

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: io LED

Report Number: P251610

Luminaire Tested: **LD4B20D010 EU4B10208035 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251610
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10208035 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1842.0 lumens
Efficiency: N/A
Efficacy: 88.6 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

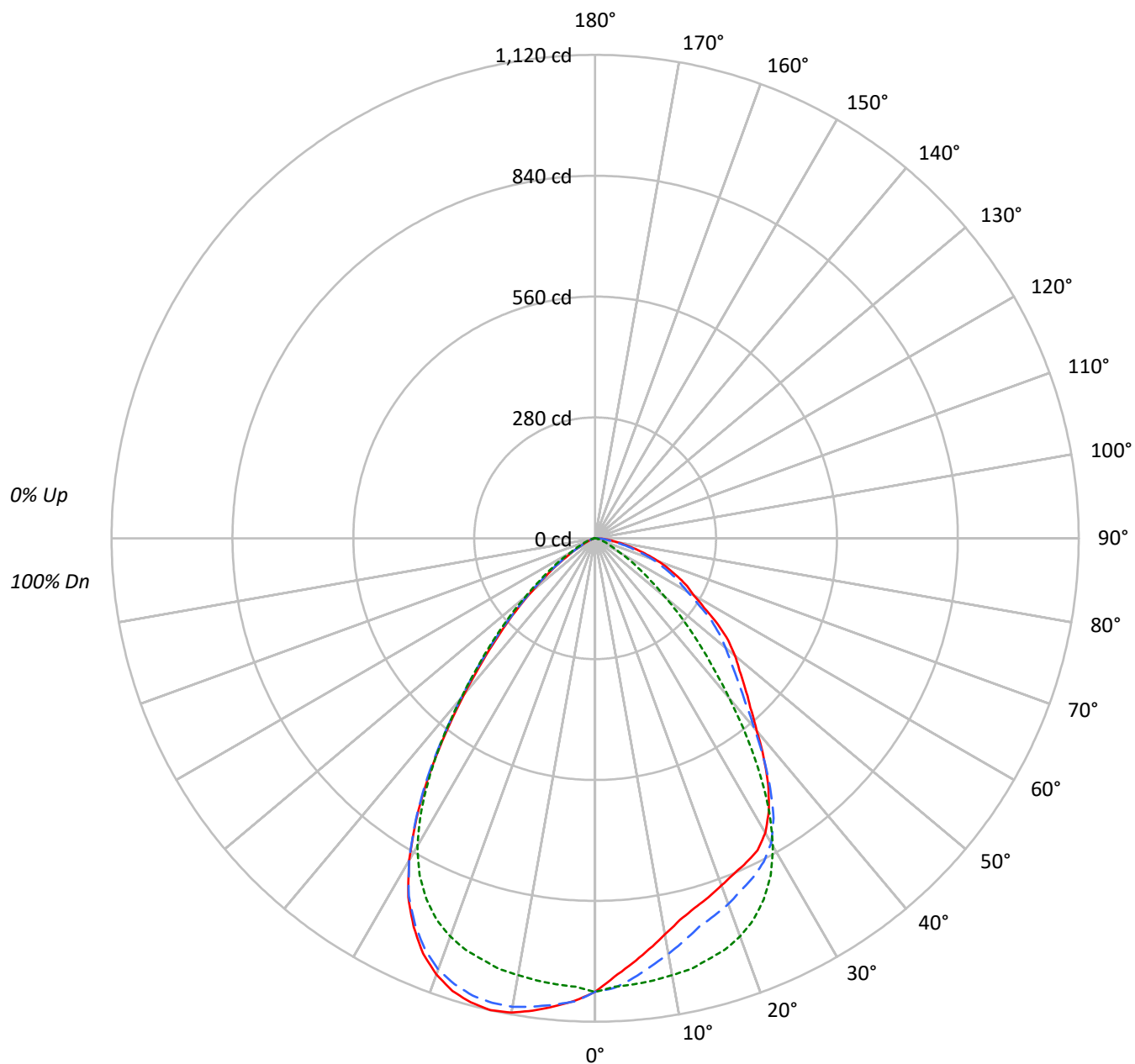
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	102409	102409	102409
5°	96705	101479	106518
10°	92202	101713	110421
15°	89495	101925	112307
20°	88757	101825	111512
25°	89123	99307	106888
30°	88689	92650	96926
35°	83139	79106	79915
40°	74082	61334	59960
45°	67756	45731	42933
50°	64059	32037	28944
55°	58909	21630	18181
60°	51477	12670	10038
65°	48727	8117	5627
70°	44366	5784	3476
75°	36714	4067	2561
80°	28904	2301	1515
85°	25719	1565	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.3	5.4
10°-20°	284.8	15.5
20°-30°	422.2	22.9
30°-40°	422.8	23.0
40°-50°	295.5	16.0
50°-60°	175.8	9.5
60°-70°	91.8	5.0
70°-80°	40.8	2.2
80°-90°	8.9	0.5
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°	806.4	43.8
0°-40°	1229.2	66.7
0°-60°	1700.5	92.3
0°-90°	1842.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1842.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1051	1051	1051	1051	1051	
5°	988	1022	1037	1085	1089	93
15°	887	932	1010	1097	1113	251
25°	829	867	924	987	994	382
35°	699	707	665	677	672	433
45°	492	467	332	321	312	382
55°	347	325	127	111	107	308
65°	211	194	35	26	24	209
75°	98	85	11	7	7	105
85°	23	18	1	1	0	26
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°	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8
2.5°	1017.0	1029.2	1017.0	1021.0	1037.3	1022.4	1030.5	1030.5	1026.5	1035.9	1042.7
5°	988.5	1000.7	988.5	994.0	1011.6	996.7	1006.1	1003.4	1004.8	1012.9	1022.4
7.5°	960.1	969.6	958.8	965.5	981.8	969.6	977.7	977.7	979.1	991.3	999.4
10°	931.7	939.8	931.7	937.1	954.7	943.9	949.3	950.6	954.7	965.5	977.7
12.5°	905.9	912.7	904.6	912.7	927.6	916.8	923.5	924.9	929.0	941.1	954.7
15°	887.0	893.8	885.6	892.4	905.9	897.8	903.2	905.9	908.6	919.5	931.7
17.5°	872.1	877.5	870.7	878.9	889.7	880.2	888.3	888.3	892.4	903.2	916.8
20°	855.8	861.3	855.8	862.6	874.8	866.7	873.4	873.4	877.5	889.7	901.9
22.5°	840.9	843.6	840.9	846.4	858.5	851.8	855.8	857.2	861.3	872.1	882.9
25°	828.8	834.2	831.5	836.9	845.0	838.2	842.3	843.6	847.7	857.2	866.7
27.5°	815.2	817.9	815.2	822.0	828.8	823.3	827.4	826.0	828.8	836.9	845.0
30°	788.1	790.8	790.8	794.9	800.3	797.6	801.7	797.6	800.3	807.1	815.2
32.5°	748.9	750.2	751.6	755.6	759.7	755.6	758.3	758.3	758.3	763.8	769.2
35°	698.8	701.5	700.1	702.8	706.9	705.5	705.5	704.2	701.5	704.2	706.9
37.5°	641.9	637.8	637.8	641.9	644.6	639.2	641.9	639.2	639.2	640.5	640.5
40°	582.3	578.2	582.3	583.6	585.0	582.3	580.9	578.2	574.2	575.5	572.8
42.5°	532.2	529.5	530.8	530.8	532.2	529.5	530.8	525.4	521.4	518.6	514.6
45°	491.6	487.5	491.6	488.9	488.9	487.5	486.1	483.4	478.0	474.0	467.2
47.5°	453.6	453.6	455.0	455.0	455.0	452.3	452.3	446.9	441.5	436.0	426.6
50°	422.5	419.8	425.2	425.2	421.1	419.8	421.1	414.4	410.3	403.5	394.1
52.5°	388.6	388.6	390.0	390.0	388.6	385.9	387.3	381.9	377.8	371.0	361.6
55°	346.7	344.0	348.0	348.0	346.7	345.3	346.7	342.6	338.5	333.1	325.0
57.5°	299.3	297.9	300.6	302.0	299.3	299.3	300.6	296.6	295.2	289.8	281.7
60°	264.1	262.7	265.4	266.8	264.1	264.1	264.1	258.6	255.9	250.5	245.1
62.5°	239.7	238.3	241.0	239.7	238.3	237.0	238.3	232.9	230.2	224.8	219.4
65°	211.3	212.6	214.0	214.0	212.6	211.3	211.3	208.5	205.8	200.4	193.6
67.5°	184.2	184.2	185.5	186.9	185.5	185.5	185.5	181.5	178.8	174.7	166.6
70°	155.7	154.4	158.4	158.4	155.7	157.1	155.7	154.4	151.7	146.3	139.5
72.5°	125.9	125.9	127.3	127.3	125.9	125.9	125.9	124.6	120.5	117.8	111.0
75°	97.5	97.5	98.9	100.2	97.5	97.5	98.9	96.1	93.4	89.4	85.3
77.5°	73.1	71.8	73.1	73.1	71.8	71.8	71.8	70.4	69.1	65.0	60.9
80°	51.5	50.1	51.5	51.5	51.5	50.1	50.1	48.8	48.8	46.0	42.0
82.5°	35.2	33.9	35.2	35.2	35.2	33.9	33.9	33.9	32.5	31.1	28.4
85°	23.0	21.7	21.7	23.0	21.7	21.7	21.7	21.7	20.3	19.0	17.6
87.5°	10.8	10.8	10.8	10.8	10.8	10.8	10.8	9.5	9.5	9.5	8.1
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°	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8
2.5°	1037.3	1034.6	1042.7	1040.0	1041.4	1034.6	1045.4	1040.0	1046.8	1040.0	1053.5
5°	1019.7	1017.0	1029.2	1027.8	1029.2	1023.8	1035.9	1034.6	1042.7	1037.3	1052.2
7.5°	1000.7	998.0	1011.6	1012.9	1015.6	1010.2	1026.5	1026.5	1034.6	1033.2	1049.5
10°	979.1	980.4	994.0	996.7	1002.1	999.4	1014.3	1018.3	1029.2	1027.8	1048.1
12.5°	958.8	958.8	976.4	981.8	985.8	984.5	1002.1	1007.5	1019.7	1022.4	1041.4
15°	938.4	939.8	956.0	964.2	969.6	968.2	987.2	994.0	1008.9	1010.2	1033.2
17.5°	922.2	920.8	938.4	945.2	953.3	952.0	972.3	980.4	995.3	999.4	1021.0
20°	908.6	907.3	923.5	931.7	937.1	935.7	956.0	965.5	979.1	981.8	1003.4
22.5°	892.4	889.7	905.9	912.7	918.1	916.8	934.4	941.1	954.7	957.4	977.7
25°	873.4	870.7	885.6	889.7	893.8	891.0	905.9	910.0	920.8	923.5	943.9
27.5°	851.8	845.0	857.2	857.2	859.9	855.8	866.7	870.7	880.2	880.2	899.2
30°	817.9	808.4	815.2	813.9	815.2	809.8	816.6	817.9	824.7	823.3	836.9
32.5°	770.5	757.0	761.0	757.0	752.9	744.8	752.9	750.2	755.6	750.2	762.4
35°	705.5	692.0	690.6	685.2	681.1	674.4	674.4	667.6	669.0	664.9	673.0
37.5°	635.1	617.5	614.8	604.0	597.2	589.1	589.1	583.6	576.9	574.2	580.9
40°	566.0	547.1	540.3	522.7	515.9	507.8	502.4	495.6	492.9	482.1	487.5
42.5°	506.5	486.1	471.3	452.3	445.5	433.3	425.2	417.1	413.0	400.8	406.3
45°	456.4	432.0	415.7	391.4	381.9	368.3	356.1	346.7	337.2	331.8	329.1
47.5°	414.4	388.6	367.0	339.9	325.0	312.8	296.6	287.1	274.9	268.1	264.1
50°	379.2	350.7	326.4	295.2	280.3	266.8	247.8	232.9	222.1	211.3	208.5
52.5°	348.0	318.2	291.1	255.9	238.3	222.1	201.8	185.5	176.0	163.9	162.5
55°	311.5	285.7	255.9	219.4	201.8	185.5	163.9	147.6	135.4	127.3	124.6
57.5°	272.2	247.8	219.4	182.8	165.2	147.6	127.3	112.4	101.6	94.8	93.4
60°	235.6	212.6	185.5	149.0	131.4	116.5	94.8	79.9	70.4	65.0	62.3
62.5°	208.5	186.9	161.1	127.3	111.0	96.1	75.8	62.3	54.2	48.8	46.0
65°	182.8	161.1	138.1	107.0	93.4	79.9	60.9	48.8	40.6	35.2	32.5
67.5°	155.7	136.8	115.1	89.4	75.8	65.0	48.8	37.9	31.1	27.1	24.4
70°	128.6	111.0	93.4	71.8	62.3	51.5	37.9	29.8	23.0	20.3	17.6
72.5°	101.6	88.0	73.1	55.5	47.4	40.6	29.8	21.7	17.6	14.9	12.2
75°	75.8	66.4	54.2	42.0	35.2	29.8	21.7	16.3	13.5	10.8	9.5
77.5°	54.2	46.0	37.9	28.4	25.7	21.7	14.9	12.2	9.5	6.8	5.4
80°	36.6	32.5	25.7	20.3	16.3	14.9	10.8	8.1	5.4	4.1	4.1
82.5°	24.4	20.3	16.3	12.2	10.8	9.5	6.8	5.4	4.1	2.7	2.7
85°	14.9	12.2	9.5	6.8	6.8	5.4	4.1	2.7	1.4	1.4	1.4
87.5°	6.8	5.4	4.1	2.7	2.7	1.4	1.4	1.4	0.0	0.0	0.0
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°	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8
2.5°	1064.4	1056.3	1050.8	1057.6	1060.3	1056.3	1060.3	1067.1	1073.9	1075.2	1056.3
5°	1065.7	1057.6	1054.9	1063.0	1064.4	1063.0	1067.1	1076.6	1084.7	1087.4	1068.4
7.5°	1065.7	1060.3	1059.0	1068.4	1069.8	1068.4	1075.2	1086.0	1094.2	1099.6	1080.6
10°	1063.0	1060.3	1061.7	1069.8	1072.5	1072.5	1082.0	1094.2	1102.3	1107.7	1088.8
12.5°	1059.0	1059.0	1059.0	1068.4	1071.2	1072.5	1080.6	1096.9	1102.3	1110.4	1091.5
15°	1052.2	1052.2	1052.2	1061.7	1065.7	1065.7	1075.2	1090.1	1096.9	1105.0	1086.0
17.5°	1040.0	1040.0	1041.4	1049.5	1053.5	1053.5	1063.0	1079.3	1083.3	1092.8	1073.9
20°	1022.4	1022.4	1023.8	1031.9	1035.9	1033.2	1045.4	1059.0	1063.0	1071.2	1052.2
22.5°	996.7	996.7	996.7	1004.8	1007.5	1006.1	1018.3	1030.5	1030.5	1041.4	1021.0
25°	958.8	961.5	958.8	966.9	969.6	968.2	979.1	989.9	987.2	999.4	979.1
27.5°	912.7	911.4	911.4	918.1	918.1	916.8	924.9	937.1	934.4	942.5	923.5
30°	849.1	853.1	846.4	855.8	851.8	849.1	854.5	865.3	861.3	868.0	853.1
32.5°	775.9	770.5	770.5	770.5	773.2	766.5	771.9	777.3	773.2	780.0	763.8
35°	679.8	681.1	677.1	678.4	679.8	671.7	677.1	682.5	677.1	681.1	666.3
37.5°	583.6	585.0	575.5	580.9	575.5	572.8	578.2	580.9	575.5	579.6	563.3
40°	487.5	484.8	483.4	483.4	484.8	478.0	482.1	486.1	482.1	484.8	469.9
42.5°	403.5	402.2	399.5	400.8	396.8	395.4	396.8	400.8	396.8	399.5	388.6
45°	330.4	327.7	323.6	325.0	325.0	318.2	322.3	325.0	320.9	322.3	312.8
47.5°	262.7	258.6	258.6	257.3	257.3	254.6	258.6	257.3	253.2	255.9	246.5
50°	204.5	201.8	201.8	201.8	201.8	197.7	199.1	201.8	197.7	197.7	192.3
52.5°	159.8	155.7	153.0	153.0	153.0	151.7	151.7	153.0	149.0	149.0	147.6
55°	120.5	119.2	115.1	115.1	115.1	111.0	112.4	112.4	111.0	111.0	107.0
57.5°	89.4	85.3	82.6	82.6	79.9	79.9	78.5	79.9	77.2	77.2	74.5
60°	59.6	56.9	55.5	54.2	54.2	52.8	54.2	52.8	52.8	51.5	50.1
62.5°	43.3	40.6	37.9	37.9	37.9	36.6	36.6	36.6	36.6	36.6	35.2
65°	31.1	28.4	28.4	27.1	27.1	25.7	25.7	25.7	25.7	25.7	24.4
67.5°	21.7	20.3	19.0	19.0	19.0	19.0	19.0	19.0	17.6	17.6	17.6
70°	16.3	14.9	13.5	13.5	13.5	13.5	13.5	12.2	13.5	13.5	12.2
72.5°	10.8	10.8	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
75°	8.1	8.1	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
77.5°	5.4	5.4	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
82.5°	2.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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°	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8	1050.8
2.5°	1076.6	1075.2	1072.5	1076.6	1065.7	1061.7	1060.3	1072.5
5°	1091.5	1088.8	1088.8	1092.8	1080.6	1077.9	1075.2	1088.8
7.5°	1105.0	1102.3	1102.3	1106.4	1095.5	1092.8	1090.1	1103.7
10°	1113.1	1113.1	1113.1	1115.8	1106.4	1103.7	1102.3	1115.8
12.5°	1117.2	1117.2	1115.8	1121.3	1109.1	1109.1	1106.4	1119.9
15°	1111.8	1111.8	1111.8	1115.8	1105.0	1102.3	1102.3	1113.1
17.5°	1098.2	1098.2	1096.9	1100.9	1088.8	1088.8	1087.4	1099.6
20°	1077.9	1077.9	1075.2	1080.6	1068.4	1064.4	1063.0	1075.2
22.5°	1045.4	1044.1	1042.7	1045.4	1034.6	1031.9	1030.5	1041.4
25°	1003.4	1002.1	999.4	1002.1	989.9	985.8	985.8	994.0
27.5°	943.9	943.9	939.8	943.9	930.3	929.0	927.6	937.1
30°	870.7	865.3	862.6	868.0	854.5	854.5	851.8	861.3
32.5°	780.0	774.6	773.2	775.9	763.8	759.7	765.1	770.5
35°	675.7	677.1	671.7	671.7	660.8	662.2	663.5	671.7
37.5°	575.5	572.8	571.5	572.8	564.7	562.0	559.3	567.4
40°	482.1	475.3	474.0	474.0	467.2	465.8	467.2	471.3
42.5°	394.1	392.7	387.3	390.0	383.2	385.9	384.6	384.6
45°	318.2	319.6	314.2	318.2	312.8	308.8	308.8	311.5
47.5°	251.9	251.9	250.5	250.5	246.5	247.8	245.1	249.2
50°	195.0	195.0	192.3	193.6	190.9	190.9	189.6	190.9
52.5°	149.0	147.6	147.6	146.3	143.5	144.9	146.3	143.5
55°	108.3	109.7	107.0	108.3	105.6	107.0	105.6	107.0
57.5°	74.5	75.8	73.1	75.8	73.1	74.5	73.1	73.1
60°	51.5	51.5	50.1	51.5	50.1	50.1	48.8	51.5
62.5°	35.2	35.2	35.2	35.2	35.2	33.9	35.2	35.2
65°	25.7	24.4	24.4	24.4	24.4	24.4	24.4	24.4
67.5°	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6
70°	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
72.5°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
75°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
77.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	1.4	1.4	1.4	0.0	1.4	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)