

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 COMMERCIAL

Report Number: P593582

Luminaire Tested: **HC815D010-HM80520950-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593582  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC815D010-HM80520950-81WWW  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1421.5 lumens  
Efficiency: N/A  
Efficacy: 101.5 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.04 / 1.13  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

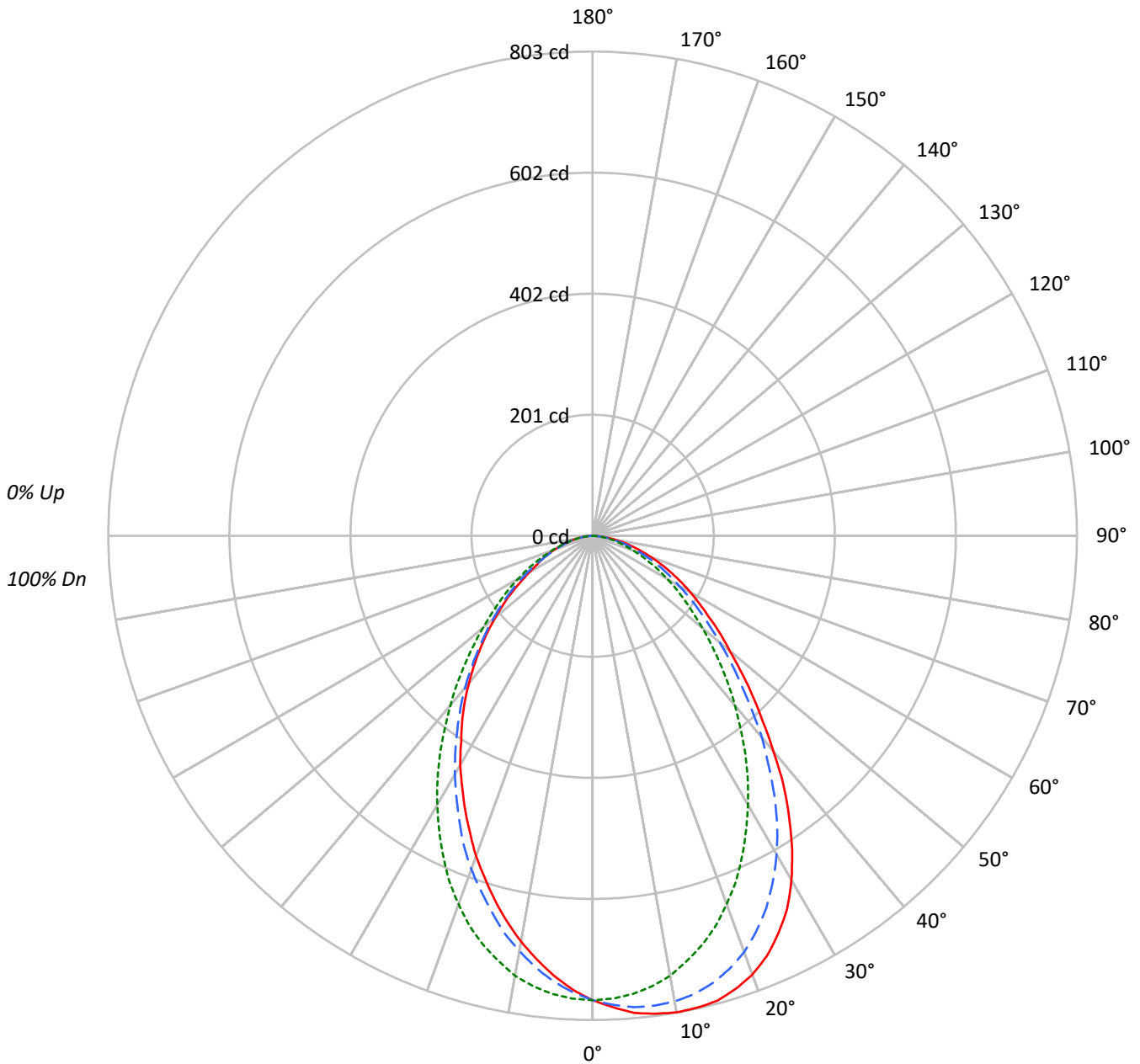
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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																			
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	88	83	90	85	81	86	83	79	83	80	78	76																			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66																			
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41																			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38																			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34																			
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32																			

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

	0°	90°	180°
0°	23750	23750	23750
5°	24587	23615	22677
10°	25134	23202	21402
15°	25488	22420	19984
20°	25415	21333	18554
25°	24783	19952	17032
30°	23483	18348	15631
35°	21367	16601	14203
40°	18762	14765	12829
45°	16362	12991	11439
50°	14238	11384	10074
55°	12698	10005	8763
60°	11539	8770	7475
65°	10376	7625	6786
70°	9232	6500	6131
75°	8102	5481	5230
80°	6872	4457	4635
85°	5166	3326	3715



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.1	5.1
10°-20°	198.8	14.0
20°-30°	275.9	19.4
30°-40°	285.3	20.1
40°-50°	238.9	16.8
50°-60°	173.4	12.2
60°-70°	109.4	7.7
70°-80°	54.2	3.8
80°-90°	13.5	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	546.9	38.5
0°-40°	832.2	58.5
0°-60°	1244.4	87.5
0°-90°	1421.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1421.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	770	770	770	770	770	
5°	794	785	763	742	733	76
15°	798	768	702	646	626	225
25°	728	681	586	523	501	334
35°	568	526	441	391	377	353
45°	375	348	298	269	262	290
55°	236	215	186	170	163	213
65°	142	124	104	92	93	142
75°	68	56	46	44	44	73
85°	15	11	9	10	10	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2
2.5°	782.8	782.8	783.9	782.8	782.8	782.8	781.8	781.8	780.7	780.7	778.7
5°	794.3	792.2	794.3	792.2	792.2	792.2	791.2	789.0	788.1	785.9	784.9
7.5°	799.5	798.4	798.4	797.5	797.5	796.4	795.3	794.3	790.1	789.0	785.9
10°	802.7	801.6	801.6	800.6	798.4	798.4	796.4	795.3	790.1	788.1	783.9
12.5°	801.6	801.6	801.6	800.6	797.5	796.4	794.3	791.2	787.0	782.8	778.7
15°	798.4	798.4	796.4	795.3	792.2	790.1	789.0	783.9	779.6	774.5	768.2
17.5°	788.1	788.1	787.0	784.9	781.8	779.6	777.6	772.4	768.2	759.8	753.5
20°	774.5	773.4	772.4	769.3	766.0	765.1	761.9	754.6	749.4	743.1	734.7
22.5°	754.6	753.5	752.5	750.4	745.2	743.1	741.0	735.8	726.4	720.1	709.6
25°	728.4	728.4	726.4	723.2	718.1	715.9	712.8	707.6	699.1	689.7	681.4
27.5°	698.2	697.1	694.0	691.9	687.7	684.6	679.4	673.1	664.7	657.3	647.0
30°	659.5	659.5	657.3	654.2	649.0	647.0	642.7	635.4	627.1	617.7	610.3
32.5°	615.6	615.6	612.5	610.3	607.2	602.0	600.9	592.6	585.3	577.9	569.6
35°	567.6	568.5	566.5	562.3	557.1	557.1	555.0	547.7	539.2	532.0	525.7
37.5°	519.5	516.3	515.3	513.2	510.1	505.9	503.8	500.6	493.3	488.0	478.6
40°	466.1	467.2	465.1	463.0	462.0	458.9	457.8	452.6	447.3	441.0	436.8
42.5°	418.0	418.0	418.0	416.0	413.9	410.8	409.7	406.6	400.3	396.1	389.8
45°	375.2	372.1	372.1	371.0	369.9	367.9	364.8	362.7	358.5	355.4	348.0
47.5°	333.4	334.4	333.4	332.3	329.2	328.1	327.2	322.9	318.7	315.6	310.4
50°	296.8	299.0	296.8	296.8	294.7	293.7	291.6	288.5	285.3	280.0	274.9
52.5°	266.5	266.5	265.5	264.4	261.2	259.2	258.1	257.1	251.8	247.7	243.5
55°	236.2	237.3	237.3	234.1	233.0	231.0	229.9	226.8	224.7	218.5	215.3
57.5°	210.0	209.1	210.0	208.0	205.9	203.8	202.8	200.6	197.5	193.4	189.2
60°	187.1	185.0	185.0	183.9	181.8	180.8	178.7	175.6	172.4	168.2	165.1
62.5°	164.1	163.0	162.0	161.0	158.8	157.9	156.8	153.6	150.5	147.4	144.2
65°	142.2	142.2	141.1	139.1	138.0	136.9	135.9	133.8	129.5	127.5	124.4
67.5°	122.3	121.2	121.2	119.2	117.0	116.0	116.0	113.9	110.7	107.6	105.6
70°	102.4	103.5	102.4	101.3	99.3	99.3	97.2	96.2	91.9	91.0	87.8
72.5°	84.7	84.7	83.6	83.6	81.6	80.5	80.5	78.3	76.3	74.2	72.1
75°	68.0	68.0	68.0	66.9	65.8	63.7	63.7	62.7	60.6	58.6	56.4
77.5°	53.3	52.3	52.3	51.2	50.1	49.2	49.2	48.1	46.0	44.9	42.9
80°	38.7	37.6	37.6	37.6	35.5	36.6	35.5	34.5	33.5	32.4	31.3
82.5°	25.1	26.1	26.1	25.1	24.0	24.0	24.0	23.0	23.0	21.9	20.8
85°	14.6	14.6	14.6	14.6	13.6	13.6	13.6	12.5	12.5	12.5	11.4
87.5°	6.3	6.3	6.3	6.3	6.3	6.3	5.2	5.2	5.2	5.2	5.2
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2
2.5°	778.7	776.5	775.5	774.5	774.5	773.4	772.4	770.2	770.2	768.2	767.1
5°	782.8	779.6	777.6	775.5	774.5	772.4	770.2	767.1	766.0	762.9	759.8
7.5°	783.9	778.7	776.5	772.4	770.2	768.2	764.0	760.8	756.6	753.5	749.4
10°	779.6	775.5	770.2	765.1	764.0	760.8	754.6	750.4	745.2	741.0	734.7
12.5°	773.4	767.1	761.9	755.7	752.5	749.4	743.1	736.9	729.5	722.2	715.9
15°	762.9	755.7	748.3	741.0	736.9	733.7	726.4	719.0	711.7	702.3	696.0
17.5°	747.2	738.9	731.6	722.2	718.1	714.9	705.4	697.1	687.7	678.3	672.0
20°	727.5	717.0	708.5	698.2	695.0	689.7	680.3	670.9	660.5	650.1	642.7
22.5°	701.3	690.8	681.4	670.9	665.8	660.5	651.1	639.6	629.1	620.8	613.5
25°	670.9	661.5	650.1	640.7	634.4	628.2	617.7	608.3	598.9	586.4	579.0
27.5°	637.6	626.0	617.7	605.2	598.9	594.7	583.2	570.7	562.3	550.8	542.4
30°	599.8	589.5	580.1	567.6	561.3	557.1	546.6	535.1	526.7	515.3	506.9
32.5°	560.2	548.6	537.2	528.9	521.5	517.3	505.9	498.5	488.0	478.6	469.2
35°	517.3	505.9	497.4	486.0	481.8	477.7	468.3	458.9	449.5	441.0	433.7
37.5°	471.4	463.0	453.6	445.2	442.1	437.9	426.4	418.0	410.8	402.3	396.1
40°	426.4	419.1	412.8	404.5	399.2	396.1	387.8	380.4	372.1	366.8	360.5
42.5°	385.6	377.3	371.0	364.8	359.6	356.4	349.1	343.9	337.5	332.3	325.0
45°	342.8	338.6	331.3	326.1	322.9	318.7	313.5	307.3	302.1	297.9	292.7
47.5°	305.2	301.0	295.8	289.4	287.4	284.3	279.1	274.9	270.6	266.5	261.2
50°	270.6	265.5	261.2	257.1	255.0	251.8	246.7	244.6	241.5	237.3	234.1
52.5°	239.3	235.1	231.0	225.7	224.7	222.6	219.4	215.3	212.2	210.0	208.0
55°	211.1	206.9	203.8	199.7	198.6	196.5	192.3	190.3	188.1	186.1	183.9
57.5°	186.1	181.8	177.6	175.6	173.5	171.4	170.4	167.3	165.1	164.1	162.0
60°	163.0	158.8	155.7	152.6	151.6	150.5	148.5	146.3	144.2	142.2	141.1
62.5°	141.1	136.9	134.8	132.8	130.6	130.6	128.6	126.4	124.4	123.3	121.2
65°	121.2	119.2	116.0	112.9	111.8	111.8	108.7	107.6	106.6	104.5	102.4
67.5°	102.4	100.4	97.2	96.2	95.1	94.1	93.0	91.0	88.8	87.8	85.7
70°	85.7	83.6	81.6	80.5	79.4	78.3	76.3	75.2	73.1	72.1	71.1
72.5°	68.9	68.0	65.8	64.8	63.7	62.7	61.7	60.6	58.6	57.5	56.4
75°	55.4	54.3	52.3	51.2	50.1	50.1	49.2	47.0	46.0	46.0	44.9
77.5°	41.8	40.7	39.8	38.7	37.6	37.6	36.6	35.5	34.5	34.5	33.5
80°	30.4	29.3	28.2	28.2	28.2	27.2	26.1	26.1	25.1	25.1	24.0
82.5°	19.9	19.9	18.8	18.8	18.8	17.7	17.7	16.7	16.7	16.7	16.7
85°	11.4	11.4	11.4	10.5	10.5	10.5	10.5	10.5	10.5	9.4	10.5
87.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	4.2	4.2	4.2
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2
2.5°	766.0	765.1	762.9	762.9	760.8	760.8	759.8	758.8	757.7	756.6	755.7
5°	758.8	754.6	752.5	751.4	749.4	748.3	745.2	743.1	742.0	740.0	737.8
7.5°	745.2	741.0	736.9	735.8	734.7	730.6	727.5	724.3	722.2	720.1	718.1
10°	729.5	725.3	720.1	718.1	715.9	710.7	706.5	703.4	699.1	695.0	694.0
12.5°	710.7	704.4	698.2	696.0	692.9	687.7	683.5	678.3	675.2	670.0	668.9
15°	688.8	681.4	676.2	670.9	668.9	663.7	656.4	652.1	645.9	643.8	638.5
17.5°	662.6	655.3	647.9	645.9	642.7	635.4	628.2	622.9	616.6	613.5	610.3
20°	635.4	626.0	618.8	616.6	612.5	606.1	598.9	593.6	588.4	582.1	579.0
22.5°	604.1	593.6	587.3	582.1	581.1	573.8	565.4	561.3	557.1	551.8	547.7
25°	569.6	560.2	552.9	548.6	546.6	540.3	534.1	528.9	522.6	519.5	514.2
27.5°	534.1	527.8	518.4	514.2	511.0	505.9	498.5	495.4	489.1	484.9	481.8
30°	499.6	490.2	484.9	479.7	476.6	471.4	465.1	462.0	456.7	452.6	449.5
32.5°	462.0	455.7	448.4	446.2	442.1	436.8	432.7	427.4	423.3	419.1	418.0
35°	427.4	419.1	411.7	409.7	406.6	401.4	399.2	396.1	390.9	389.8	385.6
37.5°	389.8	385.6	377.3	374.2	373.1	369.0	364.8	362.7	359.6	356.4	355.4
40°	354.3	349.1	344.9	341.7	339.7	336.6	332.3	331.3	329.2	325.0	324.0
42.5°	320.9	315.6	311.5	310.4	307.3	304.1	302.1	299.0	297.9	296.8	294.7
45°	288.5	285.3	281.1	280.0	279.1	274.9	272.8	270.6	268.6	267.5	265.5
47.5°	259.2	256.1	252.9	251.8	249.8	248.7	245.6	244.6	241.5	240.4	239.3
50°	231.0	228.8	226.8	225.7	223.6	222.6	220.5	218.5	216.3	215.3	214.2
52.5°	205.9	203.8	201.7	200.6	199.7	197.5	195.5	193.4	192.3	191.2	190.3
55°	181.8	179.8	178.7	177.6	176.7	175.6	172.4	171.4	170.4	169.3	167.3
57.5°	159.9	157.9	155.7	155.7	154.7	153.6	151.6	149.4	149.4	147.4	145.3
60°	140.0	138.0	135.9	134.8	133.8	131.7	130.6	129.5	128.6	127.5	125.4
62.5°	119.2	118.1	116.0	116.0	113.9	112.9	111.8	110.7	109.8	107.6	106.6
65°	101.3	100.4	98.2	97.2	97.2	96.2	94.1	93.0	91.9	91.9	91.0
67.5°	84.7	83.6	81.6	80.5	80.5	79.4	78.3	78.3	77.4	76.3	77.4
70°	70.0	68.0	68.0	66.9	66.9	65.8	64.8	64.8	64.8	65.8	65.8
72.5°	55.4	54.3	53.3	53.3	53.3	53.3	52.3	52.3	53.3	54.3	54.3
75°	43.9	42.9	42.9	42.9	41.8	41.8	42.9	42.9	43.9	43.9	43.9
77.5°	32.4	32.4	32.4	32.4	32.4	32.4	33.5	33.5	34.5	34.5	34.5
80°	24.0	24.0	24.0	24.0	24.0	25.1	25.1	25.1	25.1	25.1	26.1
82.5°	16.7	16.7	16.7	16.7	16.7	16.7	16.7	17.7	17.7	17.7	17.7
85°	9.4	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
87.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
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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CATALOG NUMBER: HC815D010-HM80520950-81WWW

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2
2.5°	754.6	754.6	754.6	755.7	753.5	753.5	753.5	753.5
5°	736.9	735.8	734.7	735.8	733.7	733.7	732.6	732.6
7.5°	714.9	713.8	712.8	712.8	710.7	710.7	709.6	708.5
10°	690.8	688.8	689.7	687.7	686.6	685.6	684.6	683.5
12.5°	664.7	662.6	661.5	659.5	657.3	656.4	657.3	655.3
15°	636.5	633.3	632.3	630.2	628.2	627.1	627.1	626.0
17.5°	605.2	603.0	602.0	599.8	598.9	596.7	595.8	594.7
20°	575.9	570.7	571.7	569.6	568.5	564.4	564.4	565.4
22.5°	543.5	540.3	538.3	536.1	535.1	533.0	533.0	532.0
25°	511.0	507.9	506.9	504.8	503.8	501.6	500.6	500.6
27.5°	479.7	475.5	475.5	473.4	471.4	470.3	469.2	468.3
30°	446.2	443.1	442.1	442.1	441.0	441.0	437.9	439.0
32.5°	414.9	412.8	411.7	409.7	409.7	408.6	408.6	405.5
35°	383.6	380.4	381.5	379.3	378.4	377.3	378.4	377.3
37.5°	353.3	351.1	351.1	349.1	349.1	348.0	347.0	349.1
40°	322.9	321.9	320.9	319.8	320.9	319.8	317.8	318.7
42.5°	292.7	292.7	291.6	291.6	290.5	290.5	290.5	290.5
45°	265.5	264.4	264.4	263.4	263.4	263.4	263.4	262.3
47.5°	238.3	237.3	237.3	237.3	236.2	236.2	235.1	236.2
50°	212.2	212.2	211.1	211.1	212.2	211.1	210.0	210.0
52.5°	188.1	188.1	187.1	187.1	186.1	185.0	186.1	186.1
55°	166.2	165.1	164.1	164.1	163.0	162.0	162.0	163.0
57.5°	145.3	144.2	143.2	143.2	141.1	140.0	140.0	140.0
60°	125.4	123.3	123.3	122.3	122.3	121.2	121.2	121.2
62.5°	106.6	105.6	105.6	105.6	105.6	104.5	104.5	104.5
65°	91.0	91.0	91.0	91.9	91.9	93.0	93.0	93.0
67.5°	78.3	79.4	79.4	79.4	80.5	80.5	80.5	79.4
70°	66.9	66.9	66.9	68.0	68.0	68.0	68.0	68.0
72.5°	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4
75°	43.9	44.9	44.9	44.9	43.9	44.9	44.9	43.9
77.5°	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5
80°	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
82.5°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
85°	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
87.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)