

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: P642304

Luminaire Tested: ML5612LSWW97FS1E - 592W WW - 600LM - 4000K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642304  
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 - 600LM - 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: 607.4 lumens  
Efficiency: N/A  
Efficacy: 59.0 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

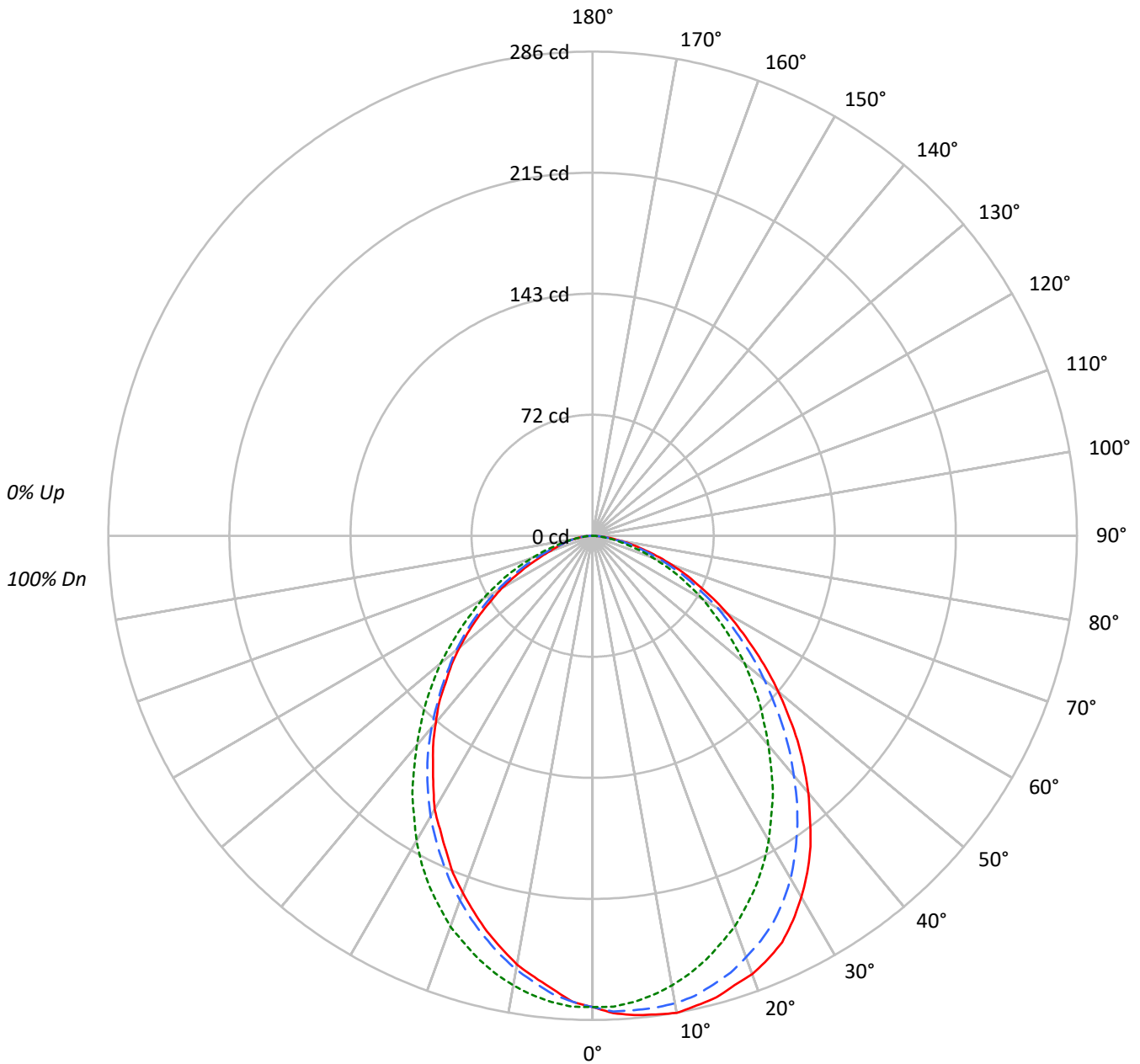
Input Watts (W): 10.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P642304

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 4000K

### Luminous Intensity Polar Plot





TEST NUMBER: P642304

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 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								
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88	86								
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74								
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64								
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55								
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49								
6	73	61	53	46	72	60	52	46	58	51	46	57	50	46	55	49	45	43								
7	68	56	47	41	67	55	47	41	53	46	41	52	45	41	51	45	40	39								
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35								
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	43	37	33	32								
10	56	43	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29								

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

	0°	45°	90°	135°	180°
0°	21977	21977	21977	21977	21977
5°	22521	22291	21911	21530	21300
10°	22941	22477	21619	20849	20617
15°	23071	22442	21175	20072	19753
20°	23144	22253	20632	19246	18843
25°	23073	21976	19877	18361	17856
30°	22469	21330	18951	17447	17009
35°	21616	20315	17886	16402	15833
40°	20425	19033	16632	15241	14839
45°	19101	17695	15540	14033	13709
50°	17574	16260	14369	12944	12588
55°	15965	14768	13033	11712	11175
60°	14494	13436	11904	10373	9773
65°	12814	11917	10479	8854	7939
70°	11379	10271	8701	7132	6255
75°	9425	8540	6771	5612	5612
80°	7455	6592	5273	4819	4819
85°	4348	4348	3532	4348	4348

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 19101 cd/sqm



TEST NUMBER: P642304

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 4000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	26.2	4.3
10°-20°	73.3	12.1
20°-30°	106.4	17.5
30°-40°	118.7	19.5
40°-50°	110.0	18.1
50°-60°	86.5	14.2
60°-70°	55.4	9.1
70°-80°	25.4	4.2
80°-90°	5.5	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°	205.9	33.9
0°-40°	324.6	53.4
0°-60°	521.2	85.8
0°-90°	607.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	607.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	278	278	278	278	278	
5°	284	281	276	272	269	27
15°	282	275	259	246	242	80
25°	265	252	228	211	205	121
35°	224	211	186	170	164	140
45°	171	158	139	126	123	132
55°	116	107	95	85	81	104
65°	69	64	56	47	42	69
75°	31	28	22	18	18	33
85°	5	5	4	5	5	7
90°	0	0	0	0	0	



TEST NUMBER: P642304

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 4000K

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4
2.5°	282.3	282.3	282.3	282.3	282.3	282.3	281.3	281.3	281.3	281.3	281.3
5°	284.2	284.2	284.2	284.2	283.3	283.3	283.3	283.3	282.3	282.3	281.3
7.5°	285.2	285.2	285.2	284.2	284.2	284.2	283.3	283.3	283.3	282.3	281.3
10°	286.2	285.2	285.2	284.2	284.2	284.2	283.3	283.3	282.3	281.3	280.4
12.5°	284.2	284.2	284.2	284.2	283.3	283.3	282.3	281.3	280.4	279.4	278.4
15°	282.3	282.3	282.3	281.3	280.4	280.4	279.4	278.4	277.5	276.5	274.6
17.5°	278.4	279.4	278.4	278.4	277.5	277.5	276.5	275.5	273.6	272.6	270.7
20°	275.5	274.6	274.6	274.6	273.6	272.6	271.7	270.7	268.8	267.8	264.9
22.5°	270.7	270.7	269.7	268.8	267.8	267.8	266.8	264.9	263.9	262.0	259.1
25°	264.9	263.9	263.9	263.0	262.0	262.0	260.1	259.1	257.2	254.3	252.3
27.5°	256.2	256.2	256.2	255.2	254.3	253.3	252.3	250.4	249.4	245.6	243.6
30°	246.5	246.5	245.6	245.6	243.6	243.6	242.7	240.7	238.8	235.9	234.0
32.5°	235.9	235.9	235.9	234.0	233.0	232.0	231.1	230.1	227.2	224.3	222.4
35°	224.3	224.3	223.3	222.4	221.4	220.4	219.5	217.5	215.6	213.7	210.8
37.5°	210.8	211.7	210.8	209.8	208.8	207.9	206.9	205.9	203.0	201.1	198.2
40°	198.2	198.2	197.2	196.3	195.3	195.3	194.3	192.4	190.5	187.6	184.7
42.5°	184.7	184.7	183.7	182.7	182.7	181.8	179.8	178.9	176.9	175.0	172.1
45°	171.1	170.2	169.2	169.2	168.2	167.2	167.2	165.3	163.4	160.5	158.5
47.5°	156.6	156.6	155.6	155.6	154.7	153.7	153.7	151.8	148.9	146.9	145.0
50°	143.1	143.1	142.1	142.1	141.1	140.2	139.2	138.2	136.3	134.4	132.4
52.5°	129.5	129.5	129.5	127.6	126.6	126.6	126.6	124.7	123.7	121.8	119.9
55°	116.0	116.0	116.0	115.0	114.1	114.1	114.1	112.1	111.2	109.2	107.3
57.5°	103.4	103.4	103.4	102.5	102.5	101.5	100.5	99.6	98.6	97.6	95.7
60°	91.8	91.8	90.9	89.9	90.9	89.9	88.9	88.0	87.0	86.0	85.1
62.5°	80.2	80.2	80.2	79.3	78.3	78.3	78.3	77.3	75.4	74.4	73.5
65°	68.6	68.6	68.6	68.6	67.7	67.7	66.7	65.7	65.7	64.8	63.8
67.5°	59.0	59.0	58.0	58.0	57.0	57.0	57.0	56.1	55.1	55.1	54.1
70°	49.3	48.3	48.3	48.3	47.4	47.4	47.4	46.4	46.4	45.4	44.5
72.5°	39.6	39.6	39.6	39.6	38.7	38.7	37.7	37.7	36.7	36.7	35.8
75°	30.9	30.9	30.9	30.9	30.0	30.0	30.0	30.0	29.0	29.0	28.0
77.5°	23.2	23.2	23.2	23.2	23.2	23.2	22.2	22.2	22.2	21.3	21.3
80°	16.4	16.4	16.4	16.4	15.5	15.5	15.5	15.5	15.5	14.5	14.5
82.5°	10.6	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	8.7
85°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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: P642304

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 4000K

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4
2.5°	280.4	280.4	280.4	280.4	279.4	279.4	279.4	278.4	278.4	278.4	278.4
5°	281.3	281.3	279.4	279.4	279.4	279.4	278.4	278.4	277.5	276.5	275.5
7.5°	280.4	280.4	279.4	278.4	277.5	277.5	276.5	275.5	274.6	273.6	272.6
10°	279.4	278.4	277.5	276.5	275.5	274.6	273.6	272.6	270.7	269.7	268.8
12.5°	277.5	275.5	274.6	272.6	272.6	271.7	269.7	268.8	266.8	264.9	263.9
15°	273.6	271.7	269.7	267.8	267.8	265.9	263.9	263.0	261.0	259.1	257.2
17.5°	268.8	266.8	264.9	263.0	262.0	260.1	258.1	256.2	254.3	252.3	250.4
20°	263.9	261.0	259.1	256.2	255.2	254.3	251.4	249.4	247.5	245.6	242.7
22.5°	257.2	255.2	251.4	249.4	248.5	246.5	244.6	241.7	238.8	236.9	234.9
25°	249.4	247.5	244.6	241.7	239.8	238.8	235.9	233.0	231.1	228.2	226.2
27.5°	240.7	237.8	235.9	232.0	231.1	229.1	226.2	223.3	221.4	218.5	215.6
30°	231.1	228.2	225.3	222.4	220.4	219.5	216.6	213.7	210.8	207.9	205.9
32.5°	219.5	216.6	213.7	211.7	208.8	206.9	205.0	202.1	199.2	196.3	194.3
35°	207.9	205.0	202.1	199.2	197.2	197.2	193.4	190.5	187.6	185.6	182.7
37.5°	195.3	192.4	189.5	186.6	185.6	183.7	180.8	177.9	176.0	173.1	171.1
40°	182.7	178.9	176.9	174.0	173.1	171.1	169.2	166.3	164.3	161.4	159.5
42.5°	169.2	167.2	164.3	162.4	160.5	159.5	156.6	153.7	151.8	149.8	148.9
45°	156.6	153.7	150.8	148.9	147.9	146.0	145.0	142.1	140.2	139.2	137.3
47.5°	143.1	141.1	139.2	136.3	135.3	134.4	132.4	131.5	129.5	127.6	125.7
50°	130.5	128.6	126.6	124.7	123.7	123.7	120.8	118.9	117.9	117.0	115.0
52.5°	117.9	116.0	114.1	112.1	112.1	111.2	109.2	108.3	107.3	105.4	103.4
55°	106.3	104.4	102.5	101.5	100.5	100.5	98.6	97.6	95.7	94.7	93.8
57.5°	94.7	92.8	91.8	90.9	89.9	89.9	88.0	87.0	86.0	84.1	84.1
60°	84.1	82.2	81.2	80.2	79.3	78.3	78.3	76.4	75.4	75.4	73.5
62.5°	72.5	71.5	70.6	69.6	68.6	68.6	67.7	66.7	65.7	64.8	63.8
65°	62.8	61.9	60.9	59.9	59.0	59.0	58.0	57.0	56.1	56.1	54.1
67.5°	53.2	52.2	51.2	50.3	50.3	49.3	48.3	48.3	47.4	46.4	45.4
70°	43.5	43.5	42.5	41.6	41.6	40.6	39.6	39.6	38.7	37.7	36.7
72.5°	35.8	34.8	33.8	33.8	32.9	32.9	31.9	31.9	30.9	30.0	29.0
75°	27.1	26.1	26.1	26.1	25.1	25.1	25.1	24.2	23.2	22.2	22.2
77.5°	20.3	20.3	19.3	18.4	18.4	18.4	17.4	17.4	17.4	16.4	16.4
80°	14.5	13.5	13.5	12.6	12.6	12.6	12.6	11.6	11.6	11.6	10.6
82.5°	8.7	8.7	8.7	7.7	7.7	7.7	7.7	7.7	6.8	6.8	6.8
85°	4.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.9	1.9
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: P642304

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 4000K

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4
2.5°	277.5	277.5	276.5	276.5	276.5	276.5	276.5	275.5	275.5	275.5	275.5
5°	275.5	274.6	273.6	273.6	273.6	272.6	272.6	271.7	271.7	270.7	270.7
7.5°	271.7	270.7	269.7	269.7	268.8	268.8	266.8	266.8	265.9	264.9	264.9
10°	266.8	265.9	264.9	263.9	263.9	262.0	262.0	261.0	260.1	259.1	259.1
12.5°	262.0	261.0	259.1	258.1	258.1	257.2	255.2	254.3	253.3	252.3	251.4
15°	255.2	254.3	252.3	251.4	250.4	249.4	248.5	247.5	245.6	244.6	244.6
17.5°	248.5	247.5	244.6	243.6	243.6	241.7	240.7	238.8	237.8	236.9	235.9
20°	240.7	238.8	236.9	235.9	234.9	233.0	232.0	231.1	229.1	228.2	227.2
22.5°	232.0	230.1	228.2	227.2	226.2	224.3	223.3	221.4	220.4	219.5	218.5
25°	223.3	221.4	219.5	218.5	216.6	215.6	213.7	211.7	210.8	209.8	208.8
27.5°	213.7	211.7	208.8	207.9	206.9	205.9	204.0	202.1	201.1	199.2	199.2
30°	203.0	201.1	199.2	198.2	197.2	195.3	194.3	192.4	191.4	189.5	189.5
32.5°	192.4	189.5	187.6	186.6	185.6	184.7	182.7	181.8	180.8	179.8	178.9
35°	180.8	178.9	176.9	176.0	175.0	173.1	172.1	171.1	170.2	168.2	168.2
37.5°	169.2	167.2	165.3	164.3	164.3	162.4	161.4	159.5	159.5	157.6	157.6
40°	157.6	155.6	153.7	153.7	152.7	150.8	149.8	148.9	147.9	146.9	146.9
42.5°	146.9	144.0	143.1	143.1	141.1	140.2	139.2	138.2	136.3	136.3	136.3
45°	135.3	133.4	132.4	131.5	130.5	129.5	128.6	126.6	125.7	124.7	124.7
47.5°	124.7	122.8	121.8	120.8	119.9	118.9	117.9	117.0	115.0	115.0	114.1
50°	114.1	112.1	111.2	110.2	109.2	108.3	107.3	106.3	105.4	104.4	103.4
52.5°	102.5	101.5	100.5	99.6	99.6	97.6	96.7	95.7	94.7	94.7	92.8
55°	92.8	91.8	90.9	89.9	88.9	88.0	87.0	86.0	85.1	84.1	83.1
57.5°	82.2	81.2	80.2	80.2	79.3	78.3	77.3	76.4	75.4	74.4	73.5
60°	72.5	71.5	70.6	70.6	69.6	68.6	67.7	67.7	65.7	64.8	63.8
62.5°	62.8	61.9	60.9	60.9	59.9	59.9	59.0	58.0	56.1	56.1	55.1
65°	54.1	53.2	52.2	51.2	51.2	50.3	49.3	48.3	47.4	47.4	46.4
67.5°	45.4	44.5	43.5	43.5	42.5	41.6	40.6	39.6	38.7	38.7	37.7
70°	36.7	35.8	34.8	34.8	33.8	32.9	32.9	31.9	30.9	30.0	30.0
72.5°	28.0	28.0	27.1	27.1	26.1	26.1	25.1	24.2	24.2	23.2	22.2
75°	21.3	21.3	20.3	20.3	19.3	19.3	18.4	18.4	18.4	17.4	18.4
77.5°	15.5	15.5	14.5	14.5	14.5	13.5	13.5	13.5	14.5	14.5	14.5
80°	10.6	10.6	10.6	10.6	9.7	9.7	10.6	10.6	10.6	10.6	10.6
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	7.7	7.7	7.7
85°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.8	4.8	4.8	4.8
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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: P642304

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 4000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	278.4	278.4	278.4	278.4	278.4	278.4	278.4	278.4
2.5°	274.6	274.6	274.6	274.6	274.6	274.6	274.6	275.5
5°	269.7	269.7	269.7	269.7	269.7	269.7	269.7	268.8
7.5°	264.9	263.9	263.9	263.9	263.9	263.0	263.0	263.0
10°	258.1	258.1	257.2	257.2	257.2	257.2	256.2	257.2
12.5°	251.4	250.4	250.4	250.4	249.4	249.4	249.4	249.4
15°	243.6	242.7	242.7	242.7	241.7	241.7	241.7	241.7
17.5°	234.9	234.9	234.0	234.0	233.0	233.0	233.0	233.0
20°	226.2	226.2	226.2	225.3	225.3	225.3	224.3	224.3
22.5°	217.5	216.6	215.6	216.6	215.6	214.6	215.6	215.6
25°	207.9	206.9	205.9	205.9	205.9	205.9	205.0	205.0
27.5°	198.2	196.3	196.3	196.3	196.3	195.3	195.3	195.3
30°	188.5	187.6	187.6	186.6	185.6	185.6	185.6	186.6
32.5°	177.9	176.9	176.0	176.0	176.0	176.0	175.0	175.0
35°	167.2	167.2	166.3	166.3	166.3	165.3	165.3	164.3
37.5°	156.6	156.6	155.6	155.6	155.6	154.7	154.7	154.7
40°	146.0	145.0	145.0	146.0	145.0	145.0	144.0	144.0
42.5°	135.3	135.3	134.4	134.4	134.4	134.4	133.4	134.4
45°	123.7	123.7	123.7	123.7	123.7	123.7	122.8	122.8
47.5°	114.1	113.1	113.1	113.1	113.1	113.1	113.1	113.1
50°	103.4	102.5	102.5	102.5	102.5	102.5	102.5	102.5
52.5°	92.8	91.8	91.8	91.8	91.8	91.8	91.8	91.8
55°	83.1	82.2	82.2	81.2	82.2	81.2	81.2	81.2
57.5°	73.5	72.5	71.5	72.5	71.5	71.5	71.5	70.6
60°	63.8	62.8	62.8	62.8	61.9	60.9	60.9	61.9
62.5°	54.1	54.1	53.2	53.2	52.2	51.2	51.2	51.2
65°	45.4	44.5	44.5	43.5	43.5	42.5	42.5	42.5
67.5°	36.7	36.7	35.8	35.8	34.8	34.8	34.8	33.8
70°	29.0	29.0	28.0	28.0	28.0	27.1	27.1	27.1
72.5°	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2
75°	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
77.5°	14.5	14.5	14.5	14.5	14.5	14.5	14.5	15.5
80°	10.6	10.6	11.6	10.6	11.6	10.6	10.6	10.6
82.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
85°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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)