

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: P642313

Luminaire Tested: ML5612LSWW97FS1E - 692H WW - 1200LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642313
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-132)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 692H WW - 1200LM - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH HAZE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 904.0 lumens
Efficiency: N/A
Efficacy: 54.8 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.12 / 1.23
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

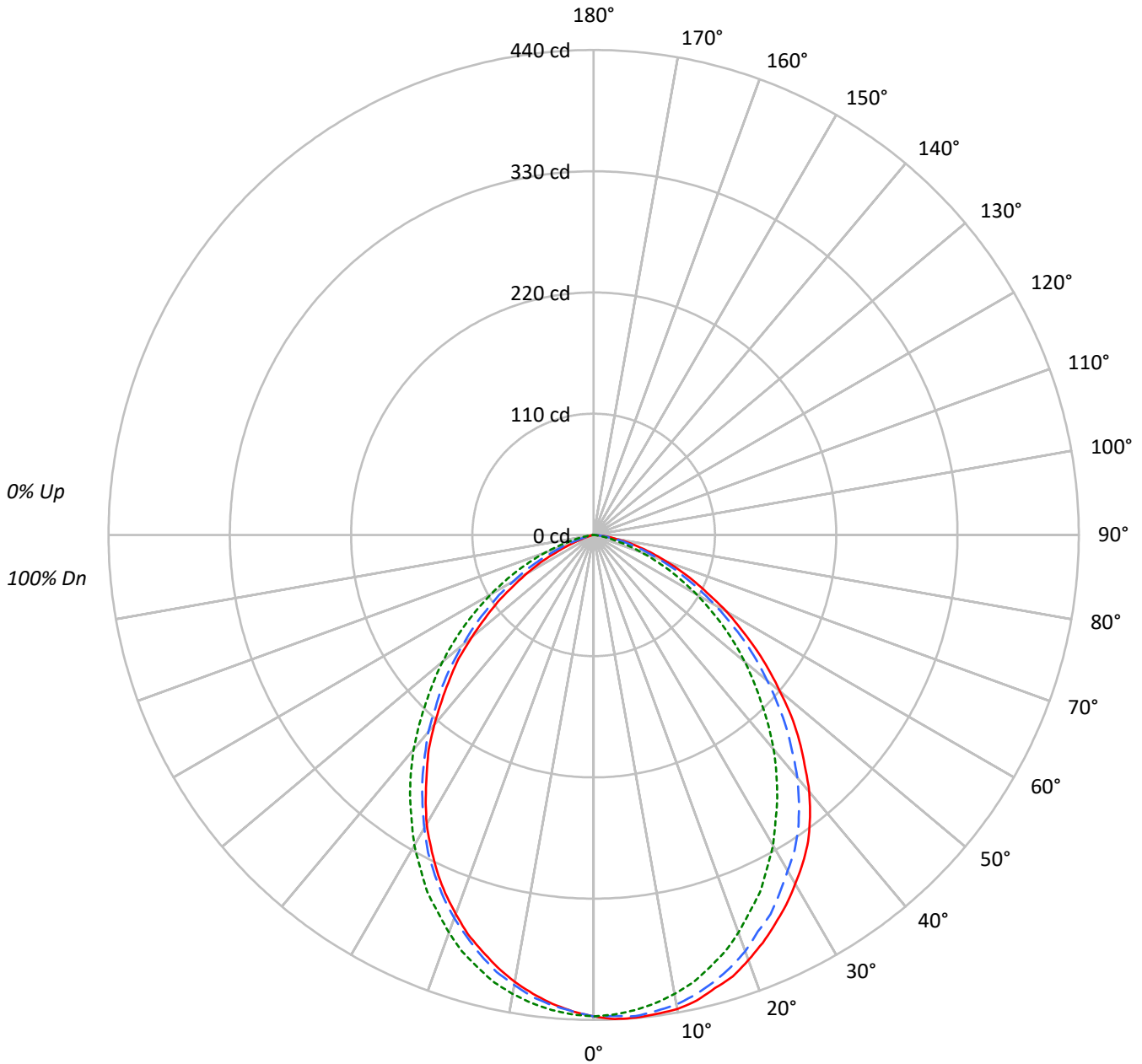
Input Watts (W): 16.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	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	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88					88			
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78	76					76			
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66					66			
4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59	57					57			
5	80	69	60	54	78	68	60	54	66	59	54	64	58	53	62	57	53	51					51			
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45					45			
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40					40			
8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36					36			
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33					33			
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	30					30			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	23951	23951	23951	23951	23951
5°	24197	24119	23811	23580	23503
10°	24320	24087	23541	23079	22923
15°	24160	23842	23053	22418	22179
20°	23942	23452	22396	21579	21334
25°	23554	22967	21612	20602	20348
30°	23149	22269	20585	19440	19174
35°	22700	21670	19428	18123	17654
40°	21777	20574	18177	16681	16080
45°	20452	19157	16668	15040	14288
50°	18805	17500	15240	13211	12264
55°	17079	15875	13610	11335	10141
60°	15306	13924	11786	9188	7653
65°	13218	11947	9781	6875	4890
70°	11188	9841	7389	4248	2244
75°	9171	7689	4723	1483	890
80°	6598	5304	2210	442	442
85°	3522	2642	881	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 20452 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.0	4.5
10°-20°	114.7	12.7
20°-30°	165.3	18.3
30°-40°	184.8	20.4
40°-50°	169.5	18.7
50°-60°	127.3	14.1
60°-70°	72.7	8.0
70°-80°	25.4	2.8
80°-90°	3.3	0.4
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°	321.1	35.5
0°-40°	505.9	56.0
0°-60°	802.6	88.8
0°-90°	904.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	904.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	437	437	437	437	437	
5°	440	438	433	428	427	42
15°	426	420	406	395	391	120
25°	389	380	357	341	336	179
35°	339	324	290	271	264	211
45°	264	247	215	194	184	203
55°	179	166	142	119	106	160
65°	102	92	75	53	38	101
75°	43	36	22	7	4	47
85°	6	4	1	0	0	8
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°	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9
2.5°	439.7	438.3	438.3	438.3	438.3	438.3	438.3	438.3	438.3	438.3	436.9
5°	439.7	439.7	439.7	439.7	439.7	439.7	439.7	438.3	438.3	438.3	438.3
7.5°	438.3	438.3	438.3	438.3	438.3	438.3	438.3	436.9	436.9	435.5	435.5
10°	436.9	436.9	436.9	435.5	435.5	435.5	435.5	435.5	434.1	434.1	432.7
12.5°	432.7	432.7	432.7	432.7	431.3	431.3	431.3	429.9	428.5	428.5	427.1
15°	425.7	427.1	427.1	425.7	425.7	425.7	425.7	424.3	422.9	421.5	420.1
17.5°	420.1	420.1	420.1	418.8	417.4	418.8	417.4	416.0	414.6	413.2	411.8
20°	410.4	410.4	409.0	409.0	409.0	409.0	407.6	406.2	404.8	403.4	402.0
22.5°	400.6	400.6	400.6	397.8	397.8	397.8	396.4	396.4	393.6	392.2	389.4
25°	389.4	389.4	389.4	388.0	386.6	385.3	386.6	383.9	382.5	379.7	379.7
27.5°	378.3	378.3	376.9	376.9	375.5	375.5	374.1	371.3	369.9	368.5	365.7
30°	365.7	365.7	364.3	364.3	362.9	361.5	361.5	358.7	357.3	354.5	351.8
32.5°	353.1	353.1	351.8	351.8	350.4	349.0	349.0	346.2	343.4	340.6	339.2
35°	339.2	339.2	337.8	337.8	336.4	335.0	333.6	330.8	329.4	325.2	323.8
37.5°	322.4	323.8	321.0	321.0	319.6	318.3	316.9	315.5	312.7	309.9	305.7
40°	304.3	302.9	302.9	301.5	300.1	300.1	298.7	295.9	294.5	290.3	287.5
42.5°	283.4	283.4	283.4	282.0	280.6	280.6	277.8	276.4	273.6	270.8	266.6
45°	263.8	263.8	262.4	262.4	259.6	259.6	258.2	255.4	254.0	249.9	247.1
47.5°	242.9	241.5	241.5	240.1	238.7	238.7	237.3	235.9	233.1	228.9	226.1
50°	220.5	220.5	220.5	219.1	217.8	217.8	216.4	213.6	212.2	209.4	205.2
52.5°	199.6	199.6	199.6	198.2	196.8	196.8	195.4	194.0	191.2	188.4	185.6
55°	178.7	178.7	178.7	177.3	177.3	174.5	174.5	173.1	170.3	167.5	166.1
57.5°	157.7	157.7	157.7	157.7	156.3	156.3	154.9	153.5	150.8	149.4	145.2
60°	139.6	138.2	138.2	136.8	136.8	135.4	134.0	132.6	131.2	128.4	127.0
62.5°	118.6	120.0	118.6	118.6	117.3	117.3	117.3	114.5	113.1	110.3	108.9
65°	101.9	101.9	101.9	101.9	99.1	99.1	99.1	96.3	94.9	94.9	92.1
67.5°	85.1	85.1	85.1	83.8	83.8	83.8	82.4	81.0	79.6	78.2	76.8
70°	69.8	69.8	69.8	68.4	68.4	67.0	67.0	65.6	64.2	64.2	61.4
72.5°	55.8	55.8	55.8	55.8	54.4	54.4	53.0	53.0	51.6	50.3	48.9
75°	43.3	43.3	43.3	41.9	41.9	41.9	40.5	40.5	39.1	37.7	36.3
77.5°	32.1	30.7	30.7	30.7	30.7	29.3	29.3	29.3	27.9	26.5	26.5
80°	20.9	20.9	20.9	20.9	20.9	19.5	19.5	19.5	18.1	18.1	16.8
82.5°	12.6	12.6	12.6	12.6	12.6	11.2	11.2	11.2	9.8	9.8	9.8
85°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.2	4.2	4.2
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9
2.5°	438.3	438.3	436.9	436.9	436.9	436.9	436.9	435.5	435.5	435.5	435.5
5°	438.3	436.9	435.5	435.5	435.5	435.5	434.1	434.1	434.1	432.7	432.7
7.5°	434.1	434.1	434.1	432.7	432.7	431.3	431.3	429.9	429.9	428.5	428.5
10°	431.3	429.9	429.9	428.5	428.5	427.1	427.1	424.3	422.9	422.9	421.5
12.5°	425.7	424.3	424.3	421.5	421.5	421.5	420.1	417.4	416.0	416.0	414.6
15°	418.8	417.4	416.0	413.2	413.2	411.8	410.4	409.0	407.6	406.2	404.8
17.5°	410.4	407.6	406.2	404.8	403.4	402.0	400.6	399.2	396.4	396.4	393.6
20°	400.6	397.8	396.4	393.6	392.2	392.2	389.4	386.6	385.3	383.9	381.1
22.5°	388.0	386.6	383.9	381.1	379.7	379.7	376.9	374.1	372.7	369.9	368.5
25°	376.9	372.7	371.3	368.5	367.1	367.1	364.3	361.5	358.7	357.3	354.5
27.5°	362.9	360.1	358.7	354.5	353.1	351.8	349.0	346.2	343.4	340.6	337.8
30°	349.0	346.2	343.4	339.2	339.2	336.4	333.6	329.4	328.0	325.2	321.0
32.5°	335.0	332.2	328.0	325.2	322.4	321.0	316.9	314.1	311.3	307.1	305.7
35°	319.6	315.5	312.7	308.5	307.1	304.3	301.5	297.3	294.5	290.3	286.1
37.5°	302.9	297.3	294.5	290.3	288.9	286.1	283.4	280.6	276.4	272.2	269.4
40°	284.8	279.2	275.0	272.2	269.4	266.6	265.2	259.6	256.8	254.0	251.3
42.5°	263.8	259.6	255.4	252.6	249.9	248.5	244.3	241.5	237.3	234.5	231.7
45°	244.3	240.1	235.9	231.7	230.3	228.9	226.1	221.9	217.8	215.0	212.2
47.5°	223.3	220.5	215.0	213.6	210.8	209.4	205.2	202.4	201.0	196.8	194.0
50°	202.4	199.6	196.8	192.6	191.2	189.8	187.0	184.3	181.5	178.7	175.9
52.5°	181.5	180.1	177.3	173.1	173.1	171.7	168.9	166.1	163.3	160.5	157.7
55°	163.3	160.5	157.7	154.9	153.5	152.1	149.4	148.0	145.2	142.4	139.6
57.5°	143.8	141.0	139.6	136.8	135.4	134.0	131.2	129.8	127.0	124.2	121.4
60°	125.6	122.8	121.4	118.6	117.3	117.3	114.5	111.7	110.3	107.5	104.7
62.5°	107.5	104.7	103.3	100.5	100.5	99.1	97.7	94.9	93.5	90.7	89.3
65°	90.7	89.3	86.5	85.1	83.8	82.4	81.0	79.6	76.8	75.4	72.6
67.5°	75.4	72.6	71.2	69.8	68.4	67.0	65.6	64.2	61.4	60.0	57.2
70°	60.0	58.6	57.2	55.8	54.4	54.4	51.6	50.3	47.5	46.1	43.3
72.5°	47.5	46.1	44.7	41.9	41.9	40.5	39.1	37.7	34.9	33.5	30.7
75°	34.9	34.9	32.1	30.7	30.7	29.3	27.9	26.5	25.1	22.3	20.9
77.5°	25.1	23.7	22.3	20.9	19.5	19.5	18.1	16.8	15.4	14.0	11.2
80°	16.8	15.4	14.0	12.6	12.6	11.2	9.8	9.8	8.4	7.0	5.6
82.5°	8.4	8.4	7.0	7.0	5.6	5.6	5.6	4.2	4.2	2.8	2.8
85°	4.2	2.8	2.8	2.8	2.8	2.8	1.4	1.4	1.4	1.4	0.0
87.5°	1.4	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9
2.5°	435.5	434.1	435.5	435.5	434.1	434.1	434.1	434.1	432.7	434.1	432.7
5°	432.7	431.3	431.3	431.3	431.3	429.9	429.9	428.5	428.5	428.5	428.5
7.5°	427.1	425.7	425.7	424.3	424.3	424.3	424.3	422.9	422.9	421.5	421.5
10°	421.5	420.1	418.8	418.8	417.4	417.4	417.4	416.0	414.6	414.6	413.2
12.5°	411.8	411.8	410.4	410.4	409.0	409.0	407.6	406.2	406.2	404.8	404.8
15°	403.4	402.0	400.6	400.6	399.2	397.8	396.4	396.4	395.0	395.0	393.6
17.5°	392.2	389.4	389.4	388.0	386.6	386.6	385.3	383.9	382.5	382.5	382.5
20°	379.7	378.3	376.9	375.5	374.1	374.1	372.7	371.3	369.9	368.5	368.5
22.5°	365.7	364.3	362.9	361.5	361.5	360.1	358.7	357.3	355.9	354.5	354.5
25°	351.8	350.4	349.0	347.6	346.2	344.8	343.4	342.0	340.6	339.2	339.2
27.5°	336.4	333.6	332.2	330.8	329.4	328.0	328.0	325.2	325.2	323.8	322.4
30°	319.6	316.9	314.1	314.1	312.7	311.3	308.5	308.5	307.1	305.7	304.3
32.5°	301.5	300.1	297.3	297.3	294.5	293.1	291.7	290.3	288.9	287.5	287.5
35°	284.8	280.6	279.2	279.2	276.4	275.0	273.6	270.8	270.8	268.0	268.0
37.5°	266.6	263.8	262.4	259.6	258.2	256.8	255.4	252.6	251.3	249.9	248.5
40°	248.5	245.7	242.9	241.5	240.1	237.3	235.9	233.1	233.1	230.3	228.9
42.5°	228.9	226.1	223.3	221.9	220.5	217.8	216.4	213.6	212.2	210.8	209.4
45°	209.4	206.6	205.2	203.8	202.4	201.0	196.8	195.4	194.0	191.2	189.8
47.5°	191.2	188.4	185.6	185.6	182.9	181.5	178.7	175.9	174.5	171.7	170.3
50°	173.1	170.3	167.5	166.1	166.1	161.9	160.5	157.7	154.9	152.1	150.8
52.5°	154.9	152.1	149.4	148.0	146.6	143.8	141.0	139.6	136.8	134.0	132.6
55°	136.8	134.0	131.2	129.8	128.4	125.6	124.2	120.0	118.6	115.9	113.1
57.5°	120.0	117.3	114.5	113.1	111.7	108.9	106.1	103.3	101.9	99.1	96.3
60°	101.9	100.5	97.7	96.3	94.9	93.5	89.3	86.5	83.8	82.4	79.6
62.5°	86.5	83.8	81.0	79.6	78.2	76.8	74.0	71.2	69.8	65.6	62.8
65°	71.2	68.4	65.6	64.2	62.8	61.4	58.6	55.8	53.0	50.3	48.9
67.5°	54.4	53.0	50.3	50.3	48.9	46.1	43.3	41.9	39.1	37.7	34.9
70°	41.9	40.5	37.7	36.3	34.9	32.1	30.7	27.9	26.5	25.1	22.3
72.5°	29.3	27.9	25.1	23.7	22.3	20.9	18.1	16.8	15.4	14.0	12.6
75°	19.5	16.8	15.4	14.0	14.0	11.2	9.8	8.4	7.0	5.6	5.6
77.5°	11.2	9.8	7.0	7.0	7.0	5.6	4.2	4.2	2.8	2.8	2.8
80°	5.6	4.2	2.8	2.8	2.8	2.8	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	0.0	0.0	0.0	0.0	0.0	1.4	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: P642313

CATALOG NUMBER: ML5612LSWW97FS1E - 692H WW - 1200LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	436.9	436.9	436.9	436.9	436.9	436.9	436.9	436.9
2.5°	432.7	432.7	432.7	432.7	432.7	432.7	432.7	432.7
5°	428.5	427.1	427.1	427.1	427.1	427.1	427.1	427.1
7.5°	421.5	421.5	420.1	421.5	420.1	420.1	420.1	420.1
10°	413.2	413.2	413.2	413.2	411.8	411.8	411.8	411.8
12.5°	404.8	403.4	403.4	403.4	402.0	403.4	402.0	402.0
15°	393.6	392.2	392.2	392.2	392.2	390.8	392.2	390.8
17.5°	381.1	381.1	379.7	381.1	379.7	379.7	379.7	379.7
20°	367.1	367.1	367.1	365.7	367.1	365.7	365.7	365.7
22.5°	353.1	353.1	351.8	351.8	351.8	351.8	351.8	351.8
25°	337.8	337.8	337.8	337.8	336.4	336.4	336.4	336.4
27.5°	322.4	321.0	321.0	321.0	319.6	321.0	319.6	319.6
30°	304.3	304.3	302.9	302.9	302.9	301.5	301.5	302.9
32.5°	284.8	284.8	284.8	284.8	283.4	283.4	283.4	283.4
35°	266.6	266.6	265.2	265.2	265.2	263.8	263.8	263.8
37.5°	247.1	247.1	245.7	245.7	245.7	244.3	244.3	245.7
40°	227.5	227.5	226.1	226.1	226.1	224.7	224.7	224.7
42.5°	208.0	206.6	206.6	205.2	205.2	205.2	203.8	203.8
45°	188.4	187.0	187.0	187.0	185.6	184.3	184.3	184.3
47.5°	168.9	167.5	166.1	166.1	164.7	164.7	164.7	166.1
50°	149.4	148.0	148.0	146.6	145.2	145.2	145.2	143.8
52.5°	129.8	128.4	128.4	127.0	127.0	125.6	124.2	124.2
55°	111.7	110.3	108.9	107.5	107.5	106.1	106.1	106.1
57.5°	93.5	92.1	90.7	90.7	89.3	89.3	87.9	86.5
60°	76.8	75.4	74.0	74.0	72.6	71.2	69.8	69.8
62.5°	61.4	60.0	58.6	57.2	55.8	54.4	53.0	54.4
65°	47.5	44.7	43.3	41.9	41.9	40.5	39.1	37.7
67.5°	33.5	32.1	30.7	29.3	27.9	26.5	25.1	25.1
70°	20.9	18.1	18.1	18.1	16.8	15.4	14.0	14.0
72.5°	11.2	9.8	8.4	8.4	7.0	7.0	7.0	7.0
75°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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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Peachtree City, GA 30269

Scaled Data Report



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

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