

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: P392536

Luminaire Tested: **MWL-2-35-17-UNV-L835-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392536  
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-L835-EDD  
Description: MWL 2FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

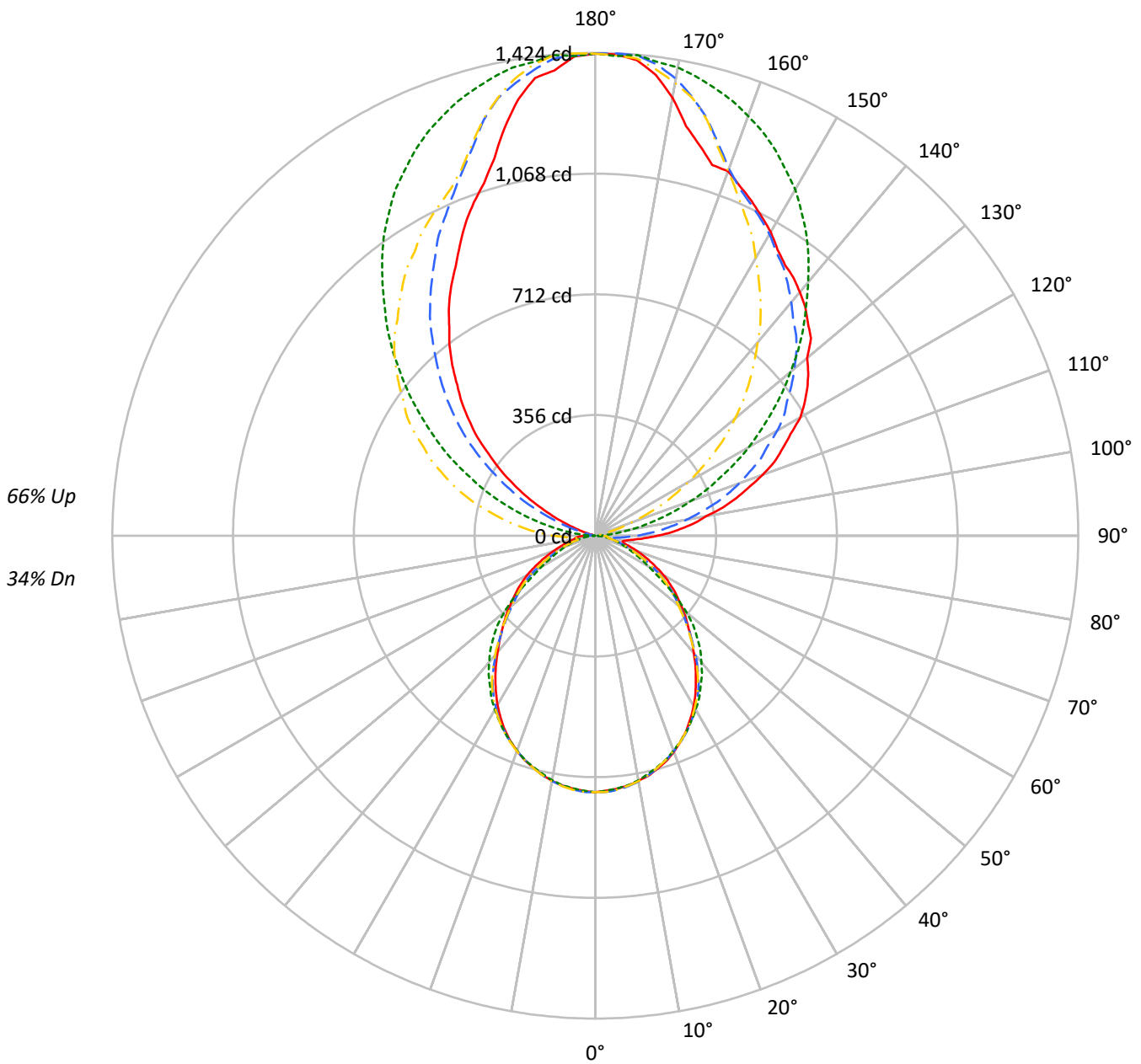
Lumens per Lamp: N/A  
Luminaire Lumens: 5112.0 lumens  
Efficiency: N/A  
Efficacy: 86.9 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')  
CIE Type: Semi-Indirect

Input Watts (W): 58.8  
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



TEST NUMBER: P392536  
CATALOG NUMBER: MWL-2-35-17-UNV-L835-EDD

### Luminous Intensity Polar Plot



66% Up  
34% Dn

— 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	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°	9770	9770	9770	9770
5°	9533	8915	9533	8915
10°	9286	8164	9286	8164
15°	9004	7446	8966	7446
20°	8664	6793	8626	6793
25°	8243	6186	8205	6186
30°	7727	5597	7674	5597
35°	7109	5023	7068	5023
40°	6484	4460	6427	4460
45°	5893	3878	5847	3878
50°	5404	3211	5356	3211
55°	4938	2377	4901	2377
60°	4427	1728	4406	1728
65°	3760	1279	3760	1279
70°	3091	955	3115	955
75°	2499	673	2583	673
80°	2902	442	2250	442
85°	5308	196	2446	196



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	71.1	1.4
10°-20°	199.7	3.9
20°-30°	292.1	5.7
30°-40°	330.0	6.5
40°-50°	306.4	6.0
50°-60°	241.0	4.7
60°-70°	152.6	3.0
70°-80°	76.9	1.5
80°-90°	58.1	1.1
90°-100°	108.0	2.1
100°-110°	218.5	4.3
110°-120°	377.3	7.4
120°-130°	512.6	10.0
130°-140°	584.8	11.4
140°-150°	583.8	11.4
150°-160°	508.4	9.9
160°-170°	357.6	7.0
170°-180°	133.2	2.6
0°-30°	562.9	11.0
0°-40°	892.9	17.5
0°-60°	1440.2	28.2
0°-90°	1727.9	33.8
90°-120°	703.7	13.8
90°-150°	2384.9	46.7
90°-180°	3384.0	66.2
0°-180°	5112.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	756	756	756	756	756	
5°	749	748	749	748	749	71
15°	711	706	708	706	711	200
25°	635	636	632	636	635	291
35°	517	542	514	542	517	323
45°	390	425	387	425	390	302
55°	284	256	282	256	284	254
65°	178	132	178	132	178	177
75°	89	64	92	64	89	102
85°	121	16	56	16	121	92
90°	183	1	32	1	183	101
95°	258	40	20	40	258	227
105°	431	199	8	199	431	454
115°	609	406	140	406	609	605
125°	763	636	346	636	763	681
135°	887	868	557	868	887	684
145°	975	1085	751	1085	975	615
155°	1089	1255	945	1255	1089	502
165°	1191	1366	1152	1366	1191	338
175°	1408	1423	1378	1423	1408	131
180°	1422	1422	1422	1422	1422	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	756.4	756.4	756.4	756.4	756.4	756.4	756.4	756.4	756.4	756.4	756.4
2.5°	752.4	754.4	756.4	754.4	752.5	753.5	756.4	754.4	753.4	754.4	756.4
5°	748.6	750.5	752.5	749.6	747.7	749.6	751.5	750.5	748.6	750.5	751.5
7.5°	742.7	744.8	744.8	743.8	741.9	742.8	743.7	743.7	742.7	743.7	743.7
10°	734.0	736.1	736.1	734.1	732.2	733.1	735.0	734.0	734.0	734.0	735.0
12.5°	724.5	724.5	723.4	721.5	719.5	721.5	723.4	722.4	722.4	722.4	723.4
15°	710.9	710.0	708.9	707.9	706.0	707.0	707.9	707.9	707.9	707.9	707.9
17.5°	696.4	694.5	693.4	693.4	692.5	693.4	692.5	693.4	693.4	693.4	692.5
20°	678.1	678.1	676.0	676.0	674.1	675.1	675.1	676.0	675.1	676.0	675.1
22.5°	656.8	657.8	657.7	656.7	655.7	655.7	656.7	655.7	654.8	655.7	656.7
25°	634.6	635.5	637.5	636.4	636.4	635.4	635.4	632.5	631.6	632.5	635.4
27.5°	607.5	611.4	614.3	615.1	614.2	614.2	612.2	608.4	604.5	608.4	612.2
30°	580.4	583.3	589.1	593.9	591.9	591.9	586.1	580.3	576.4	580.3	586.1
32.5°	549.5	553.3	562.0	568.8	569.7	566.8	559.0	549.4	545.5	549.4	559.0
35°	516.6	518.5	531.1	540.8	541.6	537.8	528.1	515.5	513.6	515.5	528.1
37.5°	484.7	483.7	496.3	513.7	516.5	510.7	493.3	480.7	481.7	480.7	493.3
40°	451.8	449.9	459.6	481.7	486.5	479.8	455.5	445.8	447.8	445.8	455.5
42.5°	420.9	418.9	422.7	448.8	458.5	446.9	419.7	414.9	416.8	414.9	419.7
45°	389.8	386.9	387.9	411.1	424.6	409.2	383.9	383.9	386.8	383.9	383.9
47.5°	362.8	357.9	355.0	371.5	391.8	370.5	351.1	354.9	359.8	354.9	351.1
50°	335.7	330.9	323.1	334.7	350.2	332.7	319.2	326.9	332.7	326.9	319.2
52.5°	308.6	305.7	294.1	299.9	304.8	297.9	291.1	301.8	305.6	301.8	291.1
55°	284.5	280.6	267.0	264.1	256.3	262.1	264.1	277.6	282.4	277.6	264.1
57.5°	258.3	256.4	240.0	228.4	214.7	226.3	237.0	253.4	256.3	253.4	237.0
60°	233.2	228.4	209.0	192.5	182.8	191.5	207.0	226.3	232.1	226.3	207.0
62.5°	204.2	201.3	180.0	159.6	154.8	158.7	178.0	199.3	203.1	199.3	178.0
65°	178.0	172.2	150.9	133.5	131.6	132.6	150.0	171.2	178.0	171.2	150.0
67.5°	153.8	144.2	125.8	110.3	111.3	110.3	124.8	143.2	153.8	143.2	124.8
70°	128.7	118.1	103.6	91.0	94.8	91.0	103.6	119.0	129.7	119.0	103.6
72.5°	108.4	95.8	84.2	74.5	77.3	73.5	84.2	96.8	110.4	96.8	84.2
75°	89.0	76.5	65.7	59.0	63.8	59.0	66.8	77.4	92.0	77.4	66.8
77.5°	81.6	66.9	50.3	47.4	51.2	47.4	51.3	63.9	77.5	63.9	51.3
80°	85.1	70.4	41.8	35.8	39.6	35.8	39.7	54.3	66.0	54.3	39.7
82.5°	98.6	85.7	48.0	25.1	27.1	25.1	36.0	49.5	60.4	49.5	36.0
85°	121.1	109.1	65.3	22.4	16.4	20.4	36.1	47.8	55.8	47.8	36.1
87.5°	149.4	141.4	89.5	33.6	3.9	19.5	32.3	45.0	46.0	45.0	32.3
90°	182.7	175.7	121.8	50.8	1.0	12.7	22.4	34.0	32.2	34.0	22.4
92.5°	222.1	213.0	156.1	76.1	16.1	6.9	18.5	27.3	25.3	27.3	18.5
95°	258.3	253.3	194.3	105.4	40.1	5.0	13.6	20.4	20.4	20.4	13.6
97.5°	297.7	292.7	232.7	140.6	71.3	12.1	10.8	16.6	16.6	16.6	10.8
100°	332.0	330.1	274.1	183.7	109.4	33.2	8.0	14.8	15.8	14.8	8.0
102.5°	385.4	371.5	315.3	224.9	150.6	62.3	16.1	10.0	11.9	10.0	16.1
105°	430.7	416.6	364.4	269.1	198.8	102.4	40.1	13.1	8.0	13.1	40.1
107.5°	473.9	463.8	408.6	313.3	249.0	147.5	74.3	38.1	24.1	38.1	74.3
110°	524.1	512.1	451.8	357.5	301.2	195.8	113.4	70.3	54.1	70.3	113.4



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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°	572.3	563.3	491.9	403.6	355.4	248.0	161.7	110.4	95.3	110.4	161.7
115°	609.4	604.4	538.2	446.8	405.6	307.2	214.8	157.6	139.5	157.6	214.8
117.5°	648.6	647.6	572.3	491.0	465.8	360.4	264.1	204.8	185.7	204.8	264.1
120°	697.8	689.8	619.5	535.2	523.1	416.6	318.3	259.0	240.0	259.0	318.3
122.5°	731.9	726.9	659.7	577.3	577.3	473.9	370.5	311.2	291.1	311.2	370.5
125°	763.1	761.0	689.8	619.5	635.5	527.1	428.7	368.5	346.3	368.5	428.7
127.5°	791.2	794.2	728.9	665.7	694.8	581.4	485.9	419.7	396.6	419.7	485.9
130°	815.3	825.3	766.1	707.8	751.1	640.6	537.2	470.9	455.8	470.9	537.2
132.5°	862.4	856.5	804.2	751.1	811.3	694.8	591.3	522.1	505.0	522.1	591.3
135°	886.6	888.6	837.4	788.2	867.5	749.0	642.6	574.3	557.2	574.3	642.6
137.5°	915.7	909.6	863.5	833.3	919.7	801.2	692.8	629.5	602.5	629.5	692.8
140°	937.8	936.7	898.6	873.6	976.0	852.5	745.0	680.7	655.6	680.7	745.0
142.5°	959.8	965.9	932.7	917.8	1032.1	906.6	800.2	729.9	705.8	729.9	800.2
145°	974.9	987.9	966.9	973.9	1085.4	967.8	848.4	777.1	751.0	777.1	848.4
147.5°	1000.0	1017.1	992.0	1013.1	1131.6	1021.1	896.6	826.3	803.2	826.3	896.6
150°	1034.2	1042.2	1027.1	1067.3	1178.8	1080.4	945.8	873.5	850.4	873.5	945.8
152.5°	1061.2	1071.3	1054.3	1126.5	1215.9	1134.5	1000.0	919.7	892.6	919.7	1000.0
155°	1089.4	1093.4	1081.3	1183.7	1255.1	1187.8	1043.2	970.9	944.8	970.9	1043.2
157.5°	1115.5	1123.5	1109.5	1227.0	1289.2	1233.9	1092.4	1022.1	999.0	1022.1	1092.4
160°	1143.6	1143.6	1151.6	1276.2	1317.4	1273.2	1144.6	1078.4	1046.2	1078.4	1144.6
162.5°	1146.6	1165.7	1208.9	1311.3	1344.4	1308.3	1200.9	1118.5	1090.3	1118.5	1200.9
165°	1190.8	1207.8	1273.1	1342.4	1365.5	1339.4	1270.1	1184.8	1151.6	1184.8	1270.1
167.5°	1237.0	1273.1	1324.3	1377.6	1385.6	1368.5	1322.4	1264.1	1233.9	1264.1	1322.4
170°	1311.3	1343.4	1368.5	1391.6	1402.6	1392.6	1355.5	1327.3	1307.3	1327.3	1355.5
172.5°	1370.5	1390.6	1400.7	1415.7	1408.6	1404.7	1385.6	1371.6	1361.5	1371.6	1385.6
175°	1407.7	1411.7	1421.7	1416.8	1422.7	1411.7	1412.7	1418.8	1377.6	1418.8	1412.7
177.5°	1420.7	1427.8	1423.7	1414.7	1415.7	1413.7	1417.7	1420.7	1414.7	1420.7	1417.7
180°	1421.7	1421.7	1421.7	1421.7	1421.7	1421.7	1421.7	1421.7	1421.7	1421.7	1421.7



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	756.4	756.4	756.4	756.4	756.4	756.4
2.5°	753.5	752.5	754.4	756.4	754.4	752.4
5°	749.6	747.7	749.6	752.5	750.5	748.6
7.5°	742.8	741.9	743.8	744.8	744.8	742.7
10°	733.1	732.2	734.1	736.1	736.1	734.0
12.5°	721.5	719.5	721.5	723.4	724.5	724.5
15°	707.0	706.0	707.9	708.9	710.0	710.9
17.5°	693.4	692.5	693.4	693.4	694.5	696.4
20°	675.1	674.1	676.0	676.0	678.1	678.1
22.5°	655.7	655.7	656.7	657.7	657.8	656.8
25°	635.4	636.4	636.4	637.5	635.5	634.6
27.5°	614.2	614.2	615.1	614.3	611.4	607.5
30°	591.9	591.9	593.9	589.1	583.3	580.4
32.5°	566.8	569.7	568.8	562.0	553.3	549.5
35°	537.8	541.6	540.8	531.1	518.5	516.6
37.5°	510.7	516.5	513.7	496.3	483.7	484.7
40°	479.8	486.5	481.7	459.6	449.9	451.8
42.5°	446.9	458.5	448.8	422.7	418.9	420.9
45°	409.2	424.6	411.1	387.9	386.9	389.8
47.5°	370.5	391.8	371.5	355.0	357.9	362.8
50°	332.7	350.2	334.7	323.1	330.9	335.7
52.5°	297.9	304.8	299.9	294.1	305.7	308.6
55°	262.1	256.3	264.1	267.0	280.6	284.5
57.5°	226.3	214.7	228.4	240.0	256.4	258.3
60°	191.5	182.8	192.5	209.0	228.4	233.2
62.5°	158.7	154.8	159.6	180.0	201.3	204.2
65°	132.6	131.6	133.5	150.9	172.2	178.0
67.5°	110.3	111.3	110.3	125.8	144.2	153.8
70°	91.0	94.8	91.0	103.6	118.1	128.7
72.5°	73.5	77.3	74.5	84.2	95.8	108.4
75°	59.0	63.8	59.0	65.7	76.5	89.0
77.5°	47.4	51.2	47.4	50.3	66.9	81.6
80°	35.8	39.6	35.8	41.8	70.4	85.1
82.5°	25.1	27.1	25.1	48.0	85.7	98.6
85°	20.4	16.4	22.4	65.3	109.1	121.1
87.5°	19.5	3.9	33.6	89.5	141.4	149.4
90°	12.7	1.0	50.8	121.8	175.7	182.7
92.5°	6.9	16.1	76.1	156.1	213.0	222.1
95°	5.0	40.1	105.4	194.3	253.3	258.3
97.5°	12.1	71.3	140.6	232.7	292.7	297.7
100°	33.2	109.4	183.7	274.1	330.1	332.0
102.5°	62.3	150.6	224.9	315.3	371.5	385.4
105°	102.4	198.8	269.1	364.4	416.6	430.7
107.5°	147.5	249.0	313.3	408.6	463.8	473.9
110°	195.8	301.2	357.5	451.8	512.1	524.1





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	248.0	355.4	403.6	491.9	563.3	572.3
115°	307.2	405.6	446.8	538.2	604.4	609.4
117.5°	360.4	465.8	491.0	572.3	647.6	648.6
120°	416.6	523.1	535.2	619.5	689.8	697.8
122.5°	473.9	577.3	577.3	659.7	726.9	731.9
125°	527.1	635.5	619.5	689.8	761.0	763.1
127.5°	581.4	694.8	665.7	728.9	794.2	791.2
130°	640.6	751.1	707.8	766.1	825.3	815.3
132.5°	694.8	811.3	751.1	804.2	856.5	862.4
135°	749.0	867.5	788.2	837.4	888.6	886.6
137.5°	801.2	919.7	833.3	863.5	909.6	915.7
140°	852.5	976.0	873.6	898.6	936.7	937.8
142.5°	906.6	1032.1	917.8	932.7	965.9	959.8
145°	967.8	1085.4	973.9	966.9	987.9	974.9
147.5°	1021.1	1131.6	1013.1	992.0	1017.1	1000.0
150°	1080.4	1178.8	1067.3	1027.1	1042.2	1034.2
152.5°	1134.5	1215.9	1126.5	1054.3	1071.3	1061.2
155°	1187.8	1255.1	1183.7	1081.3	1093.4	1089.4
157.5°	1233.9	1289.2	1227.0	1109.5	1123.5	1115.5
160°	1273.2	1317.4	1276.2	1151.6	1143.6	1143.6
162.5°	1308.3	1344.4	1311.3	1208.9	1165.7	1146.6
165°	1339.4	1365.5	1342.4	1273.1	1207.8	1190.8
167.5°	1368.5	1385.6	1377.6	1324.3	1273.1	1237.0
170°	1392.6	1402.6	1391.6	1368.5	1343.4	1311.3
172.5°	1404.7	1408.6	1415.7	1400.7	1390.6	1370.5
175°	1411.7	1422.7	1416.8	1421.7	1411.7	1407.7
177.5°	1413.7	1415.7	1414.7	1423.7	1427.8	1420.7
180°	1421.7	1421.7	1421.7	1421.7	1421.7	1421.7

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