

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: P392623

Luminaire Tested: **MWL-3-53-33-UNV-L835-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392623
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-3-53-33-UNV-L835-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

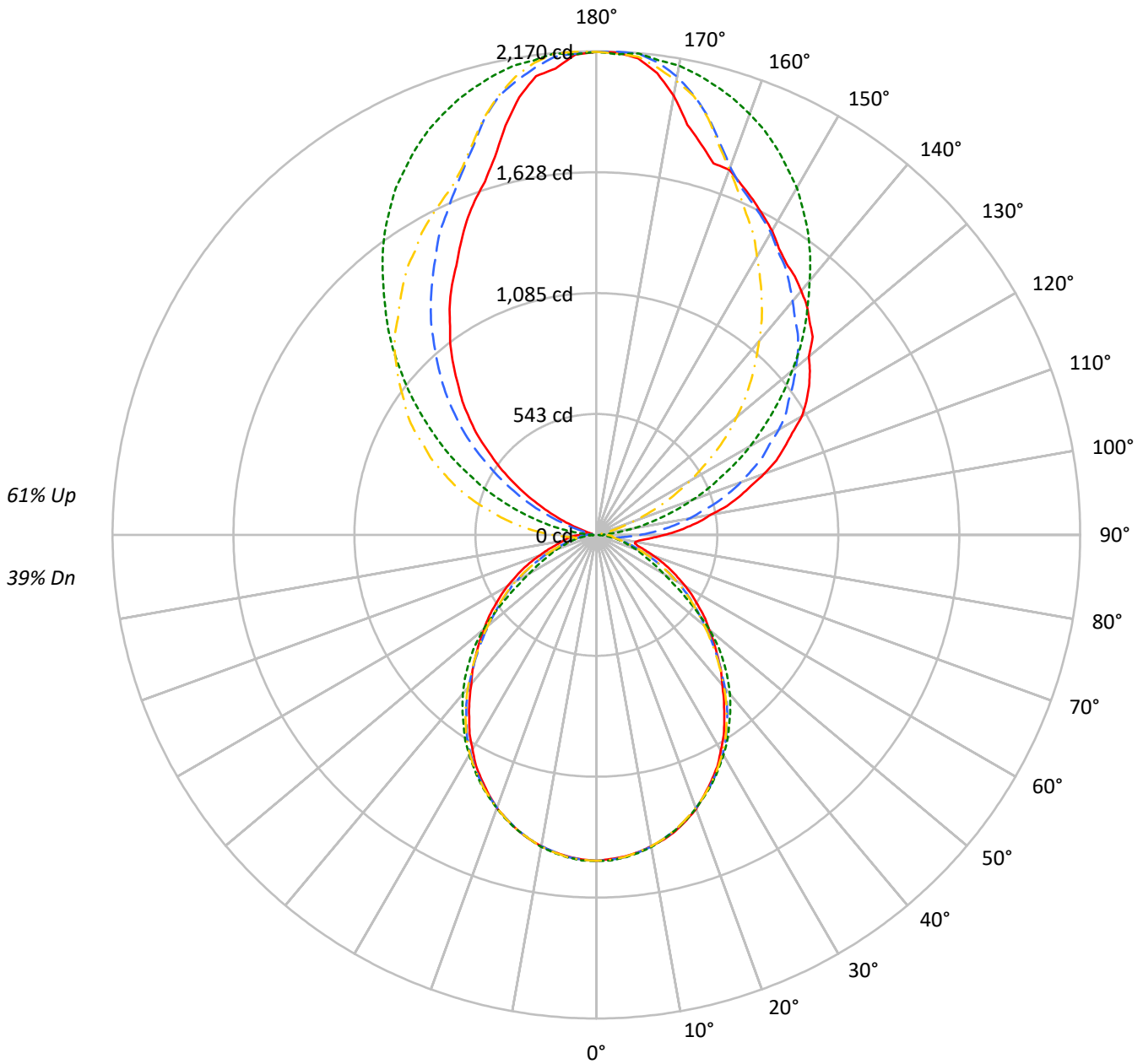
Lumens per Lamp: N/A
Luminaire Lumens: 8541.0 lumens
Efficiency: N/A
Efficacy: 81.5 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 104.8
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



— 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	0
RCR																		
0	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39
1	95	91	87	84	87	83	80	77	68	66	64	54	52	51	41	40	39	33
2	87	80	74	69	79	73	68	64	60	56	53	48	45	43	36	35	33	28
3	80	70	63	58	72	64	58	53	53	49	45	42	39	37	33	31	29	24
4	73	62	55	49	66	57	51	45	47	42	38	38	34	32	29	27	25	21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22	18
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16
7	57	45	37	32	52	42	35	30	35	29	26	28	24	21	22	19	17	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	20	18	16	13
9	49	37	30	25	45	34	28	24	29	24	20	24	20	17	19	16	14	12
10	46	34	27	23	42	32	25	21	27	22	18	22	18	16	17	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12593	12593	12593	12593
5°	12374	11550	12374	11550
10°	12107	10571	12107	10571
15°	11818	9639	11779	9639
20°	11411	8770	11371	8770
25°	10879	7968	10838	7968
30°	10282	7188	10225	7188
35°	9576	6418	9531	6418
40°	8845	5694	8784	5694
45°	8211	4912	8163	4912
50°	7595	4044	7542	4044
55°	7016	3025	6978	3025
60°	6415	2197	6396	2197
65°	5719	1650	5719	1650
70°	4928	1249	4957	1249
75°	4223	903	4326	903
80°	4938	581	4130	581
85°	8473	254	4674	254



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.5	1.6
10°-20°	386.0	4.5
20°-30°	563.4	6.6
30°-40°	637.0	7.5
40°-50°	595.9	7.0
50°-60°	470.6	5.5
60°-70°	308.0	3.6
70°-80°	161.6	1.9
80°-90°	108.2	1.3
90°-100°	173.7	2.0
100°-110°	335.8	3.9
110°-120°	575.6	6.7
120°-130°	782.1	9.2
130°-140°	892.1	10.4
140°-150°	889.9	10.4
150°-160°	775.1	9.1
160°-170°	545.3	6.4
170°-180°	203.1	2.4
0°-30°	1086.9	12.7
0°-40°	1724.0	20.2
0°-60°	2790.5	32.7
0°-90°	3368.3	39.4
90°-120°	1085.1	12.7
90°-150°	3649.2	42.7
90°-180°	5173.0	60.6
0°-180°	8541.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1462	1462	1462	1462	1462	
5°	1449	1453	1449	1453	1449	137
15°	1375	1371	1370	1371	1375	387
25°	1219	1230	1215	1230	1219	561
35°	1000	1038	995	1038	1000	625
45°	768	807	763	807	768	594
55°	560	489	557	489	560	502
65°	364	255	364	255	364	361
75°	193	128	197	128	193	218
85°	222	32	122	32	222	173
90°	304	3	75	3	304	168
95°	411	62	48	62	411	360
105°	664	303	20	303	664	700
115°	931	618	214	618	931	923
125°	1164	970	529	970	1164	1040
135°	1353	1324	850	1324	1353	1044
145°	1486	1656	1144	1656	1486	937
155°	1660	1915	1440	1915	1660	766
165°	1815	2083	1755	2083	1815	515
175°	2146	2169	2100	2169	2146	200
180°	2167	2167	2167	2167	2167	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1462.4	1462.4	1462.4	1462.4	1462.4	1462.4	1462.4	1462.4	1462.4	1462.4	1462.4
2.5°	1455.8	1459.8	1459.0	1460.5	1462.5	1459.0	1459.0	1459.8	1457.4	1459.8	1459.0
5°	1448.9	1452.0	1452.2	1452.2	1453.1	1452.2	1450.6	1452.0	1448.9	1452.0	1450.6
7.5°	1435.7	1439.8	1436.8	1439.4	1439.4	1437.8	1435.3	1438.2	1435.7	1438.2	1435.3
10°	1418.5	1422.1	1420.1	1420.1	1422.1	1418.5	1418.5	1419.0	1418.5	1419.0	1418.5
12.5°	1400.1	1399.5	1395.9	1397.9	1396.4	1397.9	1395.9	1396.4	1396.9	1396.4	1395.9
15°	1375.0	1372.0	1370.4	1371.4	1370.9	1369.9	1368.9	1368.9	1370.4	1368.9	1368.9
17.5°	1342.6	1342.5	1338.0	1340.4	1340.4	1340.4	1336.5	1340.9	1338.0	1340.9	1336.5
20°	1308.2	1306.7	1304.5	1306.0	1305.4	1304.4	1303.1	1303.6	1303.6	1303.6	1303.1
22.5°	1263.5	1266.4	1266.2	1269.6	1268.1	1268.1	1264.7	1263.3	1260.3	1263.3	1264.7
25°	1219.2	1224.1	1226.5	1231.3	1229.7	1229.7	1223.5	1219.5	1214.6	1219.5	1223.5
27.5°	1173.0	1174.0	1182.3	1190.5	1185.5	1189.1	1179.2	1169.4	1168.4	1169.4	1179.2
30°	1117.0	1121.9	1134.7	1143.9	1140.3	1140.9	1130.1	1117.3	1110.8	1117.3	1130.1
32.5°	1063.9	1065.9	1082.6	1093.8	1093.7	1090.8	1078.0	1059.7	1057.7	1059.7	1078.0
35°	999.5	1004.4	1022.1	1042.7	1038.1	1038.1	1017.4	999.8	994.8	999.8	1017.4
37.5°	939.5	942.5	962.1	987.7	986.6	983.0	957.5	937.8	934.9	937.8	957.5
40°	878.6	877.6	896.3	924.2	931.5	921.1	890.2	871.5	872.5	871.5	890.2
42.5°	827.5	815.7	827.9	859.3	871.6	856.3	823.3	809.6	821.4	809.6	823.3
45°	767.9	756.1	763.0	792.5	806.7	789.4	756.9	751.6	763.4	751.6	756.9
47.5°	714.8	700.1	699.1	720.2	740.9	718.7	693.0	695.6	710.3	695.6	693.0
50°	660.8	647.0	637.2	651.4	661.7	648.4	631.1	640.9	656.2	640.9	631.1
52.5°	614.6	595.9	578.7	582.6	574.2	579.6	574.1	589.8	610.1	589.8	574.1
55°	560.0	548.2	524.6	511.3	489.2	508.2	520.0	543.6	557.0	543.6	520.0
57.5°	511.9	501.1	472.6	441.5	410.5	438.4	467.9	496.4	508.8	496.4	467.9
60°	462.1	451.3	416.9	372.2	348.6	370.6	413.9	448.3	460.7	448.3	413.9
62.5°	411.0	404.1	364.8	314.2	299.9	312.6	361.8	401.1	409.6	401.1	361.8
65°	364.3	352.5	312.3	264.1	254.7	262.5	310.7	351.0	364.3	351.0	310.7
67.5°	317.2	302.4	264.1	219.3	218.3	219.3	262.5	300.9	317.2	300.9	262.5
70°	270.4	253.7	218.3	181.9	185.9	181.9	218.3	255.2	272.0	255.2	218.3
72.5°	230.1	207.5	179.0	149.5	152.9	148.0	179.0	209.1	233.1	209.1	179.0
75°	192.7	167.2	142.1	119.5	128.4	119.5	143.6	168.8	197.4	168.8	143.6
77.5°	177.5	142.8	109.7	94.0	102.8	94.0	111.2	138.3	171.3	138.3	111.2
80°	178.0	140.7	90.6	72.3	78.2	72.3	87.6	116.2	148.9	116.2	87.6
82.5°	193.1	155.7	93.3	51.7	55.6	51.7	74.9	100.5	134.9	100.5	74.9
85°	221.9	187.9	115.2	43.4	32.0	40.4	70.8	94.5	122.4	94.5	70.8
87.5°	259.3	232.7	150.8	57.6	8.8	36.2	63.5	85.8	101.6	85.8	63.5
90°	304.3	281.1	197.1	81.9	2.6	23.7	45.4	65.2	74.6	65.2	45.4
92.5°	358.9	336.6	246.8	120.5	25.5	14.8	37.1	53.3	58.8	53.3	37.1
95°	410.7	399.6	304.8	162.2	62.2	9.0	29.2	44.3	47.9	44.3	29.2
97.5°	470.3	459.7	362.4	215.3	109.7	19.4	23.9	38.5	41.5	38.5	23.9
100°	521.1	515.7	423.4	281.2	167.9	51.5	17.6	34.9	38.8	34.9	17.6
102.5°	599.6	577.3	481.3	344.0	230.7	95.9	25.0	26.0	30.0	26.0	25.0
105°	664.2	637.9	556.3	409.8	302.6	155.7	61.7	22.3	19.6	22.3	61.7
107.5°	724.2	707.9	623.7	477.3	379.2	224.6	113.7	58.6	38.1	58.6	113.7
110°	800.7	781.4	689.6	544.6	458.9	298.1	173.5	107.6	84.1	107.6	173.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	874.2	859.5	750.8	615.1	541.5	377.7	247.0	168.9	146.9	168.9	247.0
115°	931.0	922.3	821.3	680.9	618.1	468.0	328.2	240.9	214.3	240.9	328.2
117.5°	989.6	988.2	873.3	748.2	710.0	549.2	403.2	312.8	283.7	312.8	403.2
120°	1064.7	1052.4	945.3	815.7	797.3	634.9	485.8	395.5	366.4	395.5	485.8
122.5°	1116.8	1109.1	1006.5	880.9	880.9	723.2	565.5	475.1	444.5	475.1	565.5
125°	1164.3	1161.1	1052.4	945.3	969.8	804.4	654.3	562.4	528.8	562.4	654.3
127.5°	1207.1	1211.8	1112.2	1015.7	1060.1	887.1	741.6	640.5	605.3	640.5	741.6
130°	1243.9	1259.2	1168.8	1080.1	1145.9	977.4	819.7	718.7	695.7	718.7	819.7
132.5°	1315.8	1306.7	1227.0	1145.9	1237.7	1060.1	902.4	796.7	770.7	796.7	902.4
135°	1352.6	1355.6	1277.6	1202.5	1323.5	1142.8	980.5	876.3	850.4	876.3	980.5
137.5°	1397.0	1387.8	1317.4	1271.4	1403.1	1222.5	1057.1	960.5	919.3	960.5	1057.1
140°	1429.2	1427.6	1369.4	1332.6	1488.9	1300.5	1135.2	1037.1	998.9	1037.1	1135.2
142.5°	1462.9	1472.0	1421.5	1400.1	1574.6	1383.3	1219.3	1112.2	1075.4	1112.2	1219.3
145°	1485.8	1505.7	1473.6	1484.3	1655.8	1475.1	1292.8	1184.1	1144.3	1184.1	1292.8
147.5°	1524.1	1550.1	1511.8	1544.1	1726.3	1556.2	1366.4	1259.2	1223.9	1259.2	1366.4
150°	1576.2	1588.4	1565.5	1626.7	1798.2	1646.6	1441.4	1331.2	1296.0	1331.2	1441.4
152.5°	1617.5	1632.8	1606.8	1717.0	1854.8	1729.3	1524.1	1401.6	1360.3	1401.6	1524.1
155°	1660.4	1666.5	1648.1	1804.3	1914.6	1810.5	1590.0	1479.7	1439.9	1479.7	1590.0
157.5°	1700.2	1712.4	1691.0	1870.2	1966.7	1880.9	1664.9	1557.8	1522.5	1557.8	1664.9
160°	1743.1	1743.1	1755.4	1946.7	2009.5	1942.1	1744.7	1643.5	1594.6	1643.5	1744.7
162.5°	1747.7	1776.8	1842.6	2000.4	2050.9	1995.8	1830.4	1704.9	1661.9	1704.9	1830.4
165°	1815.0	1841.1	1940.6	2047.9	2083.1	2043.2	1936.0	1805.9	1755.4	1805.9	1936.0
167.5°	1885.5	1940.6	2020.2	2101.4	2113.6	2087.7	2017.2	1926.9	1880.9	1926.9	2017.2
170°	2000.4	2047.9	2087.7	2121.3	2138.2	2122.9	2067.7	2023.3	1994.2	2023.3	2067.7
172.5°	2089.7	2121.3	2136.6	2158.0	2147.3	2141.2	2113.6	2092.2	2076.0	2092.2	2113.6
175°	2146.3	2153.5	2167.3	2159.6	2168.8	2151.9	2153.5	2164.2	2100.4	2164.2	2153.5
177.5°	2166.3	2178.0	2170.3	2156.6	2158.0	2155.0	2161.1	2167.3	2157.1	2167.3	2161.1
180°	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1462.4	1462.4	1462.4	1462.4	1462.4	1462.4
2.5°	1459.0	1462.5	1460.5	1459.0	1459.8	1455.8
5°	1452.2	1453.1	1452.2	1452.2	1452.0	1448.9
7.5°	1437.8	1439.4	1439.4	1436.8	1439.8	1435.7
10°	1418.5	1422.1	1420.1	1420.1	1422.1	1418.5
12.5°	1397.9	1396.4	1397.9	1395.9	1399.5	1400.1
15°	1369.9	1370.9	1371.4	1370.4	1372.0	1375.0
17.5°	1340.4	1340.4	1340.4	1338.0	1342.5	1342.6
20°	1304.4	1305.4	1306.0	1304.5	1306.7	1308.2
22.5°	1268.1	1268.1	1269.6	1266.2	1266.4	1263.5
25°	1229.7	1229.7	1231.3	1226.5	1224.1	1219.2
27.5°	1189.1	1185.5	1190.5	1182.3	1174.0	1173.0
30°	1140.9	1140.3	1143.9	1134.7	1121.9	1117.0
32.5°	1090.8	1093.7	1093.8	1082.6	1065.9	1063.9
35°	1038.1	1038.1	1042.7	1022.1	1004.4	999.5
37.5°	983.0	986.6	987.7	962.1	942.5	939.5
40°	921.1	931.5	924.2	896.3	877.6	878.6
42.5°	856.3	871.6	859.3	827.9	815.7	827.5
45°	789.4	806.7	792.5	763.0	756.1	767.9
47.5°	718.7	740.9	720.2	699.1	700.1	714.8
50°	648.4	661.7	651.4	637.2	647.0	660.8
52.5°	579.6	574.2	582.6	578.7	595.9	614.6
55°	508.2	489.2	511.3	524.6	548.2	560.0
57.5°	438.4	410.5	441.5	472.6	501.1	511.9
60°	370.6	348.6	372.2	416.9	451.3	462.1
62.5°	312.6	299.9	314.2	364.8	404.1	411.0
65°	262.5	254.7	264.1	312.3	352.5	364.3
67.5°	219.3	218.3	219.3	264.1	302.4	317.2
70°	181.9	185.9	181.9	218.3	253.7	270.4
72.5°	148.0	152.9	149.5	179.0	207.5	230.1
75°	119.5	128.4	119.5	142.1	167.2	192.7
77.5°	94.0	102.8	94.0	109.7	142.8	177.5
80°	72.3	78.2	72.3	90.6	140.7	178.0
82.5°	51.7	55.6	51.7	93.3	155.7	193.1
85°	40.4	32.0	43.4	115.2	187.9	221.9
87.5°	36.2	8.8	57.6	150.8	232.7	259.3
90°	23.7	2.6	81.9	197.1	281.1	304.3
92.5°	14.8	25.5	120.5	246.8	336.6	358.9
95°	9.0	62.2	162.2	304.8	399.6	410.7
97.5°	19.4	109.7	215.3	362.4	459.7	470.3
100°	51.5	167.9	281.2	423.4	515.7	521.1
102.5°	95.9	230.7	344.0	481.3	577.3	599.6
105°	155.7	302.6	409.8	556.3	637.9	664.2
107.5°	224.6	379.2	477.3	623.7	707.9	724.2
110°	298.1	458.9	544.6	689.6	781.4	800.7



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	377.7	541.5	615.1	750.8	859.5	874.2
115°	468.0	618.1	680.9	821.3	922.3	931.0
117.5°	549.2	710.0	748.2	873.3	988.2	989.6
120°	634.9	797.3	815.7	945.3	1052.4	1064.7
122.5°	723.2	880.9	880.9	1006.5	1109.1	1116.8
125°	804.4	969.8	945.3	1052.4	1161.1	1164.3
127.5°	887.1	1060.1	1015.7	1112.2	1211.8	1207.1
130°	977.4	1145.9	1080.1	1168.8	1259.2	1243.9
132.5°	1060.1	1237.7	1145.9	1227.0	1306.7	1315.8
135°	1142.8	1323.5	1202.5	1277.6	1355.6	1352.6
137.5°	1222.5	1403.1	1271.4	1317.4	1387.8	1397.0
140°	1300.5	1488.9	1332.6	1369.4	1427.6	1429.2
142.5°	1383.3	1574.6	1400.1	1421.5	1472.0	1462.9
145°	1475.1	1655.8	1484.3	1473.6	1505.7	1485.8
147.5°	1556.2	1726.3	1544.1	1511.8	1550.1	1524.1
150°	1646.6	1798.2	1626.7	1565.5	1588.4	1576.2
152.5°	1729.3	1854.8	1717.0	1606.8	1632.8	1617.5
155°	1810.5	1914.6	1804.3	1648.1	1666.5	1660.4
157.5°	1880.9	1966.7	1870.2	1691.0	1712.4	1700.2
160°	1942.1	2009.5	1946.7	1755.4	1743.1	1743.1
162.5°	1995.8	2050.9	2000.4	1842.6	1776.8	1747.7
165°	2043.2	2083.1	2047.9	1940.6	1841.1	1815.0
167.5°	2087.7	2113.6	2101.4	2020.2	1940.6	1885.5
170°	2122.9	2138.2	2121.3	2087.7	2047.9	2000.4
172.5°	2141.2	2147.3	2158.0	2136.6	2121.3	2089.7
175°	2151.9	2168.8	2159.6	2167.3	2153.5	2146.3
177.5°	2155.0	2158.0	2156.6	2170.3	2178.0	2166.3
180°	2167.3	2167.3	2167.3	2167.3	2167.3	2167.3

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