

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: P642339

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

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642339
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 - 4000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 822.4 lumens
Efficiency: N/A
Efficacy: 61.8 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

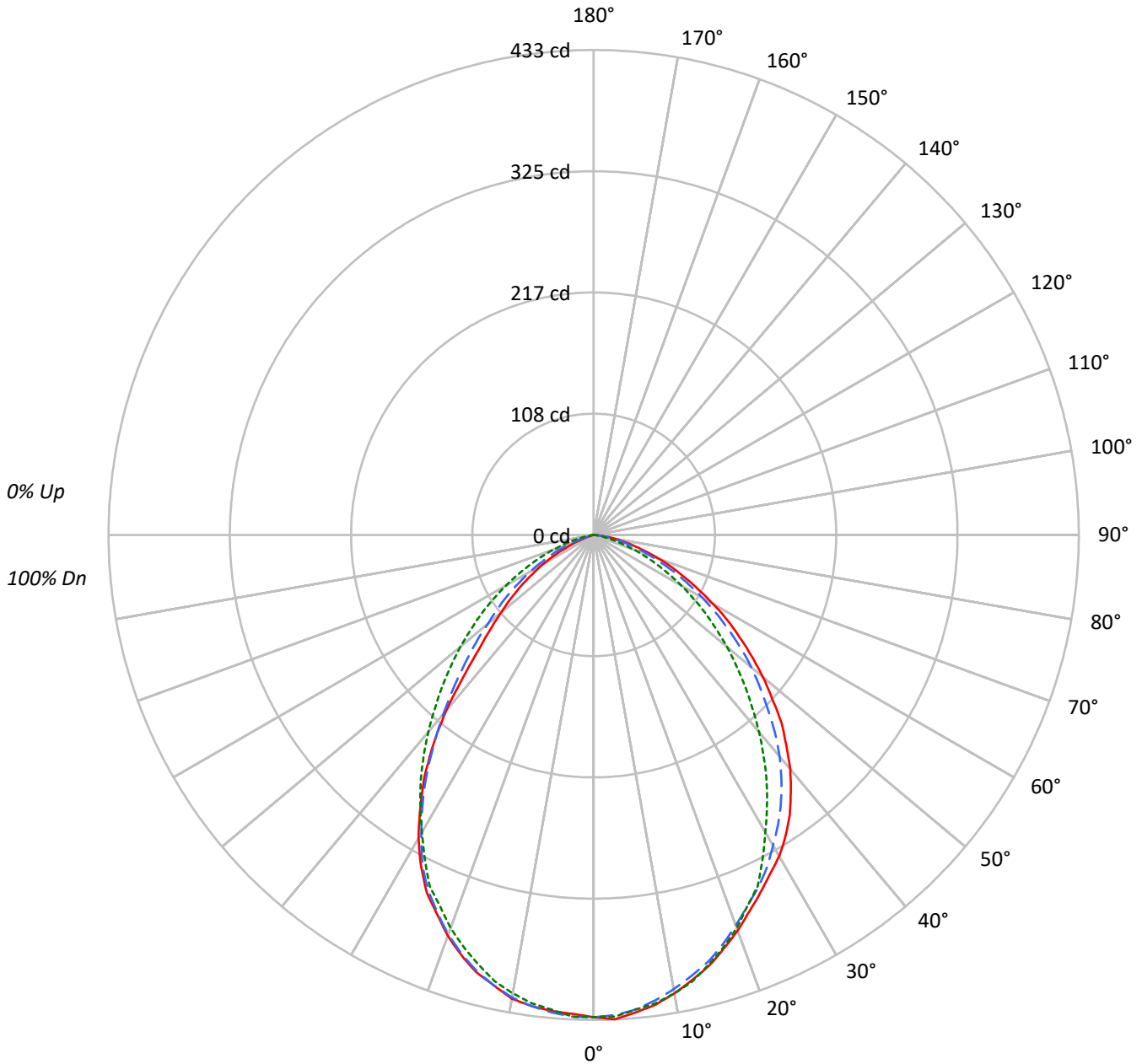
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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									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°	23600	23600	23600	23600	23600
5°	23553	23415	23415	23553	23481
10°	23135	22923	23135	23341	23407
15°	22599	22389	22531	22883	22951
20°	21929	21638	21784	22145	22215
25°	21310	21007	20935	21158	21310
30°	20965	20256	19395	19471	19788
35°	20425	19508	18016	17353	17601
40°	19529	18463	16424	14914	14649
45°	18366	17025	14808	12598	11249
50°	16818	15658	13228	10473	9202
55°	15177	13992	11622	8889	7474
60°	13464	12236	9933	7203	5712
65°	11584	10455	8042	5305	3541
70°	9938	8543	5963	2981	1394
75°	7879	6566	3940	784	0
80°	5872	4704	1957	0	0
85°	3145	2327	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 18366 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.4	4.9
10°-20°	112.0	13.6
20°-30°	159.6	19.4
30°-40°	171.7	20.9
40°-50°	147.9	18.0
50°-60°	107.2	13.0
60°-70°	60.5	7.4
70°-80°	20.6	2.5
80°-90°	2.6	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°	312.0	37.9
0°-40°	483.6	58.8
0°-60°	738.8	89.8
0°-90°	822.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	822.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	430	430	430	430	430	
5°	428	426	426	428	427	40
15°	398	394	397	403	404	112
25°	352	347	346	350	352	163
35°	305	292	269	259	263	190
45°	237	220	191	162	145	182
55°	159	146	122	93	78	142
65°	89	81	62	41	27	90
75°	37	31	19	4	0	40
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°	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5
2.5°	432.9	429.2	428.0	429.2	429.2	429.2	429.2	429.2	429.2	428.0	429.2
5°	428.0	424.3	424.3	424.3	424.3	424.3	423.0	424.3	424.3	424.3	425.5
7.5°	423.0	418.0	419.3	418.0	419.3	418.0	418.0	419.3	418.0	419.3	419.3
10°	415.6	411.8	411.8	411.8	411.8	411.8	411.8	411.8	411.8	411.8	411.8
12.5°	406.9	403.2	403.2	403.2	403.2	403.2	403.2	403.2	404.4	403.2	403.2
15°	398.2	393.2	394.5	393.2	393.2	393.2	393.2	393.2	393.2	393.2	394.5
17.5°	387.0	383.3	383.3	383.3	383.3	383.3	383.3	382.1	383.3	383.3	383.3
20°	375.9	372.1	372.1	370.9	372.1	370.9	370.9	370.9	372.1	370.9	370.9
22.5°	363.5	359.7	361.0	359.7	359.7	359.7	359.7	359.7	358.5	359.7	358.5
25°	352.3	351.1	349.8	351.1	349.8	349.8	349.8	348.6	348.6	348.6	347.3
27.5°	341.1	338.7	338.7	338.7	338.7	337.4	337.4	337.4	336.2	334.9	334.9
30°	331.2	327.5	327.5	327.5	326.3	326.3	325.0	325.0	322.5	321.3	320.0
32.5°	318.8	316.3	315.1	315.1	313.8	313.8	312.6	312.6	310.1	308.9	306.4
35°	305.2	303.9	303.9	302.7	301.4	300.2	299.0	297.7	296.5	294.0	291.5
37.5°	289.0	287.8	286.6	286.6	285.3	284.1	284.1	281.6	280.4	277.9	275.4
40°	272.9	270.4	270.4	269.2	267.9	266.7	266.7	264.2	263.0	260.5	258.0
42.5°	254.3	251.8	251.8	250.6	250.6	250.6	249.3	246.9	244.4	241.9	239.4
45°	236.9	234.5	234.5	232.0	232.0	230.7	229.5	228.3	225.8	223.3	219.6
47.5°	215.8	214.6	214.6	213.4	212.1	210.9	210.9	209.6	207.2	203.4	201.0
50°	197.2	196.0	196.0	194.8	193.5	192.3	191.0	189.8	188.6	186.1	183.6
52.5°	177.4	177.4	176.2	174.9	174.9	173.7	172.4	171.2	168.7	166.2	165.0
55°	158.8	157.5	157.5	156.3	156.3	155.1	153.8	152.6	151.3	148.9	146.4
57.5°	141.4	138.9	138.9	137.7	137.7	137.7	136.5	134.0	132.7	130.3	129.0
60°	122.8	121.6	121.6	121.6	120.3	119.1	119.1	116.6	115.4	114.1	111.6
62.5°	105.4	104.2	104.2	104.2	103.0	103.0	101.7	100.5	99.2	98.0	95.5
65°	89.3	89.3	89.3	88.1	88.1	86.8	85.6	85.6	84.4	83.1	80.6
67.5°	75.7	74.4	74.4	74.4	73.2	73.2	71.9	70.7	69.5	68.2	65.7
70°	62.0	60.8	60.8	59.5	59.5	59.5	59.5	58.3	55.8	55.8	53.3
72.5°	48.4	48.4	48.4	47.1	47.1	47.1	45.9	45.9	44.7	43.4	42.2
75°	37.2	37.2	37.2	36.0	36.0	36.0	34.7	34.7	33.5	32.3	31.0
77.5°	27.3	27.3	27.3	26.1	26.1	26.1	24.8	24.8	23.6	23.6	22.3
80°	18.6	18.6	18.6	17.4	17.4	17.4	17.4	16.1	16.1	14.9	14.9
82.5°	11.2	11.2	11.2	11.2	9.9	9.9	9.9	9.9	9.9	8.7	8.7
85°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.7	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5
2.5°	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	430.5	429.2
5°	425.5	425.5	425.5	425.5	425.5	425.5	426.7	425.5	426.7	425.5	426.7
7.5°	419.3	419.3	420.5	420.5	419.3	420.5	420.5	420.5	420.5	421.8	421.8
10°	411.8	413.1	413.1	414.3	414.3	414.3	414.3	415.6	415.6	415.6	415.6
12.5°	404.4	404.4	404.4	404.4	405.6	404.4	405.6	405.6	406.9	408.1	406.9
15°	393.2	394.5	394.5	394.5	394.5	394.5	395.7	397.0	397.0	397.0	398.2
17.5°	383.3	383.3	383.3	384.6	383.3	384.6	384.6	384.6	385.8	385.8	387.0
20°	370.9	369.7	372.1	370.9	370.9	372.1	372.1	372.1	373.4	373.4	373.4
22.5°	357.3	358.5	357.3	357.3	358.5	358.5	358.5	357.3	358.5	358.5	359.7
25°	346.1	346.1	346.1	346.1	346.1	346.1	346.1	344.9	346.1	346.1	346.1
27.5°	333.7	331.2	331.2	330.0	330.0	328.7	327.5	327.5	327.5	326.3	327.5
30°	318.8	316.3	315.1	313.8	312.6	312.6	310.1	308.9	307.6	306.4	305.2
32.5°	303.9	301.4	300.2	299.0	296.5	295.2	292.8	291.5	290.3	287.8	285.3
35°	290.3	286.6	284.1	281.6	280.4	279.1	276.6	274.2	271.7	269.2	266.7
37.5°	271.7	269.2	266.7	264.2	263.0	261.7	259.3	254.3	251.8	249.3	246.9
40°	255.5	251.8	249.3	245.6	244.4	241.9	239.4	235.7	232.0	229.5	227.0
42.5°	235.7	233.2	230.7	227.0	225.8	223.3	219.6	217.1	214.6	209.6	207.2
45°	217.1	214.6	212.1	208.4	205.9	204.7	202.2	198.5	194.8	191.0	188.6
47.5°	198.5	196.0	192.3	189.8	187.3	186.1	183.6	179.9	176.2	172.4	169.9
50°	179.9	177.4	174.9	169.9	169.9	167.5	165.0	161.3	158.8	155.1	151.3
52.5°	162.5	158.8	156.3	152.6	152.6	151.3	147.6	143.9	141.4	137.7	135.2
55°	143.9	141.4	138.9	136.5	134.0	132.7	131.5	127.8	124.0	121.6	117.8
57.5°	126.5	122.8	121.6	119.1	117.8	116.6	114.1	110.4	107.9	105.4	103.0
60°	110.4	107.9	104.2	103.0	101.7	100.5	98.0	95.5	93.0	90.6	88.1
62.5°	94.3	91.8	89.3	86.8	85.6	84.4	83.1	80.6	78.2	75.7	73.2
65°	78.2	76.9	74.4	73.2	71.9	70.7	68.2	65.7	64.5	62.0	59.5
67.5°	64.5	63.3	60.8	59.5	58.3	58.3	54.6	53.3	50.9	49.6	47.1
70°	52.1	50.9	48.4	47.1	45.9	44.7	43.4	42.2	39.7	37.2	36.0
72.5°	40.9	38.5	37.2	36.0	34.7	34.7	32.3	31.0	28.5	27.3	24.8
75°	29.8	28.5	27.3	26.1	26.1	24.8	23.6	22.3	19.8	18.6	17.4
77.5°	21.1	19.8	18.6	17.4	17.4	16.1	14.9	13.6	12.4	11.2	9.9
80°	13.6	12.4	12.4	11.2	9.9	9.9	8.7	7.4	6.2	6.2	5.0
82.5°	7.4	7.4	6.2	6.2	5.0	5.0	3.7	3.7	2.5	2.5	1.2
85°	3.7	2.5	2.5	2.5	2.5	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5
2.5°	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	430.5	429.2	429.2
5°	426.7	426.7	428.0	426.7	428.0	428.0	426.7	426.7	428.0	429.2	428.0
7.5°	421.8	421.8	423.0	423.0	423.0	423.0	423.0	424.3	424.3	425.5	425.5
10°	416.8	416.8	416.8	416.8	418.0	418.0	419.3	419.3	419.3	419.3	419.3
12.5°	408.1	409.4	409.4	409.4	409.4	410.6	410.6	411.8	411.8	411.8	413.1
15°	398.2	399.4	400.7	400.7	399.4	400.7	401.9	401.9	403.2	403.2	403.2
17.5°	387.0	388.3	388.3	389.5	388.3	390.8	390.8	392.0	392.0	393.2	393.2
20°	374.6	375.9	375.9	375.9	377.1	377.1	378.4	378.4	379.6	379.6	379.6
22.5°	359.7	361.0	361.0	361.0	361.0	362.2	362.2	363.5	364.7	365.9	364.7
25°	346.1	347.3	348.6	347.3	348.6	348.6	348.6	349.8	349.8	351.1	349.8
27.5°	327.5	327.5	327.5	328.7	330.0	330.0	330.0	331.2	331.2	331.2	332.5
30°	305.2	303.9	305.2	305.2	305.2	305.2	307.6	307.6	307.6	308.9	310.1
32.5°	284.1	284.1	284.1	282.8	282.8	282.8	282.8	284.1	284.1	285.3	286.6
35°	264.2	263.0	260.5	260.5	260.5	259.3	258.0	258.0	259.3	259.3	259.3
37.5°	243.1	241.9	240.7	238.2	238.2	235.7	234.5	233.2	233.2	232.0	232.0
40°	223.3	220.8	218.3	218.3	215.8	214.6	212.1	210.9	208.4	205.9	205.9
42.5°	203.4	201.0	198.5	197.2	194.8	193.5	189.8	187.3	184.8	183.6	181.1
45°	184.8	182.4	178.6	177.4	174.9	172.4	169.9	166.2	162.5	160.0	158.8
47.5°	166.2	163.7	160.0	157.5	156.3	152.6	150.1	146.4	142.7	138.9	135.2
50°	148.9	145.1	141.4	138.9	137.7	134.0	131.5	127.8	122.8	121.6	117.8
52.5°	131.5	127.8	124.0	122.8	121.6	117.8	114.1	110.4	107.9	104.2	101.7
55°	114.1	111.6	107.9	106.7	105.4	101.7	98.0	95.5	93.0	89.3	86.8
57.5°	99.2	96.8	93.0	91.8	90.6	86.8	84.4	80.6	78.2	75.7	73.2
60°	85.6	81.9	79.4	78.2	76.9	73.2	70.7	68.2	65.7	63.3	59.5
62.5°	70.7	68.2	65.7	64.5	62.0	60.8	57.1	55.8	52.1	50.9	48.4
65°	57.1	54.6	52.1	52.1	50.9	47.1	45.9	43.4	40.9	38.5	37.2
67.5°	45.9	43.4	40.9	39.7	38.5	36.0	34.7	32.3	29.8	28.5	26.1
70°	34.7	32.3	29.8	28.5	27.3	26.1	23.6	21.1	18.6	17.4	14.9
72.5°	23.6	21.1	19.8	19.8	18.6	16.1	13.6	12.4	9.9	8.7	7.4
75°	14.9	12.4	11.2	9.9	9.9	8.7	6.2	5.0	3.7	2.5	1.2
77.5°	8.7	7.4	6.2	5.0	5.0	3.7	2.5	1.2	1.2	0.0	0.0
80°	3.7	2.5	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: P642339

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	430.5	430.5	430.5	430.5	430.5	430.5	430.5	430.5
2.5°	429.2	429.2	429.2	429.2	428.0	428.0	428.0	428.0
5°	428.0	428.0	428.0	428.0	426.7	426.7	428.0	426.7
7.5°	425.5	425.5	424.3	424.3	424.3	424.3	424.3	424.3
10°	420.5	420.5	420.5	419.3	420.5	420.5	419.3	420.5
12.5°	413.1	413.1	413.1	413.1	411.8	411.8	413.1	411.8
15°	404.4	404.4	404.4	404.4	404.4	403.2	404.4	404.4
17.5°	394.5	394.5	393.2	393.2	393.2	394.5	394.5	393.2
20°	380.8	380.8	380.8	380.8	380.8	380.8	380.8	380.8
22.5°	365.9	365.9	365.9	365.9	365.9	365.9	365.9	365.9
25°	351.1	351.1	351.1	351.1	351.1	351.1	351.1	352.3
27.5°	332.5	332.5	332.5	332.5	332.5	331.2	331.2	333.7
30°	310.1	311.4	311.4	311.4	311.4	311.4	311.4	312.6
32.5°	287.8	287.8	287.8	289.0	287.8	289.0	287.8	287.8
35°	261.7	261.7	261.7	261.7	261.7	263.0	263.0	263.0
37.5°	232.0	233.2	233.2	234.5	234.5	234.5	235.7	234.5
40°	204.7	204.7	204.7	203.4	204.7	203.4	204.7	204.7
42.5°	178.6	176.2	176.2	174.9	174.9	173.7	172.4	172.4
45°	155.1	151.3	151.3	150.1	148.9	146.4	145.1	145.1
47.5°	132.7	131.5	130.3	129.0	127.8	125.3	124.0	125.3
50°	114.1	112.9	111.6	111.6	110.4	109.2	107.9	107.9
52.5°	99.2	96.8	95.5	95.5	94.3	93.0	93.0	93.0
55°	84.4	81.9	81.9	81.9	80.6	79.4	79.4	78.2
57.5°	70.7	68.2	68.2	67.0	65.7	65.7	65.7	64.5
60°	58.3	55.8	54.6	54.6	53.3	52.1	52.1	52.1
62.5°	45.9	44.7	42.2	42.2	40.9	39.7	38.5	39.7
65°	34.7	32.3	31.0	31.0	29.8	28.5	27.3	27.3
67.5°	23.6	22.3	21.1	21.1	18.6	18.6	17.4	17.4
70°	13.6	12.4	12.4	11.2	9.9	9.9	8.7	8.7
72.5°	6.2	5.0	5.0	3.7	3.7	2.5	2.5	2.5
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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Peachtree City, GA 30269

Scaled Data Report



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

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