

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: P642341

Luminaire Tested: ML5612LSWW97FS1E - 692W WW - 1200LM - 2700K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642341  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-117)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 2/17/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML5612LSWW97FS1E - 692W WW - 1200LM - 2700K  
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

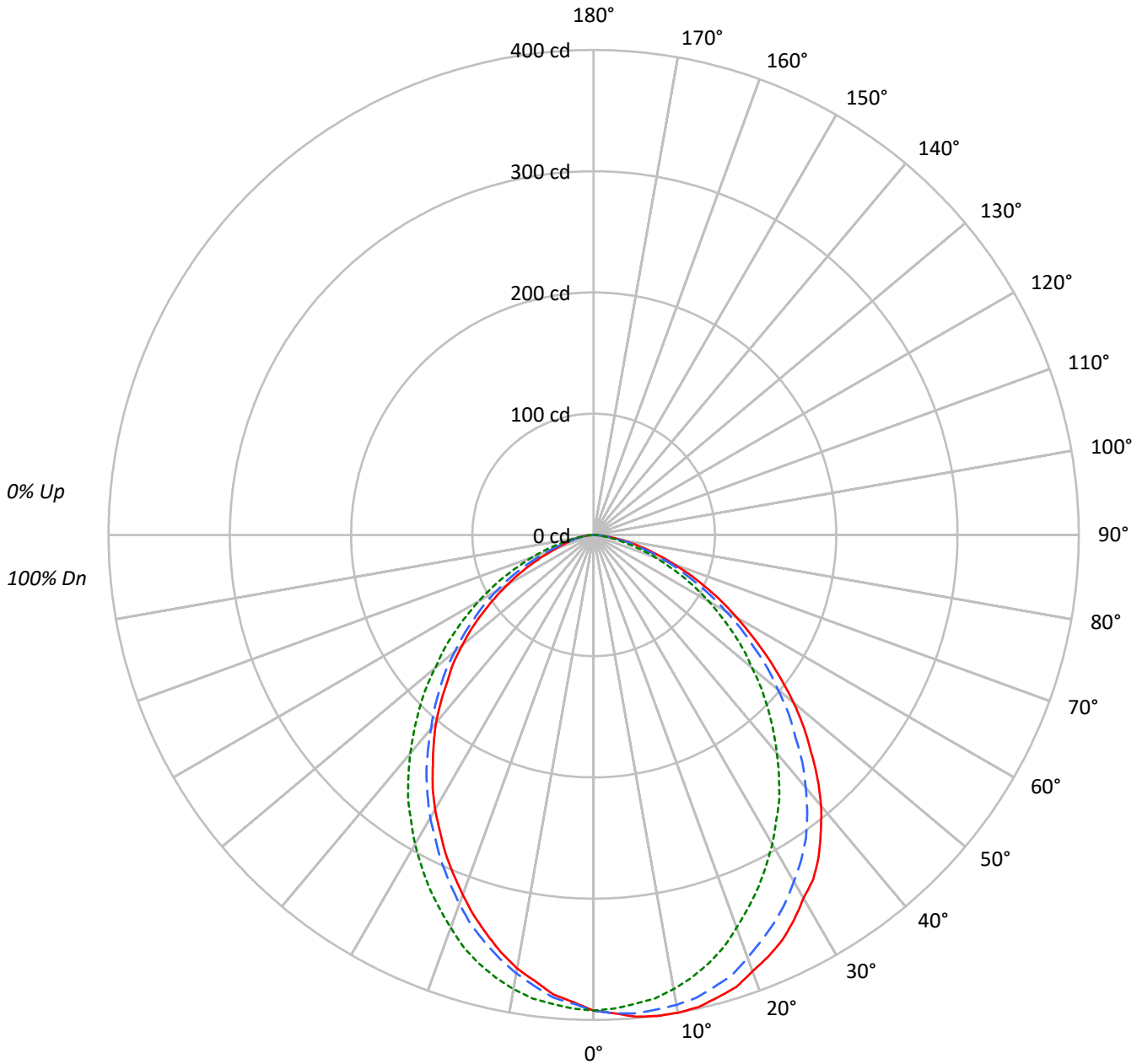
Lumens per Lamp: N/A  
Luminaire Lumens: 865.9 lumens  
Efficiency: N/A  
Efficacy: 52.5 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.25  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

Input Watts (W): 16.5  
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								
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87								
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	52	46	72	60	52	46	58	51	46	56	50	45	55	49	45	43								
7	68	55	47	41	67	55	47	41	53	46	41	52	45	41	50	45	40	38								
8	64	51	43	37	62	50	42	37	49	42	37	48	41	37	46	41	36	35								
9	60	47	39	34	58	46	39	34	45	38	33	44	38	33	43	37	33	31								
10	56	43	36	31	55	43	36	31	42	35	30	41	35	30	40	34	30	29								

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

	0°	45°	90°	135°	180°
0°	21506	21506	21506	21506	21506
5°	21951	21803	21368	21076	20933
10°	22277	21910	21175	20441	20218
15°	22412	21890	20766	19716	19342
20°	22344	21649	20109	18878	18417
25°	22290	21328	19416	17977	17499
30°	21902	20902	18642	17053	16553
35°	21656	20418	17855	16088	15466
40°	20889	19472	16824	14935	14463
45°	19661	18227	15769	13924	13211
50°	18362	16895	14533	12725	12051
55°	16659	15397	13381	11488	10599
60°	14911	13760	12017	10142	8980
65°	13192	11999	10455	8561	7199
70°	11220	10370	8687	6556	5289
75°	9235	8388	6439	4469	4469
80°	7103	6251	4578	3757	4167
85°	4969	4151	3334	3334	3334

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 19661 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.9	4.3
10°-20°	103.2	11.9
20°-30°	149.4	17.3
30°-40°	169.7	19.6
40°-50°	160.2	18.5
50°-60°	126.3	14.6
60°-70°	79.1	9.1
70°-80°	34.2	3.9
80°-90°	7.0	0.8
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°	289.5	33.4
0°-40°	459.1	53.0
0°-60°	745.6	86.1
0°-90°	865.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	865.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	392	392	392	392	392	
5°	399	396	388	383	380	38
15°	395	386	366	347	341	111
25°	368	353	321	297	289	169
35°	324	305	267	240	231	201
45°	254	235	203	180	170	196
55°	174	161	140	120	111	156
65°	102	92	81	66	56	101
75°	44	40	30	21	21	47
85°	8	7	5	5	5	10
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°	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3
2.5°	394.9	394.9	396.2	396.2	394.9	394.9	394.9	394.9	394.9	394.9	394.9
5°	398.9	398.9	398.9	398.9	397.6	397.6	397.6	397.6	397.6	396.2	396.2
7.5°	400.2	400.2	400.2	400.2	398.9	398.9	397.6	397.6	397.6	396.2	394.9
10°	400.2	400.2	400.2	398.9	398.9	397.6	398.9	397.6	396.2	394.9	393.6
12.5°	398.9	397.6	397.6	397.6	396.2	396.2	396.2	394.9	393.6	392.3	391.0
15°	394.9	394.9	394.9	393.6	393.6	392.3	392.3	391.0	389.6	387.0	385.7
17.5°	391.0	391.0	389.6	389.6	388.3	387.0	387.0	385.7	384.3	381.7	380.4
20°	383.0	383.0	383.0	381.7	380.4	380.4	379.1	377.7	375.1	372.5	371.1
22.5°	376.4	375.1	375.1	373.8	372.5	372.5	371.1	368.5	367.2	364.5	361.9
25°	368.5	367.2	367.2	365.9	364.5	363.2	363.2	360.6	357.9	355.3	352.6
27.5°	357.9	357.9	356.6	355.3	354.0	354.0	352.6	351.3	347.4	344.7	342.1
30°	346.0	347.4	346.0	344.7	343.4	343.4	342.1	339.4	336.8	332.8	330.2
32.5°	336.8	336.8	335.5	334.2	331.5	331.5	331.5	327.6	324.9	322.3	318.3
35°	323.6	323.6	323.6	321.0	319.6	318.3	317.0	314.3	311.7	309.1	305.1
37.5°	307.7	309.1	307.7	306.4	305.1	303.8	302.5	299.8	295.9	293.2	289.3
40°	291.9	291.9	290.6	289.3	287.9	286.6	285.3	282.6	280.0	276.0	272.1
42.5°	273.4	273.4	272.1	270.8	269.4	268.1	268.1	265.5	261.5	258.9	254.9
45°	253.6	253.6	253.6	252.3	250.9	249.6	248.3	247.0	244.3	240.4	235.1
47.5°	235.1	235.1	235.1	232.5	232.5	229.8	228.5	225.9	224.5	220.6	217.9
50°	215.3	214.0	214.0	212.6	211.3	210.0	210.0	206.0	204.7	202.1	198.1
52.5°	194.2	194.2	194.2	192.8	191.5	190.2	190.2	187.6	184.9	182.3	180.9
55°	174.3	174.3	174.3	173.0	171.7	171.7	170.4	167.7	166.4	163.8	161.1
57.5°	154.5	155.9	154.5	153.2	153.2	151.9	151.9	150.6	147.9	145.3	144.0
60°	136.0	136.0	136.0	134.7	133.4	133.4	133.4	132.1	129.4	128.1	125.5
62.5°	118.9	118.9	117.5	117.5	116.2	116.2	114.9	113.6	112.3	110.9	109.6
65°	101.7	100.4	100.4	100.4	99.1	99.1	99.1	97.7	95.1	93.8	92.5
67.5°	85.9	85.9	84.5	84.5	83.2	83.2	83.2	81.9	80.6	79.2	77.9
70°	70.0	70.0	70.0	70.0	68.7	68.7	68.7	67.4	66.0	66.0	64.7
72.5°	56.8	56.8	56.8	56.8	55.5	55.5	55.5	54.2	52.8	51.5	51.5
75°	43.6	44.9	43.6	43.6	43.6	43.6	42.3	42.3	40.9	39.6	39.6
77.5°	33.0	33.0	33.0	33.0	31.7	31.7	31.7	31.7	30.4	29.1	29.1
80°	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	21.1	21.1	19.8
82.5°	13.2	14.5	14.5	14.5	13.2	13.2	13.2	13.2	13.2	13.2	11.9
85°	7.9	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
87.5°	2.6	2.6	2.6	2.6	2.6	1.3	1.3	1.3	1.3	1.3	1.3
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°	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3
2.5°	393.6	393.6	393.6	393.6	392.3	392.3	392.3	391.0	391.0	391.0	391.0
5°	394.9	393.6	393.6	392.3	392.3	392.3	391.0	391.0	389.6	388.3	388.3
7.5°	393.6	393.6	392.3	391.0	391.0	389.6	388.3	387.0	385.7	385.7	383.0
10°	392.3	391.0	389.6	388.3	387.0	387.0	384.3	383.0	381.7	380.4	379.1
12.5°	388.3	387.0	385.7	383.0	383.0	381.7	379.1	377.7	375.1	373.8	371.1
15°	383.0	381.7	380.4	377.7	376.4	375.1	372.5	369.8	367.2	365.9	363.2
17.5°	377.7	375.1	372.5	369.8	368.5	367.2	364.5	361.9	359.3	356.6	354.0
20°	368.5	365.9	363.2	359.3	357.9	356.6	352.6	350.0	347.4	344.7	342.1
22.5°	359.3	356.6	352.6	350.0	348.7	346.0	343.4	339.4	336.8	332.8	330.2
25°	350.0	346.0	342.1	339.4	336.8	335.5	331.5	328.9	323.6	321.0	318.3
27.5°	338.1	335.5	331.5	327.6	324.9	322.3	319.6	315.7	311.7	307.7	305.1
30°	326.2	322.3	318.3	315.7	311.7	310.4	306.4	302.5	298.5	294.5	291.9
32.5°	314.3	310.4	306.4	302.5	299.8	297.2	293.2	289.3	284.0	280.0	277.4
35°	301.1	297.2	291.9	287.9	285.3	282.6	278.7	274.7	270.8	266.8	262.8
37.5°	285.3	280.0	277.4	273.4	269.4	266.8	262.8	257.6	254.9	250.9	247.0
40°	268.1	264.2	260.2	256.2	252.3	250.9	245.7	241.7	239.1	235.1	231.1
42.5°	250.9	247.0	241.7	237.7	235.1	233.8	229.8	225.9	221.9	219.3	215.3
45°	232.5	228.5	224.5	220.6	217.9	216.6	212.6	210.0	206.0	203.4	199.4
47.5°	214.0	210.0	207.4	203.4	200.8	199.4	196.8	192.8	188.9	187.6	184.9
50°	195.5	191.5	188.9	184.9	183.6	182.3	179.6	177.0	174.3	170.4	169.1
52.5°	177.0	173.0	170.4	167.7	167.7	165.1	162.5	161.1	158.5	155.9	153.2
55°	158.5	157.2	154.5	150.6	150.6	149.2	146.6	144.0	141.3	140.0	137.4
57.5°	140.0	138.7	136.0	134.7	133.4	132.1	130.8	128.1	126.8	124.2	122.8
60°	124.2	122.8	120.2	118.9	117.5	116.2	114.9	112.3	110.9	109.6	108.3
62.5°	107.0	105.7	104.3	103.0	101.7	100.4	100.4	97.7	96.4	95.1	93.8
65°	92.5	89.8	88.5	87.2	87.2	85.9	84.5	83.2	81.9	80.6	79.2
67.5°	76.6	75.3	75.3	72.6	72.6	71.3	70.0	70.0	67.4	66.0	64.7
70°	63.4	62.1	60.8	59.4	59.4	58.1	56.8	55.5	54.2	54.2	52.8
72.5°	50.2	48.9	48.9	47.5	46.2	46.2	44.9	43.6	42.3	42.3	40.9
75°	38.3	37.0	37.0	35.7	35.7	34.3	33.0	33.0	31.7	30.4	29.1
77.5°	27.7	27.7	26.4	26.4	25.1	25.1	23.8	23.8	22.5	21.1	21.1
80°	19.8	18.5	18.5	17.2	17.2	17.2	15.8	15.8	14.5	14.5	13.2
82.5°	11.9	11.9	10.6	10.6	10.6	10.6	9.2	9.2	9.2	7.9	7.9
85°	6.6	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	4.0
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3
2.5°	389.6	389.6	388.3	389.6	388.3	388.3	388.3	388.3	387.0	387.0	387.0
5°	387.0	385.7	385.7	384.3	385.7	384.3	383.0	383.0	383.0	383.0	381.7
7.5°	381.7	381.7	380.4	379.1	379.1	377.7	376.4	376.4	375.1	375.1	373.8
10°	377.7	375.1	373.8	372.5	372.5	371.1	369.8	368.5	367.2	365.9	365.9
12.5°	368.5	367.2	365.9	364.5	364.5	361.9	360.6	359.3	357.9	356.6	355.3
15°	361.9	359.3	356.6	355.3	355.3	352.6	351.3	350.0	347.4	347.4	344.7
17.5°	351.3	348.7	346.0	344.7	343.4	342.1	340.8	338.1	336.8	334.2	334.2
20°	338.1	336.8	332.8	331.5	330.2	328.9	326.2	324.9	323.6	321.0	319.6
22.5°	327.6	323.6	321.0	319.6	319.6	315.7	314.3	311.7	310.4	309.1	306.4
25°	314.3	311.7	309.1	306.4	306.4	303.8	302.5	299.8	297.2	295.9	294.5
27.5°	301.1	298.5	294.5	293.2	291.9	290.6	287.9	285.3	282.6	281.3	280.0
30°	286.6	284.0	281.3	280.0	277.4	274.7	272.1	270.8	269.4	266.8	265.5
32.5°	273.4	269.4	266.8	264.2	264.2	260.2	258.9	256.2	254.9	253.6	250.9
35°	258.9	254.9	252.3	250.9	249.6	245.7	243.0	240.4	240.4	237.7	236.4
37.5°	243.0	239.1	237.7	235.1	233.8	231.1	228.5	227.2	224.5	221.9	221.9
40°	228.5	224.5	220.6	220.6	217.9	216.6	212.6	211.3	208.7	207.4	206.0
42.5°	212.6	208.7	206.0	204.7	203.4	200.8	198.1	195.5	194.2	192.8	191.5
45°	195.5	192.8	191.5	188.9	187.6	184.9	183.6	180.9	179.6	177.0	175.7
47.5°	180.9	178.3	175.7	174.3	173.0	170.4	169.1	166.4	165.1	162.5	161.1
50°	166.4	163.8	161.1	159.8	158.5	155.9	153.2	151.9	149.2	147.9	145.3
52.5°	150.6	147.9	145.3	145.3	144.0	141.3	140.0	137.4	134.7	132.1	130.8
55°	136.0	133.4	130.8	129.4	129.4	126.8	124.2	122.8	120.2	118.9	116.2
57.5°	120.2	117.5	116.2	114.9	114.9	112.3	110.9	108.3	107.0	104.3	103.0
60°	105.7	104.3	101.7	101.7	100.4	97.7	96.4	93.8	92.5	91.1	89.8
62.5°	91.1	89.8	87.2	87.2	85.9	84.5	83.2	80.6	79.2	76.6	75.3
65°	76.6	75.3	74.0	72.6	72.6	70.0	68.7	67.4	66.0	64.7	63.4
67.5°	63.4	62.1	60.8	60.8	59.4	58.1	55.5	54.2	52.8	51.5	50.2
70°	51.5	48.9	47.5	47.5	46.2	44.9	43.6	42.3	40.9	39.6	38.3
72.5°	39.6	37.0	37.0	35.7	34.3	33.0	33.0	31.7	30.4	30.4	27.7
75°	29.1	27.7	26.4	26.4	25.1	23.8	22.5	22.5	21.1	21.1	21.1
77.5°	19.8	18.5	18.5	17.2	17.2	17.2	15.8	15.8	15.8	15.8	17.2
80°	13.2	13.2	11.9	11.9	11.9	11.9	11.9	11.9	11.9	13.2	13.2
82.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	9.2
85°	4.0	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
87.5°	1.3	1.3	2.6	1.3	2.6	1.3	2.6	2.6	2.6	2.6	2.6
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: P642341

CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 1200LM - 2700K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	392.3	392.3	392.3	392.3	392.3	392.3	392.3	392.3
2.5°	385.7	387.0	387.0	385.7	387.0	385.7	385.7	385.7
5°	381.7	380.4	380.4	380.4	379.1	380.4	380.4	380.4
7.5°	373.8	373.8	372.5	372.5	371.1	371.1	372.5	371.1
10°	364.5	363.2	364.5	363.2	363.2	363.2	361.9	363.2
12.5°	355.3	354.0	354.0	352.6	352.6	352.6	352.6	352.6
15°	344.7	343.4	343.4	342.1	342.1	340.8	342.1	340.8
17.5°	332.8	332.8	330.2	330.2	330.2	330.2	330.2	328.9
20°	318.3	318.3	317.0	318.3	315.7	315.7	315.7	315.7
22.5°	306.4	305.1	303.8	303.8	303.8	302.5	302.5	302.5
25°	291.9	291.9	290.6	290.6	289.3	289.3	289.3	289.3
27.5°	278.7	277.4	277.4	277.4	276.0	274.7	274.7	274.7
30°	264.2	264.2	262.8	262.8	261.5	261.5	261.5	261.5
32.5°	249.6	249.6	248.3	247.0	247.0	247.0	245.7	247.0
35°	235.1	233.8	233.8	232.5	232.5	232.5	231.1	231.1
37.5°	220.6	219.3	217.9	219.3	217.9	216.6	216.6	216.6
40°	204.7	203.4	203.4	202.1	202.1	202.1	200.8	202.1
42.5°	190.2	190.2	188.9	187.6	187.6	187.6	186.2	186.2
45°	175.7	173.0	174.3	173.0	173.0	171.7	171.7	170.4
47.5°	159.8	158.5	158.5	158.5	157.2	157.2	157.2	157.2
50°	144.0	142.6	144.0	142.6	142.6	141.3	141.3	141.3
52.5°	129.4	128.1	128.1	128.1	128.1	126.8	126.8	126.8
55°	114.9	113.6	113.6	113.6	112.3	112.3	110.9	110.9
57.5°	101.7	100.4	99.1	97.7	97.7	97.7	96.4	96.4
60°	87.2	85.9	84.5	84.5	83.2	83.2	83.2	81.9
62.5°	74.0	72.6	71.3	71.3	70.0	68.7	68.7	68.7
65°	60.8	59.4	59.4	58.1	56.8	56.8	55.5	55.5
67.5°	48.9	47.5	47.5	46.2	44.9	43.6	43.6	43.6
70°	38.3	37.0	35.7	35.7	35.7	34.3	33.0	33.0
72.5°	27.7	26.4	26.4	26.4	26.4	26.4	26.4	26.4
75°	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1
77.5°	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
80°	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
82.5°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
85°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
87.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.3
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)