

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: P642344

Luminaire Tested: ML5612LSWW97FS1E - 692W WW - 1200LM - 4000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642344
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 - 1200LM - 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: 984.3 lumens
Efficiency: N/A
Efficacy: 59.7 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

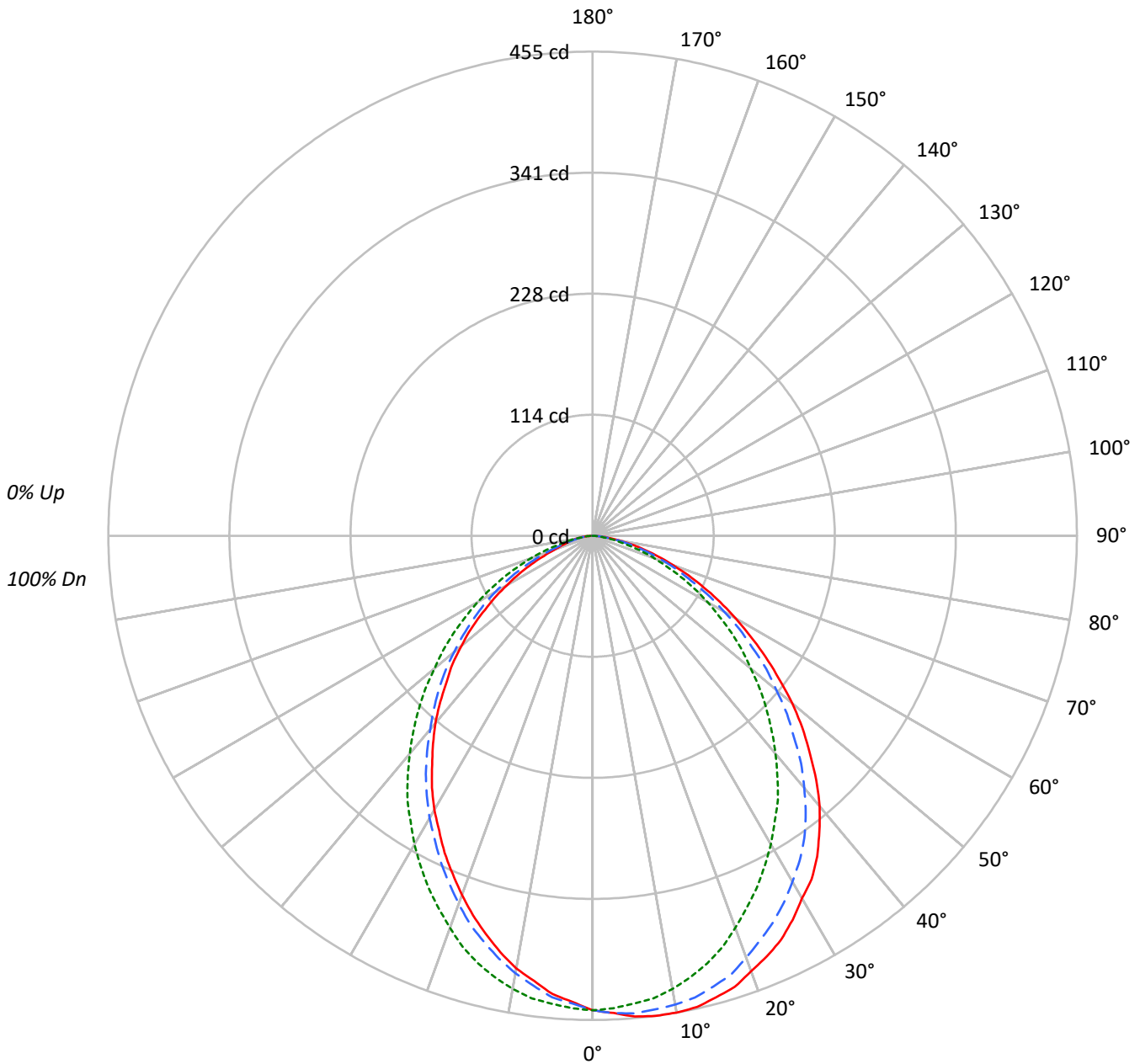
Input Watts (W): 16.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	24444	24444	24444	24444	24444
5°	24956	24791	24290	23960	23795
10°	25328	24905	24070	23235	22984
15°	25477	24881	23604	22412	21987
20°	25401	24613	22863	21463	20938
25°	25338	24249	22072	20433	19888
30°	24903	23763	21193	19389	18819
35°	24621	23209	20298	18290	17587
40°	23744	22134	19129	16975	16438
45°	22351	20723	17924	15831	15017
50°	20869	19206	16520	14473	13705
55°	18943	17510	15216	13056	12052
60°	16961	15635	13661	11523	10208
65°	14995	13633	11882	9742	8185
70°	12759	11797	9873	7453	6011
75°	10485	9531	7307	5083	5083
80°	8050	7103	5209	4262	4735
85°	5661	4717	3774	3774	3774

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 22351 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.9	4.3
10°-20°	117.3	11.9
20°-30°	169.8	17.3
30°-40°	192.9	19.6
40°-50°	182.1	18.5
50°-60°	143.6	14.6
60°-70°	89.9	9.1
70°-80°	38.8	3.9
80°-90°	8.0	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°	329.1	33.4
0°-40°	522.0	53.0
0°-60°	847.6	86.1
0°-90°	984.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	984.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	446	446	446	446	446	
5°	454	450	441	435	432	43
15°	449	438	416	395	387	127
25°	419	401	365	338	329	192
35°	368	347	303	273	263	229
45°	288	267	231	204	194	223
55°	198	183	159	137	126	177
65°	116	105	92	75	63	115
75°	50	45	34	24	24	54
85°	9	8	6	6	6	11
90°	0	0	0	0	0	



TEST NUMBER: P642344

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9
2.5°	448.9	448.9	450.5	450.5	448.9	448.9	448.9	448.9	448.9	448.9	448.9
5°	453.5	453.5	453.5	453.5	452.0	452.0	452.0	452.0	452.0	450.5	450.5
7.5°	455.0	455.0	455.0	455.0	453.5	453.5	452.0	452.0	452.0	450.5	448.9
10°	455.0	455.0	455.0	453.5	453.5	452.0	453.5	452.0	450.5	448.9	447.4
12.5°	453.5	452.0	452.0	452.0	450.5	450.5	450.5	448.9	447.4	445.9	444.4
15°	448.9	448.9	448.9	447.4	447.4	445.9	445.9	444.4	442.9	439.9	438.4
17.5°	444.4	444.4	442.9	442.9	441.4	439.9	439.9	438.4	436.9	433.9	432.4
20°	435.4	435.4	435.4	433.9	432.4	432.4	430.9	429.4	426.4	423.4	421.9
22.5°	427.9	426.4	426.4	424.9	423.4	423.4	421.9	418.9	417.4	414.4	411.4
25°	418.9	417.4	417.4	415.9	414.4	412.9	412.9	409.9	406.9	403.9	400.9
27.5°	406.9	406.9	405.4	403.9	402.4	402.4	400.9	399.4	394.9	391.9	388.9
30°	393.4	394.9	393.4	391.9	390.4	390.4	388.9	385.9	382.9	378.4	375.4
32.5°	382.9	382.9	381.4	379.9	376.9	376.9	376.9	372.4	369.4	366.4	361.9
35°	367.9	367.9	367.9	364.9	363.4	361.9	360.4	357.4	354.4	351.4	346.8
37.5°	349.9	351.4	349.9	348.3	346.8	345.3	343.8	340.8	336.3	333.3	328.8
40°	331.8	331.8	330.3	328.8	327.3	325.8	324.3	321.3	318.3	313.8	309.3
42.5°	310.8	310.8	309.3	307.8	306.3	304.8	304.8	301.8	297.3	294.3	289.8
45°	288.3	288.3	288.3	286.8	285.3	283.8	282.3	280.8	277.8	273.3	267.3
47.5°	267.3	267.3	267.3	264.3	264.3	261.3	259.8	256.8	255.3	250.8	247.7
50°	244.7	243.2	243.2	241.7	240.2	238.7	238.7	234.2	232.7	229.7	225.2
52.5°	220.7	220.7	220.7	219.2	217.7	216.2	216.2	213.2	210.2	207.2	205.7
55°	198.2	198.2	198.2	196.7	195.2	195.2	193.7	190.7	189.2	186.2	183.2
57.5°	175.7	177.2	175.7	174.2	174.2	172.7	172.7	171.2	168.2	165.2	163.7
60°	154.7	154.7	154.7	153.2	151.7	151.7	151.7	150.2	147.1	145.6	142.6
62.5°	135.1	135.1	133.6	133.6	132.1	132.1	130.6	129.1	127.6	126.1	124.6
65°	115.6	114.1	114.1	114.1	112.6	112.6	112.6	111.1	108.1	106.6	105.1
67.5°	97.6	97.6	96.1	96.1	94.6	94.6	94.6	93.1	91.6	90.1	88.6
70°	79.6	79.6	79.6	79.6	78.1	78.1	78.1	76.6	75.1	75.1	73.6
72.5°	64.6	64.6	64.6	64.6	63.1	63.1	63.1	61.6	60.1	58.6	58.6
75°	49.5	51.1	49.5	49.5	49.5	49.5	48.0	48.0	46.5	45.0	45.0
77.5°	37.5	37.5	37.5	37.5	36.0	36.0	36.0	36.0	34.5	33.0	33.0
80°	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	24.0	24.0	22.5
82.5°	15.0	16.5	16.5	16.5	15.0	15.0	15.0	15.0	15.0	15.0	13.5
85°	9.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
87.5°	3.0	3.0	3.0	3.0	3.0	1.5	1.5	1.5	1.5	1.5	1.5
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°	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9
2.5°	447.4	447.4	447.4	447.4	445.9	445.9	445.9	444.4	444.4	444.4	444.4
5°	448.9	447.4	447.4	445.9	445.9	445.9	444.4	444.4	442.9	441.4	441.4
7.5°	447.4	447.4	445.9	444.4	444.4	442.9	441.4	439.9	438.4	438.4	435.4
10°	445.9	444.4	442.9	441.4	439.9	439.9	436.9	435.4	433.9	432.4	430.9
12.5°	441.4	439.9	438.4	435.4	435.4	433.9	430.9	429.4	426.4	424.9	421.9
15°	435.4	433.9	432.4	429.4	427.9	426.4	423.4	420.4	417.4	415.9	412.9
17.5°	429.4	426.4	423.4	420.4	418.9	417.4	414.4	411.4	408.4	405.4	402.4
20°	418.9	415.9	412.9	408.4	406.9	405.4	400.9	397.9	394.9	391.9	388.9
22.5°	408.4	405.4	400.9	397.9	396.4	393.4	390.4	385.9	382.9	378.4	375.4
25°	397.9	393.4	388.9	385.9	382.9	381.4	376.9	373.9	367.9	364.9	361.9
27.5°	384.4	381.4	376.9	372.4	369.4	366.4	363.4	358.9	354.4	349.9	346.8
30°	370.9	366.4	361.9	358.9	354.4	352.9	348.3	343.8	339.3	334.8	331.8
32.5°	357.4	352.9	348.3	343.8	340.8	337.8	333.3	328.8	322.8	318.3	315.3
35°	342.3	337.8	331.8	327.3	324.3	321.3	316.8	312.3	307.8	303.3	298.8
37.5°	324.3	318.3	315.3	310.8	306.3	303.3	298.8	292.8	289.8	285.3	280.8
40°	304.8	300.3	295.8	291.3	286.8	285.3	279.3	274.8	271.8	267.3	262.8
42.5°	285.3	280.8	274.8	270.3	267.3	265.8	261.3	256.8	252.3	249.2	244.7
45°	264.3	259.8	255.3	250.8	247.7	246.2	241.7	238.7	234.2	231.2	226.7
47.5°	243.2	238.7	235.7	231.2	228.2	226.7	223.7	219.2	214.7	213.2	210.2
50°	222.2	217.7	214.7	210.2	208.7	207.2	204.2	201.2	198.2	193.7	192.2
52.5°	201.2	196.7	193.7	190.7	190.7	187.7	184.7	183.2	180.2	177.2	174.2
55°	180.2	178.7	175.7	171.2	171.2	169.7	166.7	163.7	160.7	159.2	156.2
57.5°	159.2	157.7	154.7	153.2	151.7	150.2	148.6	145.6	144.1	141.1	139.6
60°	141.1	139.6	136.6	135.1	133.6	132.1	130.6	127.6	126.1	124.6	123.1
62.5°	121.6	120.1	118.6	117.1	115.6	114.1	114.1	111.1	109.6	108.1	106.6
65°	105.1	102.1	100.6	99.1	99.1	97.6	96.1	94.6	93.1	91.6	90.1
67.5°	87.1	85.6	85.6	82.6	82.6	81.1	79.6	79.6	76.6	75.1	73.6
70°	72.1	70.6	69.1	67.6	67.6	66.1	64.6	63.1	61.6	61.6	60.1
72.5°	57.1	55.6	55.6	54.1	52.6	52.6	51.1	49.5	48.0	48.0	46.5
75°	43.5	42.0	42.0	40.5	40.5	39.0	37.5	37.5	36.0	34.5	33.0
77.5°	31.5	31.5	30.0	30.0	28.5	28.5	27.0	27.0	25.5	24.0	24.0
80°	22.5	21.0	21.0	19.5	19.5	19.5	18.0	18.0	16.5	16.5	15.0
82.5°	13.5	13.5	12.0	12.0	12.0	12.0	10.5	10.5	10.5	9.0	9.0
85°	7.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	4.5
87.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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°	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9
2.5°	442.9	442.9	441.4	442.9	441.4	441.4	441.4	441.4	439.9	439.9	439.9
5°	439.9	438.4	438.4	436.9	438.4	436.9	435.4	435.4	435.4	435.4	433.9
7.5°	433.9	433.9	432.4	430.9	430.9	429.4	427.9	427.9	426.4	426.4	424.9
10°	429.4	426.4	424.9	423.4	423.4	421.9	420.4	418.9	417.4	415.9	415.9
12.5°	418.9	417.4	415.9	414.4	414.4	411.4	409.9	408.4	406.9	405.4	403.9
15°	411.4	408.4	405.4	403.9	403.9	400.9	399.4	397.9	394.9	394.9	391.9
17.5°	399.4	396.4	393.4	391.9	390.4	388.9	387.4	384.4	382.9	379.9	379.9
20°	384.4	382.9	378.4	376.9	375.4	373.9	370.9	369.4	367.9	364.9	363.4
22.5°	372.4	367.9	364.9	363.4	363.4	358.9	357.4	354.4	352.9	351.4	348.3
25°	357.4	354.4	351.4	348.3	348.3	345.3	343.8	340.8	337.8	336.3	334.8
27.5°	342.3	339.3	334.8	333.3	331.8	330.3	327.3	324.3	321.3	319.8	318.3
30°	325.8	322.8	319.8	318.3	315.3	312.3	309.3	307.8	306.3	303.3	301.8
32.5°	310.8	306.3	303.3	300.3	300.3	295.8	294.3	291.3	289.8	288.3	285.3
35°	294.3	289.8	286.8	285.3	283.8	279.3	276.3	273.3	273.3	270.3	268.8
37.5°	276.3	271.8	270.3	267.3	265.8	262.8	259.8	258.3	255.3	252.3	252.3
40°	259.8	255.3	250.8	250.8	247.7	246.2	241.7	240.2	237.2	235.7	234.2
42.5°	241.7	237.2	234.2	232.7	231.2	228.2	225.2	222.2	220.7	219.2	217.7
45°	222.2	219.2	217.7	214.7	213.2	210.2	208.7	205.7	204.2	201.2	199.7
47.5°	205.7	202.7	199.7	198.2	196.7	193.7	192.2	189.2	187.7	184.7	183.2
50°	189.2	186.2	183.2	181.7	180.2	177.2	174.2	172.7	169.7	168.2	165.2
52.5°	171.2	168.2	165.2	165.2	163.7	160.7	159.2	156.2	153.2	150.2	148.6
55°	154.7	151.7	148.6	147.1	147.1	144.1	141.1	139.6	136.6	135.1	132.1
57.5°	136.6	133.6	132.1	130.6	130.6	127.6	126.1	123.1	121.6	118.6	117.1
60°	120.1	118.6	115.6	115.6	114.1	111.1	109.6	106.6	105.1	103.6	102.1
62.5°	103.6	102.1	99.1	99.1	97.6	96.1	94.6	91.6	90.1	87.1	85.6
65°	87.1	85.6	84.1	82.6	82.6	79.6	78.1	76.6	75.1	73.6	72.1
67.5°	72.1	70.6	69.1	69.1	67.6	66.1	63.1	61.6	60.1	58.6	57.1
70°	58.6	55.6	54.1	54.1	52.6	51.1	49.5	48.0	46.5	45.0	43.5
72.5°	45.0	42.0	42.0	40.5	39.0	37.5	37.5	36.0	34.5	34.5	31.5
75°	33.0	31.5	30.0	30.0	28.5	27.0	25.5	25.5	24.0	24.0	24.0
77.5°	22.5	21.0	21.0	19.5	19.5	19.5	18.0	18.0	18.0	18.0	19.5
80°	15.0	15.0	13.5	13.5	13.5	13.5	13.5	13.5	13.5	15.0	15.0
82.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	10.5
85°	4.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
87.5°	1.5	1.5	3.0	1.5	3.0	1.5	3.0	3.0	3.0	3.0	3.0
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: P642344

CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 1200LM - 4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	445.9	445.9	445.9	445.9	445.9	445.9	445.9	445.9
2.5°	438.4	439.9	439.9	438.4	439.9	438.4	438.4	438.4
5°	433.9	432.4	432.4	432.4	430.9	432.4	432.4	432.4
7.5°	424.9	424.9	423.4	423.4	421.9	421.9	423.4	421.9
10°	414.4	412.9	414.4	412.9	412.9	412.9	411.4	412.9
12.5°	403.9	402.4	402.4	400.9	400.9	400.9	400.9	400.9
15°	391.9	390.4	390.4	388.9	388.9	387.4	388.9	387.4
17.5°	378.4	378.4	375.4	375.4	375.4	375.4	375.4	373.9
20°	361.9	361.9	360.4	361.9	358.9	358.9	358.9	358.9
22.5°	348.3	346.8	345.3	345.3	345.3	343.8	343.8	343.8
25°	331.8	331.8	330.3	330.3	328.8	328.8	328.8	328.8
27.5°	316.8	315.3	315.3	315.3	313.8	312.3	312.3	312.3
30°	300.3	300.3	298.8	298.8	297.3	297.3	297.3	297.3
32.5°	283.8	283.8	282.3	280.8	280.8	280.8	279.3	280.8
35°	267.3	265.8	265.8	264.3	264.3	264.3	262.8	262.8
37.5°	250.8	249.2	247.7	249.2	247.7	246.2	246.2	246.2
40°	232.7	231.2	231.2	229.7	229.7	229.7	228.2	229.7
42.5°	216.2	216.2	214.7	213.2	213.2	213.2	211.7	211.7
45°	199.7	196.7	198.2	196.7	196.7	195.2	195.2	193.7
47.5°	181.7	180.2	180.2	180.2	178.7	178.7	178.7	178.7
50°	163.7	162.2	163.7	162.2	162.2	160.7	160.7	160.7
52.5°	147.1	145.6	145.6	145.6	145.6	144.1	144.1	144.1
55°	130.6	129.1	129.1	129.1	127.6	127.6	126.1	126.1
57.5°	115.6	114.1	112.6	111.1	111.1	111.1	109.6	109.6
60°	99.1	97.6	96.1	96.1	94.6	94.6	94.6	93.1
62.5°	84.1	82.6	81.1	81.1	79.6	78.1	78.1	78.1
65°	69.1	67.6	67.6	66.1	64.6	64.6	63.1	63.1
67.5°	55.6	54.1	54.1	52.6	51.1	49.5	49.5	49.5
70°	43.5	42.0	40.5	40.5	40.5	39.0	37.5	37.5
72.5°	31.5	30.0	30.0	30.0	30.0	30.0	30.0	30.0
75°	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
77.5°	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
80°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
82.5°	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
85°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
87.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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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)