

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: P644113

Luminaire Tested: ML5615LSWW9FS1E - 592W WW - 1200LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644113
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-116)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 592W WW - 1200LM - 3500K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

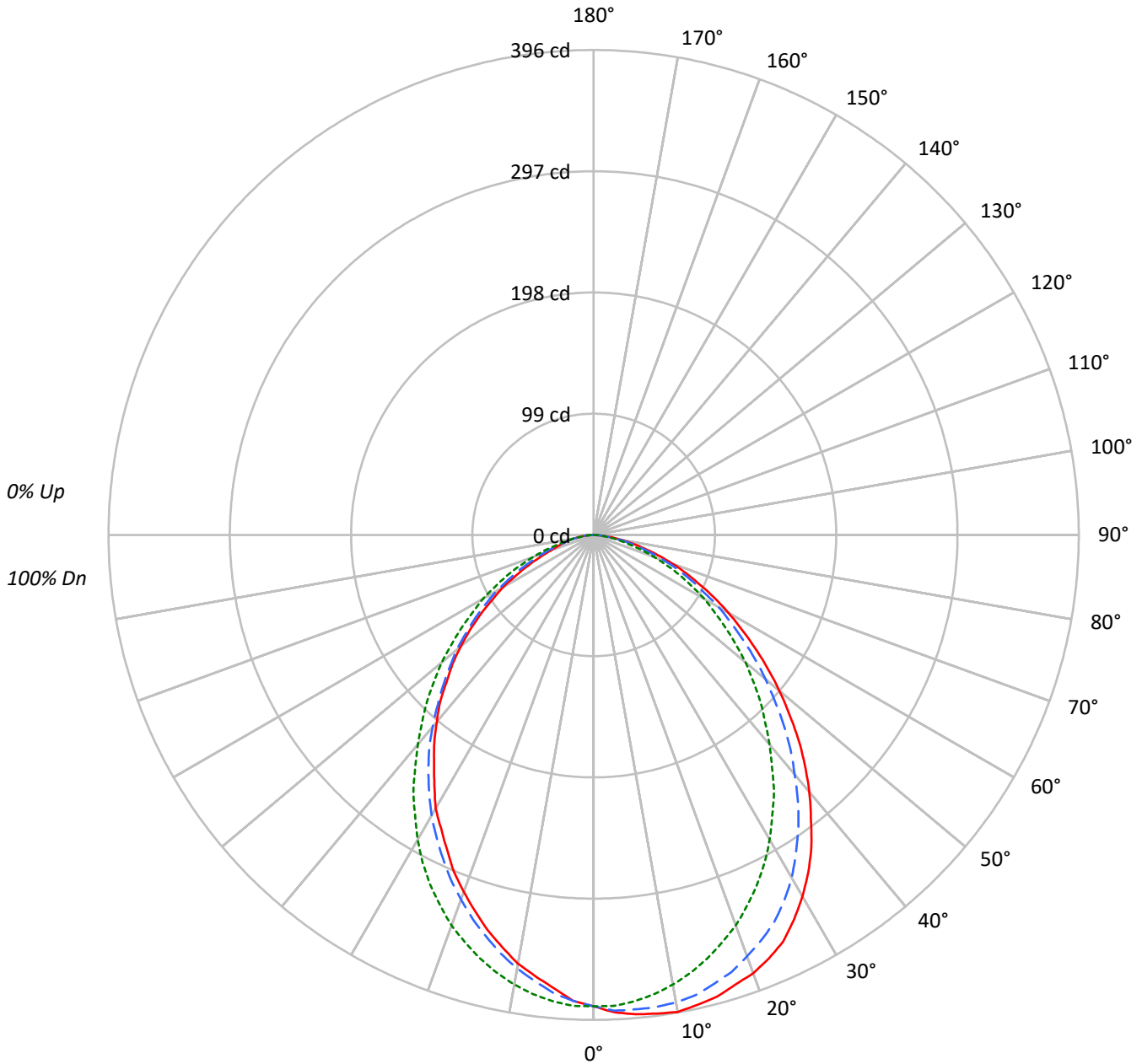
Lumens per Lamp: N/A
Luminaire Lumens: 839.6 lumens
Efficiency: N/A
Efficacy: 62.7 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.23
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

Input Watts (W): 13.4
Input Voltage (V): NR
Input Current (Ain): 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	88	86								
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	53	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43								
7	68	56	47	41	67	55	47	41	53	46	41	52	45	41	51	45	40	39								
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35								
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	43	37	33	32								
10	56	43	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	30384	30384	30384	30384	30384
5°	31134	30817	30286	29756	29439
10°	31703	31061	29883	28817	28496
15°	31889	31015	29266	27738	27305
20°	31990	30755	28512	26605	26042
25°	31888	30381	27472	25373	24676
30°	31065	29479	26188	24119	23508
35°	29874	28072	24728	22666	21895
40°	28225	26298	23001	21074	20517
45°	26403	24471	21479	19392	18945
50°	24292	22487	19858	17893	17390
55°	22076	20410	18029	16185	15456
60°	20035	18567	16451	14351	13499
65°	17726	16475	14476	12235	10983
70°	15741	14195	12025	9879	8632
75°	13054	11834	9364	7747	7747
80°	10319	9092	7274	6683	6683
85°	6068	6068	4800	6068	6068

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 26403 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.2	4.3
10°-20°	101.4	12.1
20°-30°	147.0	17.5
30°-40°	164.0	19.5
40°-50°	152.1	18.1
50°-60°	119.6	14.2
60°-70°	76.5	9.1
70°-80°	35.1	4.2
80°-90°	7.6	0.9
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°	284.6	33.9
0°-40°	448.7	53.4
0°-60°	720.4	85.8
0°-90°	839.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	839.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	385	385	385	385	385	
5°	393	389	382	376	372	38
15°	390	380	358	339	334	110
25°	366	349	315	291	283	168
35°	310	291	257	235	227	193
45°	236	219	192	174	170	182
55°	160	148	131	118	112	144
65°	95	88	78	66	59	95
75°	43	39	31	25	25	46
85°	7	7	5	7	7	9
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°	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9
2.5°	390.2	390.2	390.2	390.2	390.2	390.2	388.9	388.9	388.9	388.9	388.9
5°	392.9	392.9	392.9	392.9	391.5	391.5	391.5	391.5	390.2	390.2	388.9
7.5°	394.2	394.2	394.2	392.9	392.9	392.9	391.5	391.5	391.5	390.2	388.9
10°	395.5	394.2	394.2	392.9	392.9	392.9	391.5	391.5	390.2	388.9	387.5
12.5°	392.9	392.9	392.9	392.9	391.5	391.5	390.2	388.9	387.5	386.2	384.9
15°	390.2	390.2	390.2	388.9	387.5	387.5	386.2	384.9	383.5	382.2	379.5
17.5°	384.9	386.2	384.9	384.9	383.5	383.5	382.2	380.8	378.2	376.8	374.2
20°	380.8	379.5	379.5	379.5	378.2	376.8	375.5	374.2	371.5	370.2	366.1
22.5°	374.2	374.2	372.8	371.5	370.2	370.2	368.8	366.1	364.8	362.1	358.1
25°	366.1	364.8	364.8	363.5	362.1	362.1	359.5	358.1	355.5	351.5	348.8
27.5°	354.1	354.1	354.1	352.8	351.5	350.1	348.8	346.1	344.8	339.4	336.8
30°	340.8	340.8	339.4	339.4	336.8	336.8	335.4	332.7	330.1	326.1	323.4
32.5°	326.1	326.1	326.1	323.4	322.1	320.7	319.4	318.0	314.0	310.0	307.4
35°	310.0	310.0	308.7	307.4	306.0	304.7	303.3	300.7	298.0	295.3	291.3
37.5°	291.3	292.7	291.3	290.0	288.6	287.3	286.0	284.6	280.6	278.0	273.9
40°	273.9	273.9	272.6	271.3	269.9	269.9	268.6	265.9	263.3	259.2	255.2
42.5°	255.2	255.2	253.9	252.6	252.6	251.2	248.6	247.2	244.5	241.9	237.9
45°	236.5	235.2	233.9	233.9	232.5	231.2	231.2	228.5	225.8	221.8	219.2
47.5°	216.5	216.5	215.1	215.1	213.8	212.5	212.5	209.8	205.8	203.1	200.4
50°	197.8	197.8	196.4	196.4	195.1	193.8	192.4	191.1	188.4	185.7	183.1
52.5°	179.1	179.1	179.1	176.4	175.1	175.1	175.1	172.4	171.0	168.4	165.7
55°	160.4	160.4	160.4	159.0	157.7	157.7	157.7	155.0	153.7	151.0	148.3
57.5°	143.0	143.0	143.0	141.6	141.6	140.3	139.0	137.6	136.3	135.0	132.3
60°	126.9	126.9	125.6	124.3	125.6	124.3	122.9	121.6	120.3	118.9	117.6
62.5°	110.9	110.9	110.9	109.6	108.2	108.2	108.2	106.9	104.2	102.9	101.6
65°	94.9	94.9	94.9	94.9	93.5	93.5	92.2	90.9	90.9	89.5	88.2
67.5°	81.5	81.5	80.2	80.2	78.8	78.8	78.8	77.5	76.2	76.2	74.8
70°	68.2	66.8	66.8	66.8	65.5	65.5	65.5	64.1	64.1	62.8	61.5
72.5°	54.8	54.8	54.8	54.8	53.5	53.5	52.1	52.1	50.8	50.8	49.4
75°	42.8	42.8	42.8	42.8	41.4	41.4	41.4	41.4	40.1	40.1	38.8
77.5°	32.1	32.1	32.1	32.1	32.1	32.1	30.7	30.7	30.7	29.4	29.4
80°	22.7	22.7	22.7	22.7	21.4	21.4	21.4	21.4	21.4	20.0	20.0
82.5°	14.7	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	12.0
85°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
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°	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9
2.5°	387.5	387.5	387.5	387.5	386.2	386.2	386.2	384.9	384.9	384.9	384.9
5°	388.9	388.9	386.2	386.2	386.2	386.2	384.9	384.9	383.5	382.2	380.8
7.5°	387.5	387.5	386.2	384.9	383.5	383.5	382.2	380.8	379.5	378.2	376.8
10°	386.2	384.9	383.5	382.2	380.8	379.5	378.2	376.8	374.2	372.8	371.5
12.5°	383.5	380.8	379.5	376.8	376.8	375.5	372.8	371.5	368.8	366.1	364.8
15°	378.2	375.5	372.8	370.2	370.2	367.5	364.8	363.5	360.8	358.1	355.5
17.5°	371.5	368.8	366.1	363.5	362.1	359.5	356.8	354.1	351.5	348.8	346.1
20°	364.8	360.8	358.1	354.1	352.8	351.5	347.4	344.8	342.1	339.4	335.4
22.5°	355.5	352.8	347.4	344.8	343.4	340.8	338.1	334.1	330.1	327.4	324.7
25°	344.8	342.1	338.1	334.1	331.4	330.1	326.1	322.1	319.4	315.4	312.7
27.5°	332.7	328.7	326.1	320.7	319.4	316.7	312.7	308.7	306.0	302.0	298.0
30°	319.4	315.4	311.4	307.4	304.7	303.3	299.3	295.3	291.3	287.3	284.6
32.5°	303.3	299.3	295.3	292.7	288.6	286.0	283.3	279.3	275.3	271.3	268.6
35°	287.3	283.3	279.3	275.3	272.6	272.6	267.3	263.3	259.2	256.6	252.6
37.5°	269.9	265.9	261.9	257.9	256.6	253.9	249.9	245.9	243.2	239.2	236.5
40°	252.6	247.2	244.5	240.5	239.2	236.5	233.9	229.8	227.2	223.2	220.5
42.5°	233.9	231.2	227.2	224.5	221.8	220.5	216.5	212.5	209.8	207.1	205.8
45°	216.5	212.5	208.5	205.8	204.5	201.8	200.4	196.4	193.8	192.4	189.8
47.5°	197.8	195.1	192.4	188.4	187.1	185.7	183.1	181.7	179.1	176.4	173.7
50°	180.4	177.7	175.1	172.4	171.0	171.0	167.0	164.4	163.0	161.7	159.0
52.5°	163.0	160.4	157.7	155.0	155.0	153.7	151.0	149.7	148.3	145.7	143.0
55°	147.0	144.3	141.6	140.3	139.0	139.0	136.3	135.0	132.3	131.0	129.6
57.5°	131.0	128.3	126.9	125.6	124.3	124.3	121.6	120.3	118.9	116.3	116.3
60°	116.3	113.6	112.3	110.9	109.6	108.2	108.2	105.6	104.2	104.2	101.6
62.5°	100.2	98.9	97.6	96.2	94.9	94.9	93.5	92.2	90.9	89.5	88.2
65°	86.9	85.5	84.2	82.9	81.5	81.5	80.2	78.8	77.5	77.5	74.8
67.5°	73.5	72.2	70.8	69.5	69.5	68.2	66.8	66.8	65.5	64.1	62.8
70°	60.1	60.1	58.8	57.5	57.5	56.1	54.8	54.8	53.5	52.1	50.8
72.5°	49.4	48.1	46.8	46.8	45.4	45.4	44.1	44.1	42.8	41.4	40.1
75°	37.4	36.1	36.1	36.1	34.7	34.7	34.7	33.4	32.1	30.7	30.7
77.5°	28.1	28.1	26.7	25.4	25.4	25.4	24.1	24.1	24.1	22.7	22.7
80°	20.0	18.7	18.7	17.4	17.4	17.4	17.4	16.0	16.0	16.0	14.7
82.5°	12.0	12.0	12.0	10.7	10.7	10.7	10.7	10.7	9.4	9.4	9.4
85°	6.7	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	1.3	1.3	1.3	1.3	1.3	1.3	1.3	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9
2.5°	383.5	383.5	382.2	382.2	382.2	382.2	382.2	380.8	380.8	380.8	380.8
5°	380.8	379.5	378.2	378.2	378.2	376.8	376.8	375.5	375.5	374.2	374.2
7.5°	375.5	374.2	372.8	372.8	371.5	371.5	368.8	368.8	367.5	366.1	366.1
10°	368.8	367.5	366.1	364.8	364.8	362.1	362.1	360.8	359.5	358.1	358.1
12.5°	362.1	360.8	358.1	356.8	356.8	355.5	352.8	351.5	350.1	348.8	347.4
15°	352.8	351.5	348.8	347.4	346.1	344.8	343.4	342.1	339.4	338.1	338.1
17.5°	343.4	342.1	338.1	336.8	336.8	334.1	332.7	330.1	328.7	327.4	326.1
20°	332.7	330.1	327.4	326.1	324.7	322.1	320.7	319.4	316.7	315.4	314.0
22.5°	320.7	318.0	315.4	314.0	312.7	310.0	308.7	306.0	304.7	303.3	302.0
25°	308.7	306.0	303.3	302.0	299.3	298.0	295.3	292.7	291.3	290.0	288.6
27.5°	295.3	292.7	288.6	287.3	286.0	284.6	282.0	279.3	278.0	275.3	275.3
30°	280.6	278.0	275.3	273.9	272.6	269.9	268.6	265.9	264.6	261.9	261.9
32.5°	265.9	261.9	259.2	257.9	256.6	255.2	252.6	251.2	249.9	248.6	247.2
35°	249.9	247.2	244.5	243.2	241.9	239.2	237.9	236.5	235.2	232.5	232.5
37.5°	233.9	231.2	228.5	227.2	227.2	224.5	223.2	220.5	220.5	217.8	217.8
40°	217.8	215.1	212.5	212.5	211.1	208.5	207.1	205.8	204.5	203.1	203.1
42.5°	203.1	199.1	197.8	197.8	195.1	193.8	192.4	191.1	188.4	188.4	188.4
45°	187.1	184.4	183.1	181.7	180.4	179.1	177.7	175.1	173.7	172.4	172.4
47.5°	172.4	169.7	168.4	167.0	165.7	164.4	163.0	161.7	159.0	159.0	157.7
50°	157.7	155.0	153.7	152.3	151.0	149.7	148.3	147.0	145.7	144.3	143.0
52.5°	141.6	140.3	139.0	137.6	137.6	135.0	133.6	132.3	131.0	131.0	128.3
55°	128.3	126.9	125.6	124.3	122.9	121.6	120.3	118.9	117.6	116.3	114.9
57.5°	113.6	112.3	110.9	110.9	109.6	108.2	106.9	105.6	104.2	102.9	101.6
60°	100.2	98.9	97.6	97.6	96.2	94.9	93.5	93.5	90.9	89.5	88.2
62.5°	86.9	85.5	84.2	84.2	82.9	82.9	81.5	80.2	77.5	77.5	76.2
65°	74.8	73.5	72.2	70.8	70.8	69.5	68.2	66.8	65.5	65.5	64.1
67.5°	62.8	61.5	60.1	60.1	58.8	57.5	56.1	54.8	53.5	53.5	52.1
70°	50.8	49.4	48.1	48.1	46.8	45.4	45.4	44.1	42.8	41.4	41.4
72.5°	38.8	38.8	37.4	37.4	36.1	36.1	34.7	33.4	33.4	32.1	30.7
75°	29.4	29.4	28.1	28.1	26.7	26.7	25.4	25.4	25.4	24.1	25.4
77.5°	21.4	21.4	20.0	20.0	20.0	18.7	18.7	18.7	20.0	20.0	20.0
80°	14.7	14.7	14.7	14.7	13.4	13.4	14.7	14.7	14.7	14.7	14.7
82.5°	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	10.7	10.7	10.7
85°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	6.7	6.7	6.7	6.7
87.5°	2.7	2.7	2.7	2.7	2.7	2.7	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: P644113

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 1200LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	384.9	384.9	384.9	384.9	384.9	384.9	384.9	384.9
2.5°	379.5	379.5	379.5	379.5	379.5	379.5	379.5	380.8
5°	372.8	372.8	372.8	372.8	372.8	372.8	372.8	371.5
7.5°	366.1	364.8	364.8	364.8	364.8	363.5	363.5	363.5
10°	356.8	356.8	355.5	355.5	355.5	355.5	354.1	355.5
12.5°	347.4	346.1	346.1	346.1	344.8	344.8	344.8	344.8
15°	336.8	335.4	335.4	335.4	334.1	334.1	334.1	334.1
17.5°	324.7	324.7	323.4	323.4	322.1	322.1	322.1	322.1
20°	312.7	312.7	312.7	311.4	311.4	311.4	310.0	310.0
22.5°	300.7	299.3	298.0	299.3	298.0	296.7	298.0	298.0
25°	287.3	286.0	284.6	284.6	284.6	284.6	283.3	283.3
27.5°	273.9	271.3	271.3	271.3	271.3	269.9	269.9	269.9
30°	260.6	259.2	259.2	257.9	256.6	256.6	256.6	257.9
32.5°	245.9	244.5	243.2	243.2	243.2	243.2	241.9	241.9
35°	231.2	231.2	229.8	229.8	229.8	228.5	228.5	227.2
37.5°	216.5	216.5	215.1	215.1	215.1	213.8	213.8	213.8
40°	201.8	200.4	200.4	201.8	200.4	200.4	199.1	199.1
42.5°	187.1	187.1	185.7	185.7	185.7	185.7	184.4	185.7
45°	171.0	171.0	171.0	171.0	171.0	171.0	169.7	169.7
47.5°	157.7	156.3	156.3	156.3	156.3	156.3	156.3	156.3
50°	143.0	141.6	141.6	141.6	141.6	141.6	141.6	141.6
52.5°	128.3	126.9	126.9	126.9	126.9	126.9	126.9	126.9
55°	114.9	113.6	113.6	112.3	113.6	112.3	112.3	112.3
57.5°	101.6	100.2	98.9	100.2	98.9	98.9	98.9	97.6
60°	88.2	86.9	86.9	86.9	85.5	84.2	84.2	85.5
62.5°	74.8	74.8	73.5	73.5	72.2	70.8	70.8	70.8
65°	62.8	61.5	61.5	60.1	60.1	58.8	58.8	58.8
67.5°	50.8	50.8	49.4	49.4	48.1	48.1	48.1	46.8
70°	40.1	40.1	38.8	38.8	38.8	37.4	37.4	37.4
72.5°	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7
75°	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4
77.5°	20.0	20.0	20.0	20.0	20.0	20.0	20.0	21.4
80°	14.7	14.7	16.0	14.7	16.0	14.7	14.7	14.7
82.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
85°	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	2.7	2.7	2.7
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)