

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: P642281

Luminaire Tested: ML5612LSWW97FS1E - 592SC WW - 1200LM - 2700K

Issue Date: 2/17/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P642281  
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 - 1200LM - 2700K  
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM  
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 856.2 lumens  
Efficiency: N/A  
Efficacy: 51.9 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

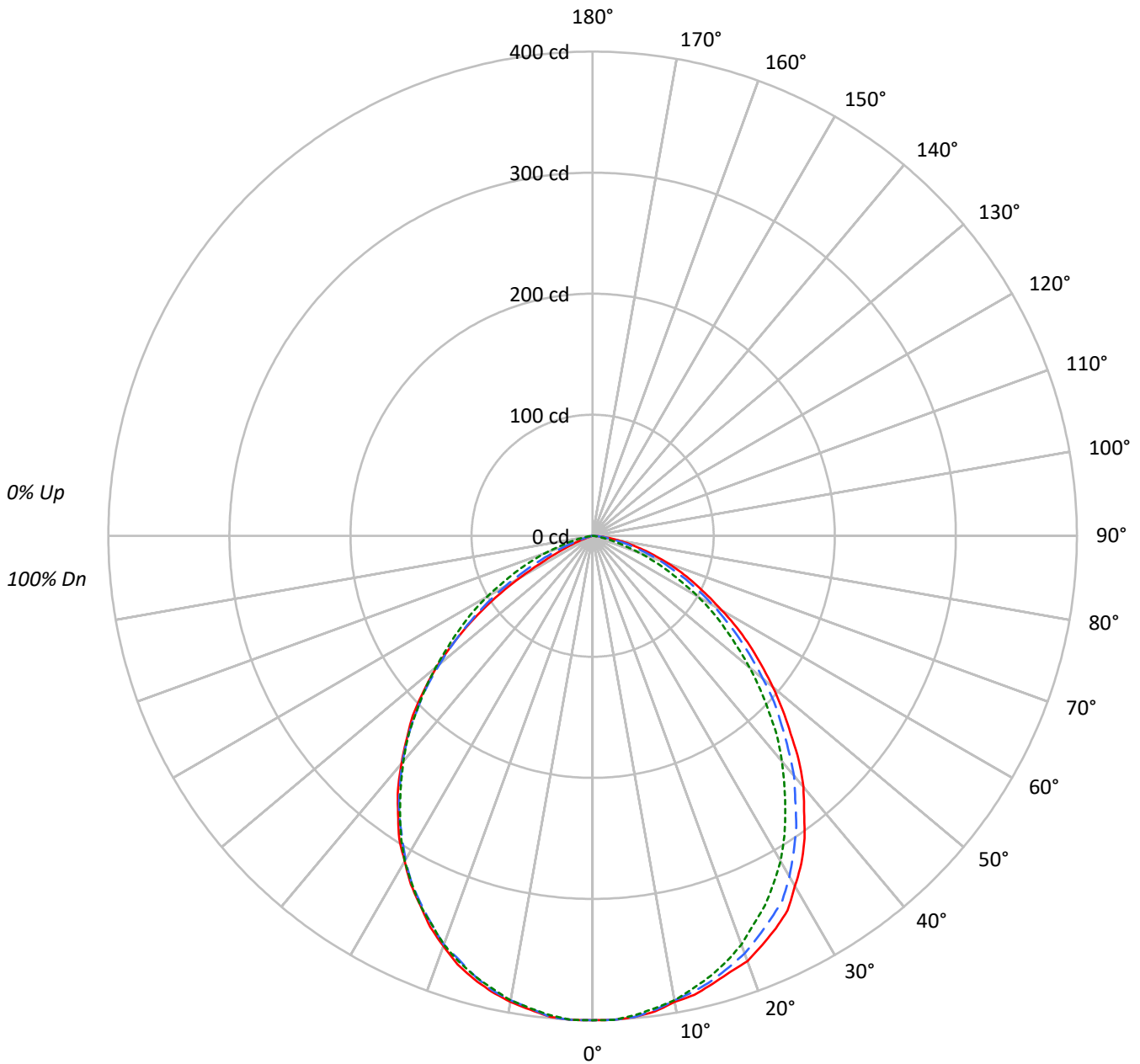
Input Watts (W): 16.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20										
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°	31600	31600	31600	31600	31600
5°	31618	31618	31507	31618	31618
10°	31342	31238	31238	31238	31342
15°	31309	31097	30770	30770	30982
20°	31410	30847	30184	30184	30293
25°	31182	30381	29345	29223	29345
30°	30463	29625	28294	28175	28294
35°	29412	28265	26733	26858	26993
40°	27906	26680	25051	25185	25319
45°	25811	24628	23009	23009	23444
50°	23850	22548	20767	20276	20608
55°	21814	20369	18360	16915	16543
60°	19404	18141	15851	13136	10846
65°	17278	15784	12832	8630	5174
70°	15256	13410	9463	4270	1523
75°	12505	10462	5643	1220	397
80°	9592	7228	2409	0	0
85°	4800	3623	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 10°  
 Vertical Angle: 45°  
 Luminance: 25956 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.8	4.4
10°-20°	106.7	12.5
20°-30°	157.4	18.4
30°-40°	178.2	20.8
40°-50°	164.6	19.2
50°-60°	121.6	14.2
60°-70°	65.4	7.6
70°-80°	21.9	2.6
80°-90°	2.8	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°	301.9	35.3
0°-40°	480.1	56.1
0°-60°	766.2	89.5
0°-90°	856.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	856.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	400	400	400	400	400	
5°	399	399	398	399	399	38
15°	383	380	376	376	379	108
25°	358	349	337	336	337	165
35°	305	293	277	279	280	190
45°	231	221	206	206	210	179
55°	158	148	133	123	120	142
65°	92	84	69	46	28	92
75°	41	34	18	4	1	44
85°	5	4	0	0	0	8
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°	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3
2.5°	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3
5°	399.0	399.0	397.6	399.0	399.0	399.0	399.0	397.6	399.0	399.0	399.0
7.5°	396.3	395.0	395.0	395.0	395.0	395.0	395.0	395.0	395.0	395.0	395.0
10°	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	389.7
12.5°	388.4	387.1	387.1	387.1	387.1	387.1	387.1	385.7	387.1	385.7	385.7
15°	383.1	383.1	383.1	383.1	383.1	383.1	381.8	381.8	381.8	381.8	380.5
17.5°	377.8	377.8	379.1	379.1	377.8	377.8	377.8	376.5	375.2	375.2	373.9
20°	373.9	373.9	372.5	372.5	371.2	372.5	371.2	369.9	369.9	368.6	367.2
22.5°	365.9	365.9	365.9	365.9	365.9	364.6	364.6	363.3	362.0	360.6	358.0
25°	358.0	358.0	358.0	358.0	356.7	356.7	356.7	354.0	352.7	351.4	348.8
27.5°	348.8	347.4	347.4	347.4	346.1	346.1	344.8	343.5	342.1	340.8	339.5
30°	334.2	334.2	334.2	334.2	332.9	331.6	331.6	330.3	328.9	326.3	325.0
32.5°	321.0	321.0	319.7	318.4	318.4	318.4	317.0	315.7	313.1	311.8	309.1
35°	305.2	303.8	303.8	302.5	302.5	302.5	301.2	298.6	297.2	295.9	293.3
37.5°	286.7	288.0	286.7	286.7	285.3	284.0	282.7	281.4	280.1	277.4	274.8
40°	270.8	270.8	269.5	268.2	266.8	266.8	265.5	264.2	262.9	261.6	258.9
42.5°	252.3	252.3	251.0	251.0	249.7	249.7	247.0	245.7	244.4	243.1	239.1
45°	231.2	231.2	232.5	231.2	229.9	228.5	228.5	227.2	224.6	223.3	220.6
47.5°	212.7	214.0	212.7	211.4	211.4	210.0	210.0	207.4	207.4	204.8	203.4
50°	194.2	194.2	194.2	194.2	192.9	191.5	191.5	190.2	187.6	186.3	183.6
52.5°	175.7	175.7	175.7	175.7	174.4	174.4	173.1	171.7	170.4	167.8	165.1
55°	158.5	157.2	157.2	157.2	155.9	155.9	154.6	153.2	151.9	150.6	148.0
57.5°	141.4	140.0	140.0	138.7	138.7	137.4	137.4	136.1	134.7	132.1	130.8
60°	122.9	124.2	122.9	122.9	121.5	121.5	121.5	120.2	117.6	116.3	114.9
62.5°	107.0	108.3	107.0	105.7	105.7	105.7	105.7	103.0	101.7	100.4	99.1
65°	92.5	92.5	92.5	91.2	91.2	91.2	88.5	88.5	87.2	85.9	84.5
67.5°	79.3	77.9	77.9	77.9	76.6	76.6	75.3	75.3	72.7	72.7	70.0
70°	66.1	64.7	64.7	64.7	63.4	62.1	63.4	60.8	59.4	58.1	58.1
72.5°	52.8	52.8	51.5	51.5	51.5	50.2	50.2	48.9	47.6	46.2	44.9
75°	41.0	41.0	41.0	39.6	39.6	38.3	38.3	37.0	37.0	34.3	34.3
77.5°	30.4	30.4	30.4	29.1	29.1	29.1	27.7	27.7	26.4	25.1	23.8
80°	21.1	19.8	19.8	19.8	19.8	18.5	18.5	18.5	17.2	17.2	15.9
82.5°	11.9	11.9	11.9	11.9	11.9	11.9	10.6	10.6	10.6	9.2	9.2
85°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	4.0	4.0	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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3
2.5°	400.3	400.3	400.3	400.3	399.0	400.3	399.0	400.3	400.3	400.3	400.3
5°	399.0	397.6	397.6	397.6	399.0	399.0	397.6	397.6	397.6	397.6	397.6
7.5°	395.0	395.0	395.0	393.7	395.0	395.0	393.7	395.0	395.0	393.7	395.0
10°	391.0	391.0	389.7	389.7	389.7	389.7	389.7	389.7	388.4	389.7	389.7
12.5°	385.7	385.7	385.7	384.4	384.4	384.4	384.4	384.4	383.1	383.1	384.4
15°	380.5	380.5	379.1	379.1	379.1	377.8	377.8	377.8	377.8	376.5	376.5
17.5°	373.9	372.5	372.5	371.2	371.2	369.9	369.9	368.6	368.6	368.6	367.2
20°	365.9	364.6	363.3	363.3	362.0	362.0	360.6	360.6	359.3	359.3	358.0
22.5°	356.7	355.4	354.0	352.7	352.7	351.4	351.4	350.1	348.8	347.4	347.4
25°	348.8	346.1	344.8	343.5	340.8	340.8	339.5	339.5	338.2	336.9	335.5
27.5°	336.9	334.2	332.9	331.6	330.3	328.9	326.3	326.3	325.0	323.7	322.3
30°	322.3	321.0	318.4	317.0	315.7	315.7	313.1	310.4	310.4	310.4	309.1
32.5°	307.8	305.2	303.8	301.2	299.9	299.9	298.6	295.9	294.6	294.6	293.3
35°	291.9	289.3	286.7	285.3	284.0	282.7	281.4	280.1	278.7	277.4	276.1
37.5°	273.5	270.8	269.5	268.2	266.8	265.5	264.2	262.9	261.6	260.2	261.6
40°	256.3	253.6	251.0	249.7	248.4	248.4	247.0	245.7	244.4	243.1	243.1
42.5°	237.8	235.1	233.8	232.5	231.2	229.9	228.5	227.2	225.9	225.9	224.6
45°	218.0	216.6	214.0	212.7	211.4	211.4	208.7	207.4	207.4	206.1	206.1
47.5°	200.8	198.2	195.5	194.2	192.9	191.5	190.2	188.9	187.6	187.6	187.6
50°	181.0	179.7	177.0	175.7	174.4	174.4	173.1	171.7	170.4	169.1	169.1
52.5°	162.5	161.2	161.2	158.5	157.2	157.2	154.6	154.6	151.9	150.6	149.3
55°	146.6	144.0	142.7	140.0	140.0	138.7	137.4	136.1	134.7	133.4	132.1
57.5°	128.1	126.8	125.5	124.2	124.2	122.9	121.5	120.2	117.6	117.6	114.9
60°	113.6	111.0	109.6	108.3	107.0	107.0	105.7	104.4	101.7	100.4	99.1
62.5°	97.8	95.1	95.1	93.8	91.2	91.2	89.8	87.2	85.9	83.2	81.9
65°	83.2	81.9	79.3	77.9	77.9	76.6	74.0	72.7	71.3	68.7	66.1
67.5°	68.7	67.4	66.1	63.4	63.4	62.1	59.4	58.1	55.5	54.2	51.5
70°	55.5	54.2	52.8	50.2	50.2	48.9	47.6	44.9	42.3	41.0	38.3
72.5°	43.6	42.3	41.0	38.3	38.3	37.0	34.3	33.0	30.4	27.7	26.4
75°	33.0	31.7	29.1	27.7	26.4	26.4	23.8	22.5	21.1	18.5	17.2
77.5°	22.5	21.1	19.8	18.5	18.5	17.2	15.9	14.5	13.2	11.9	9.2
80°	14.5	13.2	11.9	11.9	10.6	10.6	9.2	7.9	6.6	5.3	4.0
82.5°	7.9	7.9	6.6	5.3	5.3	5.3	4.0	4.0	2.6	1.3	1.3
85°	2.6	2.6	2.6	2.6	1.3	1.3	1.3	1.3	1.3	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°	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3
2.5°	400.3	400.3	400.3	400.3	400.3	400.3	399.0	400.3	400.3	400.3	399.0
5°	399.0	397.6	397.6	399.0	397.6	397.6	399.0	399.0	399.0	397.6	397.6
7.5°	393.7	395.0	393.7	393.7	395.0	395.0	395.0	395.0	393.7	393.7	395.0
10°	389.7	389.7	388.4	389.7	388.4	389.7	389.7	389.7	389.7	389.7	389.7
12.5°	383.1	383.1	383.1	384.4	383.1	383.1	384.4	384.4	384.4	384.4	384.4
15°	375.2	375.2	376.5	375.2	376.5	376.5	376.5	376.5	376.5	376.5	377.8
17.5°	367.2	367.2	367.2	367.2	367.2	367.2	367.2	367.2	367.2	368.6	368.6
20°	358.0	358.0	358.0	358.0	358.0	356.7	358.0	358.0	359.3	359.3	359.3
22.5°	346.1	346.1	346.1	346.1	346.1	346.1	346.1	346.1	347.4	348.8	347.4
25°	334.2	334.2	334.2	334.2	334.2	334.2	334.2	335.5	335.5	335.5	336.9
27.5°	322.3	322.3	322.3	321.0	322.3	321.0	322.3	322.3	323.7	322.3	323.7
30°	309.1	307.8	307.8	307.8	307.8	309.1	307.8	307.8	309.1	310.4	309.1
32.5°	291.9	291.9	291.9	293.3	293.3	293.3	294.6	293.3	293.3	294.6	294.6
35°	276.1	276.1	276.1	277.4	277.4	277.4	277.4	278.7	278.7	278.7	280.1
37.5°	258.9	260.2	258.9	260.2	260.2	261.6	261.6	261.6	261.6	262.9	262.9
40°	243.1	241.7	243.1	243.1	243.1	243.1	243.1	243.1	244.4	245.7	245.7
42.5°	224.6	224.6	224.6	224.6	224.6	224.6	225.9	225.9	225.9	227.2	227.2
45°	206.1	204.8	204.8	204.8	204.8	206.1	204.8	206.1	206.1	207.4	207.4
47.5°	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3	187.6	186.3
50°	169.1	167.8	166.5	166.5	165.1	166.5	165.1	165.1	165.1	166.5	165.1
52.5°	149.3	148.0	146.6	146.6	146.6	145.3	144.0	144.0	144.0	142.7	142.7
55°	132.1	130.8	128.1	129.5	126.8	125.5	125.5	124.2	122.9	122.9	121.5
57.5°	113.6	112.3	111.0	109.6	109.6	107.0	105.7	104.4	103.0	101.7	99.1
60°	97.8	95.1	92.5	92.5	91.2	89.8	87.2	84.5	83.2	80.6	79.3
62.5°	80.6	77.9	75.3	74.0	72.7	71.3	68.7	66.1	63.4	62.1	59.4
65°	64.7	62.1	59.4	58.1	56.8	54.2	51.5	48.9	46.2	43.6	42.3
67.5°	48.9	46.2	44.9	42.3	41.0	38.3	35.7	34.3	31.7	29.1	25.1
70°	35.7	33.0	30.4	29.1	27.7	25.1	23.8	21.1	18.5	17.2	14.5
72.5°	23.8	21.1	19.8	18.5	17.2	15.9	13.2	11.9	9.2	7.9	6.6
75°	14.5	13.2	11.9	10.6	9.2	7.9	6.6	5.3	4.0	2.6	1.3
77.5°	7.9	6.6	5.3	5.3	4.0	2.6	2.6	1.3	1.3	1.3	1.3
80°	4.0	2.6	1.3	1.3	1.3	1.3	0.0	0.0	0.0	0.0	1.3
82.5°	1.3	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: P642281

CATALOG NUMBER: ML5612LSWW97FS1E - 592SC WW - 1200LM - 2700K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3
2.5°	400.3	400.3	400.3	400.3	400.3	400.3	400.3	400.3
5°	399.0	399.0	397.6	399.0	397.6	397.6	397.6	399.0
7.5°	395.0	395.0	395.0	395.0	395.0	395.0	395.0	395.0
10°	389.7	389.7	389.7	391.0	391.0	391.0	389.7	391.0
12.5°	384.4	384.4	384.4	385.7	384.4	385.7	384.4	385.7
15°	377.8	377.8	379.1	379.1	377.8	377.8	379.1	379.1
17.5°	368.6	369.9	369.9	369.9	369.9	369.9	369.9	371.2
20°	360.6	360.6	359.3	360.6	360.6	362.0	362.0	360.6
22.5°	347.4	350.1	350.1	350.1	350.1	350.1	350.1	350.1
25°	336.9	336.9	336.9	338.2	336.9	336.9	338.2	336.9
27.5°	323.7	325.0	323.7	325.0	325.0	325.0	325.0	325.0
30°	310.4	310.4	310.4	310.4	310.4	311.8	310.4	310.4
32.5°	294.6	295.9	295.9	295.9	297.2	295.9	295.9	297.2
35°	280.1	280.1	280.1	281.4	280.1	281.4	281.4	280.1
37.5°	262.9	264.2	262.9	264.2	264.2	264.2	264.2	264.2
40°	247.0	245.7	247.0	245.7	247.0	247.0	247.0	245.7
42.5°	227.2	228.5	228.5	228.5	228.5	228.5	228.5	227.2
45°	207.4	208.7	208.7	208.7	208.7	208.7	210.0	210.0
47.5°	186.3	188.9	188.9	188.9	187.6	190.2	188.9	188.9
50°	165.1	165.1	166.5	166.5	167.8	167.8	167.8	167.8
52.5°	144.0	142.7	144.0	144.0	145.3	144.0	145.3	144.0
55°	120.2	120.2	120.2	118.9	120.2	120.2	120.2	120.2
57.5°	99.1	97.8	96.4	95.1	95.1	95.1	93.8	95.1
60°	76.6	74.0	75.3	72.7	71.3	70.0	70.0	68.7
62.5°	56.8	54.2	52.8	51.5	48.9	46.2	46.2	44.9
65°	38.3	35.7	34.3	31.7	30.4	29.1	27.7	27.7
67.5°	23.8	21.1	21.1	19.8	18.5	17.2	15.9	15.9
70°	13.2	11.9	10.6	9.2	9.2	7.9	6.6	6.6
72.5°	5.3	4.0	4.0	2.6	2.6	2.6	2.6	1.3
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)