

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: P583982

Luminaire Tested: **HC820D010-HM80520827-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P583982
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: HC820D010-HM80520827-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1979.9 lumens
Efficiency: N/A
Efficacy: 99.0 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

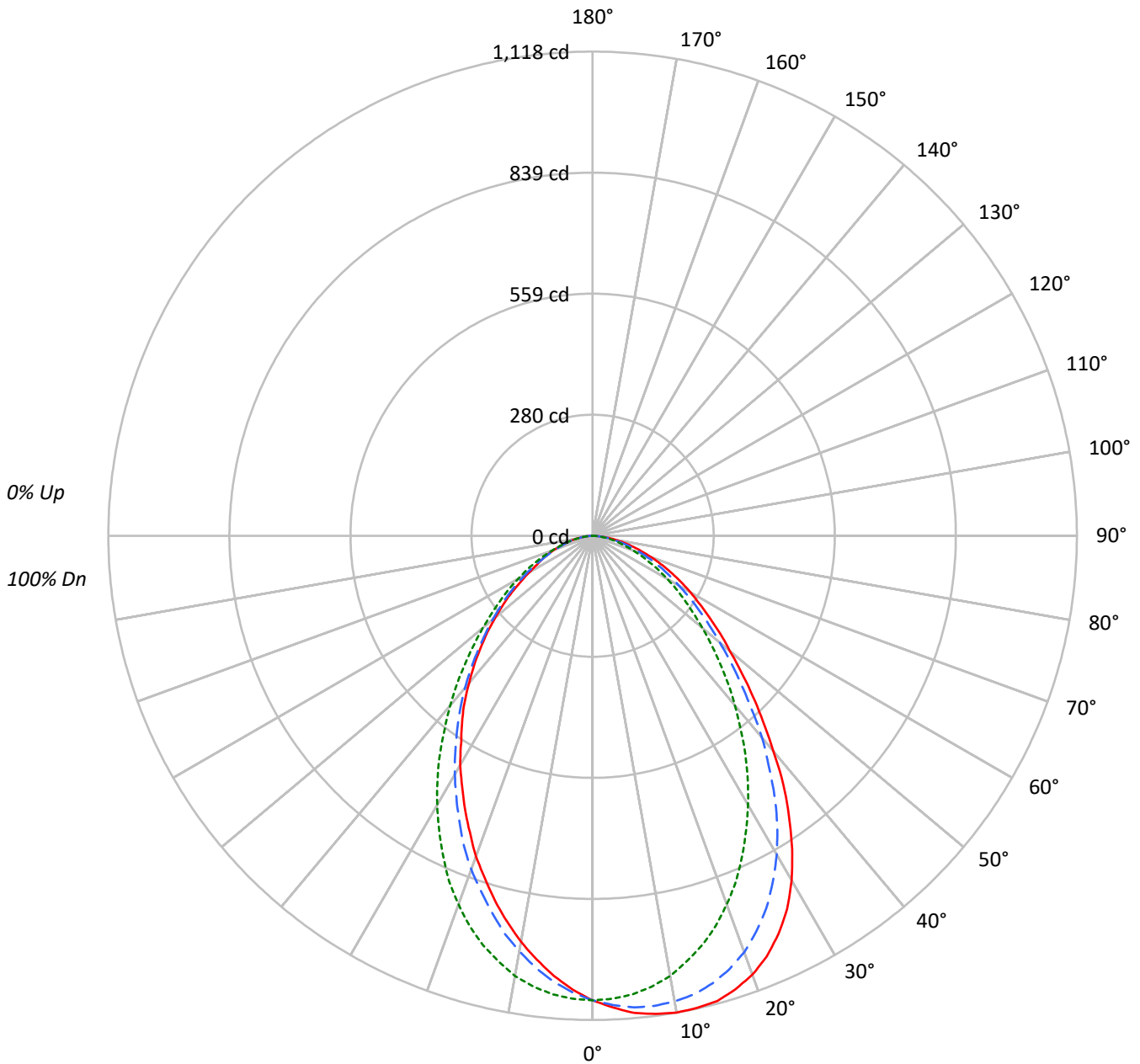
Input Watts (W): 20
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	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°	33081	33081	33081
5°	34241	32892	31586
10°	35004	32314	29809
15°	35503	31228	27838
20°	35395	29711	25839
25°	34521	27784	23725
30°	32705	25551	21766
35°	29754	23125	19782
40°	26133	20570	17873
45°	22790	18093	15935
50°	19827	15850	14032
55°	17688	13930	12209
60°	16066	12211	10417
65°	14447	10616	9449
70°	12866	9061	8529
75°	11271	7637	7280
80°	9572	6215	6464
85°	7182	4635	5130



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.5	5.1
10°-20°	276.9	14.0
20°-30°	384.3	19.4
30°-40°	397.3	20.1
40°-50°	332.7	16.8
50°-60°	241.5	12.2
60°-70°	152.4	7.7
70°-80°	75.5	3.8
80°-90°	18.8	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°	761.7	38.5
0°-40°	1159.0	58.5
0°-60°	1733.2	87.5
0°-90°	1979.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1979.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1073	1073	1073	1073	1073	
5°	1106	1093	1063	1034	1020	106
15°	1112	1070	978	900	872	313
25°	1015	949	817	728	697	465
35°	790	732	614	544	526	492
45°	523	485	415	374	365	404
55°	329	300	259	237	227	297
65°	198	173	146	128	130	197
75°	95	79	64	61	61	102
85°	20	16	13	14	14	25
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°	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8
2.5°	1090.3	1090.3	1091.7	1090.3	1090.3	1090.3	1088.9	1088.9	1087.3	1087.3	1084.5
5°	1106.2	1103.4	1106.2	1103.4	1103.4	1103.4	1101.9	1099.0	1097.5	1094.7	1093.2
7.5°	1113.6	1112.1	1112.1	1110.6	1110.6	1109.2	1107.8	1106.2	1100.4	1099.0	1094.7
10°	1117.9	1116.5	1116.5	1115.0	1112.1	1112.1	1109.2	1107.8	1100.4	1097.5	1091.7
12.5°	1116.5	1116.5	1116.5	1115.0	1110.6	1109.2	1106.2	1101.9	1096.1	1090.3	1084.5
15°	1112.1	1112.1	1109.2	1107.8	1103.4	1100.4	1099.0	1091.7	1085.9	1078.6	1069.8
17.5°	1097.5	1097.5	1096.1	1093.2	1088.9	1085.9	1082.9	1075.7	1069.8	1058.2	1049.5
20°	1078.6	1077.2	1075.7	1071.4	1067.0	1065.6	1061.2	1050.9	1043.7	1035.0	1023.3
22.5°	1050.9	1049.5	1048.1	1045.1	1037.9	1035.0	1032.0	1024.8	1011.7	1002.9	988.4
25°	1014.6	1014.6	1011.7	1007.3	1000.0	997.1	992.8	985.4	973.8	960.7	949.0
27.5°	972.3	970.9	966.5	963.6	957.8	953.4	946.2	937.4	925.7	915.6	901.0
30°	918.5	918.5	915.6	911.2	904.0	901.0	895.2	885.0	873.4	860.3	850.1
32.5°	857.4	857.4	853.0	850.1	845.7	838.4	837.0	825.4	815.1	804.9	793.4
35°	790.4	791.8	789.0	783.1	775.9	775.9	772.9	762.7	751.2	740.9	732.1
37.5°	723.5	719.1	717.6	714.8	710.4	704.5	701.6	697.3	687.1	679.8	666.6
40°	649.2	650.7	647.7	644.9	643.4	639.0	637.6	630.2	623.0	614.3	608.5
42.5°	582.3	582.3	582.3	579.3	576.5	572.1	570.6	566.3	557.5	551.6	542.9
45°	522.6	518.2	518.2	516.8	515.2	512.4	508.0	505.1	499.3	494.9	484.7
47.5°	464.3	465.8	464.3	462.9	458.5	457.1	455.7	449.8	444.0	439.6	432.4
50°	413.3	416.3	413.3	413.3	410.5	409.0	406.1	401.8	397.4	390.1	382.8
52.5°	371.1	371.1	369.7	368.3	363.9	361.0	359.6	358.0	350.8	345.0	339.1
55°	329.0	330.4	330.4	326.1	324.6	321.7	320.2	315.8	313.0	304.2	299.9
57.5°	292.5	291.1	292.5	289.7	286.8	283.8	282.4	279.4	275.2	269.3	263.5
60°	260.5	257.7	257.7	256.1	253.3	251.8	248.9	244.6	240.2	234.4	230.0
62.5°	228.5	227.1	225.6	224.2	221.3	219.9	218.3	213.9	209.6	205.2	200.8
65°	198.0	198.0	196.6	193.6	192.2	190.7	189.2	186.3	180.5	177.5	173.2
67.5°	170.3	168.9	168.9	166.0	163.0	161.6	161.6	158.6	154.3	149.9	147.0
70°	142.7	144.1	142.7	141.2	138.3	138.3	135.3	133.9	128.1	126.6	122.2
72.5°	118.0	118.0	116.4	116.4	113.6	112.1	112.1	109.2	106.3	103.3	100.5
75°	94.6	94.6	94.6	93.1	91.7	88.8	88.8	87.3	84.4	81.6	78.6
77.5°	74.2	72.8	72.8	71.3	69.9	68.4	68.4	66.9	64.1	62.6	59.7
80°	53.9	52.4	52.4	52.4	49.5	50.9	49.5	48.0	46.6	45.2	43.6
82.5°	35.0	36.4	36.4	35.0	33.5	33.5	33.5	32.0	32.0	30.6	29.1
85°	20.3	20.3	20.3	20.3	18.9	18.9	18.9	17.5	17.5	17.5	16.0
87.5°	8.7	8.7	8.7	8.7	8.7	8.7	7.3	7.3	7.3	7.3	7.3
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°	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8
2.5°	1084.5	1081.5	1080.1	1078.6	1078.6	1077.2	1075.7	1072.8	1072.8	1069.8	1068.4
5°	1090.3	1085.9	1082.9	1080.1	1078.6	1075.7	1072.8	1068.4	1067.0	1062.6	1058.2
7.5°	1091.7	1084.5	1081.5	1075.7	1072.8	1069.8	1064.0	1059.7	1053.9	1049.5	1043.7
10°	1085.9	1080.1	1072.8	1065.6	1064.0	1059.7	1050.9	1045.1	1037.9	1032.0	1023.3
12.5°	1077.2	1068.4	1061.2	1052.5	1048.1	1043.7	1035.0	1026.2	1016.0	1005.9	997.1
15°	1062.6	1052.5	1042.3	1032.0	1026.2	1021.8	1011.7	1001.5	991.2	978.2	969.5
17.5°	1040.8	1029.2	1018.9	1005.9	1000.0	995.6	982.6	970.9	957.8	944.7	936.0
20°	1013.1	998.6	987.0	972.3	967.9	960.7	947.6	934.5	920.0	905.4	895.2
22.5°	976.7	962.1	949.0	934.5	927.3	920.0	906.8	890.9	876.3	864.6	854.5
25°	934.5	921.4	905.4	892.3	883.5	874.8	860.3	847.1	834.0	816.6	806.4
27.5°	887.9	872.0	860.3	842.8	834.0	828.2	812.3	794.8	783.1	767.1	755.4
30°	835.6	821.0	807.9	790.4	781.7	775.9	761.3	745.3	733.7	717.6	706.0
32.5°	780.2	764.2	748.2	736.5	726.3	720.5	704.5	694.3	679.8	666.6	653.5
35°	720.5	704.5	692.9	676.8	671.0	665.2	652.1	639.0	625.9	614.3	604.1
37.5°	656.5	644.9	631.8	620.1	615.7	609.9	593.8	582.3	572.1	560.4	551.6
40°	593.8	583.7	574.9	563.3	556.0	551.6	540.1	529.9	518.2	511.0	502.2
42.5°	537.1	525.5	516.8	508.0	500.7	496.3	486.2	478.9	470.2	462.9	452.7
45°	477.4	471.6	461.5	454.1	449.8	444.0	436.6	428.0	420.7	414.9	407.6
47.5°	425.0	419.3	411.9	403.2	400.3	396.0	388.6	382.8	377.1	371.1	363.9
50°	377.1	369.7	363.9	358.0	355.2	350.8	343.5	340.7	336.3	330.4	326.1
52.5°	333.3	327.5	321.7	314.4	313.0	310.0	305.7	299.9	295.5	292.5	289.7
55°	294.1	288.2	283.8	278.0	276.6	273.6	267.8	264.9	262.0	259.1	256.1
57.5°	259.1	253.3	247.5	244.6	241.6	238.8	237.2	232.9	230.0	228.5	225.6
60°	227.1	221.3	216.9	212.5	211.1	209.6	206.7	203.8	200.8	198.0	196.6
62.5°	196.6	190.7	187.8	184.9	181.9	181.9	179.1	176.1	173.2	171.7	168.9
65°	168.9	166.0	161.6	157.2	155.8	155.8	151.4	149.9	148.5	145.5	142.7
67.5°	142.7	139.7	135.3	133.9	132.5	131.0	129.5	126.6	123.8	122.2	119.4
70°	119.4	116.4	113.6	112.1	110.6	109.2	106.3	104.8	101.9	100.5	98.9
72.5°	96.1	94.6	91.7	90.3	88.8	87.3	85.9	84.4	81.6	80.0	78.6
75°	77.2	75.6	72.8	71.3	69.9	69.9	68.4	65.5	64.1	64.1	62.6
77.5°	58.3	56.7	55.3	53.9	52.4	52.4	50.9	49.5	48.0	48.0	46.6
80°	42.2	40.8	39.4	39.4	39.4	37.8	36.4	36.4	35.0	35.0	33.5
82.5°	27.7	27.7	26.2	26.2	26.2	24.7	24.7	23.3	23.3	23.3	23.3
85°	16.0	16.0	16.0	14.5	14.5	14.5	14.5	14.5	14.5	13.1	14.5
87.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	5.8	5.8	5.8
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°	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8
2.5°	1067.0	1065.6	1062.6	1062.6	1059.7	1059.7	1058.2	1056.8	1055.3	1053.9	1052.5
5°	1056.8	1050.9	1048.1	1046.5	1043.7	1042.3	1037.9	1035.0	1033.5	1030.6	1027.6
7.5°	1037.9	1032.0	1026.2	1024.8	1023.3	1017.5	1013.1	1008.7	1005.9	1002.9	1000.0
10°	1016.0	1010.3	1002.9	1000.0	997.1	989.8	984.0	979.6	973.8	967.9	966.5
12.5°	989.8	981.1	972.3	969.5	965.1	957.8	952.0	944.7	940.3	933.1	931.7
15°	959.3	949.0	941.8	934.5	931.7	924.3	914.2	908.4	899.6	896.7	889.3
17.5°	922.9	912.6	902.5	899.6	895.2	885.0	874.8	867.6	858.8	854.5	850.1
20°	885.0	872.0	861.7	858.8	853.0	844.3	834.0	826.8	819.5	810.7	806.4
22.5°	841.3	826.8	818.1	810.7	809.3	799.2	787.4	781.7	775.9	768.5	762.7
25°	793.4	780.2	770.1	764.2	761.3	752.6	743.8	736.5	727.8	723.5	716.2
27.5°	743.8	735.1	722.0	716.2	711.8	704.5	694.3	689.9	681.2	675.4	671.0
30°	695.8	682.7	675.4	668.2	663.8	656.5	647.7	643.4	636.2	630.2	625.9
32.5°	643.4	634.6	624.5	621.5	615.7	608.5	602.6	595.4	589.6	583.7	582.3
35°	595.4	583.7	573.5	570.6	566.3	559.0	556.0	551.6	544.4	542.9	537.1
37.5°	542.9	537.1	525.5	521.1	519.6	513.8	508.0	505.1	500.7	496.3	494.9
40°	493.5	486.2	480.4	476.0	473.0	468.7	462.9	461.5	458.5	452.7	451.3
42.5°	446.9	439.6	433.8	432.4	428.0	423.6	420.7	416.3	414.9	413.3	410.5
45°	401.8	397.4	391.6	390.1	388.6	382.8	379.9	377.1	374.1	372.7	369.7
47.5°	361.0	356.6	352.2	350.8	347.9	346.4	342.1	340.7	336.3	334.7	333.3
50°	321.7	318.8	315.8	314.4	311.5	310.0	307.1	304.2	301.3	299.9	298.5
52.5°	286.8	283.8	281.0	279.4	278.0	275.2	272.2	269.3	267.8	266.4	264.9
55°	253.3	250.3	248.9	247.5	246.0	244.6	240.2	238.8	237.2	235.8	232.9
57.5°	222.7	219.9	216.9	216.9	215.5	213.9	211.1	208.2	208.2	205.2	202.4
60°	195.0	192.2	189.2	187.8	186.3	183.4	181.9	180.5	179.1	177.5	174.7
62.5°	166.0	164.5	161.6	161.6	158.6	157.2	155.8	154.3	152.8	149.9	148.5
65°	141.2	139.7	136.9	135.3	135.3	133.9	131.0	129.5	128.1	128.1	126.6
67.5°	118.0	116.4	113.6	112.1	112.1	110.6	109.2	109.2	107.7	106.3	107.7
70°	97.5	94.6	94.6	93.1	93.1	91.7	90.3	90.3	90.3	91.7	91.7
72.5°	77.2	75.6	74.2	74.2	74.2	74.2	72.8	72.8	74.2	75.6	75.6
75°	61.1	59.7	59.7	59.7	58.3	58.3	59.7	59.7	61.1	61.1	61.1
77.5°	45.2	45.2	45.2	45.2	45.2	45.2	46.6	46.6	48.0	48.0	48.0
80°	33.5	33.5	33.5	33.5	33.5	35.0	35.0	35.0	35.0	35.0	36.4
82.5°	23.3	23.3	23.3	23.3	23.3	23.3	23.3	24.7	24.7	24.7	24.7
85°	13.1	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
87.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8	1072.8
2.5°	1050.9	1050.9	1050.9	1052.5	1049.5	1049.5	1049.5	1049.5
5°	1026.2	1024.8	1023.3	1024.8	1021.8	1021.8	1020.4	1020.4
7.5°	995.6	994.2	992.8	992.8	989.8	989.8	988.4	987.0
10°	962.1	959.3	960.7	957.8	956.4	954.9	953.4	952.0
12.5°	925.7	922.9	921.4	918.5	915.6	914.2	915.6	912.6
15°	886.5	882.1	880.7	877.8	874.8	873.4	873.4	872.0
17.5°	842.8	839.9	838.4	835.6	834.0	831.2	829.8	828.2
20°	802.1	794.8	796.2	793.4	791.8	786.0	786.0	787.4
22.5°	757.0	752.6	749.6	746.8	745.3	742.4	742.4	740.9
25°	711.8	707.4	706.0	703.1	701.6	698.7	697.3	697.3
27.5°	668.2	662.3	662.3	659.4	656.5	655.1	653.5	652.1
30°	621.5	617.2	615.7	615.7	614.3	614.3	609.9	611.3
32.5°	577.9	574.9	573.5	570.6	570.6	569.1	569.1	564.8
35°	534.3	529.9	531.3	528.4	526.9	525.5	526.9	525.5
37.5°	491.9	489.1	489.1	486.2	486.2	484.7	483.3	486.2
40°	449.8	448.3	446.9	445.4	446.9	445.4	442.5	444.0
42.5°	407.6	407.6	406.1	406.1	404.7	404.7	404.7	404.7
45°	369.7	368.3	368.3	366.8	366.8	366.8	366.8	365.4
47.5°	331.9	330.4	330.4	330.4	329.0	329.0	327.5	329.0
50°	295.5	295.5	294.1	294.1	295.5	294.1	292.5	292.5
52.5°	262.0	262.0	260.5	260.5	259.1	257.7	259.1	259.1
55°	231.4	230.0	228.5	228.5	227.1	225.6	225.6	227.1
57.5°	202.4	200.8	199.4	199.4	196.6	195.0	195.0	195.0
60°	174.7	171.7	171.7	170.3	170.3	168.9	168.9	168.9
62.5°	148.5	147.0	147.0	147.0	147.0	145.5	145.5	145.5
65°	126.6	126.6	126.6	128.1	128.1	129.5	129.5	129.5
67.5°	109.2	110.6	110.6	110.6	112.1	112.1	112.1	110.6
70°	93.1	93.1	93.1	94.6	94.6	94.6	94.6	94.6
72.5°	77.2	77.2	77.2	77.2	77.2	77.2	77.2	77.2
75°	61.1	62.6	62.6	62.6	61.1	62.6	62.6	61.1
77.5°	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
80°	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4
82.5°	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
85°	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
87.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
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)