

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: P85552

Luminaire Tested: **ML709830ICAT120D-495PWW06-H750ICAT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P85552
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P21273)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML709830ICAT120D-495PWW06-H750ICAT
Description: HALO 6 INCH LED DOWNLIGHT WITH 900 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----
Trim Cat.No.
Light Source: (1)SMT LED 3000K
CL-L241-C26L2-A
Ballast/Driver: (1)ELECTRONIC DRIVER
(1)RHPS311BL-CLO

Summary

Lumens per Lamp: 706 (1 lamp)
Luminaire Lumens: 709.2 lumens
Efficiency: 100.5%
Efficacy: 50.7 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.22 / 1.28
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

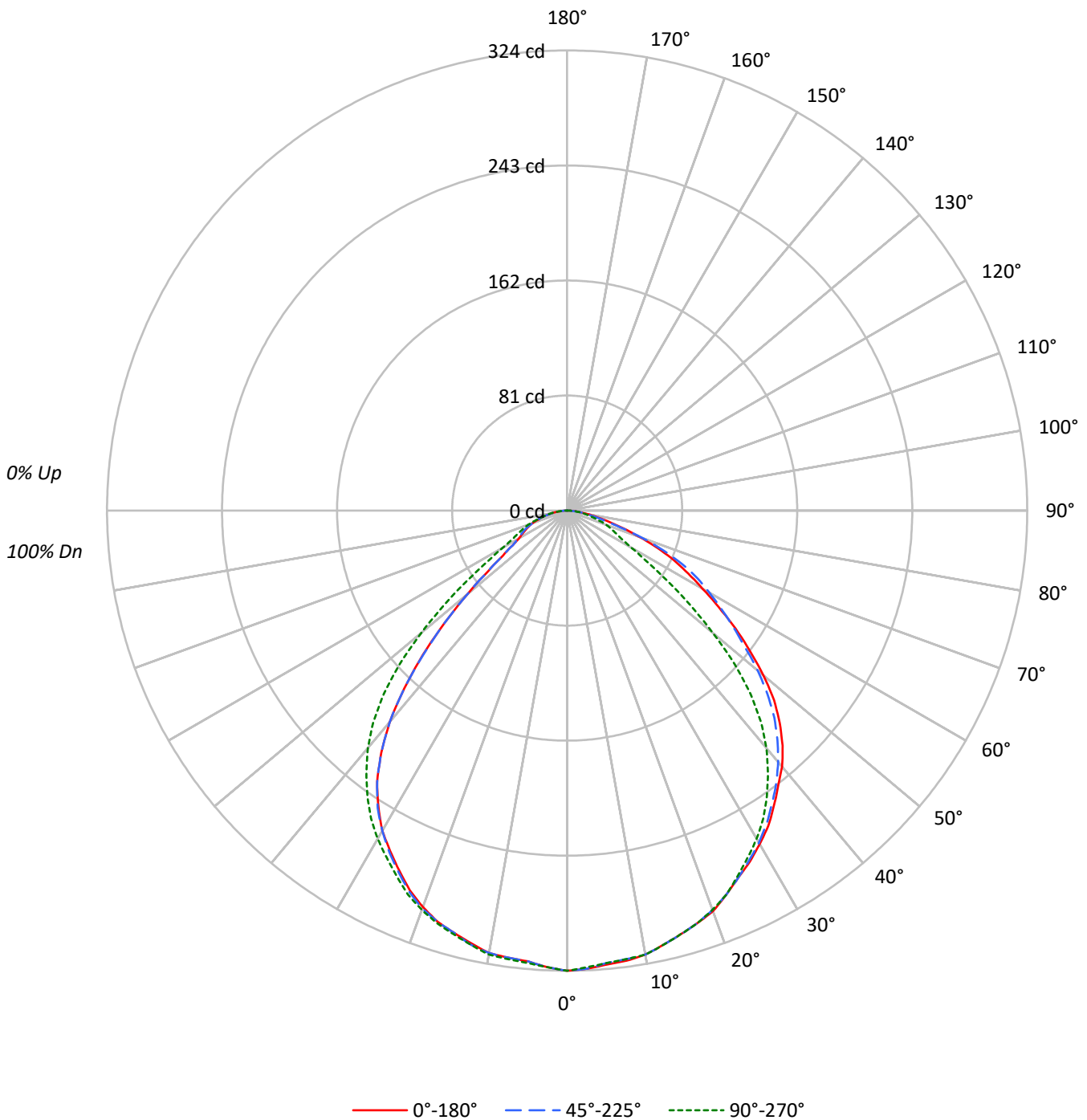
Input Watts (W): 14
Input Voltage (V): NR
Input Current (Ain): 0.12083
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	120	120	120	120	117	117	117	117	112	112	112	107	107	107	103	103	103	100
1	111	107	103	100	108	105	101	98	100	98	95	97	94	92	93	91	90	88
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	83	80	78	76
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66
4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59	57
5	81	69	60	54	79	68	60	54	66	59	54	64	58	53	62	57	52	51
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45
7	70	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°	90°	180°
0°	19340	19340	19340
5°	18785	18721	18656
10°	18383	18383	18319
15°	17820	17820	17757
20°	17388	17330	17202
25°	16707	16643	16391
30°	16200	15943	15555
35°	15593	15065	14333
40°	14998	13903	12386
45°	14119	12172	9577
50°	12723	9444	6474
55°	10916	6435	4157
60°	9009	4235	3180
65°	7486	3401	2915
70°	5447	2946	2613
75°	3497	2246	2131
80°	2070	1632	1481
85°	1103	916	729



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	30.4	4.3	4.3
10°-20°	87.1	12.3	12.3
20°-30°	130.5	18.4	18.5
30°-40°	151.4	21.3	21.4
40°-50°	135.2	19.1	19.2
50°-60°	88.3	12.4	12.5
60°-70°	55.3	7.8	7.8
70°-80°	25.0	3.5	3.5
80°-90°	6.0	0.8	0.8
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°	248.1	35.0	35.1
0°-40°	399.5	56.3	56.6
0°-60°	623.0	87.8	88.2
0°-90°	709.2	100.0	100.5
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°	709.2	100.0	100.5

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	324	324	324	324	324	
5°	321	320	320	319	319	31
15°	309	309	309	308	308	87
25°	285	285	284	281	280	132
35°	254	252	245	233	233	159
45°	212	206	182	143	144	162
55°	145	143	85	55	55	129
65°	83	90	38	34	32	82
75°	30	27	19	18	18	34
85°	6	5	5	4	4	7
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°	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0
2.5°	322.9	322.9	322.9	322.9	322.9	322.9	322.9	322.9	322.9	322.9	322.9
5°	320.8	319.7	319.7	319.7	319.7	319.7	319.7	319.7	319.7	319.7	319.7
7.5°	319.7	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6
10°	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5
12.5°	313.2	313.2	313.2	313.2	313.2	313.2	313.2	313.2	313.2	313.2	313.2
15°	308.9	308.9	308.9	308.9	307.8	308.9	308.9	307.8	307.8	308.9	307.8
17.5°	304.6	304.6	304.6	304.6	304.6	304.6	304.6	304.6	304.6	304.6	304.6
20°	300.2	299.2	299.2	299.2	299.2	299.2	299.2	299.2	299.2	299.2	299.2
22.5°	292.7	292.7	292.7	292.7	292.7	292.7	292.7	292.7	292.7	292.7	292.7
25°	285.1	285.1	285.1	285.1	285.1	285.1	285.1	285.1	285.1	285.1	285.1
27.5°	278.6	277.6	277.6	278.6	277.6	277.6	277.6	277.6	277.6	277.6	277.6
30°	271.1	271.1	271.1	271.1	271.1	271.1	270.0	270.0	270.0	270.0	270.0
32.5°	263.5	262.4	262.4	262.4	262.4	262.4	262.4	262.4	261.4	261.4	261.4
35°	253.8	253.8	253.8	252.7	252.7	252.7	252.7	252.7	251.6	251.6	251.6
37.5°	244.1	244.1	244.1	244.1	243.0	243.0	243.0	243.0	241.9	241.9	240.8
40°	235.4	234.4	234.4	234.4	233.3	233.3	233.3	232.2	232.2	231.1	231.1
42.5°	224.6	223.6	223.6	223.6	222.5	222.5	221.4	221.4	220.3	219.2	219.2
45°	211.7	211.7	211.7	210.6	210.6	210.6	209.5	208.4	207.4	206.3	205.2
47.5°	197.6	197.6	196.6	196.6	195.5	195.5	194.4	193.3	192.2	191.2	190.1
50°	180.4	180.4	180.4	179.3	179.3	178.2	177.1	177.1	175.0	175.0	172.8
52.5°	162.0	162.0	162.0	162.0	160.9	160.9	160.9	159.8	158.8	157.7	156.6
55°	144.7	143.6	144.7	144.7	144.7	144.7	143.6	143.6	143.6	142.6	142.6
57.5°	126.4	126.4	127.4	127.4	127.4	128.5	128.5	128.5	128.5	128.5	128.5
60°	110.2	110.2	111.2	111.2	112.3	113.4	113.4	114.5	115.6	115.6	116.6
62.5°	96.1	96.1	97.2	97.2	98.3	99.4	100.4	101.5	102.6	103.7	103.7
65°	83.2	83.2	83.2	84.2	84.2	85.3	86.4	87.5	88.6	89.6	90.7
67.5°	69.1	69.1	69.1	69.1	69.1	70.2	70.2	71.3	72.4	73.4	74.5
70°	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	55.1	56.2	56.2
72.5°	41.0	41.0	40.0	40.0	40.0	40.0	38.9	38.9	38.9	38.9	40.0
75°	30.2	29.2	29.2	29.2	29.2	28.1	28.1	28.1	28.1	27.0	27.0
77.5°	21.6	21.6	20.5	20.5	20.5	20.5	19.4	19.4	19.4	19.4	18.4
80°	15.1	14.0	14.0	14.0	14.0	14.0	14.0	14.0	13.0	13.0	13.0
82.5°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	8.6
85°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4
87.5°	3.2	2.2	3.2	3.2	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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0
2.5°	322.9	322.9	322.9	321.8	322.9	321.8	321.8	321.8	321.8	321.8	321.8
5°	319.7	319.7	319.7	319.7	319.7	319.7	319.7	319.7	319.7	319.7	318.6
7.5°	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6
10°	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	316.4
12.5°	312.1	313.2	313.2	313.2	313.2	313.2	313.2	313.2	313.2	313.2	313.2
15°	307.8	308.9	308.9	308.9	308.9	308.9	308.9	308.9	308.9	308.9	308.9
17.5°	304.6	304.6	304.6	304.6	304.6	304.6	304.6	304.6	304.6	304.6	304.6
20°	299.2	299.2	299.2	299.2	299.2	299.2	299.2	299.2	299.2	299.2	299.2
22.5°	292.7	292.7	292.7	292.7	292.7	292.7	292.7	292.7	291.6	291.6	291.6
25°	285.1	285.1	285.1	285.1	284.0	284.0	284.0	284.0	284.0	283.0	283.0
27.5°	277.6	277.6	277.6	276.5	276.5	276.5	276.5	275.4	275.4	274.3	273.2
30°	270.0	270.0	268.9	268.9	268.9	267.8	267.8	266.8	265.7	264.6	264.6
32.5°	261.4	261.4	260.3	260.3	259.2	258.1	258.1	257.0	256.0	253.8	252.7
35°	251.6	250.6	250.6	249.5	248.4	247.3	246.2	245.2	243.0	241.9	239.8
37.5°	240.8	239.8	239.8	238.7	237.6	235.4	234.4	232.2	230.0	226.8	223.6
40°	230.0	229.0	227.9	226.8	224.6	223.6	220.3	218.2	214.9	210.6	206.3
42.5°	218.2	217.1	214.9	212.8	210.6	208.4	205.2	202.0	197.6	192.2	185.8
45°	204.1	203.0	200.9	197.6	194.4	191.2	186.8	182.5	177.1	169.6	162.0
47.5°	189.0	186.8	183.6	180.4	175.0	170.6	165.2	159.8	153.4	145.8	137.2
50°	171.7	169.6	165.2	159.8	153.4	146.9	140.4	133.9	127.4	119.9	112.3
52.5°	155.5	153.4	148.0	140.4	132.8	124.2	115.6	109.1	101.5	95.0	88.6
55°	141.5	138.2	132.8	123.1	113.4	102.6	92.9	85.3	79.9	73.4	68.0
57.5°	128.5	125.3	118.8	109.1	96.1	84.2	73.4	65.9	60.5	57.2	52.9
60°	116.6	113.4	106.9	97.2	84.2	70.2	59.4	51.8	47.5	45.4	43.2
62.5°	104.8	102.6	96.1	86.4	74.5	61.6	50.8	43.2	40.0	37.8	37.8
65°	90.7	89.6	84.2	75.6	64.8	52.9	44.3	37.8	35.6	34.6	33.5
67.5°	74.5	74.5	70.2	63.7	54.0	45.4	37.8	33.5	31.3	30.2	30.2
70°	57.2	57.2	55.1	49.7	43.2	36.7	31.3	29.2	27.0	27.0	27.0
72.5°	40.0	40.0	40.0	36.7	33.5	29.2	25.9	23.8	23.8	22.7	22.7
75°	27.0	27.0	27.0	25.9	24.8	22.7	20.5	19.4	19.4	19.4	19.4
77.5°	18.4	18.4	18.4	18.4	17.3	16.2	16.2	15.1	15.1	15.1	15.1
80°	13.0	13.0	13.0	13.0	13.0	11.9	11.9	11.9	11.9	11.9	11.9
82.5°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	7.6
85°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	4.3
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



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0	324.0
2.5°	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8
5°	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6	318.6
7.5°	318.6	318.6	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5
10°	317.5	317.5	316.4	316.4	316.4	316.4	316.4	316.4	316.4	316.4	316.4
12.5°	313.2	313.2	313.2	313.2	313.2	313.2	313.2	313.2	312.1	313.2	313.2
15°	308.9	307.8	307.8	307.8	307.8	307.8	307.8	307.8	307.8	307.8	307.8
17.5°	304.6	304.6	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5	303.5
20°	298.1	298.1	298.1	298.1	298.1	298.1	297.0	298.1	297.0	297.0	297.0
22.5°	291.6	291.6	290.5	290.5	290.5	290.5	290.5	289.4	289.4	289.4	289.4
25°	281.9	281.9	281.9	281.9	280.8	280.8	280.8	280.8	280.8	280.8	279.7
27.5°	273.2	273.2	272.2	272.2	271.1	271.1	271.1	271.1	270.0	271.1	270.0
30°	263.5	262.4	261.4	261.4	261.4	260.3	260.3	260.3	260.3	260.3	260.3
32.5°	251.6	250.6	249.5	249.5	248.4	248.4	248.4	248.4	247.3	248.4	247.3
35°	237.6	236.5	234.4	234.4	233.3	233.3	233.3	233.3	232.2	233.3	233.3
37.5°	221.4	219.2	217.1	216.0	214.9	214.9	214.9	214.9	214.9	214.9	214.9
40°	202.0	198.7	196.6	194.4	194.4	194.4	194.4	194.4	194.4	194.4	194.4
42.5°	179.3	175.0	171.7	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6
45°	155.5	149.0	145.8	143.6	142.6	142.6	142.6	142.6	142.6	143.6	143.6
47.5°	129.6	123.1	118.8	116.6	116.6	116.6	115.6	116.6	116.6	116.6	116.6
50°	104.8	98.3	94.0	91.8	91.8	91.8	91.8	91.8	91.8	91.8	91.8
52.5°	81.0	76.7	73.4	71.3	71.3	70.2	70.2	70.2	71.3	71.3	71.3
55°	62.6	58.3	56.2	55.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1
57.5°	49.7	47.5	46.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4
60°	42.1	41.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
62.5°	36.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	35.6	35.6	35.6
65°	33.5	33.5	33.5	33.5	33.5	33.5	33.5	32.4	32.4	32.4	32.4
67.5°	30.2	30.2	30.2	30.2	30.2	30.2	30.2	29.2	29.2	29.2	29.2
70°	27.0	27.0	27.0	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9
72.5°	22.7	22.7	22.7	22.7	22.7	22.7	21.6	21.6	21.6	21.6	21.6
75°	19.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
77.5°	15.1	15.1	15.1	15.1	14.0	14.0	14.0	14.0	14.0	14.0	14.0
80°	11.9	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
82.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
85°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
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



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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	324.0	324.0	324.0	324.0
2.5°	321.8	321.8	321.8	321.8
5°	318.6	318.6	318.6	318.6
7.5°	317.5	317.5	317.5	317.5
10°	316.4	316.4	316.4	316.4
12.5°	312.1	312.1	312.1	312.1
15°	307.8	307.8	307.8	307.8
17.5°	303.5	303.5	303.5	303.5
20°	297.0	297.0	297.0	297.0
22.5°	289.4	289.4	289.4	289.4
25°	279.7	279.7	280.8	279.7
27.5°	270.0	270.0	270.0	270.0
30°	260.3	260.3	260.3	260.3
32.5°	247.3	247.3	247.3	247.3
35°	232.2	233.3	232.2	233.3
37.5°	214.9	214.9	214.9	214.9
40°	194.4	194.4	194.4	194.4
42.5°	169.6	169.6	169.6	169.6
45°	143.6	143.6	143.6	143.6
47.5°	116.6	116.6	116.6	116.6
50°	91.8	91.8	91.8	91.8
52.5°	71.3	71.3	70.2	70.2
55°	55.1	55.1	55.1	55.1
57.5°	45.4	45.4	44.3	45.4
60°	40.0	38.9	38.9	38.9
62.5°	35.6	35.6	35.6	35.6
65°	32.4	32.4	32.4	32.4
67.5°	29.2	29.2	29.2	29.2
70°	25.9	25.9	25.9	25.9
72.5°	21.6	21.6	21.6	21.6
75°	18.4	18.4	18.4	18.4
77.5°	14.0	14.0	14.0	14.0
80°	10.8	10.8	10.8	10.8
82.5°	7.6	7.6	7.6	7.6
85°	4.3	4.3	4.3	4.3
87.5°	2.2	2.2	2.2	2.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)