

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: P392576

Luminaire Tested: **MWL-3-27-57-UNV-L840-EDD**

Issue Date: 3/12/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P392576  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &  
Test Lab: INNOVATION CENTER  
Issue Date: 3/12/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-3-27-57-UNV-L840-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8491.1 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: Semi-Direct

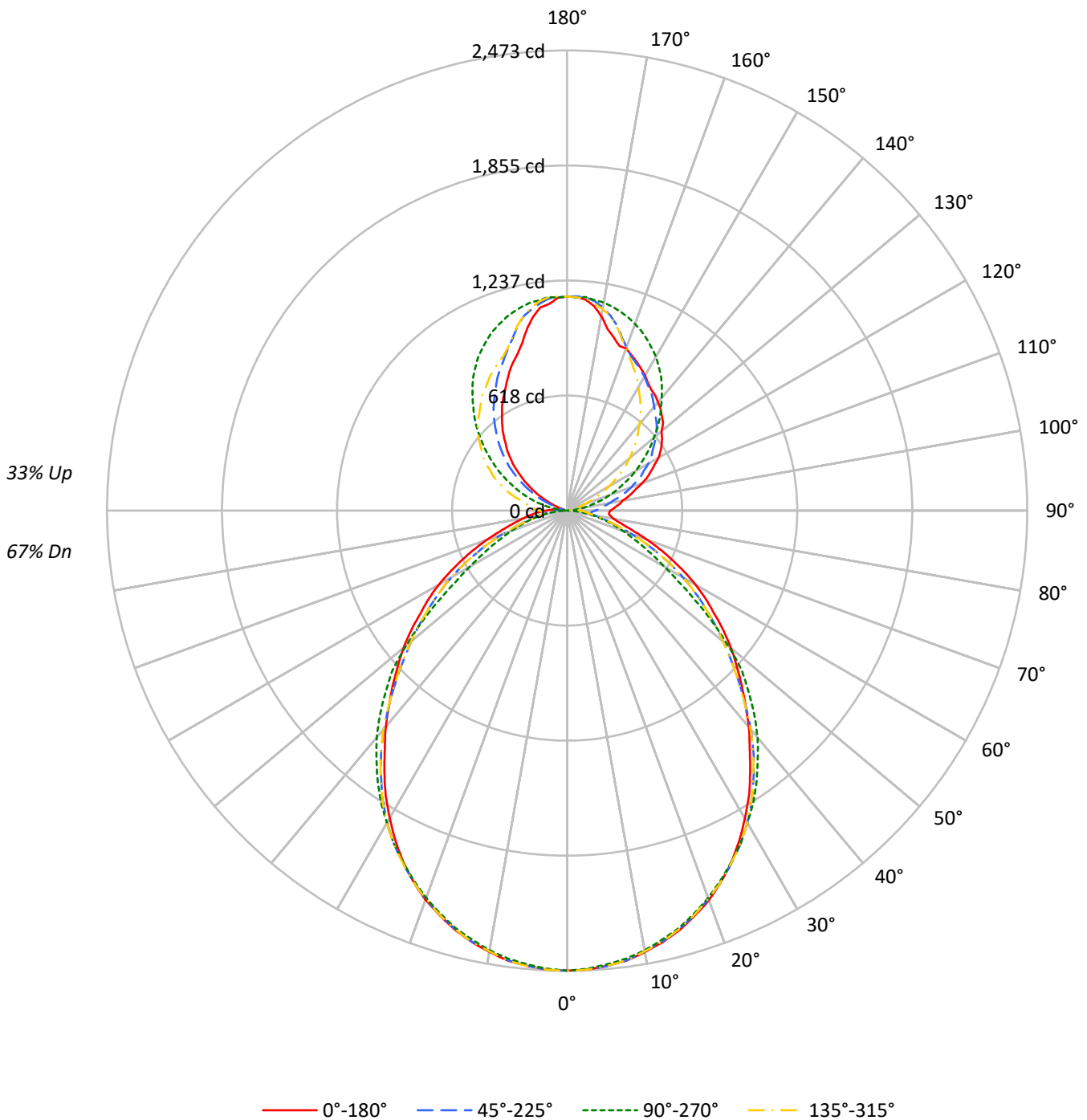
Input Watts (W): 94  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	67
1	102	98	94	90	96	92	89	86	82	79	77	73	71	69	64	63	61	57
2	93	86	80	74	88	81	76	71	72	68	65	64	61	58	57	55	52	49
3	85	76	69	63	80	72	65	60	64	59	55	57	53	50	51	48	45	42
4	78	68	60	54	74	64	57	51	58	52	47	51	47	43	46	42	39	36
5	72	61	52	46	68	57	50	45	52	46	41	46	42	38	41	38	35	32
6	67	55	46	41	63	52	44	39	47	41	36	42	37	33	38	34	31	28
7	62	49	41	36	58	47	40	35	43	37	32	39	34	30	35	31	27	25
8	58	45	37	32	54	43	36	31	39	33	29	35	30	27	32	28	25	23
9	54	41	34	29	51	40	33	28	36	30	26	33	28	24	30	25	22	20
10	50	38	31	26	48	36	30	25	33	28	24	30	25	22	27	23	20	19

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	21292	21292	21292	21292
5°	20976	19461	20976	19461
10°	20559	17837	20559	17837
15°	20063	16326	20042	16326
20°	19436	14882	19415	14882
25°	18618	13511	18596	13511
30°	17585	12211	17555	12211
35°	16427	10975	16403	10975
40°	15299	9731	15266	9731
45°	14187	8403	14161	8403
50°	13216	6914	13187	6914
55°	12077	5190	12056	5190
60°	11053	3810	11042	3810
65°	9693	2868	9693	2868
70°	8321	2147	8335	2147
75°	7091	1545	7146	1545
80°	7015	987	6588	987
85°	8607	404	6598	404



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	232.8	2.7
10°-20°	655.5	7.7
20°-30°	960.7	11.3
30°-40°	1089.4	12.8
40°-50°	1024.2	12.1
50°-60°	812.9	9.6
60°-70°	528.6	6.2
70°-80°	269.5	3.2
80°-90°	134.3	1.6
90°-100°	120.4	1.4
100°-110°	182.6	2.2
110°-120°	307.2	3.6
120°-130°	416.4	4.9
130°-140°	474.7	5.6
140°-150°	473.1	5.6
150°-160°	411.7	4.8
160°-170°	289.5	3.4
170°-180°	107.8	1.3
0°-30°	1849.0	21.8
0°-40°	2938.4	34.6
0°-60°	4775.4	56.2
0°-90°	5707.8	67.2
90°-120°	610.1	7.2
90°-150°	1974.3	23.3
90°-180°	2783.0	32.8
0°-180°	8491.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2473	2473	2473	2473	2473	
5°	2456	2448	2456	2448	2456	233
15°	2334	2322	2332	2322	2334	657
25°	2086	2085	2084	2085	2086	958
35°	1715	1775	1712	1775	1715	1072
45°	1327	1380	1324	1380	1327	1025
55°	964	839	962	839	964	867
65°	617	443	617	443	617	615
75°	324	220	326	220	324	355
85°	225	51	173	51	225	191
90°	233	2	112	2	233	129
95°	266	33	73	33	266	225
105°	360	162	19	162	360	382
115°	496	329	117	329	496	492
125°	620	515	284	515	620	554
135°	720	703	454	703	720	556
145°	790	879	610	879	790	498
155°	883	1016	766	1016	883	407
165°	964	1106	933	1106	964	273
175°	1138	1152	1114	1152	1138	106
180°	1150	1150	1150	1150	1150	



TEST NUMBER: P392576

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2472.6	2472.6	2472.6	2472.6	2472.6	2472.6	2472.6	2472.6	2472.6	2472.6	2472.6
2.5°	2469.1	2469.8	2469.4	2466.2	2464.2	2465.4	2469.4	2469.8	2470.0	2469.8	2469.4
5°	2456.1	2458.8	2457.4	2452.4	2448.4	2452.4	2456.6	2458.8	2456.1	2458.8	2456.6
7.5°	2440.0	2438.6	2438.6	2431.4	2428.4	2430.6	2437.8	2437.8	2440.0	2437.8	2437.8
10°	2408.8	2409.6	2405.6	2402.6	2399.6	2401.8	2404.8	2408.0	2408.8	2408.0	2404.8
12.5°	2375.4	2373.6	2371.8	2366.8	2361.0	2366.8	2371.8	2372.0	2373.8	2372.0	2371.8
15°	2334.2	2327.6	2328.8	2325.8	2322.0	2325.0	2328.0	2326.0	2331.8	2326.0	2328.0
17.5°	2282.2	2279.6	2277.8	2276.0	2270.0	2276.0	2277.0	2278.8	2279.8	2278.8	2277.0
20°	2228.2	2224.4	2220.8	2221.0	2215.1	2220.1	2220.0	2222.8	2225.8	2222.8	2220.0
22.5°	2160.4	2160.4	2159.8	2158.0	2152.1	2157.1	2159.0	2158.8	2158.8	2158.8	2159.0
25°	2086.4	2087.4	2090.6	2092.0	2085.1	2091.1	2089.0	2085.0	2084.0	2085.0	2089.0
27.5°	2001.4	2008.4	2018.6	2020.8	2017.1	2020.0	2017.0	2006.0	1999.0	2006.0	2017.0
30°	1910.4	1916.4	1938.4	1948.6	1937.1	1947.0	1936.0	1914.0	1907.1	1914.0	1936.0
32.5°	1818.4	1820.4	1847.4	1862.6	1861.0	1861.0	1845.0	1817.1	1815.1	1817.1	1845.0
35°	1714.6	1716.6	1746.6	1774.6	1775.1	1772.1	1744.1	1714.1	1712.1	1714.1	1744.1
37.5°	1611.6	1613.6	1645.6	1676.6	1683.0	1674.1	1643.1	1611.1	1609.1	1611.1	1643.1
40°	1519.6	1508.6	1535.6	1572.8	1592.0	1571.1	1532.3	1505.3	1516.3	1505.3	1532.3
42.5°	1417.6	1403.6	1416.8	1464.8	1488.0	1463.1	1414.3	1400.3	1414.3	1400.3	1414.3
45°	1326.8	1302.8	1306.8	1349.8	1380.0	1348.1	1303.5	1300.3	1324.3	1300.3	1303.5
47.5°	1234.8	1209.8	1197.8	1236.0	1274.0	1235.1	1194.5	1207.3	1232.3	1207.3	1194.5
50°	1149.8	1119.8	1095.8	1112.0	1131.1	1110.3	1092.5	1116.5	1147.3	1116.5	1092.5
52.5°	1058.8	1033.8	998.0	1000.0	986.1	998.3	995.5	1030.5	1056.3	1030.5	995.5
55°	964.0	949.0	903.1	879.2	839.4	877.6	900.6	946.5	962.3	946.5	900.6
57.5°	883.1	866.1	811.1	759.2	708.4	757.6	808.6	863.6	881.4	863.6	808.6
60°	796.2	782.2	720.2	640.4	604.4	639.6	718.6	780.6	795.4	780.6	718.6
62.5°	706.2	696.2	628.2	537.4	517.6	536.6	626.6	694.6	705.4	694.6	626.6
65°	617.4	604.4	533.4	450.4	442.6	449.6	532.6	603.6	617.4	603.6	532.6
67.5°	536.4	516.4	450.4	375.6	374.6	375.6	449.6	515.6	536.4	515.6	449.6
70°	456.6	428.6	368.6	312.6	319.6	312.6	368.6	429.4	457.4	429.4	368.6
72.5°	383.6	350.6	297.6	254.6	263.8	253.8	297.6	351.4	385.2	351.4	297.6
75°	323.6	278.6	234.8	203.8	219.8	203.8	235.6	279.4	326.1	279.4	235.6
77.5°	282.1	231.9	181.8	156.8	175.8	156.8	182.6	229.4	278.9	229.4	182.6
80°	252.9	202.2	146.2	118.8	132.8	118.8	144.6	189.2	237.5	189.2	144.6
82.5°	237.3	188.0	129.0	85.8	91.8	85.8	119.2	158.9	206.5	158.9	119.2
85°	225.4	189.3	127.8	66.2	50.8	64.6	104.3	139.9	172.8	139.9	104.3
87.5°	226.6	199.3	135.3	64.4	15.0	53.1	89.1	121.5	143.2	121.5	89.1
90°	233.2	214.1	150.5	67.4	1.8	36.6	70.2	99.9	111.7	99.9	70.2
92.5°	248.9	234.2	168.4	77.5	14.0	21.6	57.4	84.2	90.1	84.2	57.4
95°	265.5	256.6	189.3	89.3	33.4	8.2	43.4	68.6	73.4	68.6	43.4
97.5°	287.1	279.1	206.9	115.4	58.5	11.7	27.9	56.2	60.2	56.2	27.9
100°	300.7	292.9	230.4	150.3	90.3	28.7	15.7	38.5	45.5	38.5	15.7
102.5°	331.9	317.2	256.6	183.5	123.6	52.2	15.2	25.5	30.5	25.5	15.2
105°	359.8	343.5	296.3	218.4	161.6	83.8	34.6	17.7	18.7	17.7	34.6
107.5°	388.7	378.6	332.0	254.0	202.2	120.3	62.2	35.0	25.6	35.0	62.2
110°	428.2	416.5	366.8	289.7	244.3	159.2	93.8	59.9	48.9	59.9	93.8



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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°	466.1	457.8	399.3	326.9	288.0	201.3	132.7	92.3	81.2	92.3	132.7
115°	496.1	491.0	437.5	362.8	328.6	250.2	176.6	130.4	116.8	130.4	176.6
117.5°	527.7	525.9	465.1	398.4	378.2	293.1	216.3	168.5	154.1	168.5	216.3
120°	567.4	559.9	503.2	434.1	424.4	338.5	260.1	212.3	197.9	212.3	260.1
122.5°	594.9	589.9	535.6	468.1	468.1	384.7	302.2	254.4	239.2	254.4	302.2
125°	620.0	617.4	559.9	502.2	515.1	427.6	349.2	300.6	283.8	300.6	349.2
127.5°	642.7	645.2	591.5	539.4	562.9	471.4	395.4	342.9	324.3	342.9	395.4
130°	662.2	670.3	621.5	574.5	608.3	520.2	436.7	384.2	372.1	384.2	436.7
132.5°	700.3	695.4	652.3	609.3	657.9	563.9	480.5	425.6	411.8	425.6	480.5
135°	719.7	721.3	679.0	639.3	703.3	607.7	521.8	467.7	453.9	467.7	521.8
137.5°	743.2	738.4	700.1	675.8	745.5	649.8	562.3	512.3	490.4	512.3	562.3
140°	760.2	759.4	727.6	708.2	790.8	691.2	603.7	552.8	532.5	552.8	603.7
142.5°	778.1	782.9	756.2	743.8	836.2	734.9	649.2	592.5	573.0	592.5	649.2
145°	790.2	800.8	783.7	788.4	879.2	783.5	688.1	630.6	609.5	630.6	688.1
147.5°	810.5	824.3	803.0	820.0	916.4	826.5	726.0	670.3	651.6	670.3	726.0
150°	838.0	844.5	831.4	864.8	954.4	875.3	765.7	708.4	689.7	708.4	765.7
152.5°	859.9	868.0	853.2	911.6	984.4	918.1	809.5	745.6	723.8	745.6	809.5
155°	882.6	885.8	875.1	957.7	1016.0	960.9	844.3	787.0	765.9	787.0	844.3
157.5°	903.7	910.1	897.8	992.5	1043.6	998.2	884.0	828.3	809.7	828.3	884.0
160°	926.4	925.4	931.7	1033.0	1066.3	1030.6	926.2	872.7	847.8	872.7	926.2
162.5°	928.8	943.1	977.9	1062.4	1089.1	1060.0	971.4	905.1	883.4	905.1	971.4
165°	964.3	977.1	1030.8	1087.5	1106.1	1085.1	1028.4	958.5	932.7	958.5	1028.4
167.5°	1000.6	1029.8	1072.9	1115.9	1122.4	1108.6	1071.3	1022.5	998.2	1022.5	1071.3
170°	1060.4	1086.5	1108.6	1126.4	1135.3	1127.2	1098.0	1073.5	1057.1	1073.5	1098.0
172.5°	1108.2	1125.4	1134.5	1145.9	1140.2	1136.9	1122.4	1110.0	1100.9	1110.0	1122.4
175°	1138.2	1142.4	1150.7	1146.7	1151.5	1142.6	1143.4	1148.1	1113.9	1148.1	1143.4
177.5°	1148.7	1155.4	1152.3	1145.0	1145.9	1144.2	1147.5	1149.7	1143.9	1149.7	1147.5
180°	1149.7	1149.7	1149.7	1149.7	1149.7	1149.7	1149.7	1149.7	1149.7	1149.7	1149.7



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2472.6	2472.6	2472.6	2472.6	2472.6	2472.6
2.5°	2465.4	2464.2	2466.2	2469.4	2469.8	2469.1
5°	2452.4	2448.4	2452.4	2457.4	2458.8	2456.1
7.5°	2430.6	2428.4	2431.4	2438.6	2438.6	2440.0
10°	2401.8	2399.6	2402.6	2405.6	2409.6	2408.8
12.5°	2366.8	2361.0	2366.8	2371.8	2373.6	2375.4
15°	2325.0	2322.0	2325.8	2328.8	2327.6	2334.2
17.5°	2276.0	2270.0	2276.0	2277.8	2279.6	2282.2
20°	2220.1	2215.1	2221.0	2220.8	2224.4	2228.2
22.5°	2157.1	2152.1	2158.0	2159.8	2160.4	2160.4
25°	2091.1	2085.1	2092.0	2090.6	2087.4	2086.4
27.5°	2020.0	2017.1	2020.8	2018.6	2008.4	2001.4
30°	1947.0	1937.1	1948.6	1938.4	1916.4	1910.4
32.5°	1861.0	1861.0	1862.6	1847.4	1820.4	1818.4
35°	1772.1	1775.1	1774.6	1746.6	1716.6	1714.6
37.5°	1674.1	1683.0	1676.6	1645.6	1613.6	1611.6
40°	1571.1	1592.0	1572.8	1535.6	1508.6	1519.6
42.5°	1463.1	1488.0	1464.8	1416.8	1403.6	1417.6
45°	1348.1	1380.0	1349.8	1306.8	1302.8	1326.8
47.5°	1235.1	1274.0	1236.0	1197.8	1209.8	1234.8
50°	1110.3	1131.1	1112.0	1095.8	1119.8	1149.8
52.5°	998.3	986.1	1000.0	998.0	1033.8	1058.8
55°	877.6	839.4	879.2	903.1	949.0	964.0
57.5°	757.6	708.4	759.2	811.1	866.1	883.1
60°	639.6	604.4	640.4	720.2	782.2	796.2
62.5°	536.6	517.6	537.4	628.2	696.2	706.2
65°	449.6	442.6	450.4	533.4	604.4	617.4
67.5°	375.6	374.6	375.6	450.4	516.4	536.4
70°	312.6	319.6	312.6	368.6	428.6	456.6
72.5°	253.8	263.8	254.6	297.6	350.6	383.6
75°	203.8	219.8	203.8	234.8	278.6	323.6
77.5°	156.8	175.8	156.8	181.8	231.9	282.1
80°	118.8	132.8	118.8	146.2	202.2	252.9
82.5°	85.8	91.8	85.8	129.0	188.0	237.3
85°	64.6	50.8	66.2	127.8	189.3	225.4
87.5°	53.1	15.0	64.4	135.3	199.3	226.6
90°	36.6	1.8	67.4	150.5	214.1	233.2
92.5°	21.6	14.0	77.5	168.4	234.2	248.9
95°	8.2	33.4	89.3	189.3	256.6	265.5
97.5°	11.7	58.5	115.4	206.9	279.1	287.1
100°	28.7	90.3	150.3	230.4	292.9	300.7
102.5°	52.2	123.6	183.5	256.6	317.2	331.9
105°	83.8	161.6	218.4	296.3	343.5	359.8
107.5°	120.3	202.2	254.0	332.0	378.6	388.7
110°	159.2	244.3	289.7	366.8	416.5	428.2





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	201.3	288.0	326.9	399.3	457.8	466.1
115°	250.2	328.6	362.8	437.5	491.0	496.1
117.5°	293.1	378.2	398.4	465.1	525.9	527.7
120°	338.5	424.4	434.1	503.2	559.9	567.4
122.5°	384.7	468.1	468.1	535.6	589.9	594.9
125°	427.6	515.1	502.2	559.9	617.4	620.0
127.5°	471.4	562.9	539.4	591.5	645.2	642.7
130°	520.2	608.3	574.5	621.5	670.3	662.2
132.5°	563.9	657.9	609.3	652.3	695.4	700.3
135°	607.7	703.3	639.3	679.0	721.3	719.7
137.5°	649.8	745.5	675.8	700.1	738.4	743.2
140°	691.2	790.8	708.2	727.6	759.4	760.2
142.5°	734.9	836.2	743.8	756.2	782.9	778.1
145°	783.5	879.2	788.4	783.7	800.8	790.2
147.5°	826.5	916.4	820.0	803.0	824.3	810.5
150°	875.3	954.4	864.8	831.4	844.5	838.0
152.5°	918.1	984.4	911.6	853.2	868.0	859.9
155°	960.9	1016.0	957.7	875.1	885.8	882.6
157.5°	998.2	1043.6	992.5	897.8	910.1	903.7
160°	1030.6	1066.3	1033.0	931.7	925.4	926.4
162.5°	1060.0	1089.1	1062.4	977.9	943.1	928.8
165°	1085.1	1106.1	1087.5	1030.8	977.1	964.3
167.5°	1108.6	1122.4	1115.9	1072.9	1029.8	1000.6
170°	1127.2	1135.3	1126.4	1108.6	1086.5	1060.4
172.5°	1136.9	1140.2	1145.9	1134.5	1125.4	1108.2
175°	1142.6	1151.5	1146.7	1150.7	1142.4	1138.2
177.5°	1144.2	1145.9	1145.0	1152.3	1155.4	1148.7
180°	1149.7	1149.7	1149.7	1149.7	1149.7	1149.7

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