

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: P644106

Luminaire Tested: ML5615LSWW9FS1E - 592SC WW - 900LM - 2700K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644106
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-129)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 592SC WW - 900LM - 2700K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

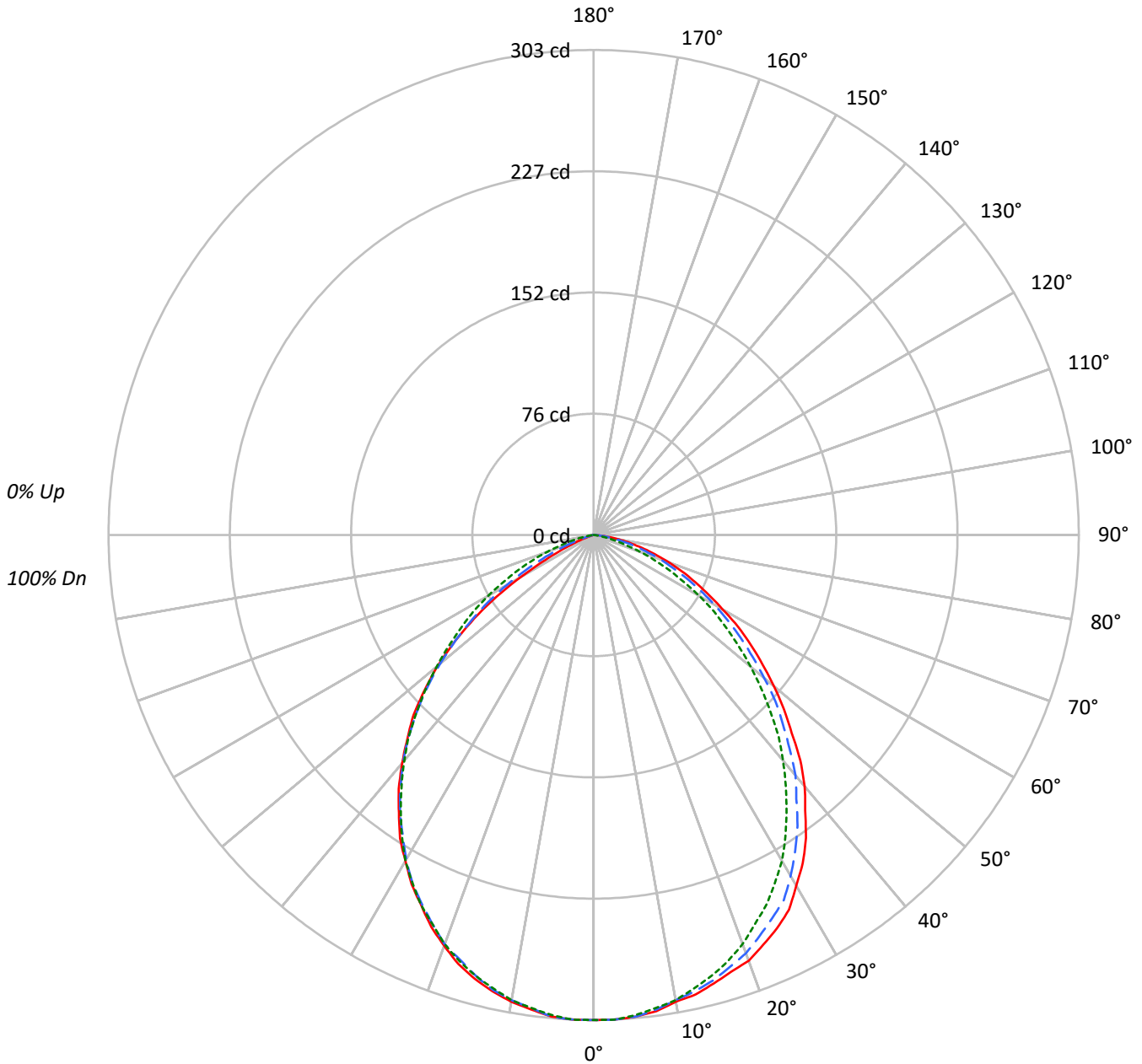
Lumens per Lamp: N/A
Luminaire Lumens: 648.3 lumens
Efficiency: N/A
Efficacy: 61.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.26
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

Input Watts (W): 10.5
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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	103	100	108	105	101	98	100	98	95	97	94	93	93	91	90	88								
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76								
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66								
4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58								
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51								
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45								
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40								
8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36								
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33								
10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	23927	23927	23927	23927	23927
5°	23939	23939	23860	23939	23939
10°	23735	23655	23655	23655	23735
15°	23709	23545	23300	23300	23463
20°	23782	23362	22858	22858	22942
25°	23613	23004	22220	22133	22220
30°	23071	22433	21430	21339	21430
35°	22271	21394	20238	20334	20430
40°	21125	20198	18961	19064	19167
45°	19537	18644	17416	17416	17751
50°	18053	17071	15720	15351	15597
55°	16516	15414	13901	12800	12524
60°	14683	13736	11999	9947	8210
65°	13075	11955	9713	6538	3923
70°	11540	10156	7155	3231	1154
75°	9455	7930	4270	915	305
80°	7274	5455	1818	0	0
85°	3623	2717	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 19649 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.6	4.4
10°-20°	80.8	12.5
20°-30°	119.2	18.4
30°-40°	134.9	20.8
40°-50°	124.6	19.2
50°-60°	92.0	14.2
60°-70°	49.5	7.6
70°-80°	16.6	2.6
80°-90°	2.1	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°	228.6	35.3
0°-40°	363.5	56.1
0°-60°	580.1	89.5
0°-90°	648.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	648.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	303	303	303	303	303	
5°	302	302	301	302	302	29
15°	290	288	285	285	287	82
25°	271	264	255	254	255	125
35°	231	222	210	211	212	144
45°	175	167	156	156	159	135
55°	120	112	101	93	91	107
65°	70	64	52	35	21	70
75°	31	26	14	3	1	33
85°	4	3	0	0	0	6
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°	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1
2.5°	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1
5°	302.1	302.1	301.1	302.1	302.1	302.1	302.1	301.1	302.1	302.1	302.1
7.5°	300.1	299.1	299.1	299.1	299.1	299.1	299.1	299.1	299.1	299.1	299.1
10°	296.1	296.1	296.1	296.1	296.1	296.1	296.1	296.1	296.1	296.1	295.1
12.5°	294.1	293.1	293.1	293.1	293.1	293.1	293.1	292.1	293.1	292.1	292.1
15°	290.1	290.1	290.1	290.1	290.1	290.1	289.1	289.1	289.1	289.1	288.1
17.5°	286.1	286.1	287.1	287.1	286.1	286.1	286.1	285.1	284.1	284.1	283.1
20°	283.1	283.1	282.1	282.1	281.1	282.1	281.1	280.1	280.1	279.1	278.1
22.5°	277.1	277.1	277.1	277.1	277.1	276.1	276.1	275.1	274.1	273.1	271.1
25°	271.1	271.1	271.1	271.1	270.1	270.1	270.1	268.1	267.1	266.1	264.1
27.5°	264.1	263.1	263.1	263.1	262.1	262.1	261.1	260.1	259.1	258.1	257.1
30°	253.1	253.1	253.1	253.1	252.1	251.1	251.1	250.1	249.1	247.1	246.1
32.5°	243.1	243.1	242.1	241.1	241.1	241.1	240.1	239.1	237.1	236.1	234.1
35°	231.1	230.0	230.0	229.0	229.0	229.0	228.0	226.0	225.0	224.0	222.0
37.5°	217.0	218.0	217.0	217.0	216.0	215.0	214.0	213.0	212.0	210.0	208.0
40°	205.0	205.0	204.0	203.0	202.0	202.0	201.0	200.0	199.0	198.0	196.0
42.5°	191.0	191.0	190.0	190.0	189.0	189.0	187.0	186.0	185.0	184.0	181.0
45°	175.0	175.0	176.0	175.0	174.0	173.0	173.0	172.0	170.0	169.0	167.0
47.5°	161.0	162.0	161.0	160.0	160.0	159.0	159.0	157.0	157.0	155.0	154.0
50°	147.0	147.0	147.0	147.0	146.0	145.0	145.0	144.0	142.0	141.0	139.0
52.5°	133.0	133.0	133.0	133.0	132.0	132.0	131.0	130.0	129.0	127.0	125.0
55°	120.0	119.0	119.0	119.0	118.0	118.0	117.0	116.0	115.0	114.0	112.0
57.5°	107.0	106.0	106.0	105.0	105.0	104.0	104.0	103.0	102.0	100.0	99.0
60°	93.0	94.0	93.0	93.0	92.0	92.0	92.0	91.0	89.0	88.0	87.0
62.5°	81.0	82.0	81.0	80.0	80.0	80.0	80.0	78.0	77.0	76.0	75.0
65°	70.0	70.0	70.0	69.0	69.0	69.0	67.0	67.0	66.0	65.0	64.0
67.5°	60.0	59.0	59.0	59.0	58.0	58.0	57.0	57.0	55.0	55.0	53.0
70°	50.0	49.0	49.0	49.0	48.0	47.0	48.0	46.0	45.0	44.0	44.0
72.5°	40.0	40.0	39.0	39.0	39.0	38.0	38.0	37.0	36.0	35.0	34.0
75°	31.0	31.0	31.0	30.0	30.0	29.0	29.0	28.0	28.0	26.0	26.0
77.5°	23.0	23.0	23.0	22.0	22.0	22.0	21.0	21.0	20.0	19.0	18.0
80°	16.0	15.0	15.0	15.0	15.0	14.0	14.0	14.0	13.0	13.0	12.0
82.5°	9.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0	7.0	7.0
85°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1
2.5°	303.1	303.1	303.1	303.1	302.1	303.1	302.1	303.1	303.1	303.1	303.1
5°	302.1	301.1	301.1	301.1	302.1	302.1	301.1	301.1	301.1	301.1	301.1
7.5°	299.1	299.1	299.1	298.1	299.1	299.1	298.1	299.1	299.1	298.1	299.1
10°	296.1	296.1	295.1	295.1	295.1	295.1	295.1	295.1	294.1	295.1	295.1
12.5°	292.1	292.1	292.1	291.1	291.1	291.1	291.1	291.1	290.1	290.1	291.1
15°	288.1	288.1	287.1	287.1	287.1	286.1	286.1	286.1	286.1	285.1	285.1
17.5°	283.1	282.1	282.1	281.1	281.1	280.1	280.1	279.1	279.1	279.1	278.1
20°	277.1	276.1	275.1	275.1	274.1	274.1	273.1	273.1	272.1	272.1	271.1
22.5°	270.1	269.1	268.1	267.1	267.1	266.1	266.1	265.1	264.1	263.1	263.1
25°	264.1	262.1	261.1	260.1	258.1	258.1	257.1	257.1	256.1	255.1	254.1
27.5°	255.1	253.1	252.1	251.1	250.1	249.1	247.1	247.1	246.1	245.1	244.1
30°	244.1	243.1	241.1	240.1	239.1	239.1	237.1	235.1	235.1	235.1	234.1
32.5°	233.1	231.1	230.0	228.0	227.0	227.0	226.0	224.0	223.0	223.0	222.0
35°	221.0	219.0	217.0	216.0	215.0	214.0	213.0	212.0	211.0	210.0	209.0
37.5°	207.0	205.0	204.0	203.0	202.0	201.0	200.0	199.0	198.0	197.0	198.0
40°	194.0	192.0	190.0	189.0	188.0	188.0	187.0	186.0	185.0	184.0	184.0
42.5°	180.0	178.0	177.0	176.0	175.0	174.0	173.0	172.0	171.0	171.0	170.0
45°	165.0	164.0	162.0	161.0	160.0	160.0	158.0	157.0	157.0	156.0	156.0
47.5°	152.0	150.0	148.0	147.0	146.0	145.0	144.0	143.0	142.0	142.0	142.0
50°	137.0	136.0	134.0	133.0	132.0	132.0	131.0	130.0	129.0	128.0	128.0
52.5°	123.0	122.0	122.0	120.0	119.0	119.0	117.0	117.0	115.0	114.0	113.0
55°	111.0	109.0	108.0	106.0	106.0	105.0	104.0	103.0	102.0	101.0	100.0
57.5°	97.0	96.0	95.0	94.0	94.0	93.0	92.0	91.0	89.0	89.0	87.0
60°	86.0	84.0	83.0	82.0	81.0	81.0	80.0	79.0	77.0	76.0	75.0
62.5°	74.0	72.0	72.0	71.0	69.0	69.0	68.0	66.0	65.0	63.0	62.0
65°	63.0	62.0	60.0	59.0	59.0	58.0	56.0	55.0	54.0	52.0	50.0
67.5°	52.0	51.0	50.0	48.0	48.0	47.0	45.0	44.0	42.0	41.0	39.0
70°	42.0	41.0	40.0	38.0	38.0	37.0	36.0	34.0	32.0	31.0	29.0
72.5°	33.0	32.0	31.0	29.0	29.0	28.0	26.0	25.0	23.0	21.0	20.0
75°	25.0	24.0	22.0	21.0	20.0	20.0	18.0	17.0	16.0	14.0	13.0
77.5°	17.0	16.0	15.0	14.0	14.0	13.0	12.0	11.0	10.0	9.0	7.0
80°	11.0	10.0	9.0	9.0	8.0	8.0	7.0	6.0	5.0	4.0	3.0
82.5°	6.0	6.0	5.0	4.0	4.0	4.0	3.0	3.0	2.0	1.0	1.0
85°	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1
2.5°	303.1	303.1	303.1	303.1	303.1	303.1	302.1	303.1	303.1	303.1	302.1
5°	302.1	301.1	301.1	302.1	301.1	301.1	302.1	302.1	302.1	301.1	301.1
7.5°	298.1	299.1	298.1	298.1	299.1	299.1	299.1	299.1	298.1	298.1	299.1
10°	295.1	295.1	294.1	295.1	294.1	295.1	295.1	295.1	295.1	295.1	295.1
12.5°	290.1	290.1	290.1	291.1	290.1	290.1	291.1	291.1	291.1	291.1	291.1
15°	284.1	284.1	285.1	284.1	285.1	285.1	285.1	285.1	285.1	285.1	286.1
17.5°	278.1	278.1	278.1	278.1	278.1	278.1	278.1	278.1	278.1	279.1	279.1
20°	271.1	271.1	271.1	271.1	271.1	270.1	271.1	271.1	272.1	272.1	272.1
22.5°	262.1	262.1	262.1	262.1	262.1	262.1	262.1	262.1	263.1	264.1	263.1
25°	253.1	253.1	253.1	253.1	253.1	253.1	253.1	254.1	254.1	254.1	255.1
27.5°	244.1	244.1	244.1	243.1	244.1	243.1	244.1	244.1	245.1	244.1	245.1
30°	234.1	233.1	233.1	233.1	233.1	234.1	233.1	233.1	234.1	235.1	234.1
32.5°	221.0	221.0	221.0	222.0	222.0	222.0	223.0	222.0	222.0	223.0	223.0
35°	209.0	209.0	209.0	210.0	210.0	210.0	210.0	211.0	211.0	211.0	212.0
37.5°	196.0	197.0	196.0	197.0	197.0	198.0	198.0	198.0	198.0	199.0	199.0
40°	184.0	183.0	184.0	184.0	184.0	184.0	184.0	184.0	185.0	186.0	186.0
42.5°	170.0	170.0	170.0	170.0	170.0	170.0	171.0	171.0	171.0	172.0	172.0
45°	156.0	155.0	155.0	155.0	155.0	156.0	155.0	156.0	156.0	157.0	157.0
47.5°	141.0	141.0	141.0	141.0	141.0	141.0	141.0	141.0	141.0	142.0	141.0
50°	128.0	127.0	126.0	126.0	125.0	126.0	125.0	125.0	125.0	126.0	125.0
52.5°	113.0	112.0	111.0	111.0	111.0	110.0	109.0	109.0	109.0	108.0	108.0
55°	100.0	99.0	97.0	98.0	96.0	95.0	95.0	94.0	93.0	93.0	92.0
57.5°	86.0	85.0	84.0	83.0	83.0	81.0	80.0	79.0	78.0	77.0	75.0
60°	74.0	72.0	70.0	70.0	69.0	68.0	66.0	64.0	63.0	61.0	60.0
62.5°	61.0	59.0	57.0	56.0	55.0	54.0	52.0	50.0	48.0	47.0	45.0
65°	49.0	47.0	45.0	44.0	43.0	41.0	39.0	37.0	35.0	33.0	32.0
67.5°	37.0	35.0	34.0	32.0	31.0	29.0	27.0	26.0	24.0	22.0	19.0
70°	27.0	25.0	23.0	22.0	21.0	19.0	18.0	16.0	14.0	13.0	11.0
72.5°	18.0	16.0	15.0	14.0	13.0	12.0	10.0	9.0	7.0	6.0	5.0
75°	11.0	10.0	9.0	8.0	7.0	6.0	5.0	4.0	3.0	2.0	1.0
77.5°	6.0	5.0	4.0	4.0	3.0	2.0	2.0	1.0	1.0	1.0	1.0
80°	3.0	2.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
82.5°	1.0	0.0	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°	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1
2.5°	303.1	303.1	303.1	303.1	303.1	303.1	303.1	303.1
5°	302.1	302.1	301.1	302.1	301.1	301.1	301.1	302.1
7.5°	299.1	299.1	299.1	299.1	299.1	299.1	299.1	299.1
10°	295.1	295.1	295.1	296.1	296.1	296.1	295.1	296.1
12.5°	291.1	291.1	291.1	292.1	291.1	292.1	291.1	292.1
15°	286.1	286.1	287.1	287.1	286.1	286.1	287.1	287.1
17.5°	279.1	280.1	280.1	280.1	280.1	280.1	280.1	281.1
20°	273.1	273.1	272.1	273.1	273.1	274.1	274.1	273.1
22.5°	263.1	265.1	265.1	265.1	265.1	265.1	265.1	265.1
25°	255.1	255.1	255.1	256.1	255.1	255.1	256.1	255.1
27.5°	245.1	246.1	245.1	246.1	246.1	246.1	246.1	246.1
30°	235.1	235.1	235.1	235.1	235.1	236.1	235.1	235.1
32.5°	223.0	224.0	224.0	224.0	225.0	224.0	224.0	225.0
35°	212.0	212.0	212.0	213.0	212.0	213.0	213.0	212.0
37.5°	199.0	200.0	199.0	200.0	200.0	200.0	200.0	200.0
40°	187.0	186.0	187.0	186.0	187.0	187.0	187.0	186.0
42.5°	172.0	173.0	173.0	173.0	173.0	173.0	173.0	172.0
45°	157.0	158.0	158.0	158.0	158.0	158.0	159.0	159.0
47.5°	141.0	143.0	143.0	143.0	142.0	144.0	143.0	143.0
50°	125.0	125.0	126.0	126.0	127.0	127.0	127.0	127.0
52.5°	109.0	108.0	109.0	109.0	110.0	109.0	110.0	109.0
55°	91.0	91.0	91.0	90.0	91.0	91.0	91.0	91.0
57.5°	75.0	74.0	73.0	72.0	72.0	72.0	71.0	72.0
60°	58.0	56.0	57.0	55.0	54.0	53.0	53.0	52.0
62.5°	43.0	41.0	40.0	39.0	37.0	35.0	35.0	34.0
65°	29.0	27.0	26.0	24.0	23.0	22.0	21.0	21.0
67.5°	18.0	16.0	16.0	15.0	14.0	13.0	12.0	12.0
70°	10.0	9.0	8.0	7.0	7.0	6.0	5.0	5.0
72.5°	4.0	3.0	3.0	2.0	2.0	2.0	2.0	1.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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

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)