

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P392597

Luminaire Tested: **MWL-3-37-28-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392597
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-37-28-UNV-L840-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6530.2 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

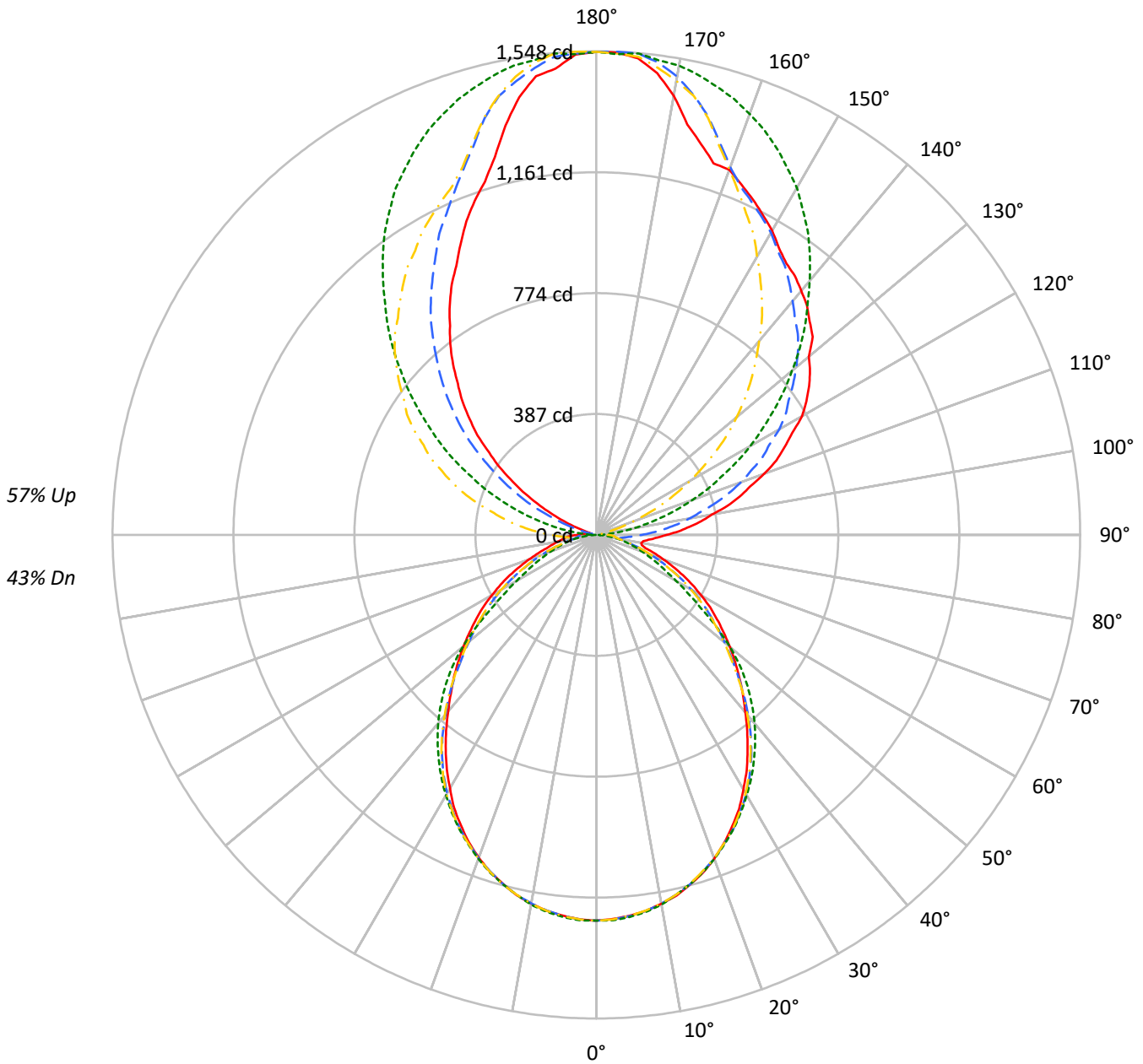
Input Watts (W): 64.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270° - - - 135°-315°



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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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	43				
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	44	43	42	37				
2	88	81	75	70	80	74	69	65	62	58	55	50	47	45	39	38	36	31				
3	80	71	64	58	73	65	59	54	55	50	46	45	41	39	35	33	31	27				
4	74	63	56	50	67	58	51	46	49	44	40	40	36	33	32	29	27	23				
5	68	56	49	43	62	52	45	40	44	38	34	36	32	29	29	26	24	20				
6	62	51	43	37	57	47	40	35	39	34	30	33	29	26	26	23	21	18				
7	58	46	38	33	53	42	35	31	36	30	27	30	26	23	24	21	19	16				
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	15				
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15	13				
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10631	10631	10631	10631
5°	10448	9759	10448	9759
10°	10230	8932	10230	8932
15°	9960	8138	9932	8138
20°	9620	7413	9592	7413
25°	9180	6729	9151	6729
30°	8659	6067	8620	6067
35°	8082	5437	8051	5437
40°	7466	4813	7423	4813
45°	6925	4162	6889	4162
50°	6409	3413	6371	3413
55°	5907	2524	5879	2524
60°	5364	1862	5349	1862
65°	4793	1407	4793	1407
70°	4140	1043	4160	1043
75°	3554	753	3627	753
80°	4064	499	3487	499
85°	6510	207	3803	207



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.1	1.8
10°-20°	326.1	5.0
20°-30°	475.7	7.3
30°-40°	537.6	8.2
40°-50°	502.6	7.7
50°-60°	396.6	6.1
60°-70°	259.6	4.0
70°-80°	135.8	2.1
80°-90°	85.9	1.3
90°-100°	127.2	1.9
100°-110°	239.9	3.7
110°-120°	410.8	6.3
120°-130°	558.0	8.5
130°-140°	636.5	9.7
140°-150°	634.9	9.7
150°-160°	553.0	8.5
160°-170°	389.0	6.0
170°-180°	144.9	2.2
0°-30°	917.9	14.1
0°-40°	1455.6	22.3
0°-60°	2354.8	36.1
0°-90°	2836.0	43.4
90°-120°	777.9	11.9
90°-150°	2607.2	39.9
90°-180°	3694.0	56.6
0°-180°	6530.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1235	1235	1235	1235	1235	
5°	1223	1228	1223	1228	1223	116
15°	1159	1158	1156	1158	1159	326
25°	1029	1038	1026	1038	1029	473
35°	844	879	840	879	844	527
45°	648	684	644	684	648	500
55°	472	408	469	408	472	422
65°	305	217	305	217	305	302
75°	162	107	166	107	162	182
85°	170	26	100	26	170	134
90°	224	2	61	2	224	124
95°	299	45	40	45	299	261
105°	474	216	15	216	474	500
115°	664	441	153	441	664	659
125°	831	691	378	691	831	742
135°	965	943	607	943	965	745
145°	1060	1180	817	1180	1060	668
155°	1185	1366	1027	1366	1185	546
165°	1295	1486	1252	1486	1295	367
175°	1531	1547	1498	1547	1531	143
180°	1546	1546	1546	1546	1546	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6
2.5°	1230.4	1232.6	1231.7	1233.8	1234.8	1232.7	1231.7	1232.6	1231.5	1232.6	1231.7
5°	1223.4	1225.6	1224.7	1225.7	1227.7	1225.7	1223.6	1225.6	1223.4	1225.6	1223.6
7.5°	1213.5	1215.6	1213.6	1215.7	1216.7	1214.6	1212.6	1214.6	1213.5	1214.6	1212.6
10°	1198.6	1199.6	1198.6	1199.6	1201.6	1198.6	1197.6	1197.5	1198.6	1197.5	1197.6
12.5°	1182.7	1181.6	1179.6	1180.6	1179.5	1180.6	1179.6	1179.5	1180.6	1179.5	1179.6
15°	1158.8	1158.6	1157.6	1159.6	1157.5	1158.5	1156.5	1156.5	1155.6	1156.5	1156.5
17.5°	1133.8	1132.6	1130.6	1132.5	1132.5	1132.5	1129.5	1131.6	1130.6	1131.6	1129.5
20°	1102.8	1103.7	1102.6	1104.5	1103.4	1103.4	1101.5	1101.6	1099.6	1101.6	1101.5
22.5°	1067.7	1069.7	1069.6	1073.5	1071.4	1072.4	1068.5	1067.6	1065.6	1067.6	1068.5
25°	1028.7	1031.7	1037.6	1039.5	1038.4	1038.4	1035.5	1028.5	1025.5	1028.5	1035.5
27.5°	988.7	991.7	997.6	1002.6	1001.4	1001.5	995.5	988.5	985.5	988.5	995.5
30°	940.7	946.7	958.7	964.6	962.4	962.5	955.5	943.5	936.4	943.5	955.5
32.5°	894.7	899.7	912.7	923.6	922.5	921.5	909.5	895.4	890.4	895.4	909.5
35°	843.6	846.6	863.6	878.6	879.4	875.4	860.4	843.4	840.4	843.4	860.4
37.5°	792.6	793.6	811.6	832.6	834.5	829.4	808.4	790.4	789.4	790.4	808.4
40°	741.6	739.6	755.6	780.6	787.5	778.4	751.3	735.3	737.3	735.3	751.3
42.5°	693.6	686.6	699.6	727.6	736.5	725.4	696.3	682.3	689.3	682.3	696.3
45°	647.6	635.6	642.6	667.6	683.5	665.4	638.2	632.3	644.3	632.3	638.2
47.5°	601.6	590.6	587.6	607.5	625.5	606.4	583.2	587.3	598.3	587.3	583.2
50°	557.6	545.6	536.6	548.5	558.4	546.3	532.2	541.2	554.3	541.2	532.2
52.5°	513.6	502.6	487.5	489.5	485.4	487.3	484.2	498.2	510.3	498.2	484.2
55°	471.5	461.5	441.5	431.4	408.3	429.2	438.2	458.2	469.3	458.2	438.2
57.5°	431.5	422.5	397.5	372.4	347.3	370.2	394.2	419.2	429.3	419.2	394.2
60°	386.4	381.4	352.4	314.3	295.3	313.2	350.2	379.2	385.3	379.2	350.2
62.5°	346.4	340.4	307.4	265.3	250.2	264.2	305.2	338.2	345.3	338.2	305.2
65°	305.3	296.3	262.3	221.3	217.2	220.2	261.2	295.2	305.3	295.2	261.2
67.5°	264.3	255.3	223.3	186.2	183.2	186.2	222.2	254.2	264.3	254.2	222.2
70°	227.2	213.2	185.2	153.2	155.2	153.2	185.2	214.3	228.3	214.3	185.2
72.5°	193.2	173.2	152.2	126.2	130.1	125.1	152.2	174.3	195.4	174.3	152.2
75°	162.2	140.2	118.1	101.1	107.1	101.1	119.2	141.3	165.5	141.3	119.2
77.5°	147.9	118.6	92.1	80.1	88.1	80.1	93.2	115.3	143.6	115.3	93.2
80°	146.5	113.8	75.4	61.1	67.1	61.1	73.2	96.4	125.7	96.4	73.2
82.5°	151.7	122.9	76.5	43.1	46.1	43.1	63.4	83.6	110.2	83.6	63.4
85°	170.5	143.6	90.5	36.4	26.1	34.2	58.8	77.0	99.6	77.0	58.8
87.5°	194.9	175.0	114.2	44.7	7.0	29.5	51.9	70.2	82.4	70.2	51.9
90°	224.4	208.5	145.5	60.7	2.1	19.2	37.4	54.6	60.6	54.6	37.4
92.5°	263.5	246.4	179.9	87.5	18.5	12.2	30.3	44.4	49.5	44.4	30.3
95°	299.1	290.5	219.8	116.6	44.7	7.4	23.3	37.2	40.3	37.2	23.3
97.5°	339.1	331.7	260.9	153.9	78.5	14.1	19.6	31.4	33.4	31.4	19.6
100°	374.7	370.6	302.0	200.8	120.0	37.0	12.6	27.7	30.7	27.7	12.6
102.5°	430.0	412.9	342.8	245.6	164.8	68.7	17.4	19.7	23.7	19.7	17.4
105°	474.4	455.1	396.3	292.6	216.1	111.3	43.6	16.1	14.6	16.1	43.6
107.5°	516.3	505.4	444.4	340.6	270.7	160.4	80.7	42.4	27.1	42.4	80.7
110°	570.9	557.8	491.3	388.7	327.5	212.9	123.3	77.3	59.9	77.3	123.3



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CATALOG NUMBER: MWL-3-37-28-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	623.4	613.5	535.0	438.9	386.5	269.6	175.7	121.0	104.6	121.0	175.7
115°	663.8	658.3	586.2	485.9	441.1	334.1	234.6	172.4	152.7	172.4	234.6
117.5°	706.4	705.3	623.4	533.9	506.6	391.9	288.1	223.7	202.9	223.7	288.1
120°	759.9	751.1	674.7	582.0	568.8	453.1	347.1	282.6	261.9	282.6	347.1
122.5°	797.0	791.5	718.4	627.8	627.8	515.3	403.9	339.4	317.6	339.4	403.9
125°	830.8	828.7	751.1	673.7	691.2	573.2	467.2	401.7	377.7	401.7	467.2
127.5°	861.4	864.7	793.7	723.9	755.6	632.2	529.4	457.4	432.3	457.4	529.4
130°	887.6	898.5	834.1	769.8	816.7	696.6	585.1	513.1	496.7	513.1	585.1
132.5°	938.9	932.4	875.6	816.7	882.3	755.6	644.1	568.8	550.2	568.8	644.1
135°	965.2	967.3	911.6	858.1	943.4	815.6	699.8	625.5	607.0	625.5	699.8
137.5°	996.8	990.3	940.0	907.3	1000.2	872.3	754.4	685.6	656.1	685.6	754.4
140°	1019.8	1018.7	977.2	951.0	1061.3	928.0	810.1	740.2	712.9	740.2	810.1
142.5°	1043.8	1050.3	1014.3	999.0	1122.5	987.0	870.2	793.7	767.5	793.7	870.2
145°	1060.2	1074.4	1051.4	1059.1	1180.4	1052.5	922.6	845.0	816.6	845.0	922.6
147.5°	1087.5	1106.0	1078.7	1101.7	1230.6	1110.4	975.0	898.5	873.4	898.5	975.0
150°	1124.6	1133.3	1116.9	1160.6	1282.9	1174.8	1028.5	949.9	924.8	949.9	1028.5
152.5°	1154.1	1165.0	1146.4	1225.1	1323.3	1233.8	1087.5	1000.1	970.6	1000.1	1087.5
155°	1184.7	1189.0	1175.9	1287.3	1365.9	1291.7	1134.4	1055.8	1027.4	1055.8	1134.4
157.5°	1213.0	1221.8	1206.5	1334.3	1403.1	1341.9	1187.9	1111.5	1086.4	1111.5	1187.9
160°	1243.6	1243.6	1252.4	1388.9	1433.6	1385.6	1244.7	1172.6	1137.7	1172.6	1244.7
162.5°	1246.9	1267.6	1314.6	1427.1	1463.1	1423.8	1305.9	1216.3	1185.7	1216.3	1305.9
165°	1294.9	1313.5	1384.5	1460.9	1486.0	1457.7	1381.2	1288.4	1252.4	1288.4	1381.2
167.5°	1345.2	1384.5	1441.3	1499.2	1507.9	1489.3	1439.1	1374.7	1341.9	1374.7	1439.1
170°	1427.1	1460.9	1489.3	1513.4	1525.4	1514.4	1475.1	1443.5	1422.7	1443.5	1475.1
172.5°	1490.5	1513.4	1524.3	1539.6	1531.9	1527.5	1507.9	1492.6	1480.7	1492.6	1507.9
175°	1530.9	1536.3	1546.1	1540.7	1547.2	1535.2	1536.3	1543.9	1498.2	1543.9	1536.3
177.5°	1545.1	1553.8	1548.3	1538.5	1539.6	1537.4	1541.7	1546.1	1538.6	1546.1	1541.7
180°	1546.1	1546.1	1546.1	1546.1	1546.1	1546.1	1546.1	1546.1	1546.1	1546.1	1546.1



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CATALOG NUMBER: MWL-3-37-28-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1234.6	1234.6	1234.6	1234.6	1234.6	1234.6
2.5°	1232.7	1234.8	1233.8	1231.7	1232.6	1230.4
5°	1225.7	1227.7	1225.7	1224.7	1225.6	1223.4
7.5°	1214.6	1216.7	1215.7	1213.6	1215.6	1213.5
10°	1198.6	1201.6	1199.6	1198.6	1199.6	1198.6
12.5°	1180.6	1179.5	1180.6	1179.6	1181.6	1182.7
15°	1158.5	1157.5	1159.6	1157.6	1158.6	1158.8
17.5°	1132.5	1132.5	1132.5	1130.6	1132.6	1133.8
20°	1103.4	1103.4	1104.5	1102.6	1103.7	1102.8
22.5°	1072.4	1071.4	1073.5	1069.6	1069.7	1067.7
25°	1038.4	1038.4	1039.5	1037.6	1031.7	1028.7
27.5°	1001.5	1001.4	1002.6	997.6	991.7	988.7
30°	962.5	962.4	964.6	958.7	946.7	940.7
32.5°	921.5	922.5	923.6	912.7	899.7	894.7
35°	875.4	879.4	878.6	863.6	846.6	843.6
37.5°	829.4	834.5	832.6	811.6	793.6	792.6
40°	778.4	787.5	780.6	755.6	739.6	741.6
42.5°	725.4	736.5	727.6	699.6	686.6	693.6
45°	665.4	683.5	667.6	642.6	635.6	647.6
47.5°	606.4	625.5	607.5	587.6	590.6	601.6
50°	546.3	558.4	548.5	536.6	545.6	557.6
52.5°	487.3	485.4	489.5	487.5	502.6	513.6
55°	429.2	408.3	431.4	441.5	461.5	471.5
57.5°	370.2	347.3	372.4	397.5	422.5	431.5
60°	313.2	295.3	314.3	352.4	381.4	386.4
62.5°	264.2	250.2	265.3	307.4	340.4	346.4
65°	220.2	217.2	221.3	262.3	296.3	305.3
67.5°	186.2	183.2	186.2	223.3	255.3	264.3
70°	153.2	155.2	153.2	185.2	213.2	227.2
72.5°	125.1	130.1	126.2	152.2	173.2	193.2
75°	101.1	107.1	101.1	118.1	140.2	162.2
77.5°	80.1	88.1	80.1	92.1	118.6	147.9
80°	61.1	67.1	61.1	75.4	113.8	146.5
82.5°	43.1	46.1	43.1	76.5	122.9	151.7
85°	34.2	26.1	36.4	90.5	143.6	170.5
87.5°	29.5	7.0	44.7	114.2	175.0	194.9
90°	19.2	2.1	60.7	145.5	208.5	224.4
92.5°	12.2	18.5	87.5	179.9	246.4	263.5
95°	7.4	44.7	116.6	219.8	290.5	299.1
97.5°	14.1	78.5	153.9	260.9	331.7	339.1
100°	37.0	120.0	200.8	302.0	370.6	374.7
102.5°	68.7	164.8	245.6	342.8	412.9	430.0
105°	111.3	216.1	292.6	396.3	455.1	474.4
107.5°	160.4	270.7	340.6	444.4	505.4	516.3
110°	212.9	327.5	388.7	491.3	557.8	570.9



TEST NUMBER: P392597

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	269.6	386.5	438.9	535.0	613.5	623.4
115°	334.1	441.1	485.9	586.2	658.3	663.8
117.5°	391.9	506.6	533.9	623.4	705.3	706.4
120°	453.1	568.8	582.0	674.7	751.1	759.9
122.5°	515.3	627.8	627.8	718.4	791.5	797.0
125°	573.2	691.2	673.7	751.1	828.7	830.8
127.5°	632.2	755.6	723.9	793.7	864.7	861.4
130°	696.6	816.7	769.8	834.1	898.5	887.6
132.5°	755.6	882.3	816.7	875.6	932.4	938.9
135°	815.6	943.4	858.1	911.6	967.3	965.2
137.5°	872.3	1000.2	907.3	940.0	990.3	996.8
140°	928.0	1061.3	951.0	977.2	1018.7	1019.8
142.5°	987.0	1122.5	999.0	1014.3	1050.3	1043.8
145°	1052.5	1180.4	1059.1	1051.4	1074.4	1060.2
147.5°	1110.4	1230.6	1101.7	1078.7	1106.0	1087.5
150°	1174.8	1282.9	1160.6	1116.9	1133.3	1124.6
152.5°	1233.8	1323.3	1225.1	1146.4	1165.0	1154.1
155°	1291.7	1365.9	1287.3	1175.9	1189.0	1184.7
157.5°	1341.9	1403.1	1334.3	1206.5	1221.8	1213.0
160°	1385.6	1433.6	1388.9	1252.4	1243.6	1243.6
162.5°	1423.8	1463.1	1427.1	1314.6	1267.6	1246.9
165°	1457.7	1486.0	1460.9	1384.5	1313.5	1294.9
167.5°	1489.3	1507.9	1499.2	1441.3	1384.5	1345.2
170°	1514.4	1525.4	1513.4	1489.3	1460.9	1427.1
172.5°	1527.5	1531.9	1539.6	1524.3	1513.4	1490.5
175°	1535.2	1547.2	1540.7	1546.1	1536.3	1530.9
177.5°	1537.4	1539.6	1538.5	1548.3	1553.8	1545.1
180°	1546.1	1546.1	1546.1	1546.1	1546.1	1546.1

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