

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: P392537

Luminaire Tested: **MWL-2-35-17-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392537
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-25 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-2-35-17-UNV-L940-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

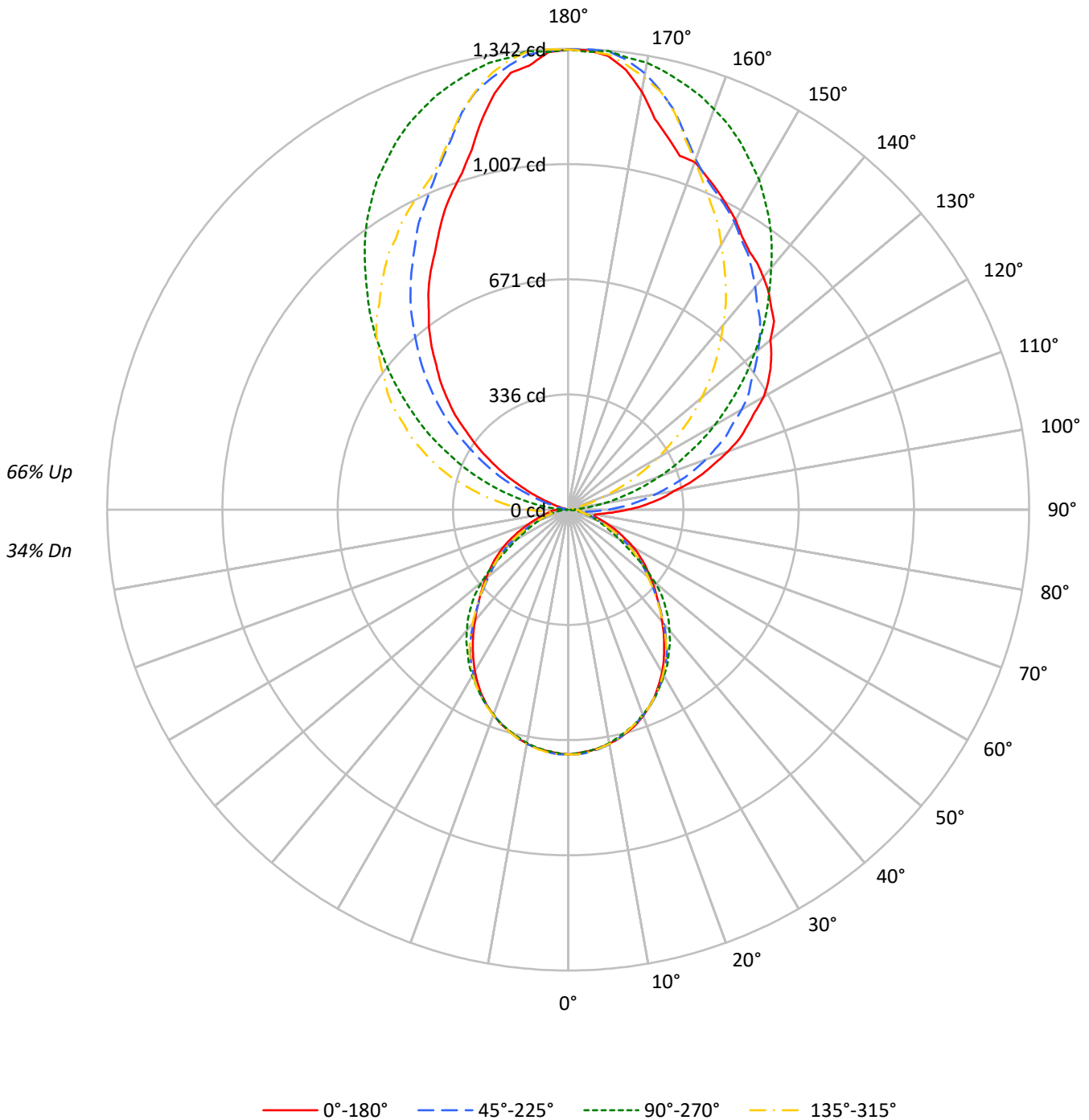
Lumens per Lamp: N/A
Luminaire Lumens: 4817.1 lumens
Efficiency: N/A
Efficacy: 81.1 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 59.388
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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34
1	94	90	86	83	85	81	78	75	65	63	61	50	49	48	36	36	35	29
2	86	79	73	68	77	71	66	62	57	54	51	44	42	40	32	31	30	24
3	79	69	62	57	71	63	57	52	51	47	43	39	37	34	29	27	26	21
4	72	62	54	48	65	56	49	44	45	41	37	35	32	29	26	24	22	18
5	66	55	47	41	59	50	43	38	40	36	32	32	28	26	24	21	20	16
6	61	49	41	36	55	45	38	33	36	31	28	29	25	22	21	19	17	14
7	56	44	37	31	51	40	34	29	33	28	24	26	23	20	20	17	15	13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	11
9	48	37	29	25	44	34	27	23	28	23	19	22	18	16	17	14	13	10
10	45	34	27	22	41	31	25	20	25	21	17	20	17	14	15	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9207	9207	9207	9207
5°	8983	8401	8983	8401
10°	8751	7693	8751	7693
15°	8485	7017	8449	7017
20°	8164	6401	8127	6401
25°	7768	5829	7730	5829
30°	7281	5274	7232	5274
35°	6699	4734	6660	4734
40°	6111	4204	6055	4204
45°	5554	3655	5510	3655
50°	5092	3026	5047	3026
55°	4651	2240	4618	2240
60°	4173	1629	4154	1629
65°	3543	1205	3543	1205
70°	2913	901	2935	901
75°	2356	634	2434	634
80°	2735	417	2121	417
85°	5001	185	2305	185



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.0	1.4
10°-20°	188.1	3.9
20°-30°	275.3	5.7
30°-40°	310.9	6.5
40°-50°	288.8	6.0
50°-60°	227.1	4.7
60°-70°	143.8	3.0
70°-80°	72.5	1.5
80°-90°	54.8	1.1
90°-100°	101.7	2.1
100°-110°	205.9	4.3
110°-120°	355.5	7.4
120°-130°	483.0	10.0
130°-140°	551.1	11.4
140°-150°	550.1	11.4
150°-160°	479.1	9.9
160°-170°	337.0	7.0
170°-180°	125.5	2.6
0°-30°	530.4	11.0
0°-40°	841.4	17.5
0°-60°	1357.2	28.2
0°-90°	1628.2	33.8
90°-120°	663.1	13.8
90°-150°	2247.3	46.7
90°-180°	3189.0	66.2
0°-180°	4817.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	713	713	713	713	713	
5°	705	705	705	705	705	67
15°	670	665	667	665	670	189
25°	598	600	595	600	598	274
35°	487	510	484	510	487	304
45°	367	400	364	400	367	285
55°	268	242	266	242	268	239
65°	168	124	168	124	168	167
75°	84	60	87	60	84	96
85°	114	16	53	16	114	87
90°	172	1	30	1	172	95
95°	243	38	19	38	243	214
105°	406	187	8	187	406	428
115°	574	382	132	382	574	570
125°	719	599	326	599	719	642
135°	836	817	525	817	836	645
145°	919	1023	708	1023	919	579
155°	1026	1183	890	1183	1026	473
165°	1122	1287	1085	1287	1122	318
175°	1326	1341	1298	1341	1326	124
180°	1340	1340	1340	1340	1340	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	712.8	712.8	712.8	712.8	712.8	712.8	712.8	712.8	712.8	712.8	712.8
2.5°	709.0	710.8	712.8	710.9	709.1	710.0	712.8	710.8	709.9	710.8	712.8
5°	705.4	707.2	709.1	706.4	704.6	706.4	708.2	707.2	705.4	707.2	708.2
7.5°	699.9	701.8	701.8	700.9	699.1	700.0	700.8	700.8	699.9	700.8	700.8
10°	691.7	693.6	693.6	691.8	690.0	690.8	692.6	691.7	691.7	691.7	692.6
12.5°	682.7	682.7	681.7	679.9	678.0	679.9	681.7	680.8	680.8	680.8	681.7
15°	669.9	669.0	668.0	667.1	665.3	666.2	667.1	667.1	667.1	667.1	667.1
17.5°	656.3	654.4	653.4	653.4	652.5	653.4	652.5	653.4	653.4	653.4	652.5
20°	639.0	639.0	637.0	637.0	635.2	636.1	636.1	637.0	636.1	637.0	636.1
22.5°	618.9	619.8	619.7	618.8	617.9	617.9	618.8	617.9	617.0	617.9	618.8
25°	598.0	598.9	600.7	599.7	599.7	598.8	598.8	596.0	595.1	596.0	598.8
27.5°	572.4	576.1	578.8	579.6	578.7	578.7	576.9	573.3	569.6	573.3	576.9
30°	546.9	549.7	555.1	559.7	557.8	557.8	552.3	546.8	543.2	546.8	552.3
32.5°	517.8	521.4	529.6	536.0	536.8	534.1	526.8	517.7	514.0	517.7	526.8
35°	486.8	488.6	500.5	509.6	510.4	506.8	497.6	485.8	484.0	485.8	497.6
37.5°	456.7	455.8	467.7	484.1	486.7	481.2	464.8	453.0	453.9	453.0	464.8
40°	425.8	423.9	433.0	453.9	458.5	452.1	429.2	420.1	421.9	420.1	429.2
42.5°	396.6	394.8	398.3	422.9	432.0	421.1	395.5	391.0	392.8	391.0	395.5
45°	367.4	364.6	365.5	387.4	400.2	385.6	361.8	361.8	364.5	361.8	361.8
47.5°	341.8	337.3	334.6	350.0	369.2	349.1	330.8	334.5	339.0	334.5	330.8
50°	316.3	311.8	304.5	315.4	330.0	313.5	300.8	308.0	313.5	308.0	300.8
52.5°	290.8	288.1	277.2	282.6	287.2	280.7	274.3	284.4	288.0	284.4	274.3
55°	268.0	264.4	251.6	248.9	241.5	247.0	248.8	261.6	266.1	261.6	248.8
57.5°	243.4	241.6	226.1	215.2	202.4	213.3	223.3	238.8	241.5	238.8	223.3
60°	219.8	215.2	197.0	181.4	172.3	180.5	195.1	213.3	218.8	213.3	195.1
62.5°	192.4	189.7	169.6	150.4	145.9	149.5	167.7	187.8	191.4	187.8	167.7
65°	167.7	162.3	142.2	125.8	124.0	124.9	141.3	161.4	167.7	161.4	141.3
67.5°	145.0	135.8	118.5	104.0	104.9	104.0	117.6	134.9	145.0	134.9	117.6
70°	121.3	111.2	97.6	85.7	89.4	85.7	97.6	112.2	122.2	112.2	97.6
72.5°	102.1	90.3	79.4	70.2	72.9	69.2	79.4	91.2	104.0	91.2	79.4
75°	83.9	72.1	62.0	55.6	60.1	55.6	63.0	73.0	86.7	73.0	63.0
77.5°	76.9	63.0	47.4	44.6	48.3	44.6	48.4	60.2	73.1	60.2	48.4
80°	80.2	66.3	39.4	33.7	37.4	33.7	37.4	51.2	62.2	51.2	37.4
82.5°	92.9	80.7	45.2	23.7	25.5	23.7	33.9	46.6	56.9	46.6	33.9
85°	114.1	102.8	61.5	21.1	15.5	19.2	34.0	45.0	52.6	45.0	34.0
87.5°	140.8	133.2	84.4	31.6	3.6	18.4	30.4	42.4	43.4	42.4	30.4
90°	172.2	165.5	114.8	47.8	0.9	11.9	21.1	32.1	30.3	32.1	21.1
92.5°	209.3	200.7	147.1	71.7	15.1	6.5	17.4	25.7	23.9	25.7	17.4
95°	243.4	238.7	183.1	99.3	37.8	4.7	12.8	19.2	19.2	19.2	12.8
97.5°	280.5	275.8	219.3	132.5	67.1	11.4	10.2	15.7	15.7	15.7	10.2
100°	312.9	311.0	258.3	173.1	103.1	31.3	7.6	13.9	14.9	13.9	7.6
102.5°	363.2	350.0	297.1	211.9	141.9	58.7	15.1	9.4	11.2	9.4	15.1
105°	405.9	392.6	343.4	253.6	187.3	96.5	37.8	12.3	7.6	12.3	37.8
107.5°	446.5	437.1	385.0	295.2	234.6	139.0	70.0	35.9	22.7	35.9	70.0
110°	493.9	482.5	425.8	336.8	283.8	184.5	106.9	66.2	51.0	66.2	106.9



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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°	539.3	530.8	463.6	380.3	334.9	233.7	152.3	104.0	89.8	104.0	152.3
115°	574.3	569.5	507.1	421.0	382.2	289.5	202.4	148.5	131.5	148.5	202.4
117.5°	611.2	610.3	539.3	462.7	439.0	339.7	248.8	193.0	175.0	193.0	248.8
120°	657.5	650.0	583.7	504.3	492.9	392.6	299.9	244.1	226.1	244.1	299.9
122.5°	689.7	685.0	621.6	544.0	544.0	446.5	349.1	293.3	274.3	293.3	349.1
125°	719.0	717.1	650.0	583.7	598.9	496.7	404.0	347.2	326.4	347.2	404.0
127.5°	745.6	748.4	686.9	627.3	654.7	547.8	457.9	395.5	373.7	395.5	457.9
130°	768.2	777.7	721.9	667.0	707.7	603.6	506.2	443.7	429.5	443.7	506.2
132.5°	812.7	807.1	757.9	707.7	764.5	654.7	557.2	492.0	475.9	492.0	557.2
135°	835.5	837.3	789.1	742.7	817.4	705.8	605.5	541.2	525.1	541.2	605.5
137.5°	862.9	857.2	813.7	785.3	866.6	755.0	652.8	593.2	567.7	593.2	652.8
140°	883.7	882.7	846.8	823.2	919.7	803.3	702.0	641.4	617.8	641.4	702.0
142.5°	904.4	910.2	878.9	864.8	972.6	854.3	754.0	687.8	665.1	687.8	754.0
145°	918.7	931.0	911.1	917.8	1022.8	912.0	799.5	732.3	707.7	732.3	799.5
147.5°	942.4	958.4	934.8	954.7	1066.4	962.2	844.9	778.6	756.9	778.6	844.9
150°	974.5	982.1	967.9	1005.8	1110.8	1018.1	891.2	823.1	801.3	823.1	891.2
152.5°	1000.0	1009.5	993.5	1061.5	1145.8	1069.1	942.4	866.6	841.1	866.6	942.4
155°	1026.5	1030.4	1019.0	1115.5	1182.7	1119.3	983.0	914.9	890.3	914.9	983.0
157.5°	1051.1	1058.7	1045.5	1156.2	1214.9	1162.7	1029.4	963.1	941.3	963.1	1029.4
160°	1077.6	1077.6	1085.2	1202.6	1241.4	1199.7	1078.6	1016.1	985.8	1016.1	1078.6
162.5°	1080.5	1098.4	1139.1	1235.6	1266.9	1232.8	1131.6	1054.0	1027.4	1054.0	1131.6
165°	1122.1	1138.1	1199.6	1265.0	1286.7	1262.1	1196.8	1116.5	1085.2	1116.5	1196.8
167.5°	1165.7	1199.6	1247.9	1298.1	1305.7	1289.6	1246.1	1191.2	1162.7	1191.2	1246.1
170°	1235.6	1265.9	1289.6	1311.3	1321.7	1312.3	1277.3	1250.8	1231.9	1250.8	1277.3
172.5°	1291.5	1310.4	1319.9	1334.0	1327.4	1323.6	1305.7	1292.5	1283.0	1292.5	1305.7
175°	1326.5	1330.3	1339.7	1335.0	1340.7	1330.3	1331.2	1336.9	1298.1	1336.9	1331.2
177.5°	1338.8	1345.4	1341.6	1333.1	1334.0	1332.1	1335.9	1338.8	1333.1	1338.8	1335.9
180°	1339.7	1339.7	1339.7	1339.7	1339.7	1339.7	1339.7	1339.7	1339.7	1339.7	1339.7



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CATALOG NUMBER: MWL-2-35-17-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	712.8	712.8	712.8	712.8	712.8	712.8
2.5°	710.0	709.1	710.9	712.8	710.8	709.0
5°	706.4	704.6	706.4	709.1	707.2	705.4
7.5°	700.0	699.1	700.9	701.8	701.8	699.9
10°	690.8	690.0	691.8	693.6	693.6	691.7
12.5°	679.9	678.0	679.9	681.7	682.7	682.7
15°	666.2	665.3	667.1	668.0	669.0	669.9
17.5°	653.4	652.5	653.4	653.4	654.4	656.3
20°	636.1	635.2	637.0	637.0	639.0	639.0
22.5°	617.9	617.9	618.8	619.7	619.8	618.9
25°	598.8	599.7	599.7	600.7	598.9	598.0
27.5°	578.7	578.7	579.6	578.8	576.1	572.4
30°	557.8	557.8	559.7	555.1	549.7	546.9
32.5°	534.1	536.8	536.0	529.6	521.4	517.8
35°	506.8	510.4	509.6	500.5	488.6	486.8
37.5°	481.2	486.7	484.1	467.7	455.8	456.7
40°	452.1	458.5	453.9	433.0	423.9	425.8
42.5°	421.1	432.0	422.9	398.3	394.8	396.6
45°	385.6	400.2	387.4	365.5	364.6	367.4
47.5°	349.1	369.2	350.0	334.6	337.3	341.8
50°	313.5	330.0	315.4	304.5	311.8	316.3
52.5°	280.7	287.2	282.6	277.2	288.1	290.8
55°	247.0	241.5	248.9	251.6	264.4	268.0
57.5°	213.3	202.4	215.2	226.1	241.6	243.4
60°	180.5	172.3	181.4	197.0	215.2	219.8
62.5°	149.5	145.9	150.4	169.6	189.7	192.4
65°	124.9	124.0	125.8	142.2	162.3	167.7
67.5°	104.0	104.9	104.0	118.5	135.8	145.0
70°	85.7	89.4	85.7	97.6	111.2	121.3
72.5°	69.2	72.9	70.2	79.4	90.3	102.1
75°	55.6	60.1	55.6	62.0	72.1	83.9
77.5°	44.6	48.3	44.6	47.4	63.0	76.9
80°	33.7	37.4	33.7	39.4	66.3	80.2
82.5°	23.7	25.5	23.7	45.2	80.7	92.9
85°	19.2	15.5	21.1	61.5	102.8	114.1
87.5°	18.4	3.6	31.6	84.4	133.2	140.8
90°	11.9	0.9	47.8	114.8	165.5	172.2
92.5°	6.5	15.1	71.7	147.1	200.7	209.3
95°	4.7	37.8	99.3	183.1	238.7	243.4
97.5°	11.4	67.1	132.5	219.3	275.8	280.5
100°	31.3	103.1	173.1	258.3	311.0	312.9
102.5°	58.7	141.9	211.9	297.1	350.0	363.2
105°	96.5	187.3	253.6	343.4	392.6	405.9
107.5°	139.0	234.6	295.2	385.0	437.1	446.5
110°	184.5	283.8	336.8	425.8	482.5	493.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	233.7	334.9	380.3	463.6	530.8	539.3
115°	289.5	382.2	421.0	507.1	569.5	574.3
117.5°	339.7	439.0	462.7	539.3	610.3	611.2
120°	392.6	492.9	504.3	583.7	650.0	657.5
122.5°	446.5	544.0	544.0	621.6	685.0	689.7
125°	496.7	598.9	583.7	650.0	717.1	719.0
127.5°	547.8	654.7	627.3	686.9	748.4	745.6
130°	603.6	707.7	667.0	721.9	777.7	768.2
132.5°	654.7	764.5	707.7	757.9	807.1	812.7
135°	705.8	817.4	742.7	789.1	837.3	835.5
137.5°	755.0	866.6	785.3	813.7	857.2	862.9
140°	803.3	919.7	823.2	846.8	882.7	883.7
142.5°	854.3	972.6	864.8	878.9	910.2	904.4
145°	912.0	1022.8	917.8	911.1	931.0	918.7
147.5°	962.2	1066.4	954.7	934.8	958.4	942.4
150°	1018.1	1110.8	1005.8	967.9	982.1	974.5
152.5°	1069.1	1145.8	1061.5	993.5	1009.5	1000.0
155°	1119.3	1182.7	1115.5	1019.0	1030.4	1026.5
157.5°	1162.7	1214.9	1156.2	1045.5	1058.7	1051.1
160°	1199.7	1241.4	1202.6	1085.2	1077.6	1077.6
162.5°	1232.8	1266.9	1235.6	1139.1	1098.4	1080.5
165°	1262.1	1286.7	1265.0	1199.6	1138.1	1122.1
167.5°	1289.6	1305.7	1298.1	1247.9	1199.6	1165.7
170°	1312.3	1321.7	1311.3	1289.6	1265.9	1235.6
172.5°	1323.6	1327.4	1334.0	1319.9	1310.4	1291.5
175°	1330.3	1340.7	1335.0	1339.7	1330.3	1326.5
177.5°	1332.1	1334.0	1333.1	1341.6	1345.4	1338.8
180°	1339.7	1339.7	1339.7	1339.7	1339.7	1339.7

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