

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: P644158

Luminaire Tested: ML5615LSWW9FS1E - 692W WW - 1200LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644158
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: ML5615LSWW9FS1E - 692W WW - 1200LM - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 876.1 lumens
Efficiency: N/A
Efficacy: 65.4 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

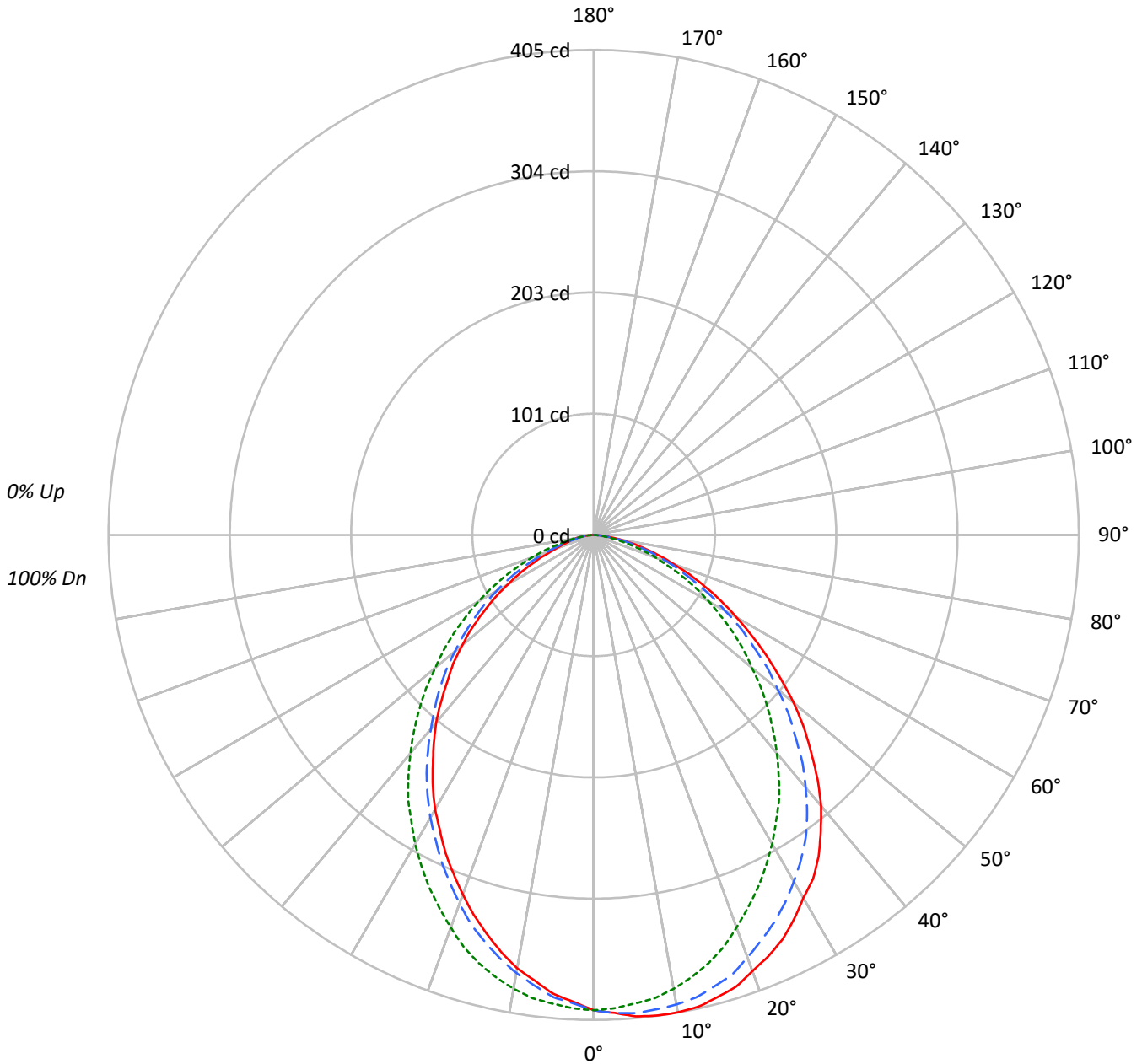
Input Watts (W): 13.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87				87				
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74				74				
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64				64				
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55				55				
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49				49				
6	73	61	52	46	72	60	52	46	58	51	46	56	50	45	55	49	45	43				43				
7	68	55	47	41	67	55	47	41	53	46	41	52	45	41	50	45	40	38				38				
8	64	51	43	37	62	50	42	37	49	42	37	48	41	37	46	41	36	35				35				
9	60	47	39	34	58	46	39	34	45	38	33	44	38	33	43	37	33	31				31				
10	56	43	36	31	55	43	36	31	42	35	30	41	35	30	40	34	30	29				29				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	21758	21758	21758	21758	21758
5°	22210	22061	21621	21324	21181
10°	22539	22166	21426	20680	20457
15°	22679	22145	21010	19949	19569
20°	22606	21906	20348	19100	18633
25°	22550	21582	19640	18189	17705
30°	22162	21149	18864	17256	16749
35°	21911	20659	18063	16276	15653
40°	21132	19701	17025	15107	14635
45°	19894	18444	15955	14087	13366
50°	18575	17100	14703	12878	12196
55°	16860	15579	13543	11622	10733
60°	15087	13924	12159	10251	9089
65°	13348	12128	10572	8665	7277
70°	11348	10499	8784	6636	5353
75°	9341	8494	6503	4533	4533
80°	7166	6314	4641	3788	4230
85°	5032	4214	3334	3334	3334

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 19894 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.3	4.3
10°-20°	104.4	11.9
20°-30°	151.1	17.3
30°-40°	171.7	19.6
40°-50°	162.1	18.5
50°-60°	127.8	14.6
60°-70°	80.0	9.1
70°-80°	34.6	3.9
80°-90°	7.1	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°	292.9	33.4
0°-40°	464.5	53.0
0°-60°	754.4	86.1
0°-90°	876.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	876.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	397	397	397	397	397	
5°	404	401	393	388	385	39
15°	400	390	370	352	345	113
25°	373	357	325	301	293	171
35°	327	309	270	243	234	204
45°	257	238	206	182	172	198
55°	176	163	142	122	112	158
65°	103	94	82	67	56	102
75°	44	40	31	21	21	48
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°	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9
2.5°	399.6	399.6	400.9	400.9	399.6	399.6	399.6	399.6	399.6	399.6	399.6
5°	403.6	403.6	403.6	403.6	402.2	402.2	402.2	402.2	402.2	400.9	400.9
7.5°	404.9	404.9	404.9	404.9	403.6	403.6	402.2	402.2	402.2	400.9	399.6
10°	404.9	404.9	404.9	403.6	403.6	402.2	403.6	402.2	400.9	399.6	398.2
12.5°	403.6	402.2	402.2	402.2	400.9	400.9	400.9	399.6	398.2	396.9	395.6
15°	399.6	399.6	399.6	398.2	398.2	396.9	396.9	395.6	394.2	391.5	390.2
17.5°	395.6	395.6	394.2	394.2	392.9	391.5	391.5	390.2	388.9	386.2	384.9
20°	387.5	387.5	387.5	386.2	384.9	384.9	383.5	382.2	379.5	376.8	375.5
22.5°	380.9	379.5	379.5	378.2	376.8	376.8	375.5	372.8	371.5	368.8	366.2
25°	372.8	371.5	371.5	370.2	368.8	367.5	367.5	364.8	362.1	359.5	356.8
27.5°	362.1	362.1	360.8	359.5	358.1	358.1	356.8	355.5	351.5	348.8	346.1
30°	350.1	351.5	350.1	348.8	347.4	347.4	346.1	343.4	340.8	336.8	334.1
32.5°	340.8	340.8	339.4	338.1	335.4	335.4	335.4	331.4	328.7	326.1	322.1
35°	327.4	327.4	327.4	324.7	323.4	322.1	320.7	318.0	315.4	312.7	308.7
37.5°	311.4	312.7	311.4	310.0	308.7	307.4	306.0	303.3	299.3	296.7	292.7
40°	295.3	295.3	294.0	292.7	291.3	290.0	288.6	286.0	283.3	279.3	275.3
42.5°	276.6	276.6	275.3	273.9	272.6	271.3	271.3	268.6	264.6	261.9	257.9
45°	256.6	256.6	256.6	255.2	253.9	252.6	251.2	249.9	247.2	243.2	237.9
47.5°	237.9	237.9	237.9	235.2	235.2	232.5	231.2	228.5	227.2	223.2	220.5
50°	217.8	216.5	216.5	215.1	213.8	212.5	212.5	208.5	207.1	204.5	200.5
52.5°	196.4	196.4	196.4	195.1	193.8	192.4	192.4	189.8	187.1	184.4	183.1
55°	176.4	176.4	176.4	175.1	173.7	173.7	172.4	169.7	168.4	165.7	163.0
57.5°	156.4	157.7	156.4	155.0	155.0	153.7	153.7	152.3	149.7	147.0	145.7
60°	137.6	137.6	137.6	136.3	135.0	135.0	135.0	133.6	131.0	129.6	127.0
62.5°	120.3	120.3	118.9	118.9	117.6	117.6	116.3	114.9	113.6	112.3	110.9
65°	102.9	101.6	101.6	101.6	100.2	100.2	100.2	98.9	96.2	94.9	93.5
67.5°	86.9	86.9	85.5	85.5	84.2	84.2	84.2	82.9	81.5	80.2	78.8
70°	70.8	70.8	70.8	70.8	69.5	69.5	69.5	68.2	66.8	66.8	65.5
72.5°	57.5	57.5	57.5	57.5	56.1	56.1	56.1	54.8	53.5	52.1	52.1
75°	44.1	45.4	44.1	44.1	44.1	44.1	42.8	42.8	41.4	40.1	40.1
77.5°	33.4	33.4	33.4	33.4	32.1	32.1	32.1	32.1	30.7	29.4	29.4
80°	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	21.4	21.4	20.0
82.5°	13.4	14.7	14.7	14.7	13.4	13.4	13.4	13.4	13.4	13.4	12.0
85°	8.0	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
87.5°	2.7	2.7	2.7	2.7	2.7	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°	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9
2.5°	398.2	398.2	398.2	398.2	396.9	396.9	396.9	395.6	395.6	395.6	395.6
5°	399.6	398.2	398.2	396.9	396.9	396.9	395.6	395.6	394.2	392.9	392.9
7.5°	398.2	398.2	396.9	395.6	395.6	394.2	392.9	391.5	390.2	390.2	387.5
10°	396.9	395.6	394.2	392.9	391.5	391.5	388.9	387.5	386.2	384.9	383.5
12.5°	392.9	391.5	390.2	387.5	387.5	386.2	383.5	382.2	379.5	378.2	375.5
15°	387.5	386.2	384.9	382.2	380.9	379.5	376.8	374.2	371.5	370.2	367.5
17.5°	382.2	379.5	376.8	374.2	372.8	371.5	368.8	366.2	363.5	360.8	358.1
20°	372.8	370.2	367.5	363.5	362.1	360.8	356.8	354.1	351.5	348.8	346.1
22.5°	363.5	360.8	356.8	354.1	352.8	350.1	347.4	343.4	340.8	336.8	334.1
25°	354.1	350.1	346.1	343.4	340.8	339.4	335.4	332.7	327.4	324.7	322.1
27.5°	342.1	339.4	335.4	331.4	328.7	326.1	323.4	319.4	315.4	311.4	308.7
30°	330.1	326.1	322.1	319.4	315.4	314.0	310.0	306.0	302.0	298.0	295.3
32.5°	318.0	314.0	310.0	306.0	303.3	300.7	296.7	292.7	287.3	283.3	280.6
35°	304.7	300.7	295.3	291.3	288.6	286.0	282.0	278.0	273.9	269.9	265.9
37.5°	288.6	283.3	280.6	276.6	272.6	269.9	265.9	260.6	257.9	253.9	249.9
40°	271.3	267.3	263.3	259.2	255.2	253.9	248.6	244.5	241.9	237.9	233.9
42.5°	253.9	249.9	244.5	240.5	237.9	236.5	232.5	228.5	224.5	221.8	217.8
45°	235.2	231.2	227.2	223.2	220.5	219.2	215.1	212.5	208.5	205.8	201.8
47.5°	216.5	212.5	209.8	205.8	203.1	201.8	199.1	195.1	191.1	189.8	187.1
50°	197.8	193.8	191.1	187.1	185.8	184.4	181.7	179.1	176.4	172.4	171.1
52.5°	179.1	175.1	172.4	169.7	169.7	167.0	164.4	163.0	160.4	157.7	155.0
55°	160.4	159.0	156.4	152.3	152.3	151.0	148.3	145.7	143.0	141.7	139.0
57.5°	141.7	140.3	137.6	136.3	135.0	133.6	132.3	129.6	128.3	125.6	124.3
60°	125.6	124.3	121.6	120.3	118.9	117.6	116.3	113.6	112.3	110.9	109.6
62.5°	108.2	106.9	105.6	104.2	102.9	101.6	101.6	98.9	97.6	96.2	94.9
65°	93.5	90.9	89.5	88.2	88.2	86.9	85.5	84.2	82.9	81.5	80.2
67.5°	77.5	76.2	76.2	73.5	73.5	72.2	70.8	70.8	68.2	66.8	65.5
70°	64.1	62.8	61.5	60.1	60.1	58.8	57.5	56.1	54.8	54.8	53.5
72.5°	50.8	49.4	49.4	48.1	46.8	46.8	45.4	44.1	42.8	42.8	41.4
75°	38.8	37.4	37.4	36.1	36.1	34.7	33.4	33.4	32.1	30.7	29.4
77.5°	28.1	28.1	26.7	26.7	25.4	25.4	24.1	24.1	22.7	21.4	21.4
80°	20.0	18.7	18.7	17.4	17.4	17.4	16.0	16.0	14.7	14.7	13.4
82.5°	12.0	12.0	10.7	10.7	10.7	10.7	9.4	9.4	9.4	8.0	8.0
85°	6.7	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°	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9
2.5°	394.2	394.2	392.9	394.2	392.9	392.9	392.9	392.9	391.5	391.5	391.5
5°	391.5	390.2	390.2	388.9	390.2	388.9	387.5	387.5	387.5	387.5	386.2
7.5°	386.2	386.2	384.9	383.5	383.5	382.2	380.9	380.9	379.5	379.5	378.2
10°	382.2	379.5	378.2	376.8	376.8	375.5	374.2	372.8	371.5	370.2	370.2
12.5°	372.8	371.5	370.2	368.8	368.8	366.2	364.8	363.5	362.1	360.8	359.5
15°	366.2	363.5	360.8	359.5	359.5	356.8	355.5	354.1	351.5	351.5	348.8
17.5°	355.5	352.8	350.1	348.8	347.4	346.1	344.8	342.1	340.8	338.1	338.1
20°	342.1	340.8	336.8	335.4	334.1	332.7	330.1	328.7	327.4	324.7	323.4
22.5°	331.4	327.4	324.7	323.4	323.4	319.4	318.0	315.4	314.0	312.7	310.0
25°	318.0	315.4	312.7	310.0	310.0	307.4	306.0	303.3	300.7	299.3	298.0
27.5°	304.7	302.0	298.0	296.7	295.3	294.0	291.3	288.6	286.0	284.6	283.3
30°	290.0	287.3	284.6	283.3	280.6	278.0	275.3	273.9	272.6	269.9	268.6
32.5°	276.6	272.6	269.9	267.3	267.3	263.3	261.9	259.2	257.9	256.6	253.9
35°	261.9	257.9	255.2	253.9	252.6	248.6	245.9	243.2	243.2	240.5	239.2
37.5°	245.9	241.9	240.5	237.9	236.5	233.9	231.2	229.8	227.2	224.5	224.5
40°	231.2	227.2	223.2	223.2	220.5	219.2	215.1	213.8	211.1	209.8	208.5
42.5°	215.1	211.1	208.5	207.1	205.8	203.1	200.5	197.8	196.4	195.1	193.8
45°	197.8	195.1	193.8	191.1	189.8	187.1	185.8	183.1	181.7	179.1	177.7
47.5°	183.1	180.4	177.7	176.4	175.1	172.4	171.1	168.4	167.0	164.4	163.0
50°	168.4	165.7	163.0	161.7	160.4	157.7	155.0	153.7	151.0	149.7	147.0
52.5°	152.3	149.7	147.0	147.0	145.7	143.0	141.7	139.0	136.3	133.6	132.3
55°	137.6	135.0	132.3	131.0	131.0	128.3	125.6	124.3	121.6	120.3	117.6
57.5°	121.6	118.9	117.6	116.3	116.3	113.6	112.3	109.6	108.2	105.6	104.2
60°	106.9	105.6	102.9	102.9	101.6	98.9	97.6	94.9	93.5	92.2	90.9
62.5°	92.2	90.9	88.2	88.2	86.9	85.5	84.2	81.5	80.2	77.5	76.2
65°	77.5	76.2	74.8	73.5	73.5	70.8	69.5	68.2	66.8	65.5	64.1
67.5°	64.1	62.8	61.5	61.5	60.1	58.8	56.1	54.8	53.5	52.1	50.8
70°	52.1	49.4	48.1	48.1	46.8	45.4	44.1	42.8	41.4	40.1	38.8
72.5°	40.1	37.4	37.4	36.1	34.7	33.4	33.4	32.1	30.7	30.7	28.1
75°	29.4	28.1	26.7	26.7	25.4	24.1	22.7	22.7	21.4	21.4	21.4
77.5°	20.0	18.7	18.7	17.4	17.4	17.4	16.0	16.0	16.0	16.0	17.4
80°	13.4	13.4	12.0	12.0	12.0	12.0	12.0	12.0	12.0	13.4	13.4
82.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.4
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	2.7	1.3	2.7	1.3	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: P644158

CATALOG NUMBER: ML5615LSWW9FS1E - 692W WW - 1200LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	396.9	396.9	396.9	396.9	396.9	396.9	396.9	396.9
2.5°	390.2	391.5	391.5	390.2	391.5	390.2	390.2	390.2
5°	386.2	384.9	384.9	384.9	383.5	384.9	384.9	384.9
7.5°	378.2	378.2	376.8	376.8	375.5	375.5	376.8	375.5
10°	368.8	367.5	368.8	367.5	367.5	367.5	366.2	367.5
12.5°	359.5	358.1	358.1	356.8	356.8	356.8	356.8	356.8
15°	348.8	347.4	347.4	346.1	346.1	344.8	346.1	344.8
17.5°	336.8	336.8	334.1	334.1	334.1	334.1	334.1	332.7
20°	322.1	322.1	320.7	322.1	319.4	319.4	319.4	319.4
22.5°	310.0	308.7	307.4	307.4	307.4	306.0	306.0	306.0
25°	295.3	295.3	294.0	294.0	292.7	292.7	292.7	292.7
27.5°	282.0	280.6	280.6	280.6	279.3	278.0	278.0	278.0
30°	267.3	267.3	265.9	265.9	264.6	264.6	264.6	264.6
32.5°	252.6	252.6	251.2	249.9	249.9	249.9	248.6	249.9
35°	237.9	236.5	236.5	235.2	235.2	235.2	233.9	233.9
37.5°	223.2	221.8	220.5	221.8	220.5	219.2	219.2	219.2
40°	207.1	205.8	205.8	204.5	204.5	204.5	203.1	204.5
42.5°	192.4	192.4	191.1	189.8	189.8	189.8	188.4	188.4
45°	177.7	175.1	176.4	175.1	175.1	173.7	173.7	172.4
47.5°	161.7	160.4	160.4	160.4	159.0	159.0	159.0	159.0
50°	145.7	144.3	145.7	144.3	144.3	143.0	143.0	143.0
52.5°	131.0	129.6	129.6	129.6	129.6	128.3	128.3	128.3
55°	116.3	114.9	114.9	114.9	113.6	113.6	112.3	112.3
57.5°	102.9	101.6	100.2	98.9	98.9	98.9	97.6	97.6
60°	88.2	86.9	85.5	85.5	84.2	84.2	84.2	82.9
62.5°	74.8	73.5	72.2	72.2	70.8	69.5	69.5	69.5
65°	61.5	60.1	60.1	58.8	57.5	57.5	56.1	56.1
67.5°	49.4	48.1	48.1	46.8	45.4	44.1	44.1	44.1
70°	38.8	37.4	36.1	36.1	36.1	34.7	33.4	33.4
72.5°	28.1	26.7	26.7	26.7	26.7	26.7	26.7	26.7
75°	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
77.5°	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
80°	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
82.5°	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
85°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
87.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
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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)