

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO

Report Number: P644145

Luminaire Tested: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P644145  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-131)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K  
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH SPECULAR CLEAR TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 953.8 lumens  
Efficiency: N/A  
Efficacy: 71.2 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.09 / 1.17  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

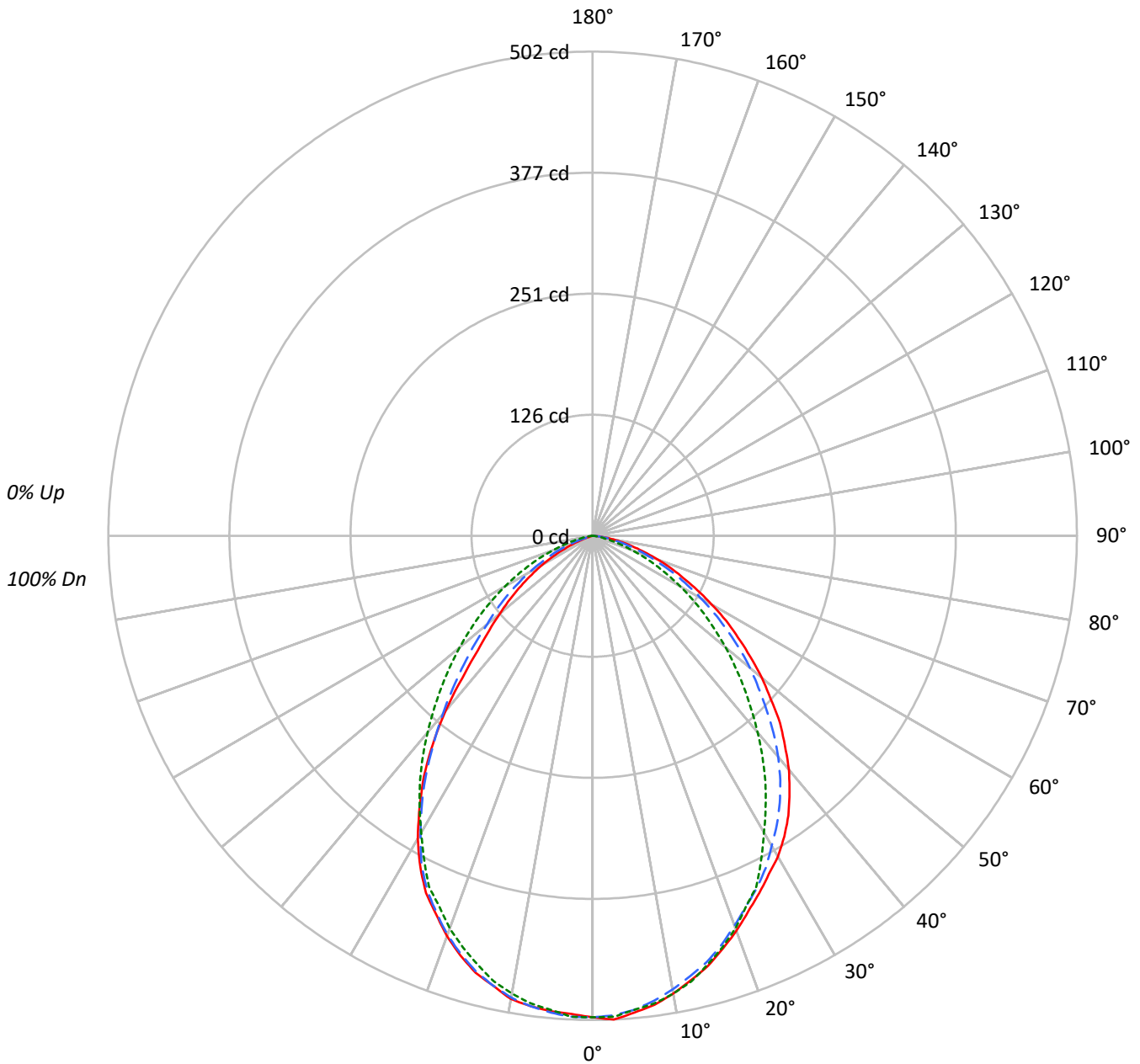
Input Watts (W): 13.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P644145

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K

### Luminous Intensity Polar Plot





TEST NUMBER: P644145

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77								
3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67								
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61	59								
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52								
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	46								
7	70	58	50	45	69	57	50	44	56	49	44	55	48	44	53	48	44	42								
8	66	53	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38								
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34								
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	27366	27366	27366	27366	27366
5°	27311	27152	27152	27311	27234
10°	26825	26586	26825	27065	27148
15°	26209	25965	26124	26533	26618
20°	25430	25091	25261	25681	25762
25°	24715	24364	24280	24540	24715
30°	24314	23497	22491	22586	22947
35°	23684	22627	20893	20124	20412
40°	22650	21412	19043	17297	16989
45°	21305	19738	17172	14614	13048
50°	19505	18157	15334	12145	10678
55°	17596	16229	13476	10313	8659
60°	15613	14198	11512	8355	6622
65°	13439	12128	9327	6161	4099
70°	11524	9922	6924	3462	1619
75°	9150	7625	4575	911	0
80°	6819	5462	2273	0	0
85°	3648	2705	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 21305 cd/sqm



TEST NUMBER: P644145

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	46.8	4.9
10°-20°	129.9	13.6
20°-30°	185.1	19.4
30°-40°	199.1	20.9
40°-50°	171.6	18.0
50°-60°	124.3	13.0
60°-70°	70.1	7.4
70°-80°	23.8	2.5
80°-90°	3.1	0.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	361.8	37.9
0°-40°	560.9	58.8
0°-60°	856.7	89.8
0°-90°	953.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	953.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	499	499	499	499	499	
5°	496	493	493	496	495	47
15°	462	458	460	468	469	130
25°	409	403	401	406	409	189
35°	354	338	312	301	305	220
45°	275	255	222	188	168	211
55°	184	170	141	108	91	165
65°	104	94	72	48	32	104
75°	43	36	22	4	0	47
85°	6	4	0	0	0	8
90°	0	0	0	0	0	



TEST NUMBER: P644145

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2
2.5°	502.1	497.7	496.3	497.7	497.7	497.7	497.7	497.7	497.7	496.3	497.7
5°	496.3	492.0	492.0	492.0	492.0	492.0	490.6	492.0	492.0	492.0	493.4
7.5°	490.6	484.8	486.2	484.8	486.2	484.8	484.8	486.2	484.8	486.2	486.2
10°	481.9	477.6	477.6	477.6	477.6	477.6	477.6	477.6	477.6	477.6	477.6
12.5°	471.9	467.5	467.5	467.5	467.5	467.5	467.5	467.5	469.0	467.5	467.5
15°	461.8	456.0	457.5	456.0	456.0	456.0	456.0	456.0	456.0	456.0	457.5
17.5°	448.8	444.5	444.5	444.5	444.5	444.5	444.5	443.1	444.5	444.5	444.5
20°	435.9	431.6	431.6	430.1	431.6	430.1	430.1	430.1	431.6	430.1	430.1
22.5°	421.5	417.2	418.6	417.2	417.2	417.2	417.2	417.2	415.7	417.2	415.7
25°	408.6	407.1	405.7	407.1	405.7	405.7	405.7	404.2	404.2	404.2	402.8
27.5°	395.6	392.7	392.7	392.7	392.7	391.3	391.3	391.3	389.9	388.4	388.4
30°	384.1	379.8	379.8	379.8	378.3	378.3	376.9	376.9	374.0	372.6	371.2
32.5°	369.7	366.8	365.4	365.4	364.0	364.0	362.5	362.5	359.6	358.2	355.3
35°	353.9	352.4	352.4	351.0	349.6	348.1	346.7	345.3	343.8	340.9	338.1
37.5°	335.2	333.7	332.3	332.3	330.9	329.4	329.4	326.6	325.1	322.2	319.4
40°	316.5	313.6	313.6	312.2	310.7	309.3	309.3	306.4	305.0	302.1	299.2
42.5°	294.9	292.0	292.0	290.6	290.6	290.6	289.2	286.3	283.4	280.5	277.6
45°	274.8	271.9	271.9	269.0	269.0	267.6	266.1	264.7	261.8	258.9	254.6
47.5°	250.3	248.9	248.9	247.4	246.0	244.6	244.6	243.1	240.2	235.9	233.0
50°	228.7	227.3	227.3	225.9	224.4	223.0	221.5	220.1	218.7	215.8	212.9
52.5°	205.7	205.7	204.3	202.8	202.8	201.4	200.0	198.5	195.6	192.8	191.3
55°	184.1	182.7	182.7	181.3	181.3	179.8	178.4	176.9	175.5	172.6	169.8
57.5°	164.0	161.1	161.1	159.7	159.7	159.7	158.2	155.4	153.9	151.0	149.6
60°	142.4	141.0	141.0	141.0	139.5	138.1	138.1	135.2	133.8	132.3	129.5
62.5°	122.3	120.8	120.8	120.8	119.4	119.4	118.0	116.5	115.1	113.6	110.8
65°	103.6	103.6	103.6	102.1	102.1	100.7	99.3	99.3	97.8	96.4	93.5
67.5°	87.8	86.3	86.3	86.3	84.9	84.9	83.4	82.0	80.6	79.1	76.2
70°	71.9	70.5	70.5	69.1	69.1	69.1	69.1	67.6	64.7	64.7	61.9
72.5°	56.1	56.1	56.1	54.7	54.7	54.7	53.2	53.2	51.8	50.3	48.9
75°	43.2	43.2	43.2	41.7	41.7	41.7	40.3	40.3	38.8	37.4	36.0
77.5°	31.6	31.6	31.6	30.2	30.2	30.2	28.8	28.8	27.3	27.3	25.9
80°	21.6	21.6	21.6	20.1	20.1	20.1	20.1	18.7	18.7	17.3	17.3
82.5°	12.9	12.9	12.9	12.9	11.5	11.5	11.5	11.5	11.5	10.1	10.1
85°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	4.3	4.3
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P644145

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2
2.5°	497.7	497.7	497.7	497.7	497.7	497.7	497.7	497.7	497.7	499.2	497.7
5°	493.4	493.4	493.4	493.4	493.4	493.4	494.9	493.4	494.9	493.4	494.9
7.5°	486.2	486.2	487.7	487.7	486.2	487.7	487.7	487.7	487.7	489.1	489.1
10°	477.6	479.0	479.0	480.5	480.5	480.5	480.5	481.9	481.9	481.9	481.9
12.5°	469.0	469.0	469.0	469.0	470.4	469.0	470.4	470.4	471.9	473.3	471.9
15°	456.0	457.5	457.5	457.5	457.5	457.5	458.9	460.3	460.3	460.3	461.8
17.5°	444.5	444.5	444.5	446.0	444.5	446.0	446.0	446.0	447.4	447.4	448.8
20°	430.1	428.7	431.6	430.1	430.1	431.6	431.6	431.6	433.0	433.0	433.0
22.5°	414.3	415.7	414.3	414.3	415.7	415.7	415.7	414.3	415.7	415.7	417.2
25°	401.4	401.4	401.4	401.4	401.4	401.4	401.4	399.9	401.4	401.4	401.4
27.5°	387.0	384.1	384.1	382.7	382.7	381.2	379.8	379.8	379.8	378.3	379.8
30°	369.7	366.8	365.4	364.0	362.5	362.5	359.6	358.2	356.8	355.3	353.9
32.5°	352.4	349.6	348.1	346.7	343.8	342.4	339.5	338.1	336.6	333.7	330.9
35°	336.6	332.3	329.4	326.6	325.1	323.7	320.8	317.9	315.0	312.2	309.3
37.5°	315.0	312.2	309.3	306.4	305.0	303.5	300.7	294.9	292.0	289.2	286.3
40°	296.3	292.0	289.2	284.8	283.4	280.5	277.6	273.3	269.0	266.1	263.3
42.5°	273.3	270.5	267.6	263.3	261.8	258.9	254.6	251.7	248.9	243.1	240.2
45°	251.7	248.9	246.0	241.7	238.8	237.4	234.5	230.2	225.9	221.5	218.7
47.5°	230.2	227.3	223.0	220.1	217.2	215.8	212.9	208.6	204.3	200.0	197.1
50°	208.6	205.7	202.8	197.1	197.1	194.2	191.3	187.0	184.1	179.8	175.5
52.5°	188.5	184.1	181.3	176.9	176.9	175.5	171.2	166.9	164.0	159.7	156.8
55°	166.9	164.0	161.1	158.2	155.4	153.9	152.5	148.2	143.9	141.0	136.7
57.5°	146.7	142.4	141.0	138.1	136.7	135.2	132.3	128.0	125.2	122.3	119.4
60°	128.0	125.2	120.8	119.4	118.0	116.5	113.6	110.8	107.9	105.0	102.1
62.5°	109.3	106.5	103.6	100.7	99.3	97.8	96.4	93.5	90.6	87.8	84.9
65°	90.6	89.2	86.3	84.9	83.4	82.0	79.1	76.2	74.8	71.9	69.1
67.5°	74.8	73.4	70.5	69.1	67.6	67.6	63.3	61.9	59.0	57.5	54.7
70°	60.4	59.0	56.1	54.7	53.2	51.8	50.3	48.9	46.0	43.2	41.7
72.5°	47.5	44.6	43.2	41.7	40.3	40.3	37.4	36.0	33.1	31.6	28.8
75°	34.5	33.1	31.6	30.2	30.2	28.8	27.3	25.9	23.0	21.6	20.1
77.5°	24.5	23.0	21.6	20.1	20.1	18.7	17.3	15.8	14.4	12.9	11.5
80°	15.8	14.4	14.4	12.9	11.5	11.5	10.1	8.6	7.2	7.2	5.8
82.5°	8.6	8.6	7.2	7.2	5.8	5.8	4.3	4.3	2.9	2.9	1.4
85°	4.3	2.9	2.9	2.9	2.9	1.4	1.4	1.4	0.0	0.0	0.0
87.5°	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P644145

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2
2.5°	497.7	497.7	497.7	497.7	497.7	497.7	497.7	497.7	499.2	497.7	497.7
5°	494.9	494.9	496.3	494.9	496.3	496.3	494.9	494.9	496.3	497.7	496.3
7.5°	489.1	489.1	490.6	490.6	490.6	490.6	490.6	492.0	492.0	493.4	493.4
10°	483.4	483.4	483.4	483.4	484.8	484.8	486.2	486.2	486.2	486.2	486.2
12.5°	473.3	474.7	474.7	474.7	474.7	476.2	476.2	477.6	477.6	477.6	479.0
15°	461.8	463.2	464.7	464.7	463.2	464.7	466.1	466.1	467.5	467.5	467.5
17.5°	448.8	450.3	450.3	451.7	450.3	453.1	453.1	454.6	454.6	456.0	456.0
20°	434.4	435.9	435.9	435.9	437.3	437.3	438.8	438.8	440.2	440.2	440.2
22.5°	417.2	418.6	418.6	418.6	418.6	420.1	420.1	421.5	422.9	424.4	422.9
25°	401.4	402.8	404.2	402.8	404.2	404.2	404.2	405.7	405.7	407.1	405.7
27.5°	379.8	379.8	379.8	381.2	382.7	382.7	382.7	384.1	384.1	384.1	385.5
30°	353.9	352.4	353.9	353.9	353.9	353.9	356.8	356.8	356.8	358.2	359.6
32.5°	329.4	329.4	329.4	328.0	328.0	328.0	328.0	329.4	329.4	330.9	332.3
35°	306.4	305.0	302.1	302.1	302.1	300.7	299.2	299.2	300.7	300.7	300.7
37.5°	282.0	280.5	279.1	276.2	276.2	273.3	271.9	270.5	270.5	269.0	269.0
40°	258.9	256.1	253.2	253.2	250.3	248.9	246.0	244.6	241.7	238.8	238.8
42.5°	235.9	233.0	230.2	228.7	225.9	224.4	220.1	217.2	214.3	212.9	210.0
45°	214.3	211.5	207.2	205.7	202.8	200.0	197.1	192.8	188.5	185.6	184.1
47.5°	192.8	189.9	185.6	182.7	181.3	176.9	174.1	169.8	165.4	161.1	156.8
50°	172.6	168.3	164.0	161.1	159.7	155.4	152.5	148.2	142.4	141.0	136.7
52.5°	152.5	148.2	143.9	142.4	141.0	136.7	132.3	128.0	125.2	120.8	118.0
55°	132.3	129.5	125.2	123.7	122.3	118.0	113.6	110.8	107.9	103.6	100.7
57.5°	115.1	112.2	107.9	106.5	105.0	100.7	97.8	93.5	90.6	87.8	84.9
60°	99.3	94.9	92.1	90.6	89.2	84.9	82.0	79.1	76.2	73.4	69.1
62.5°	82.0	79.1	76.2	74.8	71.9	70.5	66.2	64.7	60.4	59.0	56.1
65°	66.2	63.3	60.4	60.4	59.0	54.7	53.2	50.3	47.5	44.6	43.2
67.5°	53.2	50.3	47.5	46.0	44.6	41.7	40.3	37.4	34.5	33.1	30.2
70°	40.3	37.4	34.5	33.1	31.6	30.2	27.3	24.5	21.6	20.1	17.3
72.5°	27.3	24.5	23.0	23.0	21.6	18.7	15.8	14.4	11.5	10.1	8.6
75°	17.3	14.4	12.9	11.5	11.5	10.1	7.2	5.8	4.3	2.9	1.4
77.5°	10.1	8.6	7.2	5.8	5.8	4.3	2.9	1.4	1.4	0.0	0.0
80°	4.3	2.9	1.4	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P644145

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 5000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	499.2	499.2	499.2	499.2	499.2	499.2	499.2	499.2
2.5°	497.7	497.7	497.7	497.7	496.3	496.3	496.3	496.3
5°	496.3	496.3	496.3	496.3	494.9	494.9	496.3	494.9
7.5°	493.4	493.4	492.0	492.0	492.0	492.0	492.0	492.0
10°	487.7	487.7	487.7	486.2	487.7	487.7	486.2	487.7
12.5°	479.0	479.0	479.0	479.0	477.6	477.6	479.0	477.6
15°	469.0	469.0	469.0	469.0	469.0	467.5	469.0	469.0
17.5°	457.5	457.5	456.0	456.0	456.0	457.5	457.5	456.0
20°	441.6	441.6	441.6	441.6	441.6	441.6	441.6	441.6
22.5°	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4
25°	407.1	407.1	407.1	407.1	407.1	407.1	407.1	408.6
27.5°	385.5	385.5	385.5	385.5	385.5	384.1	384.1	387.0
30°	359.6	361.1	361.1	361.1	361.1	361.1	361.1	362.5
32.5°	333.7	333.7	333.7	335.2	333.7	335.2	333.7	333.7
35°	303.5	303.5	303.5	303.5	303.5	305.0	305.0	305.0
37.5°	269.0	270.5	270.5	271.9	271.9	271.9	273.3	271.9
40°	237.4	237.4	237.4	235.9	237.4	235.9	237.4	237.4
42.5°	207.2	204.3	204.3	202.8	202.8	201.4	200.0	200.0
45°	179.8	175.5	175.5	174.1	172.6	169.8	168.3	168.3
47.5°	153.9	152.5	151.0	149.6	148.2	145.3	143.9	145.3
50°	132.3	130.9	129.5	129.5	128.0	126.6	125.2	125.2
52.5°	115.1	112.2	110.8	110.8	109.3	107.9	107.9	107.9
55°	97.8	94.9	94.9	94.9	93.5	92.1	92.1	90.6
57.5°	82.0	79.1	79.1	77.7	76.2	76.2	76.2	74.8
60°	67.6	64.7	63.3	63.3	61.9	60.4	60.4	60.4
62.5°	53.2	51.8	48.9	48.9	47.5	46.0	44.6	46.0
65°	40.3	37.4	36.0	36.0	34.5	33.1	31.6	31.6
67.5°	27.3	25.9	24.5	24.5	21.6	21.6	20.1	20.1
70°	15.8	14.4	14.4	12.9	11.5	11.5	10.1	10.1
72.5°	7.2	5.8	5.8	4.3	4.3	2.9	2.9	2.9
75°	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	1.4	1.4	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





— 0°-180°    - - 45°-225°    - - - - 90°-270°

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)