

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

CW04XXPC 15L 35K XW XX CL XX

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

Test Number

SP-01074_M-15L

Test Date

1/30/2020

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

Summary of Results

Power

Input Watts	9.5 W
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Lumen Output

Output Lumens	908
Efficacy	95.59 lm/W

Luminous Dimensions

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

Spacing Criterion

Two luminaires, plane 0°	0.95
Two luminaires, plane 90°	0.94
Four luminaires	0.83

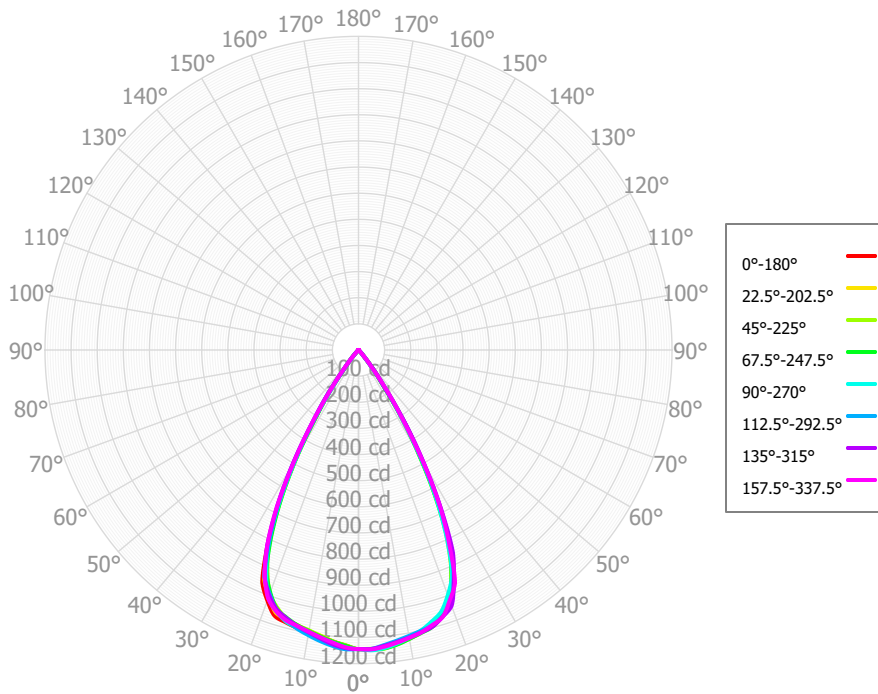
Full Beam Angle

0° - 180°	58°
90° - 270°	57°

IES File Header Contents

Keyword	Value
TEST	SP-01074_M-15L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	1/30/2020
ISSUEDATE	3/24/2020
LUMCAT	CW04XXPC 15L 35K XW XX CL XX
LUMINAIRE	Nom 4" diam Gamma Cylinder (wet location), XW optic, clear glass lens
OTHER	Beam Angle: 57.2 deg
OTHER	Extra Wide 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°	108.92	11.99%	90.00° - 100.00°	0.06	0.01%
10.00° - 20.00°	302.32	33.29%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	357.37	39.35%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	125.21	13.79%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	8.65	0.95%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.77	0.20%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.41	0.16%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	1.32	0.15%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	1.06	0.12%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	908.03	99.99%	0.00° - 180.00°	908.10	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°	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97	1144.97
2.50°	1145.63	1147.05	1144.96	1148.17	1150.38	1146.40	1141.89	1139.04	1132.05	1134.57	1131.32	1133.43	1139.71	1145.12	1145.22	1146.94	1145.63
5.00°	1142.44	1142.50	1147.28	1145.93	1144.96	1136.89	1131.07	1124.29	1119.82	1119.62	1120.34	1120.92	1125.66	1133.51	1136.36	1139.93	1142.44
7.50°	1134.31	1135.64	1133.87	1136.92	1132.89	1123.79	1113.82	1109.57	1105.87	1103.34	1104.85	1106.87	1112.93	1122.18	1127.04	1129.92	1134.31
10.00°	1120.97	1121.76	1120.47	1122.77	1117.80	1108.18	1097.40	1094.93	1096.41	1091.42	1089.93	1093.11	1101.27	1111.24	1117.54	1118.86	1120.97
12.50°	1106.19	1106.53	1107.08	1109.33	1100.61	1091.66	1082.08	1081.94	1089.25	1079.97	1079.31	1079.57	1088.64	1101.12	1106.97	1107.53	1106.19
15.00°	1090.18	1088.12	1091.40	1096.32	1077.49	1068.17	1063.23	1071.48	1078.79	1066.93	1065.29	1061.18	1075.38	1091.92	1096.09	1090.11	1090.18
17.50°	1060.21	1059.18	1059.81	1064.54	1051.09	1042.67	1040.54	1048.97	1067.01	1053.80	1034.46	1039.86	1046.80	1069.81	1070.66	1071.58	1060.21
20.00°	1020.34	1010.62	1017.90	1023.57	999.16	994.01	998.97	1011.60	1020.19	1001.60	992.99	987.94	1009.96	1035.73	1041.91	1020.36	1020.34
22.50°	936.37	931.79	927.98	932.00	935.68	940.48	940.25	937.69	962.11	944.86	912.12	921.24	922.84	954.17	953.25	965.40	936.37
25.00°	826.83	806.26	818.57	820.30	804.31	809.14	826.44	827.11	822.22	800.60	808.26	792.91	814.26	835.78	855.29	823.60	826.83
27.50°	667.32	655.08	643.25	651.24	649.07	666.96	671.98	676.64	662.87	653.15	640.32	641.27	653.96	675.21	682.07	676.44	667.32
30.00°	484.77	471.84	470.22	464.73	477.32	493.21	503.03	493.12	486.32	474.27	473.22	471.10	476.64	488.18	502.03	493.08	484.77
32.50°	324.26	311.26	303.33	305.45	301.21	317.04	325.45	330.95	306.94	303.76	307.91	295.39	318.53	325.52	333.98	312.27	324.26
35.00°	171.67	173.72	165.22	152.22	182.13	197.39	197.87	183.32	188.91	183.18	173.96	180.71	165.33	175.07	167.60	191.24	171.67
37.50°	93.98	85.09	87.16	84.04	73.69	81.34	94.80	96.19	77.42	79.01	94.16	79.33	92.21	92.08	97.99	77.95	93.98
40.00°	37.42	38.14	32.27	28.62	38.52	46.32	45.79	42.20	42.80	42.68	38.97	42.54	33.43	36.61	31.90	44.10	37.42
42.50°	17.77	14.64	15.93	14.76	12.70	13.53	17.54	18.30	11.98	13.64	19.05	15.20	17.59	16.43	17.39	14.15	17.77
45.00°	5.60	7.35	5.43	4.82	7.06	7.93	7.77	7.46	7.33	7.76	7.29	8.35	6.56	7.31	4.43	8.20	5.60
47.50°	3.28	3.83	3.01	3.32	2.76	2.93	3.40	3.84	2.90	3.40	5.01	3.37	4.60	4.38	3.36	3.22	3.28
50.00°	2.27	2.42	1.72	2.15	2.19	2.30	2.27	2.75	2.70	2.74	3.55	2.62	3.17	2.88	2.41	2.40	2.27
52.50°	2.23	1.76	1.69	2.11	1.68	1.77	1.87	2.39	2.48	2.23	2.85	2.02	2.72	2.31	2.11	1.81	2.23
55.00°	2.26	1.44	1.64	2.05	1.62	1.71	1.88	2.22	2.08	2.01	2.35	1.76	2.28	1.90	1.84	1.98	2.26
57.50°	1.90	1.47	1.56	1.84	1.56	1.65	1.95	2.06	1.73	1.78	2.02	1.52	1.84	1.96	1.69	2.05	1.90
60.00°	1.53	1.62	1.38	1.62	1.50	1.64	1.65	1.90	1.58	1.54	1.73	1.55	1.41	2.08	1.54	1.90	1.53
62.50°	1.58	1.48	1.14	1.32	1.43	1.58	1.32	1.56	1.45	1.45	1.47	1.56	1.20	1.82	1.40	1.70	1.58
65.00°	1.61	1.26	1.16	1.06	1.39	1.39	1.42	1.19	1.42	1.54	1.48	1.41	1.07	1.54	1.33	1.44	1.61
67.50°	1.39	1.46	1.34	1.03	1.29	1.26	1.46	1.38	1.39	1.63	1.60	1.30	1.33	1.39	1.44	1.33	1.39
70.00°	1.26	1.75	1.37	1.08	1.04	1.21	1.12	1.48	1.35	1.72	1.64	1.30	1.50	1.28	1.55	1.47	1.26
72.50°	1.53	1.35	1.35	1.32	0.90	1.01	0.99	1.27	1.15	1.45	1.60	1.21	1.48	1.37	1.68	1.57	1.53
75.00°	1.48	1.04	1.35	1.55	0.86	0.80	1.10	1.04	0.98	1.20	1.27	1.04	1.38	1.26	1.77	1.65	1.48
77.50°	1.05	0.94	1.22	1.64	0.96	0.94	1.25	0.86	1.16	1.11	1.16	1.49	1.33	0.93	1.77	1.40	1.05
80.00°	1.01	1.01	0.90	1.16	0.95	1.03	1.14	0.85	0.78	0.78	1.13	1.52	1.63	0.84	1.12	1.27	1.01
82.50°	0.96	1.04	1.22	1.12	1.01	1.04	0.81	1.09	0.89	0.84	1.06	1.28	2.01	1.07	1.13	1.29	0.96
85.00°	0.87	0.98	1.04	1.02	1.14	0.94	0.92	1.14	0.92	1.41	0.90	1.10	1.11	1.23	1.24	0.94	0.87
87.50°	0.86	0.83	0.85	0.99	0.89	0.64	1.21	0.74	0.80	0.96	0.93	1.48	1.05	0.99	1.27	0.76	0.86
90.00°	0.75	0.99	0.87	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	0.87	0.97	0.91	0.75
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%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	30%
	0	1081	1081	1081	1081	1056	1056	1056	1056	1009	1009	1009	966	966	966	927	927	927	908
	1	1034	1011	990	971	1012	991	972	955	955	940	926	921	909	898	890	881	872	863
	2	988	948	914	885	969	932	901	875	903	878	856	876	856	838	851	835	821	819
	3	944	891	849	816	927	878	840	809	855	823	797	833	807	784	813	791	772	776
	4	902	839	793	758	886	829	786	753	810	773	745	792	761	736	775	749	728	735
	5	861	792	743	708	847	784	738	704	768	728	698	753	719	692	739	710	686	697
	6	823	749	699	663	810	742	695	661	729	687	657	716	680	652	705	673	648	661
	7	787	709	659	624	775	703	656	622	692	650	619	682	644	616	672	638	613	628
	8	752	673	623	588	742	668	620	587	658	615	585	649	611	582	641	606	580	597
	9	720	639	590	556	710	635	588	555	627	584	553	619	580	552	612	576	550	567
	10	689	608	559	527	681	604	558	526	597	554	525	590	551	523	584	548	522	540

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	37.9 fc	6.0 ft
6.5 ft	27.1 fc	7.1 ft
7.5 ft	20.4 fc	8.2 ft
8.0 ft	17.9 fc	8.7 ft
10.0 ft	11.4 fc	10.9 ft
12.0 ft	8.0 fc	13.1 ft
14.0 ft	5.8 fc	15.3 ft
16.0 ft	4.5 fc	17.5 ft
20.0 ft	2.9 fc	21.9 ft
24.0 ft	2.0 fc	26.2 ft
28.0 ft	1.5 fc	30.6 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	144095	144095	144095
45.00°	997	967	1257
55.00°	497	360	356
65.00°	479	345	413
75.00°	721	658	420
85.00°	1263	1497	1640

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	-6.1	-5.2	-5.7	-4.9	-4.6	-6.9	-6.0	-6.5	-5.6	-5.3
	3H	-3.6	-2.8	-3.2	-2.4	-2.1	-4.3	-3.5	-3.9	-3.2	-2.8
	4H	-1.9	-1.2	-1.5	-0.8	-0.4	-3.0	-2.3	-2.6	-2.0	-1.6
	6H	-0.7	-0.1	-0.3	0.3	0.7	-1.0	-0.4	-0.6	0.0	0.4
	8H	-0.1	0.6	0.4	1.0	1.4	0.4	1.0	0.9	1.4	1.8
	12H	0.7	1.3	1.1	1.7	2.1	1.6	2.2	2.0	2.6	3.0
4H	2H	-5.7	-5.0	-5.3	-4.6	-4.2	-6.1	-5.3	-5.7	-5.0	-4.6
	3H	-2.5	-1.9	-2.1	-1.5	-1.1	-3.2	-2.6	-2.8	-2.2	-1.8
	4H	-0.7	-0.2	-0.3	0.2	0.7	-1.9	-1.4	-1.5	-1.0	-0.5
	6H	0.7	1.1	1.1	1.6	2.0	0.4	0.8	0.9	1.3	1.8
	8H	1.5	1.9	2.0	2.4	2.8	1.9	2.3	2.4	2.8	3.2
	12H	2.3	2.7	2.8	3.2	3.7	3.1	3.5	3.6	4.0	4.5
8H	4H	0.0	0.4	0.5	0.9	1.3	-1.2	-0.8	-0.7	-0.3	0.1
	6H	1.6	1.9	2.1	2.4	2.9	1.3	1.7	1.9	2.2	2.7
	8H	2.6	2.9	3.2	3.5	4.0	2.9	3.2	3.5	3.7	4.2
	12H	3.7	4.0	4.3	4.5	5.1	4.3	4.6	4.9	5.1	5.7
12H	4H	0.1	0.4	0.6	0.9	1.4	-1.1	-0.7	-0.6	-0.3	0.2
	6H	1.8	2.1	2.4	2.6	3.2	1.5	1.8	2.1	2.3	2.8
	8H	3.0	3.3	3.6	3.8	4.4	3.2	3.4	3.7	3.9	4.5

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0