5.2 fc	8.1 ft
24.0 ft	3.6 fc	9.7 ft
28.0 ft	2.6 fc	11.3 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	689271	689271	689271
45.00°	2676	4045	2598
55.00°	4280	5372	4118
65.00°	1218	1134	830
75.00°	1428	726	1507
85.00°	2215	2285	1484

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	9.4	8.9	9.7	10.0	9.4	10.3	9.8	10.6	10.9
	3H	8.5	9.3	8.9	9.6	10.0	9.4	10.2	9.8	10.6	10.9
	4H	8.6	9.3	9.0	9.7	10.1	9.6	10.4	10.0	10.7	11.1
	6H	8.7	9.3	9.1	9.7	10.1	10.3	11.0	10.7	11.4	11.8
	8H	8.7	9.4	9.1	9.7	10.2	11.0	11.6	11.4	12.0	12.4
	12H	8.8	9.4	9.2	9.8	10.2	11.8	12.5	12.3	12.8	13.3
4H	2H	8.3	9.1	8.7	9.4	9.8	9.2	9.9	9.6	10.3	10.7
	3H	8.4	9.0	8.8	9.4	9.8	9.3	9.9	9.7	10.4	10.8
	4H	8.5	9.1	9.0	9.5	9.9	9.8	10.4	10.2	10.8	11.2
	6H	8.8	9.2	9.2	9.7	10.2	11.0	11.5	11.5	11.9	12.4
	8H	8.9	9.3	9.4	9.8	10.2	11.9	12.4	12.4	12.8	13.3
	12H	9.1	9.5	9.6	10.0	10.4	13.2	13.6	13.7	14.1	14.5
8H	4H	8.5	8.9	8.9	9.4	9.8	10.1	10.6	10.6	11.0	11.5
	6H	8.9	9.2	9.4	9.7	10.2	11.8	12.2	12.3	12.7	13.1
	8H	9.1	9.4	9.7	10.0	10.5	13.2	13.5	13.7	14.0	14.5
	12H	9.5	9.8	10.0	10.3	10.8	14.9	15.2	15.5	15.7	16.3
12H	4H	8.4	8.8	8.9	9.3	9.8	10.3	10.7	10.8	11.2	11.7
	6H	8.9	9.2	9.5	9.7	10.3	12.2	12.5	12.7	13.0	13.5
	8H	9.2	9.5	9.8	10.0	10.6	13.8	14.0	14.3	14.5	15.1

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0