

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: P642323

Luminaire Tested: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642323  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-132)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K  
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH HAZE TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 746.8 lumens  
Efficiency: N/A  
Efficacy: 56.1 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.12 / 1.23  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

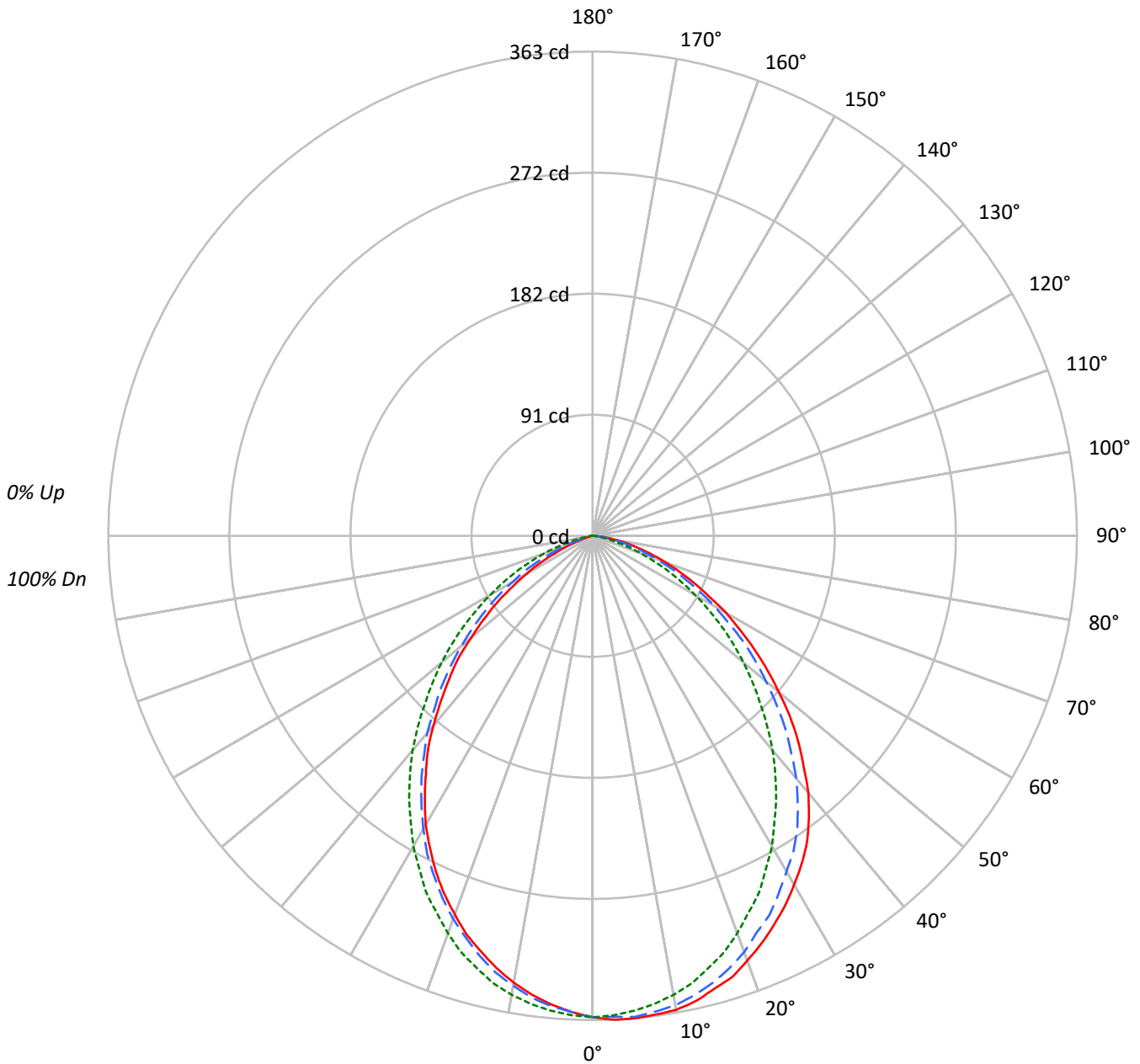
Input Watts (W): 13.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P642323

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K

### Luminous Intensity Polar Plot





TEST NUMBER: P642323

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K

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

RF	20					20					20					20				
RC	80					70					50					30				
RW	70	50	30	10	70	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	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88		
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78	76		
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66		
4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59	57		
5	80	69	60	54	78	68	60	54	66	59	54	64	58	53	62	57	53	51		
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45		
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40		
8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36		
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33		
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	30		

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

	0°	45°	90°	135°	180°
0°	19785	19785	19785	19785	19785
5°	19987	19926	19668	19480	19414
10°	20090	19895	19450	19066	18938
15°	19960	19699	19041	18519	18326
20°	19777	19374	18499	17828	17624
25°	19459	18969	17856	17015	16809
30°	19123	18395	17009	16059	15838
35°	18752	17902	16048	14971	14583
40°	17991	16996	15021	13783	13282
45°	16893	15823	13769	12428	11800
50°	15539	14456	12588	10916	10132
55°	14107	13113	11240	9366	8372
60°	12642	11501	9736	7587	6326
65°	10922	9871	8081	5682	4034
70°	9248	8126	6107	3510	1843
75°	7562	6354	3897	1228	741
80°	5462	4357	1831	379	379
85°	2893	2201	755	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 16893 cd/sqm



TEST NUMBER: P642323

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	33.9	4.5
10°-20°	94.8	12.7
20°-30°	136.6	18.3
30°-40°	152.7	20.4
40°-50°	140.0	18.7
50°-60°	105.1	14.1
60°-70°	60.0	8.0
70°-80°	21.0	2.8
80°-90°	2.7	0.4
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°	265.2	35.5
0°-40°	417.9	56.0
0°-60°	663.0	88.8
0°-90°	746.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	746.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	361	361	361	361	361	
5°	363	362	357	354	353	35
15°	352	347	336	326	323	99
25°	322	314	295	281	278	148
35°	280	268	240	224	218	174
45°	218	204	178	160	152	168
55°	148	137	118	98	88	132
65°	84	76	62	44	31	84
75°	36	30	18	6	4	38
85°	5	4	1	0	0	7
90°	0	0	0	0	0	



TEST NUMBER: P642323

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9
2.5°	363.2	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	360.9
5°	363.2	363.2	363.2	363.2	363.2	363.2	363.2	362.1	362.1	362.1	362.1
7.5°	362.1	362.1	362.1	362.1	362.1	362.1	362.1	360.9	360.9	359.8	359.8
10°	360.9	360.9	360.9	359.8	359.8	359.8	359.8	359.8	358.6	358.6	357.4
12.5°	357.4	357.4	357.4	357.4	356.3	356.3	356.3	355.1	354.0	354.0	352.8
15°	351.7	352.8	352.8	351.7	351.7	351.7	351.7	350.5	349.4	348.2	347.1
17.5°	347.1	347.1	347.1	345.9	344.8	345.9	344.8	343.6	342.5	341.3	340.2
20°	339.0	339.0	337.8	337.8	337.8	337.8	336.7	335.5	334.4	333.2	332.1
22.5°	330.9	330.9	330.9	328.6	328.6	328.6	327.5	327.5	325.2	324.0	321.7
25°	321.7	321.7	321.7	320.5	319.4	318.2	319.4	317.1	315.9	313.6	313.6
27.5°	312.5	312.5	311.3	311.3	310.2	310.2	309.0	306.7	305.6	304.4	302.1
30°	302.1	302.1	300.9	300.9	299.8	298.6	298.6	296.3	295.2	292.9	290.6
32.5°	291.7	291.7	290.6	290.6	289.4	288.3	288.3	286.0	283.7	281.3	280.2
35°	280.2	280.2	279.0	279.0	277.9	276.7	275.6	273.3	272.1	268.7	267.5
37.5°	266.4	267.5	265.2	265.2	264.0	262.9	261.7	260.6	258.3	256.0	252.5
40°	251.4	250.2	250.2	249.1	247.9	247.9	246.8	244.4	243.3	239.8	237.5
42.5°	234.1	234.1	234.1	232.9	231.8	231.8	229.5	228.3	226.0	223.7	220.2
45°	217.9	217.9	216.8	216.8	214.5	214.5	213.3	211.0	209.9	206.4	204.1
47.5°	200.6	199.5	199.5	198.3	197.2	197.2	196.0	194.9	192.6	189.1	186.8
50°	182.2	182.2	182.2	181.0	179.9	179.9	178.7	176.4	175.3	173.0	169.5
52.5°	164.9	164.9	164.9	163.7	162.6	162.6	161.4	160.3	158.0	155.7	153.4
55°	147.6	147.6	147.6	146.4	146.4	144.1	144.1	143.0	140.7	138.4	137.2
57.5°	130.3	130.3	130.3	130.3	129.1	129.1	128.0	126.8	124.5	123.4	119.9
60°	115.3	114.2	114.2	113.0	113.0	111.8	110.7	109.5	108.4	106.1	104.9
62.5°	98.0	99.2	98.0	98.0	96.9	96.9	96.9	94.6	93.4	91.1	89.9
65°	84.2	84.2	84.2	84.2	81.9	81.9	81.9	79.6	78.4	78.4	76.1
67.5°	70.3	70.3	70.3	69.2	69.2	69.2	68.0	66.9	65.7	64.6	63.4
70°	57.7	57.7	57.7	56.5	56.5	55.3	55.3	54.2	53.0	53.0	50.7
72.5°	46.1	46.1	46.1	46.1	45.0	45.0	43.8	43.8	42.7	41.5	40.4
75°	35.7	35.7	35.7	34.6	34.6	34.6	33.4	33.4	32.3	31.1	30.0
77.5°	26.5	25.4	25.4	25.4	25.4	24.2	24.2	24.2	23.1	21.9	21.9
80°	17.3	17.3	17.3	17.3	17.3	16.1	16.1	16.1	15.0	15.0	13.8
82.5°	10.4	10.4	10.4	10.4	10.4	9.2	9.2	9.2	8.1	8.1	8.1
85°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	3.5	3.5	3.5
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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: P642323

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9
2.5°	362.1	362.1	360.9	360.9	360.9	360.9	360.9	359.8	359.8	359.8	359.8
5°	362.1	360.9	359.8	359.8	359.8	359.8	358.6	358.6	358.6	357.4	357.4
7.5°	358.6	358.6	358.6	357.4	357.4	356.3	356.3	355.1	355.1	354.0	354.0
10°	356.3	355.1	355.1	354.0	354.0	352.8	352.8	350.5	349.4	349.4	348.2
12.5°	351.7	350.5	350.5	348.2	348.2	348.2	347.1	344.8	343.6	343.6	342.5
15°	345.9	344.8	343.6	341.3	341.3	340.2	339.0	337.8	336.7	335.5	334.4
17.5°	339.0	336.7	335.5	334.4	333.2	332.1	330.9	329.8	327.5	327.5	325.2
20°	330.9	328.6	327.5	325.2	324.0	324.0	321.7	319.4	318.2	317.1	314.8
22.5°	320.5	319.4	317.1	314.8	313.6	313.6	311.3	309.0	307.9	305.6	304.4
25°	311.3	307.9	306.7	304.4	303.3	303.3	300.9	298.6	296.3	295.2	292.9
27.5°	299.8	297.5	296.3	292.9	291.7	290.6	288.3	286.0	283.7	281.3	279.0
30°	288.3	286.0	283.7	280.2	280.2	277.9	275.6	272.1	271.0	268.7	265.2
32.5°	276.7	274.4	271.0	268.7	266.4	265.2	261.7	259.4	257.1	253.7	252.5
35°	264.0	260.6	258.3	254.8	253.7	251.4	249.1	245.6	243.3	239.8	236.4
37.5°	250.2	245.6	243.3	239.8	238.7	236.4	234.1	231.8	228.3	224.8	222.5
40°	235.2	230.6	227.2	224.8	222.5	220.2	219.1	214.5	212.2	209.9	207.5
42.5°	217.9	214.5	211.0	208.7	206.4	205.2	201.8	199.5	196.0	193.7	191.4
45°	201.8	198.3	194.9	191.4	190.3	189.1	186.8	183.3	179.9	177.6	175.3
47.5°	184.5	182.2	177.6	176.4	174.1	173.0	169.5	167.2	166.0	162.6	160.3
50°	167.2	164.9	162.6	159.1	158.0	156.8	154.5	152.2	149.9	147.6	145.3
52.5°	149.9	148.7	146.4	143.0	143.0	141.8	139.5	137.2	134.9	132.6	130.3
55°	134.9	132.6	130.3	128.0	126.8	125.7	123.4	122.2	119.9	117.6	115.3
57.5°	118.8	116.5	115.3	113.0	111.8	110.7	108.4	107.2	104.9	102.6	100.3
60°	103.8	101.5	100.3	98.0	96.9	96.9	94.6	92.2	91.1	88.8	86.5
62.5°	88.8	86.5	85.3	83.0	83.0	81.9	80.7	78.4	77.3	74.9	73.8
65°	74.9	73.8	71.5	70.3	69.2	68.0	66.9	65.7	63.4	62.3	60.0
67.5°	62.3	60.0	58.8	57.7	56.5	55.3	54.2	53.0	50.7	49.6	47.3
70°	49.6	48.4	47.3	46.1	45.0	45.0	42.7	41.5	39.2	38.1	35.7
72.5°	39.2	38.1	36.9	34.6	34.6	33.4	32.3	31.1	28.8	27.7	25.4
75°	28.8	28.8	26.5	25.4	25.4	24.2	23.1	21.9	20.8	18.4	17.3
77.5°	20.8	19.6	18.4	17.3	16.1	16.1	15.0	13.8	12.7	11.5	9.2
80°	13.8	12.7	11.5	10.4	10.4	9.2	8.1	8.1	6.9	5.8	4.6
82.5°	6.9	6.9	5.8	5.8	4.6	4.6	4.6	3.5	3.5	2.3	2.3
85°	3.5	2.3	2.3	2.3	2.3	2.3	1.2	1.2	1.2	1.2	0.0
87.5°	1.2	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: P642323

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9
2.5°	359.8	358.6	359.8	359.8	358.6	358.6	358.6	358.6	357.4	358.6	357.4
5°	357.4	356.3	356.3	356.3	356.3	355.1	355.1	354.0	354.0	354.0	354.0
7.5°	352.8	351.7	351.7	350.5	350.5	350.5	350.5	349.4	349.4	348.2	348.2
10°	348.2	347.1	345.9	345.9	344.8	344.8	344.8	343.6	342.5	342.5	341.3
12.5°	340.2	340.2	339.0	339.0	337.8	337.8	336.7	335.5	335.5	334.4	334.4
15°	333.2	332.1	330.9	330.9	329.8	328.6	327.5	327.5	326.3	326.3	325.2
17.5°	324.0	321.7	321.7	320.5	319.4	319.4	318.2	317.1	315.9	315.9	315.9
20°	313.6	312.5	311.3	310.2	309.0	309.0	307.9	306.7	305.6	304.4	304.4
22.5°	302.1	300.9	299.8	298.6	298.6	297.5	296.3	295.2	294.0	292.9	292.9
25°	290.6	289.4	288.3	287.1	286.0	284.8	283.7	282.5	281.3	280.2	280.2
27.5°	277.9	275.6	274.4	273.3	272.1	271.0	271.0	268.7	268.7	267.5	266.4
30°	264.0	261.7	259.4	259.4	258.3	257.1	254.8	254.8	253.7	252.5	251.4
32.5°	249.1	247.9	245.6	245.6	243.3	242.1	241.0	239.8	238.7	237.5	237.5
35°	235.2	231.8	230.6	230.6	228.3	227.2	226.0	223.7	223.7	221.4	221.4
37.5°	220.2	217.9	216.8	214.5	213.3	212.2	211.0	208.7	207.5	206.4	205.2
40°	205.2	202.9	200.6	199.5	198.3	196.0	194.9	192.6	192.6	190.3	189.1
42.5°	189.1	186.8	184.5	183.3	182.2	179.9	178.7	176.4	175.3	174.1	173.0
45°	173.0	170.7	169.5	168.3	167.2	166.0	162.6	161.4	160.3	158.0	156.8
47.5°	158.0	155.7	153.4	153.4	151.1	149.9	147.6	145.3	144.1	141.8	140.7
50°	143.0	140.7	138.4	137.2	137.2	133.8	132.6	130.3	128.0	125.7	124.5
52.5°	128.0	125.7	123.4	122.2	121.1	118.8	116.5	115.3	113.0	110.7	109.5
55°	113.0	110.7	108.4	107.2	106.1	103.8	102.6	99.2	98.0	95.7	93.4
57.5°	99.2	96.9	94.6	93.4	92.2	89.9	87.6	85.3	84.2	81.9	79.6
60°	84.2	83.0	80.7	79.6	78.4	77.3	73.8	71.5	69.2	68.0	65.7
62.5°	71.5	69.2	66.9	65.7	64.6	63.4	61.1	58.8	57.7	54.2	51.9
65°	58.8	56.5	54.2	53.0	51.9	50.7	48.4	46.1	43.8	41.5	40.4
67.5°	45.0	43.8	41.5	41.5	40.4	38.1	35.7	34.6	32.3	31.1	28.8
70°	34.6	33.4	31.1	30.0	28.8	26.5	25.4	23.1	21.9	20.8	18.4
72.5°	24.2	23.1	20.8	19.6	18.4	17.3	15.0	13.8	12.7	11.5	10.4
75°	16.1	13.8	12.7	11.5	11.5	9.2	8.1	6.9	5.8	4.6	4.6
77.5°	9.2	8.1	5.8	5.8	5.8	4.6	3.5	3.5	2.3	2.3	2.3
80°	4.6	3.5	2.3	2.3	2.3	2.3	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
85°	0.0	0.0	0.0	0.0	0.0	1.2	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: P642323

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 900LM - 3500K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	360.9	360.9	360.9	360.9	360.9	360.9	360.9	360.9
2.5°	357.4	357.4	357.4	357.4	357.4	357.4	357.4	357.4
5°	354.0	352.8	352.8	352.8	352.8	352.8	352.8	352.8
7.5°	348.2	348.2	347.1	348.2	347.1	347.1	347.1	347.1
10°	341.3	341.3	341.3	341.3	340.2	340.2	340.2	340.2
12.5°	334.4	333.2	333.2	333.2	332.1	333.2	332.1	332.1
15°	325.2	324.0	324.0	324.0	324.0	322.9	324.0	322.9
17.5°	314.8	314.8	313.6	314.8	313.6	313.6	313.6	313.6
20°	303.3	303.3	303.3	302.1	303.3	302.1	302.1	302.1
22.5°	291.7	291.7	290.6	290.6	290.6	290.6	290.6	290.6
25°	279.0	279.0	279.0	279.0	277.9	277.9	277.9	277.9
27.5°	266.4	265.2	265.2	265.2	264.0	265.2	264.0	264.0
30°	251.4	251.4	250.2	250.2	250.2	249.1	249.1	250.2
32.5°	235.2	235.2	235.2	235.2	234.1	234.1	234.1	234.1
35°	220.2	220.2	219.1	219.1	219.1	217.9	217.9	217.9
37.5°	204.1	204.1	202.9	202.9	202.9	201.8	201.8	202.9
40°	187.9	187.9	186.8	186.8	186.8	185.6	185.6	185.6
42.5°	171.8	170.7	170.7	169.5	169.5	169.5	168.3	168.3
45°	155.7	154.5	154.5	154.5	153.4	152.2	152.2	152.2
47.5°	139.5	138.4	137.2	137.2	136.1	136.1	136.1	137.2
50°	123.4	122.2	122.2	121.1	119.9	119.9	119.9	118.8
52.5°	107.2	106.1	106.1	104.9	104.9	103.8	102.6	102.6
55°	92.2	91.1	89.9	88.8	88.8	87.6	87.6	87.6
57.5°	77.3	76.1	74.9	74.9	73.8	73.8	72.6	71.5
60°	63.4	62.3	61.1	61.1	60.0	58.8	57.7	57.7
62.5°	50.7	49.6	48.4	47.3	46.1	45.0	43.8	45.0
65°	39.2	36.9	35.7	34.6	34.6	33.4	32.3	31.1
67.5°	27.7	26.5	25.4	24.2	23.1	21.9	20.8	20.8
70°	17.3	15.0	15.0	15.0	13.8	12.7	11.5	11.5
72.5°	9.2	8.1	6.9	6.9	5.8	5.8	5.8	5.8
75°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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)