

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CW04XXPC 10L 35K ND XX CL XX

Nom 4" diam Gamma Cylinder (wet location), ND optic, clear glass lens

Test Number

SP-01050_M-10L

Test Date

1/30/2020

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

Summary of Results

Power

Input Watts	6.5 W
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Lumen Output

Output Lumens	564
Efficacy	86.75 lm/W

Luminous Dimensions

0° - 180° Size	-0.33
90° - 270° Size	-0.33
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.35
Two luminaires, plane 90°	0.35
Four luminaires	0.37

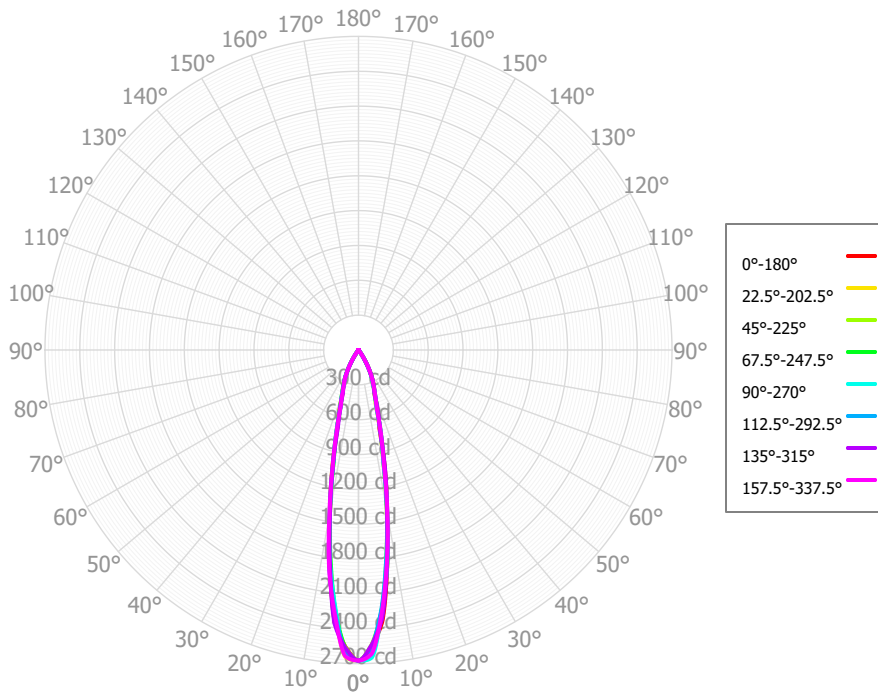
Full Beam Angle

0° - 180°	21°
90° - 270°	21°

IES File Header Contents

Keyword	Value
TEST	SP-01050_M-10L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/30/2020
ISSUEDATE	3/24/2020
LUMCAT	CW04XXPC 10L 35K ND XX CL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder (wet location), ND optic, clear glass lens
OTHER	Beam Angle: 21.2 deg
OTHER	Narrow optic
LAMPCAT	N/A
LAMP	N/A
OTHER	CCT Output Multipliers: 27K x 0.97, 30K x 0.98, 40K x 1.04
OTHER	Total luminaire wattage is approximate
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°	190.64	33.81%	90.00° - 100.00°	0.04	0.01%
10.00° - 20.00°	208.28	36.94%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	125.56	22.27%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	32.11	5.69%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	2.20	0.39%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	2.19	0.39%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.22	0.22%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.85	0.15%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.74	0.13%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	563.80	99.99%	0.00° - 180.00°	563.84	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°	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28	2674.28
2.50°	2558.43	2628.65	2544.60	2571.20	2650.36	2592.82	2570.06	2637.66	2560.71	2642.01	2563.61	2573.48	2626.06	2561.04	2546.33	2618.52	2558.43
5.00°	2348.98	2261.40	2272.73	2262.22	2268.81	2289.18	2365.68	2303.38	2349.98	2274.77	2294.92	2267.36	2249.19	2248.87	2324.46	2280.00	2348.98
7.50°	1889.81	1871.05	1825.78	1887.08	1883.33	1912.25	1879.22	1927.34	1873.29	1894.92	1896.36	1835.90	1867.71	1824.81	1877.38	1863.72	1889.81
10.00°	1414.42	1426.61	1402.92	1420.01	1428.76	1425.02	1410.32	1445.81	1412.95	1430.29	1412.41	1412.40	1425.86	1412.98	1411.65	1436.59	1414.42
12.50°	1053.02	981.90	1004.37	1032.30	987.66	1021.73	1022.61	1025.11	1039.38	999.31	1035.87	992.60	1002.78	1006.34	1058.80	1007.04	1053.02
15.00°	695.80	735.03	714.86	741.66	739.33	727.88	683.65	734.56	706.58	739.18	720.20	725.26	744.63	740.99	711.28	748.74	695.80
17.50°	550.52	494.49	522.31	536.99	506.49	522.09	525.17	511.07	543.65	512.18	539.06	517.88	509.77	526.99	555.27	520.05	550.52
20.00°	408.74	414.50	403.05	423.70	418.30	417.44	392.38	412.18	404.04	421.16	423.22	414.01	421.47	420.36	403.28	423.70	408.74
22.50°	350.25	336.19	340.40	339.80	333.92	337.03	337.69	330.93	343.13	337.42	348.17	344.16	338.36	346.09	346.17	344.71	350.25
25.00°	291.06	279.48	277.41	283.47	274.66	280.83	279.72	277.89	280.20	277.94	290.21	279.72	280.91	280.49	288.38	280.96	291.06
27.50°	223.33	221.52	214.20	218.91	213.80	217.35	213.24	218.02	211.47	215.93	222.45	216.78	220.95	217.05	219.31	218.56	223.33
30.00°	156.13	153.18	149.17	147.65	144.97	147.55	148.05	148.69	145.01	146.80	151.22	149.78	151.17	149.12	150.97	150.09	156.13
32.50°	93.45	88.56	83.08	88.76	81.79	88.57	85.70	89.30	83.96	85.16	91.84	81.87	87.79	80.29	90.27	81.30	93.45
35.00°	37.08	46.92	42.53	38.73	41.51	37.86	37.96	42.00	36.72	41.26	35.97	44.33	44.88	43.28	34.93	44.68	37.08
37.50°	18.95	11.68	14.83	14.15	9.60	12.93	17.49	13.92	17.56	10.19	16.39	11.98	12.07	11.02	17.92	9.08	18.95
40.00°	3.88	6.70	4.79	5.33	5.23	5.08	4.26	6.17	4.78	5.37	5.55	6.06	6.64	5.43	3.52	5.78	3.88
42.50°	3.08	2.68	2.45	2.28	2.03	2.19	2.81	2.46	3.32	2.29	3.26	3.56	2.94	2.76	3.10	2.65	3.08
45.00°	2.53	2.37	2.00	2.32	2.01	2.12	1.95	2.53	2.42	2.27	2.63	3.09	3.18	2.48	2.75	2.54	2.53
47.50°	2.93	2.13	2.25	2.35	2.00	1.99	1.92	2.43	2.38	2.45	2.53	2.80	3.22	2.36	2.66	2.44	2.93
50.00°	3.13	2.15	2.30	2.39	2.00	1.83	2.05	2.20	2.49	2.93	2.50	2.70	2.90	2.75	2.58	2.57	3.13
52.50°	2.67	2.27	2.29	2.42	2.03	1.91	2.36	2.19	2.80	3.19	2.50	2.61	2.75	3.16	2.56	2.71	2.67
55.00°	2.25	2.70	2.21	2.44	2.15	2.10	2.55	2.35	2.56	3.16	2.51	3.16	2.89	3.07	2.52	2.93	2.25
57.50°	1.95	2.70	2.11	1.98	2.11	1.83	2.60	2.32	1.69	2.79	2.59	3.68	2.75	2.96	2.44	2.97	1.95
60.00°	1.65	1.73	1.63	1.36	1.80	1.41	2.25	2.18	1.32	2.03	2.67	2.46	2.20	2.24	2.29	2.00	1.65
62.50°	1.35	1.07	1.06	1.06	1.45	1.20	1.54	1.84	1.44	1.46	1.95	1.28	1.73	1.55	1.96	1.22	1.35
65.00°	1.16	0.99	0.74	0.84	1.05	1.05	1.12	1.41	1.28	1.10	1.23	1.02	1.36	1.22	1.67	1.27	1.16
67.50°	1.19	0.85	0.46	0.76	0.88	0.88	0.91	1.10	0.88	0.83	1.01	0.81	1.06	0.93	1.45	1.31	1.19
70.00°	1.08	0.64	0.64	0.70	0.95	0.70	0.84	0.84	0.72	0.62	0.84	0.93	0.83	0.88	1.31	1.25	1.08
72.50°	0.78	0.67	0.80	0.76	0.84	0.61	0.83	0.76	0.67	0.66	0.89	0.97	0.65	0.87	1.30	1.21	0.78
75.00°	0.63	0.86	0.81	0.78	0.68	0.57	0.87	0.73	0.68	0.76	0.87	0.87	0.50	0.92	1.04	1.20	0.63
77.50°	0.57	0.72	0.79	0.73	0.56	0.61	0.80	0.75	0.81	0.91	0.84	0.84	0.68	0.90	0.71	0.98	0.57
80.00°	0.72	0.68	0.75	0.57	0.71	0.76	0.74	1.02	0.83	0.72	0.96	0.84	0.78	0.83	0.82	0.79	0.72
82.50°	0.83	0.75	0.66	0.75	0.84	0.67	0.81	0.63	0.76	0.51	0.77	0.85	0.96	0.70	0.69	0.79	0.83
85.00°	0.70	0.78	0.74	0.68	0.76	0.89	0.71	0.59	0.68	0.55	0.63	0.86	1.03	0.59	0.57	0.66	0.70
87.50°	0.52	0.77	0.66	0.54	0.62	0.75	0.73	0.99	0.81	0.70	0.76	0.94	0.70	0.58	0.60	0.69	0.52
90.00°	0.65	0.66	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.65	0.61	0.74	0.57	0.65
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
97.50°	0.00	0.00	0.00	0.00	0.00	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
102.50°	0.00	0.00	0.00	0.00	0.00	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
107.50°	0.00	0.00	0.00	0.00	0.00	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
112.50°	0.00	0.00	0.00	0.00	0.00	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	671	671	671	671	656	656	656	656	626	626	626	600	600	600	575	575	564
	1	647	635	623	613	634	623	613	603	600	592	585	579	573	568	560	556	545
	2	624	603	585	571	613	594	578	564	576	563	552	560	549	540	545	537	526
	3	603	576	554	537	593	568	549	533	554	538	525	541	528	517	529	518	509
	4	583	551	528	510	574	545	524	507	534	516	501	524	508	496	514	501	492
	5	564	529	505	487	556	525	502	485	515	496	481	507	490	477	499	485	476
	6	547	510	485	467	540	506	482	466	498	478	463	491	473	460	484	469	461
	7	530	492	467	449	524	488	465	448	482	461	446	476	458	444	471	454	447
	8	514	475	451	434	509	472	449	433	467	446	431	462	443	430	457	441	434
	9	500	460	436	419	495	458	435	419	453	432	418	449	430	416	445	428	422
	10	486	446	422	406	481	444	421	406	440	419	405	436	417	404	433	416	410

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	88.4 fc	2.0 ft
6.5 ft	63.3 fc	2.4 ft
7.5 ft	47.5 fc	2.8 ft
8.0 ft	41.8 fc	3.0 ft
10.0 ft	26.7 fc	3.7 ft
12.0 ft	18.6 fc	4.5 ft
14.0 ft	13.6 fc	5.2 ft
16.0 ft	10.4 fc	5.9 ft
20.0 ft	6.7 fc	7.4 ft
24.0 ft	4.6 fc	8.9 ft
28.0 ft	3.4 fc	10.4 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	336558	336558	336558
45.00°	449	356	359
55.00°	494	485	472
65.00°	347	222	313
75.00°	307	393	332
85.00°	1014	1070	1091

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	-1.8	-0.9	-1.4	-0.6	-0.3	-1.4	-0.5	-1.1	-0.2	0.1
	3H	-1.0	-0.2	-0.6	0.1	0.5	-1.0	-0.2	-0.6	0.1	0.5
	4H	-0.6	0.1	-0.2	0.5	0.8	-0.8	0.0	-0.4	0.3	0.7
	6H	-0.1	0.6	0.3	0.9	1.3	-0.2	0.5	0.2	0.9	1.3
	8H	0.5	1.1	0.9	1.5	1.9	0.5	1.1	0.9	1.5	1.9
	12H	1.1	1.7	1.6	2.1	2.6	1.4	2.0	1.9	2.4	2.9
4H	2H	-1.7	-1.0	-1.3	-0.7	-0.3	-1.5	-0.7	-1.0	-0.4	0.0
	3H	-0.7	-0.1	-0.3	0.3	0.7	-0.8	-0.2	-0.4	0.2	0.6
	4H	0.1	0.6	0.5	1.0	1.5	-0.4	0.1	0.1	0.6	1.0
	6H	0.9	1.3	1.3	1.8	2.2	0.5	1.0	1.0	1.4	1.9
	8H	1.6	2.0	2.1	2.4	2.9	1.4	1.8	1.9	2.3	2.8
	12H	2.4	2.8	2.9	3.3	3.8	2.6	3.0	3.1	3.5	4.0
8H	4H	0.3	0.7	0.8	1.2	1.7	-0.1	0.3	0.4	0.8	1.2
	6H	1.4	1.7	1.9	2.2	2.7	1.2	1.5	1.7	2.0	2.5
	8H	2.3	2.6	2.9	3.2	3.6	2.2	2.5	2.8	3.1	3.6
	12H	3.5	3.7	4.0	4.2	4.8	3.8	4.0	4.3	4.5	5.1
12H	4H	0.4	0.7	0.9	1.2	1.7	0.0	0.3	0.5	0.8	1.3
	6H	1.6	1.9	2.1	2.3	2.9	1.4	1.7	1.9	2.2	2.7
	8H	2.6	2.8	3.1	3.3	3.9	2.6	2.8	3.1	3.3	3.9

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0