

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: P642327

Luminaire Tested: ML5612LSWW97FS1E - 692SC WW - 1200LM - 3000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642327
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 - 1200LM - 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: 900.8 lumens
Efficiency: N/A
Efficacy: 54.6 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

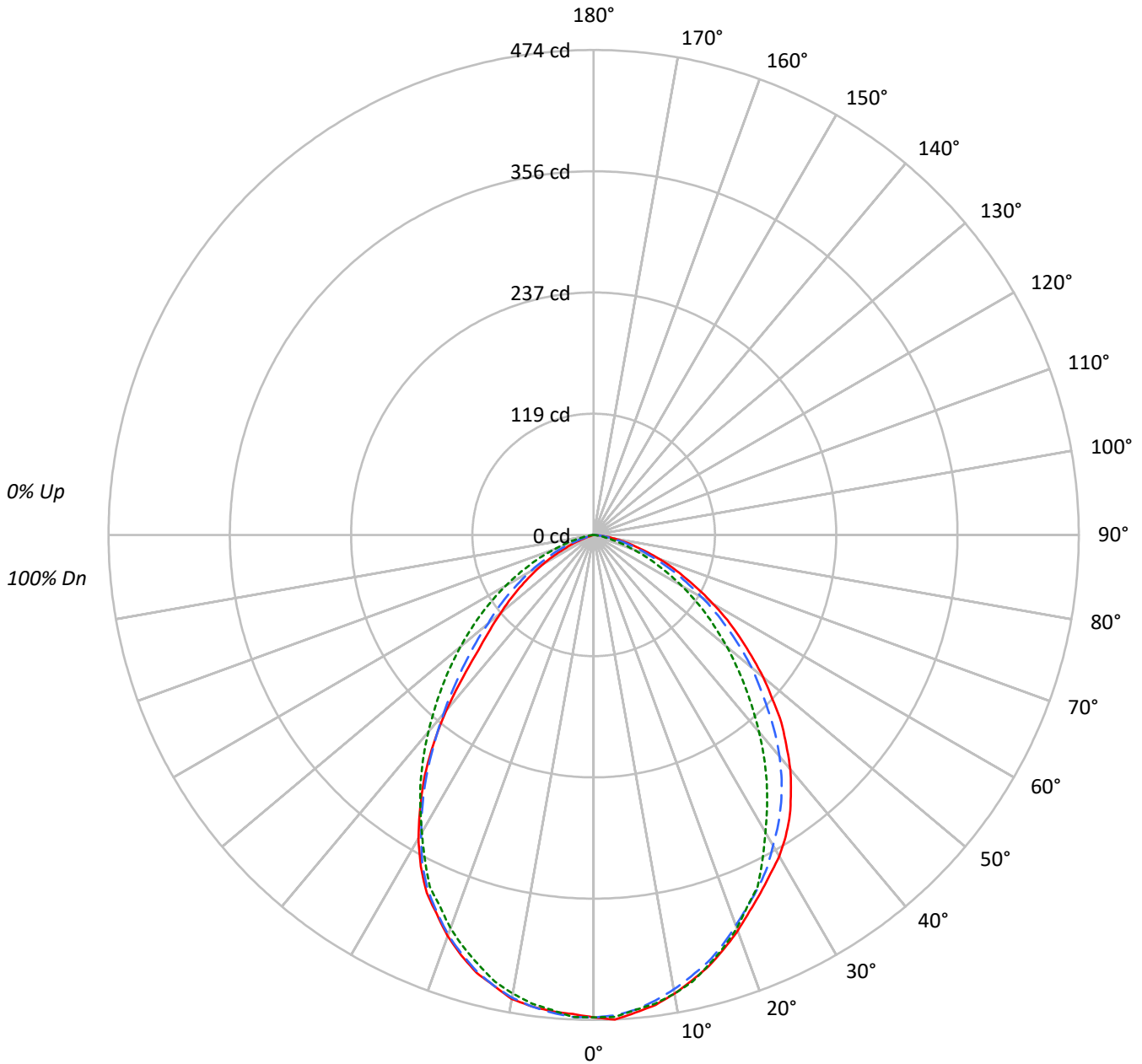
Input Watts (W): 16.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	25848	25848	25848	25848	25848
5°	25792	25644	25644	25792	25721
10°	25339	25111	25339	25562	25640
15°	24750	24523	24677	25063	25136
20°	24018	23697	23860	24257	24333
25°	23342	23009	22931	23179	23342
30°	22966	22187	21244	21332	21674
35°	22366	21369	19729	19006	19274
40°	21390	20224	17991	16338	16044
45°	20118	18645	16219	13800	12327
50°	18422	17151	14481	11471	10081
55°	16621	15321	12731	9739	8181
60°	14747	13409	10876	7894	6260
65°	12686	11454	8808	5811	3878
70°	10883	9361	6540	3270	1523
75°	8642	7202	4321	868	0
80°	6440	5146	2147	0	0
85°	3397	2579	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 20118 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.2	4.9
10°-20°	122.7	13.6
20°-30°	174.8	19.4
30°-40°	188.0	20.9
40°-50°	162.0	18.0
50°-60°	117.4	13.0
60°-70°	66.2	7.4
70°-80°	22.5	2.5
80°-90°	2.9	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°	341.7	37.9
0°-40°	529.7	58.8
0°-60°	809.2	89.8
0°-90°	900.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	900.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	472	472	472	472	472	
5°	469	466	466	469	467	44
15°	436	432	435	442	443	123
25°	386	380	379	383	386	178
35°	334	319	295	284	288	208
45°	260	240	209	178	159	199
55°	174	160	133	102	86	156
65°	98	88	68	45	30	98
75°	41	34	20	4	0	44
85°	5	4	0	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°	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5
2.5°	474.2	470.1	468.7	470.1	470.1	470.1	470.1	470.1	470.1	468.7	470.1
5°	468.7	464.7	464.7	464.7	464.7	464.7	463.3	464.7	464.7	464.7	466.0
7.5°	463.3	457.9	459.2	457.9	459.2	457.9	457.9	459.2	457.9	459.2	459.2
10°	455.2	451.1	451.1	451.1	451.1	451.1	451.1	451.1	451.1	451.1	451.1
12.5°	445.7	441.6	441.6	441.6	441.6	441.6	441.6	441.6	442.9	441.6	441.6
15°	436.1	430.7	432.1	430.7	430.7	430.7	430.7	430.7	430.7	430.7	432.1
17.5°	423.9	419.8	419.8	419.8	419.8	419.8	419.8	418.5	419.8	419.8	419.8
20°	411.7	407.6	407.6	406.2	407.6	406.2	406.2	406.2	407.6	406.2	406.2
22.5°	398.1	394.0	395.4	394.0	394.0	394.0	394.0	394.0	392.7	394.0	392.7
25°	385.9	384.5	383.2	384.5	383.2	383.2	383.2	381.8	381.8	381.8	380.4
27.5°	373.6	370.9	370.9	370.9	370.9	369.6	369.6	369.6	368.2	366.8	366.8
30°	362.8	358.7	358.7	358.7	357.3	357.3	356.0	356.0	353.3	351.9	350.5
32.5°	349.2	346.5	345.1	345.1	343.7	343.7	342.4	342.4	339.7	338.3	335.6
35°	334.2	332.9	332.9	331.5	330.2	328.8	327.4	326.1	324.7	322.0	319.3
37.5°	316.6	315.2	313.9	313.9	312.5	311.1	311.1	308.4	307.1	304.3	301.6
40°	298.9	296.2	296.2	294.8	293.5	292.1	292.1	289.4	288.0	285.3	282.6
42.5°	278.5	275.8	275.8	274.5	274.5	274.5	273.1	270.4	267.7	264.9	262.2
45°	259.5	256.8	256.8	254.1	254.1	252.7	251.4	250.0	247.3	244.6	240.5
47.5°	236.4	235.1	235.1	233.7	232.3	231.0	231.0	229.6	226.9	222.8	220.1
50°	216.0	214.7	214.7	213.3	212.0	210.6	209.2	207.9	206.5	203.8	201.1
52.5°	194.3	194.3	192.9	191.6	191.6	190.2	188.9	187.5	184.8	182.1	180.7
55°	173.9	172.6	172.6	171.2	171.2	169.8	168.5	167.1	165.8	163.0	160.3
57.5°	154.9	152.2	152.2	150.8	150.8	150.8	149.5	146.7	145.4	142.7	141.3
60°	134.5	133.2	133.2	133.2	131.8	130.4	130.4	127.7	126.4	125.0	122.3
62.5°	115.5	114.1	114.1	114.1	112.8	112.8	111.4	110.1	108.7	107.3	104.6
65°	97.8	97.8	97.8	96.5	96.5	95.1	93.7	93.7	92.4	91.0	88.3
67.5°	82.9	81.5	81.5	81.5	80.2	80.2	78.8	77.4	76.1	74.7	72.0
70°	67.9	66.6	66.6	65.2	65.2	65.2	65.2	63.9	61.1	61.1	58.4
72.5°	53.0	53.0	53.0	51.6	51.6	51.6	50.3	50.3	48.9	47.6	46.2
75°	40.8	40.8	40.8	39.4	39.4	39.4	38.0	38.0	36.7	35.3	34.0
77.5°	29.9	29.9	29.9	28.5	28.5	28.5	27.2	27.2	25.8	25.8	24.5
80°	20.4	20.4	20.4	19.0	19.0	19.0	19.0	17.7	17.7	16.3	16.3
82.5°	12.2	12.2	12.2	12.2	10.9	10.9	10.9	10.9	10.9	9.5	9.5
85°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	4.1	4.1
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°	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5
2.5°	470.1	470.1	470.1	470.1	470.1	470.1	470.1	470.1	470.1	471.5	470.1
5°	466.0	466.0	466.0	466.0	466.0	466.0	467.4	466.0	467.4	466.0	467.4
7.5°	459.2	459.2	460.6	460.6	459.2	460.6	460.6	460.6	460.6	462.0	462.0
10°	451.1	452.4	452.4	453.8	453.8	453.8	453.8	455.2	455.2	455.2	455.2
12.5°	442.9	442.9	442.9	442.9	444.3	442.9	444.3	444.3	445.7	447.0	445.7
15°	430.7	432.1	432.1	432.1	432.1	432.1	433.4	434.8	434.8	434.8	436.1
17.5°	419.8	419.8	419.8	421.2	419.8	421.2	421.2	421.2	422.6	422.6	423.9
20°	406.2	404.9	407.6	406.2	406.2	407.6	407.6	407.6	409.0	409.0	409.0
22.5°	391.3	392.7	391.3	391.3	392.7	392.7	392.7	391.3	392.7	392.7	394.0
25°	379.1	379.1	379.1	379.1	379.1	379.1	379.1	377.7	379.1	379.1	379.1
27.5°	365.5	362.8	362.8	361.4	361.4	360.1	358.7	358.7	358.7	357.3	358.7
30°	349.2	346.5	345.1	343.7	342.4	342.4	339.7	338.3	337.0	335.6	334.2
32.5°	332.9	330.2	328.8	327.4	324.7	323.4	320.7	319.3	317.9	315.2	312.5
35°	317.9	313.9	311.1	308.4	307.1	305.7	303.0	300.3	297.6	294.8	292.1
37.5°	297.6	294.8	292.1	289.4	288.0	286.7	284.0	278.5	275.8	273.1	270.4
40°	279.9	275.8	273.1	269.0	267.7	264.9	262.2	258.2	254.1	251.4	248.6
42.5°	258.2	255.4	252.7	248.6	247.3	244.6	240.5	237.8	235.1	229.6	226.9
45°	237.8	235.1	232.3	228.3	225.5	224.2	221.5	217.4	213.3	209.2	206.5
47.5°	217.4	214.7	210.6	207.9	205.2	203.8	201.1	197.0	192.9	188.9	186.1
50°	197.0	194.3	191.6	186.1	186.1	183.4	180.7	176.6	173.9	169.8	165.8
52.5°	178.0	173.9	171.2	167.1	167.1	165.8	161.7	157.6	154.9	150.8	148.1
55°	157.6	154.9	152.2	149.5	146.7	145.4	144.0	139.9	135.9	133.2	129.1
57.5°	138.6	134.5	133.2	130.4	129.1	127.7	125.0	120.9	118.2	115.5	112.8
60°	120.9	118.2	114.1	112.8	111.4	110.1	107.3	104.6	101.9	99.2	96.5
62.5°	103.3	100.5	97.8	95.1	93.7	92.4	91.0	88.3	85.6	82.9	80.2
65°	85.6	84.2	81.5	80.2	78.8	77.4	74.7	72.0	70.7	67.9	65.2
67.5°	70.7	69.3	66.6	65.2	63.9	63.9	59.8	58.4	55.7	54.3	51.6
70°	57.1	55.7	53.0	51.6	50.3	48.9	47.6	46.2	43.5	40.8	39.4
72.5°	44.8	42.1	40.8	39.4	38.0	38.0	35.3	34.0	31.2	29.9	27.2
75°	32.6	31.2	29.9	28.5	28.5	27.2	25.8	24.5	21.7	20.4	19.0
77.5°	23.1	21.7	20.4	19.0	19.0	17.7	16.3	14.9	13.6	12.2	10.9
80°	14.9	13.6	13.6	12.2	10.9	10.9	9.5	8.2	6.8	6.8	5.4
82.5°	8.2	8.2	6.8	6.8	5.4	5.4	4.1	4.1	2.7	2.7	1.4
85°	4.1	2.7	2.7	2.7	2.7	1.4	1.4	1.4	0.0	0.0	0.0
87.5°	1.4	1.4	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°	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5
2.5°	470.1	470.1	470.1	470.1	470.1	470.1	470.1	470.1	471.5	470.1	470.1
5°	467.4	467.4	468.7	467.4	468.7	468.7	467.4	467.4	468.7	470.1	468.7
7.5°	462.0	462.0	463.3	463.3	463.3	463.3	463.3	464.7	464.7	466.0	466.0
10°	456.5	456.5	456.5	456.5	457.9	457.9	459.2	459.2	459.2	459.2	459.2
12.5°	447.0	448.4	448.4	448.4	448.4	449.7	449.7	451.1	451.1	451.1	452.4
15°	436.1	437.5	438.9	438.9	437.5	438.9	440.2	440.2	441.6	441.6	441.6
17.5°	423.9	425.3	425.3	426.6	425.3	428.0	428.0	429.3	429.3	430.7	430.7
20°	410.3	411.7	411.7	411.7	413.0	413.0	414.4	414.4	415.8	415.8	415.8
22.5°	394.0	395.4	395.4	395.4	395.4	396.7	396.7	398.1	399.5	400.8	399.5
25°	379.1	380.4	381.8	380.4	381.8	381.8	381.8	383.2	383.2	384.5	383.2
27.5°	358.7	358.7	358.7	360.1	361.4	361.4	361.4	362.8	362.8	362.8	364.1
30°	334.2	332.9	334.2	334.2	334.2	334.2	337.0	337.0	337.0	338.3	339.7
32.5°	311.1	311.1	311.1	309.8	309.8	309.8	309.8	311.1	311.1	312.5	313.9
35°	289.4	288.0	285.3	285.3	285.3	284.0	282.6	282.6	284.0	284.0	284.0
37.5°	266.3	264.9	263.6	260.9	260.9	258.2	256.8	255.4	255.4	254.1	254.1
40°	244.6	241.8	239.1	239.1	236.4	235.1	232.3	231.0	228.3	225.5	225.5
42.5°	222.8	220.1	217.4	216.0	213.3	212.0	207.9	205.2	202.4	201.1	198.4
45°	202.4	199.7	195.7	194.3	191.6	188.9	186.1	182.1	178.0	175.3	173.9
47.5°	182.1	179.3	175.3	172.6	171.2	167.1	164.4	160.3	156.2	152.2	148.1
50°	163.0	159.0	154.9	152.2	150.8	146.7	144.0	139.9	134.5	133.2	129.1
52.5°	144.0	139.9	135.9	134.5	133.2	129.1	125.0	120.9	118.2	114.1	111.4
55°	125.0	122.3	118.2	116.8	115.5	111.4	107.3	104.6	101.9	97.8	95.1
57.5°	108.7	106.0	101.9	100.5	99.2	95.1	92.4	88.3	85.6	82.9	80.2
60°	93.7	89.7	87.0	85.6	84.2	80.2	77.4	74.7	72.0	69.3	65.2
62.5°	77.4	74.7	72.0	70.7	67.9	66.6	62.5	61.1	57.1	55.7	53.0
65°	62.5	59.8	57.1	57.1	55.7	51.6	50.3	47.6	44.8	42.1	40.8
67.5°	50.3	47.6	44.8	43.5	42.1	39.4	38.0	35.3	32.6	31.2	28.5
70°	38.0	35.3	32.6	31.2	29.9	28.5	25.8	23.1	20.4	19.0	16.3
72.5°	25.8	23.1	21.7	21.7	20.4	17.7	14.9	13.6	10.9	9.5	8.2
75°	16.3	13.6	12.2	10.9	10.9	9.5	6.8	5.4	4.1	2.7	1.4
77.5°	9.5	8.2	6.8	5.4	5.4	4.1	2.7	1.4	1.4	0.0	0.0
80°	4.1	2.7	1.4	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	1.4	1.4	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



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	471.5	471.5	471.5	471.5	471.5	471.5	471.5	471.5
2.5°	470.1	470.1	470.1	470.1	468.7	468.7	468.7	468.7
5°	468.7	468.7	468.7	468.7	467.4	467.4	468.7	467.4
7.5°	466.0	466.0	464.7	464.7	464.7	464.7	464.7	464.7
10°	460.6	460.6	460.6	459.2	460.6	460.6	459.2	460.6
12.5°	452.4	452.4	452.4	452.4	451.1	451.1	452.4	451.1
15°	442.9	442.9	442.9	442.9	442.9	441.6	442.9	442.9
17.5°	432.1	432.1	430.7	430.7	430.7	432.1	432.1	430.7
20°	417.1	417.1	417.1	417.1	417.1	417.1	417.1	417.1
22.5°	400.8	400.8	400.8	400.8	400.8	400.8	400.8	400.8
25°	384.5	384.5	384.5	384.5	384.5	384.5	384.5	385.9
27.5°	364.1	364.1	364.1	364.1	364.1	362.8	362.8	365.5
30°	339.7	341.0	341.0	341.0	341.0	341.0	341.0	342.4
32.5°	315.2	315.2	315.2	316.6	315.2	316.6	315.2	315.2
35°	286.7	286.7	286.7	286.7	286.7	288.0	288.0	288.0
37.5°	254.1	255.4	255.4	256.8	256.8	256.8	258.2	256.8
40°	224.2	224.2	224.2	222.8	224.2	222.8	224.2	224.2
42.5°	195.7	192.9	192.9	191.6	191.6	190.2	188.9	188.9
45°	169.8	165.8	165.8	164.4	163.0	160.3	159.0	159.0
47.5°	145.4	144.0	142.7	141.3	139.9	137.2	135.9	137.2
50°	125.0	123.6	122.3	122.3	120.9	119.6	118.2	118.2
52.5°	108.7	106.0	104.6	104.6	103.3	101.9	101.9	101.9
55°	92.4	89.7	89.7	89.7	88.3	87.0	87.0	85.6
57.5°	77.4	74.7	74.7	73.4	72.0	72.0	72.0	70.7
60°	63.9	61.1	59.8	59.8	58.4	57.1	57.1	57.1
62.5°	50.3	48.9	46.2	46.2	44.8	43.5	42.1	43.5
65°	38.0	35.3	34.0	34.0	32.6	31.2	29.9	29.9
67.5°	25.8	24.5	23.1	23.1	20.4	20.4	19.0	19.0
70°	14.9	13.6	13.6	12.2	10.9	10.9	9.5	9.5
72.5°	6.8	5.4	5.4	4.1	4.1	2.7	2.7	2.7
75°	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	1.4	1.4	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

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

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