

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: P583813

Luminaire Tested: **HC810D010-HM80520935-81WWWB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P583813  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC810D010-HM80520935-81WWWB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1047.2 lumens  
Efficiency: N/A  
Efficacy: 105.8 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.09 / 1.18  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

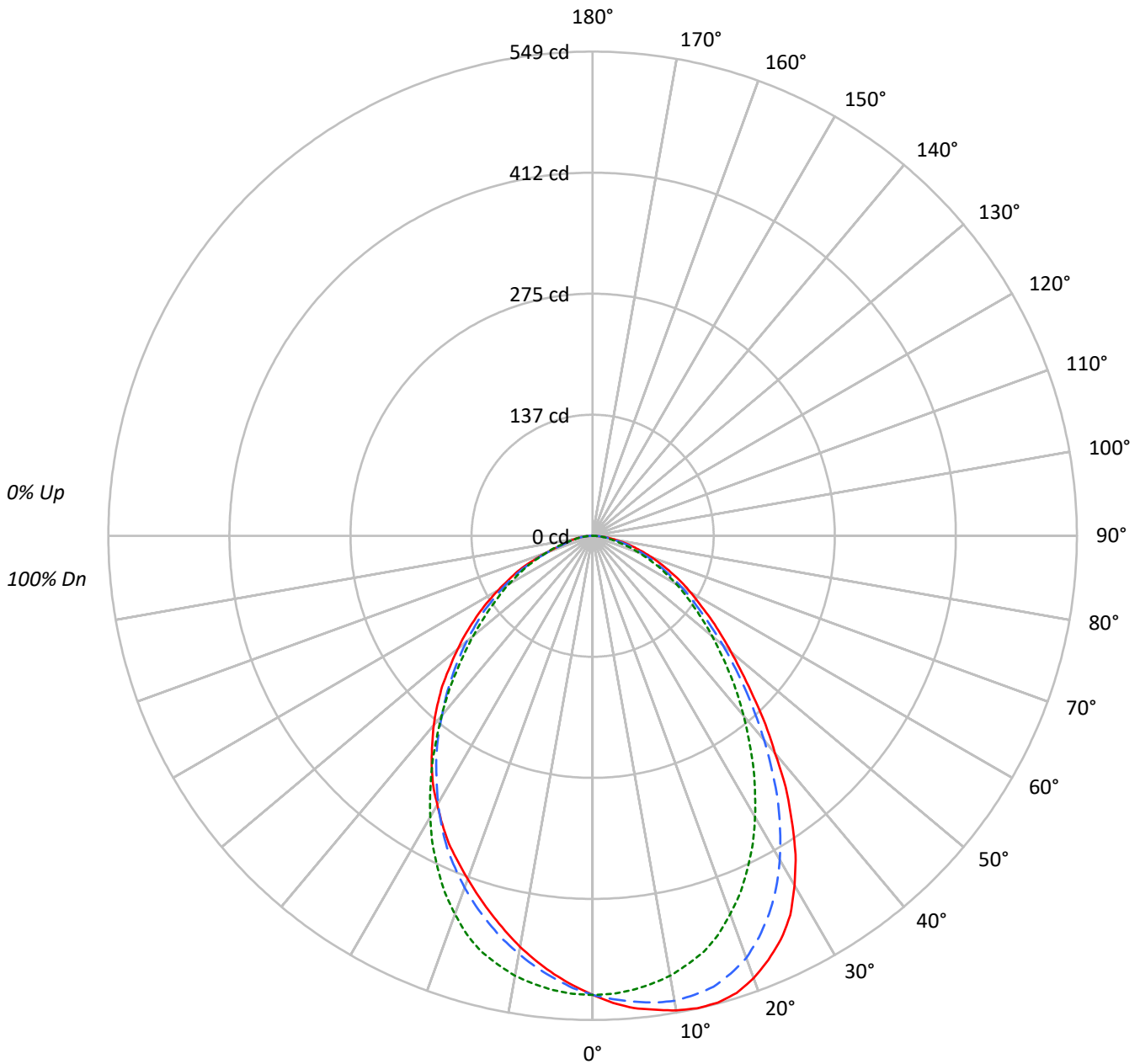
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P583813

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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								
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87								
2	102	94	88	83	99	93	87	82	89	85	81	86	82	79	83	80	77	75								
3	94	84	77	71	91	83	76	71	80	74	69	77	72	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	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50								
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45								
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40								
8	65	52	45	39	64	52	44	39	51	44	39	49	43	39	48	43	38	37								
9	61	48	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33								
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30								

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

	0°	90°	180°
0°	16053	16053	16053
5°	16644	16003	15452
10°	17112	15863	14820
15°	17494	15582	14168
20°	17520	14974	13589
25°	17186	14144	13113
30°	16297	13114	12537
35°	14809	11941	11971
40°	12950	10716	11283
45°	11221	9546	10514
50°	9825	8477	9580
55°	8752	7516	8666
60°	7888	6753	7610
65°	7121	5939	6640
70°	6401	4995	4932
75°	5647	3967	3693
80°	4724	3285	3552
85°	3644	2901	3149



TEST NUMBER: P583813

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	49.1	4.7
10°-20°	138.3	13.2
20°-30°	197.7	18.9
30°-40°	210.1	20.1
40°-50°	180.9	17.3
50°-60°	135.2	12.9
60°-70°	86.3	8.2
70°-80°	39.2	3.7
80°-90°	10.3	1.0
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°	385.2	36.8
0°-40°	595.2	56.8
0°-60°	911.3	87.0
0°-90°	1047.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1047.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	521	521	521	521	521	
5°	538	530	517	504	499	52
15°	548	530	488	455	444	154
25°	505	473	416	390	385	231
35°	393	366	317	309	318	245
45°	257	243	219	225	241	200
55°	163	149	140	152	161	146
65°	98	86	81	85	91	97
75°	47	41	33	30	31	50
85°	10	9	8	9	9	12
90°	0	0	0	0	0	



TEST NUMBER: P583813

CATALOG NUMBER: HC810D010-HM80520935-81WWWB

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6
2.5°	530.2	528.8	529.5	528.8	529.5	529.5	528.0	528.0	528.0	528.0	525.9
5°	537.7	536.9	536.9	536.2	535.5	536.2	535.5	534.6	533.2	532.5	530.2
7.5°	542.1	542.1	542.1	542.1	541.4	540.7	539.8	538.4	536.9	535.5	533.9
10°	546.5	547.3	546.5	545.8	545.0	543.5	542.8	541.4	539.1	536.9	535.5
12.5°	548.7	548.7	548.0	548.0	546.5	545.8	543.5	541.4	539.1	536.9	533.2
15°	548.0	548.0	547.3	546.5	544.3	543.5	542.1	539.8	536.2	533.2	529.5
17.5°	543.5	542.8	541.4	541.4	538.4	537.7	536.2	533.2	529.5	525.0	520.6
20°	533.9	533.9	533.2	532.5	529.5	527.3	525.9	522.1	519.1	514.0	509.5
22.5°	520.6	522.1	520.6	519.1	515.4	514.7	512.5	508.1	503.6	497.7	492.6
25°	505.1	504.4	503.6	502.2	499.2	497.7	494.7	490.3	485.8	479.2	473.3
27.5°	485.1	482.2	482.2	479.2	477.0	474.8	473.3	468.9	463.0	457.7	450.4
30°	457.7	458.6	454.8	454.1	450.4	448.9	445.9	441.5	436.3	430.4	424.5
32.5°	428.2	426.0	426.0	423.0	420.1	417.8	417.1	411.9	407.5	401.6	395.7
35°	393.4	393.4	391.3	390.5	387.5	386.1	383.8	380.9	375.7	370.5	366.1
37.5°	359.4	358.0	357.2	355.7	353.5	351.3	351.3	346.1	345.3	339.4	333.6
40°	321.7	323.2	321.7	319.5	318.8	317.2	316.5	313.6	311.3	306.1	302.4
42.5°	289.9	288.5	288.5	287.6	284.8	284.8	283.2	281.7	278.0	276.6	272.1
45°	257.3	258.8	256.6	257.3	254.5	254.5	254.5	251.5	248.5	246.3	243.3
47.5°	229.2	229.9	229.9	227.8	227.1	227.1	225.6	224.1	221.9	218.9	216.7
50°	204.8	205.5	204.1	203.4	201.9	201.2	201.2	198.2	196.8	193.8	192.3
52.5°	182.7	182.7	182.0	182.0	179.7	179.7	178.3	176.0	174.5	173.1	169.4
55°	162.8	162.8	161.9	161.2	161.2	159.0	158.3	156.0	154.6	151.6	149.4
57.5°	143.5	144.2	143.5	142.7	142.0	141.2	139.8	137.5	136.1	133.9	132.3
60°	127.9	127.9	127.2	126.5	125.0	124.3	123.4	122.0	119.8	118.3	116.1
62.5°	113.1	112.4	111.7	110.9	109.5	109.5	107.9	106.5	104.3	102.8	101.3
65°	97.6	97.6	96.9	96.9	96.2	94.7	93.9	93.2	90.3	89.4	86.5
67.5°	83.5	84.3	82.8	82.8	81.4	81.4	80.7	78.4	77.6	76.2	74.6
70°	71.0	71.0	71.0	70.3	68.8	68.0	67.3	65.9	65.0	63.6	62.1
72.5°	58.4	58.4	57.7	57.7	57.0	56.3	55.4	54.0	54.0	52.5	51.1
75°	47.4	47.4	46.6	45.8	45.1	45.1	44.4	43.6	42.2	41.5	40.6
77.5°	36.2	36.2	36.2	35.5	34.7	34.7	34.7	33.3	31.9	31.9	31.0
80°	26.6	26.6	25.8	25.8	25.1	25.1	25.1	24.4	23.7	23.0	22.2
82.5°	17.8	17.8	17.8	17.8	17.1	17.1	17.1	16.2	15.5	15.5	15.5
85°	10.3	10.3	10.3	10.3	9.6	9.6	9.6	9.6	9.6	8.9	8.9
87.5°	4.4	3.7	4.4	3.7	4.4	3.7	4.4	3.7	3.7	3.7	3.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P583813

CATALOG NUMBER: HC810D010-HM80520935-81WWWB

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6
2.5°	526.6	525.9	525.0	524.3	524.3	523.6	522.1	521.4	520.6	519.9	519.9
5°	529.5	528.8	527.3	525.9	525.0	523.6	522.1	520.6	519.1	517.0	516.3
7.5°	531.8	529.5	528.0	525.0	524.3	522.9	520.6	518.4	515.4	512.5	510.2
10°	531.8	528.8	526.6	522.9	521.4	519.9	517.0	513.3	509.5	506.6	502.9
12.5°	530.2	526.6	522.9	519.1	517.0	514.7	510.2	506.6	502.2	497.7	494.7
15°	525.0	520.6	516.3	511.8	509.5	506.6	502.2	497.0	492.6	488.1	483.0
17.5°	515.4	511.0	505.8	500.6	497.7	495.5	488.9	485.1	478.5	474.1	469.6
20°	502.9	497.7	491.0	485.8	482.2	480.0	474.8	468.2	463.0	456.3	451.8
22.5°	486.6	480.0	473.3	468.2	464.5	461.4	454.8	448.2	443.8	437.8	432.6
25°	467.3	460.7	454.1	446.7	442.9	440.1	434.2	428.2	422.3	415.7	411.2
27.5°	444.5	437.0	431.2	424.5	420.8	416.4	409.8	403.8	397.9	393.4	387.5
30°	419.4	411.2	405.3	398.6	395.0	391.3	384.5	378.6	373.5	368.3	365.3
32.5°	389.0	383.1	377.2	370.5	367.6	365.3	358.7	352.8	346.9	342.4	340.2
35°	360.1	353.5	348.3	342.4	338.7	336.4	330.6	325.4	322.5	317.2	314.3
37.5°	329.8	324.7	318.8	312.9	310.6	308.4	304.0	298.8	294.4	290.6	289.2
40°	298.1	293.6	288.5	284.8	282.5	280.3	276.6	272.9	270.0	266.2	264.8
42.5°	267.7	264.8	260.4	255.9	253.6	252.9	248.5	245.6	244.0	242.6	241.1
45°	240.4	236.0	232.9	229.9	227.8	226.3	224.1	221.9	220.3	218.9	217.4
47.5°	213.7	210.0	207.1	204.8	202.7	201.9	200.4	198.2	196.8	196.8	196.8
50°	189.3	186.3	183.4	182.0	181.1	179.7	178.3	177.5	176.7	176.7	176.7
52.5°	167.9	164.9	162.8	161.2	161.2	159.7	158.3	157.6	157.6	157.6	157.6
55°	148.0	145.7	144.2	142.7	141.2	140.5	140.5	140.5	139.8	139.8	140.5
57.5°	130.2	128.7	126.5	125.0	124.3	124.3	123.4	122.7	123.4	124.3	125.0
60°	113.9	112.4	111.7	109.5	109.5	109.5	108.7	108.7	108.7	109.5	110.2
62.5°	99.0	98.3	96.9	96.2	95.4	95.4	94.7	94.7	94.7	94.7	95.4
65°	85.8	84.3	82.8	82.8	82.8	82.1	82.1	80.7	81.4	81.4	80.7
67.5°	73.2	71.8	71.0	70.3	69.5	69.5	68.8	68.0	67.3	67.3	67.3
70°	61.4	59.9	59.9	58.4	58.4	57.7	57.0	57.0	56.3	55.4	54.7
72.5°	49.5	48.8	48.1	47.4	47.4	47.4	46.6	45.8	45.1	44.4	42.9
75°	39.2	39.2	37.7	37.0	37.0	36.2	35.5	34.7	34.0	33.3	32.6
77.5°	30.3	29.6	28.1	27.4	27.4	27.4	26.6	25.8	25.1	24.4	23.7
80°	22.2	21.4	20.7	20.0	20.0	20.0	19.2	19.2	18.5	18.5	18.5
82.5°	14.8	14.8	14.1	14.1	14.1	14.1	13.3	13.3	13.3	13.3	13.3
85°	8.9	8.9	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
87.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P583813

CATALOG NUMBER: HC810D010-HM80520935-81WWWB

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6
2.5°	518.4	518.4	517.0	516.3	515.4	516.3	514.7	514.0	513.3	513.3	512.5
5°	514.0	513.3	510.2	509.5	508.8	508.1	506.6	505.1	503.6	502.9	502.2
7.5°	508.1	505.8	502.9	502.2	501.4	499.2	497.0	495.5	493.3	492.6	491.0
10°	499.9	497.0	494.7	492.6	491.0	488.9	486.6	484.4	481.4	480.7	478.5
12.5°	490.3	486.6	482.2	481.4	479.2	476.2	473.3	471.1	468.9	467.3	465.2
15°	478.5	474.8	470.3	468.2	465.9	463.7	460.0	457.0	454.8	452.6	450.4
17.5°	464.5	460.0	456.3	454.1	452.6	448.9	445.9	442.2	440.1	437.8	435.6
20°	447.4	443.8	438.6	436.3	435.6	432.6	429.0	427.4	424.5	422.3	420.8
22.5°	428.2	424.5	420.1	418.5	415.7	414.1	410.5	408.9	407.5	405.3	404.5
25°	406.8	403.0	399.3	398.6	396.4	395.0	392.7	390.5	390.5	388.2	388.2
27.5°	384.5	380.9	377.9	376.5	375.7	374.2	372.0	371.3	370.5	369.7	369.7
30°	360.8	356.5	355.0	354.2	353.5	352.1	351.3	349.8	350.5	351.3	350.5
32.5°	335.7	334.3	331.3	329.8	330.6	329.8	328.4	329.8	329.1	330.6	331.3
35°	311.3	309.9	308.4	308.4	306.9	306.9	306.9	307.7	309.2	309.9	311.3
37.5°	287.6	285.5	284.8	284.0	284.8	284.8	284.8	286.2	287.6	289.2	291.4
40°	262.5	261.1	261.1	261.1	261.1	263.2	262.5	264.0	265.5	267.7	270.0
42.5°	238.8	238.8	239.6	239.6	239.6	239.6	241.1	243.3	245.6	247.7	250.0
45°	216.7	216.7	216.7	218.2	218.2	218.9	221.9	223.3	224.8	227.1	229.2
47.5°	195.9	195.9	196.8	197.5	198.2	199.7	201.2	203.4	205.5	207.1	209.3
50°	176.7	177.5	179.0	180.4	180.4	181.1	183.4	184.9	186.3	188.6	189.3
52.5°	158.3	159.7	161.2	161.9	162.8	164.2	164.9	167.1	167.9	170.1	170.8
55°	141.2	142.0	144.2	145.0	145.0	146.4	148.0	149.4	151.6	151.6	153.1
57.5°	125.7	126.5	127.9	128.7	127.9	130.2	130.9	132.3	133.1	134.6	135.3
60°	110.2	111.7	112.4	112.4	113.1	113.9	115.4	115.4	116.8	118.3	118.3
62.5°	95.4	96.2	96.9	97.6	98.3	97.6	99.9	99.9	101.3	102.0	103.5
65°	81.4	82.1	82.1	82.8	82.8	83.5	83.5	84.3	85.1	86.5	87.3
67.5°	67.3	67.3	67.3	68.0	67.3	68.0	68.0	68.8	68.8	70.3	71.0
70°	54.7	54.0	53.2	53.2	53.2	53.2	52.5	53.2	53.2	54.0	54.0
72.5°	42.2	41.5	40.6	39.9	39.9	39.2	38.5	39.2	39.2	39.9	39.9
75°	31.9	30.3	30.3	30.3	29.6	29.6	29.6	30.3	30.3	30.3	31.0
77.5°	23.7	23.7	23.0	23.0	23.0	23.7	23.7	24.4	24.4	24.4	24.4
80°	17.8	18.5	18.5	18.5	18.5	19.2	19.2	19.2	19.2	20.0	20.0
82.5°	13.3	13.3	13.3	13.3	14.1	14.1	14.1	14.1	14.1	14.1	14.1
85°	8.2	8.9	8.9	8.2	8.9	8.9	8.9	8.9	8.9	8.9	8.9
87.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P583813

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**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6
2.5°	511.8	511.8	511.8	511.8	511.0	511.0	511.0	510.2
5°	500.6	500.6	500.6	499.2	499.9	499.9	498.5	499.2
7.5°	489.6	488.9	488.1	488.1	487.4	486.6	485.8	486.6
10°	477.0	474.8	474.8	474.1	474.1	472.6	472.6	473.3
12.5°	463.0	461.4	461.4	460.7	460.0	459.3	458.6	458.6
15°	448.9	447.4	446.7	445.9	445.2	443.8	444.5	443.8
17.5°	434.9	432.6	432.6	431.9	431.2	429.7	429.7	429.0
20°	418.5	417.8	416.4	417.1	416.4	414.9	414.1	414.1
22.5°	402.3	402.3	401.6	401.6	400.9	400.1	399.3	399.3
25°	386.8	386.1	386.8	386.8	384.5	384.5	384.5	385.4
27.5°	369.0	369.7	369.0	369.0	369.0	369.0	369.7	369.0
30°	351.3	351.3	351.3	352.1	353.5	352.8	352.8	352.1
32.5°	332.1	332.8	332.8	333.6	334.3	335.7	335.7	336.4
35°	312.9	314.3	315.0	314.3	316.5	316.5	318.0	318.0
37.5°	292.8	293.6	295.1	295.8	297.3	298.1	298.8	298.8
40°	271.4	274.4	275.1	275.9	278.0	278.0	278.9	280.3
42.5°	251.5	254.5	255.2	255.9	257.3	259.6	258.8	260.4
45°	232.2	234.4	235.2	236.0	238.1	238.8	238.8	241.1
47.5°	211.6	213.0	213.7	215.2	216.7	218.2	219.6	218.9
50°	190.8	193.0	194.5	195.2	197.5	198.2	198.9	199.7
52.5°	172.4	173.8	174.5	175.3	177.5	178.3	179.0	180.4
55°	154.6	155.3	156.7	156.0	158.3	159.0	159.7	161.2
57.5°	136.8	137.5	138.4	138.4	139.8	141.2	142.0	142.7
60°	119.8	121.3	122.0	122.0	122.0	123.4	123.4	123.4
62.5°	104.3	104.3	105.1	105.1	106.5	106.5	106.5	106.5
65°	88.0	88.7	89.4	89.4	91.0	90.3	91.7	91.0
67.5°	71.0	71.0	72.5	72.5	71.8	72.5	72.5	72.5
70°	54.0	54.0	54.7	54.7	54.7	54.7	54.7	54.7
72.5°	39.9	39.9	39.9	40.6	39.9	39.9	40.6	39.9
75°	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
77.5°	24.4	24.4	25.1	25.1	25.1	25.1	25.1	25.1
80°	20.0	20.0	20.0	20.0	20.7	20.0	20.0	20.0
82.5°	14.8	14.1	14.8	14.1	14.8	14.8	14.8	14.8
85°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
87.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
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)