

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: P85553

Luminaire Tested: **ML709835ICAT120D-495PWW06-H750ICAT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P85553
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML709835ICAT120D-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 3500K
CL-L241-C26L2-A 14.3 WATTS
Ballast/Driver: (1)ELECTRONIC DRIVER
(1)RHPS311BL-CLO

Summary

Lumens per Lamp: 771 (1 lamp)
Luminaire Lumens: 771.6 lumens
Efficiency: 100.1%
Efficacy: 55.1 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

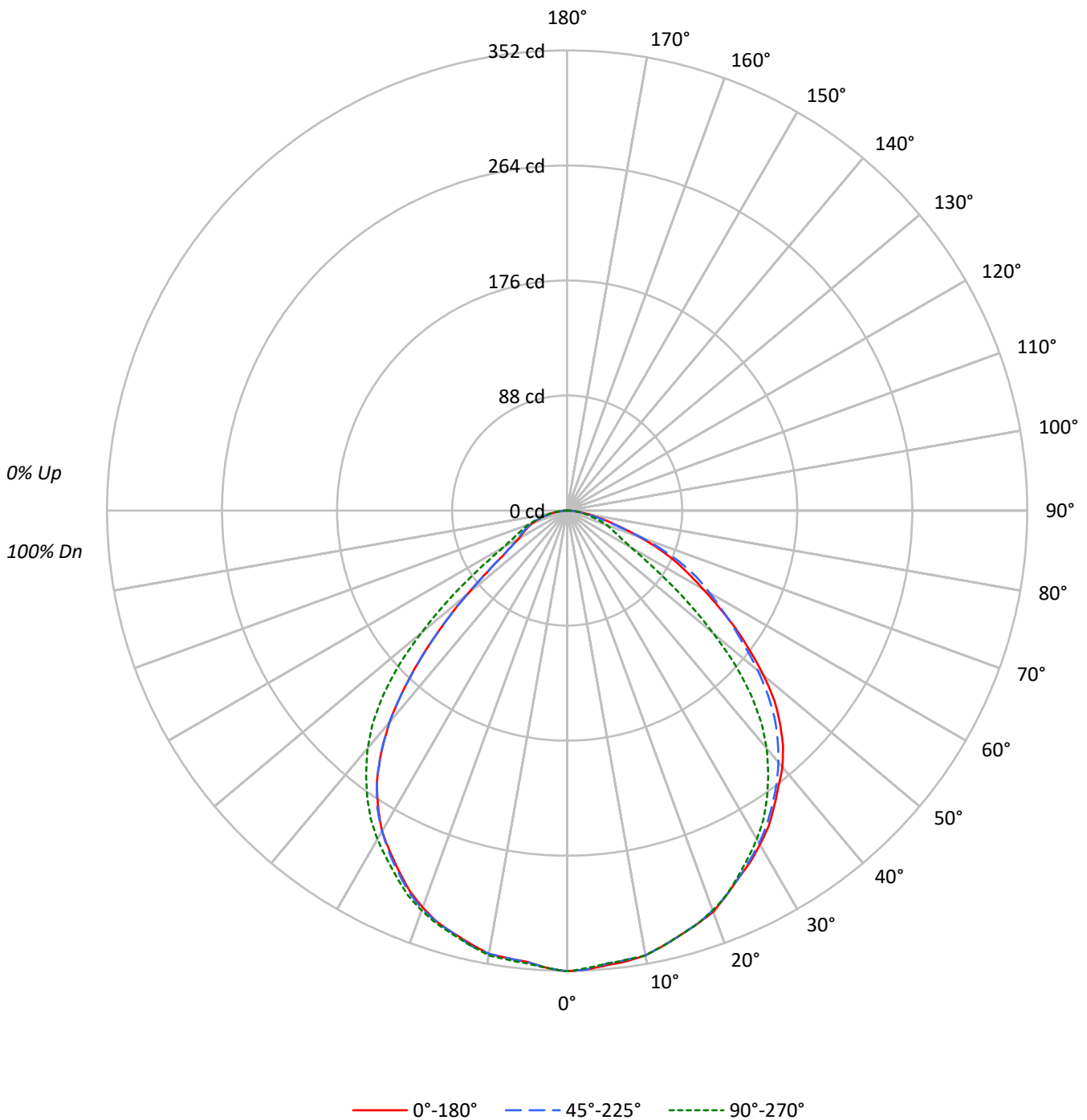
Input Watts (W): 14
Input Voltage (V): NR
Input Current (Ain): 0.12083
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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					100			
1	110	106	103	99	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	84	77	71	91	83	76	71	80	74	70	77	73	68	75	71	67					65				
4	87	76	68	62	84	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	60	53	47	58	52	47	56	51	47					45				
7	69	57	49	43	68	56	48	43	54	48	42	53	47	42	52	46	42					40				
8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38					36				
9	61	48	40	35	59	47	40	35	46	40	35	45	39	35	44	39	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32					30				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	21041	21041	21041
5°	20437	20366	20296
10°	19998	19998	19935
15°	19383	19383	19320
20°	18922	18853	18714
25°	18178	18108	17832
30°	17622	17342	16923
35°	16963	16385	15593
40°	16324	15126	13476
45°	15360	13245	10424
50°	13838	10276	7046
55°	11882	7001	4519
60°	9794	4611	3458
65°	8142	3698	3167
70°	5932	3198	2845
75°	3810	2455	2316
80°	2249	1769	1618
85°	1187	1001	797



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	33.1	4.3	4.3
10°-20°	94.8	12.3	12.3
20°-30°	141.9	18.4	18.4
30°-40°	164.7	21.3	21.4
40°-50°	147.1	19.1	19.1
50°-60°	96.1	12.4	12.5
60°-70°	60.2	7.8	7.8
70°-80°	27.2	3.5	3.5
80°-90°	6.5	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°	269.9	35.0	35.0
0°-40°	434.6	56.3	56.4
0°-60°	677.8	87.8	87.9
0°-90°	771.6	100.0	100.1
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°	771.6	100.0	100.1

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	352	352	352	352	352	
5°	349	348	348	347	347	33
15°	336	336	336	335	335	95
25°	310	310	309	306	304	143
35°	276	274	267	254	254	173
45°	230	224	199	155	156	177
55°	158	155	93	60	60	140
65°	90	98	41	36	35	89
75°	33	29	21	20	20	36
85°	7	6	6	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°	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5
2.5°	351.3	351.3	351.3	351.3	351.3	351.3	351.3	351.3	351.3	351.3	351.3
5°	349.0	347.8	347.8	347.8	347.8	347.8	347.8	347.8	347.8	347.8	347.8
7.5°	347.8	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6
10°	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4
12.5°	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8
15°	336.0	336.0	336.0	336.0	334.9	336.0	336.0	334.9	334.9	336.0	334.9
17.5°	331.4	331.4	331.4	331.4	331.4	331.4	331.4	331.4	331.4	331.4	331.4
20°	326.7	325.5	325.5	325.5	325.5	325.5	325.5	325.5	325.5	325.5	325.5
22.5°	318.4	318.4	318.4	318.4	318.4	318.4	318.4	318.4	318.4	318.4	318.4
25°	310.2	310.2	310.2	310.2	310.2	310.2	310.2	310.2	310.2	310.2	310.2
27.5°	303.2	302.0	302.0	303.2	302.0	302.0	302.0	302.0	302.0	302.0	302.0
30°	294.9	294.9	294.9	294.9	294.9	294.9	293.8	293.8	293.8	293.8	293.8
32.5°	286.7	285.5	285.5	285.5	285.5	285.5	285.5	285.5	284.4	284.4	284.4
35°	276.1	276.1	276.1	275.0	275.0	275.0	275.0	275.0	273.8	273.8	273.8
37.5°	265.6	265.6	265.6	265.6	264.4	264.4	264.4	264.4	263.2	263.2	262.0
40°	256.2	255.0	255.0	255.0	253.8	253.8	253.8	252.6	252.6	251.4	251.4
42.5°	244.4	243.2	243.2	243.2	242.0	242.0	240.9	240.9	239.7	238.5	238.5
45°	230.3	230.3	230.3	229.1	229.1	229.1	228.0	226.8	225.6	224.4	223.2
47.5°	215.0	215.0	213.8	213.8	212.7	212.7	211.5	210.3	209.2	208.0	206.8
50°	196.2	196.2	196.2	195.0	195.0	193.9	192.7	192.7	190.4	190.4	188.0
52.5°	176.2	176.2	176.2	176.2	175.1	175.1	175.1	173.9	172.7	171.6	170.4
55°	157.5	156.3	157.5	157.5	157.5	157.5	156.3	156.3	156.3	155.1	155.1
57.5°	137.5	137.5	138.6	138.6	138.6	139.8	139.8	139.8	139.8	139.8	139.8
60°	119.8	119.8	121.0	121.0	122.2	123.4	123.4	124.6	125.7	125.7	126.9
62.5°	104.6	104.6	105.8	105.8	106.9	108.1	109.3	110.4	111.6	112.8	112.8
65°	90.5	90.5	90.5	91.6	91.6	92.8	94.0	95.2	96.4	97.5	98.7
67.5°	75.2	75.2	75.2	75.2	75.2	76.4	76.4	77.6	78.7	79.9	81.1
70°	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8	59.9	61.1	61.1
72.5°	44.6	44.6	43.5	43.5	43.5	43.5	42.3	42.3	42.3	42.3	43.5
75°	32.9	31.7	31.7	31.7	31.7	30.6	30.6	30.6	30.6	29.4	29.4
77.5°	23.5	23.5	22.3	22.3	22.3	22.3	21.2	21.2	21.2	21.2	20.0
80°	16.4	15.3	15.3	15.3	15.3	15.3	15.3	15.3	14.1	14.1	14.1
82.5°	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	9.4
85°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	5.9	5.9
87.5°	3.5	2.4	3.5	3.5	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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5
2.5°	351.3	351.3	351.3	350.2	351.3	350.2	350.2	350.2	350.2	350.2	350.2
5°	347.8	347.8	347.8	347.8	347.8	347.8	347.8	347.8	347.8	347.8	346.6
7.5°	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6
10°	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4	344.3
12.5°	339.6	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8
15°	334.9	336.0	336.0	336.0	336.0	336.0	336.0	336.0	336.0	336.0	336.0
17.5°	331.4	331.4	331.4	331.4	331.4	331.4	331.4	331.4	331.4	331.4	331.4
20°	325.5	325.5	325.5	325.5	325.5	325.5	325.5	325.5	325.5	325.5	325.5
22.5°	318.4	318.4	318.4	318.4	318.4	318.4	318.4	318.4	317.2	317.2	317.2
25°	310.2	310.2	310.2	310.2	309.0	309.0	309.0	309.0	309.0	307.8	307.8
27.5°	302.0	302.0	302.0	300.8	300.8	300.8	300.8	299.6	299.6	298.4	297.3
30°	293.8	293.8	292.6	292.6	292.6	291.4	291.4	290.2	289.0	287.9	287.9
32.5°	284.4	284.4	283.2	283.2	282.0	280.8	280.8	279.7	278.5	276.1	275.0
35°	273.8	272.6	272.6	271.4	270.2	269.1	267.9	266.7	264.4	263.2	260.8
37.5°	262.0	260.8	260.8	259.7	258.5	256.2	255.0	252.6	250.3	246.8	243.2
40°	250.3	249.1	247.9	246.8	244.4	243.2	239.7	237.4	233.8	229.1	224.4
42.5°	237.4	236.2	233.8	231.5	229.1	226.8	223.2	219.7	215.0	209.2	202.1
45°	222.1	220.9	218.6	215.0	211.5	208.0	203.3	198.6	192.7	184.5	176.2
47.5°	205.6	203.3	199.8	196.2	190.4	185.6	179.8	173.9	166.8	158.6	149.2
50°	186.8	184.5	179.8	173.9	166.8	159.8	152.8	145.7	138.6	130.4	122.2
52.5°	169.2	166.8	161.0	152.8	144.5	135.1	125.7	118.7	110.4	103.4	96.4
55°	153.9	150.4	144.5	134.0	123.4	111.6	101.0	92.8	87.0	79.9	74.0
57.5°	139.8	136.3	129.2	118.7	104.6	91.6	79.9	71.7	65.8	62.3	57.6
60°	126.9	123.4	116.3	105.8	91.6	76.4	64.6	56.4	51.7	49.4	47.0
62.5°	114.0	111.6	104.6	94.0	81.1	67.0	55.2	47.0	43.5	41.1	41.1
65°	98.7	97.5	91.6	82.2	70.5	57.6	48.2	41.1	38.8	37.6	36.4
67.5°	81.1	81.1	76.4	69.3	58.8	49.4	41.1	36.4	34.1	32.9	32.9
70°	62.3	62.3	59.9	54.0	47.0	40.0	34.1	31.7	29.4	29.4	29.4
72.5°	43.5	43.5	43.5	40.0	36.4	31.7	28.2	25.8	25.8	24.7	24.7
75°	29.4	29.4	29.4	28.2	27.0	24.7	22.3	21.2	21.2	21.2	21.2
77.5°	20.0	20.0	20.0	20.0	18.8	17.6	17.6	16.4	16.4	16.4	16.4
80°	14.1	14.1	14.1	14.1	14.1	12.9	12.9	12.9	12.9	12.9	12.9
82.5°	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	8.2
85°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	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°	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5	352.5
2.5°	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2	350.2
5°	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6	346.6
7.5°	346.6	346.6	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4	345.4
10°	345.4	345.4	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3
12.5°	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	339.6	340.8	340.8
15°	336.0	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
17.5°	331.4	331.4	330.2	330.2	330.2	330.2	330.2	330.2	330.2	330.2	330.2
20°	324.3	324.3	324.3	324.3	324.3	324.3	323.1	324.3	323.1	323.1	323.1
22.5°	317.2	317.2	316.1	316.1	316.1	316.1	316.1	314.9	314.9	314.9	314.9
25°	306.7	306.7	306.7	306.7	305.5	305.5	305.5	305.5	305.5	305.5	304.3
27.5°	297.3	297.3	296.1	296.1	294.9	294.9	294.9	294.9	293.8	294.9	293.8
30°	286.7	285.5	284.4	284.4	284.4	283.2	283.2	283.2	283.2	283.2	283.2
32.5°	273.8	272.6	271.4	271.4	270.2	270.2	270.2	270.2	269.1	270.2	269.1
35°	258.5	257.3	255.0	255.0	253.8	253.8	253.8	253.8	252.6	253.8	253.8
37.5°	240.9	238.5	236.2	235.0	233.8	233.8	233.8	233.8	233.8	233.8	233.8
40°	219.7	216.2	213.8	211.5	211.5	211.5	211.5	211.5	211.5	211.5	211.5
42.5°	195.0	190.4	186.8	184.5	184.5	184.5	184.5	184.5	184.5	184.5	184.5
45°	169.2	162.2	158.6	156.3	155.1	155.1	155.1	155.1	155.1	156.3	156.3
47.5°	141.0	134.0	129.2	126.9	126.9	126.9	125.7	126.9	126.9	126.9	126.9
50°	114.0	106.9	102.2	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
52.5°	88.1	83.4	79.9	77.6	77.6	76.4	76.4	76.4	77.6	77.6	77.6
55°	68.2	63.4	61.1	59.9	59.9	59.9	59.9	59.9	59.9	59.9	59.9
57.5°	54.0	51.7	50.5	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4
60°	45.8	44.6	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5
62.5°	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	38.8	38.8	38.8
65°	36.4	36.4	36.4	36.4	36.4	36.4	36.4	35.2	35.2	35.2	35.2
67.5°	32.9	32.9	32.9	32.9	32.9	32.9	32.9	31.7	31.7	31.7	31.7
70°	29.4	29.4	29.4	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
72.5°	24.7	24.7	24.7	24.7	24.7	24.7	23.5	23.5	23.5	23.5	23.5
75°	21.2	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
77.5°	16.4	16.4	16.4	16.4	15.3	15.3	15.3	15.3	15.3	15.3	15.3
80°	12.9	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
82.5°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
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	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):

	165°	170°	175°	180°
0°	352.5	352.5	352.5	352.5
2.5°	350.2	350.2	350.2	350.2
5°	346.6	346.6	346.6	346.6
7.5°	345.4	345.4	345.4	345.4
10°	344.3	344.3	344.3	344.3
12.5°	339.6	339.6	339.6	339.6
15°	334.9	334.9	334.9	334.9
17.5°	330.2	330.2	330.2	330.2
20°	323.1	323.1	323.1	323.1
22.5°	314.9	314.9	314.9	314.9
25°	304.3	304.3	305.5	304.3
27.5°	293.8	293.8	293.8	293.8
30°	283.2	283.2	283.2	283.2
32.5°	269.1	269.1	269.1	269.1
35°	252.6	253.8	252.6	253.8
37.5°	233.8	233.8	233.8	233.8
40°	211.5	211.5	211.5	211.5
42.5°	184.5	184.5	184.5	184.5
45°	156.3	156.3	156.3	156.3
47.5°	126.9	126.9	126.9	126.9
50°	99.9	99.9	99.9	99.9
52.5°	77.6	77.6	76.4	76.4
55°	59.9	59.9	59.9	59.9
57.5°	49.4	49.4	48.2	49.4
60°	43.5	42.3	42.3	42.3
62.5°	38.8	38.8	38.8	38.8
65°	35.2	35.2	35.2	35.2
67.5°	31.7	31.7	31.7	31.7
70°	28.2	28.2	28.2	28.2
72.5°	23.5	23.5	23.5	23.5
75°	20.0	20.0	20.0	20.0
77.5°	15.3	15.3	15.3	15.3
80°	11.8	11.8	11.8	11.8
82.5°	8.2	8.2	8.2	8.2
85°	4.7	4.7	4.7	4.7
87.5°	2.4	2.4	2.4	2.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)