

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: P642354

Luminaire Tested: ML5612LSWW97FS1E - 692W WW - 900LM - 4000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642354
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 - 900LM - 4000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 813.1 lumens
Efficiency: N/A
Efficacy: 61.1 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

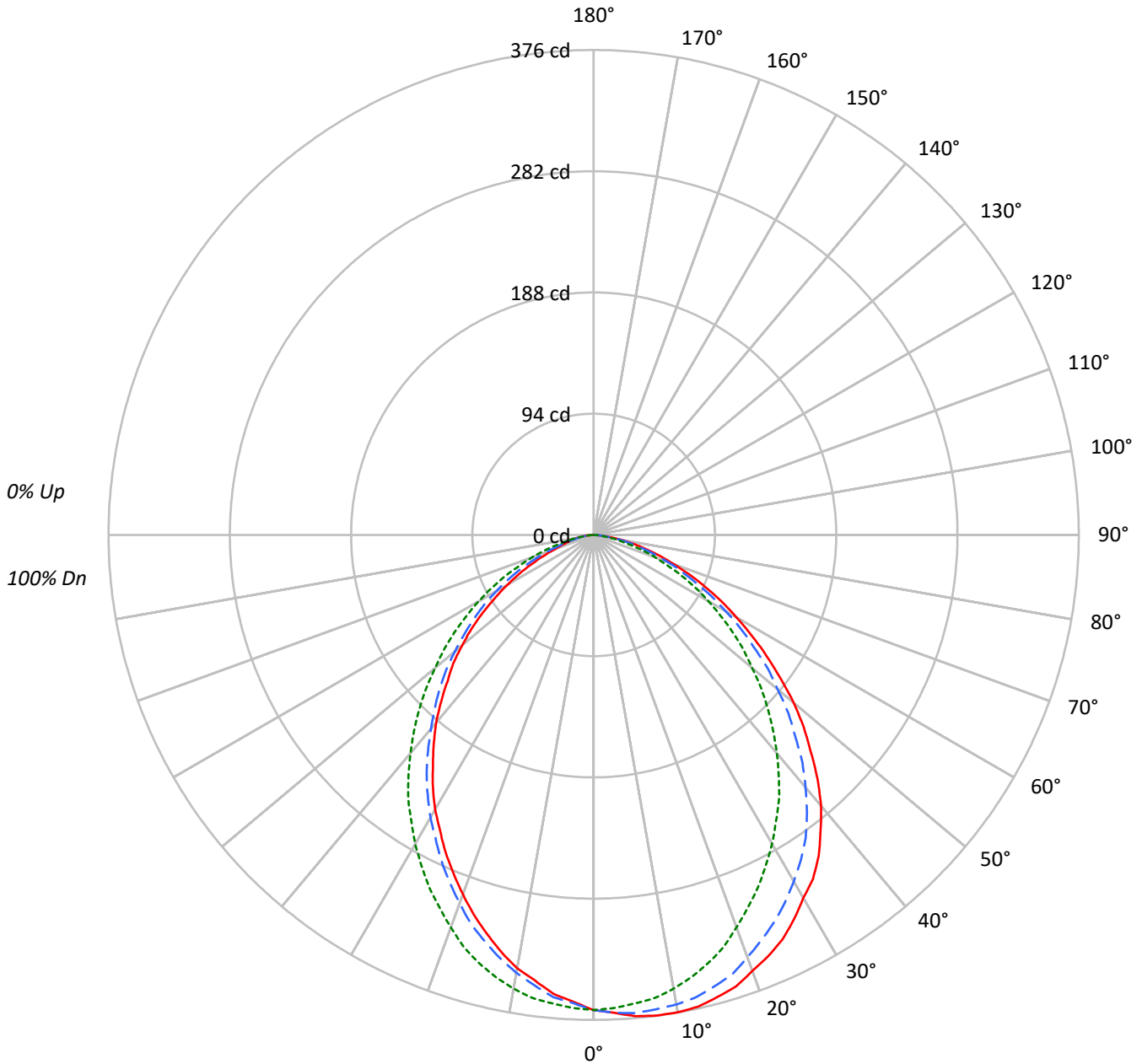
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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								
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°	20196	20196	20196	20196	20196
5°	20614	20477	20069	19794	19657
10°	20919	20574	19884	19194	18988
15°	21050	20556	19501	18513	18161
20°	20984	20331	18884	17729	17292
25°	20935	20033	18231	16882	16428
30°	20573	19630	17509	16015	15547
35°	20338	19173	16764	15105	14529
40°	19615	18284	15801	14026	13583
45°	18459	17118	14808	13079	12404
50°	17245	15872	13646	11957	11317
55°	15646	14461	12568	10791	9959
60°	14012	12916	11282	9517	8431
65°	12388	11259	9819	8042	6758
70°	10531	9745	8158	6171	4969
75°	8663	7879	6037	4194	4194
80°	6661	5872	4293	3536	3915
85°	4655	3900	3145	3145	3145

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 18459 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.6	4.3
10°-20°	96.9	11.9
20°-30°	140.3	17.3
30°-40°	159.4	19.6
40°-50°	150.4	18.5
50°-60°	118.6	14.6
60°-70°	74.2	9.1
70°-80°	32.1	3.9
80°-90°	6.6	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°	271.8	33.4
0°-40°	431.2	53.0
0°-60°	700.2	86.1
0°-90°	813.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	813.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	368	368	368	368	368	
5°	375	372	365	360	357	36
15°	371	362	344	326	320	105
25°	346	331	301	279	272	159
35°	304	286	250	226	217	189
45°	238	221	191	169	160	184
55°	164	151	132	113	104	147
65°	96	87	76	62	52	95
75°	41	37	28	20	20	44
85°	7	6	5	5	5	9
90°	0	0	0	0	0	



TEST NUMBER: P642354

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4
2.5°	370.9	370.9	372.1	372.1	370.9	370.9	370.9	370.9	370.9	370.9	370.9
5°	374.6	374.6	374.6	374.6	373.3	373.3	373.3	373.3	373.3	372.1	372.1
7.5°	375.8	375.8	375.8	375.8	374.6	374.6	373.3	373.3	373.3	372.1	370.9
10°	375.8	375.8	375.8	374.6	374.6	373.3	374.6	373.3	372.1	370.9	369.6
12.5°	374.6	373.3	373.3	373.3	372.1	372.1	372.1	370.9	369.6	368.4	367.1
15°	370.9	370.9	370.9	369.6	369.6	368.4	368.4	367.1	365.9	363.4	362.2
17.5°	367.1	367.1	365.9	365.9	364.7	363.4	363.4	362.2	360.9	358.5	357.2
20°	359.7	359.7	359.7	358.5	357.2	357.2	356.0	354.7	352.3	349.8	348.5
22.5°	353.5	352.3	352.3	351.0	349.8	349.8	348.5	346.1	344.8	342.3	339.9
25°	346.1	344.8	344.8	343.6	342.3	341.1	341.1	338.6	336.1	333.7	331.2
27.5°	336.1	336.1	334.9	333.7	332.4	332.4	331.2	329.9	326.2	323.7	321.2
30°	325.0	326.2	325.0	323.7	322.5	322.5	321.2	318.8	316.3	312.6	310.1
32.5°	316.3	316.3	315.0	313.8	311.3	311.3	311.3	307.6	305.1	302.6	298.9
35°	303.9	303.9	303.9	301.4	300.2	298.9	297.7	295.2	292.7	290.2	286.5
37.5°	289.0	290.2	289.0	287.8	286.5	285.3	284.0	281.6	277.8	275.4	271.6
40°	274.1	274.1	272.9	271.6	270.4	269.2	267.9	265.4	263.0	259.2	255.5
42.5°	256.8	256.8	255.5	254.3	253.0	251.8	251.8	249.3	245.6	243.1	239.4
45°	238.1	238.1	238.1	236.9	235.7	234.4	233.2	231.9	229.5	225.7	220.8
47.5°	220.8	220.8	220.8	218.3	218.3	215.8	214.6	212.1	210.9	207.1	204.7
50°	202.2	200.9	200.9	199.7	198.5	197.2	197.2	193.5	192.3	189.8	186.1
52.5°	182.3	182.3	182.3	181.1	179.8	178.6	178.6	176.1	173.6	171.2	169.9
55°	163.7	163.7	163.7	162.5	161.2	161.2	160.0	157.5	156.3	153.8	151.3
57.5°	145.1	146.4	145.1	143.9	143.9	142.6	142.6	141.4	138.9	136.4	135.2
60°	127.8	127.8	127.8	126.5	125.3	125.3	125.3	124.0	121.6	120.3	117.8
62.5°	111.6	111.6	110.4	110.4	109.2	109.2	107.9	106.7	105.4	104.2	102.9
65°	95.5	94.3	94.3	94.3	93.0	93.0	93.0	91.8	89.3	88.1	86.8
67.5°	80.6	80.6	79.4	79.4	78.1	78.1	78.1	76.9	75.7	74.4	73.2
70°	65.7	65.7	65.7	65.7	64.5	64.5	64.5	63.3	62.0	62.0	60.8
72.5°	53.3	53.3	53.3	53.3	52.1	52.1	52.1	50.9	49.6	48.4	48.4
75°	40.9	42.2	40.9	40.9	40.9	40.9	39.7	39.7	38.5	37.2	37.2
77.5°	31.0	31.0	31.0	31.0	29.8	29.8	29.8	29.8	28.5	27.3	27.3
80°	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	19.8	19.8	18.6
82.5°	12.4	13.6	13.6	13.6	12.4	12.4	12.4	12.4	12.4	12.4	11.2
85°	7.4	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
87.5°	2.5	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	1.2
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°	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4
2.5°	369.6	369.6	369.6	369.6	368.4	368.4	368.4	367.1	367.1	367.1	367.1
5°	370.9	369.6	369.6	368.4	368.4	368.4	367.1	367.1	365.9	364.7	364.7
7.5°	369.6	369.6	368.4	367.1	367.1	365.9	364.7	363.4	362.2	362.2	359.7
10°	368.4	367.1	365.9	364.7	363.4	363.4	360.9	359.7	358.5	357.2	356.0
12.5°	364.7	363.4	362.2	359.7	359.7	358.5	356.0	354.7	352.3	351.0	348.5
15°	359.7	358.5	357.2	354.7	353.5	352.3	349.8	347.3	344.8	343.6	341.1
17.5°	354.7	352.3	349.8	347.3	346.1	344.8	342.3	339.9	337.4	334.9	332.4
20°	346.1	343.6	341.1	337.4	336.1	334.9	331.2	328.7	326.2	323.7	321.2
22.5°	337.4	334.9	331.2	328.7	327.5	325.0	322.5	318.8	316.3	312.6	310.1
25°	328.7	325.0	321.2	318.8	316.3	315.0	311.3	308.8	303.9	301.4	298.9
27.5°	317.5	315.0	311.3	307.6	305.1	302.6	300.2	296.4	292.7	289.0	286.5
30°	306.4	302.6	298.9	296.4	292.7	291.5	287.8	284.0	280.3	276.6	274.1
32.5°	295.2	291.5	287.8	284.0	281.6	279.1	275.4	271.6	266.7	263.0	260.5
35°	282.8	279.1	274.1	270.4	267.9	265.4	261.7	258.0	254.3	250.5	246.8
37.5°	267.9	263.0	260.5	256.8	253.0	250.5	246.8	241.9	239.4	235.7	231.9
40°	251.8	248.1	244.3	240.6	236.9	235.7	230.7	227.0	224.5	220.8	217.1
42.5°	235.7	231.9	227.0	223.3	220.8	219.5	215.8	212.1	208.4	205.9	202.2
45°	218.3	214.6	210.9	207.1	204.7	203.4	199.7	197.2	193.5	191.0	187.3
47.5°	200.9	197.2	194.7	191.0	188.5	187.3	184.8	181.1	177.4	176.1	173.6
50°	183.6	179.8	177.4	173.6	172.4	171.2	168.7	166.2	163.7	160.0	158.8
52.5°	166.2	162.5	160.0	157.5	157.5	155.0	152.6	151.3	148.8	146.4	143.9
55°	148.8	147.6	145.1	141.4	141.4	140.2	137.7	135.2	132.7	131.5	129.0
57.5°	131.5	130.2	127.8	126.5	125.3	124.0	122.8	120.3	119.1	116.6	115.4
60°	116.6	115.4	112.9	111.6	110.4	109.2	107.9	105.4	104.2	102.9	101.7
62.5°	100.5	99.2	98.0	96.7	95.5	94.3	94.3	91.8	90.5	89.3	88.1
65°	86.8	84.3	83.1	81.9	81.9	80.6	79.4	78.1	76.9	75.7	74.4
67.5°	71.9	70.7	70.7	68.2	68.2	67.0	65.7	65.7	63.3	62.0	60.8
70°	59.5	58.3	57.1	55.8	55.8	54.6	53.3	52.1	50.9	50.9	49.6
72.5°	47.1	45.9	45.9	44.7	43.4	43.4	42.2	40.9	39.7	39.7	38.5
75°	36.0	34.7	34.7	33.5	33.5	32.2	31.0	31.0	29.8	28.5	27.3
77.5°	26.0	26.0	24.8	24.8	23.6	23.6	22.3	22.3	21.1	19.8	19.8
80°	18.6	17.4	17.4	16.1	16.1	16.1	14.9	14.9	13.6	13.6	12.4
82.5°	11.2	11.2	9.9	9.9	9.9	9.9	8.7	8.7	8.7	7.4	7.4
85°	6.2	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.7
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4
2.5°	365.9	365.9	364.7	365.9	364.7	364.7	364.7	364.7	363.4	363.4	363.4
5°	363.4	362.2	362.2	360.9	362.2	360.9	359.7	359.7	359.7	359.7	358.5
7.5°	358.5	358.5	357.2	356.0	356.0	354.7	353.5	353.5	352.3	352.3	351.0
10°	354.7	352.3	351.0	349.8	349.8	348.5	347.3	346.1	344.8	343.6	343.6
12.5°	346.1	344.8	343.6	342.3	342.3	339.9	338.6	337.4	336.1	334.9	333.7
15°	339.9	337.4	334.9	333.7	333.7	331.2	329.9	328.7	326.2	326.2	323.7
17.5°	329.9	327.5	325.0	323.7	322.5	321.2	320.0	317.5	316.3	313.8	313.8
20°	317.5	316.3	312.6	311.3	310.1	308.8	306.4	305.1	303.9	301.4	300.2
22.5°	307.6	303.9	301.4	300.2	300.2	296.4	295.2	292.7	291.5	290.2	287.8
25°	295.2	292.7	290.2	287.8	287.8	285.3	284.0	281.6	279.1	277.8	276.6
27.5°	282.8	280.3	276.6	275.4	274.1	272.9	270.4	267.9	265.4	264.2	263.0
30°	269.2	266.7	264.2	263.0	260.5	258.0	255.5	254.3	253.0	250.5	249.3
32.5°	256.8	253.0	250.5	248.1	248.1	244.3	243.1	240.6	239.4	238.1	235.7
35°	243.1	239.4	236.9	235.7	234.4	230.7	228.2	225.7	225.7	223.3	222.0
37.5°	228.2	224.5	223.3	220.8	219.5	217.1	214.6	213.3	210.9	208.4	208.4
40°	214.6	210.9	207.1	207.1	204.7	203.4	199.7	198.5	196.0	194.7	193.5
42.5°	199.7	196.0	193.5	192.3	191.0	188.5	186.1	183.6	182.3	181.1	179.8
45°	183.6	181.1	179.8	177.4	176.1	173.6	172.4	169.9	168.7	166.2	165.0
47.5°	169.9	167.4	165.0	163.7	162.5	160.0	158.8	156.3	155.0	152.6	151.3
50°	156.3	153.8	151.3	150.1	148.8	146.4	143.9	142.6	140.2	138.9	136.4
52.5°	141.4	138.9	136.4	136.4	135.2	132.7	131.5	129.0	126.5	124.0	122.8
55°	127.8	125.3	122.8	121.6	121.6	119.1	116.6	115.4	112.9	111.6	109.2
57.5°	112.9	110.4	109.2	107.9	107.9	105.4	104.2	101.7	100.5	98.0	96.7
60°	99.2	98.0	95.5	95.5	94.3	91.8	90.5	88.1	86.8	85.6	84.3
62.5°	85.6	84.3	81.9	81.9	80.6	79.4	78.1	75.7	74.4	71.9	70.7
65°	71.9	70.7	69.5	68.2	68.2	65.7	64.5	63.3	62.0	60.8	59.5
67.5°	59.5	58.3	57.1	57.1	55.8	54.6	52.1	50.9	49.6	48.4	47.1
70°	48.4	45.9	44.7	44.7	43.4	42.2	40.9	39.7	38.5	37.2	36.0
72.5°	37.2	34.7	34.7	33.5	32.2	31.0	31.0	29.8	28.5	28.5	26.0
75°	27.3	26.0	24.8	24.8	23.6	22.3	21.1	21.1	19.8	19.8	19.8
77.5°	18.6	17.4	17.4	16.1	16.1	16.1	14.9	14.9	14.9	14.9	16.1
80°	12.4	12.4	11.2	11.2	11.2	11.2	11.2	11.2	11.2	12.4	12.4
82.5°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	8.7
85°	3.7	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
87.5°	1.2	1.2	2.5	1.2	2.5	1.2	2.5	2.5	2.5	2.5	2.5
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: P642354

CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 900LM - 4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	368.4	368.4	368.4	368.4	368.4	368.4	368.4	368.4
2.5°	362.2	363.4	363.4	362.2	363.4	362.2	362.2	362.2
5°	358.5	357.2	357.2	357.2	356.0	357.2	357.2	357.2
7.5°	351.0	351.0	349.8	349.8	348.5	348.5	349.8	348.5
10°	342.3	341.1	342.3	341.1	341.1	341.1	339.9	341.1
12.5°	333.7	332.4	332.4	331.2	331.2	331.2	331.2	331.2
15°	323.7	322.5	322.5	321.2	321.2	320.0	321.2	320.0
17.5°	312.6	312.6	310.1	310.1	310.1	310.1	310.1	308.8
20°	298.9	298.9	297.7	298.9	296.4	296.4	296.4	296.4
22.5°	287.8	286.5	285.3	285.3	285.3	284.0	284.0	284.0
25°	274.1	274.1	272.9	272.9	271.6	271.6	271.6	271.6
27.5°	261.7	260.5	260.5	260.5	259.2	258.0	258.0	258.0
30°	248.1	248.1	246.8	246.8	245.6	245.6	245.6	245.6
32.5°	234.4	234.4	233.2	231.9	231.9	231.9	230.7	231.9
35°	220.8	219.5	219.5	218.3	218.3	218.3	217.1	217.1
37.5°	207.1	205.9	204.7	205.9	204.7	203.4	203.4	203.4
40°	192.3	191.0	191.0	189.8	189.8	189.8	188.5	189.8
42.5°	178.6	178.6	177.4	176.1	176.1	176.1	174.9	174.9
45°	165.0	162.5	163.7	162.5	162.5	161.2	161.2	160.0
47.5°	150.1	148.8	148.8	148.8	147.6	147.6	147.6	147.6
50°	135.2	134.0	135.2	134.0	134.0	132.7	132.7	132.7
52.5°	121.6	120.3	120.3	120.3	120.3	119.1	119.1	119.1
55°	107.9	106.7	106.7	106.7	105.4	105.4	104.2	104.2
57.5°	95.5	94.3	93.0	91.8	91.8	91.8	90.5	90.5
60°	81.9	80.6	79.4	79.4	78.1	78.1	78.1	76.9
62.5°	69.5	68.2	67.0	67.0	65.7	64.5	64.5	64.5
65°	57.1	55.8	55.8	54.6	53.3	53.3	52.1	52.1
67.5°	45.9	44.7	44.7	43.4	42.2	40.9	40.9	40.9
70°	36.0	34.7	33.5	33.5	33.5	32.2	31.0	31.0
72.5°	26.0	24.8	24.8	24.8	24.8	24.8	24.8	24.8
75°	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8
77.5°	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
80°	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4
82.5°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
85°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.2
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)