

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: P85570

Luminaire Tested: **ML712840TUNVD010-495PWW06-H750ICAT**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P85570  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: ML712840TUNVD010-495PWW06-H750ICAT  
Description: HALO 6 INCH LED DOWNLIGHT WITH 1200 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-L241-C26L2-A  
Ballast/Driver: (1)ELECTRONIC DRIVER  
RHPS314D-CLO

**Summary**

Lumens per Lamp: 1401 (1 lamp)  
Luminaire Lumens: 1400.7 lumens  
Efficiency: 100.0%  
Efficacy: 57.6 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.23 / 1.28  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct

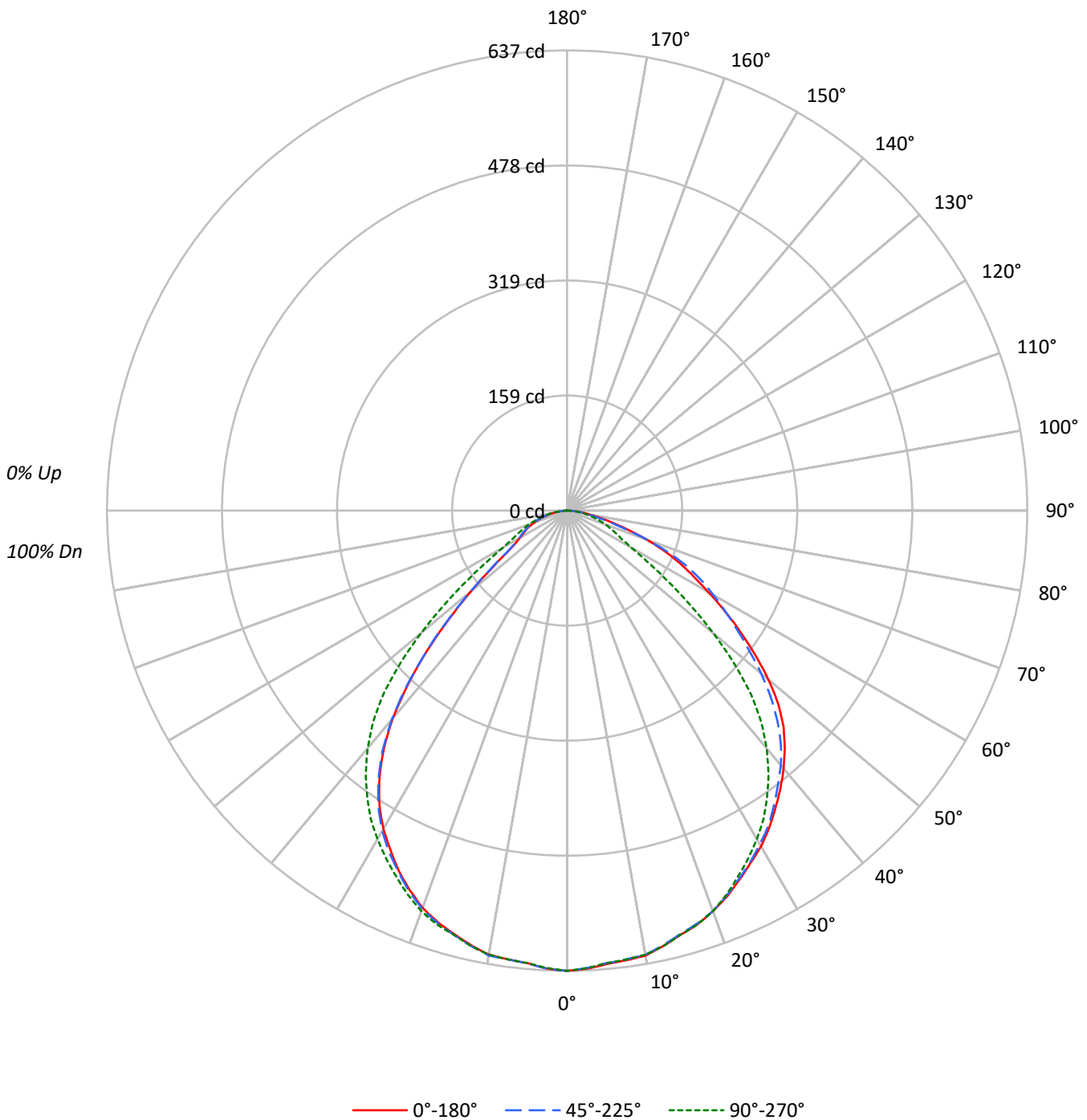
Input Watts (W): 24.3  
Input Voltage (V): NR  
Input Current (Ain): 0.2037  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: 6 HR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87					87			
2	102	94	88	83	99	93	87	82	89	85	81	86	82	79	83	80	77	75					75			
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65					65			
4	86	76	68	62	84	74	67	61	72	66	60	70	64	60	68	63	59	57					57			
5	80	68	60	54	78	67	60	54	65	58	53	63	57	53	61	56	52	50					50			
6	74	62	54	48	72	61	53	48	59	52	47	58	52	47	56	51	46	45					45			
7	69	57	48	43	68	56	48	43	54	47	42	53	47	42	52	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	43	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	35	31	30					30			

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

	0°	90°	180°
0°	38035	38035	38035
5°	36897	36827	36827
10°	36210	36140	36140
15°	35058	35058	34988
20°	34173	34173	33900
25°	33051	32775	32295
30°	32084	31379	30393
35°	30885	29650	27837
40°	29697	27365	23906
45°	28251	24003	18261
50°	25630	18641	12152
55°	22074	12727	7748
60°	18427	8298	6172
65°	15502	6685	5623
70°	11782	5710	4882
75°	7515	4504	3821
80°	4374	3236	2591
85°	2409	1595	1204



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	60.0	4.3	4.3
10°-20°	171.6	12.3	12.3
20°-30°	257.1	18.4	18.3
30°-40°	298.0	21.3	21.3
40°-50°	265.9	19.0	19.0
50°-60°	174.7	12.5	12.5
60°-70°	111.1	7.9	7.9
70°-80°	50.5	3.6	3.6
80°-90°	11.8	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°	488.6	34.9	34.9
0°-40°	786.6	56.2	56.1
0°-60°	1227.2	87.6	87.6
0°-90°	1400.7	100.0	100.0
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°	1400.7	100.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	637	637	637	637	637	
5°	630	629	629	629	629	60
15°	608	606	608	608	606	172
25°	564	563	559	552	551	260
35°	503	499	483	456	453	315
45°	424	412	360	275	274	324
55°	293	287	169	104	103	262
65°	172	183	74	64	62	169
75°	65	58	39	35	33	72
85°	14	13	9	8	7	16
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°	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2
2.5°	634.8	633.7	633.7	633.7	633.7	633.7	633.7	633.7	633.7	633.7	633.7
5°	630.1	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9
7.5°	627.8	627.8	627.8	626.6	626.6	627.8	627.8	626.6	627.8	626.6	626.6
10°	625.4	624.2	624.2	624.2	624.2	624.2	624.2	624.2	624.2	624.2	624.2
12.5°	617.1	616.0	616.0	616.0	616.0	616.0	616.0	616.0	616.0	616.0	616.0
15°	607.7	606.5	606.5	606.5	606.5	606.5	606.5	606.5	606.5	606.5	606.5
17.5°	600.6	599.4	599.4	599.4	599.4	599.4	599.4	599.4	599.4	599.4	599.4
20°	590.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0
22.5°	578.2	577.0	577.0	577.0	577.0	577.0	577.0	577.0	577.0	577.0	577.0
25°	564.0	562.9	562.9	562.9	562.9	562.9	562.9	562.9	562.9	562.9	562.9
27.5°	549.9	549.9	549.9	548.7	549.9	548.7	548.7	548.7	547.5	548.7	547.5
30°	536.9	535.7	535.7	535.7	535.7	535.7	534.5	534.5	534.5	533.4	533.4
32.5°	520.4	520.4	520.4	519.2	519.2	519.2	518.0	519.2	518.0	518.0	516.8
35°	502.7	502.7	502.7	501.5	501.5	501.5	500.3	500.3	499.1	499.1	498.0
37.5°	485.0	483.8	483.8	483.8	482.6	482.6	481.4	481.4	480.3	479.1	477.9
40°	466.1	466.1	464.9	464.9	464.9	463.7	462.6	461.4	460.2	460.2	457.8
42.5°	446.0	444.9	444.9	444.9	443.7	442.5	441.3	440.1	439.0	437.8	435.4
45°	423.6	422.4	422.4	421.3	420.1	418.9	417.7	415.4	414.2	411.8	409.5
47.5°	396.5	395.3	395.3	394.1	392.9	391.8	389.4	387.0	384.7	382.3	380.0
50°	363.4	363.4	362.3	361.1	359.9	351.6	357.5	355.2	352.8	350.5	346.9
52.5°	328.0	328.0	326.9	326.9	326.9	325.7	323.3	322.1	319.8	317.4	313.9
55°	292.6	292.6	292.6	292.6	292.6	292.6	291.5	290.3	289.1	286.7	285.6
57.5°	258.4	258.4	258.4	259.6	259.6	260.8	260.8	260.8	259.6	259.6	258.4
60°	225.4	225.4	226.6	227.7	228.9	230.1	231.3	232.5	233.6	233.6	234.8
62.5°	197.1	198.2	199.4	200.6	201.8	203.0	205.3	206.5	207.7	210.0	211.2
65°	172.3	172.3	173.5	174.6	175.8	177.0	178.2	179.4	181.7	182.9	185.3
67.5°	145.1	145.1	145.1	145.1	146.3	146.3	147.5	148.7	151.0	152.2	153.4
70°	116.8	116.8	115.6	115.6	115.6	115.6	115.6	115.6	115.6	116.8	118.0
72.5°	88.5	88.5	87.3	87.3	86.1	85.0	83.8	83.8	82.6	83.8	83.8
75°	64.9	64.9	63.7	62.5	61.4	61.4	60.2	59.0	57.8	57.8	57.8
77.5°	46.0	46.0	46.0	44.8	43.7	43.7	42.5	41.3	41.3	40.1	38.9
80°	31.9	31.9	31.9	31.9	30.7	29.5	29.5	29.5	28.3	28.3	27.1
82.5°	22.4	22.4	21.2	21.2	21.2	21.2	21.2	20.1	20.1	20.1	18.9
85°	14.2	14.2	14.2	14.2	14.2	14.2	13.0	13.0	13.0	13.0	11.8
87.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	5.9	5.9	5.9
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°	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2
2.5°	633.7	633.7	633.7	633.7	634.8	633.7	633.7	633.7	633.7	633.7	634.8
5°	628.9	628.9	628.9	627.8	628.9	628.9	628.9	628.9	628.9	628.9	628.9
7.5°	627.8	626.6	627.8	626.6	626.6	627.8	626.6	626.6	626.6	626.6	626.6
10°	624.2	624.2	624.2	624.2	624.2	624.2	624.2	624.2	624.2	624.2	624.2
12.5°	616.0	616.0	616.0	617.1	616.0	617.1	617.1	617.1	617.1	617.1	617.1
15°	607.7	607.7	607.7	607.7	607.7	607.7	607.7	607.7	607.7	607.7	607.7
17.5°	600.6	600.6	600.6	599.4	599.4	600.6	600.6	600.6	599.4	599.4	599.4
20°	590.0	590.0	590.0	591.2	590.0	590.0	590.0	590.0	590.0	588.8	588.8
22.5°	577.0	577.0	577.0	577.0	577.0	577.0	575.8	575.8	575.8	574.7	574.7
25°	562.9	561.7	562.9	561.7	561.7	560.5	560.5	559.3	558.1	558.1	557.0
27.5°	548.7	547.5	547.5	546.3	545.2	545.2	544.0	542.8	541.6	540.4	539.3
30°	533.4	533.4	532.2	531.0	529.8	528.6	527.5	525.1	523.9	521.6	520.4
32.5°	516.8	515.7	514.5	513.3	512.1	510.9	508.6	506.2	502.7	500.3	498.0
35°	498.0	495.6	494.4	493.2	490.9	488.5	486.2	482.6	479.1	475.5	470.8
37.5°	476.7	475.5	474.4	470.8	468.5	464.9	461.4	457.8	451.9	446.0	440.1
40°	456.7	454.3	451.9	448.4	444.9	440.1	435.4	429.5	423.6	414.2	404.7
42.5°	434.2	430.7	427.2	422.4	417.7	411.8	405.9	397.7	388.2	376.4	363.4
45°	407.1	403.6	398.8	392.9	385.9	377.6	369.3	359.9	348.1	332.8	317.4
47.5°	377.6	372.9	367.0	358.7	348.1	337.5	326.9	313.9	300.9	285.6	267.9
50°	343.4	338.7	330.4	319.8	306.8	292.6	278.5	264.3	250.2	233.6	218.3
52.5°	311.5	305.6	296.2	280.8	264.3	246.6	228.9	214.8	200.6	185.3	171.1
55°	282.0	276.1	264.3	246.6	225.4	204.1	184.1	168.7	155.8	144.0	132.2
57.5°	257.2	251.3	237.2	217.1	192.3	167.6	146.3	131.0	119.2	110.9	102.7
60°	233.6	227.7	214.8	193.5	166.4	140.4	116.8	101.5	93.2	87.3	83.8
62.5°	211.2	206.5	193.5	173.5	147.5	121.5	99.1	85.0	77.9	74.3	73.2
65°	185.3	181.7	171.1	152.2	128.6	105.0	86.1	74.3	69.6	67.3	66.1
67.5°	154.6	152.2	142.8	127.4	108.6	88.5	74.3	64.9	61.4	60.2	59.0
70°	119.2	119.2	112.1	101.5	87.3	73.2	62.5	56.6	54.3	53.1	51.9
72.5°	85.0	85.0	81.4	75.5	66.1	57.8	50.7	47.2	46.0	44.8	44.8
75°	56.6	56.6	55.5	53.1	48.4	43.7	40.1	38.9	37.8	37.8	36.6
77.5°	38.9	37.8	37.8	36.6	35.4	33.0	31.9	30.7	30.7	29.5	29.5
80°	27.1	26.0	26.0	26.0	24.8	24.8	23.6	23.6	22.4	22.4	22.4
82.5°	18.9	18.9	17.7	17.7	17.7	16.5	16.5	16.5	16.5	15.3	15.3
85°	11.8	11.8	11.8	10.6	10.6	10.6	10.6	9.4	9.4	9.4	9.4
87.5°	5.9	5.9	4.7	4.7	4.7	4.7	4.7	4.7	3.5	3.5	3.5
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°	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2	637.2
2.5°	634.8	634.8	634.8	634.8	634.8	634.8	634.8	634.8	634.8	634.8	634.8
5°	628.9	627.8	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9
7.5°	626.6	626.6	626.6	626.6	626.6	626.6	626.6	626.6	626.6	626.6	626.6
10°	624.2	624.2	624.2	624.2	625.4	625.4	624.2	624.2	625.4	624.2	624.2
12.5°	617.1	617.1	617.1	617.1	617.1	617.1	617.1	616.0	617.1	617.1	616.0
15°	607.7	607.7	607.7	607.7	607.7	607.7	607.7	606.5	606.5	606.5	606.5
17.5°	599.4	599.4	598.3	598.3	598.3	598.3	598.3	597.1	598.3	597.1	597.1
20°	588.8	587.6	587.6	586.5	586.5	586.5	586.5	586.5	586.5	585.3	585.3
22.5°	573.5	573.5	572.3	571.1	571.1	571.1	571.1	569.9	569.9	569.9	569.9
25°	555.8	555.8	554.6	553.4	553.4	552.2	552.2	551.1	551.1	551.1	551.1
27.5°	536.9	535.7	535.7	534.5	533.4	533.4	532.2	531.0	531.0	531.0	531.0
30°	518.0	515.7	514.5	513.3	512.1	512.1	510.9	509.8	509.8	509.8	509.8
32.5°	494.4	492.1	489.7	488.5	487.3	486.2	486.2	485.0	485.0	485.0	485.0
35°	466.1	462.6	460.2	457.8	456.7	455.5	455.5	454.3	454.3	454.3	453.1
37.5°	433.1	428.3	424.8	422.4	420.1	420.1	418.9	418.9	418.9	417.7	417.7
40°	395.3	388.2	383.5	380.0	377.6	377.6	377.6	376.4	376.4	375.2	375.2
42.5°	351.6	341.0	333.9	330.4	328.0	328.0	326.9	326.9	326.9	326.9	326.9
45°	303.3	290.3	282.0	278.5	276.1	274.9	274.9	273.8	273.8	273.8	273.8
47.5°	252.5	238.4	230.1	225.4	224.2	223.0	221.8	221.8	221.8	220.7	220.7
50°	201.8	190.0	181.7	177.0	175.8	174.6	173.5	173.5	173.5	173.5	172.3
52.5°	156.9	146.3	139.2	136.9	134.5	134.5	133.3	133.3	133.3	132.2	132.2
55°	120.4	113.3	108.6	106.2	105.0	103.8	103.8	103.8	103.8	103.8	102.7
57.5°	95.6	90.9	88.5	87.3	87.3	86.1	86.1	86.1	86.1	85.0	85.0
60°	81.4	79.1	77.9	77.9	77.9	76.7	76.7	76.7	76.7	75.5	75.5
62.5°	72.0	72.0	70.8	70.8	70.8	70.8	69.6	69.6	69.6	69.6	68.4
65°	64.9	64.9	64.9	64.9	64.9	63.7	63.7	63.7	62.5	62.5	62.5
67.5°	59.0	59.0	57.8	57.8	57.8	57.8	56.6	56.6	56.6	56.6	55.5
70°	51.9	51.9	51.9	50.7	50.7	50.7	49.6	49.6	49.6	48.4	48.4
72.5°	44.8	43.7	43.7	43.7	42.5	42.5	42.5	41.3	41.3	41.3	41.3
75°	36.6	36.6	35.4	35.4	35.4	35.4	34.2	34.2	34.2	34.2	34.2
77.5°	29.5	28.3	28.3	28.3	27.1	27.1	27.1	27.1	26.0	26.0	26.0
80°	22.4	21.2	21.2	21.2	20.1	20.1	20.1	20.1	20.1	18.9	18.9
82.5°	15.3	14.2	14.2	14.2	14.2	13.0	13.0	13.0	13.0	13.0	13.0
85°	9.4	8.3	8.3	8.3	8.3	8.3	7.1	7.1	7.1	7.1	7.1
87.5°	3.5	3.5	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°	637.2	637.2	637.2	637.2
2.5°	634.8	634.8	636.0	634.8
5°	628.9	628.9	628.9	628.9
7.5°	626.6	626.6	626.6	626.6
10°	624.2	624.2	624.2	624.2
12.5°	617.1	616.0	616.0	616.0
15°	606.5	606.5	606.5	606.5
17.5°	597.1	597.1	597.1	597.1
20°	585.3	585.3	585.3	585.3
22.5°	569.9	569.9	569.9	568.8
25°	551.1	551.1	551.1	551.1
27.5°	531.0	531.0	531.0	529.8
30°	509.8	509.8	508.6	508.6
32.5°	483.8	483.8	483.8	483.8
35°	454.3	453.1	453.1	453.1
37.5°	417.7	417.7	417.7	417.7
40°	375.2	376.4	375.2	375.2
42.5°	325.7	325.7	325.7	325.7
45°	273.8	273.8	272.6	273.8
47.5°	220.7	220.7	220.7	220.7
50°	172.3	172.3	172.3	172.3
52.5°	132.2	132.2	132.2	132.2
55°	102.7	102.7	102.7	102.7
57.5°	85.0	85.0	85.0	85.0
60°	75.5	75.5	75.5	75.5
62.5°	68.4	68.4	68.4	68.4
65°	62.5	62.5	62.5	62.5
67.5°	55.5	55.5	55.5	55.5
70°	48.4	48.4	48.4	48.4
72.5°	41.3	41.3	40.1	41.3
75°	33.0	33.0	33.0	33.0
77.5°	26.0	26.0	26.0	26.0
80°	18.9	18.9	18.9	18.9
82.5°	13.0	13.0	13.0	13.0
85°	7.1	7.1	7.1	7.1
87.5°	2.4	2.4	2.4	2.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)