

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: P644164

Luminaire Tested: ML5615LSWW9FS1E - 692W WW - 1500LM - 4000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644164
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 - 4000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1158.9 lumens
Efficiency: N/A
Efficacy: 67.8 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

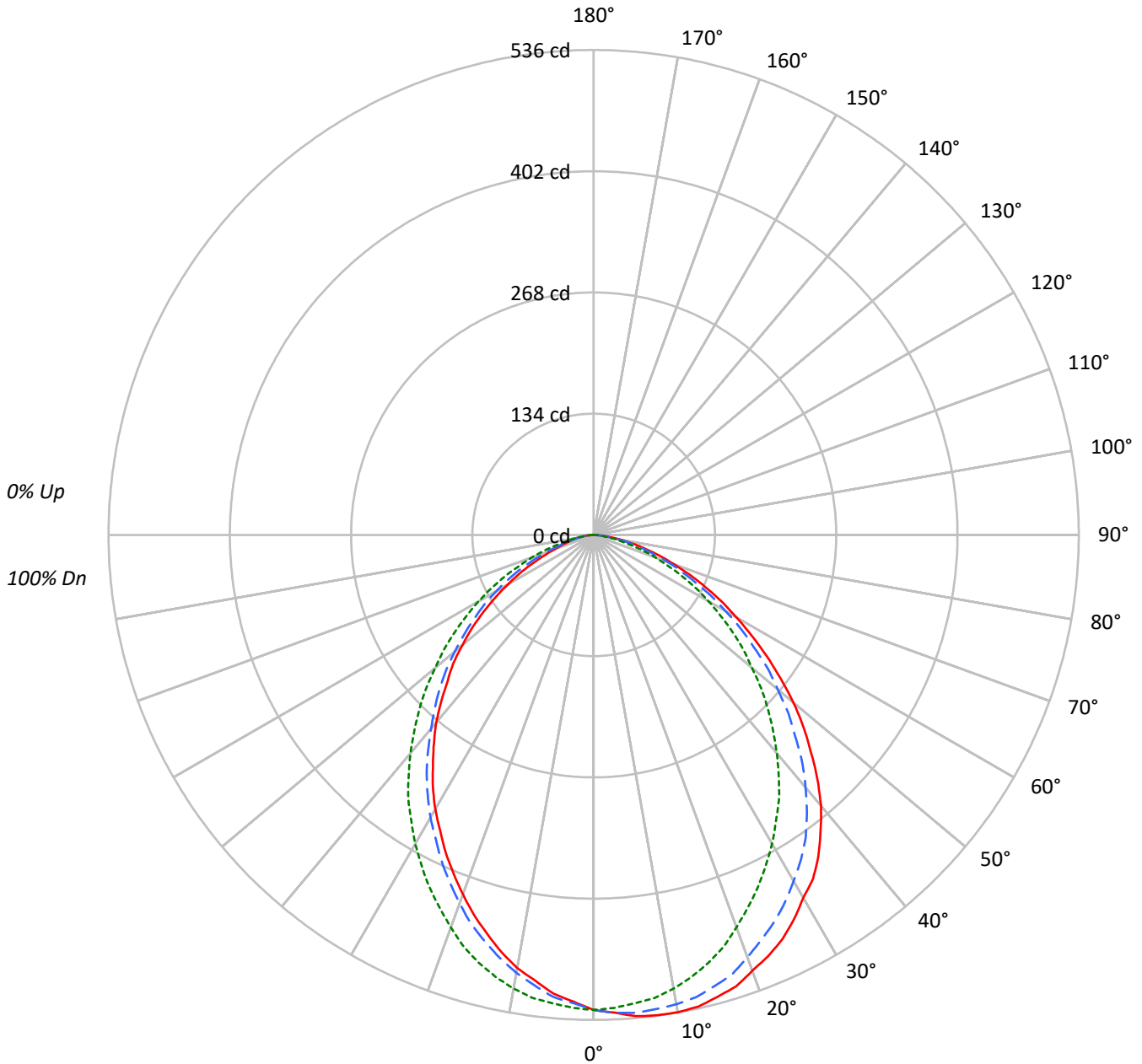
Input Watts (W): 17.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	28781	28781	28781	28781	28781
5°	29380	29182	28599	28208	28016
10°	29815	29325	28339	27354	27059
15°	29994	29296	27792	26385	25886
20°	29904	28977	26917	25266	24648
25°	29832	28550	25985	24056	23415
30°	29315	27973	24953	22826	22155
35°	28984	27325	23898	21529	20706
40°	27960	26063	22521	19987	19358
45°	26313	24398	21103	18638	17676
50°	24571	22618	19445	17040	16127
55°	22298	20616	17911	15378	14193
60°	19966	18409	16084	13563	12017
65°	17654	16046	13983	11467	9625
70°	15019	13881	11621	8784	7085
75°	12348	11226	8621	5994	5994
80°	9502	8366	6125	5020	5588
85°	6667	5535	4466	4466	4466

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 26313 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.3	4.3
10°-20°	138.1	11.9
20°-30°	199.9	17.3
30°-40°	227.1	19.6
40°-50°	214.4	18.5
50°-60°	169.1	14.6
60°-70°	105.8	9.1
70°-80°	45.7	3.9
80°-90°	9.4	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°	387.4	33.4
0°-40°	614.5	53.0
0°-60°	997.9	86.1
0°-90°	1158.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1158.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	525	525	525	525	525	
5°	534	530	520	513	509	51
15°	528	516	490	465	456	149
25°	493	472	430	398	387	227
35°	433	408	357	322	309	270
45°	339	315	272	240	228	262
55°	233	216	187	161	148	209
65°	136	124	108	88	74	135
75°	58	53	41	28	28	63
85°	11	9	7	7	7	13
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°	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0
2.5°	528.5	528.5	530.3	530.3	528.5	528.5	528.5	528.5	528.5	528.5	528.5
5°	533.9	533.9	533.9	533.9	532.1	532.1	532.1	532.1	532.1	530.3	530.3
7.5°	535.6	535.6	535.6	535.6	533.9	533.9	532.1	532.1	532.1	530.3	528.5
10°	535.6	535.6	535.6	533.9	533.9	532.1	533.9	532.1	530.3	528.5	526.8
12.5°	533.9	532.1	532.1	532.1	530.3	530.3	530.3	528.5	526.8	525.0	523.2
15°	528.5	528.5	528.5	526.8	526.8	525.0	525.0	523.2	521.5	517.9	516.2
17.5°	523.2	523.2	521.5	521.5	519.7	517.9	517.9	516.2	514.4	510.9	509.1
20°	512.6	512.6	512.6	510.9	509.1	509.1	507.3	505.6	502.0	498.5	496.7
22.5°	503.8	502.0	502.0	500.3	498.5	498.5	496.7	493.2	491.4	487.9	484.4
25°	493.2	491.4	491.4	489.7	487.9	486.1	486.1	482.6	479.1	475.5	472.0
27.5°	479.1	479.1	477.3	475.5	473.7	473.7	472.0	470.2	464.9	461.4	457.8
30°	463.1	464.9	463.1	461.4	459.6	459.6	457.8	454.3	450.8	445.5	441.9
32.5°	450.8	450.8	449.0	447.2	443.7	443.7	443.7	438.4	434.9	431.3	426.0
35°	433.1	433.1	433.1	429.6	427.8	426.0	424.3	420.7	417.2	413.6	408.3
37.5°	411.9	413.6	411.9	410.1	408.3	406.6	404.8	401.3	396.0	392.4	387.1
40°	390.7	390.7	388.9	387.1	385.4	383.6	381.8	378.3	374.8	369.5	364.2
42.5°	365.9	365.9	364.2	362.4	360.6	358.8	358.8	355.3	350.0	346.5	341.2
45°	339.4	339.4	339.4	337.6	335.9	334.1	332.3	330.6	327.0	321.7	314.7
47.5°	314.7	314.7	314.7	311.1	311.1	307.6	305.8	302.3	300.5	295.2	291.7
50°	288.1	286.4	286.4	284.6	282.8	281.1	281.1	275.8	274.0	270.5	265.2
52.5°	259.9	259.9	259.9	258.1	256.3	254.6	254.6	251.0	247.5	243.9	242.2
55°	233.3	233.3	233.3	231.6	229.8	229.8	228.0	224.5	222.7	219.2	215.7
57.5°	206.8	208.6	206.8	205.1	205.1	203.3	203.3	201.5	198.0	194.4	192.7
60°	182.1	182.1	182.1	180.3	178.5	178.5	178.5	176.8	173.2	171.5	167.9
62.5°	159.1	159.1	157.3	157.3	155.6	155.6	153.8	152.0	150.3	148.5	146.7
65°	136.1	134.3	134.3	134.3	132.6	132.6	132.6	130.8	127.3	125.5	123.7
67.5°	114.9	114.9	113.1	113.1	111.4	111.4	111.4	109.6	107.8	106.1	104.3
70°	93.7	93.7	93.7	93.7	91.9	91.9	91.9	90.2	88.4	88.4	86.6
72.5°	76.0	76.0	76.0	76.0	74.2	74.2	74.2	72.5	70.7	68.9	68.9
75°	58.3	60.1	58.3	58.3	58.3	58.3	56.6	56.6	54.8	53.0	53.0
77.5°	44.2	44.2	44.2	44.2	42.4	42.4	42.4	42.4	40.7	38.9	38.9
80°	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	28.3	28.3	26.5
82.5°	17.7	19.4	19.4	19.4	17.7	17.7	17.7	17.7	17.7	17.7	15.9
85°	10.6	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
87.5°	3.5	3.5	3.5	3.5	3.5	1.8	1.8	1.8	1.8	1.8	1.8
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°	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0
2.5°	526.8	526.8	526.8	526.8	525.0	525.0	525.0	523.2	523.2	523.2	523.2
5°	528.5	526.8	526.8	525.0	525.0	525.0	523.2	523.2	521.5	519.7	519.7
7.5°	526.8	526.8	525.0	523.2	523.2	521.5	519.7	517.9	516.2	516.2	512.6
10°	525.0	523.2	521.5	519.7	517.9	517.9	514.4	512.6	510.9	509.1	507.3
12.5°	519.7	517.9	516.2	512.6	512.6	510.9	507.3	505.6	502.0	500.3	496.7
15°	512.6	510.9	509.1	505.6	503.8	502.0	498.5	495.0	491.4	489.7	486.1
17.5°	505.6	502.0	498.5	495.0	493.2	491.4	487.9	484.4	480.8	477.3	473.7
20°	493.2	489.7	486.1	480.8	479.1	477.3	472.0	468.4	464.9	461.4	457.8
22.5°	480.8	477.3	472.0	468.4	466.7	463.1	459.6	454.3	450.8	445.5	441.9
25°	468.4	463.1	457.8	454.3	450.8	449.0	443.7	440.2	433.1	429.6	426.0
27.5°	452.5	449.0	443.7	438.4	434.9	431.3	427.8	422.5	417.2	411.9	408.3
30°	436.6	431.3	426.0	422.5	417.2	415.4	410.1	404.8	399.5	394.2	390.7
32.5°	420.7	415.4	410.1	404.8	401.3	397.7	392.4	387.1	380.1	374.8	371.2
35°	403.0	397.7	390.7	385.4	381.8	378.3	373.0	367.7	362.4	357.1	351.8
37.5°	381.8	374.8	371.2	365.9	360.6	357.1	351.8	344.7	341.2	335.9	330.6
40°	358.8	353.5	348.2	342.9	337.6	335.9	328.8	323.5	320.0	314.7	309.4
42.5°	335.9	330.6	323.5	318.2	314.7	312.9	307.6	302.3	297.0	293.4	288.1
45°	311.1	305.8	300.5	295.2	291.7	289.9	284.6	281.1	275.8	272.2	266.9
47.5°	286.4	281.1	277.5	272.2	268.7	266.9	263.4	258.1	252.8	251.0	247.5
50°	261.6	256.3	252.8	247.5	245.7	243.9	240.4	236.9	233.3	228.0	226.3
52.5°	236.9	231.6	228.0	224.5	224.5	221.0	217.4	215.7	212.1	208.6	205.1
55°	212.1	210.4	206.8	201.5	201.5	199.8	196.2	192.7	189.1	187.4	183.8
57.5°	187.4	185.6	182.1	180.3	178.5	176.8	175.0	171.5	169.7	166.2	164.4
60°	166.2	164.4	160.9	159.1	157.3	155.6	153.8	150.3	148.5	146.7	145.0
62.5°	143.2	141.4	139.7	137.9	136.1	134.3	134.3	130.8	129.0	127.3	125.5
65°	123.7	120.2	118.4	116.7	116.7	114.9	113.1	111.4	109.6	107.8	106.1
67.5°	102.5	100.8	100.8	97.2	97.2	95.5	93.7	93.7	90.2	88.4	86.6
70°	84.9	83.1	81.3	79.5	79.5	77.8	76.0	74.2	72.5	72.5	70.7
72.5°	67.2	65.4	65.4	63.6	61.9	61.9	60.1	58.3	56.6	56.6	54.8
75°	51.3	49.5	49.5	47.7	47.7	46.0	44.2	44.2	42.4	40.7	38.9
77.5°	37.1	37.1	35.4	35.4	33.6	33.6	31.8	31.8	30.1	28.3	28.3
80°	26.5	24.7	24.7	23.0	23.0	23.0	21.2	21.2	19.4	19.4	17.7
82.5°	15.9	15.9	14.1	14.1	14.1	14.1	12.4	12.4	12.4	10.6	10.6
85°	8.8	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	5.3
87.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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°	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0
2.5°	521.5	521.5	519.7	521.5	519.7	519.7	519.7	519.7	517.9	517.9	517.9
5°	517.9	516.2	516.2	514.4	516.2	514.4	512.6	512.6	512.6	512.6	510.9
7.5°	510.9	510.9	509.1	507.3	507.3	505.6	503.8	503.8	502.0	502.0	500.3
10°	505.6	502.0	500.3	498.5	498.5	496.7	495.0	493.2	491.4	489.7	489.7
12.5°	493.2	491.4	489.7	487.9	487.9	484.4	482.6	480.8	479.1	477.3	475.5
15°	484.4	480.8	477.3	475.5	475.5	472.0	470.2	468.4	464.9	464.9	461.4
17.5°	470.2	466.7	463.1	461.4	459.6	457.8	456.1	452.5	450.8	447.2	447.2
20°	452.5	450.8	445.5	443.7	441.9	440.2	436.6	434.9	433.1	429.6	427.8
22.5°	438.4	433.1	429.6	427.8	427.8	422.5	420.7	417.2	415.4	413.6	410.1
25°	420.7	417.2	413.6	410.1	410.1	406.6	404.8	401.3	397.7	396.0	394.2
27.5°	403.0	399.5	394.2	392.4	390.7	388.9	385.4	381.8	378.3	376.5	374.8
30°	383.6	380.1	376.5	374.8	371.2	367.7	364.2	362.4	360.6	357.1	355.3
32.5°	365.9	360.6	357.1	353.5	353.5	348.2	346.5	342.9	341.2	339.4	335.9
35°	346.5	341.2	337.6	335.9	334.1	328.8	325.3	321.7	321.7	318.2	316.4
37.5°	325.3	320.0	318.2	314.7	312.9	309.4	305.8	304.0	300.5	297.0	297.0
40°	305.8	300.5	295.2	295.2	291.7	289.9	284.6	282.8	279.3	277.5	275.8
42.5°	284.6	279.3	275.8	274.0	272.2	268.7	265.2	261.6	259.9	258.1	256.3
45°	261.6	258.1	256.3	252.8	251.0	247.5	245.7	242.2	240.4	236.9	235.1
47.5°	242.2	238.6	235.1	233.3	231.6	228.0	226.3	222.7	221.0	217.4	215.7
50°	222.7	219.2	215.7	213.9	212.1	208.6	205.1	203.3	199.8	198.0	194.4
52.5°	201.5	198.0	194.4	194.4	192.7	189.1	187.4	183.8	180.3	176.8	175.0
55°	182.1	178.5	175.0	173.2	173.2	169.7	166.2	164.4	160.9	159.1	155.6
57.5°	160.9	157.3	155.6	153.8	153.8	150.3	148.5	145.0	143.2	139.7	137.9
60°	141.4	139.7	136.1	136.1	134.3	130.8	129.0	125.5	123.7	122.0	120.2
62.5°	122.0	120.2	116.7	116.7	114.9	113.1	111.4	107.8	106.1	102.5	100.8
65°	102.5	100.8	99.0	97.2	97.2	93.7	91.9	90.2	88.4	86.6	84.9
67.5°	84.9	83.1	81.3	81.3	79.5	77.8	74.2	72.5	70.7	68.9	67.2
70°	68.9	65.4	63.6	63.6	61.9	60.1	58.3	56.6	54.8	53.0	51.3
72.5°	53.0	49.5	49.5	47.7	46.0	44.2	44.2	42.4	40.7	40.7	37.1
75°	38.9	37.1	35.4	35.4	33.6	31.8	30.1	30.1	28.3	28.3	28.3
77.5°	26.5	24.7	24.7	23.0	23.0	23.0	21.2	21.2	21.2	21.2	23.0
80°	17.7	17.7	15.9	15.9	15.9	15.9	15.9	15.9	15.9	17.7	17.7
82.5°	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	12.4
85°	5.3	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
87.5°	1.8	1.8	3.5	1.8	3.5	1.8	3.5	3.5	3.5	3.5	3.5
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°	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0
2.5°	516.2	517.9	517.9	516.2	517.9	516.2	516.2	516.2
5°	510.9	509.1	509.1	509.1	507.3	509.1	509.1	509.1
7.5°	500.3	500.3	498.5	498.5	496.7	496.7	498.5	496.7
10°	487.9	486.1	487.9	486.1	486.1	486.1	484.4	486.1
12.5°	475.5	473.7	473.7	472.0	472.0	472.0	472.0	472.0
15°	461.4	459.6	459.6	457.8	457.8	456.1	457.8	456.1
17.5°	445.5	445.5	441.9	441.9	441.9	441.9	441.9	440.2
20°	426.0	426.0	424.3	426.0	422.5	422.5	422.5	422.5
22.5°	410.1	408.3	406.6	406.6	406.6	404.8	404.8	404.8
25°	390.7	390.7	388.9	388.9	387.1	387.1	387.1	387.1
27.5°	373.0	371.2	371.2	371.2	369.5	367.7	367.7	367.7
30°	353.5	353.5	351.8	351.8	350.0	350.0	350.0	350.0
32.5°	334.1	334.1	332.3	330.6	330.6	330.6	328.8	330.6
35°	314.7	312.9	312.9	311.1	311.1	311.1	309.4	309.4
37.5°	295.2	293.4	291.7	293.4	291.7	289.9	289.9	289.9
40°	274.0	272.2	272.2	270.5	270.5	270.5	268.7	270.5
42.5°	254.6	254.6	252.8	251.0	251.0	251.0	249.2	249.2
45°	235.1	231.6	233.3	231.6	231.6	229.8	229.8	228.0
47.5°	213.9	212.1	212.1	212.1	210.4	210.4	210.4	210.4
50°	192.7	190.9	192.7	190.9	190.9	189.1	189.1	189.1
52.5°	173.2	171.5	171.5	171.5	171.5	169.7	169.7	169.7
55°	153.8	152.0	152.0	152.0	150.3	150.3	148.5	148.5
57.5°	136.1	134.3	132.6	130.8	130.8	130.8	129.0	129.0
60°	116.7	114.9	113.1	113.1	111.4	111.4	111.4	109.6
62.5°	99.0	97.2	95.5	95.5	93.7	91.9	91.9	91.9
65°	81.3	79.5	79.5	77.8	76.0	76.0	74.2	74.2
67.5°	65.4	63.6	63.6	61.9	60.1	58.3	58.3	58.3
70°	51.3	49.5	47.7	47.7	47.7	46.0	44.2	44.2
72.5°	37.1	35.4	35.4	35.4	35.4	35.4	35.4	35.4
75°	28.3	28.3	28.3	28.3	28.3	28.3	28.3	28.3
77.5°	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
80°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
82.5°	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4
85°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	1.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
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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)