

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: P644163

Luminaire Tested: ML5615LSWW9FS1E - 692W WW - 1500LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644163
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 - 1500LM - 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: 1077.1 lumens
Efficiency: N/A
Efficacy: 63.0 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

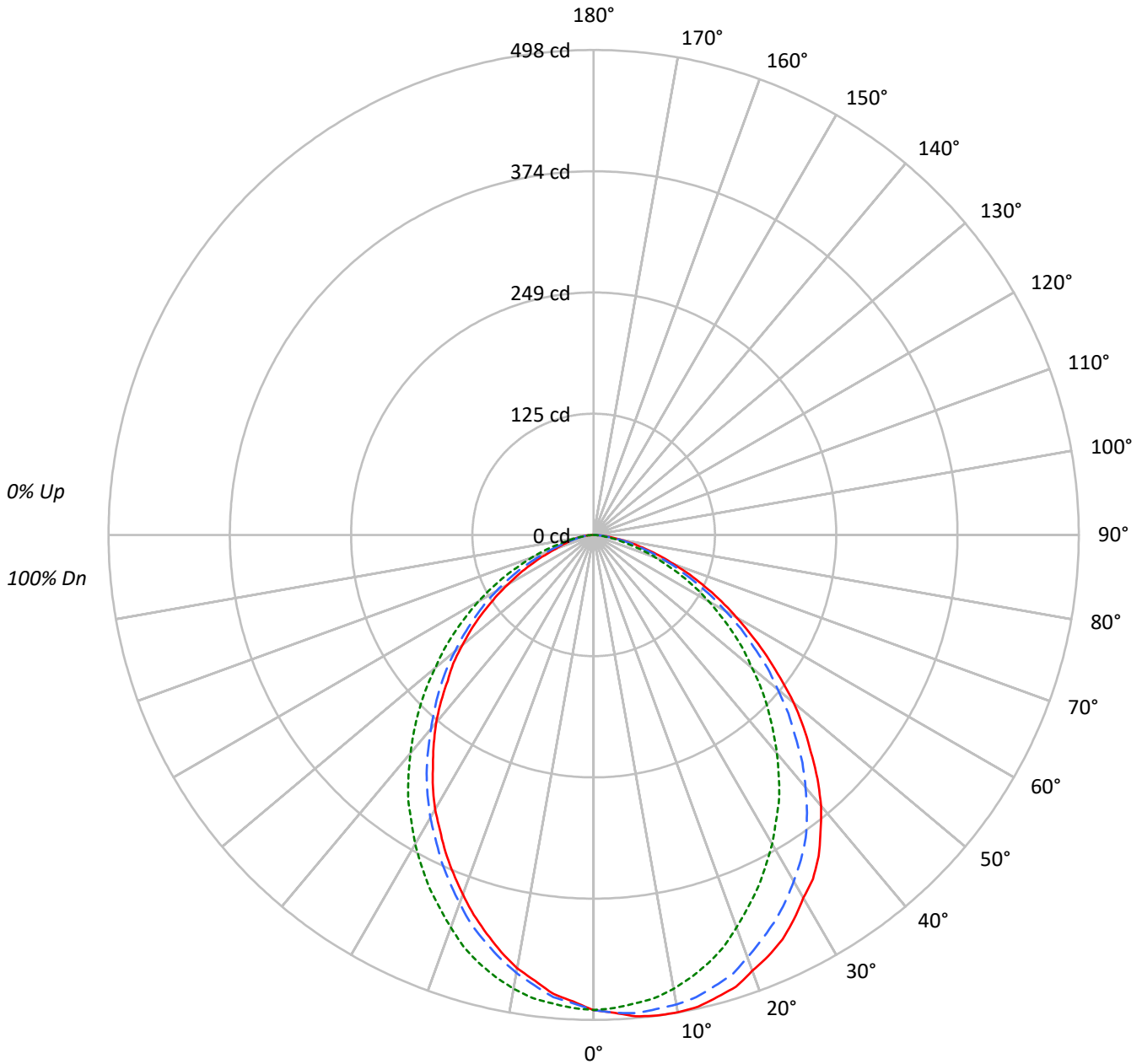
Input Watts (W): 17.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
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°	26747	26747	26747	26747	26747
5°	27306	27124	26579	26216	26040
10°	27710	27254	26341	25423	25150
15°	27878	27225	25829	24523	24058
20°	27792	26935	25016	23481	22909
25°	27727	26536	24147	22362	21763
30°	27245	25998	23193	21218	20592
35°	26937	25397	22212	20010	19240
40°	25984	24217	20925	18578	17991
45°	24452	22669	19614	17320	16428
50°	22839	21014	18072	15837	14993
55°	20730	19153	16640	14289	13189
60°	18551	17115	14955	12609	11172
65°	16409	14917	12998	10650	8950
70°	13961	12903	10803	8158	6588
75°	11480	10442	8006	5571	5571
80°	8808	7766	5714	4672	5177
85°	6227	5158	4151	4151	4151

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 24452 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.8	4.3
10°-20°	128.4	11.9
20°-30°	185.8	17.3
30°-40°	211.1	19.6
40°-50°	199.2	18.5
50°-60°	157.1	14.6
60°-70°	98.3	9.1
70°-80°	42.5	3.9
80°-90°	8.7	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°	360.0	33.4
0°-40°	571.1	53.0
0°-60°	927.5	86.1
0°-90°	1077.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1077.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	488	488	488	488	488	
5°	496	493	483	476	473	47
15°	491	480	455	432	424	139
25°	458	439	399	370	360	211
35°	402	380	332	299	288	251
45°	315	292	253	223	212	244
55°	217	200	174	150	138	194
65°	126	115	100	82	69	126
75°	54	49	38	26	26	59
85°	10	8	7	7	7	12
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°	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9
2.5°	491.2	491.2	492.9	492.9	491.2	491.2	491.2	491.2	491.2	491.2	491.2
5°	496.2	496.2	496.2	496.2	494.5	494.5	494.5	494.5	494.5	492.9	492.9
7.5°	497.8	497.8	497.8	497.8	496.2	496.2	494.5	494.5	494.5	492.9	491.2
10°	497.8	497.8	497.8	496.2	496.2	494.5	496.2	494.5	492.9	491.2	489.6
12.5°	496.2	494.5	494.5	494.5	492.9	492.9	492.9	491.2	489.6	487.9	486.3
15°	491.2	491.2	491.2	489.6	489.6	487.9	487.9	486.3	484.7	481.4	479.7
17.5°	486.3	486.3	484.7	484.7	483.0	481.4	481.4	479.7	478.1	474.8	473.2
20°	476.4	476.4	476.4	474.8	473.2	473.2	471.5	469.9	466.6	463.3	461.7
22.5°	468.2	466.6	466.6	464.9	463.3	463.3	461.7	458.4	456.7	453.4	450.2
25°	458.4	456.7	456.7	455.1	453.4	451.8	451.8	448.5	445.2	441.9	438.7
27.5°	445.2	445.2	443.6	441.9	440.3	440.3	438.7	437.0	432.1	428.8	425.5
30°	430.4	432.1	430.4	428.8	427.2	427.2	425.5	422.2	418.9	414.0	410.7
32.5°	418.9	418.9	417.3	415.7	412.4	412.4	412.4	407.4	404.2	400.9	395.9
35°	402.5	402.5	402.5	399.2	397.6	395.9	394.3	391.0	387.7	384.4	379.5
37.5°	382.8	384.4	382.8	381.2	379.5	377.9	376.2	372.9	368.0	364.7	359.8
40°	363.1	363.1	361.4	359.8	358.2	356.5	354.9	351.6	348.3	343.4	338.4
42.5°	340.1	340.1	338.4	336.8	335.2	333.5	333.5	330.2	325.3	322.0	317.1
45°	315.4	315.4	315.4	313.8	312.2	310.5	308.9	307.2	303.9	299.0	292.4
47.5°	292.4	292.4	292.4	289.2	289.2	285.9	284.2	280.9	279.3	274.4	271.1
50°	267.8	266.2	266.2	264.5	262.9	261.2	261.2	256.3	254.7	251.4	246.4
52.5°	241.5	241.5	241.5	239.9	238.2	236.6	236.6	233.3	230.0	226.7	225.1
55°	216.9	216.9	216.9	215.2	213.6	213.6	211.9	208.7	207.0	203.7	200.4
57.5°	192.2	193.9	192.2	190.6	190.6	188.9	188.9	187.3	184.0	180.7	179.1
60°	169.2	169.2	169.2	167.6	165.9	165.9	165.9	164.3	161.0	159.4	156.1
62.5°	147.9	147.9	146.2	146.2	144.6	144.6	142.9	141.3	139.6	138.0	136.4
65°	126.5	124.9	124.9	124.9	123.2	123.2	123.2	121.6	118.3	116.6	115.0
67.5°	106.8	106.8	105.1	105.1	103.5	103.5	103.5	101.9	100.2	98.6	96.9
70°	87.1	87.1	87.1	87.1	85.4	85.4	85.4	83.8	82.1	82.1	80.5
72.5°	70.6	70.6	70.6	70.6	69.0	69.0	69.0	67.4	65.7	64.1	64.1
75°	54.2	55.9	54.2	54.2	54.2	54.2	52.6	52.6	50.9	49.3	49.3
77.5°	41.1	41.1	41.1	41.1	39.4	39.4	39.4	39.4	37.8	36.1	36.1
80°	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	26.3	26.3	24.6
82.5°	16.4	18.1	18.1	18.1	16.4	16.4	16.4	16.4	16.4	16.4	14.8
85°	9.9	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
87.5°	3.3	3.3	3.3	3.3	3.3	1.6	1.6	1.6	1.6	1.6	1.6
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°	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9
2.5°	489.6	489.6	489.6	489.6	487.9	487.9	487.9	486.3	486.3	486.3	486.3
5°	491.2	489.6	489.6	487.9	487.9	487.9	486.3	486.3	484.7	483.0	483.0
7.5°	489.6	489.6	487.9	486.3	486.3	484.7	483.0	481.4	479.7	479.7	476.4
10°	487.9	486.3	484.7	483.0	481.4	481.4	478.1	476.4	474.8	473.2	471.5
12.5°	483.0	481.4	479.7	476.4	476.4	474.8	471.5	469.9	466.6	464.9	461.7
15°	476.4	474.8	473.2	469.9	468.2	466.6	463.3	460.0	456.7	455.1	451.8
17.5°	469.9	466.6	463.3	460.0	458.4	456.7	453.4	450.2	446.9	443.6	440.3
20°	458.4	455.1	451.8	446.9	445.2	443.6	438.7	435.4	432.1	428.8	425.5
22.5°	446.9	443.6	438.7	435.4	433.7	430.4	427.2	422.2	418.9	414.0	410.7
25°	435.4	430.4	425.5	422.2	418.9	417.3	412.4	409.1	402.5	399.2	395.9
27.5°	420.6	417.3	412.4	407.4	404.2	400.9	397.6	392.7	387.7	382.8	379.5
30°	405.8	400.9	395.9	392.7	387.7	386.1	381.2	376.2	371.3	366.4	363.1
32.5°	391.0	386.1	381.2	376.2	372.9	369.7	364.7	359.8	353.2	348.3	345.0
35°	374.6	369.7	363.1	358.2	354.9	351.6	346.7	341.7	336.8	331.9	326.9
37.5°	354.9	348.3	345.0	340.1	335.2	331.9	326.9	320.4	317.1	312.2	307.2
40°	333.5	328.6	323.7	318.7	313.8	312.2	305.6	300.7	297.4	292.4	287.5
42.5°	312.2	307.2	300.7	295.7	292.4	290.8	285.9	280.9	276.0	272.7	267.8
45°	289.2	284.2	279.3	274.4	271.1	269.4	264.5	261.2	256.3	253.0	248.1
47.5°	266.2	261.2	257.9	253.0	249.7	248.1	244.8	239.9	234.9	233.3	230.0
50°	243.2	238.2	234.9	230.0	228.4	226.7	223.4	220.2	216.9	211.9	210.3
52.5°	220.2	215.2	211.9	208.7	208.7	205.4	202.1	200.4	197.2	193.9	190.6
55°	197.2	195.5	192.2	187.3	187.3	185.7	182.4	179.1	175.8	174.1	170.9
57.5°	174.1	172.5	169.2	167.6	165.9	164.3	162.6	159.4	157.7	154.4	152.8
60°	154.4	152.8	149.5	147.9	146.2	144.6	142.9	139.6	138.0	136.4	134.7
62.5°	133.1	131.4	129.8	128.1	126.5	124.9	124.9	121.6	119.9	118.3	116.6
65°	115.0	111.7	110.1	108.4	108.4	106.8	105.1	103.5	101.9	100.2	98.6
67.5°	95.3	93.6	93.6	90.4	90.4	88.7	87.1	87.1	83.8	82.1	80.5
70°	78.9	77.2	75.6	73.9	73.9	72.3	70.6	69.0	67.4	67.4	65.7
72.5°	62.4	60.8	60.8	59.1	57.5	57.5	55.9	54.2	52.6	52.6	50.9
75°	47.6	46.0	46.0	44.4	44.4	42.7	41.1	41.1	39.4	37.8	36.1
77.5°	34.5	34.5	32.9	32.9	31.2	31.2	29.6	29.6	27.9	26.3	26.3
80°	24.6	23.0	23.0	21.4	21.4	21.4	19.7	19.7	18.1	18.1	16.4
82.5°	14.8	14.8	13.1	13.1	13.1	13.1	11.5	11.5	11.5	9.9	9.9
85°	8.2	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	4.9
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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°	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9
2.5°	484.7	484.7	483.0	484.7	483.0	483.0	483.0	483.0	481.4	481.4	481.4
5°	481.4	479.7	479.7	478.1	479.7	478.1	476.4	476.4	476.4	476.4	474.8
7.5°	474.8	474.8	473.2	471.5	471.5	469.9	468.2	468.2	466.6	466.6	464.9
10°	469.9	466.6	464.9	463.3	463.3	461.7	460.0	458.4	456.7	455.1	455.1
12.5°	458.4	456.7	455.1	453.4	453.4	450.2	448.5	446.9	445.2	443.6	441.9
15°	450.2	446.9	443.6	441.9	441.9	438.7	437.0	435.4	432.1	432.1	428.8
17.5°	437.0	433.7	430.4	428.8	427.2	425.5	423.9	420.6	418.9	415.7	415.7
20°	420.6	418.9	414.0	412.4	410.7	409.1	405.8	404.2	402.5	399.2	397.6
22.5°	407.4	402.5	399.2	397.6	397.6	392.7	391.0	387.7	386.1	384.4	381.2
25°	391.0	387.7	384.4	381.2	381.2	377.9	376.2	372.9	369.7	368.0	366.4
27.5°	374.6	371.3	366.4	364.7	363.1	361.4	358.2	354.9	351.6	349.9	348.3
30°	356.5	353.2	349.9	348.3	345.0	341.7	338.4	336.8	335.2	331.9	330.2
32.5°	340.1	335.2	331.9	328.6	328.6	323.7	322.0	318.7	317.1	315.4	312.2
35°	322.0	317.1	313.8	312.2	310.5	305.6	302.3	299.0	299.0	295.7	294.1
37.5°	302.3	297.4	295.7	292.4	290.8	287.5	284.2	282.6	279.3	276.0	276.0
40°	284.2	279.3	274.4	274.4	271.1	269.4	264.5	262.9	259.6	257.9	256.3
42.5°	264.5	259.6	256.3	254.7	253.0	249.7	246.4	243.2	241.5	239.9	238.2
45°	243.2	239.9	238.2	234.9	233.3	230.0	228.4	225.1	223.4	220.2	218.5
47.5°	225.1	221.8	218.5	216.9	215.2	211.9	210.3	207.0	205.4	202.1	200.4
50°	207.0	203.7	200.4	198.8	197.2	193.9	190.6	188.9	185.7	184.0	180.7
52.5°	187.3	184.0	180.7	180.7	179.1	175.8	174.1	170.9	167.6	164.3	162.6
55°	169.2	165.9	162.6	161.0	161.0	157.7	154.4	152.8	149.5	147.9	144.6
57.5°	149.5	146.2	144.6	142.9	142.9	139.6	138.0	134.7	133.1	129.8	128.1
60°	131.4	129.8	126.5	126.5	124.9	121.6	119.9	116.6	115.0	113.4	111.7
62.5°	113.4	111.7	108.4	108.4	106.8	105.1	103.5	100.2	98.6	95.3	93.6
65°	95.3	93.6	92.0	90.4	90.4	87.1	85.4	83.8	82.1	80.5	78.9
67.5°	78.9	77.2	75.6	75.6	73.9	72.3	69.0	67.4	65.7	64.1	62.4
70°	64.1	60.8	59.1	59.1	57.5	55.9	54.2	52.6	50.9	49.3	47.6
72.5°	49.3	46.0	46.0	44.4	42.7	41.1	41.1	39.4	37.8	37.8	34.5
75°	36.1	34.5	32.9	32.9	31.2	29.6	27.9	27.9	26.3	26.3	26.3
77.5°	24.6	23.0	23.0	21.4	21.4	21.4	19.7	19.7	19.7	19.7	21.4
80°	16.4	16.4	14.8	14.8	14.8	14.8	14.8	14.8	14.8	16.4	16.4
82.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	11.5
85°	4.9	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
87.5°	1.6	1.6	3.3	1.6	3.3	1.6	3.3	3.3	3.3	3.3	3.3
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: P644163

CATALOG NUMBER: ML5615LSWW9FS1E - 692W WW - 1500LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	487.9	487.9	487.9	487.9	487.9	487.9	487.9	487.9
2.5°	479.7	481.4	481.4	479.7	481.4	479.7	479.7	479.7
5°	474.8	473.2	473.2	473.2	471.5	473.2	473.2	473.2
7.5°	464.9	464.9	463.3	463.3	461.7	461.7	463.3	461.7
10°	453.4	451.8	453.4	451.8	451.8	451.8	450.2	451.8
12.5°	441.9	440.3	440.3	438.7	438.7	438.7	438.7	438.7
15°	428.8	427.2	427.2	425.5	425.5	423.9	425.5	423.9
17.5°	414.0	414.0	410.7	410.7	410.7	410.7	410.7	409.1
20°	395.9	395.9	394.3	395.9	392.7	392.7	392.7	392.7
22.5°	381.2	379.5	377.9	377.9	377.9	376.2	376.2	376.2
25°	363.1	363.1	361.4	361.4	359.8	359.8	359.8	359.8
27.5°	346.7	345.0	345.0	345.0	343.4	341.7	341.7	341.7
30°	328.6	328.6	326.9	326.9	325.3	325.3	325.3	325.3
32.5°	310.5	310.5	308.9	307.2	307.2	307.2	305.6	307.2
35°	292.4	290.8	290.8	289.2	289.2	289.2	287.5	287.5
37.5°	274.4	272.7	271.1	272.7	271.1	269.4	269.4	269.4
40°	254.7	253.0	253.0	251.4	251.4	251.4	249.7	251.4
42.5°	236.6	236.6	234.9	233.3	233.3	233.3	231.7	231.7
45°	218.5	215.2	216.9	215.2	215.2	213.6	213.6	211.9
47.5°	198.8	197.2	197.2	197.2	195.5	195.5	195.5	195.5
50°	179.1	177.4	179.1	177.4	177.4	175.8	175.8	175.8
52.5°	161.0	159.4	159.4	159.4	159.4	157.7	157.7	157.7
55°	142.9	141.3	141.3	141.3	139.6	139.6	138.0	138.0
57.5°	126.5	124.9	123.2	121.6	121.6	121.6	119.9	119.9
60°	108.4	106.8	105.1	105.1	103.5	103.5	103.5	101.9
62.5°	92.0	90.4	88.7	88.7	87.1	85.4	85.4	85.4
65°	75.6	73.9	73.9	72.3	70.6	70.6	69.0	69.0
67.5°	60.8	59.1	59.1	57.5	55.9	54.2	54.2	54.2
70°	47.6	46.0	44.4	44.4	44.4	42.7	41.1	41.1
72.5°	34.5	32.9	32.9	32.9	32.9	32.9	32.9	32.9
75°	26.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3
77.5°	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
80°	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4
82.5°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
85°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
87.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	1.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
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Peachtree City, GA 30269

Scaled Data Report



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

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(END OF REPORT)