

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: P642297

Luminaire Tested: ML5612LSWW97FS1E - 592W WW - 1200LM - 3000K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642297  
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 - 1200LM - 3000K  
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH WHITE TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

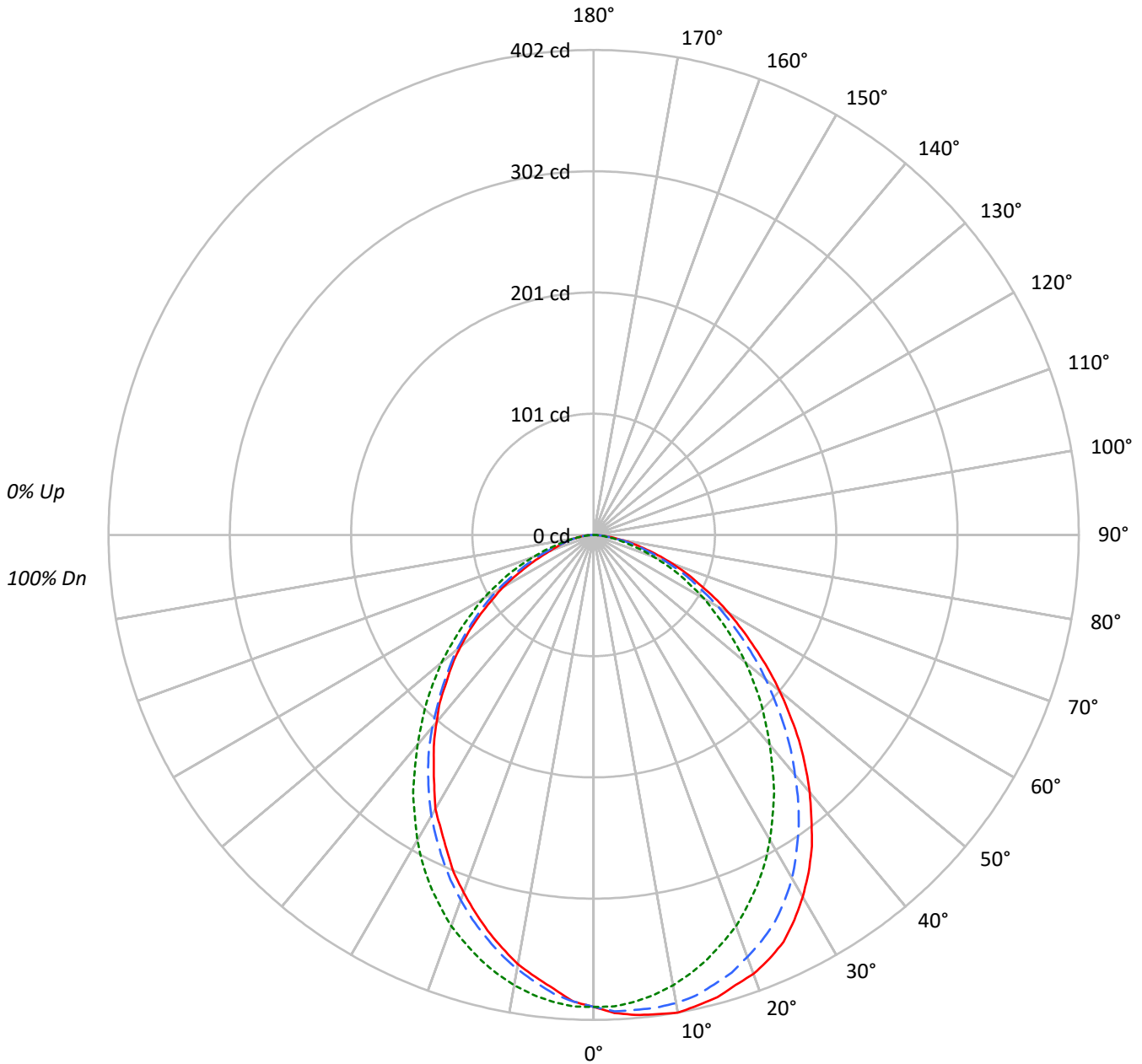
Lumens per Lamp: N/A  
Luminaire Lumens: 853.5 lumens  
Efficiency: N/A  
Efficacy: 51.7 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.23  
Luminous Opening: Circular (Dia: 0.42' x H: 0')  
CIE Type: Direct

Input Watts (W): 16.5  
Input Voltage (V): NR  
Input Current (Ain): 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



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### Luminous Intensity Polar Plot





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**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	57	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	45	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°	30882	30882	30882	30882	30882
5°	31649	31325	30786	30247	29930
10°	32232	31583	30380	29290	28969
15°	32421	31530	29756	28204	27754
20°	32528	31267	28991	27050	26479
25°	32419	30886	27925	25800	25085
30°	31575	29971	26626	24520	23900
35°	30376	28545	25133	23042	22252
40°	28699	26741	23382	21424	20857
45°	26849	24873	21837	19716	19258
50°	24697	22855	20190	18188	17685
55°	22434	20754	18318	16447	15704
60°	20383	18867	16735	14588	13720
65°	18025	16755	14719	12440	11170
70°	15995	14425	12233	10040	8771
75°	13268	12017	9516	7869	7869
80°	10501	9274	7410	6774	6774
85°	6159	6159	4891	6159	6159

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 26849 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.8	4.3
10°-20°	103.0	12.1
20°-30°	149.5	17.5
30°-40°	166.8	19.5
40°-50°	154.6	18.1
50°-60°	121.6	14.2
60°-70°	77.8	9.1
70°-80°	35.7	4.2
80°-90°	7.7	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°	289.3	33.9
0°-40°	456.1	53.4
0°-60°	732.3	85.8
0°-90°	853.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	853.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	391	391	391	391	391	
5°	399	395	388	382	378	38
15°	397	386	364	345	340	112
25°	372	355	321	296	288	171
35°	315	296	261	239	231	196
45°	240	223	196	177	172	185
55°	163	151	133	120	114	146
65°	96	90	79	67	60	97
75°	44	39	31	26	26	47
85°	7	7	5	7	7	9
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2
2.5°	396.7	396.7	396.7	396.7	396.7	396.7	395.3	395.3	395.3	395.3	395.3
5°	399.4	399.4	399.4	399.4	398.0	398.0	398.0	398.0	396.7	396.7	395.3
7.5°	400.8	400.8	400.8	399.4	399.4	399.4	398.0	398.0	398.0	396.7	395.3
10°	402.1	400.8	400.8	399.4	399.4	399.4	398.0	398.0	396.7	395.3	394.0
12.5°	399.4	399.4	399.4	399.4	398.0	398.0	396.7	395.3	394.0	392.6	391.2
15°	396.7	396.7	396.7	395.3	394.0	394.0	392.6	391.2	389.9	388.5	385.8
17.5°	391.2	392.6	391.2	391.2	389.9	389.9	388.5	387.2	384.5	383.1	380.4
20°	387.2	385.8	385.8	385.8	384.5	383.1	381.7	380.4	377.7	376.3	372.2
22.5°	380.4	380.4	379.0	377.7	376.3	376.3	374.9	372.2	370.9	368.2	364.1
25°	372.2	370.9	370.9	369.5	368.2	368.2	365.4	364.1	361.4	357.3	354.6
27.5°	360.0	360.0	360.0	358.6	357.3	355.9	354.6	351.9	350.5	345.1	342.3
30°	346.4	346.4	345.1	345.1	342.3	342.3	341.0	338.3	335.5	331.5	328.8
32.5°	331.5	331.5	331.5	328.8	327.4	326.0	324.7	323.3	319.2	315.2	312.5
35°	315.2	315.2	313.8	312.5	311.1	309.7	308.4	305.7	302.9	300.2	296.2
37.5°	296.2	297.5	296.2	294.8	293.4	292.1	290.7	289.4	285.3	282.6	278.5
40°	278.5	278.5	277.1	275.8	274.4	274.4	273.1	270.3	267.6	263.5	259.5
42.5°	259.5	259.5	258.1	256.8	256.8	255.4	252.7	251.3	248.6	245.9	241.8
45°	240.5	239.1	237.7	237.7	236.4	235.0	235.0	232.3	229.6	225.5	222.8
47.5°	220.1	220.1	218.7	218.7	217.4	216.0	216.0	213.3	209.2	206.5	203.8
50°	201.1	201.1	199.7	199.7	198.3	197.0	195.6	194.3	191.5	188.8	186.1
52.5°	182.0	182.0	182.0	179.3	178.0	178.0	178.0	175.2	173.9	171.2	168.5
55°	163.0	163.0	163.0	161.7	160.3	160.3	160.3	157.6	156.2	153.5	150.8
57.5°	145.4	145.4	145.4	144.0	144.0	142.6	141.3	139.9	138.6	137.2	134.5
60°	129.1	129.1	127.7	126.3	127.7	126.3	125.0	123.6	122.3	120.9	119.5
62.5°	112.8	112.8	112.8	111.4	110.0	110.0	110.0	108.7	106.0	104.6	103.2
65°	96.5	96.5	96.5	96.5	95.1	95.1	93.7	92.4	92.4	91.0	89.7
67.5°	82.9	82.9	81.5	81.5	80.2	80.2	80.2	78.8	77.4	77.4	76.1
70°	69.3	67.9	67.9	67.9	66.6	66.6	66.6	65.2	65.2	63.8	62.5
72.5°	55.7	55.7	55.7	55.7	54.3	54.3	53.0	53.0	51.6	51.6	50.3
75°	43.5	43.5	43.5	43.5	42.1	42.1	42.1	42.1	40.8	40.8	39.4
77.5°	32.6	32.6	32.6	32.6	32.6	32.6	31.2	31.2	31.2	29.9	29.9
80°	23.1	23.1	23.1	23.1	21.7	21.7	21.7	21.7	21.7	20.4	20.4
82.5°	14.9	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	12.2
85°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2
2.5°	394.0	394.0	394.0	394.0	392.6	392.6	392.6	391.2	391.2	391.2	391.2
5°	395.3	395.3	392.6	392.6	392.6	392.6	391.2	391.2	389.9	388.5	387.2
7.5°	394.0	394.0	392.6	391.2	389.9	389.9	388.5	387.2	385.8	384.5	383.1
10°	392.6	391.2	389.9	388.5	387.2	385.8	384.5	383.1	380.4	379.0	377.7
12.5°	389.9	387.2	385.8	383.1	383.1	381.7	379.0	377.7	374.9	372.2	370.9
15°	384.5	381.7	379.0	376.3	376.3	373.6	370.9	369.5	366.8	364.1	361.4
17.5°	377.7	374.9	372.2	369.5	368.2	365.4	362.7	360.0	357.3	354.6	351.9
20°	370.9	366.8	364.1	360.0	358.6	357.3	353.2	350.5	347.8	345.1	341.0
22.5°	361.4	358.6	353.2	350.5	349.1	346.4	343.7	339.6	335.5	332.8	330.1
25°	350.5	347.8	343.7	339.6	336.9	335.5	331.5	327.4	324.7	320.6	317.9
27.5°	338.3	334.2	331.5	326.0	324.7	322.0	317.9	313.8	311.1	307.0	302.9
30°	324.7	320.6	316.5	312.5	309.7	308.4	304.3	300.2	296.2	292.1	289.4
32.5°	308.4	304.3	300.2	297.5	293.4	290.7	288.0	283.9	279.9	275.8	273.1
35°	292.1	288.0	283.9	279.9	277.1	277.1	271.7	267.6	263.5	260.8	256.8
37.5°	274.4	270.3	266.3	262.2	260.8	258.1	254.0	250.0	247.2	243.2	240.5
40°	256.8	251.3	248.6	244.5	243.2	240.5	237.7	233.7	230.9	226.9	224.2
42.5°	237.7	235.0	230.9	228.2	225.5	224.2	220.1	216.0	213.3	210.6	209.2
45°	220.1	216.0	211.9	209.2	207.9	205.1	203.8	199.7	197.0	195.6	192.9
47.5°	201.1	198.3	195.6	191.5	190.2	188.8	186.1	184.8	182.0	179.3	176.6
50°	183.4	180.7	178.0	175.2	173.9	173.9	169.8	167.1	165.7	164.4	161.7
52.5°	165.7	163.0	160.3	157.6	157.6	156.2	153.5	152.2	150.8	148.1	145.4
55°	149.4	146.7	144.0	142.6	141.3	141.3	138.6	137.2	134.5	133.1	131.8
57.5°	133.1	130.4	129.1	127.7	126.3	126.3	123.6	122.3	120.9	118.2	118.2
60°	118.2	115.5	114.1	112.8	111.4	110.0	110.0	107.3	106.0	106.0	103.2
62.5°	101.9	100.5	99.2	97.8	96.5	96.5	95.1	93.7	92.4	91.0	89.7
65°	88.3	86.9	85.6	84.2	82.9	82.9	81.5	80.2	78.8	78.8	76.1
67.5°	74.7	73.4	72.0	70.6	70.6	69.3	67.9	67.9	66.6	65.2	63.8
70°	61.1	61.1	59.8	58.4	58.4	57.1	55.7	55.7	54.3	53.0	51.6
72.5°	50.3	48.9	47.5	47.5	46.2	46.2	44.8	44.8	43.5	42.1	40.8
75°	38.0	36.7	36.7	36.7	35.3	35.3	35.3	34.0	32.6	31.2	31.2
77.5°	28.5	28.5	27.2	25.8	25.8	25.8	24.5	24.5	24.5	23.1	23.1
80°	20.4	19.0	19.0	17.7	17.7	17.7	17.7	16.3	16.3	16.3	14.9
82.5°	12.2	12.2	12.2	10.9	10.9	10.9	10.9	10.9	9.5	9.5	9.5
85°	6.8	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.7	2.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 1200LM - 3000K

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2
2.5°	389.9	389.9	388.5	388.5	388.5	388.5	388.5	387.2	387.2	387.2	387.2
5°	387.2	385.8	384.5	384.5	384.5	383.1	383.1	381.7	381.7	380.4	380.4
7.5°	381.7	380.4	379.0	379.0	377.7	377.7	374.9	374.9	373.6	372.2	372.2
10°	374.9	373.6	372.2	370.9	370.9	368.2	368.2	366.8	365.4	364.1	364.1
12.5°	368.2	366.8	364.1	362.7	362.7	361.4	358.6	357.3	355.9	354.6	353.2
15°	358.6	357.3	354.6	353.2	351.9	350.5	349.1	347.8	345.1	343.7	343.7
17.5°	349.1	347.8	343.7	342.3	342.3	339.6	338.3	335.5	334.2	332.8	331.5
20°	338.3	335.5	332.8	331.5	330.1	327.4	326.0	324.7	322.0	320.6	319.2
22.5°	326.0	323.3	320.6	319.2	317.9	315.2	313.8	311.1	309.7	308.4	307.0
25°	313.8	311.1	308.4	307.0	304.3	302.9	300.2	297.5	296.2	294.8	293.4
27.5°	300.2	297.5	293.4	292.1	290.7	289.4	286.6	283.9	282.6	279.9	279.9
30°	285.3	282.6	279.9	278.5	277.1	274.4	273.1	270.3	269.0	266.3	266.3
32.5°	270.3	266.3	263.5	262.2	260.8	259.5	256.8	255.4	254.0	252.7	251.3
35°	254.0	251.3	248.6	247.2	245.9	243.2	241.8	240.5	239.1	236.4	236.4
37.5°	237.7	235.0	232.3	230.9	230.9	228.2	226.9	224.2	224.2	221.4	221.4
40°	221.4	218.7	216.0	216.0	214.6	211.9	210.6	209.2	207.9	206.5	206.5
42.5°	206.5	202.4	201.1	201.1	198.3	197.0	195.6	194.3	191.5	191.5	191.5
45°	190.2	187.5	186.1	184.8	183.4	182.0	180.7	178.0	176.6	175.2	175.2
47.5°	175.2	172.5	171.2	169.8	168.5	167.1	165.7	164.4	161.7	161.7	160.3
50°	160.3	157.6	156.2	154.9	153.5	152.2	150.8	149.4	148.1	146.7	145.4
52.5°	144.0	142.6	141.3	139.9	139.9	137.2	135.8	134.5	133.1	133.1	130.4
55°	130.4	129.1	127.7	126.3	125.0	123.6	122.3	120.9	119.5	118.2	116.8
57.5°	115.5	114.1	112.8	112.8	111.4	110.0	108.7	107.3	106.0	104.6	103.2
60°	101.9	100.5	99.2	99.2	97.8	96.5	95.1	95.1	92.4	91.0	89.7
62.5°	88.3	86.9	85.6	85.6	84.2	84.2	82.9	81.5	78.8	78.8	77.4
65°	76.1	74.7	73.4	72.0	72.0	70.6	69.3	67.9	66.6	66.6	65.2
67.5°	63.8	62.5	61.1	61.1	59.8	58.4	57.1	55.7	54.3	54.3	53.0
70°	51.6	50.3	48.9	48.9	47.5	46.2	46.2	44.8	43.5	42.1	42.1
72.5°	39.4	39.4	38.0	38.0	36.7	36.7	35.3	34.0	34.0	32.6	31.2
75°	29.9	29.9	28.5	28.5	27.2	27.2	25.8	25.8	25.8	24.5	25.8
77.5°	21.7	21.7	20.4	20.4	20.4	19.0	19.0	19.0	20.4	20.4	20.4
80°	14.9	14.9	14.9	14.9	13.6	13.6	14.9	14.9	14.9	14.9	14.9
82.5°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	10.9	10.9	10.9
85°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	6.8	6.8	6.8	6.8
87.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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: P642297

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 1200LM - 3000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	391.2	391.2	391.2	391.2	391.2	391.2	391.2	391.2
2.5°	385.8	385.8	385.8	385.8	385.8	385.8	385.8	387.2
5°	379.0	379.0	379.0	379.0	379.0	379.0	379.0	377.7
7.5°	372.2	370.9	370.9	370.9	370.9	369.5	369.5	369.5
10°	362.7	362.7	361.4	361.4	361.4	361.4	360.0	361.4
12.5°	353.2	351.9	351.9	351.9	350.5	350.5	350.5	350.5
15°	342.3	341.0	341.0	341.0	339.6	339.6	339.6	339.6
17.5°	330.1	330.1	328.8	328.8	327.4	327.4	327.4	327.4
20°	317.9	317.9	317.9	316.5	316.5	316.5	315.2	315.2
22.5°	305.7	304.3	302.9	304.3	302.9	301.6	302.9	302.9
25°	292.1	290.7	289.4	289.4	289.4	289.4	288.0	288.0
27.5°	278.5	275.8	275.8	275.8	275.8	274.4	274.4	274.4
30°	264.9	263.5	263.5	262.2	260.8	260.8	260.8	262.2
32.5°	250.0	248.6	247.2	247.2	247.2	247.2	245.9	245.9
35°	235.0	235.0	233.7	233.7	233.7	232.3	232.3	230.9
37.5°	220.1	220.1	218.7	218.7	218.7	217.4	217.4	217.4
40°	205.1	203.8	203.8	205.1	203.8	203.8	202.4	202.4
42.5°	190.2	190.2	188.8	188.8	188.8	188.8	187.5	188.8
45°	173.9	173.9	173.9	173.9	173.9	173.9	172.5	172.5
47.5°	160.3	158.9	158.9	158.9	158.9	158.9	158.9	158.9
50°	145.4	144.0	144.0	144.0	144.0	144.0	144.0	144.0
52.5°	130.4	129.1	129.1	129.1	129.1	129.1	129.1	129.1
55°	116.8	115.5	115.5	114.1	115.5	114.1	114.1	114.1
57.5°	103.2	101.9	100.5	101.9	100.5	100.5	100.5	99.2
60°	89.7	88.3	88.3	88.3	86.9	85.6	85.6	86.9
62.5°	76.1	76.1	74.7	74.7	73.4	72.0	72.0	72.0
65°	63.8	62.5	62.5	61.1	61.1	59.8	59.8	59.8
67.5°	51.6	51.6	50.3	50.3	48.9	48.9	48.9	47.5
70°	40.8	40.8	39.4	39.4	39.4	38.0	38.0	38.0
72.5°	31.2	31.2	31.2	31.2	31.2	31.2	31.2	31.2
75°	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8
77.5°	20.4	20.4	20.4	20.4	20.4	20.4	20.4	21.7
80°	14.9	14.9	16.3	14.9	16.3	14.9	14.9	14.9
82.5°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
85°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
87.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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



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

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(END OF REPORT)