

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: P644162

Luminaire Tested: ML5615LSWW9FS1E - 692W WW - 1500LM - 3000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644162
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: ML5615LSWW9FS1E - 692W WW - 1500LM - 3000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

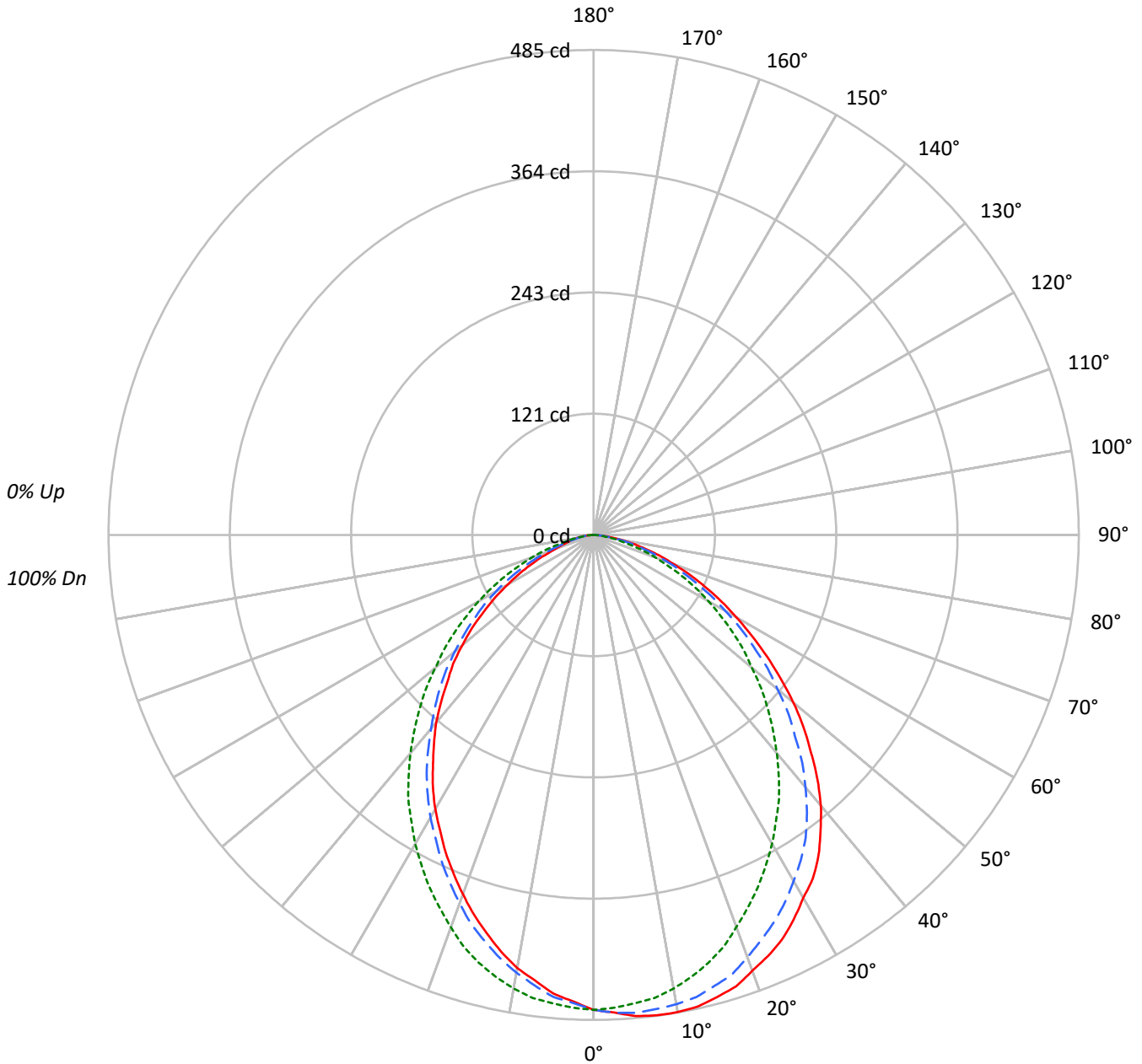
Lumens per Lamp: N/A
Luminaire Lumens: 1048.6 lumens
Efficiency: N/A
Efficacy: 61.3 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.25
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 17.1
Input Voltage (V): NR
Input Current (Ain): 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				
RW	70	50	30	10	70	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°	26040	26040	26040	26040	26040
5°	26579	26403	25875	25523	25347
10°	26976	26530	25640	24749	24482
15°	27140	26504	25142	23871	23417
20°	27057	26217	24350	22863	22303
25°	26989	25828	23511	21769	21189
30°	26523	25308	22579	20655	20047
35°	26227	24728	21623	19481	18732
40°	25297	23580	20374	18084	17511
45°	23809	22072	19095	16862	15994
50°	22234	20460	17594	15411	14592
55°	20176	18647	16200	13906	12836
60°	18058	16654	14549	12280	10876
65°	15981	14528	12660	10377	8717
70°	13592	12566	10515	7950	6411
75°	11184	10167	7795	5422	5422
80°	8587	7577	5556	4546	5051
85°	6038	5032	4026	4026	4026

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 23809 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.6	4.3
10°-20°	125.0	11.9
20°-30°	180.9	17.3
30°-40°	205.5	19.6
40°-50°	193.9	18.5
50°-60°	152.9	14.6
60°-70°	95.8	9.1
70°-80°	41.4	3.9
80°-90°	8.5	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°	350.5	33.4
0°-40°	556.0	53.0
0°-60°	902.9	86.1
0°-90°	1048.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1048.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	475	475	475	475	475	
5°	483	480	470	464	461	46
15°	478	467	443	421	413	135
25°	446	427	389	360	350	205
35°	392	370	323	291	280	244
45°	307	285	246	218	206	237
55°	211	195	170	146	134	189
65°	123	112	98	80	67	123
75°	53	48	37	26	26	57
85°	10	8	6	6	6	12
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°	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0
2.5°	478.2	478.2	479.8	479.8	478.2	478.2	478.2	478.2	478.2	478.2	478.2
5°	483.0	483.0	483.0	483.0	481.4	481.4	481.4	481.4	481.4	479.8	479.8
7.5°	484.6	484.6	484.6	484.6	483.0	483.0	481.4	481.4	481.4	479.8	478.2
10°	484.6	484.6	484.6	483.0	483.0	481.4	483.0	481.4	479.8	478.2	476.6
12.5°	483.0	481.4	481.4	481.4	479.8	479.8	479.8	478.2	476.6	475.0	473.4
15°	478.2	478.2	478.2	476.6	476.6	475.0	475.0	473.4	471.8	468.6	467.0
17.5°	473.4	473.4	471.8	471.8	470.2	468.6	468.6	467.0	465.4	462.2	460.6
20°	463.8	463.8	463.8	462.2	460.6	460.6	459.0	457.4	454.2	451.0	449.4
22.5°	455.8	454.2	454.2	452.6	451.0	451.0	449.4	446.2	444.6	441.4	438.2
25°	446.2	444.6	444.6	443.0	441.4	439.8	439.8	436.6	433.4	430.2	427.0
27.5°	433.4	433.4	431.8	430.2	428.6	428.6	427.0	425.4	420.6	417.4	414.2
30°	419.0	420.6	419.0	417.4	415.8	415.8	414.2	411.0	407.8	403.0	399.8
32.5°	407.8	407.8	406.2	404.6	401.4	401.4	401.4	396.6	393.4	390.3	385.5
35°	391.9	391.9	391.9	388.7	387.1	385.5	383.9	380.7	377.5	374.3	369.5
37.5°	372.7	374.3	372.7	371.1	369.5	367.9	366.3	363.1	358.3	355.1	350.3
40°	353.5	353.5	351.9	350.3	348.7	347.1	345.5	342.3	339.1	334.3	329.5
42.5°	331.1	331.1	329.5	327.9	326.3	324.7	324.7	321.5	316.7	313.5	308.7
45°	307.1	307.1	307.1	305.5	303.9	302.3	300.7	299.1	295.9	291.1	284.7
47.5°	284.7	284.7	284.7	281.5	281.5	278.3	276.7	273.5	271.9	267.1	263.9
50°	260.7	259.1	259.1	257.5	255.9	254.3	254.3	249.5	247.9	244.7	239.9
52.5°	235.1	235.1	235.1	233.5	231.9	230.3	230.3	227.1	223.9	220.7	219.1
55°	211.1	211.1	211.1	209.5	207.9	207.9	206.3	203.1	201.5	198.3	195.1
57.5°	187.1	188.7	187.1	185.5	185.5	183.9	183.9	182.3	179.1	175.9	174.3
60°	164.7	164.7	164.7	163.1	161.5	161.5	161.5	159.9	156.7	155.1	151.9
62.5°	143.9	143.9	142.3	142.3	140.7	140.7	139.1	137.5	135.9	134.3	132.7
65°	123.2	121.6	121.6	121.6	120.0	120.0	120.0	118.4	115.2	113.6	112.0
67.5°	104.0	104.0	102.4	102.4	100.8	100.8	100.8	99.2	97.6	96.0	94.4
70°	84.8	84.8	84.8	84.8	83.2	83.2	83.2	81.6	80.0	80.0	78.4
72.5°	68.8	68.8	68.8	68.8	67.2	67.2	67.2	65.6	64.0	62.4	62.4
75°	52.8	54.4	52.8	52.8	52.8	52.8	51.2	51.2	49.6	48.0	48.0
77.5°	40.0	40.0	40.0	40.0	38.4	38.4	38.4	38.4	36.8	35.2	35.2
80°	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	25.6	25.6	24.0
82.5°	16.0	17.6	17.6	17.6	16.0	16.0	16.0	16.0	16.0	16.0	14.4
85°	9.6	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
87.5°	3.2	3.2	3.2	3.2	3.2	1.6	1.6	1.6	1.6	1.6	1.6
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°	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0
2.5°	476.6	476.6	476.6	476.6	475.0	475.0	475.0	473.4	473.4	473.4	473.4
5°	478.2	476.6	476.6	475.0	475.0	475.0	473.4	473.4	471.8	470.2	470.2
7.5°	476.6	476.6	475.0	473.4	473.4	471.8	470.2	468.6	467.0	467.0	463.8
10°	475.0	473.4	471.8	470.2	468.6	468.6	465.4	463.8	462.2	460.6	459.0
12.5°	470.2	468.6	467.0	463.8	463.8	462.2	459.0	457.4	454.2	452.6	449.4
15°	463.8	462.2	460.6	457.4	455.8	454.2	451.0	447.8	444.6	443.0	439.8
17.5°	457.4	454.2	451.0	447.8	446.2	444.6	441.4	438.2	435.0	431.8	428.6
20°	446.2	443.0	439.8	435.0	433.4	431.8	427.0	423.8	420.6	417.4	414.2
22.5°	435.0	431.8	427.0	423.8	422.2	419.0	415.8	411.0	407.8	403.0	399.8
25°	423.8	419.0	414.2	411.0	407.8	406.2	401.4	398.2	391.9	388.7	385.5
27.5°	409.4	406.2	401.4	396.6	393.4	390.3	387.1	382.3	377.5	372.7	369.5
30°	395.0	390.3	385.5	382.3	377.5	375.9	371.1	366.3	361.5	356.7	353.5
32.5°	380.7	375.9	371.1	366.3	363.1	359.9	355.1	350.3	343.9	339.1	335.9
35°	364.7	359.9	353.5	348.7	345.5	342.3	337.5	332.7	327.9	323.1	318.3
37.5°	345.5	339.1	335.9	331.1	326.3	323.1	318.3	311.9	308.7	303.9	299.1
40°	324.7	319.9	315.1	310.3	305.5	303.9	297.5	292.7	289.5	284.7	279.9
42.5°	303.9	299.1	292.7	287.9	284.7	283.1	278.3	273.5	268.7	265.5	260.7
45°	281.5	276.7	271.9	267.1	263.9	262.3	257.5	254.3	249.5	246.3	241.5
47.5°	259.1	254.3	251.1	246.3	243.1	241.5	238.3	233.5	228.7	227.1	223.9
50°	236.7	231.9	228.7	223.9	222.3	220.7	217.5	214.3	211.1	206.3	204.7
52.5°	214.3	209.5	206.3	203.1	203.1	199.9	196.7	195.1	191.9	188.7	185.5
55°	191.9	190.3	187.1	182.3	182.3	180.7	177.5	174.3	171.1	169.5	166.3
57.5°	169.5	167.9	164.7	163.1	161.5	159.9	158.3	155.1	153.5	150.3	148.7
60°	150.3	148.7	145.5	143.9	142.3	140.7	139.1	135.9	134.3	132.7	131.1
62.5°	129.6	128.0	126.4	124.8	123.2	121.6	121.6	118.4	116.8	115.2	113.6
65°	112.0	108.8	107.2	105.6	105.6	104.0	102.4	100.8	99.2	97.6	96.0
67.5°	92.8	91.2	91.2	88.0	88.0	86.4	84.8	84.8	81.6	80.0	78.4
70°	76.8	75.2	73.6	72.0	72.0	70.4	68.8	67.2	65.6	65.6	64.0
72.5°	60.8	59.2	59.2	57.6	56.0	56.0	54.4	52.8	51.2	51.2	49.6
75°	46.4	44.8	44.8	43.2	43.2	41.6	40.0	40.0	38.4	36.8	35.2
77.5°	33.6	33.6	32.0	32.0	30.4	30.4	28.8	28.8	27.2	25.6	25.6
80°	24.0	22.4	22.4	20.8	20.8	20.8	19.2	19.2	17.6	17.6	16.0
82.5°	14.4	14.4	12.8	12.8	12.8	12.8	11.2	11.2	11.2	9.6	9.6
85°	8.0	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	4.8
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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°	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0
2.5°	471.8	471.8	470.2	471.8	470.2	470.2	470.2	470.2	468.6	468.6	468.6
5°	468.6	467.0	467.0	465.4	467.0	465.4	463.8	463.8	463.8	463.8	462.2
7.5°	462.2	462.2	460.6	459.0	459.0	457.4	455.8	455.8	454.2	454.2	452.6
10°	457.4	454.2	452.6	451.0	451.0	449.4	447.8	446.2	444.6	443.0	443.0
12.5°	446.2	444.6	443.0	441.4	441.4	438.2	436.6	435.0	433.4	431.8	430.2
15°	438.2	435.0	431.8	430.2	430.2	427.0	425.4	423.8	420.6	420.6	417.4
17.5°	425.4	422.2	419.0	417.4	415.8	414.2	412.6	409.4	407.8	404.6	404.6
20°	409.4	407.8	403.0	401.4	399.8	398.2	395.0	393.4	391.9	388.7	387.1
22.5°	396.6	391.9	388.7	387.1	387.1	382.3	380.7	377.5	375.9	374.3	371.1
25°	380.7	377.5	374.3	371.1	371.1	367.9	366.3	363.1	359.9	358.3	356.7
27.5°	364.7	361.5	356.7	355.1	353.5	351.9	348.7	345.5	342.3	340.7	339.1
30°	347.1	343.9	340.7	339.1	335.9	332.7	329.5	327.9	326.3	323.1	321.5
32.5°	331.1	326.3	323.1	319.9	319.9	315.1	313.5	310.3	308.7	307.1	303.9
35°	313.5	308.7	305.5	303.9	302.3	297.5	294.3	291.1	291.1	287.9	286.3
37.5°	294.3	289.5	287.9	284.7	283.1	279.9	276.7	275.1	271.9	268.7	268.7
40°	276.7	271.9	267.1	267.1	263.9	262.3	257.5	255.9	252.7	251.1	249.5
42.5°	257.5	252.7	249.5	247.9	246.3	243.1	239.9	236.7	235.1	233.5	231.9
45°	236.7	233.5	231.9	228.7	227.1	223.9	222.3	219.1	217.5	214.3	212.7
47.5°	219.1	215.9	212.7	211.1	209.5	206.3	204.7	201.5	199.9	196.7	195.1
50°	201.5	198.3	195.1	193.5	191.9	188.7	185.5	183.9	180.7	179.1	175.9
52.5°	182.3	179.1	175.9	175.9	174.3	171.1	169.5	166.3	163.1	159.9	158.3
55°	164.7	161.5	158.3	156.7	156.7	153.5	150.3	148.7	145.5	143.9	140.7
57.5°	145.5	142.3	140.7	139.1	139.1	135.9	134.3	131.1	129.6	126.4	124.8
60°	128.0	126.4	123.2	123.2	121.6	118.4	116.8	113.6	112.0	110.4	108.8
62.5°	110.4	108.8	105.6	105.6	104.0	102.4	100.8	97.6	96.0	92.8	91.2
65°	92.8	91.2	89.6	88.0	88.0	84.8	83.2	81.6	80.0	78.4	76.8
67.5°	76.8	75.2	73.6	73.6	72.0	70.4	67.2	65.6	64.0	62.4	60.8
70°	62.4	59.2	57.6	57.6	56.0	54.4	52.8	51.2	49.6	48.0	46.4
72.5°	48.0	44.8	44.8	43.2	41.6	40.0	40.0	38.4	36.8	36.8	33.6
75°	35.2	33.6	32.0	32.0	30.4	28.8	27.2	27.2	25.6	25.6	25.6
77.5°	24.0	22.4	22.4	20.8	20.8	20.8	19.2	19.2	19.2	19.2	20.8
80°	16.0	16.0	14.4	14.4	14.4	14.4	14.4	14.4	14.4	16.0	16.0
82.5°	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	11.2
85°	4.8	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
87.5°	1.6	1.6	3.2	1.6	3.2	1.6	3.2	3.2	3.2	3.2	3.2
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	475.0	475.0	475.0	475.0	475.0	475.0	475.0	475.0
2.5°	467.0	468.6	468.6	467.0	468.6	467.0	467.0	467.0
5°	462.2	460.6	460.6	460.6	459.0	460.6	460.6	460.6
7.5°	452.6	452.6	451.0	451.0	449.4	449.4	451.0	449.4
10°	441.4	439.8	441.4	439.8	439.8	439.8	438.2	439.8
12.5°	430.2	428.6	428.6	427.0	427.0	427.0	427.0	427.0
15°	417.4	415.8	415.8	414.2	414.2	412.6	414.2	412.6
17.5°	403.0	403.0	399.8	399.8	399.8	399.8	399.8	398.2
20°	385.5	385.5	383.9	385.5	382.3	382.3	382.3	382.3
22.5°	371.1	369.5	367.9	367.9	367.9	366.3	366.3	366.3
25°	353.5	353.5	351.9	351.9	350.3	350.3	350.3	350.3
27.5°	337.5	335.9	335.9	335.9	334.3	332.7	332.7	332.7
30°	319.9	319.9	318.3	318.3	316.7	316.7	316.7	316.7
32.5°	302.3	302.3	300.7	299.1	299.1	299.1	297.5	299.1
35°	284.7	283.1	283.1	281.5	281.5	281.5	279.9	279.9
37.5°	267.1	265.5	263.9	265.5	263.9	262.3	262.3	262.3
40°	247.9	246.3	246.3	244.7	244.7	244.7	243.1	244.7
42.5°	230.3	230.3	228.7	227.1	227.1	227.1	225.5	225.5
45°	212.7	209.5	211.1	209.5	209.5	207.9	207.9	206.3
47.5°	193.5	191.9	191.9	191.9	190.3	190.3	190.3	190.3
50°	174.3	172.7	174.3	172.7	172.7	171.1	171.1	171.1
52.5°	156.7	155.1	155.1	155.1	155.1	153.5	153.5	153.5
55°	139.1	137.5	137.5	137.5	135.9	135.9	134.3	134.3
57.5°	123.2	121.6	120.0	118.4	118.4	118.4	116.8	116.8
60°	105.6	104.0	102.4	102.4	100.8	100.8	100.8	99.2
62.5°	89.6	88.0	86.4	86.4	84.8	83.2	83.2	83.2
65°	73.6	72.0	72.0	70.4	68.8	68.8	67.2	67.2
67.5°	59.2	57.6	57.6	56.0	54.4	52.8	52.8	52.8
70°	46.4	44.8	43.2	43.2	43.2	41.6	40.0	40.0
72.5°	33.6	32.0	32.0	32.0	32.0	32.0	32.0	32.0
75°	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
77.5°	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
80°	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
82.5°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
85°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
87.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	1.6
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)