

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: P642294

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

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642294  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-129)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5612LSWW97FS1E - 592SC WW - 900LM - 4000K  
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 804.1 lumens  
Efficiency: N/A  
Efficacy: 60.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.26  
Luminous Opening: Circular (Dia: 0.42' x H: 0')  
CIE Type: Direct

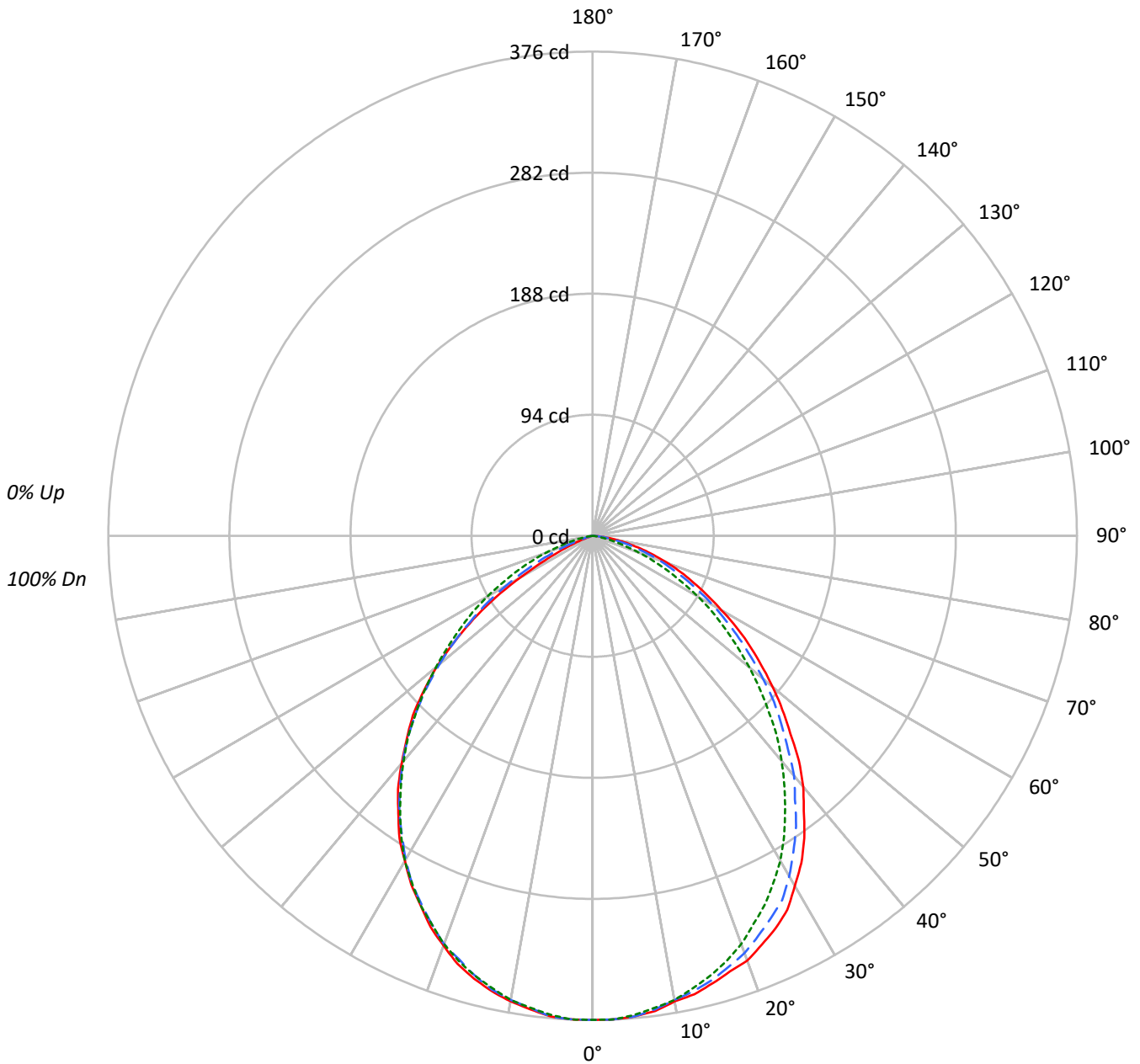
Input Watts (W): 13.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	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	111	107	103	100	108	105	101	98	100	98	95	97	94	93	93	91	90	88					88			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76					76			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66					66			
4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58					58			
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51					51			
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45					45			
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40					40			
8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36					36			
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33					33			
10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°	135°	180°
0°	29674	29674	29674	29674	29674
5°	29692	29692	29589	29692	29692
10°	29434	29338	29338	29338	29434
15°	29405	29201	28898	28898	29094
20°	29495	28974	28344	28344	28453
25°	29284	28526	27550	27446	27550
30°	28613	27820	26571	26462	26571
35°	27619	26540	25104	25229	25345
40°	26206	25062	23526	23650	23774
45°	24237	23132	21602	21602	22026
50°	22401	21172	19502	19048	19355
55°	20493	19117	17245	15882	15538
60°	18220	17035	14888	12346	10183
65°	16213	14831	12048	8107	4875
70°	14310	12602	8886	4016	1431
75°	11743	9852	5307	1129	366
80°	9001	6774	2273	0	0
85°	4529	3351	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 10°  
 Vertical Angle: 45°  
 Luminance: 24371 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.5	4.4
10°-20°	100.2	12.5
20°-30°	147.8	18.4
30°-40°	167.3	20.8
40°-50°	154.5	19.2
50°-60°	114.2	14.2
60°-70°	61.4	7.6
70°-80°	20.5	2.6
80°-90°	2.6	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°	283.5	35.3
0°-40°	450.8	56.1
0°-60°	719.6	89.5
0°-90°	804.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	804.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	376	376	376	376	376	
5°	375	375	373	375	375	36
15°	360	357	354	354	356	102
25°	336	328	316	315	316	155
35°	287	275	260	262	263	179
45°	217	207	194	194	197	168
55°	149	139	125	115	113	133
65°	87	79	64	43	26	87
75°	38	32	17	4	1	41
85°	5	4	0	0	0	7
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°	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9
2.5°	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9
5°	374.7	374.7	373.4	374.7	374.7	374.7	374.7	373.4	374.7	374.7	374.7
7.5°	372.2	370.9	370.9	370.9	370.9	370.9	370.9	370.9	370.9	370.9	370.9
10°	367.2	367.2	367.2	367.2	367.2	367.2	367.2	367.2	367.2	367.2	366.0
12.5°	364.7	363.5	363.5	363.5	363.5	363.5	363.5	362.2	363.5	362.2	362.2
15°	359.8	359.8	359.8	359.8	359.8	359.8	358.5	358.5	358.5	358.5	357.3
17.5°	354.8	354.8	356.0	356.0	354.8	354.8	354.8	353.6	352.3	352.3	351.1
20°	351.1	351.1	349.8	349.8	348.6	349.8	348.6	347.4	347.4	346.1	344.9
22.5°	343.6	343.6	343.6	343.6	343.6	342.4	342.4	341.2	339.9	338.7	336.2
25°	336.2	336.2	336.2	336.2	335.0	335.0	335.0	332.5	331.2	330.0	327.5
27.5°	327.5	326.3	326.3	326.3	325.0	325.0	323.8	322.6	321.3	320.1	318.8
30°	313.9	313.9	313.9	313.9	312.6	311.4	311.4	310.1	308.9	306.4	305.2
32.5°	301.5	301.5	300.2	299.0	299.0	299.0	297.7	296.5	294.0	292.8	290.3
35°	286.6	285.3	285.3	284.1	284.1	284.1	282.9	280.4	279.1	277.9	275.4
37.5°	269.2	270.4	269.2	269.2	268.0	266.7	265.5	264.2	263.0	260.5	258.0
40°	254.3	254.3	253.1	251.8	250.6	250.6	249.4	248.1	246.9	245.6	243.2
42.5°	237.0	237.0	235.7	235.7	234.5	234.5	232.0	230.7	229.5	228.3	224.5
45°	217.1	217.1	218.3	217.1	215.9	214.6	214.6	213.4	210.9	209.7	207.2
47.5°	199.7	201.0	199.7	198.5	198.5	197.3	197.3	194.8	194.8	192.3	191.0
50°	182.4	182.4	182.4	182.4	181.1	179.9	179.9	178.6	176.2	174.9	172.4
52.5°	165.0	165.0	165.0	165.0	163.8	163.8	162.5	161.3	160.0	157.6	155.1
55°	148.9	147.6	147.6	147.6	146.4	146.4	145.1	143.9	142.7	141.4	138.9
57.5°	132.7	131.5	131.5	130.3	130.3	129.0	129.0	127.8	126.5	124.1	122.8
60°	115.4	116.6	115.4	115.4	114.1	114.1	114.1	112.9	110.4	109.2	107.9
62.5°	100.5	101.7	100.5	99.2	99.2	99.2	99.2	96.8	95.5	94.3	93.0
65°	86.8	86.8	86.8	85.6	85.6	85.6	83.1	83.1	81.9	80.6	79.4
67.5°	74.4	73.2	73.2	73.2	72.0	72.0	70.7	70.7	68.2	68.2	65.8
70°	62.0	60.8	60.8	60.8	59.5	58.3	59.5	57.1	55.8	54.6	54.6
72.5°	49.6	49.6	48.4	48.4	48.4	47.1	47.1	45.9	44.7	43.4	42.2
75°	38.5	38.5	38.5	37.2	37.2	36.0	36.0	34.7	34.7	32.3	32.3
77.5°	28.5	28.5	28.5	27.3	27.3	27.3	26.1	26.1	24.8	23.6	22.3
80°	19.8	18.6	18.6	18.6	18.6	17.4	17.4	17.4	16.1	16.1	14.9
82.5°	11.2	11.2	11.2	11.2	11.2	11.2	9.9	9.9	9.9	8.7	8.7
85°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.7	3.7	3.7
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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9
2.5°	375.9	375.9	375.9	375.9	374.7	375.9	374.7	375.9	375.9	375.9	375.9
5°	374.7	373.4	373.4	373.4	374.7	374.7	373.4	373.4	373.4	373.4	373.4
7.5°	370.9	370.9	370.9	369.7	370.9	370.9	369.7	370.9	370.9	369.7	370.9
10°	367.2	367.2	366.0	366.0	366.0	366.0	366.0	366.0	364.7	366.0	366.0
12.5°	362.2	362.2	362.2	361.0	361.0	361.0	361.0	361.0	359.8	359.8	361.0
15°	357.3	357.3	356.0	356.0	356.0	354.8	354.8	354.8	354.8	353.6	353.6
17.5°	351.1	349.8	349.8	348.6	348.6	347.4	347.4	346.1	346.1	346.1	344.9
20°	343.6	342.4	341.2	341.2	339.9	339.9	338.7	338.7	337.4	337.4	336.2
22.5°	335.0	333.7	332.5	331.2	331.2	330.0	330.0	328.8	327.5	326.3	326.3
25°	327.5	325.0	323.8	322.6	320.1	320.1	318.8	318.8	317.6	316.3	315.1
27.5°	316.3	313.9	312.6	311.4	310.1	308.9	306.4	306.4	305.2	303.9	302.7
30°	302.7	301.5	299.0	297.7	296.5	296.5	294.0	291.5	291.5	291.5	290.3
32.5°	289.1	286.6	285.3	282.9	281.6	281.6	280.4	277.9	276.6	276.6	275.4
35°	274.2	271.7	269.2	268.0	266.7	265.5	264.2	263.0	261.8	260.5	259.3
37.5°	256.8	254.3	253.1	251.8	250.6	249.4	248.1	246.9	245.6	244.4	245.6
40°	240.7	238.2	235.7	234.5	233.2	233.2	232.0	230.7	229.5	228.3	228.3
42.5°	223.3	220.8	219.6	218.3	217.1	215.9	214.6	213.4	212.1	212.1	210.9
45°	204.7	203.5	201.0	199.7	198.5	198.5	196.0	194.8	194.8	193.5	193.5
47.5°	188.6	186.1	183.6	182.4	181.1	179.9	178.6	177.4	176.2	176.2	176.2
50°	170.0	168.7	166.2	165.0	163.8	163.8	162.5	161.3	160.0	158.8	158.8
52.5°	152.6	151.4	151.4	148.9	147.6	147.6	145.1	145.1	142.7	141.4	140.2
55°	137.7	135.2	134.0	131.5	131.5	130.3	129.0	127.8	126.5	125.3	124.1
57.5°	120.3	119.1	117.9	116.6	116.6	115.4	114.1	112.9	110.4	110.4	107.9
60°	106.7	104.2	103.0	101.7	100.5	100.5	99.2	98.0	95.5	94.3	93.0
62.5°	91.8	89.3	89.3	88.1	85.6	85.6	84.4	81.9	80.6	78.2	76.9
65°	78.2	76.9	74.4	73.2	73.2	72.0	69.5	68.2	67.0	64.5	62.0
67.5°	64.5	63.3	62.0	59.5	59.5	58.3	55.8	54.6	52.1	50.9	48.4
70°	52.1	50.9	49.6	47.1	47.1	45.9	44.7	42.2	39.7	38.5	36.0
72.5°	40.9	39.7	38.5	36.0	36.0	34.7	32.3	31.0	28.5	26.1	24.8
75°	31.0	29.8	27.3	26.1	24.8	24.8	22.3	21.1	19.8	17.4	16.1
77.5°	21.1	19.8	18.6	17.4	17.4	16.1	14.9	13.6	12.4	11.2	8.7
80°	13.6	12.4	11.2	11.2	9.9	9.9	8.7	7.4	6.2	5.0	3.7
82.5°	7.4	7.4	6.2	5.0	5.0	5.0	3.7	3.7	2.5	1.2	1.2
85°	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9
2.5°	375.9	375.9	375.9	375.9	375.9	375.9	374.7	375.9	375.9	375.9	374.7
5°	374.7	373.4	373.4	374.7	373.4	373.4	374.7	374.7	374.7	373.4	373.4
7.5°	369.7	370.9	369.7	369.7	370.9	370.9	370.9	370.9	369.7	369.7	370.9
10°	366.0	366.0	364.7	366.0	364.7	366.0	366.0	366.0	366.0	366.0	366.0
12.5°	359.8	359.8	359.8	361.0	359.8	359.8	361.0	361.0	361.0	361.0	361.0
15°	352.3	352.3	353.6	352.3	353.6	353.6	353.6	353.6	353.6	353.6	354.8
17.5°	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9	344.9	346.1	346.1
20°	336.2	336.2	336.2	336.2	336.2	335.0	336.2	336.2	337.4	337.4	337.4
22.5°	325.0	325.0	325.0	325.0	325.0	325.0	325.0	325.0	326.3	327.5	326.3
25°	313.9	313.9	313.9	313.9	313.9	313.9	313.9	315.1	315.1	315.1	316.3
27.5°	302.7	302.7	302.7	301.5	302.7	301.5	302.7	302.7	303.9	302.7	303.9
30°	290.3	289.1	289.1	289.1	289.1	290.3	289.1	289.1	290.3	291.5	290.3
32.5°	274.2	274.2	274.2	275.4	275.4	275.4	276.6	275.4	275.4	276.6	276.6
35°	259.3	259.3	259.3	260.5	260.5	260.5	260.5	261.8	261.8	261.8	263.0
37.5°	243.2	244.4	243.2	244.4	244.4	245.6	245.6	245.6	245.6	246.9	246.9
40°	228.3	227.0	228.3	228.3	228.3	228.3	228.3	228.3	229.5	230.7	230.7
42.5°	210.9	210.9	210.9	210.9	210.9	210.9	212.1	212.1	212.1	213.4	213.4
45°	193.5	192.3	192.3	192.3	192.3	193.5	192.3	193.5	193.5	194.8	194.8
47.5°	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9	176.2	174.9
50°	158.8	157.6	156.3	156.3	155.1	156.3	155.1	155.1	155.1	156.3	155.1
52.5°	140.2	138.9	137.7	137.7	137.7	136.5	135.2	135.2	135.2	134.0	134.0
55°	124.1	122.8	120.3	121.6	119.1	117.9	117.9	116.6	115.4	115.4	114.1
57.5°	106.7	105.4	104.2	103.0	103.0	100.5	99.2	98.0	96.8	95.5	93.0
60°	91.8	89.3	86.8	86.8	85.6	84.4	81.9	79.4	78.2	75.7	74.4
62.5°	75.7	73.2	70.7	69.5	68.2	67.0	64.5	62.0	59.5	58.3	55.8
65°	60.8	58.3	55.8	54.6	53.3	50.9	48.4	45.9	43.4	40.9	39.7
67.5°	45.9	43.4	42.2	39.7	38.5	36.0	33.5	32.3	29.8	27.3	23.6
70°	33.5	31.0	28.5	27.3	26.1	23.6	22.3	19.8	17.4	16.1	13.6
72.5°	22.3	19.8	18.6	17.4	16.1	14.9	12.4	11.2	8.7	7.4	6.2
75°	13.6	12.4	11.2	9.9	8.7	7.4	6.2	5.0	3.7	2.5	1.2
77.5°	7.4	6.2	5.0	5.0	3.7	2.5	2.5	1.2	1.2	1.2	1.2
80°	3.7	2.5	1.2	1.2	1.2	1.2	0.0	0.0	0.0	0.0	1.2
82.5°	1.2	0.0	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: P642294

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

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9
2.5°	375.9	375.9	375.9	375.9	375.9	375.9	375.9	375.9
5°	374.7	374.7	373.4	374.7	373.4	373.4	373.4	374.7
7.5°	370.9	370.9	370.9	370.9	370.9	370.9	370.9	370.9
10°	366.0	366.0	366.0	367.2	367.2	367.2	366.0	367.2
12.5°	361.0	361.0	361.0	362.2	361.0	362.2	361.0	362.2
15°	354.8	354.8	356.0	356.0	354.8	354.8	356.0	356.0
17.5°	346.1	347.4	347.4	347.4	347.4	347.4	347.4	348.6
20°	338.7	338.7	337.4	338.7	338.7	339.9	339.9	338.7
22.5°	326.3	328.8	328.8	328.8	328.8	328.8	328.8	328.8
25°	316.3	316.3	316.3	317.6	316.3	316.3	317.6	316.3
27.5°	303.9	305.2	303.9	305.2	305.2	305.2	305.2	305.2
30°	291.5	291.5	291.5	291.5	291.5	292.8	291.5	291.5
32.5°	276.6	277.9	277.9	277.9	279.1	277.9	277.9	279.1
35°	263.0	263.0	263.0	264.2	263.0	264.2	264.2	263.0
37.5°	246.9	248.1	246.9	248.1	248.1	248.1	248.1	248.1
40°	232.0	230.7	232.0	230.7	232.0	232.0	232.0	230.7
42.5°	213.4	214.6	214.6	214.6	214.6	214.6	214.6	213.4
45°	194.8	196.0	196.0	196.0	196.0	196.0	197.3	197.3
47.5°	174.9	177.4	177.4	177.4	176.2	178.6	177.4	177.4
50°	155.1	155.1	156.3	156.3	157.6	157.6	157.6	157.6
52.5°	135.2	134.0	135.2	135.2	136.5	135.2	136.5	135.2
55°	112.9	112.9	112.9	111.7	112.9	112.9	112.9	112.9
57.5°	93.0	91.8	90.6	89.3	89.3	89.3	88.1	89.3
60°	72.0	69.5	70.7	68.2	67.0	65.8	65.8	64.5
62.5°	53.3	50.9	49.6	48.4	45.9	43.4	43.4	42.2
65°	36.0	33.5	32.3	29.8	28.5	27.3	26.1	26.1
67.5°	22.3	19.8	19.8	18.6	17.4	16.1	14.9	14.9
70°	12.4	11.2	9.9	8.7	8.7	7.4	6.2	6.2
72.5°	5.0	3.7	3.7	2.5	2.5	2.5	2.5	1.2
75°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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



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

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(END OF REPORT)