

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: P583983

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P583983
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: HC820D010-HM80520827-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2061.4 lumens
Efficiency: N/A
Efficacy: 103.1 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

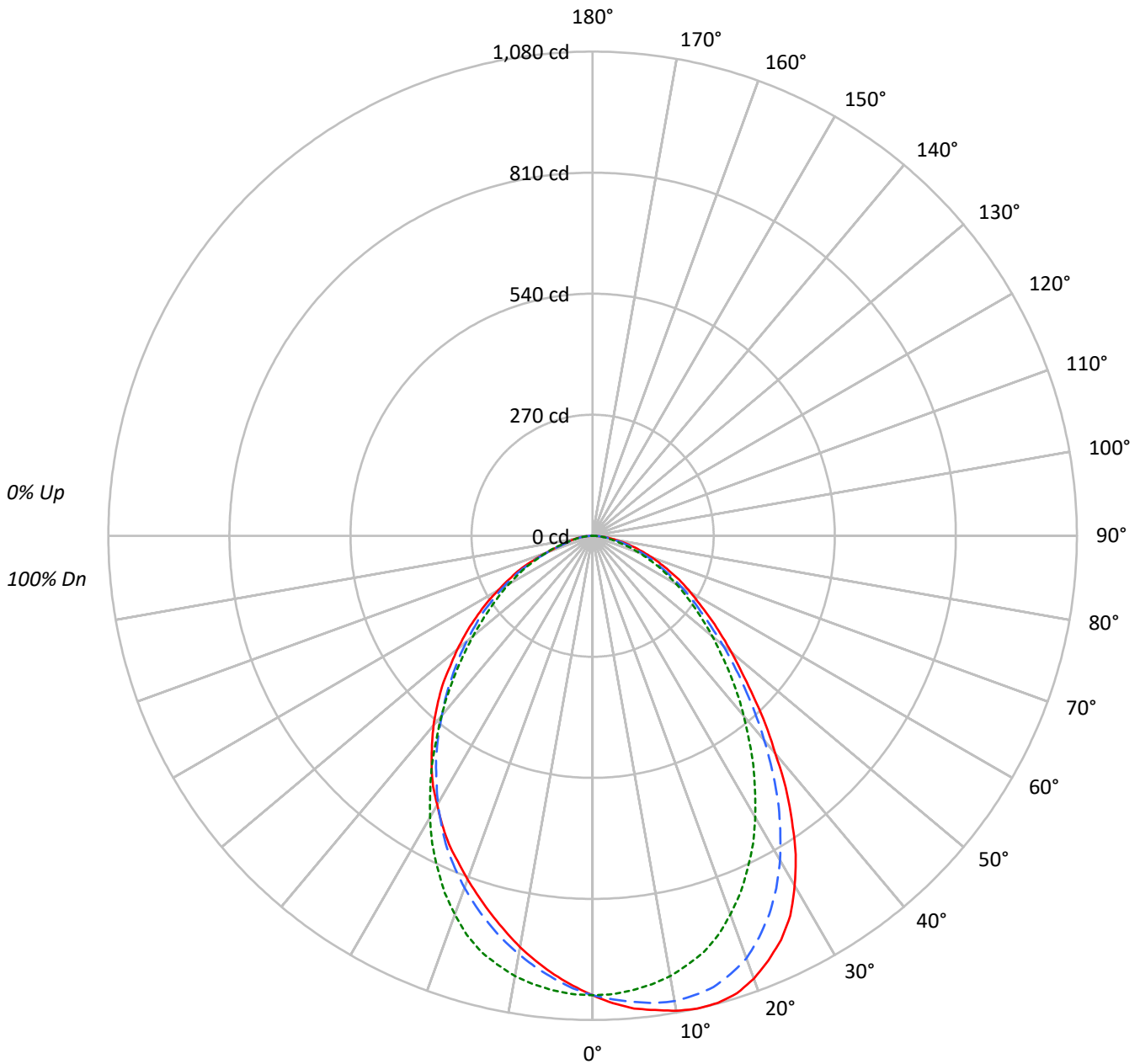
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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°	31604	31604	31604
5°	32765	31502	30419
10°	33689	31227	29177
15°	34440	30673	27886
20°	34495	29478	26754
25°	33834	27839	25807
30°	32089	25815	24675
35°	29159	23513	23565
40°	25493	21097	22212
45°	22092	18796	20697
50°	19347	16695	18858
55°	17220	14795	17064
60°	15535	13290	14993
65°	14024	11689	13068
70°	12595	9845	9710
75°	11092	7804	7280
80°	9305	6464	6997
85°	7182	5661	6192



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	96.7	4.7
10°-20°	272.3	13.2
20°-30°	389.2	18.9
30°-40°	413.6	20.1
40°-50°	356.1	17.3
50°-60°	266.2	12.9
60°-70°	169.8	8.2
70°-80°	77.3	3.7
80°-90°	20.3	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°	758.2	36.8
0°-40°	1171.8	56.8
0°-60°	1794.1	87.0
0°-90°	2061.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2061.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1025	1025	1025	1025	1025	
5°	1058	1044	1018	992	983	101
15°	1079	1042	961	895	874	304
25°	994	932	818	769	758	455
35°	775	721	625	609	626	482
45°	507	479	431	442	475	394
55°	320	294	275	298	317	288
65°	192	170	160	167	179	192
75°	93	80	66	60	61	99
85°	20	18	16	18	18	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°	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9
2.5°	1043.8	1041.0	1042.4	1041.0	1042.4	1042.4	1039.5	1039.5	1039.5	1039.5	1035.1
5°	1058.5	1056.9	1056.9	1055.5	1054.1	1055.5	1054.1	1052.6	1049.7	1048.2	1043.8
7.5°	1067.1	1067.1	1067.1	1067.1	1065.7	1064.3	1062.9	1059.9	1056.9	1054.1	1051.2
10°	1075.9	1077.4	1075.9	1074.4	1073.0	1070.1	1068.6	1065.7	1061.3	1056.9	1054.1
12.5°	1080.2	1080.2	1078.8	1078.8	1075.9	1074.4	1070.1	1065.7	1061.3	1056.9	1049.7
15°	1078.8	1078.8	1077.4	1075.9	1071.5	1070.1	1067.1	1062.9	1055.5	1049.7	1042.4
17.5°	1070.1	1068.6	1065.7	1065.7	1059.9	1058.5	1055.5	1049.7	1042.4	1033.7	1024.9
20°	1051.2	1051.2	1049.7	1048.2	1042.4	1038.0	1035.1	1027.9	1022.1	1011.8	1003.2
22.5°	1024.9	1027.9	1024.9	1022.1	1014.7	1013.3	1009.0	1000.2	991.5	979.8	969.6
25°	994.4	992.9	991.5	988.5	982.7	979.8	974.0	965.2	956.5	943.5	931.8
27.5°	955.1	949.3	949.3	943.5	939.1	934.7	931.8	923.0	911.4	901.2	886.6
30°	901.2	902.7	895.4	893.9	886.6	883.8	877.9	869.1	859.0	847.4	835.7
32.5°	843.0	838.6	838.6	832.7	826.9	822.6	821.1	811.0	802.2	790.5	778.9
35°	774.6	774.6	770.2	768.7	762.9	760.0	755.7	749.7	739.6	729.4	720.7
37.5°	707.5	704.6	703.2	700.3	696.0	691.6	691.6	681.3	679.9	668.3	656.6
40°	633.3	636.3	633.3	628.9	627.5	624.6	623.2	617.2	613.0	602.7	595.5
42.5°	570.7	567.8	567.8	566.3	560.5	560.5	557.5	554.7	547.4	544.5	535.8
45°	506.6	509.6	505.2	506.6	500.8	500.8	500.8	495.0	489.2	484.9	478.9
47.5°	451.3	452.8	452.8	448.5	446.9	446.9	444.1	441.1	436.7	431.0	426.6
50°	403.3	404.7	401.9	400.3	397.5	396.0	396.0	390.2	387.2	381.4	378.5
52.5°	359.6	359.6	358.1	358.1	353.8	353.8	350.8	346.4	343.6	340.7	333.4
55°	320.3	320.3	318.8	317.4	317.4	313.0	311.6	307.2	304.2	298.5	294.1
57.5°	282.5	283.9	282.5	281.0	279.5	278.1	275.2	270.8	267.8	263.5	260.6
60°	251.9	251.9	250.5	248.9	246.1	244.6	243.1	240.2	235.8	233.0	228.6
62.5°	222.8	221.3	219.9	218.4	215.5	215.5	212.5	209.7	205.3	202.4	199.4
65°	192.2	192.2	190.8	190.8	189.2	186.4	184.9	183.4	177.7	176.1	170.3
67.5°	164.5	166.0	163.1	163.1	160.2	160.2	158.7	154.4	152.8	150.0	147.0
70°	139.7	139.7	139.7	138.3	135.3	133.9	132.5	129.5	128.1	125.2	122.3
72.5°	115.0	115.0	113.6	113.6	112.1	110.6	109.2	106.3	106.3	103.4	100.5
75°	93.1	93.1	91.7	90.3	88.8	88.8	87.3	85.9	83.0	81.6	80.0
77.5°	71.4	71.4	71.4	69.9	68.4	68.4	68.4	65.5	62.6	62.6	61.1
80°	52.4	52.4	50.9	50.9	49.5	49.5	49.5	48.0	46.6	45.2	43.7
82.5°	35.0	35.0	35.0	35.0	33.5	33.5	33.5	32.0	30.6	30.6	30.6
85°	20.3	20.3	20.3	20.3	18.9	18.9	18.9	18.9	18.9	17.5	17.5
87.5°	8.7	7.3	8.7	7.3	8.7	7.3	8.7	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°	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9
2.5°	1036.6	1035.1	1033.7	1032.2	1032.2	1030.8	1027.9	1026.4	1024.9	1023.5	1023.5
5°	1042.4	1041.0	1038.0	1035.1	1033.7	1030.8	1027.9	1024.9	1022.1	1017.7	1016.2
7.5°	1046.8	1042.4	1039.5	1033.7	1032.2	1029.3	1024.9	1020.5	1014.7	1009.0	1004.6
10°	1046.8	1041.0	1036.6	1029.3	1026.4	1023.5	1017.7	1010.4	1003.2	997.3	990.0
12.5°	1043.8	1036.6	1029.3	1022.1	1017.7	1013.3	1004.6	997.3	988.5	979.8	974.0
15°	1033.7	1024.9	1016.2	1007.4	1003.2	997.3	988.5	978.3	969.6	960.8	950.7
17.5°	1014.7	1006.0	995.8	985.7	979.8	975.4	962.4	955.1	941.9	933.2	924.4
20°	990.0	979.8	966.8	956.5	949.3	944.9	934.7	921.6	911.4	898.3	889.6
22.5°	958.0	944.9	931.8	921.6	914.3	908.5	895.4	882.2	873.5	861.9	851.7
25°	920.1	907.1	893.9	879.4	872.1	866.3	854.6	843.0	831.3	818.2	809.4
27.5°	875.0	860.4	848.8	835.7	828.3	819.7	806.6	794.9	783.3	774.6	762.9
30°	825.5	809.4	797.8	784.7	777.4	770.2	757.1	745.4	735.2	725.0	719.2
32.5°	765.8	754.1	742.5	729.4	723.6	719.2	706.1	694.4	682.8	674.1	669.7
35°	709.0	696.0	685.7	674.1	666.8	662.4	650.8	640.6	634.7	624.6	618.8
37.5°	649.3	639.1	627.5	615.8	611.4	607.1	598.3	588.2	579.4	572.2	569.3
40°	586.7	578.0	567.8	560.5	556.1	551.8	544.5	537.2	531.4	524.1	521.3
42.5°	527.1	521.3	512.5	503.8	499.4	497.9	489.2	483.3	480.5	477.5	474.6
45°	473.2	464.4	458.6	452.8	448.5	445.5	441.1	436.7	433.9	431.0	428.0
47.5°	420.8	413.5	407.7	403.3	398.9	397.5	394.6	390.2	387.2	387.2	387.2
50°	372.7	366.9	361.1	358.1	356.7	353.8	350.8	349.4	348.0	348.0	348.0
52.5°	330.5	324.7	320.3	317.4	317.4	314.5	311.6	310.2	310.2	310.2	310.2
55°	291.1	286.8	283.9	281.0	278.1	276.6	276.6	276.6	275.2	275.2	276.6
57.5°	256.3	253.3	248.9	246.1	244.6	244.6	243.1	241.7	243.1	244.6	246.1
60°	224.2	221.3	219.9	215.5	215.5	215.5	214.1	214.1	214.1	215.5	216.9
62.5°	195.0	193.6	190.8	189.2	187.8	187.8	186.4	186.4	186.4	186.4	187.8
65°	168.9	166.0	163.1	163.1	163.1	161.6	161.6	158.7	160.2	160.2	158.7
67.5°	144.1	141.2	139.7	138.3	136.9	136.9	135.3	133.9	132.5	132.5	132.5
70°	120.8	118.0	118.0	115.0	115.0	113.6	112.1	112.1	110.6	109.2	107.7
72.5°	97.5	96.1	94.7	93.1	93.1	93.1	91.7	90.3	88.8	87.3	84.4
75°	77.2	77.2	74.2	72.8	72.8	71.4	69.9	68.4	67.0	65.5	64.1
77.5°	59.7	58.3	55.3	53.9	53.9	53.9	52.4	50.9	49.5	48.0	46.6
80°	43.7	42.2	40.8	39.4	39.4	39.4	37.8	37.8	36.4	36.4	36.4
82.5°	29.1	29.1	27.7	27.7	27.7	27.7	26.2	26.2	26.2	26.2	26.2
85°	17.5	17.5	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
87.5°	7.3	7.3	7.3	7.3	7.3	7.3	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9
2.5°	1020.5	1020.5	1017.7	1016.2	1014.7	1016.2	1013.3	1011.8	1010.4	1010.4	1009.0
5°	1011.8	1010.4	1004.6	1003.2	1001.6	1000.2	997.3	994.4	991.5	990.0	988.5
7.5°	1000.2	995.8	990.0	988.5	987.1	982.7	978.3	975.4	971.1	969.6	966.8
10°	984.1	978.3	974.0	969.6	966.8	962.4	958.0	953.6	947.7	946.3	941.9
12.5°	965.2	958.0	949.3	947.7	943.5	937.6	931.8	927.4	923.0	920.1	915.7
15°	941.9	934.7	926.0	921.6	917.2	912.9	905.5	899.7	895.4	891.0	886.6
17.5°	914.3	905.5	898.3	893.9	891.0	883.8	877.9	870.7	866.3	861.9	857.5
20°	880.8	873.5	863.3	859.0	857.5	851.7	844.4	841.5	835.7	831.3	828.3
22.5°	843.0	835.7	826.9	824.0	818.2	815.3	808.0	805.1	802.2	797.8	796.3
25°	800.7	793.5	786.1	784.7	780.4	777.4	773.0	768.7	768.7	764.3	764.3
27.5°	757.1	749.7	744.0	741.0	739.6	736.6	732.4	730.8	729.4	728.0	728.0
30°	710.5	701.8	698.8	697.4	696.0	693.0	691.6	688.6	690.1	691.6	690.1
32.5°	661.0	658.0	652.2	649.3	650.8	649.3	646.4	649.3	647.9	650.8	652.2
35°	613.0	610.0	607.1	607.1	604.2	604.2	604.2	605.7	608.6	610.0	613.0
37.5°	566.3	561.9	560.5	559.1	560.5	560.5	560.5	563.5	566.3	569.3	573.6
40°	516.9	513.9	513.9	513.9	513.9	518.3	516.9	519.7	522.7	527.1	531.4
42.5°	470.2	470.2	471.7	471.7	471.7	471.7	474.6	478.9	483.3	487.7	492.1
45°	426.6	426.6	426.6	429.5	429.5	431.0	436.7	439.7	442.5	446.9	451.3
47.5°	385.8	385.8	387.2	388.8	390.2	393.1	396.0	400.3	404.7	407.7	412.0
50°	348.0	349.4	352.4	355.2	355.2	356.7	361.1	363.9	366.9	371.3	372.7
52.5°	311.6	314.5	317.4	318.8	320.3	323.2	324.7	329.1	330.5	334.9	336.3
55°	278.1	279.5	283.9	285.3	285.3	288.3	291.1	294.1	298.5	298.5	301.4
57.5°	247.5	248.9	251.9	253.3	251.9	256.3	257.7	260.6	262.0	265.0	266.4
60°	216.9	219.9	221.3	221.3	222.8	224.2	227.1	227.1	230.0	233.0	233.0
62.5°	187.8	189.2	190.8	192.2	193.6	192.2	196.6	196.6	199.4	200.9	203.8
65°	160.2	161.6	161.6	163.1	163.1	164.5	164.5	166.0	167.4	170.3	171.7
67.5°	132.5	132.5	132.5	133.9	132.5	133.9	133.9	135.3	135.3	138.3	139.7
70°	107.7	106.3	104.8	104.8	104.8	104.8	103.4	104.8	104.8	106.3	106.3
72.5°	83.0	81.6	80.0	78.6	78.6	77.2	75.6	77.2	77.2	78.6	78.6
75°	62.6	59.7	59.7	59.7	58.3	58.3	58.3	59.7	59.7	59.7	61.1
77.5°	46.6	46.6	45.2	45.2	45.2	46.6	46.6	48.0	48.0	48.0	48.0
80°	35.0	36.4	36.4	36.4	36.4	37.8	37.8	37.8	37.8	39.4	39.4
82.5°	26.2	26.2	26.2	26.2	27.7	27.7	27.7	27.7	27.7	27.7	27.7
85°	16.0	17.5	17.5	16.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5
87.5°	7.3	7.3	7.3	7.3	7.3	7.3	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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9	1024.9
2.5°	1007.4	1007.4	1007.4	1007.4	1006.0	1006.0	1006.0	1004.6
5°	985.7	985.7	985.7	982.7	984.1	984.1	981.3	982.7
7.5°	963.8	962.4	960.8	960.8	959.4	958.0	956.5	958.0
10°	939.1	934.7	934.7	933.2	933.2	930.4	930.4	931.8
12.5°	911.4	908.5	908.5	907.1	905.5	904.1	902.7	902.7
15°	883.8	880.8	879.4	877.9	876.5	873.5	875.0	873.5
17.5°	856.0	851.7	851.7	850.2	848.8	845.8	845.8	844.4
20°	824.0	822.6	819.7	821.1	819.7	816.8	815.3	815.3
22.5°	792.1	792.1	790.5	790.5	789.1	787.7	786.1	786.1
25°	761.4	760.0	761.4	761.4	757.1	757.1	757.1	758.5
27.5°	726.5	728.0	726.5	726.5	726.5	726.5	728.0	726.5
30°	691.6	691.6	691.6	693.0	696.0	694.4	694.4	693.0
32.5°	653.6	655.2	655.2	656.6	658.0	661.0	661.0	662.4
35°	615.8	618.8	620.2	618.8	623.2	623.2	626.0	626.0
37.5°	576.6	578.0	581.0	582.4	585.2	586.7	588.2	588.2
40°	534.3	540.2	541.6	543.0	547.4	547.4	548.9	551.8
42.5°	495.0	500.8	502.2	503.8	506.6	511.0	509.6	512.5
45°	457.2	461.6	463.0	464.4	468.8	470.2	470.2	474.6
47.5°	416.4	419.3	420.8	423.6	426.6	429.5	432.4	431.0
50°	375.6	380.0	382.8	384.4	388.8	390.2	391.6	393.1
52.5°	339.2	342.2	343.6	345.0	349.4	350.8	352.4	355.2
55°	304.2	305.8	308.6	307.2	311.6	313.0	314.5	317.4
57.5°	269.4	270.8	272.2	272.2	275.2	278.1	279.5	281.0
60°	235.8	238.8	240.2	240.2	240.2	243.1	243.1	243.1
62.5°	205.3	205.3	206.7	206.7	209.7	209.7	209.7	209.7
65°	173.3	174.7	176.1	176.1	179.1	177.7	180.5	179.1
67.5°	139.7	139.7	142.7	142.7	141.2	142.7	142.7	142.7
70°	106.3	106.3	107.7	107.7	107.7	107.7	107.7	107.7
72.5°	78.6	78.6	78.6	80.0	78.6	78.6	80.0	78.6
75°	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1
77.5°	48.0	48.0	49.5	49.5	49.5	49.5	49.5	49.5
80°	39.4	39.4	39.4	39.4	40.8	39.4	39.4	39.4
82.5°	29.1	27.7	29.1	27.7	29.1	29.1	29.1	29.1
85°	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
87.5°	7.3	7.3	7.3	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



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













(END OF REPORT)