

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: P642293

Luminaire Tested: ML5612LSWW97FS1E - 592SC WW - 900LM - 3500K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642293  
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 - 3500K  
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 747.3 lumens  
Efficiency: N/A  
Efficacy: 56.2 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

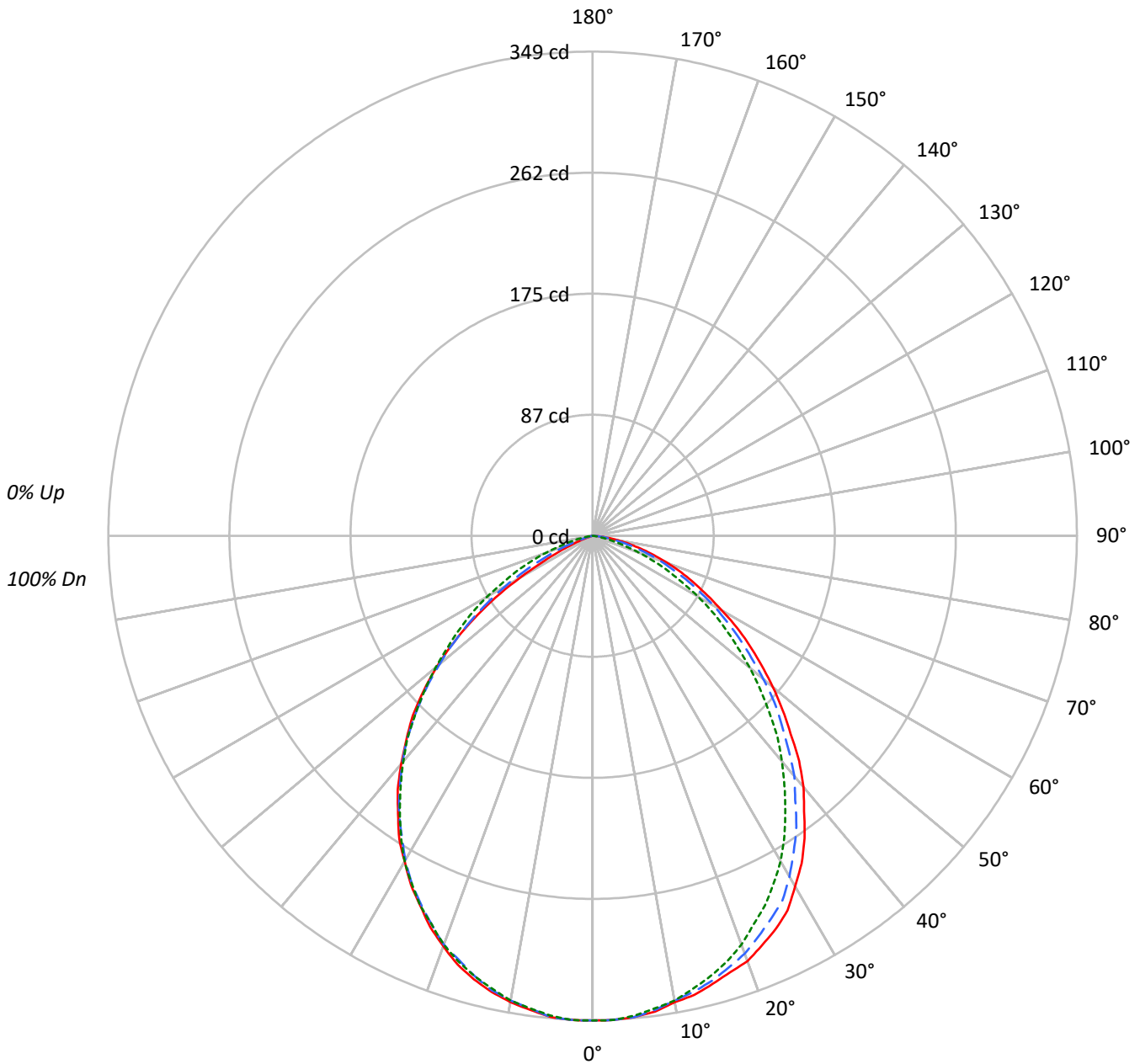
Input Watts (W): 13.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	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°	27582	27582	27582	27582	27582
5°	27592	27592	27505	27592	27592
10°	27358	27262	27262	27262	27358
15°	27329	27141	26855	26855	27043
20°	27412	26924	26345	26345	26445
25°	27219	26514	25608	25512	25608
30°	26589	25851	24702	24593	24702
35°	25663	24670	23331	23447	23553
40°	24361	23289	21867	21981	22104
45°	22529	21502	20084	20084	20463
50°	20816	19686	18127	17697	17979
55°	19048	17768	16034	14754	14437
60°	16925	15836	13830	11462	9473
65°	15074	13785	11207	7546	4520
70°	13295	11702	8240	3716	1339
75°	10889	9150	4911	1068	366
80°	8365	6274	2091	0	0
85°	4166	3170	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 10°  
 Vertical Angle: 45°  
 Luminance: 22652 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.9	4.4
10°-20°	93.2	12.5
20°-30°	137.4	18.4
30°-40°	155.5	20.8
40°-50°	143.6	19.2
50°-60°	106.1	14.2
60°-70°	57.1	7.6
70°-80°	19.1	2.6
80°-90°	2.4	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°	263.5	35.3
0°-40°	419.0	56.1
0°-60°	668.8	89.5
0°-90°	747.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	747.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	349	349	349	349	349	
5°	348	348	347	348	348	33
15°	334	332	329	329	331	95
25°	312	304	294	293	294	144
35°	266	256	242	243	244	166
45°	202	193	180	180	183	156
55°	138	129	116	107	105	124
65°	81	74	60	40	24	81
75°	36	30	16	4	1	39
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°	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4
2.5°	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4
5°	348.2	348.2	347.1	348.2	348.2	348.2	348.2	347.1	348.2	348.2	348.2
7.5°	345.9	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7
10°	341.3	341.3	341.3	341.3	341.3	341.3	341.3	341.3	341.3	341.3	340.1
12.5°	339.0	337.8	337.8	337.8	337.8	337.8	337.8	336.7	337.8	336.7	336.7
15°	334.4	334.4	334.4	334.4	334.4	334.4	333.2	333.2	333.2	333.2	332.1
17.5°	329.8	329.8	330.9	330.9	329.8	329.8	329.8	328.6	327.5	327.5	326.3
20°	326.3	326.3	325.1	325.1	324.0	325.1	324.0	322.8	322.8	321.7	320.5
22.5°	319.4	319.4	319.4	319.4	319.4	318.2	318.2	317.1	315.9	314.8	312.5
25°	312.5	312.5	312.5	312.5	311.3	311.3	311.3	309.0	307.8	306.7	304.4
27.5°	304.4	303.2	303.2	303.2	302.1	302.1	300.9	299.8	298.6	297.5	296.3
30°	291.7	291.7	291.7	291.7	290.6	289.4	289.4	288.2	287.1	284.8	283.6
32.5°	280.2	280.2	279.0	277.9	277.9	277.9	276.7	275.6	273.3	272.1	269.8
35°	266.3	265.2	265.2	264.0	264.0	264.0	262.9	260.6	259.4	258.3	256.0
37.5°	250.2	251.4	250.2	250.2	249.0	247.9	246.7	245.6	244.4	242.1	239.8
40°	236.4	236.4	235.2	234.1	232.9	232.9	231.8	230.6	229.4	228.3	226.0
42.5°	220.2	220.2	219.1	219.1	217.9	217.9	215.6	214.5	213.3	212.2	208.7
45°	201.8	201.8	202.9	201.8	200.6	199.5	199.5	198.3	196.0	194.9	192.6
47.5°	185.6	186.8	185.6	184.5	184.5	183.3	183.3	181.0	181.0	178.7	177.6
50°	169.5	169.5	169.5	169.5	168.3	167.2	167.2	166.0	163.7	162.6	160.3
52.5°	153.3	153.3	153.3	153.3	152.2	152.2	151.0	149.9	148.7	146.4	144.1
55°	138.4	137.2	137.2	137.2	136.1	136.1	134.9	133.7	132.6	131.4	129.1
57.5°	123.4	122.2	122.2	121.1	121.1	119.9	119.9	118.8	117.6	115.3	114.1
60°	107.2	108.4	107.2	107.2	106.1	106.1	106.1	104.9	102.6	101.5	100.3
62.5°	93.4	94.5	93.4	92.2	92.2	92.2	92.2	89.9	88.8	87.6	86.5
65°	80.7	80.7	80.7	79.6	79.6	79.6	77.3	77.3	76.1	74.9	73.8
67.5°	69.2	68.0	68.0	68.0	66.9	66.9	65.7	65.7	63.4	63.4	61.1
70°	57.6	56.5	56.5	56.5	55.3	54.2	55.3	53.0	51.9	50.7	50.7
72.5°	46.1	46.1	45.0	45.0	45.0	43.8	43.8	42.7	41.5	40.4	39.2
75°	35.7	35.7	35.7	34.6	34.6	33.4	33.4	32.3	32.3	30.0	30.0
77.5°	26.5	26.5	26.5	25.4	25.4	25.4	24.2	24.2	23.1	21.9	20.8
80°	18.4	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	10.4	9.2	9.2	9.2	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4
2.5°	349.4	349.4	349.4	349.4	348.2	349.4	348.2	349.4	349.4	349.4	349.4
5°	348.2	347.1	347.1	347.1	348.2	348.2	347.1	347.1	347.1	347.1	347.1
7.5°	344.7	344.7	344.7	343.6	344.7	344.7	343.6	344.7	344.7	343.6	344.7
10°	341.3	341.3	340.1	340.1	340.1	340.1	340.1	340.1	339.0	340.1	340.1
12.5°	336.7	336.7	336.7	335.5	335.5	335.5	335.5	335.5	334.4	334.4	335.5
15°	332.1	332.1	330.9	330.9	330.9	329.8	329.8	329.8	329.8	328.6	328.6
17.5°	326.3	325.1	325.1	324.0	324.0	322.8	322.8	321.7	321.7	321.7	320.5
20°	319.4	318.2	317.1	317.1	315.9	315.9	314.8	314.8	313.6	313.6	312.5
22.5°	311.3	310.2	309.0	307.8	307.8	306.7	306.7	305.5	304.4	303.2	303.2
25°	304.4	302.1	300.9	299.8	297.5	297.5	296.3	296.3	295.2	294.0	292.9
27.5°	294.0	291.7	290.6	289.4	288.2	287.1	284.8	284.8	283.6	282.5	281.3
30°	281.3	280.2	277.9	276.7	275.6	275.6	273.3	271.0	271.0	271.0	269.8
32.5°	268.6	266.3	265.2	262.9	261.7	261.7	260.6	258.3	257.1	257.1	256.0
35°	254.8	252.5	250.2	249.0	247.9	246.7	245.6	244.4	243.3	242.1	241.0
37.5°	238.7	236.4	235.2	234.1	232.9	231.8	230.6	229.4	228.3	227.1	228.3
40°	223.7	221.4	219.1	217.9	216.8	216.8	215.6	214.5	213.3	212.2	212.2
42.5°	207.5	205.2	204.1	202.9	201.8	200.6	199.5	198.3	197.2	197.2	196.0
45°	190.2	189.1	186.8	185.6	184.5	184.5	182.2	181.0	181.0	179.9	179.9
47.5°	175.3	172.9	170.6	169.5	168.3	167.2	166.0	164.9	163.7	163.7	163.7
50°	158.0	156.8	154.5	153.3	152.2	152.2	151.0	149.9	148.7	147.6	147.6
52.5°	141.8	140.7	140.7	138.4	137.2	137.2	134.9	134.9	132.6	131.4	130.3
55°	128.0	125.7	124.5	122.2	122.2	121.1	119.9	118.8	117.6	116.5	115.3
57.5°	111.8	110.7	109.5	108.4	108.4	107.2	106.1	104.9	102.6	102.6	100.3
60°	99.2	96.9	95.7	94.5	93.4	93.4	92.2	91.1	88.8	87.6	86.5
62.5°	85.3	83.0	83.0	81.9	79.6	79.6	78.4	76.1	74.9	72.6	71.5
65°	72.6	71.5	69.2	68.0	68.0	66.9	64.6	63.4	62.3	60.0	57.6
67.5°	60.0	58.8	57.6	55.3	55.3	54.2	51.9	50.7	48.4	47.3	45.0
70°	48.4	47.3	46.1	43.8	43.8	42.7	41.5	39.2	36.9	35.7	33.4
72.5°	38.0	36.9	35.7	33.4	33.4	32.3	30.0	28.8	26.5	24.2	23.1
75°	28.8	27.7	25.4	24.2	23.1	23.1	20.8	19.6	18.4	16.1	15.0
77.5°	19.6	18.4	17.3	16.1	16.1	15.0	13.8	12.7	11.5	10.4	8.1
80°	12.7	11.5	10.4	10.4	9.2	9.2	8.1	6.9	5.8	4.6	3.5
82.5°	6.9	6.9	5.8	4.6	4.6	4.6	3.5	3.5	2.3	1.2	1.2
85°	2.3	2.3	2.3	2.3	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°	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4
2.5°	349.4	349.4	349.4	349.4	349.4	349.4	348.2	349.4	349.4	349.4	348.2
5°	348.2	347.1	347.1	348.2	347.1	347.1	348.2	348.2	348.2	347.1	347.1
7.5°	343.6	344.7	343.6	343.6	344.7	344.7	344.7	344.7	343.6	343.6	344.7
10°	340.1	340.1	339.0	340.1	339.0	340.1	340.1	340.1	340.1	340.1	340.1
12.5°	334.4	334.4	334.4	335.5	334.4	334.4	335.5	335.5	335.5	335.5	335.5
15°	327.5	327.5	328.6	327.5	328.6	328.6	328.6	328.6	328.6	328.6	329.8
17.5°	320.5	320.5	320.5	320.5	320.5	320.5	320.5	320.5	320.5	321.7	321.7
20°	312.5	312.5	312.5	312.5	312.5	311.3	312.5	312.5	313.6	313.6	313.6
22.5°	302.1	302.1	302.1	302.1	302.1	302.1	302.1	302.1	303.2	304.4	303.2
25°	291.7	291.7	291.7	291.7	291.7	291.7	291.7	292.9	292.9	292.9	294.0
27.5°	281.3	281.3	281.3	280.2	281.3	280.2	281.3	281.3	282.5	281.3	282.5
30°	269.8	268.6	268.6	268.6	268.6	269.8	268.6	268.6	269.8	271.0	269.8
32.5°	254.8	254.8	254.8	256.0	256.0	256.0	257.1	256.0	256.0	257.1	257.1
35°	241.0	241.0	241.0	242.1	242.1	242.1	242.1	243.3	243.3	243.3	244.4
37.5°	226.0	227.1	226.0	227.1	227.1	228.3	228.3	228.3	228.3	229.4	229.4
40°	212.2	211.0	212.2	212.2	212.2	212.2	212.2	212.2	213.3	214.5	214.5
42.5°	196.0	196.0	196.0	196.0	196.0	196.0	197.2	197.2	197.2	198.3	198.3
45°	179.9	178.7	178.7	178.7	178.7	179.9	178.7	179.9	179.9	181.0	181.0
47.5°	162.6	162.6	162.6	162.6	162.6	162.6	162.6	162.6	162.6	163.7	162.6
50°	147.6	146.4	145.3	145.3	144.1	145.3	144.1	144.1	144.1	145.3	144.1
52.5°	130.3	129.1	128.0	128.0	128.0	126.8	125.7	125.7	125.7	124.5	124.5
55°	115.3	114.1	111.8	113.0	110.7	109.5	109.5	108.4	107.2	107.2	106.1
57.5°	99.2	98.0	96.9	95.7	95.7	93.4	92.2	91.1	89.9	88.8	86.5
60°	85.3	83.0	80.7	80.7	79.6	78.4	76.1	73.8	72.6	70.3	69.2
62.5°	70.3	68.0	65.7	64.6	63.4	62.3	60.0	57.6	55.3	54.2	51.9
65°	56.5	54.2	51.9	50.7	49.6	47.3	45.0	42.7	40.4	38.0	36.9
67.5°	42.7	40.4	39.2	36.9	35.7	33.4	31.1	30.0	27.7	25.4	21.9
70°	31.1	28.8	26.5	25.4	24.2	21.9	20.8	18.4	16.1	15.0	12.7
72.5°	20.8	18.4	17.3	16.1	15.0	13.8	11.5	10.4	8.1	6.9	5.8
75°	12.7	11.5	10.4	9.2	8.1	6.9	5.8	4.6	3.5	2.3	1.2
77.5°	6.9	5.8	4.6	4.6	3.5	2.3	2.3	1.2	1.2	1.2	1.2
80°	3.5	2.3	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: P642293

CATALOG NUMBER: ML5612LSWW97FS1E - 592SC WW - 900LM - 3500K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4
2.5°	349.4	349.4	349.4	349.4	349.4	349.4	349.4	349.4
5°	348.2	348.2	347.1	348.2	347.1	347.1	347.1	348.2
7.5°	344.7	344.7	344.7	344.7	344.7	344.7	344.7	344.7
10°	340.1	340.1	340.1	341.3	341.3	341.3	340.1	341.3
12.5°	335.5	335.5	335.5	336.7	335.5	336.7	335.5	336.7
15°	329.8	329.8	330.9	330.9	329.8	329.8	330.9	330.9
17.5°	321.7	322.8	322.8	322.8	322.8	322.8	322.8	324.0
20°	314.8	314.8	313.6	314.8	314.8	315.9	315.9	314.8
22.5°	303.2	305.5	305.5	305.5	305.5	305.5	305.5	305.5
25°	294.0	294.0	294.0	295.2	294.0	294.0	295.2	294.0
27.5°	282.5	283.6	282.5	283.6	283.6	283.6	283.6	283.6
30°	271.0	271.0	271.0	271.0	271.0	272.1	271.0	271.0
32.5°	257.1	258.3	258.3	258.3	259.4	258.3	258.3	259.4
35°	244.4	244.4	244.4	245.6	244.4	245.6	245.6	244.4
37.5°	229.4	230.6	229.4	230.6	230.6	230.6	230.6	230.6
40°	215.6	214.5	215.6	214.5	215.6	215.6	215.6	214.5
42.5°	198.3	199.5	199.5	199.5	199.5	199.5	199.5	198.3
45°	181.0	182.2	182.2	182.2	182.2	182.2	183.3	183.3
47.5°	162.6	164.9	164.9	164.9	163.7	166.0	164.9	164.9
50°	144.1	144.1	145.3	145.3	146.4	146.4	146.4	146.4
52.5°	125.7	124.5	125.7	125.7	126.8	125.7	126.8	125.7
55°	104.9	104.9	104.9	103.8	104.9	104.9	104.9	104.9
57.5°	86.5	85.3	84.2	83.0	83.0	83.0	81.9	83.0
60°	66.9	64.6	65.7	63.4	62.3	61.1	61.1	60.0
62.5°	49.6	47.3	46.1	45.0	42.7	40.4	40.4	39.2
65°	33.4	31.1	30.0	27.7	26.5	25.4	24.2	24.2
67.5°	20.8	18.4	18.4	17.3	16.1	15.0	13.8	13.8
70°	11.5	10.4	9.2	8.1	8.1	6.9	5.8	5.8
72.5°	4.6	3.5	3.5	2.3	2.3	2.3	2.3	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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Scaled Data Report





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

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(END OF REPORT)