

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: P642309

Luminaire Tested: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642309
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-116)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 779.3 lumens
Efficiency: N/A
Efficacy: 58.6 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.23
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

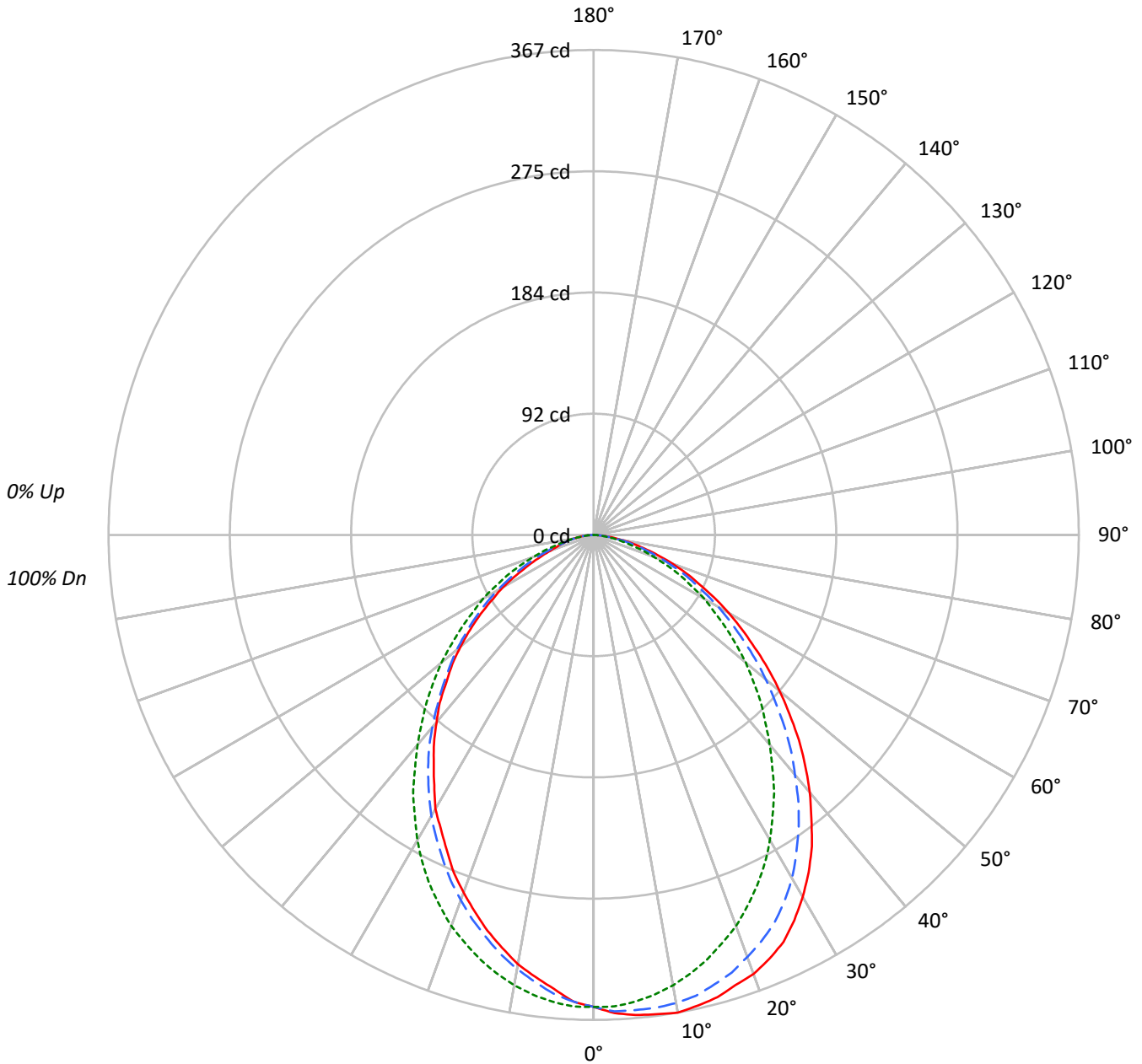
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P642309

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K

Luminous Intensity Polar Plot





TEST NUMBER: P642309

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					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				100				
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88	86				86				
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74				74				
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64				64				
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55				55				
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49				49				
6	73	61	53	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43				43				
7	68	56	47	41	67	55	47	41	53	46	41	52	45	41	51	45	40	39				39				
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35				35				
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	43	37	33	32				32				
10	56	43	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29				29				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	28198	28198	28198	28198	28198
5°	28900	28599	28107	27616	27323
10°	29426	28833	27735	26741	26444
15°	29601	28792	27166	25744	25343
20°	29697	28546	26462	24698	24177
25°	29597	28195	25495	23552	22899
30°	28832	27364	24311	22387	21822
35°	27735	26058	22945	21037	20324
40°	26206	24413	21342	19559	19044
45°	24505	22707	19939	17996	17583
50°	22548	20865	18434	16604	16150
55°	20479	18952	16736	15015	14341
60°	18598	17225	15267	13309	12536
65°	16456	15298	13430	11357	10199
70°	14610	13179	11171	9163	8009
75°	12109	10980	8693	7198	7198
80°	9592	8456	6774	6183	6183
85°	5616	5616	4529	5616	5616

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 24505 cd/sqm



TEST NUMBER: P642309

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.6	4.3
10°-20°	94.1	12.1
20°-30°	136.5	17.5
30°-40°	152.3	19.5
40°-50°	141.2	18.1
50°-60°	111.0	14.2
60°-70°	71.0	9.1
70°-80°	32.6	4.2
80°-90°	7.0	0.9
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°	264.2	33.9
0°-40°	416.4	53.4
0°-60°	668.6	85.8
0°-90°	779.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	779.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	357	357	357	357	357	
5°	365	361	355	348	345	35
15°	362	352	332	315	310	102
25°	340	324	293	270	263	156
35°	288	270	238	218	211	179
45°	220	203	179	161	158	169
55°	149	138	122	109	104	134
65°	88	82	72	61	55	88
75°	40	36	28	24	24	43
85°	6	6	5	6	6	9
90°	0	0	0	0	0	



TEST NUMBER: P642309

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2
2.5°	362.2	362.2	362.2	362.2	362.2	362.2	360.9	360.9	360.9	360.9	360.9
5°	364.7	364.7	364.7	364.7	363.4	363.4	363.4	363.4	362.2	362.2	360.9
7.5°	365.9	365.9	365.9	364.7	364.7	364.7	363.4	363.4	363.4	362.2	360.9
10°	367.1	365.9	365.9	364.7	364.7	364.7	363.4	363.4	362.2	360.9	359.7
12.5°	364.7	364.7	364.7	364.7	363.4	363.4	362.2	360.9	359.7	358.5	357.2
15°	362.2	362.2	362.2	360.9	359.7	359.7	358.5	357.2	356.0	354.7	352.3
17.5°	357.2	358.5	357.2	357.2	356.0	356.0	354.7	353.5	351.0	349.8	347.3
20°	353.5	352.3	352.3	352.3	351.0	349.8	348.5	347.3	344.8	343.6	339.8
22.5°	347.3	347.3	346.0	344.8	343.6	343.6	342.3	339.8	338.6	336.1	332.4
25°	339.8	338.6	338.6	337.4	336.1	336.1	333.6	332.4	329.9	326.2	323.7
27.5°	328.7	328.7	328.7	327.4	326.2	325.0	323.7	321.2	320.0	315.0	312.6
30°	316.3	316.3	315.0	315.0	312.6	312.6	311.3	308.8	306.4	302.6	300.2
32.5°	302.6	302.6	302.6	300.2	298.9	297.7	296.4	295.2	291.5	287.8	285.3
35°	287.8	287.8	286.5	285.3	284.0	282.8	281.6	279.1	276.6	274.1	270.4
37.5°	270.4	271.6	270.4	269.1	267.9	266.7	265.4	264.2	260.5	258.0	254.3
40°	254.3	254.3	253.0	251.8	250.5	250.5	249.3	246.8	244.3	240.6	236.9
42.5°	236.9	236.9	235.7	234.4	234.4	233.2	230.7	229.5	227.0	224.5	220.8
45°	219.5	218.3	217.1	217.1	215.8	214.6	214.6	212.1	209.6	205.9	203.4
47.5°	200.9	200.9	199.7	199.7	198.5	197.2	197.2	194.7	191.0	188.5	186.0
50°	183.6	183.6	182.3	182.3	181.1	179.8	178.6	177.4	174.9	172.4	169.9
52.5°	166.2	166.2	166.2	163.7	162.5	162.5	162.5	160.0	158.8	156.3	153.8
55°	148.8	148.8	148.8	147.6	146.4	146.4	146.4	143.9	142.6	140.2	137.7
57.5°	132.7	132.7	132.7	131.5	131.5	130.2	129.0	127.8	126.5	125.3	122.8
60°	117.8	117.8	116.6	115.3	116.6	115.3	114.1	112.9	111.6	110.4	109.1
62.5°	102.9	102.9	102.9	101.7	100.5	100.5	100.5	99.2	96.7	95.5	94.3
65°	88.1	88.1	88.1	88.1	86.8	86.8	85.6	84.3	84.3	83.1	81.9
67.5°	75.7	75.7	74.4	74.4	73.2	73.2	73.2	71.9	70.7	70.7	69.5
70°	63.3	62.0	62.0	62.0	60.8	60.8	60.8	59.5	59.5	58.3	57.1
72.5°	50.9	50.9	50.9	50.9	49.6	49.6	48.4	48.4	47.1	47.1	45.9
75°	39.7	39.7	39.7	39.7	38.4	38.4	38.4	38.4	37.2	37.2	36.0
77.5°	29.8	29.8	29.8	29.8	29.8	29.8	28.5	28.5	28.5	27.3	27.3
80°	21.1	21.1	21.1	21.1	19.8	19.8	19.8	19.8	19.8	18.6	18.6
82.5°	13.6	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	11.2
85°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
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: P642309

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2
2.5°	359.7	359.7	359.7	359.7	358.5	358.5	358.5	357.2	357.2	357.2	357.2
5°	360.9	360.9	358.5	358.5	358.5	358.5	357.2	357.2	356.0	354.7	353.5
7.5°	359.7	359.7	358.5	357.2	356.0	356.0	354.7	353.5	352.3	351.0	349.8
10°	358.5	357.2	356.0	354.7	353.5	352.3	351.0	349.8	347.3	346.0	344.8
12.5°	356.0	353.5	352.3	349.8	349.8	348.5	346.0	344.8	342.3	339.8	338.6
15°	351.0	348.5	346.0	343.6	343.6	341.1	338.6	337.4	334.9	332.4	329.9
17.5°	344.8	342.3	339.8	337.4	336.1	333.6	331.2	328.7	326.2	323.7	321.2
20°	338.6	334.9	332.4	328.7	327.4	326.2	322.5	320.0	317.5	315.0	311.3
22.5°	329.9	327.4	322.5	320.0	318.8	316.3	313.8	310.1	306.4	303.9	301.4
25°	320.0	317.5	313.8	310.1	307.6	306.4	302.6	298.9	296.4	292.7	290.2
27.5°	308.8	305.1	302.6	297.7	296.4	294.0	290.2	286.5	284.0	280.3	276.6
30°	296.4	292.7	289.0	285.3	282.8	281.6	277.8	274.1	270.4	266.7	264.2
32.5°	281.6	277.8	274.1	271.6	267.9	265.4	262.9	259.2	255.5	251.8	249.3
35°	266.7	262.9	259.2	255.5	253.0	253.0	248.1	244.3	240.6	238.1	234.4
37.5°	250.5	246.8	243.1	239.4	238.1	235.7	231.9	228.2	225.7	222.0	219.5
40°	234.4	229.5	227.0	223.3	222.0	219.5	217.1	213.3	210.9	207.1	204.7
42.5°	217.1	214.6	210.9	208.4	205.9	204.7	200.9	197.2	194.7	192.2	191.0
45°	200.9	197.2	193.5	191.0	189.8	187.3	186.0	182.3	179.8	178.6	176.1
47.5°	183.6	181.1	178.6	174.9	173.6	172.4	169.9	168.7	166.2	163.7	161.2
50°	167.4	165.0	162.5	160.0	158.8	158.8	155.0	152.6	151.3	150.1	147.6
52.5°	151.3	148.8	146.4	143.9	143.9	142.6	140.2	138.9	137.7	135.2	132.7
55°	136.4	134.0	131.5	130.2	129.0	129.0	126.5	125.3	122.8	121.6	120.3
57.5°	121.6	119.1	117.8	116.6	115.3	115.3	112.9	111.6	110.4	107.9	107.9
60°	107.9	105.4	104.2	102.9	101.7	100.5	100.5	98.0	96.7	96.7	94.3
62.5°	93.0	91.8	90.5	89.3	88.1	88.1	86.8	85.6	84.3	83.1	81.9
65°	80.6	79.4	78.1	76.9	75.7	75.7	74.4	73.2	71.9	71.9	69.5
67.5°	68.2	67.0	65.7	64.5	64.5	63.3	62.0	62.0	60.8	59.5	58.3
70°	55.8	55.8	54.6	53.3	53.3	52.1	50.9	50.9	49.6	48.4	47.1
72.5°	45.9	44.7	43.4	43.4	42.2	42.2	40.9	40.9	39.7	38.4	37.2
75°	34.7	33.5	33.5	33.5	32.2	32.2	32.2	31.0	29.8	28.5	28.5
77.5°	26.0	26.0	24.8	23.6	23.6	23.6	22.3	22.3	22.3	21.1	21.1
80°	18.6	17.4	17.4	16.1	16.1	16.1	16.1	14.9	14.9	14.9	13.6
82.5°	11.2	11.2	11.2	9.9	9.9	9.9	9.9	9.9	8.7	8.7	8.7
85°	6.2	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.5	2.5
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: P642309

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2
2.5°	356.0	356.0	354.7	354.7	354.7	354.7	354.7	353.5	353.5	353.5	353.5
5°	353.5	352.3	351.0	351.0	351.0	349.8	349.8	348.5	348.5	347.3	347.3
7.5°	348.5	347.3	346.0	346.0	344.8	344.8	342.3	342.3	341.1	339.8	339.8
10°	342.3	341.1	339.8	338.6	338.6	336.1	336.1	334.9	333.6	332.4	332.4
12.5°	336.1	334.9	332.4	331.2	331.2	329.9	327.4	326.2	325.0	323.7	322.5
15°	327.4	326.2	323.7	322.5	321.2	320.0	318.8	317.5	315.0	313.8	313.8
17.5°	318.8	317.5	313.8	312.6	312.6	310.1	308.8	306.4	305.1	303.9	302.6
20°	308.8	306.4	303.9	302.6	301.4	298.9	297.7	296.4	294.0	292.7	291.5
22.5°	297.7	295.2	292.7	291.5	290.2	287.8	286.5	284.0	282.8	281.6	280.3
25°	286.5	284.0	281.6	280.3	277.8	276.6	274.1	271.6	270.4	269.1	267.9
27.5°	274.1	271.6	267.9	266.7	265.4	264.2	261.7	259.2	258.0	255.5	255.5
30°	260.5	258.0	255.5	254.3	253.0	250.5	249.3	246.8	245.6	243.1	243.1
32.5°	246.8	243.1	240.6	239.4	238.1	236.9	234.4	233.2	231.9	230.7	229.5
35°	231.9	229.5	227.0	225.7	224.5	222.0	220.8	219.5	218.3	215.8	215.8
37.5°	217.1	214.6	212.1	210.9	210.9	208.4	207.1	204.7	204.7	202.2	202.2
40°	202.2	199.7	197.2	197.2	196.0	193.5	192.2	191.0	189.8	188.5	188.5
42.5°	188.5	184.8	183.6	183.6	181.1	179.8	178.6	177.4	174.9	174.9	174.9
45°	173.6	171.2	169.9	168.7	167.4	166.2	165.0	162.5	161.2	160.0	160.0
47.5°	160.0	157.5	156.3	155.0	153.8	152.6	151.3	150.1	147.6	147.6	146.4
50°	146.4	143.9	142.6	141.4	140.2	138.9	137.7	136.4	135.2	134.0	132.7
52.5°	131.5	130.2	129.0	127.8	127.8	125.3	124.0	122.8	121.6	121.6	119.1
55°	119.1	117.8	116.6	115.3	114.1	112.9	111.6	110.4	109.1	107.9	106.7
57.5°	105.4	104.2	102.9	102.9	101.7	100.5	99.2	98.0	96.7	95.5	94.3
60°	93.0	91.8	90.5	90.5	89.3	88.1	86.8	86.8	84.3	83.1	81.9
62.5°	80.6	79.4	78.1	78.1	76.9	76.9	75.7	74.4	71.9	71.9	70.7
65°	69.5	68.2	67.0	65.7	65.7	64.5	63.3	62.0	60.8	60.8	59.5
67.5°	58.3	57.1	55.8	55.8	54.6	53.3	52.1	50.9	49.6	49.6	48.4
70°	47.1	45.9	44.7	44.7	43.4	42.2	42.2	40.9	39.7	38.4	38.4
72.5°	36.0	36.0	34.7	34.7	33.5	33.5	32.2	31.0	31.0	29.8	28.5
75°	27.3	27.3	26.0	26.0	24.8	24.8	23.6	23.6	23.6	22.3	23.6
77.5°	19.8	19.8	18.6	18.6	18.6	17.4	17.4	17.4	18.6	18.6	18.6
80°	13.6	13.6	13.6	13.6	12.4	12.4	13.6	13.6	13.6	13.6	13.6
82.5°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	9.9	9.9	9.9
85°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.2	6.2	6.2	6.2
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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: P642309

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 900LM - 4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	357.2	357.2	357.2	357.2	357.2	357.2	357.2	357.2
2.5°	352.3	352.3	352.3	352.3	352.3	352.3	352.3	353.5
5°	346.0	346.0	346.0	346.0	346.0	346.0	346.0	344.8
7.5°	339.8	338.6	338.6	338.6	338.6	337.4	337.4	337.4
10°	331.2	331.2	329.9	329.9	329.9	329.9	328.7	329.9
12.5°	322.5	321.2	321.2	321.2	320.0	320.0	320.0	320.0
15°	312.6	311.3	311.3	311.3	310.1	310.1	310.1	310.1
17.5°	301.4	301.4	300.2	300.2	298.9	298.9	298.9	298.9
20°	290.2	290.2	290.2	289.0	289.0	289.0	287.8	287.8
22.5°	279.1	277.8	276.6	277.8	276.6	275.4	276.6	276.6
25°	266.7	265.4	264.2	264.2	264.2	264.2	262.9	262.9
27.5°	254.3	251.8	251.8	251.8	251.8	250.5	250.5	250.5
30°	241.9	240.6	240.6	239.4	238.1	238.1	238.1	239.4
32.5°	228.2	227.0	225.7	225.7	225.7	225.7	224.5	224.5
35°	214.6	214.6	213.3	213.3	213.3	212.1	212.1	210.9
37.5°	200.9	200.9	199.7	199.7	199.7	198.5	198.5	198.5
40°	187.3	186.0	186.0	187.3	186.0	186.0	184.8	184.8
42.5°	173.6	173.6	172.4	172.4	172.4	172.4	171.2	172.4
45°	158.8	158.8	158.8	158.8	158.8	158.8	157.5	157.5
47.5°	146.4	145.1	145.1	145.1	145.1	145.1	145.1	145.1
50°	132.7	131.5	131.5	131.5	131.5	131.5	131.5	131.5
52.5°	119.1	117.8	117.8	117.8	117.8	117.8	117.8	117.8
55°	106.7	105.4	105.4	104.2	105.4	104.2	104.2	104.2
57.5°	94.3	93.0	91.8	93.0	91.8	91.8	91.8	90.5
60°	81.9	80.6	80.6	80.6	79.4	78.1	78.1	79.4
62.5°	69.5	69.5	68.2	68.2	67.0	65.7	65.7	65.7
65°	58.3	57.1	57.1	55.8	55.8	54.6	54.6	54.6
67.5°	47.1	47.1	45.9	45.9	44.7	44.7	44.7	43.4
70°	37.2	37.2	36.0	36.0	36.0	34.7	34.7	34.7
72.5°	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
75°	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6
77.5°	18.6	18.6	18.6	18.6	18.6	18.6	18.6	19.8
80°	13.6	13.6	14.9	13.6	14.9	13.6	13.6	13.6
82.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
85°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)