

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P85554

Luminaire Tested: **ML706840-495PWW06-H750ICAT**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P85554  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: ML706840-495PWW06-H750ICAT  
Description: HALO 6 INCH LED DOWNLIGHT WITH 600 Lmn MODULE, DIFFUSE LENS AND WHITE REFLECTOR WITH PLASTIC SPECULAR KICKER---ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING A 500 WATT, NIST TRACEABLE, OMNI-DIRECTIONAL LAB LUMEN STANDARD IN THE GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET----

Light Source: (1)SMT LED 4000K  
CL-L221-C14L2-B

Ballast/Driver: (1)ELECTRONIC DRIVER  
RLD011

**Summary**

Lumens per Lamp: 704 (1 lamp)  
Luminaire Lumens: 706.2 lumens  
Efficiency: 100.3%  
Efficacy: 50.1 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.24 / 1.29  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct

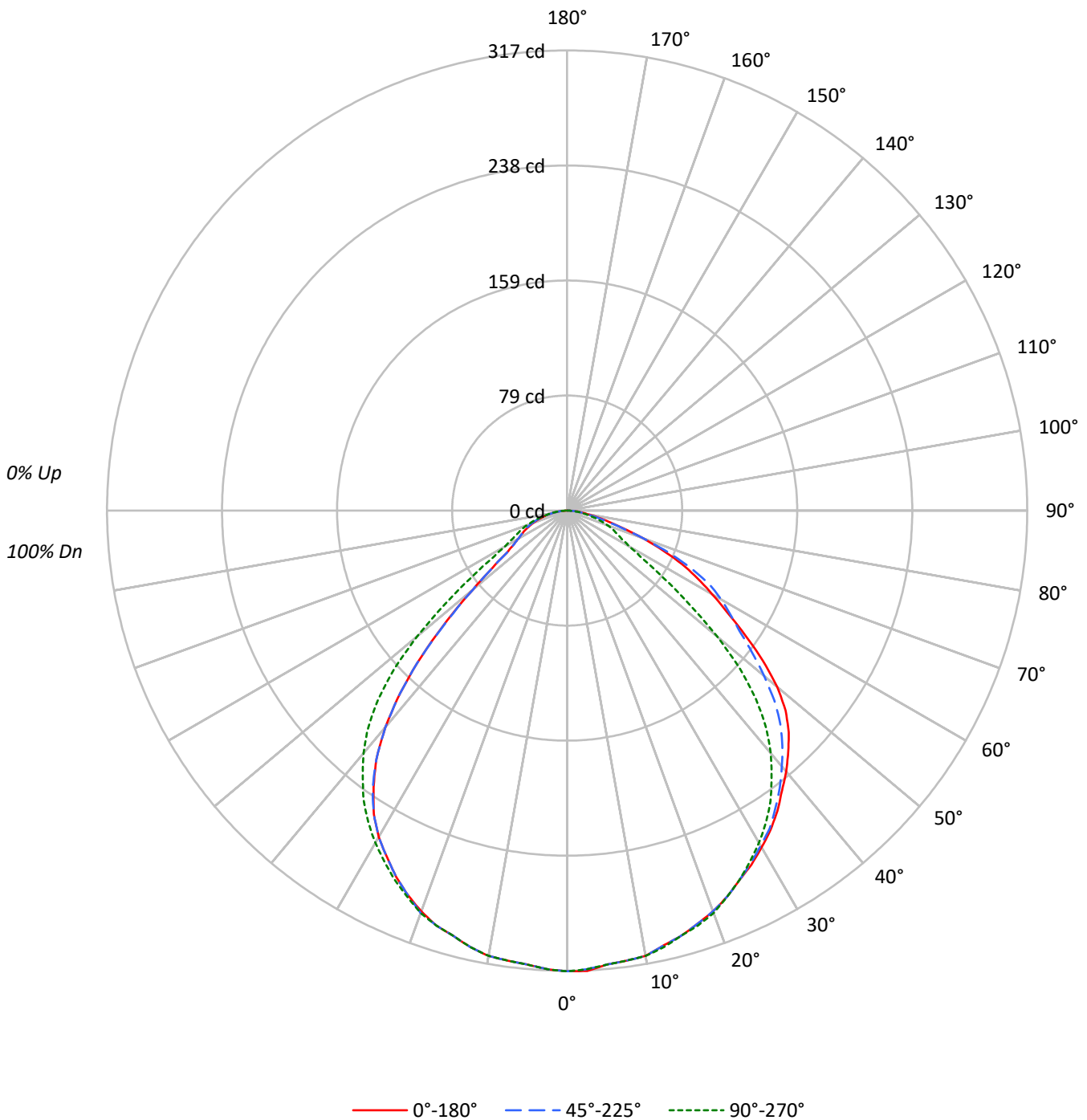
Input Watts (W): 14.1  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 0.12376  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	117	117	117	117	111	111	111	107	107	107	102	102	102	100
1	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75
3	94	85	77	71	92	83	76	71	80	74	70	77	73	68	75	71	67	65
4	87	76	68	62	85	75	67	61	72	66	61	70	64	60	68	63	59	57
5	80	68	60	54	78	67	60	54	65	59	53	63	57	53	62	56	52	50
6	74	62	54	48	73	61	53	48	59	53	47	58	52	47	56	51	47	45
7	69	57	49	43	68	56	48	43	54	47	42	53	47	42	52	46	42	40
8	65	52	44	39	63	51	44	38	50	43	38	49	43	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	39	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	35	31	30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	18946	18946	18946
5°	18381	18381	18381
10°	18035	18035	18035
15°	17497	17497	17497
20°	17017	17086	17017
25°	16455	16455	16320
30°	16009	15794	15513
35°	15513	15009	14284
40°	14960	13909	12405
45°	14399	12278	9444
50°	13316	9486	5995
55°	11308	6141	3825
60°	9451	4055	3180
65°	7854	3401	2870
70°	5599	2976	2502
75°	3416	2327	2050
80°	1947	1618	1453
85°	1204	797	797



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	29.9	4.2	4.2
10°-20°	85.7	12.1	12.2
20°-30°	129.0	18.3	18.3
30°-40°	150.9	21.4	21.4
40°-50°	135.3	19.2	19.2
50°-60°	87.9	12.4	12.5
60°-70°	56.7	8.0	8.0
70°-80°	24.7	3.5	3.5
80°-90°	6.0	0.8	0.9
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	244.6	34.6	34.8
0°-40°	395.5	56.0	56.2
0°-60°	618.8	87.6	87.9
0°-90°	706.2	100.0	100.3
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	706.2	100.0	100.3

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	317	317	317	317	317	
5°	314	314	314	314	314	30
15°	303	303	303	303	303	86
25°	281	281	281	278	278	130
35°	252	250	244	234	232	158
45°	216	208	184	142	142	165
55°	150	145	81	51	51	135
65°	87	94	38	33	32	85
75°	30	27	20	19	18	33
85°	7	6	5	5	5	8
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4
2.5°	317.4	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2
5°	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9
7.5°	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7
10°	311.5	311.5	311.5	311.5	311.5	311.5	311.5	310.3	311.5	311.5	311.5
12.5°	306.8	306.8	306.8	306.8	306.8	306.8	306.8	306.8	306.8	306.8	306.8
15°	303.3	302.1	302.1	302.1	302.1	302.1	302.1	302.1	302.1	303.3	303.3
17.5°	298.5	298.5	298.5	298.5	298.5	298.5	298.5	298.5	298.5	298.5	298.5
20°	293.8	293.8	293.8	293.8	293.8	293.8	293.8	293.8	293.8	293.8	295.0
22.5°	287.9	287.9	287.9	287.9	287.9	287.9	287.9	287.9	287.9	287.9	287.9
25°	280.8	280.8	280.8	280.8	280.8	280.8	280.8	280.8	280.8	280.8	280.8
27.5°	274.9	273.8	273.8	273.8	273.8	273.8	273.8	273.8	273.8	273.8	273.8
30°	267.9	267.9	267.9	267.9	267.9	267.9	266.7	266.7	266.7	266.7	266.7
32.5°	260.8	260.8	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	258.4
35°	252.5	251.3	251.3	251.3	251.3	251.3	250.2	250.2	250.2	250.2	250.2
37.5°	243.1	243.1	243.1	243.1	241.9	241.9	241.9	240.7	240.7	240.7	239.5
40°	234.8	234.8	234.8	233.6	233.6	233.6	232.5	232.5	231.3	230.1	230.1
42.5°	225.4	225.4	225.4	225.4	224.2	223.0	223.0	221.8	220.7	219.5	219.5
45°	215.9	215.9	215.9	214.8	213.6	212.4	211.2	210.0	208.9	207.7	206.5
47.5°	204.1	203.0	203.0	201.8	201.8	200.6	198.2	197.1	195.9	193.5	192.3
50°	188.8	187.6	187.6	186.4	185.3	184.1	182.9	180.5	179.4	177.0	175.8
52.5°	169.9	168.7	168.7	168.7	167.6	166.4	165.2	164.0	161.7	160.5	158.1
55°	149.9	149.9	149.9	149.9	149.9	148.7	148.7	147.5	146.3	145.1	144.0
57.5°	131.0	131.0	132.2	132.2	133.3	133.3	133.3	133.3	133.3	133.3	132.2
60°	115.6	115.6	116.8	118.0	118.0	119.2	120.4	121.5	122.7	122.7	122.7
62.5°	101.5	101.5	102.7	102.7	103.8	105.0	106.2	108.6	109.7	110.9	112.1
65°	87.3	87.3	87.3	87.3	88.5	89.7	90.9	92.0	93.2	94.4	96.8
67.5°	70.8	70.8	70.8	70.8	70.8	72.0	72.0	73.2	74.3	75.5	76.7
70°	55.5	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	55.5	55.5
72.5°	40.1	40.1	40.1	40.1	38.9	38.9	38.9	38.9	38.9	38.9	38.9
75°	29.5	29.5	28.3	28.3	28.3	27.1	27.1	27.1	27.1	27.1	27.1
77.5°	21.2	20.1	20.1	20.1	20.1	20.1	18.9	18.9	18.9	18.9	18.9
80°	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	13.0	13.0	13.0
82.5°	10.6	10.6	10.6	10.6	9.4	9.4	9.4	9.4	9.4	9.4	9.4
85°	7.1	7.1	7.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.4	2.4	2.4	2.4
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4
2.5°	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2
5°	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9
7.5°	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7
10°	311.5	311.5	311.5	311.5	311.5	311.5	311.5	311.5	311.5	311.5	311.5
12.5°	306.8	306.8	306.8	306.8	308.0	308.0	308.0	308.0	308.0	308.0	308.0
15°	303.3	303.3	303.3	303.3	303.3	303.3	303.3	303.3	303.3	303.3	303.3
17.5°	299.7	299.7	299.7	299.7	299.7	299.7	299.7	299.7	299.7	299.7	299.7
20°	295.0	295.0	295.0	295.0	295.0	295.0	295.0	295.0	295.0	295.0	295.0
22.5°	287.9	287.9	287.9	289.1	289.1	289.1	289.1	287.9	289.1	287.9	287.9
25°	280.8	280.8	280.8	280.8	280.8	280.8	280.8	280.8	280.8	279.7	279.7
27.5°	273.8	273.8	273.8	273.8	273.8	273.8	272.6	272.6	272.6	272.6	271.4
30°	266.7	266.7	266.7	266.7	266.7	265.5	265.5	264.3	264.3	263.1	262.0
32.5°	258.4	258.4	258.4	258.4	257.2	257.2	256.1	254.9	253.7	252.5	251.3
35°	249.0	249.0	249.0	247.8	247.8	246.6	245.4	244.3	241.9	240.7	238.4
37.5°	239.5	239.5	238.4	237.2	236.0	234.8	233.6	231.3	228.9	226.6	224.2
40°	230.1	228.9	227.7	226.6	225.4	223.0	220.7	218.3	214.8	211.2	206.5
42.5°	218.3	217.1	215.9	213.6	211.2	208.9	206.5	203.0	198.2	192.3	186.4
45°	205.3	204.1	201.8	199.4	195.9	192.3	188.8	184.1	178.2	169.9	161.7
47.5°	190.0	188.8	185.3	181.7	177.0	172.3	167.6	161.7	154.6	145.1	135.7
50°	173.5	171.1	167.6	161.7	155.8	148.7	141.6	134.5	127.4	118.0	108.6
52.5°	155.8	153.4	148.7	140.4	132.2	122.7	114.5	106.2	100.3	92.0	83.8
55°	141.6	138.1	132.2	122.7	110.9	99.1	88.5	81.4	75.5	69.6	64.9
57.5°	131.0	127.4	120.4	108.6	94.4	81.4	69.6	61.4	56.6	53.1	50.7
60°	122.7	120.4	112.1	99.1	83.8	68.4	57.8	49.6	46.0	43.7	42.5
62.5°	112.1	109.7	102.7	90.9	75.5	60.2	49.6	42.5	38.9	37.8	36.6
65°	96.8	95.6	89.7	79.1	66.1	53.1	43.7	37.8	35.4	34.2	33.0
67.5°	77.9	76.7	73.2	64.9	55.5	46.0	37.8	34.2	31.9	30.7	30.7
70°	56.6	56.6	54.3	50.7	43.7	37.8	31.9	29.5	27.1	27.1	27.1
72.5°	38.9	38.9	37.8	36.6	33.0	29.5	26.0	24.8	23.6	23.6	22.4
75°	26.0	26.0	26.0	26.0	24.8	22.4	21.2	20.1	18.9	18.9	18.9
77.5°	17.7	17.7	17.7	17.7	17.7	16.5	16.5	15.3	15.3	15.3	15.3
80°	13.0	13.0	13.0	13.0	13.0	11.8	11.8	11.8	11.8	11.8	11.8
82.5°	9.4	9.4	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
85°	5.9	5.9	5.9	5.9	5.9	4.7	4.7	4.7	4.7	4.7	4.7
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4	317.4
2.5°	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2	316.2
5°	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9
7.5°	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7	312.7
10°	311.5	311.5	311.5	311.5	311.5	311.5	311.5	311.5	311.5	311.5	311.5
12.5°	308.0	308.0	308.0	308.0	308.0	308.0	308.0	308.0	308.0	308.0	308.0
15°	303.3	303.3	303.3	303.3	303.3	303.3	303.3	304.4	303.3	303.3	303.3
17.5°	299.7	299.7	299.7	299.7	299.7	299.7	299.7	299.7	299.7	299.7	299.7
20°	295.0	295.0	295.0	295.0	295.0	295.0	295.0	295.0	295.0	293.8	293.8
22.5°	287.9	287.9	287.9	287.9	287.9	286.7	286.7	286.7	286.7	286.7	286.7
25°	279.7	279.7	279.7	278.5	278.5	278.5	278.5	278.5	278.5	278.5	278.5
27.5°	271.4	270.2	270.2	270.2	269.0	269.0	269.0	269.0	269.0	269.0	269.0
30°	262.0	260.8	260.8	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6
32.5°	251.3	250.2	249.0	249.0	247.8	247.8	247.8	247.8	247.8	247.8	247.8
35°	237.2	236.0	234.8	233.6	233.6	233.6	232.5	232.5	232.5	232.5	232.5
37.5°	221.8	219.5	218.3	217.1	215.9	215.9	215.9	215.9	215.9	215.9	215.9
40°	203.0	199.4	198.2	197.1	195.9	194.7	194.7	194.7	194.7	194.7	194.7
42.5°	180.5	175.8	173.5	171.1	169.9	169.9	169.9	169.9	169.9	169.9	169.9
45°	154.6	148.7	144.0	142.8	141.6	141.6	141.6	141.6	141.6	141.6	141.6
47.5°	126.3	119.2	114.5	113.3	112.1	110.9	110.9	110.9	110.9	112.1	112.1
50°	99.1	92.0	88.5	86.1	85.0	85.0	85.0	85.0	85.0	85.0	85.0
52.5°	76.7	70.8	67.3	64.9	64.9	64.9	64.9	64.9	64.9	64.9	64.9
55°	59.0	55.5	53.1	51.9	51.9	50.7	50.7	50.7	50.7	50.7	50.7
57.5°	47.2	46.0	44.8	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7
60°	41.3	40.1	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9
62.5°	36.6	36.6	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4
65°	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	31.9
67.5°	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
70°	27.1	27.1	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
72.5°	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	21.2	21.2	21.2
75°	18.9	18.9	18.9	18.9	18.9	18.9	17.7	17.7	17.7	17.7	17.7
77.5°	15.3	15.3	15.3	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
80°	11.8	11.8	11.8	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
82.5°	8.3	8.3	8.3	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
85°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
87.5°	2.4	2.4	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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):**

	165°	170°	175°	180°
0°	317.4	317.4	317.4	317.4
2.5°	316.2	316.2	316.2	316.2
5°	313.9	313.9	313.9	313.9
7.5°	312.7	312.7	312.7	312.7
10°	311.5	311.5	311.5	311.5
12.5°	308.0	308.0	308.0	308.0
15°	303.3	303.3	303.3	303.3
17.5°	299.7	299.7	299.7	299.7
20°	293.8	293.8	293.8	293.8
22.5°	286.7	286.7	286.7	286.7
25°	278.5	278.5	278.5	278.5
27.5°	269.0	269.0	269.0	269.0
30°	258.4	259.6	259.6	259.6
32.5°	247.8	247.8	247.8	247.8
35°	232.5	232.5	232.5	232.5
37.5°	215.9	215.9	215.9	215.9
40°	194.7	194.7	194.7	194.7
42.5°	169.9	169.9	169.9	169.9
45°	141.6	141.6	141.6	141.6
47.5°	110.9	112.1	112.1	112.1
50°	85.0	85.0	85.0	85.0
52.5°	64.9	64.9	64.9	64.9
55°	50.7	50.7	50.7	50.7
57.5°	43.7	43.7	42.5	43.7
60°	38.9	38.9	37.8	38.9
62.5°	35.4	35.4	35.4	35.4
65°	31.9	31.9	31.9	31.9
67.5°	29.5	29.5	28.3	28.3
70°	26.0	26.0	24.8	24.8
72.5°	21.2	21.2	21.2	21.2
75°	17.7	17.7	17.7	17.7
77.5°	14.2	14.2	14.2	14.2
80°	10.6	10.6	10.6	10.6
82.5°	7.1	7.1	7.1	7.1
85°	4.7	4.7	4.7	4.7
87.5°	1.2	1.2	1.2	1.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)