

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: P642307

Luminaire Tested: ML5612LSWW97FS1E - 592W WW - 900LM - 3000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642307
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-116)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 592W WW - 900LM - 3000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

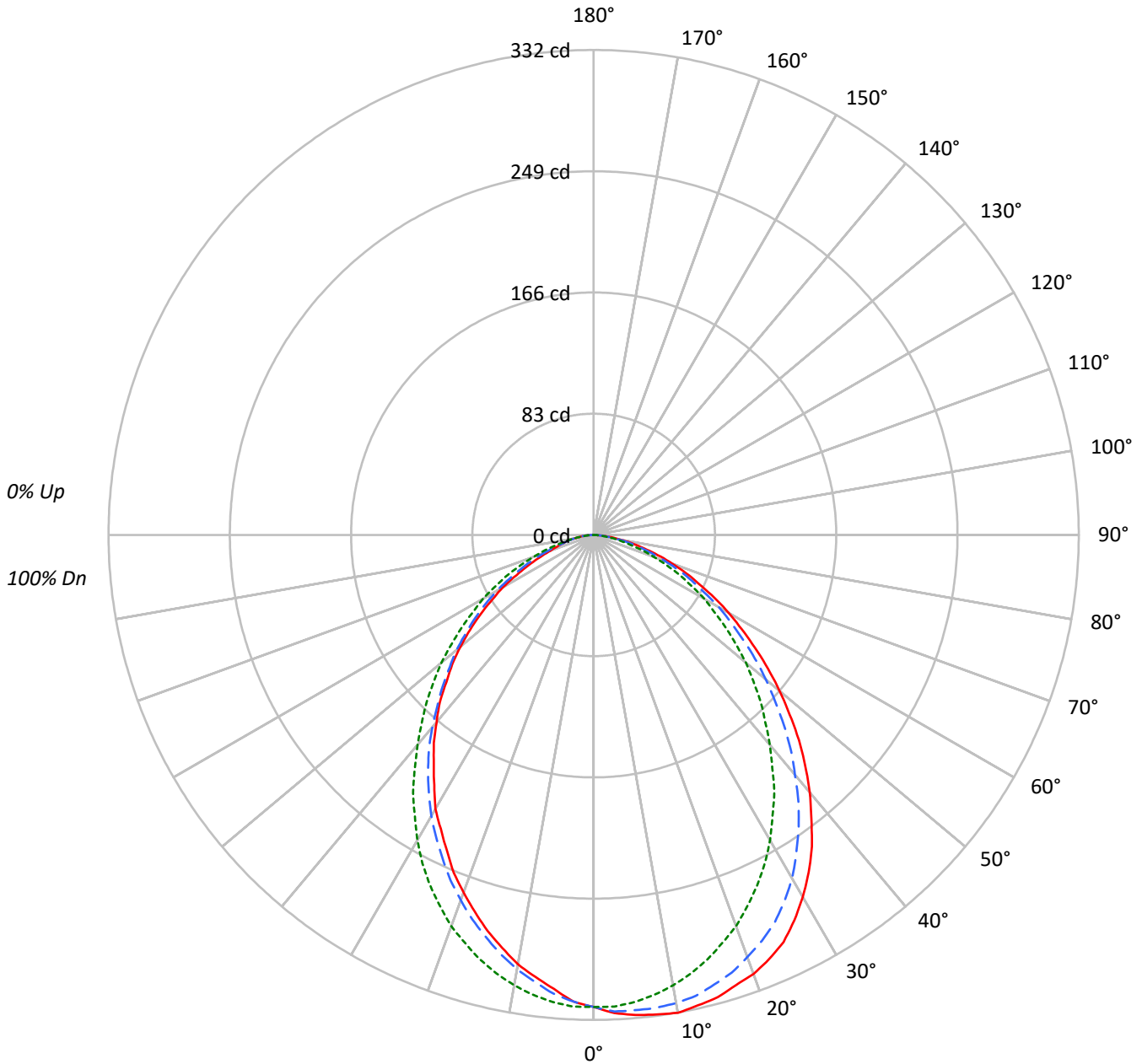
Lumens per Lamp: N/A
Luminaire Lumens: 705.1 lumens
Efficiency: N/A
Efficacy: 53.0 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.23
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

Input Watts (W): 13.3
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					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	88	86								
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	58	55								
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49								
6	73	61	53	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43								
7	68	56	47	41	67	55	47	41	53	46	41	52	45	41	51	45	40	39								
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35								
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	43	37	33	32								
10	56	43	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	25514	25514	25514	25514	25514
5°	26142	25881	25437	24985	24724
10°	26629	26084	25098	24200	23927
15°	26781	26046	24583	23292	22932
20°	26865	25832	23942	22346	21875
25°	26784	25512	23065	21305	20721
30°	26088	24757	21995	20254	19744
35°	25095	23572	20768	19033	18387
40°	23712	22084	19312	17694	17230
45°	22172	20542	18041	16288	15909
50°	20399	18876	16678	15020	14614
55°	18539	17149	15139	13598	12978
60°	16830	15599	13815	12046	11336
65°	14887	13841	12160	10273	9227
70°	13202	11910	10109	8286	7247
75°	10950	9913	7869	6497	6497
80°	8683	7637	6137	5592	5592
85°	5072	5072	4076	5072	5072

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 22172 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.4	4.3
10°-20°	85.1	12.1
20°-30°	123.5	17.5
30°-40°	137.8	19.5
40°-50°	127.7	18.1
50°-60°	100.4	14.2
60°-70°	64.3	9.1
70°-80°	29.5	4.2
80°-90°	6.4	0.9
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°	239.0	33.9
0°-40°	376.8	53.4
0°-60°	605.0	85.8
0°-90°	705.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	705.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	323	323	323	323	323	
5°	330	327	321	315	312	32
15°	328	319	301	285	281	92
25°	308	293	265	245	238	141
35°	260	245	216	198	191	162
45°	199	184	162	146	142	153
55°	135	125	110	99	94	121
65°	80	74	65	55	49	80
75°	36	32	26	21	21	39
85°	6	6	4	6	6	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°	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2
2.5°	327.7	327.7	327.7	327.7	327.7	327.7	326.6	326.6	326.6	326.6	326.6
5°	329.9	329.9	329.9	329.9	328.8	328.8	328.8	328.8	327.7	327.7	326.6
7.5°	331.1	331.1	331.1	329.9	329.9	329.9	328.8	328.8	328.8	327.7	326.6
10°	332.2	331.1	331.1	329.9	329.9	329.9	328.8	328.8	327.7	326.6	325.4
12.5°	329.9	329.9	329.9	329.9	328.8	328.8	327.7	326.6	325.4	324.3	323.2
15°	327.7	327.7	327.7	326.6	325.4	325.4	324.3	323.2	322.1	321.0	318.7
17.5°	323.2	324.3	323.2	323.2	322.1	322.1	321.0	319.8	317.6	316.5	314.2
20°	319.8	318.7	318.7	318.7	317.6	316.5	315.3	314.2	312.0	310.9	307.5
22.5°	314.2	314.2	313.1	312.0	310.9	310.9	309.7	307.5	306.4	304.1	300.8
25°	307.5	306.4	306.4	305.2	304.1	304.1	301.9	300.8	298.5	295.1	292.9
27.5°	297.4	297.4	297.4	296.3	295.1	294.0	292.9	290.7	289.5	285.0	282.8
30°	286.2	286.2	285.0	285.0	282.8	282.8	281.7	279.4	277.2	273.8	271.6
32.5°	273.8	273.8	273.8	271.6	270.5	269.3	268.2	267.1	263.7	260.4	258.1
35°	260.4	260.4	259.2	258.1	257.0	255.9	254.7	252.5	250.3	248.0	244.6
37.5°	244.6	245.8	244.6	243.5	242.4	241.3	240.2	239.0	235.7	233.4	230.1
40°	230.1	230.1	228.9	227.8	226.7	226.7	225.6	223.3	221.1	217.7	214.3
42.5°	214.3	214.3	213.2	212.1	212.1	211.0	208.7	207.6	205.4	203.1	199.8
45°	198.6	197.5	196.4	196.4	195.3	194.1	194.1	191.9	189.7	186.3	184.0
47.5°	181.8	181.8	180.7	180.7	179.6	178.4	178.4	176.2	172.8	170.6	168.3
50°	166.1	166.1	165.0	165.0	163.8	162.7	161.6	160.5	158.2	156.0	153.7
52.5°	150.4	150.4	150.4	148.1	147.0	147.0	147.0	144.8	143.6	141.4	139.2
55°	134.7	134.7	134.7	133.5	132.4	132.4	132.4	130.2	129.1	126.8	124.6
57.5°	120.1	120.1	120.1	119.0	119.0	117.8	116.7	115.6	114.5	113.3	111.1
60°	106.6	106.6	105.5	104.4	105.5	104.4	103.2	102.1	101.0	99.9	98.8
62.5°	93.1	93.1	93.1	92.0	90.9	90.9	90.9	89.8	87.5	86.4	85.3
65°	79.7	79.7	79.7	79.7	78.6	78.6	77.4	76.3	76.3	75.2	74.1
67.5°	68.5	68.5	67.3	67.3	66.2	66.2	66.2	65.1	64.0	64.0	62.8
70°	57.2	56.1	56.1	56.1	55.0	55.0	55.0	53.9	53.9	52.7	51.6
72.5°	46.0	46.0	46.0	46.0	44.9	44.9	43.8	43.8	42.6	42.6	41.5
75°	35.9	35.9	35.9	35.9	34.8	34.8	34.8	34.8	33.7	33.7	32.5
77.5°	26.9	26.9	26.9	26.9	26.9	26.9	25.8	25.8	25.8	24.7	24.7
80°	19.1	19.1	19.1	19.1	18.0	18.0	18.0	18.0	18.0	16.8	16.8
82.5°	12.3	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	10.1
85°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
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°	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2
2.5°	325.4	325.4	325.4	325.4	324.3	324.3	324.3	323.2	323.2	323.2	323.2
5°	326.6	326.6	324.3	324.3	324.3	324.3	323.2	323.2	322.1	321.0	319.8
7.5°	325.4	325.4	324.3	323.2	322.1	322.1	321.0	319.8	318.7	317.6	316.5
10°	324.3	323.2	322.1	321.0	319.8	318.7	317.6	316.5	314.2	313.1	312.0
12.5°	322.1	319.8	318.7	316.5	316.5	315.3	313.1	312.0	309.7	307.5	306.4
15°	317.6	315.3	313.1	310.9	310.9	308.6	306.4	305.2	303.0	300.8	298.5
17.5°	312.0	309.7	307.5	305.2	304.1	301.9	299.6	297.4	295.1	292.9	290.7
20°	306.4	303.0	300.8	297.4	296.3	295.1	291.8	289.5	287.3	285.0	281.7
22.5°	298.5	296.3	291.8	289.5	288.4	286.2	283.9	280.6	277.2	274.9	272.7
25°	289.5	287.3	283.9	280.6	278.3	277.2	273.8	270.5	268.2	264.8	262.6
27.5°	279.4	276.1	273.8	269.3	268.2	266.0	262.6	259.2	257.0	253.6	250.3
30°	268.2	264.8	261.5	258.1	255.9	254.7	251.4	248.0	244.6	241.3	239.0
32.5°	254.7	251.4	248.0	245.8	242.4	240.2	237.9	234.5	231.2	227.8	225.6
35°	241.3	237.9	234.5	231.2	228.9	228.9	224.4	221.1	217.7	215.5	212.1
37.5°	226.7	223.3	220.0	216.6	215.5	213.2	209.9	206.5	204.2	200.9	198.6
40°	212.1	207.6	205.4	202.0	200.9	198.6	196.4	193.0	190.8	187.4	185.2
42.5°	196.4	194.1	190.8	188.5	186.3	185.2	181.8	178.4	176.2	173.9	172.8
45°	181.8	178.4	175.1	172.8	171.7	169.5	168.3	165.0	162.7	161.6	159.4
47.5°	166.1	163.8	161.6	158.2	157.1	156.0	153.7	152.6	150.4	148.1	145.9
50°	151.5	149.3	147.0	144.8	143.6	143.6	140.3	138.0	136.9	135.8	133.5
52.5°	136.9	134.7	132.4	130.2	130.2	129.1	126.8	125.7	124.6	122.3	120.1
55°	123.4	121.2	119.0	117.8	116.7	116.7	114.5	113.3	111.1	110.0	108.9
57.5°	110.0	107.7	106.6	105.5	104.4	104.4	102.1	101.0	99.9	97.6	97.6
60°	97.6	95.4	94.3	93.1	92.0	90.9	90.9	88.7	87.5	87.5	85.3
62.5°	84.2	83.0	81.9	80.8	79.7	79.7	78.6	77.4	76.3	75.2	74.1
65°	72.9	71.8	70.7	69.6	68.5	68.5	67.3	66.2	65.1	65.1	62.8
67.5°	61.7	60.6	59.5	58.4	58.4	57.2	56.1	56.1	55.0	53.9	52.7
70°	50.5	50.5	49.4	48.3	48.3	47.1	46.0	46.0	44.9	43.8	42.6
72.5°	41.5	40.4	39.3	39.3	38.2	38.2	37.0	37.0	35.9	34.8	33.7
75°	31.4	30.3	30.3	30.3	29.2	29.2	29.2	28.1	26.9	25.8	25.8
77.5°	23.6	23.6	22.4	21.3	21.3	21.3	20.2	20.2	20.2	19.1	19.1
80°	16.8	15.7	15.7	14.6	14.6	14.6	14.6	13.5	13.5	13.5	12.3
82.5°	10.1	10.1	10.1	9.0	9.0	9.0	9.0	9.0	7.9	7.9	7.9
85°	5.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	2.2
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2
2.5°	322.1	322.1	321.0	321.0	321.0	321.0	321.0	319.8	319.8	319.8	319.8
5°	319.8	318.7	317.6	317.6	317.6	316.5	316.5	315.3	315.3	314.2	314.2
7.5°	315.3	314.2	313.1	313.1	312.0	312.0	309.7	309.7	308.6	307.5	307.5
10°	309.7	308.6	307.5	306.4	306.4	304.1	304.1	303.0	301.9	300.8	300.8
12.5°	304.1	303.0	300.8	299.6	299.6	298.5	296.3	295.1	294.0	292.9	291.8
15°	296.3	295.1	292.9	291.8	290.7	289.5	288.4	287.3	285.0	283.9	283.9
17.5°	288.4	287.3	283.9	282.8	282.8	280.6	279.4	277.2	276.1	274.9	273.8
20°	279.4	277.2	274.9	273.8	272.7	270.5	269.3	268.2	266.0	264.8	263.7
22.5°	269.3	267.1	264.8	263.7	262.6	260.4	259.2	257.0	255.9	254.7	253.6
25°	259.2	257.0	254.7	253.6	251.4	250.3	248.0	245.8	244.6	243.5	242.4
27.5°	248.0	245.8	242.4	241.3	240.2	239.0	236.8	234.5	233.4	231.2	231.2
30°	235.7	233.4	231.2	230.1	228.9	226.7	225.6	223.3	222.2	220.0	220.0
32.5°	223.3	220.0	217.7	216.6	215.5	214.3	212.1	211.0	209.9	208.7	207.6
35°	209.9	207.6	205.4	204.2	203.1	200.9	199.8	198.6	197.5	195.3	195.3
37.5°	196.4	194.1	191.9	190.8	190.8	188.5	187.4	185.2	185.2	182.9	182.9
40°	182.9	180.7	178.4	178.4	177.3	175.1	173.9	172.8	171.7	170.6	170.6
42.5°	170.6	167.2	166.1	166.1	163.8	162.7	161.6	160.5	158.2	158.2	158.2
45°	157.1	154.9	153.7	152.6	151.5	150.4	149.3	147.0	145.9	144.8	144.8
47.5°	144.8	142.5	141.4	140.3	139.2	138.0	136.9	135.8	133.5	133.5	132.4
50°	132.4	130.2	129.1	127.9	126.8	125.7	124.6	123.4	122.3	121.2	120.1
52.5°	119.0	117.8	116.7	115.6	115.6	113.3	112.2	111.1	110.0	110.0	107.7
55°	107.7	106.6	105.5	104.4	103.2	102.1	101.0	99.9	98.8	97.6	96.5
57.5°	95.4	94.3	93.1	93.1	92.0	90.9	89.8	88.7	87.5	86.4	85.3
60°	84.2	83.0	81.9	81.9	80.8	79.7	78.6	78.6	76.3	75.2	74.1
62.5°	72.9	71.8	70.7	70.7	69.6	69.6	68.5	67.3	65.1	65.1	64.0
65°	62.8	61.7	60.6	59.5	59.5	58.4	57.2	56.1	55.0	55.0	53.9
67.5°	52.7	51.6	50.5	50.5	49.4	48.3	47.1	46.0	44.9	44.9	43.8
70°	42.6	41.5	40.4	40.4	39.3	38.2	38.2	37.0	35.9	34.8	34.8
72.5°	32.5	32.5	31.4	31.4	30.3	30.3	29.2	28.1	28.1	26.9	25.8
75°	24.7	24.7	23.6	23.6	22.4	22.4	21.3	21.3	21.3	20.2	21.3
77.5°	18.0	18.0	16.8	16.8	16.8	15.7	15.7	15.7	16.8	16.8	16.8
80°	12.3	12.3	12.3	12.3	11.2	11.2	12.3	12.3	12.3	12.3	12.3
82.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	9.0	9.0	9.0
85°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	5.6	5.6	5.6	5.6
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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: P642307

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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	323.2	323.2	323.2	323.2	323.2	323.2	323.2	323.2
2.5°	318.7	318.7	318.7	318.7	318.7	318.7	318.7	319.8
5°	313.1	313.1	313.1	313.1	313.1	313.1	313.1	312.0
7.5°	307.5	306.4	306.4	306.4	306.4	305.2	305.2	305.2
10°	299.6	299.6	298.5	298.5	298.5	298.5	297.4	298.5
12.5°	291.8	290.7	290.7	290.7	289.5	289.5	289.5	289.5
15°	282.8	281.7	281.7	281.7	280.6	280.6	280.6	280.6
17.5°	272.7	272.7	271.6	271.6	270.5	270.5	270.5	270.5
20°	262.6	262.6	262.6	261.5	261.5	261.5	260.4	260.4
22.5°	252.5	251.4	250.3	251.4	250.3	249.1	250.3	250.3
25°	241.3	240.2	239.0	239.0	239.0	239.0	237.9	237.9
27.5°	230.1	227.8	227.8	227.8	227.8	226.7	226.7	226.7
30°	218.8	217.7	217.7	216.6	215.5	215.5	215.5	216.6
32.5°	206.5	205.4	204.2	204.2	204.2	204.2	203.1	203.1
35°	194.1	194.1	193.0	193.0	193.0	191.9	191.9	190.8
37.5°	181.8	181.8	180.7	180.7	180.7	179.6	179.6	179.6
40°	169.5	168.3	168.3	169.5	168.3	168.3	167.2	167.2
42.5°	157.1	157.1	156.0	156.0	156.0	156.0	154.9	156.0
45°	143.6	143.6	143.6	143.6	143.6	143.6	142.5	142.5
47.5°	132.4	131.3	131.3	131.3	131.3	131.3	131.3	131.3
50°	120.1	119.0	119.0	119.0	119.0	119.0	119.0	119.0
52.5°	107.7	106.6	106.6	106.6	106.6	106.6	106.6	106.6
55°	96.5	95.4	95.4	94.3	95.4	94.3	94.3	94.3
57.5°	85.3	84.2	83.0	84.2	83.0	83.0	83.0	81.9
60°	74.1	72.9	72.9	72.9	71.8	70.7	70.7	71.8
62.5°	62.8	62.8	61.7	61.7	60.6	59.5	59.5	59.5
65°	52.7	51.6	51.6	50.5	50.5	49.4	49.4	49.4
67.5°	42.6	42.6	41.5	41.5	40.4	40.4	40.4	39.3
70°	33.7	33.7	32.5	32.5	32.5	31.4	31.4	31.4
72.5°	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8
75°	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
77.5°	16.8	16.8	16.8	16.8	16.8	16.8	16.8	18.0
80°	12.3	12.3	13.5	12.3	13.5	12.3	12.3	12.3
82.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
85°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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)