

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: P85558

Luminaire Tested: **ML706830-495WW06-H750ICAT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P85558
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML706830-495WW06-H750ICAT
Description: HALO 6 INCH LED DOWNLIGHT WITH 600 Lmn MODULE, DIFFUSE LENS AND SEMI-SPECULAR 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 3000K
CL-L221-C14L2-B
Ballast/Driver: (1)ELECTRONIC DRIVER
RLD011

Summary

Lumens per Lamp: 638 (1 lamp)
Luminaire Lumens: 635.5 lumens
Efficiency: 99.6%
Efficacy: 45.4 lumens/watt
Spacing Criteria (0/90/45): 1.29 / 1.32 / 1.33
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

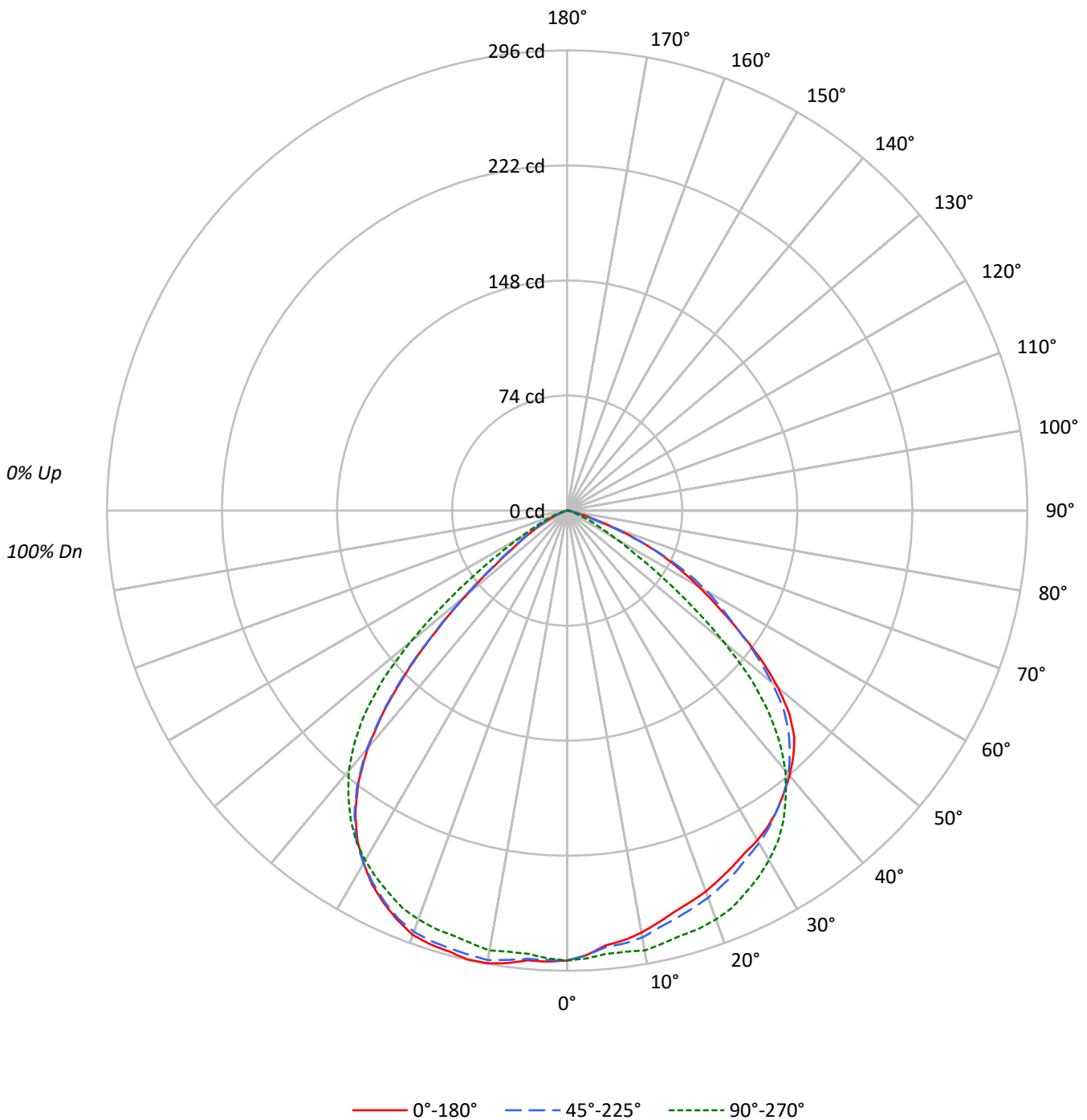
Input Watts (W): 14
Input Voltage (V): NR
Input Current (Ain): 0.123
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 6 HR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	94	92	91	89				89
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	78				78
3	95	86	79	74	93	85	78	73	82	77	72	79	75	71	77	73	70	68				68
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60				60
5	81	70	62	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53				53
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47				47
7	70	58	50	45	69	57	50	45	56	49	44	55	49	44	53	48	44	42				42
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	40	38				38
9	62	49	42	36	60	49	41	36	48	41	36	46	40	36	46	40	36	34				34
10	58	45	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	17274	17274	17274
5°	16449	16759	17005
10°	15957	16634	17121
15°	15409	16326	16937
20°	15105	16206	16820
25°	14785	15904	16338
30°	14635	15519	15644
35°	14456	14911	14585
40°	14183	13915	12698
45°	13786	12232	9617
50°	12483	9267	5981
55°	10154	5598	3282
60°	7971	2943	1905
65°	5911	1619	1053
70°	3208	746	424
75°	1100	371	127
80°	439	151	151
85°	356	187	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	27.3	4.3	4.3
10°-20°	79.8	12.6	12.5
20°-30°	123.5	19.4	19.4
30°-40°	148.1	23.3	23.2
40°-50°	134.0	21.1	21.0
50°-60°	80.0	12.6	12.5
60°-70°	35.6	5.6	5.6
70°-80°	6.2	1.0	1.0
80°-90°	0.9	0.1	0.1
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°	230.6	36.3	36.1
0°-40°	378.7	59.6	59.4
0°-60°	592.7	93.3	92.9
0°-90°	635.5	100.0	99.6
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°	635.5	100.0	99.6

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	289	289	289	289	289	
5°	281	282	286	289	290	27
15°	267	271	283	292	294	76
25°	252	256	271	278	279	117
35°	235	235	243	238	237	147
45°	207	201	183	146	144	157
55°	135	135	74	46	44	121
65°	66	68	18	13	12	64
75°	10	7	3	1	1	13
85°	2	1	1	0	0	2
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°	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4
2.5°	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2	286.2
5°	280.9	280.9	280.9	280.9	280.9	282.0	282.0	282.0	282.0	282.0	283.0
7.5°	278.8	278.8	278.8	278.8	278.8	278.8	279.8	279.8	279.8	280.9	280.9
10°	275.6	275.6	275.6	275.6	276.7	276.7	276.7	277.7	277.7	278.8	279.8
12.5°	271.4	271.4	271.4	271.4	271.4	272.4	272.4	273.5	274.5	274.5	275.6
15°	267.1	267.1	267.1	267.1	268.2	268.2	269.2	269.2	270.3	271.4	272.4
17.5°	263.9	263.9	263.9	263.9	265.0	265.0	266.1	267.1	267.1	268.2	270.3
20°	260.8	260.8	260.8	260.8	261.8	261.8	262.9	263.9	265.0	265.0	267.1
22.5°	256.5	256.5	256.5	257.6	257.6	257.6	258.6	258.6	259.7	260.8	262.9
25°	252.3	252.3	252.3	252.3	253.3	253.3	253.3	254.4	255.5	256.5	257.6
27.5°	248.0	248.0	248.0	248.0	249.1	249.1	249.1	250.2	251.2	251.2	253.3
30°	244.9	244.9	244.9	244.9	244.9	244.9	245.9	245.9	247.0	247.0	248.0
32.5°	240.6	240.6	240.6	240.6	240.6	240.6	240.6	240.6	241.7	241.7	242.7
35°	235.3	235.3	235.3	234.3	234.3	235.3	235.3	235.3	235.3	235.3	236.4
37.5°	229.0	229.0	229.0	229.0	229.0	229.0	229.0	229.0	229.0	229.0	229.0
40°	222.6	222.6	222.6	222.6	222.6	222.6	221.5	221.5	221.5	221.5	221.5
42.5°	215.2	215.2	215.2	215.2	215.2	214.1	214.1	213.1	213.1	212.0	212.0
45°	206.7	206.7	206.7	205.6	205.6	204.6	204.6	203.5	202.5	201.4	201.4
47.5°	194.0	194.0	194.0	192.9	192.9	191.9	191.9	190.8	189.7	188.7	187.6
50°	177.0	177.0	177.0	177.0	177.0	176.0	174.9	173.8	172.8	171.7	170.7
52.5°	156.9	156.9	156.9	156.9	156.9	156.9	155.8	155.8	154.8	153.7	151.6
55°	134.6	134.6	135.7	136.7	136.7	136.7	136.7	136.7	135.7	134.6	133.6
57.5°	114.5	114.5	115.5	117.7	117.7	118.7	118.7	118.7	118.7	118.7	117.7
60°	97.5	97.5	98.6	100.7	101.8	101.8	102.8	102.8	102.8	103.9	103.9
62.5°	81.6	82.7	82.7	83.7	84.8	85.9	85.9	85.9	85.9	86.9	86.9
65°	65.7	65.7	66.8	66.8	66.8	66.8	66.8	66.8	66.8	67.8	67.8
67.5°	48.8	48.8	48.8	48.8	47.7	47.7	46.6	46.6	46.6	46.6	46.6
70°	31.8	31.8	30.7	30.7	29.7	29.7	28.6	28.6	27.6	27.6	27.6
72.5°	18.0	18.0	18.0	17.0	17.0	15.9	15.9	14.8	14.8	14.8	13.8
75°	9.5	9.5	9.5	9.5	8.5	8.5	8.5	8.5	7.4	7.4	7.4
77.5°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	4.2	4.2	4.2	4.2
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
85°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.1	1.1	1.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4
2.5°	286.2	286.2	287.3	287.3	287.3	287.3	287.3	288.3	288.3	288.3	288.3
5°	283.0	283.0	284.1	284.1	284.1	285.1	285.1	286.2	286.2	287.3	287.3
7.5°	282.0	282.0	283.0	284.1	284.1	285.1	285.1	286.2	287.3	287.3	288.3
10°	279.8	280.9	282.0	283.0	284.1	285.1	286.2	287.3	287.3	288.3	289.4
12.5°	276.7	277.7	278.8	279.8	282.0	283.0	284.1	285.1	286.2	287.3	288.3
15°	273.5	274.5	276.7	277.7	278.8	280.9	282.0	283.0	285.1	286.2	287.3
17.5°	271.4	272.4	274.5	275.6	277.7	279.8	280.9	282.0	284.1	285.1	286.2
20°	268.2	270.3	271.4	273.5	275.6	276.7	278.8	279.8	282.0	283.0	284.1
22.5°	263.9	266.1	267.1	269.2	271.4	273.5	274.5	276.7	277.7	279.8	279.8
25°	258.6	260.8	262.9	265.0	266.1	268.2	270.3	271.4	272.4	273.5	274.5
27.5°	254.4	255.5	257.6	259.7	260.8	262.9	265.0	266.1	267.1	268.2	269.2
30°	249.1	251.2	252.3	254.4	256.5	257.6	258.6	259.7	260.8	261.8	261.8
32.5°	243.8	244.9	247.0	248.0	249.1	251.2	252.3	252.3	253.3	253.3	253.3
35°	237.4	238.5	238.5	239.6	240.6	241.7	242.7	242.7	242.7	241.7	241.7
37.5°	229.0	230.0	230.0	231.1	231.1	232.1	232.1	231.1	230.0	229.0	226.8
40°	221.5	221.5	221.5	221.5	221.5	220.5	219.4	218.4	216.2	213.1	209.9
42.5°	212.0	210.9	210.9	209.9	208.8	206.7	204.6	202.5	199.3	195.0	189.7
45°	200.3	199.3	198.2	196.1	192.9	189.7	186.6	183.4	179.1	172.8	164.3
47.5°	186.6	184.4	182.3	179.1	173.8	169.6	164.3	160.1	153.7	146.3	136.7
50°	169.6	167.5	163.2	159.0	151.6	144.2	137.8	131.4	125.1	117.7	108.1
52.5°	150.5	148.4	143.1	136.7	127.2	116.6	108.1	101.8	95.4	89.0	80.6
55°	132.5	130.4	125.1	116.6	103.9	91.2	80.6	74.2	68.9	63.6	58.3
57.5°	116.6	114.5	109.2	98.6	84.8	70.0	58.3	51.9	47.7	43.5	41.3
60°	102.8	100.7	95.4	84.8	68.9	53.0	42.4	36.0	32.9	30.7	28.6
62.5°	86.9	84.8	80.6	70.0	55.1	40.3	30.7	25.4	23.3	21.2	21.2
65°	67.8	66.8	62.5	55.1	42.4	29.7	22.3	18.0	15.9	14.8	14.8
67.5°	46.6	45.6	43.5	38.2	29.7	21.2	14.8	11.7	10.6	9.5	9.5
70°	27.6	27.6	26.5	23.3	18.0	12.7	9.5	7.4	6.4	6.4	5.3
72.5°	13.8	13.8	13.8	12.7	9.5	7.4	5.3	4.2	4.2	3.2	3.2
75°	7.4	6.4	6.4	6.4	5.3	4.2	3.2	3.2	2.1	2.1	2.1
77.5°	4.2	4.2	3.2	3.2	3.2	2.1	2.1	2.1	1.1	1.1	1.1
80°	3.2	2.1	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1
82.5°	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0
87.5°	1.1	1.1	1.1	1.1	1.1	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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4	289.4
2.5°	288.3	288.3	289.4	289.4	289.4	289.4	289.4	289.4	289.4	290.4	290.4
5°	287.3	288.3	288.3	288.3	289.4	289.4	289.4	289.4	290.4	290.4	290.4
7.5°	289.4	289.4	290.4	290.4	290.4	291.5	291.5	291.5	292.6	292.6	292.6
10°	290.4	290.4	291.5	292.6	292.6	293.6	293.6	294.7	294.7	294.7	294.7
12.5°	289.4	290.4	291.5	291.5	292.6	292.6	293.6	293.6	294.7	294.7	294.7
15°	288.3	289.4	289.4	290.4	291.5	291.5	292.6	292.6	292.6	293.6	293.6
17.5°	287.3	288.3	289.4	289.4	290.4	290.4	291.5	291.5	291.5	292.6	292.6
20°	285.1	286.2	287.3	287.3	288.3	288.3	289.4	289.4	289.4	289.4	289.4
22.5°	280.9	282.0	283.0	283.0	284.1	284.1	284.1	284.1	285.1	285.1	285.1
25°	275.6	276.7	276.7	276.7	277.7	277.7	277.7	277.7	278.8	278.8	278.8
27.5°	269.2	269.2	270.3	270.3	270.3	270.3	270.3	271.4	270.3	271.4	271.4
30°	261.8	261.8	261.8	261.8	261.8	261.8	262.9	262.9	262.9	262.9	261.8
32.5°	252.3	252.3	252.3	252.3	252.3	252.3	252.3	252.3	251.2	252.3	251.2
35°	240.6	239.6	239.6	238.5	238.5	238.5	238.5	238.5	237.4	237.4	237.4
37.5°	224.7	223.7	222.6	221.5	221.5	221.5	220.5	220.5	220.5	220.5	220.5
40°	206.7	204.6	202.5	201.4	201.4	200.3	200.3	200.3	200.3	200.3	199.3
42.5°	184.4	180.2	178.1	176.0	176.0	174.9	174.9	174.9	174.9	174.9	173.8
45°	157.9	151.6	148.4	147.3	146.3	146.3	145.2	145.2	145.2	145.2	145.2
47.5°	128.3	121.9	117.7	115.5	115.5	114.5	114.5	115.5	114.5	114.5	114.5
50°	98.6	92.2	89.0	88.0	86.9	85.9	85.9	85.9	85.9	85.9	84.8
52.5°	73.1	67.8	64.7	63.6	63.6	62.5	62.5	62.5	61.5	61.5	61.5
55°	53.0	49.8	47.7	46.6	46.6	45.6	45.6	45.6	44.5	44.5	44.5
57.5°	38.2	36.0	35.0	35.0	33.9	33.9	33.9	32.9	32.9	32.9	32.9
60°	27.6	27.6	26.5	26.5	25.4	25.4	25.4	25.4	24.4	24.4	24.4
62.5°	20.1	20.1	20.1	19.1	19.1	19.1	18.0	18.0	18.0	18.0	18.0
65°	14.8	13.8	13.8	13.8	12.7	12.7	12.7	12.7	12.7	11.7	11.7
67.5°	8.5	8.5	8.5	8.5	7.4	7.4	7.4	7.4	7.4	7.4	7.4
70°	5.3	5.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	3.2	3.2	3.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
75°	2.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	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):

	165°	170°	175°	180°
0°	289.4	289.4	289.4	289.4
2.5°	290.4	290.4	290.4	290.4
5°	290.4	290.4	290.4	290.4
7.5°	292.6	292.6	292.6	293.6
10°	295.7	295.7	295.7	295.7
12.5°	294.7	294.7	294.7	295.7
15°	293.6	293.6	293.6	293.6
17.5°	292.6	292.6	292.6	292.6
20°	290.4	290.4	290.4	290.4
22.5°	285.1	285.1	285.1	285.1
25°	278.8	278.8	278.8	278.8
27.5°	271.4	271.4	271.4	271.4
30°	262.9	262.9	262.9	261.8
32.5°	251.2	251.2	251.2	251.2
35°	237.4	237.4	237.4	237.4
37.5°	220.5	220.5	220.5	220.5
40°	199.3	199.3	199.3	199.3
42.5°	173.8	173.8	173.8	173.8
45°	145.2	144.2	144.2	144.2
47.5°	114.5	113.4	113.4	113.4
50°	84.8	84.8	84.8	84.8
52.5°	61.5	60.4	60.4	60.4
55°	43.5	43.5	43.5	43.5
57.5°	31.8	31.8	31.8	31.8
60°	24.4	23.3	23.3	23.3
62.5°	17.0	17.0	17.0	17.0
65°	11.7	11.7	11.7	11.7
67.5°	7.4	7.4	7.4	7.4
70°	4.2	4.2	4.2	4.2
72.5°	2.1	2.1	2.1	2.1
75°	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)