

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: P642338

Luminaire Tested: ML5612LSWW97FS1E - 692SC WW - 900LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642338
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-131)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 692SC WW - 900LM - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 764.4 lumens
Efficiency: N/A
Efficacy: 57.5 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.09 / 1.17
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

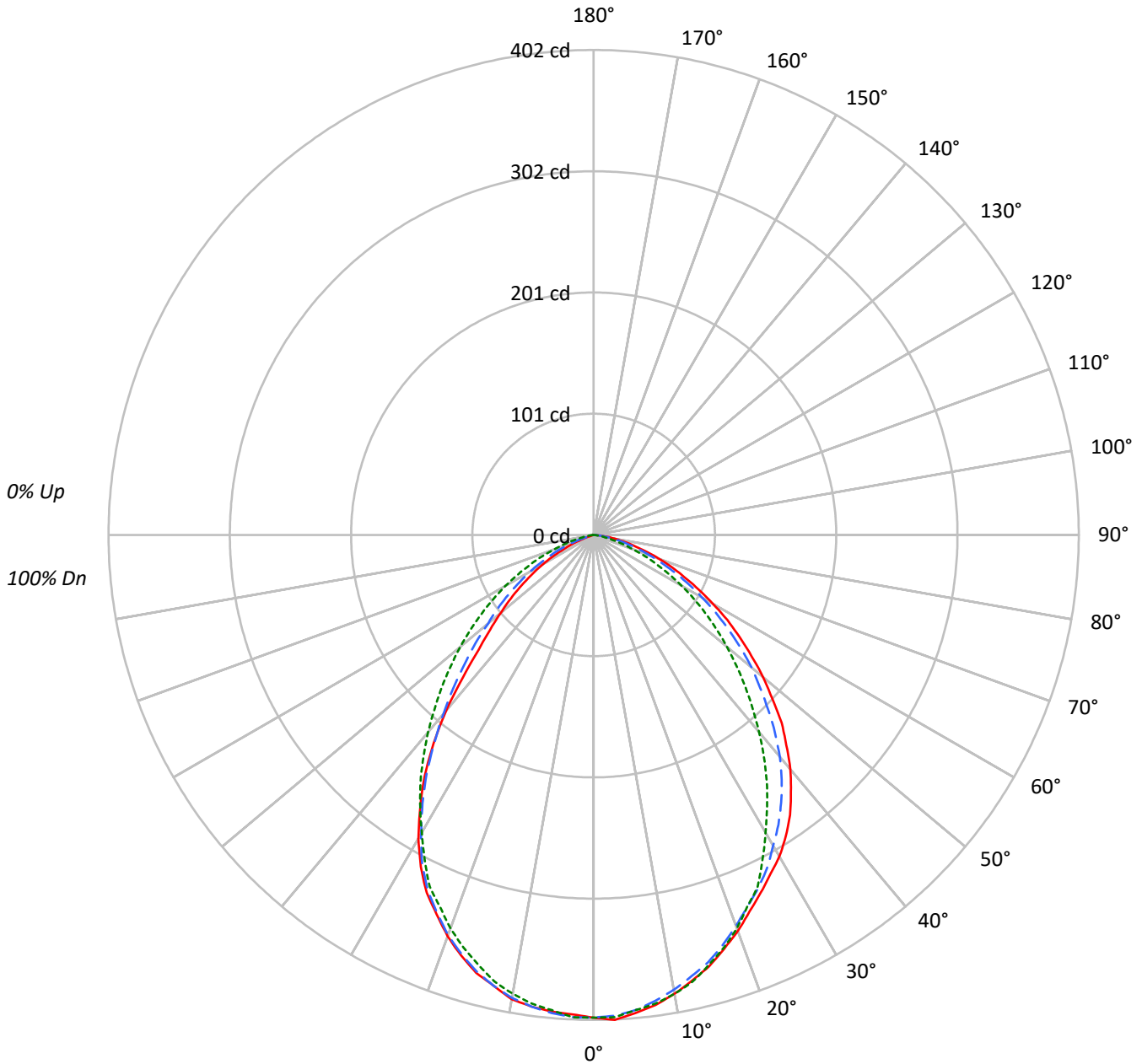
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P642338

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 900LM - 3500K

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	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88						
	2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77	77						
	3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67	67						
	4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61	59	59						
	5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52						
	6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	46	46						
	7	70	58	50	45	69	57	50	44	56	49	44	55	48	44	53	48	44	42	42						
	8	66	53	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38	38						
	9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34						
	10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32	32						

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	21934	21934	21934	21934	21934
5°	21891	21764	21764	21891	21825
10°	21498	21309	21498	21693	21754
15°	21005	20806	20937	21266	21334
20°	20378	20109	20243	20582	20646
25°	19804	19525	19459	19664	19804
30°	19484	18832	18028	18098	18389
35°	18979	18129	16744	16128	16356
40°	18148	17161	15264	13862	13611
45°	17072	15823	13761	11707	10458
50°	15633	14550	12290	9731	8554
55°	14107	12998	10800	8267	6939
60°	12510	11381	9232	6699	5307
65°	10766	9716	7472	4929	3295
70°	9232	7950	5546	2773	1298
75°	7329	6100	3664	741	0
80°	5462	4357	1831	0	0
85°	2893	2201	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 17072 cd/sqm



TEST NUMBER: P642338

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 900LM - 3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.5	4.9
10°-20°	104.1	13.6
20°-30°	148.3	19.4
30°-40°	159.5	20.9
40°-50°	137.5	18.0
50°-60°	99.6	13.0
60°-70°	56.2	7.4
70°-80°	19.1	2.5
80°-90°	2.5	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°	290.0	37.9
0°-40°	449.5	58.8
0°-60°	686.6	89.8
0°-90°	764.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	764.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	400	400	400	400	400	
5°	398	396	396	398	397	38
15°	370	367	369	375	376	104
25°	327	323	322	325	327	151
35°	284	271	250	241	244	177
45°	220	204	178	151	135	169
55°	148	136	113	86	73	132
65°	83	75	58	38	25	83
75°	35	29	17	4	0	38
85°	5	4	0	0	0	7
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°	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1
2.5°	402.4	398.9	397.8	398.9	398.9	398.9	398.9	398.9	398.9	397.8	398.9
5°	397.8	394.3	394.3	394.3	394.3	394.3	393.1	394.3	394.3	394.3	395.5
7.5°	393.1	388.5	389.7	388.5	389.7	388.5	388.5	389.7	388.5	389.7	389.7
10°	386.2	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8
12.5°	378.2	374.7	374.7	374.7	374.7	374.7	374.7	374.7	375.9	374.7	374.7
15°	370.1	365.5	366.6	365.5	365.5	365.5	365.5	365.5	365.5	365.5	366.6
17.5°	359.7	356.3	356.3	356.3	356.3	356.3	356.3	355.1	356.3	356.3	356.3
20°	349.3	345.9	345.9	344.7	345.9	344.7	344.7	344.7	345.9	344.7	344.7
22.5°	337.8	334.3	335.5	334.3	334.3	334.3	334.3	334.3	333.2	334.3	333.2
25°	327.4	326.3	325.1	326.3	325.1	325.1	325.1	324.0	324.0	324.0	322.8
27.5°	317.1	314.7	314.7	314.7	314.7	313.6	313.6	313.6	312.4	311.3	311.3
30°	307.8	304.4	304.4	304.4	303.2	303.2	302.1	302.1	299.8	298.6	297.5
32.5°	296.3	294.0	292.8	292.8	291.7	291.7	290.5	290.5	288.2	287.1	284.8
35°	283.6	282.5	282.5	281.3	280.2	279.0	277.9	276.7	275.5	273.2	270.9
37.5°	268.6	267.5	266.3	266.3	265.2	264.0	264.0	261.7	260.6	258.3	255.9
40°	253.6	251.3	251.3	250.2	249.0	247.9	247.9	245.6	244.4	242.1	239.8
42.5°	236.3	234.0	234.0	232.9	232.9	232.9	231.7	229.4	227.1	224.8	222.5
45°	220.2	217.9	217.9	215.6	215.6	214.4	213.3	212.1	209.8	207.5	204.1
47.5°	200.6	199.5	199.5	198.3	197.1	196.0	196.0	194.8	192.5	189.1	186.8
50°	183.3	182.2	182.2	181.0	179.9	178.7	177.5	176.4	175.2	172.9	170.6
52.5°	164.9	164.9	163.7	162.6	162.6	161.4	160.3	159.1	156.8	154.5	153.3
55°	147.6	146.4	146.4	145.3	145.3	144.1	143.0	141.8	140.7	138.4	136.0
57.5°	131.4	129.1	129.1	128.0	128.0	128.0	126.8	124.5	123.4	121.1	119.9
60°	114.1	113.0	113.0	113.0	111.8	110.7	110.7	108.4	107.2	106.1	103.8
62.5°	98.0	96.8	96.8	96.8	95.7	95.7	94.5	93.4	92.2	91.1	88.8
65°	83.0	83.0	83.0	81.9	81.9	80.7	79.6	79.6	78.4	77.2	74.9
67.5°	70.3	69.2	69.2	69.2	68.0	68.0	66.9	65.7	64.6	63.4	61.1
70°	57.6	56.5	56.5	55.3	55.3	55.3	55.3	54.2	51.9	51.9	49.6
72.5°	45.0	45.0	45.0	43.8	43.8	43.8	42.7	42.7	41.5	40.4	39.2
75°	34.6	34.6	34.6	33.4	33.4	33.4	32.3	32.3	31.1	30.0	28.8
77.5°	25.4	25.4	25.4	24.2	24.2	24.2	23.1	23.1	21.9	21.9	20.8
80°	17.3	17.3	17.3	16.1	16.1	16.1	16.1	15.0	15.0	13.8	13.8
82.5°	10.4	10.4	10.4	10.4	9.2	9.2	9.2	9.2	9.2	8.1	8.1
85°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	3.5	3.5
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



TEST NUMBER: P642338

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1
2.5°	398.9	398.9	398.9	398.9	398.9	398.9	398.9	398.9	398.9	400.1	398.9
5°	395.5	395.5	395.5	395.5	395.5	395.5	396.6	395.5	396.6	395.5	396.6
7.5°	389.7	389.7	390.8	390.8	389.7	390.8	390.8	390.8	390.8	392.0	392.0
10°	382.8	383.9	383.9	385.1	385.1	385.1	385.1	386.2	386.2	386.2	386.2
12.5°	375.9	375.9	375.9	375.9	377.0	375.9	377.0	377.0	378.2	379.3	378.2
15°	365.5	366.6	366.6	366.6	366.6	366.6	367.8	368.9	368.9	368.9	370.1
17.5°	356.3	356.3	356.3	357.4	356.3	357.4	357.4	357.4	358.6	358.6	359.7
20°	344.7	343.6	345.9	344.7	344.7	345.9	345.9	345.9	347.0	347.0	347.0
22.5°	332.0	333.2	332.0	332.0	333.2	333.2	333.2	332.0	333.2	333.2	334.3
25°	321.7	321.7	321.7	321.7	321.7	321.7	321.7	320.5	321.7	321.7	321.7
27.5°	310.1	307.8	307.8	306.7	306.7	305.5	304.4	304.4	304.4	303.2	304.4
30°	296.3	294.0	292.8	291.7	290.5	290.5	288.2	287.1	285.9	284.8	283.6
32.5°	282.5	280.2	279.0	277.9	275.5	274.4	272.1	270.9	269.8	267.5	265.2
35°	269.8	266.3	264.0	261.7	260.6	259.4	257.1	254.8	252.5	250.2	247.9
37.5°	252.5	250.2	247.9	245.6	244.4	243.3	241.0	236.3	234.0	231.7	229.4
40°	237.5	234.0	231.7	228.3	227.1	224.8	222.5	219.1	215.6	213.3	211.0
42.5°	219.1	216.7	214.4	211.0	209.8	207.5	204.1	201.8	199.5	194.8	192.5
45°	201.8	199.5	197.1	193.7	191.4	190.2	187.9	184.5	181.0	177.5	175.2
47.5°	184.5	182.2	178.7	176.4	174.1	172.9	170.6	167.2	163.7	160.3	158.0
50°	167.2	164.9	162.6	158.0	158.0	155.6	153.3	149.9	147.6	144.1	140.7
52.5°	151.0	147.6	145.3	141.8	141.8	140.7	137.2	133.7	131.4	128.0	125.7
55°	133.7	131.4	129.1	126.8	124.5	123.4	122.2	118.8	115.3	113.0	109.5
57.5°	117.6	114.1	113.0	110.7	109.5	108.4	106.1	102.6	100.3	98.0	95.7
60°	102.6	100.3	96.8	95.7	94.5	93.4	91.1	88.8	86.5	84.2	81.9
62.5°	87.6	85.3	83.0	80.7	79.6	78.4	77.2	74.9	72.6	70.3	68.0
65°	72.6	71.5	69.2	68.0	66.9	65.7	63.4	61.1	60.0	57.6	55.3
67.5°	60.0	58.8	56.5	55.3	54.2	54.2	50.7	49.6	47.3	46.1	43.8
70°	48.4	47.3	45.0	43.8	42.7	41.5	40.4	39.2	36.9	34.6	33.4
72.5°	38.0	35.7	34.6	33.4	32.3	32.3	30.0	28.8	26.5	25.4	23.1
75°	27.7	26.5	25.4	24.2	24.2	23.1	21.9	20.8	18.4	17.3	16.1
77.5°	19.6	18.4	17.3	16.1	16.1	15.0	13.8	12.7	11.5	10.4	9.2
80°	12.7	11.5	11.5	10.4	9.2	9.2	8.1	6.9	5.8	5.8	4.6
82.5°	6.9	6.9	5.8	5.8	4.6	4.6	3.5	3.5	2.3	2.3	1.2
85°	3.5	2.3	2.3	2.3	2.3	1.2	1.2	1.2	0.0	0.0	0.0
87.5°	1.2	1.2	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: P642338

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1
2.5°	398.9	398.9	398.9	398.9	398.9	398.9	398.9	398.9	400.1	398.9	398.9
5°	396.6	396.6	397.8	396.6	397.8	397.8	396.6	396.6	397.8	398.9	397.8
7.5°	392.0	392.0	393.1	393.1	393.1	393.1	393.1	394.3	394.3	395.5	395.5
10°	387.4	387.4	387.4	387.4	388.5	388.5	389.7	389.7	389.7	389.7	389.7
12.5°	379.3	380.5	380.5	380.5	380.5	381.6	381.6	382.8	382.8	382.8	383.9
15°	370.1	371.2	372.4	372.4	371.2	372.4	373.5	373.5	374.7	374.7	374.7
17.5°	359.7	360.9	360.9	362.0	360.9	363.2	363.2	364.3	364.3	365.5	365.5
20°	348.2	349.3	349.3	349.3	350.5	350.5	351.6	351.6	352.8	352.8	352.8
22.5°	334.3	335.5	335.5	335.5	335.5	336.7	336.7	337.8	339.0	340.1	339.0
25°	321.7	322.8	324.0	322.8	324.0	324.0	324.0	325.1	325.1	326.3	325.1
27.5°	304.4	304.4	304.4	305.5	306.7	306.7	306.7	307.8	307.8	307.8	309.0
30°	283.6	282.5	283.6	283.6	283.6	283.6	285.9	285.9	285.9	287.1	288.2
32.5°	264.0	264.0	264.0	262.9	262.9	262.9	262.9	264.0	264.0	265.2	266.3
35°	245.6	244.4	242.1	242.1	242.1	241.0	239.8	239.8	241.0	241.0	241.0
37.5°	226.0	224.8	223.7	221.4	221.4	219.1	217.9	216.7	216.7	215.6	215.6
40°	207.5	205.2	202.9	202.9	200.6	199.5	197.1	196.0	193.7	191.4	191.4
42.5°	189.1	186.8	184.5	183.3	181.0	179.9	176.4	174.1	171.8	170.6	168.3
45°	171.8	169.5	166.0	164.9	162.6	160.3	158.0	154.5	151.0	148.7	147.6
47.5°	154.5	152.2	148.7	146.4	145.3	141.8	139.5	136.0	132.6	129.1	125.7
50°	138.4	134.9	131.4	129.1	128.0	124.5	122.2	118.8	114.1	113.0	109.5
52.5°	122.2	118.8	115.3	114.1	113.0	109.5	106.1	102.6	100.3	96.8	94.5
55°	106.1	103.8	100.3	99.2	98.0	94.5	91.1	88.8	86.5	83.0	80.7
57.5°	92.2	89.9	86.5	85.3	84.2	80.7	78.4	74.9	72.6	70.3	68.0
60°	79.6	76.1	73.8	72.6	71.5	68.0	65.7	63.4	61.1	58.8	55.3
62.5°	65.7	63.4	61.1	60.0	57.6	56.5	53.0	51.9	48.4	47.3	45.0
65°	53.0	50.7	48.4	48.4	47.3	43.8	42.7	40.4	38.0	35.7	34.6
67.5°	42.7	40.4	38.0	36.9	35.7	33.4	32.3	30.0	27.7	26.5	24.2
70°	32.3	30.0	27.7	26.5	25.4	24.2	21.9	19.6	17.3	16.1	13.8
72.5°	21.9	19.6	18.4	18.4	17.3	15.0	12.7	11.5	9.2	8.1	6.9
75°	13.8	11.5	10.4	9.2	9.2	8.1	5.8	4.6	3.5	2.3	1.2
77.5°	8.1	6.9	5.8	4.6	4.6	3.5	2.3	1.2	1.2	0.0	0.0
80°	3.5	2.3	1.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	1.2	1.2	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: P642338

CATALOG NUMBER: ML5612LSWW97FS1E - 692SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	400.1	400.1	400.1	400.1	400.1	400.1	400.1	400.1
2.5°	398.9	398.9	398.9	398.9	397.8	397.8	397.8	397.8
5°	397.8	397.8	397.8	397.8	396.6	396.6	397.8	396.6
7.5°	395.5	395.5	394.3	394.3	394.3	394.3	394.3	394.3
10°	390.8	390.8	390.8	389.7	390.8	390.8	389.7	390.8
12.5°	383.9	383.9	383.9	383.9	382.8	382.8	383.9	382.8
15°	375.9	375.9	375.9	375.9	375.9	374.7	375.9	375.9
17.5°	366.6	366.6	365.5	365.5	365.5	366.6	366.6	365.5
20°	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9
22.5°	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
25°	326.3	326.3	326.3	326.3	326.3	326.3	326.3	327.4
27.5°	309.0	309.0	309.0	309.0	309.0	307.8	307.8	310.1
30°	288.2	289.4	289.4	289.4	289.4	289.4	289.4	290.5
32.5°	267.5	267.5	267.5	268.6	267.5	268.6	267.5	267.5
35°	243.3	243.3	243.3	243.3	243.3	244.4	244.4	244.4
37.5°	215.6	216.7	216.7	217.9	217.9	217.9	219.1	217.9
40°	190.2	190.2	190.2	189.1	190.2	189.1	190.2	190.2
42.5°	166.0	163.7	163.7	162.6	162.6	161.4	160.3	160.3
45°	144.1	140.7	140.7	139.5	138.4	136.0	134.9	134.9
47.5°	123.4	122.2	121.1	119.9	118.8	116.4	115.3	116.4
50°	106.1	104.9	103.8	103.8	102.6	101.5	100.3	100.3
52.5°	92.2	89.9	88.8	88.8	87.6	86.5	86.5	86.5
55°	78.4	76.1	76.1	76.1	74.9	73.8	73.8	72.6
57.5°	65.7	63.4	63.4	62.3	61.1	61.1	61.1	60.0
60°	54.2	51.9	50.7	50.7	49.6	48.4	48.4	48.4
62.5°	42.7	41.5	39.2	39.2	38.0	36.9	35.7	36.9
65°	32.3	30.0	28.8	28.8	27.7	26.5	25.4	25.4
67.5°	21.9	20.8	19.6	19.6	17.3	17.3	16.1	16.1
70°	12.7	11.5	11.5	10.4	9.2	9.2	8.1	8.1
72.5°	5.8	4.6	4.6	3.5	3.5	2.3	2.3	2.3
75°	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.0
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

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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)