

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: P642337

Luminaire Tested: ML5612LSWW97FS1E - 692SC WW - 900LM - 3000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642337
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 - 3000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 744.1 lumens
Efficiency: N/A
Efficacy: 55.9 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

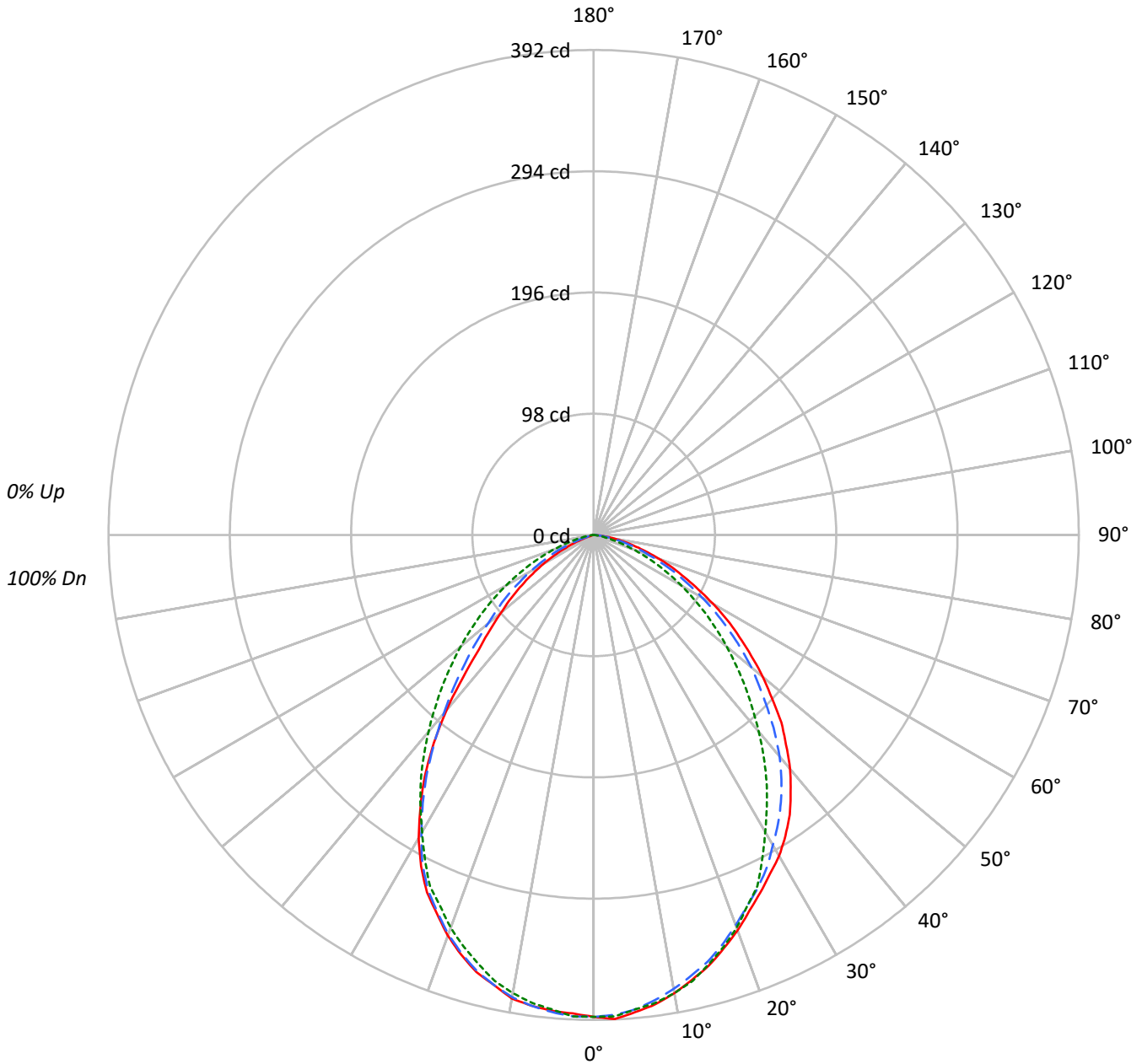
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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					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	100	100	100	100		
	1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88	88	88	88	88		
	2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77	77	77	77	77	77		
	3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67	67	67	67	67	67		
	4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61	59	59	59	59	59	59		
	5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52		
	6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	46	46	46	46	46	46		
	7	70	58	50	45	69	57	50	44	56	49	44	55	48	44	53	48	44	42	42	42	42	42	42		
	8	66	53	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38	38	38	38	38	38		
	9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34	34	34	34	34		
	10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32	32	32	32	32	32		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	21352	21352	21352	21352	21352
5°	21307	21186	21186	21307	21247
10°	20930	20741	20930	21120	21181
15°	20448	20256	20386	20704	20766
20°	19841	19578	19707	20033	20103
25°	19283	19011	18939	19144	19283
30°	18971	18332	17547	17617	17901
35°	18477	17654	16302	15700	15921
40°	17669	16710	14856	13497	13253
45°	16622	15405	13397	11397	10179
50°	15223	14166	11965	9475	8324
55°	13734	12654	10513	8048	6757
60°	12181	11074	8980	6524	5164
65°	10481	9469	7277	4799	3204
70°	8992	7742	5402	2693	1266
75°	7138	5952	3558	720	0
80°	5304	4262	1768	0	0
85°	2830	2139	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16622 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.5	4.9
10°-20°	101.4	13.6
20°-30°	144.4	19.4
30°-40°	155.3	20.9
40°-50°	133.9	18.0
50°-60°	97.0	13.0
60°-70°	54.7	7.4
70°-80°	18.6	2.5
80°-90°	2.4	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°	282.3	37.9
0°-40°	437.6	58.8
0°-60°	668.4	89.8
0°-90°	744.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	744.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	390	390	390	390	390	
5°	387	385	385	387	386	37
15°	360	357	359	365	366	101
25°	319	314	313	316	319	147
35°	276	264	244	235	238	172
45°	214	199	173	147	131	164
55°	144	132	110	84	71	129
65°	81	73	56	37	25	81
75°	34	28	17	3	0	37
85°	4	3	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°	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5
2.5°	391.7	388.3	387.2	388.3	388.3	388.3	388.3	388.3	388.3	387.2	388.3
5°	387.2	383.9	383.9	383.9	383.9	383.9	382.7	383.9	383.9	383.9	385.0
7.5°	382.7	378.2	379.4	378.2	379.4	378.2	378.2	379.4	378.2	379.4	379.4
10°	376.0	372.6	372.6	372.6	372.6	372.6	372.6	372.6	372.6	372.6	372.6
12.5°	368.1	364.8	364.8	364.8	364.8	364.8	364.8	364.8	365.9	364.8	364.8
15°	360.3	355.8	356.9	355.8	355.8	355.8	355.8	355.8	355.8	355.8	356.9
17.5°	350.2	346.8	346.8	346.8	346.8	346.8	346.8	345.7	346.8	346.8	346.8
20°	340.1	336.7	336.7	335.6	336.7	335.6	335.6	335.6	336.7	335.6	335.6
22.5°	328.9	325.5	326.6	325.5	325.5	325.5	325.5	325.5	324.4	325.5	324.4
25°	318.8	317.6	316.5	317.6	316.5	316.5	316.5	315.4	315.4	315.4	314.3
27.5°	308.7	306.4	306.4	306.4	306.4	305.3	305.3	305.3	304.2	303.0	303.0
30°	299.7	296.3	296.3	296.3	295.2	295.2	294.1	294.1	291.8	290.7	289.6
32.5°	288.4	286.2	285.1	285.1	284.0	284.0	282.8	282.8	280.6	279.5	277.2
35°	276.1	275.0	275.0	273.9	272.7	271.6	270.5	269.4	268.2	266.0	263.8
37.5°	261.5	260.4	259.3	259.3	258.1	257.0	257.0	254.8	253.7	251.4	249.2
40°	246.9	244.7	244.7	243.6	242.4	241.3	241.3	239.1	237.9	235.7	233.5
42.5°	230.1	227.8	227.8	226.7	226.7	226.7	225.6	223.4	221.1	218.9	216.6
45°	214.4	212.1	212.1	209.9	209.9	208.8	207.6	206.5	204.3	202.0	198.7
47.5°	195.3	194.2	194.2	193.0	191.9	190.8	190.8	189.7	187.4	184.1	181.8
50°	178.5	177.3	177.3	176.2	175.1	174.0	172.8	171.7	170.6	168.4	166.1
52.5°	160.5	160.5	159.4	158.3	158.3	157.1	156.0	154.9	152.6	150.4	149.3
55°	143.7	142.5	142.5	141.4	141.4	140.3	139.2	138.1	136.9	134.7	132.4
57.5°	128.0	125.7	125.7	124.6	124.6	124.6	123.5	121.2	120.1	117.8	116.7
60°	111.1	110.0	110.0	110.0	108.9	107.7	107.7	105.5	104.4	103.3	101.0
62.5°	95.4	94.3	94.3	94.3	93.2	93.2	92.0	90.9	89.8	88.7	86.4
65°	80.8	80.8	80.8	79.7	79.7	78.6	77.4	77.4	76.3	75.2	73.0
67.5°	68.5	67.3	67.3	67.3	66.2	66.2	65.1	64.0	62.9	61.7	59.5
70°	56.1	55.0	55.0	53.9	53.9	53.9	53.9	52.8	50.5	50.5	48.3
72.5°	43.8	43.8	43.8	42.7	42.7	42.7	41.5	41.5	40.4	39.3	38.2
75°	33.7	33.7	33.7	32.5	32.5	32.5	31.4	31.4	30.3	29.2	28.1
77.5°	24.7	24.7	24.7	23.6	23.6	23.6	22.4	22.4	21.3	21.3	20.2
80°	16.8	16.8	16.8	15.7	15.7	15.7	15.7	14.6	14.6	13.5	13.5
82.5°	10.1	10.1	10.1	10.1	9.0	9.0	9.0	9.0	9.0	7.9	7.9
85°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.4	3.4
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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°	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5
2.5°	388.3	388.3	388.3	388.3	388.3	388.3	388.3	388.3	388.3	389.5	388.3
5°	385.0	385.0	385.0	385.0	385.0	385.0	386.1	385.0	386.1	385.0	386.1
7.5°	379.4	379.4	380.5	380.5	379.4	380.5	380.5	380.5	380.5	381.6	381.6
10°	372.6	373.7	373.7	374.9	374.9	374.9	374.9	376.0	376.0	376.0	376.0
12.5°	365.9	365.9	365.9	365.9	367.0	365.9	367.0	367.0	368.1	369.3	368.1
15°	355.8	356.9	356.9	356.9	356.9	356.9	358.0	359.2	359.2	359.2	360.3
17.5°	346.8	346.8	346.8	347.9	346.8	347.9	347.9	347.9	349.1	349.1	350.2
20°	335.6	334.5	336.7	335.6	335.6	336.7	336.7	336.7	337.8	337.8	337.8
22.5°	323.2	324.4	323.2	323.2	324.4	324.4	324.4	323.2	324.4	324.4	325.5
25°	313.1	313.1	313.1	313.1	313.1	313.1	313.1	312.0	313.1	313.1	313.1
27.5°	301.9	299.7	299.7	298.6	298.6	297.4	296.3	296.3	296.3	295.2	296.3
30°	288.4	286.2	285.1	284.0	282.8	282.8	280.6	279.5	278.3	277.2	276.1
32.5°	275.0	272.7	271.6	270.5	268.2	267.1	264.9	263.8	262.6	260.4	258.1
35°	262.6	259.3	257.0	254.8	253.7	252.5	250.3	248.0	245.8	243.6	241.3
37.5°	245.8	243.6	241.3	239.1	237.9	236.8	234.6	230.1	227.8	225.6	223.4
40°	231.2	227.8	225.6	222.2	221.1	218.9	216.6	213.3	209.9	207.6	205.4
42.5°	213.3	211.0	208.8	205.4	204.3	202.0	198.7	196.4	194.2	189.7	187.4
45°	196.4	194.2	191.9	188.6	186.3	185.2	182.9	179.6	176.2	172.8	170.6
47.5°	179.6	177.3	174.0	171.7	169.5	168.4	166.1	162.7	159.4	156.0	153.8
50°	162.7	160.5	158.3	153.8	153.8	151.5	149.3	145.9	143.7	140.3	136.9
52.5°	147.0	143.7	141.4	138.1	138.1	136.9	133.6	130.2	128.0	124.6	122.3
55°	130.2	128.0	125.7	123.5	121.2	120.1	119.0	115.6	112.2	110.0	106.6
57.5°	114.5	111.1	110.0	107.7	106.6	105.5	103.3	99.9	97.6	95.4	93.2
60°	99.9	97.6	94.3	93.2	92.0	90.9	88.7	86.4	84.2	81.9	79.7
62.5°	85.3	83.1	80.8	78.6	77.4	76.3	75.2	73.0	70.7	68.5	66.2
65°	70.7	69.6	67.3	66.2	65.1	64.0	61.7	59.5	58.4	56.1	53.9
67.5°	58.4	57.2	55.0	53.9	52.8	52.8	49.4	48.3	46.0	44.9	42.7
70°	47.1	46.0	43.8	42.7	41.5	40.4	39.3	38.2	35.9	33.7	32.5
72.5°	37.0	34.8	33.7	32.5	31.4	31.4	29.2	28.1	25.8	24.7	22.4
75°	26.9	25.8	24.7	23.6	23.6	22.4	21.3	20.2	18.0	16.8	15.7
77.5°	19.1	18.0	16.8	15.7	15.7	14.6	13.5	12.3	11.2	10.1	9.0
80°	12.3	11.2	11.2	10.1	9.0	9.0	7.9	6.7	5.6	5.6	4.5
82.5°	6.7	6.7	5.6	5.6	4.5	4.5	3.4	3.4	2.2	2.2	1.1
85°	3.4	2.2	2.2	2.2	2.2	1.1	1.1	1.1	0.0	0.0	0.0
87.5°	1.1	1.1	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°	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5
2.5°	388.3	388.3	388.3	388.3	388.3	388.3	388.3	388.3	389.5	388.3	388.3
5°	386.1	386.1	387.2	386.1	387.2	387.2	386.1	386.1	387.2	388.3	387.2
7.5°	381.6	381.6	382.7	382.7	382.7	382.7	382.7	383.9	383.9	385.0	385.0
10°	377.1	377.1	377.1	377.1	378.2	378.2	379.4	379.4	379.4	379.4	379.4
12.5°	369.3	370.4	370.4	370.4	370.4	371.5	371.5	372.6	372.6	372.6	373.7
15°	360.3	361.4	362.5	362.5	361.4	362.5	363.6	363.6	364.8	364.8	364.8
17.5°	350.2	351.3	351.3	352.4	351.3	353.5	353.5	354.7	354.7	355.8	355.8
20°	339.0	340.1	340.1	340.1	341.2	341.2	342.3	342.3	343.4	343.4	343.4
22.5°	325.5	326.6	326.6	326.6	326.6	327.7	327.7	328.9	330.0	331.1	330.0
25°	313.1	314.3	315.4	314.3	315.4	315.4	315.4	316.5	316.5	317.6	316.5
27.5°	296.3	296.3	296.3	297.4	298.6	298.6	298.6	299.7	299.7	299.7	300.8
30°	276.1	275.0	276.1	276.1	276.1	276.1	278.3	278.3	278.3	279.5	280.6
32.5°	257.0	257.0	257.0	255.9	255.9	255.9	255.9	257.0	257.0	258.1	259.3
35°	239.1	237.9	235.7	235.7	235.7	234.6	233.5	233.5	234.6	234.6	234.6
37.5°	220.0	218.9	217.7	215.5	215.5	213.3	212.1	211.0	211.0	209.9	209.9
40°	202.0	199.8	197.5	197.5	195.3	194.2	191.9	190.8	188.6	186.3	186.3
42.5°	184.1	181.8	179.6	178.5	176.2	175.1	171.7	169.5	167.2	166.1	163.9
45°	167.2	165.0	161.6	160.5	158.3	156.0	153.8	150.4	147.0	144.8	143.7
47.5°	150.4	148.2	144.8	142.5	141.4	138.1	135.8	132.4	129.1	125.7	122.3
50°	134.7	131.3	128.0	125.7	124.6	121.2	119.0	115.6	111.1	110.0	106.6
52.5°	119.0	115.6	112.2	111.1	110.0	106.6	103.3	99.9	97.6	94.3	92.0
55°	103.3	101.0	97.6	96.5	95.4	92.0	88.7	86.4	84.2	80.8	78.6
57.5°	89.8	87.5	84.2	83.1	81.9	78.6	76.3	73.0	70.7	68.5	66.2
60°	77.4	74.1	71.8	70.7	69.6	66.2	64.0	61.7	59.5	57.2	53.9
62.5°	64.0	61.7	59.5	58.4	56.1	55.0	51.6	50.5	47.1	46.0	43.8
65°	51.6	49.4	47.1	47.1	46.0	42.7	41.5	39.3	37.0	34.8	33.7
67.5°	41.5	39.3	37.0	35.9	34.8	32.5	31.4	29.2	26.9	25.8	23.6
70°	31.4	29.2	26.9	25.8	24.7	23.6	21.3	19.1	16.8	15.7	13.5
72.5°	21.3	19.1	18.0	18.0	16.8	14.6	12.3	11.2	9.0	7.9	6.7
75°	13.5	11.2	10.1	9.0	9.0	7.9	5.6	4.5	3.4	2.2	1.1
77.5°	7.9	6.7	5.6	4.5	4.5	3.4	2.2	1.1	1.1	0.0	0.0
80°	3.4	2.2	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	1.1	1.1	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: P642337

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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5
2.5°	388.3	388.3	388.3	388.3	387.2	387.2	387.2	387.2
5°	387.2	387.2	387.2	387.2	386.1	386.1	387.2	386.1
7.5°	385.0	385.0	383.9	383.9	383.9	383.9	383.9	383.9
10°	380.5	380.5	380.5	379.4	380.5	380.5	379.4	380.5
12.5°	373.7	373.7	373.7	373.7	372.6	372.6	373.7	372.6
15°	365.9	365.9	365.9	365.9	365.9	364.8	365.9	365.9
17.5°	356.9	356.9	355.8	355.8	355.8	356.9	356.9	355.8
20°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
22.5°	331.1	331.1	331.1	331.1	331.1	331.1	331.1	331.1
25°	317.6	317.6	317.6	317.6	317.6	317.6	317.6	318.8
27.5°	300.8	300.8	300.8	300.8	300.8	299.7	299.7	301.9
30°	280.6	281.7	281.7	281.7	281.7	281.7	281.7	282.8
32.5°	260.4	260.4	260.4	261.5	260.4	261.5	260.4	260.4
35°	236.8	236.8	236.8	236.8	236.8	237.9	237.9	237.9
37.5°	209.9	211.0	211.0	212.1	212.1	212.1	213.3	212.1
40°	185.2	185.2	185.2	184.1	185.2	184.1	185.2	185.2
42.5°	161.6	159.4	159.4	158.3	158.3	157.1	156.0	156.0
45°	140.3	136.9	136.9	135.8	134.7	132.4	131.3	131.3
47.5°	120.1	119.0	117.8	116.7	115.6	113.4	112.2	113.4
50°	103.3	102.1	101.0	101.0	99.9	98.8	97.6	97.6
52.5°	89.8	87.5	86.4	86.4	85.3	84.2	84.2	84.2
55°	76.3	74.1	74.1	74.1	73.0	71.8	71.8	70.7
57.5°	64.0	61.7	61.7	60.6	59.5	59.5	59.5	58.4
60°	52.8	50.5	49.4	49.4	48.3	47.1	47.1	47.1
62.5°	41.5	40.4	38.2	38.2	37.0	35.9	34.8	35.9
65°	31.4	29.2	28.1	28.1	26.9	25.8	24.7	24.7
67.5°	21.3	20.2	19.1	19.1	16.8	16.8	15.7	15.7
70°	12.3	11.2	11.2	10.1	9.0	9.0	7.9	7.9
72.5°	5.6	4.5	4.5	3.4	3.4	2.2	2.2	2.2
75°	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	1.1	1.1	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)