

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: P85567

Luminaire Tested: **ML712835TUNVD010-495WW06-H750ICAT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P85567
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML712835TUNVD010-495WW06-H750ICAT
Description: HALO 6 INCH LED DOWNLIGHT WITH 1200 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 3500K
CL-L241-C26L2-A
Ballast/Driver: (1)ELECTRONIC DRIVER
RHPS314D-CLO

Summary

Lumens per Lamp: 1410 (1 lamp)
Luminaire Lumens: 1410.9 lumens
Efficiency: 100.1%
Efficacy: 58.1 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.31 / 1.32
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

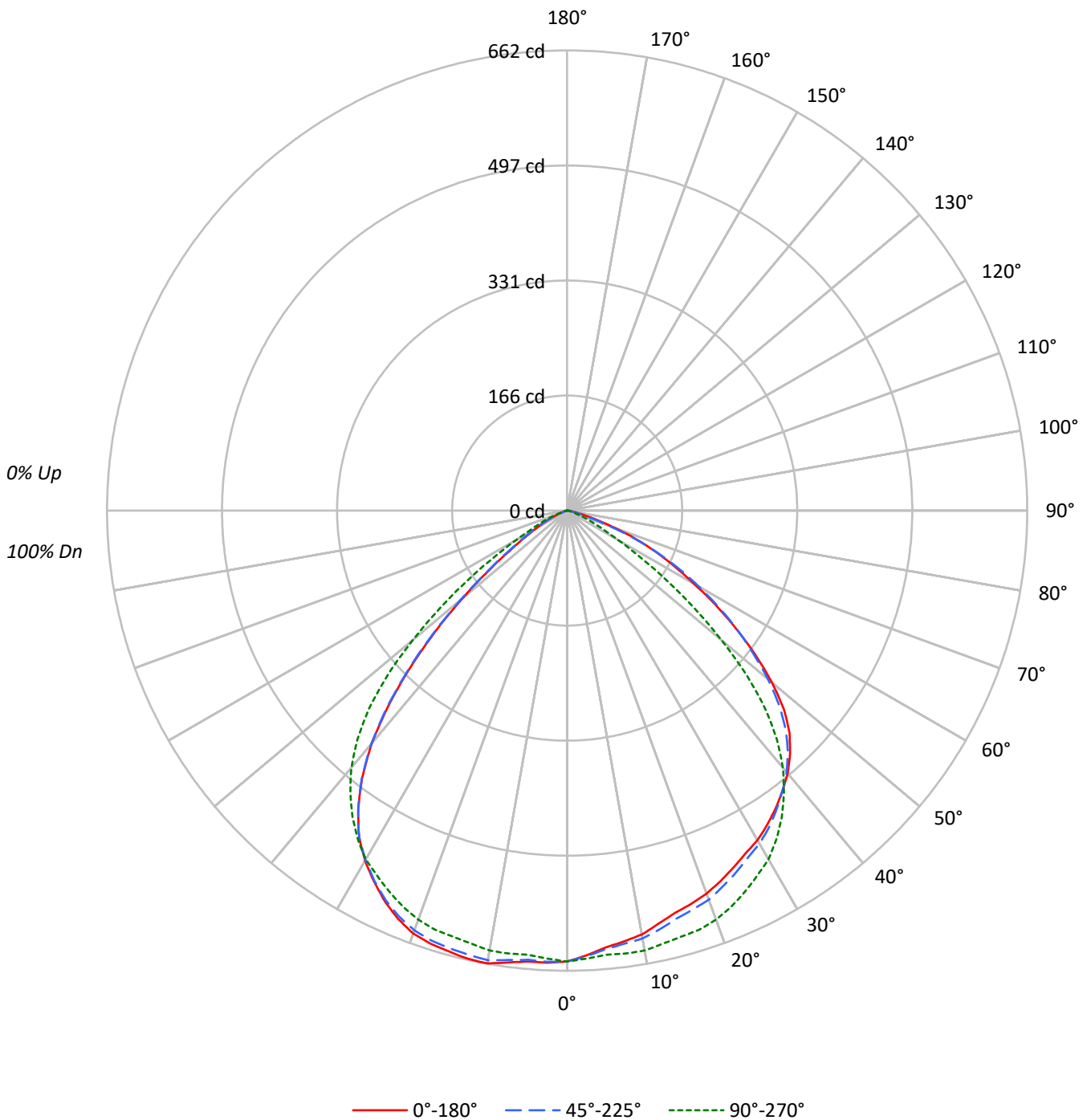
Input Watts (W): 24.3
Input Voltage (V): NR
Input Current (Ain): 0.2041
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 6 HR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	108	104	101	109	105	102	100	101	99	97	98	96	94	94	92	91	89					89			
2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	82	80	78					78			
3	95	87	80	74	93	85	79	74	82	77	73	80	75	71	77	73	70	68					68			
4	88	78	71	65	86	77	70	64	74	68	64	72	67	63	70	66	62	60					60			
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53					53			
6	76	64	56	50	74	63	56	50	62	55	50	60	54	49	58	53	49	47					47			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42					42			
8	66	54	46	41	65	53	46	40	52	45	40	51	45	40	50	44	40	38					38			
9	62	49	42	37	61	49	42	37	48	41	37	47	41	36	46	40	36	34					34			
10	58	46	38	34	57	45	38	33	44	38	33	43	37	33	43	37	33	31					31			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	38715	38715	38715
5°	36950	37570	38121
10°	35851	37212	38300
15°	34567	36604	37890
20°	33958	36275	37497
25°	33191	35459	36356
30°	32723	34617	34755
35°	32126	33066	32200
40°	31443	30768	27850
45°	30172	26878	21235
50°	27097	20467	13838
55°	22428	13119	7619
60°	17193	6818	4227
65°	12686	3599	2222
70°	7354	1654	827
75°	2860	683	278
80°	1124	329	165
85°	594	204	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	61.3	4.3	4.3
10°-20°	178.6	12.7	12.7
20°-30°	275.4	19.5	19.5
30°-40°	328.2	23.3	23.3
40°-50°	295.7	21.0	21.0
50°-60°	178.3	12.6	12.6
60°-70°	76.8	5.4	5.4
70°-80°	14.7	1.0	1.0
80°-90°	2.0	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°	515.2	36.5	36.5
0°-40°	843.4	59.8	59.8
0°-60°	1317.5	93.4	93.4
0°-90°	1410.9	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°	1410.9	100.0	100.1

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	649	649	649	649	649	
5°	631	633	642	649	651	60
15°	599	608	634	652	657	170
25°	566	575	605	618	620	262
35°	523	525	538	524	524	327
45°	452	444	403	322	318	345
55°	297	298	174	106	101	265
65°	141	143	40	27	25	139
75°	25	19	6	4	2	33
85°	4	4	1	0	0	4
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°	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6
2.5°	640.4	640.4	640.4	640.4	640.4	640.4	640.4	640.4	641.6	641.6	641.6
5°	631.0	629.8	629.8	629.8	629.8	631.0	631.0	632.2	632.2	633.3	634.5
7.5°	625.1	623.9	625.1	625.1	625.1	626.3	626.3	627.4	628.6	628.6	629.8
10°	619.2	618.1	618.1	619.2	619.2	620.4	621.6	622.8	623.9	625.1	626.3
12.5°	608.6	607.5	608.6	608.6	609.8	611.0	612.2	613.4	614.5	616.9	619.2
15°	599.2	599.2	599.2	599.2	600.4	601.6	602.8	605.1	606.3	607.5	611.0
17.5°	593.4	592.2	592.2	592.2	594.6	594.6	596.9	598.1	600.4	601.6	605.1
20°	586.3	585.2	585.2	586.3	587.5	588.7	589.8	591.0	593.4	595.7	598.1
22.5°	576.9	574.6	575.8	576.9	576.9	578.1	579.3	581.6	582.8	585.2	588.7
25°	566.4	565.2	565.2	565.2	566.4	567.5	568.7	569.9	572.2	574.6	576.9
27.5°	555.8	554.6	554.6	555.8	555.8	557.0	558.1	559.3	560.5	562.8	566.4
30°	547.6	546.4	546.4	546.4	547.6	547.6	547.6	549.9	551.1	553.4	554.6
32.5°	535.8	535.8	534.6	535.8	535.8	535.8	537.0	538.2	539.3	540.5	541.7
35°	522.9	521.7	521.7	521.7	521.7	522.9	522.9	522.9	524.1	525.2	526.4
37.5°	508.8	507.6	507.6	507.6	507.6	507.6	507.6	507.6	507.6	508.8	508.8
40°	493.5	492.3	492.3	492.3	492.3	491.2	491.2	491.2	491.2	491.2	491.2
42.5°	474.7	474.7	474.7	473.5	473.5	472.4	472.4	471.2	470.0	470.0	468.8
45°	452.4	451.2	451.2	451.2	450.0	448.8	448.8	446.5	446.5	444.2	444.2
47.5°	423.0	421.8	421.8	420.6	420.6	419.5	418.3	417.1	416.0	413.6	412.4
50°	384.2	384.2	384.2	384.2	383.0	383.0	381.9	379.5	379.5	377.2	374.8
52.5°	341.9	341.9	341.9	341.9	341.9	341.9	341.9	340.8	339.6	337.2	336.0
55°	297.3	297.3	298.4	299.6	300.8	300.8	300.8	299.6	299.6	298.4	297.3
57.5°	253.8	253.8	253.8	256.2	257.3	258.5	258.5	259.7	259.7	258.5	257.3
60°	210.3	210.3	211.5	213.8	216.2	217.4	217.4	218.6	218.6	218.6	218.6
62.5°	173.9	173.9	175.1	177.4	178.6	179.8	179.8	181.0	181.0	181.0	181.0
65°	141.0	141.0	141.0	142.2	142.2	142.2	143.4	143.4	143.4	143.4	143.4
67.5°	106.9	106.9	106.9	105.8	105.8	105.8	104.6	103.4	103.4	103.4	103.4
70°	72.9	72.9	72.9	71.7	70.5	69.3	68.2	65.8	65.8	64.6	65.8
72.5°	44.6	44.6	43.5	42.3	41.1	40.0	38.8	37.6	36.4	35.2	35.2
75°	24.7	24.7	24.7	23.5	22.3	22.3	21.2	20.0	18.8	18.8	17.6
77.5°	14.1	14.1	12.9	12.9	12.9	11.8	11.8	11.8	10.6	10.6	9.4
80°	8.2	8.2	8.2	8.2	8.2	7.0	7.0	7.0	7.0	7.0	7.0
82.5°	5.9	5.9	5.9	5.9	5.9	4.7	4.7	4.7	4.7	4.7	4.7
85°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6
2.5°	641.6	642.7	642.7	643.9	643.9	643.9	645.1	645.1	646.2	646.2	647.4
5°	634.5	635.7	635.7	636.8	638.0	639.2	640.4	641.6	642.7	642.7	643.9
7.5°	632.2	633.3	634.5	635.7	638.0	639.2	640.4	642.7	643.9	645.1	646.2
10°	628.6	631.0	632.2	634.5	636.8	639.2	640.4	642.7	645.1	646.2	648.6
12.5°	620.4	623.9	626.3	628.6	631.0	634.5	635.7	638.0	641.6	643.9	646.2
15°	613.4	615.7	619.2	621.6	625.1	628.6	631.0	634.5	636.8	639.2	641.6
17.5°	608.6	611.0	614.5	618.1	621.6	625.1	628.6	632.2	634.5	636.8	639.2
20°	601.6	605.1	608.6	612.2	615.7	619.2	623.9	626.3	629.8	632.2	634.5
22.5°	591.0	594.6	599.2	602.8	606.3	611.0	614.5	616.9	620.4	622.8	625.1
25°	580.4	584.0	587.5	591.0	595.7	599.2	602.8	605.1	608.6	611.0	612.2
27.5°	568.7	572.2	575.8	579.3	582.8	586.3	589.8	592.2	594.6	596.9	598.1
30°	557.0	560.5	564.0	567.5	571.1	573.4	576.9	579.3	580.4	581.6	581.6
32.5°	544.0	547.6	549.9	553.4	555.8	558.1	560.5	560.5	561.6	561.6	561.6
35°	527.6	529.9	532.3	534.6	537.0	538.2	538.2	538.2	538.2	535.8	533.4
37.5°	510.0	511.1	512.3	513.5	514.6	514.6	514.6	512.3	510.0	506.4	501.7
40°	491.2	491.2	491.2	491.2	490.0	488.8	486.4	482.9	477.0	471.2	463.0
42.5°	468.8	467.6	466.5	464.1	460.6	457.1	452.4	446.5	438.3	427.7	416.0
45°	441.8	439.4	437.1	432.4	426.5	418.3	411.2	403.0	391.3	378.4	363.1
47.5°	408.9	405.4	400.7	392.4	383.0	372.5	361.9	350.2	336.0	320.8	305.5
50°	371.3	367.8	359.6	349.0	334.9	319.6	305.5	290.2	276.1	260.8	244.4
52.5°	332.5	326.7	316.1	302.0	283.2	264.4	246.8	230.3	216.2	200.9	185.6
55°	293.8	287.9	275.0	256.2	233.8	210.3	190.4	173.9	159.8	146.9	135.1
57.5°	255.0	249.1	235.0	215.0	189.2	163.3	139.8	123.4	111.6	102.2	95.2
60°	216.2	210.3	197.4	176.2	150.4	123.4	99.9	83.4	75.2	69.3	65.8
62.5°	181.0	175.1	163.3	143.4	118.7	92.8	71.7	57.6	51.7	48.2	47.0
65°	143.4	139.8	129.2	111.6	90.5	68.2	50.5	40.0	35.2	32.9	31.7
67.5°	103.4	101.0	94.0	81.1	64.6	47.0	34.1	27.0	23.5	21.2	20.0
70°	64.6	64.6	61.1	52.9	41.1	29.4	21.2	16.4	14.1	12.9	11.8
72.5°	35.2	35.2	34.1	29.4	23.5	16.4	11.8	9.4	8.2	7.0	7.0
75°	16.4	16.4	16.4	15.3	12.9	9.4	7.0	5.9	4.7	4.7	4.7
77.5°	9.4	9.4	8.2	8.2	7.0	5.9	4.7	3.5	3.5	3.5	2.4
80°	5.9	5.9	5.9	4.7	4.7	3.5	3.5	2.4	2.4	2.4	2.4
82.5°	4.7	4.7	3.5	3.5	3.5	2.4	2.4	2.4	1.2	1.2	1.2
85°	3.5	2.4	2.4	2.4	2.4	2.4	1.2	1.2	1.2	1.2	0.0
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	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°	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6
2.5°	647.4	647.4	648.6	648.6	649.8	649.8	649.8	649.8	649.8	651.0	651.0
5°	645.1	645.1	646.2	647.4	647.4	648.6	649.8	649.8	649.8	651.0	651.0
7.5°	647.4	648.6	649.8	651.0	652.1	652.1	653.3	653.3	654.5	654.5	655.6
10°	649.8	651.0	653.3	654.5	655.6	656.8	658.0	659.2	659.2	660.4	659.2
12.5°	647.4	649.8	651.0	652.1	654.5	654.5	655.6	656.8	658.0	659.2	659.2
15°	643.9	646.2	647.4	649.8	651.0	652.1	653.3	654.5	654.5	655.6	655.6
17.5°	641.6	643.9	645.1	646.2	647.4	648.6	649.8	651.0	651.0	652.1	652.1
20°	636.8	638.0	639.2	640.4	641.6	642.7	643.9	645.1	645.1	646.2	646.2
22.5°	626.3	628.6	628.6	629.8	631.0	632.2	632.2	633.3	633.3	634.5	634.5
25°	613.4	614.5	615.7	616.9	616.9	618.1	618.1	618.1	619.2	619.2	619.2
27.5°	599.2	599.2	599.2	599.2	600.4	600.4	600.4	600.4	600.4	601.6	601.6
30°	581.6	581.6	581.6	581.6	581.6	580.4	581.6	581.6	581.6	581.6	581.6
32.5°	560.5	559.3	558.1	557.0	557.0	557.0	555.8	555.8	555.8	555.8	555.8
35°	531.1	529.9	527.6	525.2	525.2	524.1	524.1	524.1	524.1	524.1	524.1
37.5°	497.0	492.3	490.0	487.6	486.4	485.3	485.3	485.3	485.3	484.1	484.1
40°	454.7	448.8	443.0	440.6	439.4	438.3	438.3	438.3	437.1	437.1	437.1
42.5°	405.4	396.0	388.9	385.4	383.0	383.0	381.9	381.9	381.9	381.9	381.9
45°	349.0	337.2	329.0	325.5	322.0	322.0	322.0	320.8	320.8	319.6	320.8
47.5°	289.0	276.1	266.7	263.2	260.8	259.7	258.5	258.5	258.5	257.3	257.3
50°	229.1	216.2	208.0	203.3	200.9	199.8	199.8	198.6	198.6	197.4	197.4
52.5°	171.6	161.0	153.9	150.4	148.0	146.9	146.9	145.7	145.7	144.5	144.5
55°	123.4	115.2	110.4	108.1	105.8	105.8	104.6	103.4	103.4	102.2	102.2
57.5°	88.1	82.2	79.9	77.6	76.4	76.4	75.2	74.0	74.0	72.9	72.9
60°	62.3	61.1	58.8	57.6	57.6	56.4	55.2	55.2	54.0	54.0	52.9
62.5°	45.8	44.6	43.5	42.3	41.1	41.1	40.0	40.0	38.8	38.8	38.8
65°	31.7	30.6	29.4	28.2	28.2	27.0	27.0	27.0	25.8	25.8	25.8
67.5°	20.0	18.8	17.6	17.6	16.4	16.4	16.4	15.3	15.3	15.3	15.3
70°	11.8	10.6	10.6	9.4	9.4	9.4	9.4	9.4	9.4	8.2	8.2
72.5°	7.0	5.9	5.9	5.9	5.9	4.7	4.7	4.7	4.7	4.7	4.7
75°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.4	2.4	2.4
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.2	2.4
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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°	648.6	648.6	648.6	648.6
2.5°	651.0	651.0	651.0	651.0
5°	651.0	651.0	652.1	651.0
7.5°	655.6	655.6	655.6	655.6
10°	660.4	660.4	661.5	661.5
12.5°	659.2	660.4	660.4	660.4
15°	656.8	656.8	656.8	656.8
17.5°	653.3	653.3	653.3	653.3
20°	646.2	647.4	647.4	647.4
22.5°	634.5	634.5	635.7	635.7
25°	619.2	620.4	620.4	620.4
27.5°	601.6	601.6	601.6	601.6
30°	581.6	581.6	581.6	581.6
32.5°	555.8	555.8	555.8	557.0
35°	524.1	524.1	524.1	524.1
37.5°	484.1	484.1	484.1	484.1
40°	437.1	437.1	437.1	437.1
42.5°	380.7	380.7	380.7	380.7
45°	319.6	319.6	319.6	318.4
47.5°	256.2	257.3	256.2	256.2
50°	196.2	196.2	196.2	196.2
52.5°	143.4	143.4	143.4	143.4
55°	101.0	101.0	101.0	101.0
57.5°	71.7	71.7	71.7	71.7
60°	52.9	51.7	51.7	51.7
62.5°	37.6	37.6	37.6	37.6
65°	24.7	24.7	24.7	24.7
67.5°	15.3	15.3	15.3	15.3
70°	8.2	8.2	8.2	8.2
72.5°	4.7	4.7	4.7	4.7
75°	2.4	2.4	2.4	2.4
77.5°	1.2	1.2	2.4	2.4
80°	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2
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)