

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: P392607

Luminaire Tested: **MWL-3-44-25-UNV-L830-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392607  
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-3-44-25-UNV-L830-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

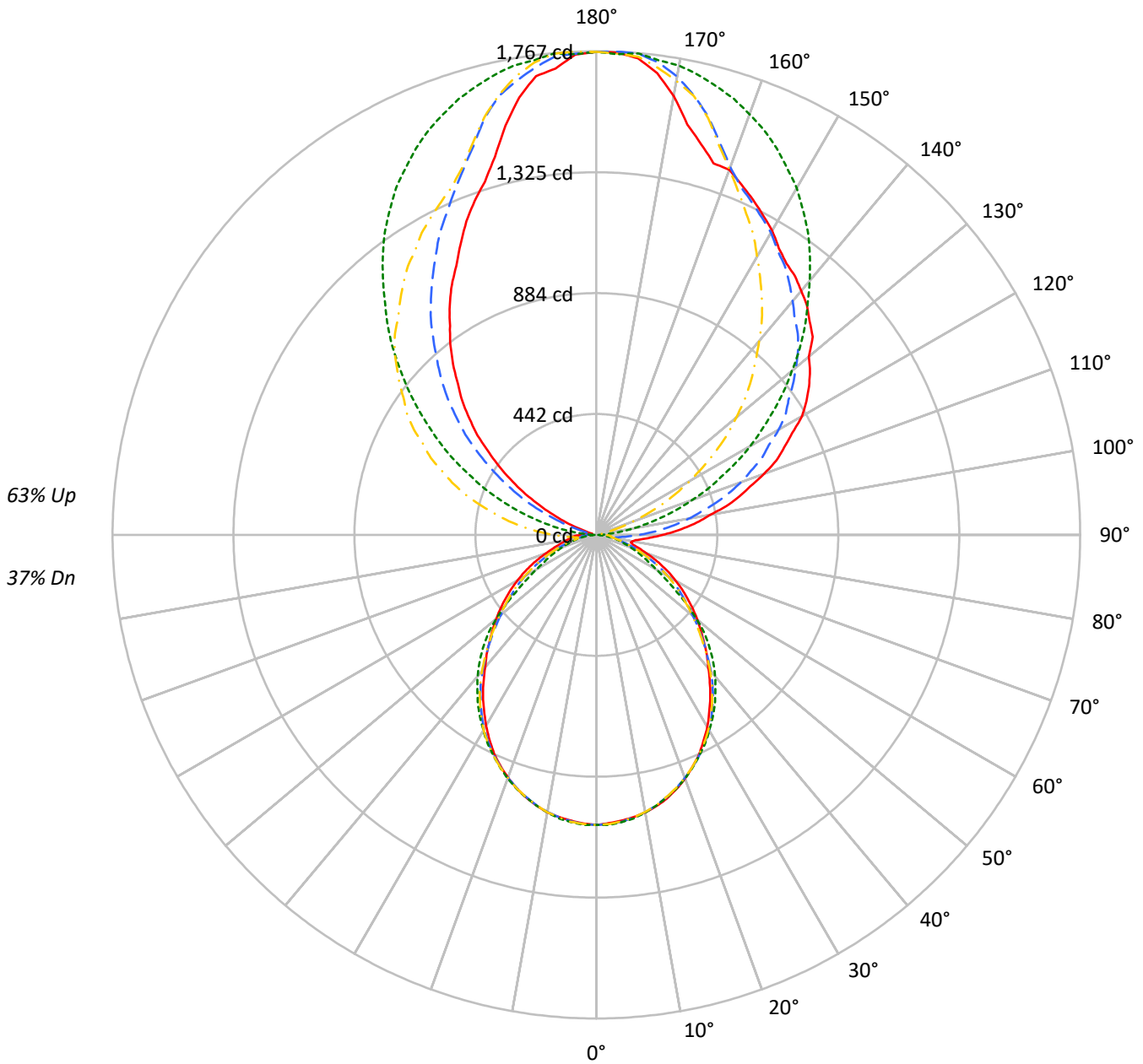
Lumens per Lamp: N/A  
Luminaire Lumens: 6653.0 lumens  
Efficiency: N/A  
Efficacy: 84.3 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: Semi-Indirect

Input Watts (W): 78.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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



TEST NUMBER: P392607  
CATALOG NUMBER: MWL-3-44-25-UNV-L830-EDD

### 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	104	104	104	104	94	94	94	94	76	76	76		59	59	59		44	44	44	37
1	95	91	87	83	86	82	79	76	67	64	62		52	51	49		39	38	37	31
2	87	79	73	68	78	72	67	63	59	55	52		46	44	42		34	33	32	26
3	79	70	63	57	71	64	58	53	52	47	44		41	38	35		31	29	27	23
4	72	62	54	49	65	57	50	45	46	41	38		37	33	30		28	25	24	20
5	66	55	47	42	60	50	44	39	41	36	32		33	29	27		25	23	21	17
6	61	50	42	36	55	45	38	34	37	32	28		30	26	23		23	20	18	15
7	57	45	37	32	51	41	34	29	34	29	25		27	23	21		21	18	16	14
8	52	41	33	28	48	37	31	26	31	26	22		25	21	18		19	17	15	12
9	49	37	30	25	44	34	28	23	28	23	20		23	19	17		18	15	13	11
10	46	34	27	22	41	31	25	21	26	21	18		21	17	15		16	14	12	10

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

	0°	90°	180°	270°
0°	9126	9126	9126	9126
5°	8953	8372	8953	8372
10°	8788	7656	8788	7656
15°	8569	6981	8537	6981
20°	8261	6360	8228	6360
25°	7909	5761	7876	5761
30°	7461	5199	7415	5199
35°	6953	4666	6917	4666
40°	6408	4127	6358	4127
45°	5941	3568	5900	3568
50°	5525	2923	5482	2923
55°	5093	2178	5061	2178
60°	4627	1597	4609	1597
65°	4112	1210	4112	1210
70°	3508	894	3532	894
75°	3063	650	3144	650
80°	3703	423	3046	423
85°	6541	185	3448	185



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.7	1.5
10°-20°	279.7	4.2
20°-30°	408.3	6.1
30°-40°	461.4	6.9
40°-50°	431.9	6.5
50°-60°	341.1	5.1
60°-70°	223.2	3.4
70°-80°	117.1	1.8
80°-90°	82.0	1.2
90°-100°	139.0	2.1
100°-110°	273.0	4.1
110°-120°	468.6	7.0
120°-130°	636.6	9.6
130°-140°	726.3	10.9
140°-150°	724.7	10.9
150°-160°	631.0	9.5
160°-170°	444.0	6.7
170°-180°	165.4	2.5
0°-30°	787.7	11.8
0°-40°	1249.2	18.8
0°-60°	2022.2	30.4
0°-90°	2444.4	36.7
90°-120°	880.6	13.2
90°-150°	2968.1	44.6
90°-180°	4209.0	63.3
0°-180°	6653.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1060	1060	1060	1060	1060	
5°	1048	1053	1048	1053	1048	99
15°	997	993	993	993	997	280
25°	886	889	883	889	886	407
35°	726	755	722	755	726	453
45°	556	586	552	586	556	430
55°	406	352	404	352	406	364
65°	262	187	262	187	262	260
75°	140	92	144	92	140	157
85°	171	23	90	23	171	132
90°	241	1	54	1	241	133
95°	331	51	35	51	331	290
105°	539	247	14	247	539	568
115°	758	503	174	503	758	752
125°	948	789	431	789	948	847
135°	1102	1077	693	1077	1102	850
145°	1210	1348	932	1348	1210	763
155°	1352	1558	1173	1558	1352	624
165°	1478	1696	1430	1696	1478	419
175°	1748	1766	1710	1766	1748	163
180°	1765	1765	1765	1765	1765	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1059.8	1059.8	1059.8	1059.8	1059.8	1059.8	1059.8	1059.8	1059.8	1059.8	1059.8
2.5°	1054.1	1058.5	1057.2	1059.4	1060.3	1058.1	1057.2	1058.5	1055.3	1058.5	1057.2
5°	1048.3	1052.7	1052.4	1052.4	1053.3	1052.4	1051.1	1052.7	1048.3	1052.7	1051.1
7.5°	1040.0	1043.4	1041.5	1043.7	1044.7	1042.5	1040.3	1042.2	1040.0	1042.2	1040.3
10°	1029.7	1030.0	1029.0	1030.0	1030.0	1028.7	1027.8	1027.5	1029.7	1027.5	1027.8
12.5°	1014.9	1012.7	1011.5	1013.4	1012.1	1013.4	1011.5	1010.2	1012.4	1010.2	1011.5
15°	997.0	994.5	992.3	994.2	992.9	992.9	991.0	992.0	993.2	992.0	991.0
17.5°	973.9	971.4	970.2	971.8	971.8	971.8	969.0	970.2	970.2	970.2	969.0
20°	947.1	947.7	945.2	947.8	946.6	946.6	944.0	945.2	943.3	945.2	944.0
22.5°	917.0	918.9	918.4	920.0	919.7	918.8	917.1	916.4	914.5	916.4	917.1
25°	886.3	885.3	888.9	892.2	889.0	890.9	886.4	881.6	882.6	881.6	886.4
27.5°	847.9	853.7	857.2	861.7	860.2	860.5	854.7	849.9	844.2	849.9	854.7
30°	810.5	813.4	823.0	828.4	824.7	825.9	819.2	809.6	805.5	809.6	819.2
32.5°	767.3	773.0	783.6	792.9	790.4	790.4	779.9	768.1	762.3	768.1	779.9
35°	725.7	727.6	741.1	754.5	754.6	750.8	737.3	723.9	722.0	723.9	737.3
37.5°	680.6	682.5	697.9	714.2	713.6	710.5	694.2	678.8	676.9	678.8	694.2
40°	636.5	637.4	649.9	670.7	675.2	668.2	644.9	632.4	631.5	632.4	644.9
42.5°	598.1	591.4	599.7	624.7	632.0	622.2	596.0	586.4	593.1	586.4	596.0
45°	555.6	547.9	552.7	575.7	586.0	573.2	547.7	544.1	551.8	544.1	547.7
47.5°	517.2	507.6	506.6	522.6	538.0	521.4	501.6	503.8	513.4	503.8	501.6
50°	480.7	469.2	460.5	471.8	478.2	469.3	455.5	464.2	476.9	464.2	455.5
52.5°	444.2	432.7	419.0	421.8	413.9	419.4	415.2	427.7	440.5	427.7	415.2
55°	406.5	396.9	380.6	370.7	352.2	368.2	376.8	393.1	404.0	393.1	376.8
57.5°	371.0	363.3	343.1	321.7	299.4	319.2	339.4	359.6	368.5	359.6	339.4
60°	333.3	329.4	302.5	271.5	253.3	270.3	300.0	326.9	332.0	326.9	300.0
62.5°	299.7	292.9	264.1	228.3	215.6	227.1	261.7	290.4	298.4	290.4	261.7
65°	261.9	257.1	224.5	192.8	186.8	191.6	223.3	255.9	261.9	255.9	223.3
67.5°	228.3	218.7	191.9	158.0	158.0	158.0	190.6	217.5	228.3	217.5	190.6
70°	192.5	182.9	158.0	132.1	133.0	132.1	158.0	184.2	193.8	184.2	158.0
72.5°	164.7	150.3	129.2	108.1	110.7	106.8	129.2	151.6	167.2	151.6	129.2
75°	139.8	122.5	102.0	87.6	92.4	87.6	103.3	123.7	143.5	123.7	103.3
77.5°	128.6	103.5	80.0	68.4	74.2	68.4	81.2	99.7	123.6	99.7	81.2
80°	133.5	103.7	66.4	52.1	56.9	52.1	63.9	83.7	109.8	83.7	63.9
82.5°	145.1	118.6	69.9	37.7	39.6	37.7	54.9	73.7	97.8	73.7	54.9
85°	171.3	145.4	88.7	31.9	23.3	29.4	52.5	69.4	90.3	69.4	52.5
87.5°	203.8	183.9	118.1	44.8	6.7	27.4	47.0	64.2	75.3	64.2	47.0
90°	240.8	224.6	157.2	64.3	1.2	16.9	33.8	48.8	53.8	48.8	33.8
92.5°	287.1	270.2	197.6	97.1	20.9	11.1	26.8	39.5	42.7	39.5	26.8
95°	330.9	321.5	245.4	131.6	50.9	6.9	21.0	32.3	35.4	32.3	21.0
97.5°	379.0	370.9	293.6	175.6	89.5	15.9	18.0	28.0	29.9	28.0	18.0
100°	421.0	417.8	343.9	229.1	136.9	42.1	13.5	26.3	28.2	26.3	13.5
102.5°	486.3	468.4	391.2	280.3	188.0	78.2	19.7	19.6	22.5	19.6	19.7
105°	539.4	519.1	452.3	333.8	246.6	126.9	49.6	17.9	14.5	17.9	49.6
107.5°	589.1	576.7	507.2	388.7	309.0	183.0	92.0	48.1	30.6	48.1	92.0
110°	651.5	636.6	560.8	443.5	373.8	242.8	140.6	87.9	68.0	87.9	140.6



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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°	711.3	700.1	610.6	500.9	441.1	307.7	200.4	137.8	119.1	137.8	200.4
115°	757.5	751.3	668.0	554.6	503.4	381.2	266.5	196.4	174.0	196.4	266.5
117.5°	806.2	804.9	710.4	609.4	578.2	447.3	327.6	255.0	231.3	255.0	327.6
120°	867.2	857.2	769.0	664.3	649.3	517.2	395.0	322.3	298.7	322.3	395.0
122.5°	909.6	903.4	818.9	716.6	716.6	588.2	459.8	387.2	362.2	387.2	459.8
125°	948.2	945.8	856.3	769.0	789.0	654.3	532.1	458.2	430.9	458.2	532.1
127.5°	983.2	986.9	904.9	826.3	862.5	721.6	603.2	521.9	493.2	521.9	603.2
130°	1013.1	1025.6	951.0	878.7	932.4	795.2	666.8	585.4	566.8	585.4	666.8
132.5°	1071.7	1064.3	999.4	932.4	1007.2	862.5	735.0	649.0	627.8	649.0	735.0
135°	1101.6	1104.1	1040.6	978.5	1076.9	929.9	798.7	713.8	692.7	713.8	798.7
137.5°	1137.8	1130.3	1072.0	1034.6	1141.8	994.7	860.0	782.5	748.8	782.5	860.0
140°	1164.0	1162.7	1115.3	1085.4	1211.6	1059.3	924.6	844.7	813.6	844.7	924.6
142.5°	1191.4	1198.9	1157.7	1139.3	1281.5	1125.6	993.1	905.9	875.9	905.9	993.1
145°	1210.1	1226.3	1200.1	1208.8	1347.5	1201.3	1053.0	964.4	932.1	964.4	1053.0
147.5°	1241.3	1262.5	1231.3	1257.5	1404.9	1267.5	1112.8	1025.6	996.9	1025.6	1112.8
150°	1283.7	1293.7	1274.9	1324.9	1463.5	1341.0	1174.0	1084.1	1055.5	1084.1	1174.0
152.5°	1317.4	1329.8	1307.7	1397.4	1509.6	1407.4	1240.3	1141.5	1107.8	1141.5	1240.3
155°	1352.2	1357.2	1342.2	1468.4	1558.3	1473.4	1294.9	1205.1	1172.7	1205.1	1294.9
157.5°	1384.7	1394.6	1377.2	1522.1	1600.6	1530.8	1356.0	1268.7	1240.0	1268.7	1356.0
160°	1419.6	1419.6	1429.6	1585.4	1635.6	1581.6	1420.8	1338.5	1298.7	1338.5	1420.8
162.5°	1423.3	1446.1	1500.6	1629.0	1670.2	1625.3	1490.6	1387.4	1353.5	1387.4	1490.6
165°	1478.1	1498.4	1580.4	1667.7	1696.4	1664.0	1576.7	1469.7	1429.6	1469.7	1576.7
167.5°	1535.5	1579.4	1645.2	1711.3	1721.3	1700.1	1642.8	1568.3	1531.8	1568.3	1642.8
170°	1628.1	1666.7	1700.1	1727.5	1741.2	1728.8	1683.9	1646.8	1623.1	1646.8	1683.9
172.5°	1701.7	1726.5	1740.0	1757.5	1748.7	1743.7	1721.3	1702.8	1690.5	1702.8	1721.3
175°	1747.8	1752.7	1764.9	1758.7	1766.2	1752.5	1753.7	1761.5	1710.3	1761.5	1753.7
177.5°	1764.0	1772.7	1767.4	1756.2	1757.5	1755.0	1759.9	1764.0	1756.5	1764.0	1759.9
180°	1764.9	1764.9	1764.9	1764.9	1764.9	1764.9	1764.9	1764.9	1764.9	1764.9	1764.9



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1059.8	1059.8	1059.8	1059.8	1059.8	1059.8
2.5°	1058.1	1060.3	1059.4	1057.2	1058.5	1054.1
5°	1052.4	1053.3	1052.4	1052.4	1052.7	1048.3
7.5°	1042.5	1044.7	1043.7	1041.5	1043.4	1040.0
10°	1028.7	1030.0	1030.0	1029.0	1030.0	1029.7
12.5°	1013.4	1012.1	1013.4	1011.5	1012.7	1014.9
15°	992.9	992.9	994.2	992.3	994.5	997.0
17.5°	971.8	971.8	971.8	970.2	971.4	973.9
20°	946.6	946.6	947.8	945.2	947.7	947.1
22.5°	918.8	919.7	920.0	918.4	918.9	917.0
25°	890.9	889.0	892.2	888.9	885.3	886.3
27.5°	860.5	860.2	861.7	857.2	853.7	847.9
30°	825.9	824.7	828.4	823.0	813.4	810.5
32.5°	790.4	790.4	792.9	783.6	773.0	767.3
35°	750.8	754.6	754.5	741.1	727.6	725.7
37.5°	710.5	713.6	714.2	697.9	682.5	680.6
40°	668.2	675.2	670.7	649.9	637.4	636.5
42.5°	622.2	632.0	624.7	599.7	591.4	598.1
45°	573.2	586.0	575.7	552.7	547.9	555.6
47.5°	521.4	538.0	522.6	506.6	507.6	517.2
50°	469.3	478.2	471.8	460.5	469.2	480.7
52.5°	419.4	413.9	421.8	419.0	432.7	444.2
55°	368.2	352.2	370.7	380.6	396.9	406.5
57.5°	319.2	299.4	321.7	343.1	363.3	371.0
60°	270.3	253.3	271.5	302.5	329.4	333.3
62.5°	227.1	215.6	228.3	264.1	292.9	299.7
65°	191.6	186.8	192.8	224.5	257.1	261.9
67.5°	158.0	158.0	158.0	191.9	218.7	228.3
70°	132.1	133.0	132.1	158.0	182.9	192.5
72.5°	106.8	110.7	108.1	129.2	150.3	164.7
75°	87.6	92.4	87.6	102.0	122.5	139.8
77.5°	68.4	74.2	68.4	80.0	103.5	128.6
80°	52.1	56.9	52.1	66.4	103.7	133.5
82.5°	37.7	39.6	37.7	69.9	118.6	145.1
85°	29.4	23.3	31.9	88.7	145.4	171.3
87.5°	27.4	6.7	44.8	118.1	183.9	203.8
90°	16.9	1.2	64.3	157.2	224.6	240.8
92.5°	11.1	20.9	97.1	197.6	270.2	287.1
95°	6.9	50.9	131.6	245.4	321.5	330.9
97.5°	15.9	89.5	175.6	293.6	370.9	379.0
100°	42.1	136.9	229.1	343.9	417.8	421.0
102.5°	78.2	188.0	280.3	391.2	468.4	486.3
105°	126.9	246.6	333.8	452.3	519.1	539.4
107.5°	183.0	309.0	388.7	507.2	576.7	589.1
110°	242.8	373.8	443.5	560.8	636.6	651.5





TEST NUMBER: P392607

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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	307.7	441.1	500.9	610.6	700.1	711.3
115°	381.2	503.4	554.6	668.0	751.3	757.5
117.5°	447.3	578.2	609.4	710.4	804.9	806.2
120°	517.2	649.3	664.3	769.0	857.2	867.2
122.5°	588.2	716.6	716.6	818.9	903.4	909.6
125°	654.3	789.0	769.0	856.3	945.8	948.2
127.5°	721.6	862.5	826.3	904.9	986.9	983.2
130°	795.2	932.4	878.7	951.0	1025.6	1013.1
132.5°	862.5	1007.2	932.4	999.4	1064.3	1071.7
135°	929.9	1076.9	978.5	1040.6	1104.1	1101.6
137.5°	994.7	1141.8	1034.6	1072.0	1130.3	1137.8
140°	1059.3	1211.6	1085.4	1115.3	1162.7	1164.0
142.5°	1125.6	1281.5	1139.3	1157.7	1198.9	1191.4
145°	1201.3	1347.5	1208.8	1200.1	1226.3	1210.1
147.5°	1267.5	1404.9	1257.5	1231.3	1262.5	1241.3
150°	1341.0	1463.5	1324.9	1274.9	1293.7	1283.7
152.5°	1407.4	1509.6	1397.4	1307.7	1329.8	1317.4
155°	1473.4	1558.3	1468.4	1342.2	1357.2	1352.2
157.5°	1530.8	1600.6	1522.1	1377.2	1394.6	1384.7
160°	1581.6	1635.6	1585.4	1429.6	1419.6	1419.6
162.5°	1625.3	1670.2	1629.0	1500.6	1446.1	1423.3
165°	1664.0	1696.4	1667.7	1580.4	1498.4	1478.1
167.5°	1700.1	1721.3	1711.3	1645.2	1579.4	1535.5
170°	1728.8	1741.2	1727.5	1700.1	1666.7	1628.1
172.5°	1743.7	1748.7	1757.5	1740.0	1726.5	1701.7
175°	1752.5	1766.2	1758.7	1764.9	1752.7	1747.8
177.5°	1755.0	1757.5	1756.2	1767.4	1772.7	1764.0
180°	1764.9	1764.9	1764.9	1764.9	1764.9	1764.9

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