

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-L840-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-L840-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

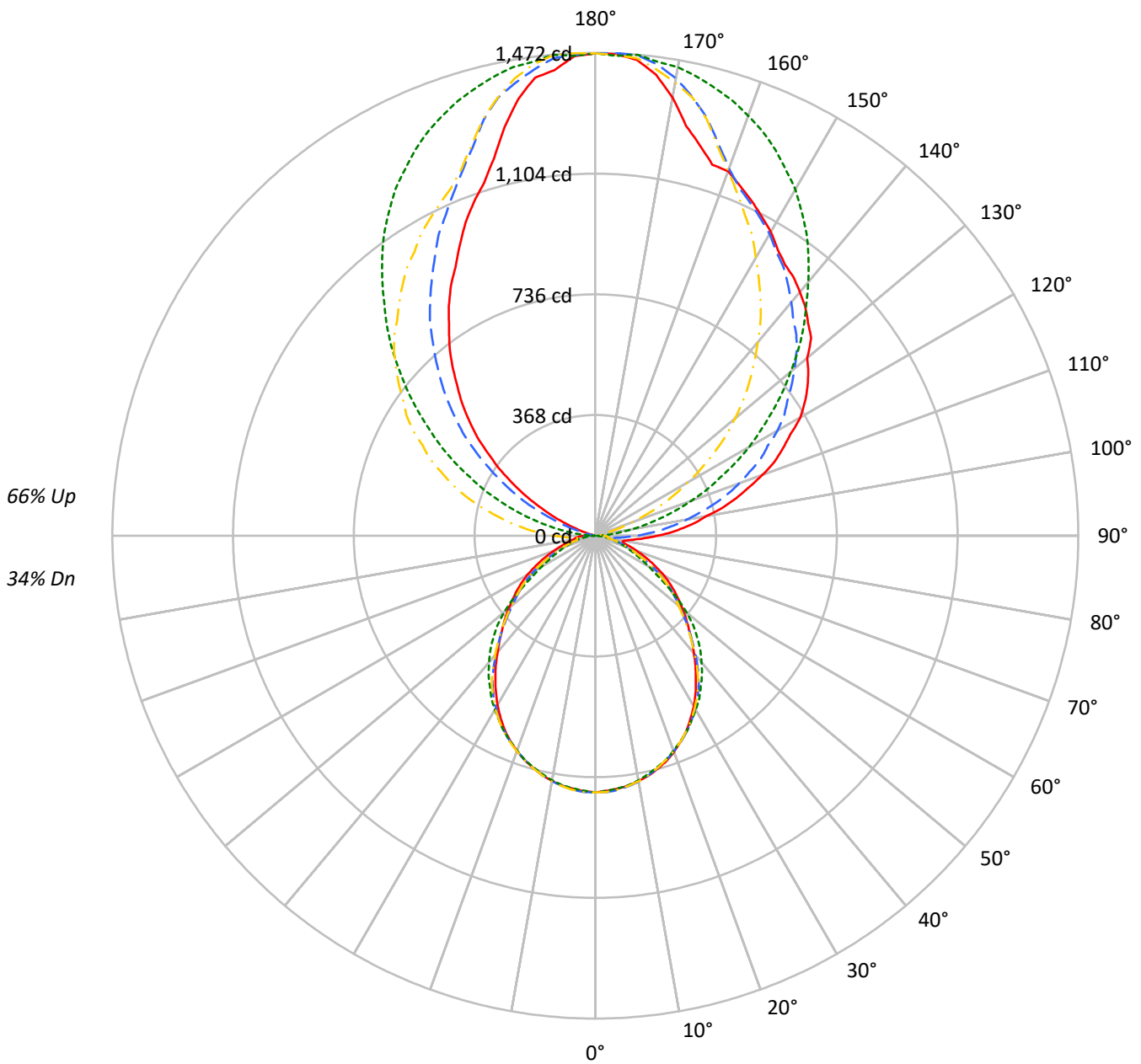
Lumens per Lamp: N/A
Luminaire Lumens: 5287.2 lumens
Efficiency: N/A
Efficacy: 89.9 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: Semi-Indirect

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



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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	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°	10105	10105	10105	10105
5°	9859	9220	9859	9220
10°	9605	8444	9605	8444
15°	9313	7701	9274	7701
20°	8960	7026	8921	7026
25°	8525	6397	8485	6397
30°	7992	5789	7938	5789
35°	7352	5196	7310	5196
40°	6707	4614	6647	4614
45°	6095	4011	6049	4011
50°	5589	3321	5539	3321
55°	5106	2459	5070	2459
60°	4579	1788	4558	1788
65°	3889	1323	3889	1323
70°	3197	989	3221	989
75°	2586	696	2673	696
80°	3001	457	2329	457
85°	5488	203	2529	203



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.5	1.4
10°-20°	206.5	3.9
20°-30°	302.2	5.7
30°-40°	341.3	6.5
40°-50°	316.9	6.0
50°-60°	249.2	4.7
60°-70°	157.8	3.0
70°-80°	79.6	1.5
80°-90°	60.1	1.1
90°-100°	111.7	2.1
100°-110°	226.0	4.3
110°-120°	390.2	7.4
120°-130°	530.1	10.0
130°-140°	604.8	11.4
140°-150°	603.8	11.4
150°-160°	525.9	9.9
160°-170°	369.8	7.0
170°-180°	137.8	2.6
0°-30°	582.2	11.0
0°-40°	923.5	17.5
0°-60°	1489.6	28.2
0°-90°	1787.1	33.8
90°-120°	727.8	13.8
90°-150°	2466.6	46.7
90°-180°	3500.0	66.2
0°-180°	5287.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	782	782	782	782	782	
5°	774	773	774	773	774	73
15°	735	730	732	730	735	207
25°	656	658	653	658	656	301
35°	534	560	531	560	534	334
45°	403	439	400	439	403	313
55°	294	265	292	265	294	263
65°	184	136	184	136	184	183
75°	92	66	95	66	92	105
85°	125	17	58	17	125	95
90°	189	1	33	1	189	104
95°	267	42	21	42	267	235
105°	446	206	8	206	446	469
115°	630	420	144	420	630	625
125°	789	657	358	657	789	705
135°	917	897	576	897	917	708
145°	1008	1123	777	1123	1008	636
155°	1127	1298	977	1298	1127	520
165°	1232	1412	1191	1412	1232	349
175°	1456	1472	1425	1472	1456	136
180°	1470	1470	1470	1470	1470	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	782.3	782.3	782.3	782.3	782.3	782.3	782.3	782.3	782.3	782.3	782.3
2.5°	778.2	780.2	782.3	780.3	778.3	779.3	782.3	780.2	779.2	780.2	782.3
5°	774.2	776.2	778.3	775.3	773.3	775.3	777.3	776.2	774.2	776.2	777.3
7.5°	768.2	770.3	770.3	769.3	767.3	768.3	769.2	769.2	768.2	769.2	769.2
10°	759.2	761.3	761.3	759.3	757.3	758.2	760.2	759.2	759.2	759.2	760.2
12.5°	749.3	749.3	748.2	746.2	744.2	746.2	748.2	747.2	747.2	747.2	748.2
15°	735.3	734.3	733.2	732.2	730.2	731.2	732.2	732.2	732.2	732.2	732.2
17.5°	720.3	718.3	717.2	717.2	716.2	717.2	716.2	717.2	717.2	717.2	716.2
20°	701.3	701.3	699.2	699.2	697.2	698.2	698.2	699.2	698.2	699.2	698.2
22.5°	679.3	680.3	680.2	679.2	678.2	678.2	679.2	678.2	677.2	678.2	679.2
25°	656.3	657.3	659.3	658.2	658.2	657.2	657.2	654.2	653.2	654.2	657.2
27.5°	628.3	632.3	635.3	636.2	635.2	635.2	633.2	629.2	625.2	629.2	633.2
30°	600.3	603.3	609.3	614.3	612.2	612.2	606.2	600.2	596.2	600.2	606.2
32.5°	568.3	572.3	581.3	588.3	589.2	586.2	578.2	568.2	564.2	568.2	578.2
35°	534.3	536.3	549.3	559.3	560.2	556.2	546.2	533.2	531.2	533.2	546.2
37.5°	501.3	500.3	513.3	531.3	534.2	528.2	510.2	497.2	498.2	497.2	510.2
40°	467.3	465.3	475.3	498.2	503.2	496.2	471.1	461.1	463.1	461.1	471.1
42.5°	435.3	433.3	437.2	464.2	474.2	462.2	434.1	429.1	431.1	429.1	434.1
45°	403.2	400.2	401.2	425.2	439.2	423.2	397.1	397.1	400.1	397.1	397.1
47.5°	375.2	370.2	367.2	384.2	405.2	383.2	363.1	367.1	372.1	367.1	363.1
50°	347.2	342.2	334.2	346.2	362.2	344.1	330.1	338.1	344.1	338.1	330.1
52.5°	319.2	316.2	304.2	310.2	315.2	308.1	301.1	312.1	316.1	312.1	301.1
55°	294.2	290.2	276.2	273.2	265.1	271.1	273.1	287.1	292.1	287.1	273.1
57.5°	267.2	265.2	248.2	236.2	222.1	234.1	245.1	262.1	265.1	262.1	245.1
60°	241.2	236.2	216.2	199.1	189.1	198.1	214.1	234.1	240.1	234.1	214.1
62.5°	211.2	208.2	186.2	165.1	160.1	164.1	184.1	206.1	210.1	206.1	184.1
65°	184.1	178.1	156.1	138.1	136.1	137.1	155.1	177.1	184.1	177.1	155.1
67.5°	159.1	149.1	130.1	114.1	115.1	114.1	129.1	148.1	159.1	148.1	129.1
70°	133.1	122.1	107.1	94.1	98.1	94.1	107.1	123.1	134.1	123.1	107.1
72.5°	112.1	99.1	87.1	77.1	80.0	76.0	87.1	100.1	114.2	100.1	87.1
75°	92.1	79.1	68.0	61.0	66.0	61.0	69.1	80.1	95.2	80.1	69.1
77.5°	84.4	69.2	52.0	49.0	53.0	49.0	53.1	66.1	80.2	66.1	53.1
80°	88.0	72.8	43.2	37.0	41.0	37.0	41.1	56.2	68.3	56.2	41.1
82.5°	102.0	88.6	49.6	26.0	28.0	26.0	37.2	51.2	62.5	51.2	37.2
85°	125.2	112.8	67.5	23.2	17.0	21.1	37.3	49.4	57.7	49.4	37.3
87.5°	154.5	146.2	92.6	34.7	4.0	20.2	33.4	46.5	47.6	46.5	33.4
90°	189.0	181.7	126.0	52.5	1.0	13.1	23.2	35.2	33.3	35.2	23.2
92.5°	229.7	220.3	161.4	78.7	16.6	7.1	19.1	28.2	26.2	28.2	19.1
95°	267.2	262.0	201.0	109.0	41.5	5.2	14.1	21.1	21.1	21.1	14.1
97.5°	307.9	302.7	240.7	145.4	73.7	12.5	11.2	17.2	17.2	17.2	11.2
100°	343.4	341.4	283.5	190.0	113.2	34.3	8.3	15.3	16.3	15.3	8.3
102.5°	398.6	384.2	326.1	232.6	155.8	64.4	16.6	10.3	12.3	10.3	16.6
105°	445.5	430.9	376.9	278.3	205.6	105.9	41.5	13.5	8.3	13.5	41.5
107.5°	490.1	479.7	422.6	324.0	257.5	152.6	76.8	39.4	24.9	39.4	76.8
110°	542.1	529.6	467.3	369.7	311.5	202.5	117.3	72.7	56.0	72.7	117.3



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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°	591.9	582.6	508.8	417.4	367.6	256.5	167.2	114.2	98.6	114.2	167.2
115°	630.3	625.1	556.6	462.1	419.5	317.7	222.2	163.0	144.3	163.0	222.2
117.5°	670.8	669.8	591.9	507.8	481.8	372.8	273.1	211.8	192.1	211.8	273.1
120°	721.7	713.4	640.7	553.5	541.0	430.9	329.2	267.9	248.2	267.9	329.2
122.5°	757.0	751.8	682.3	597.1	597.1	490.1	383.2	321.9	301.1	321.9	383.2
125°	789.2	787.1	713.4	640.7	657.3	545.2	443.4	381.1	358.2	381.1	443.4
127.5°	818.3	821.4	753.9	688.5	718.6	601.3	502.6	434.1	410.2	434.1	502.6
130°	843.2	853.6	792.3	732.1	776.8	662.5	555.6	487.0	471.4	487.0	555.6
132.5°	892.0	885.8	831.8	776.8	839.1	718.6	611.6	540.0	522.3	540.0	611.6
135°	917.0	919.0	866.1	815.2	897.2	774.7	664.6	594.0	576.3	594.0	664.6
137.5°	947.1	940.8	893.1	861.9	951.2	828.7	716.5	651.1	623.1	651.1	716.5
140°	969.9	968.8	929.4	903.5	1009.4	881.7	770.5	704.0	678.1	704.0	770.5
142.5°	992.7	999.0	964.7	949.2	1067.5	937.7	827.6	754.9	730.0	754.9	827.6
145°	1008.3	1021.8	1000.0	1007.3	1122.6	1001.0	877.5	803.7	776.7	803.7	877.5
147.5°	1034.3	1051.9	1026.0	1047.8	1170.4	1056.1	927.3	854.6	830.7	854.6	927.3
150°	1069.6	1077.9	1062.3	1103.9	1219.2	1117.4	978.2	903.4	879.5	903.4	978.2
152.5°	1097.6	1108.0	1090.4	1165.1	1257.6	1173.4	1034.3	951.2	923.2	951.2	1034.3
155°	1126.7	1130.9	1118.4	1224.3	1298.1	1228.5	1078.9	1004.2	977.2	1004.2	1078.9
157.5°	1153.7	1162.0	1147.5	1269.0	1333.4	1276.2	1129.8	1057.1	1033.2	1057.1	1129.8
160°	1182.8	1182.8	1191.1	1319.9	1362.5	1316.8	1183.8	1115.3	1082.0	1115.3	1183.8
162.5°	1185.9	1205.6	1250.3	1356.2	1390.5	1353.1	1242.0	1156.8	1127.7	1156.8	1242.0
165°	1231.6	1249.2	1316.7	1388.4	1412.3	1385.3	1313.6	1225.4	1191.1	1225.4	1313.6
167.5°	1279.4	1316.7	1369.7	1424.8	1433.1	1415.4	1367.7	1307.4	1276.2	1307.4	1367.7
170°	1356.2	1389.4	1415.4	1439.3	1450.7	1440.3	1401.9	1372.8	1352.1	1372.8	1401.9
172.5°	1417.5	1438.3	1448.7	1464.2	1456.9	1452.8	1433.1	1418.6	1408.2	1418.6	1433.1
175°	1455.9	1460.1	1470.4	1465.3	1471.5	1460.1	1461.1	1467.4	1424.8	1467.4	1461.1
177.5°	1469.4	1476.7	1472.5	1463.2	1464.2	1462.1	1466.3	1469.4	1463.2	1469.4	1466.3
180°	1470.4	1470.4	1470.4	1470.4	1470.4	1470.4	1470.4	1470.4	1470.4	1470.4	1470.4



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	782.3	782.3	782.3	782.3	782.3	782.3
2.5°	779.3	778.3	780.3	782.3	780.2	778.2
5°	775.3	773.3	775.3	778.3	776.2	774.2
7.5°	768.3	767.3	769.3	770.3	770.3	768.2
10°	758.2	757.3	759.3	761.3	761.3	759.2
12.5°	746.2	744.2	746.2	748.2	749.3	749.3
15°	731.2	730.2	732.2	733.2	734.3	735.3
17.5°	717.2	716.2	717.2	717.2	718.3	720.3
20°	698.2	697.2	699.2	699.2	701.3	701.3
22.5°	678.2	678.2	679.2	680.2	680.3	679.3
25°	657.2	658.2	658.2	659.3	657.3	656.3
27.5°	635.2	635.2	636.2	635.3	632.3	628.3
30°	612.2	612.2	614.3	609.3	603.3	600.3
32.5°	586.2	589.2	588.3	581.3	572.3	568.3
35°	556.2	560.2	559.3	549.3	536.3	534.3
37.5°	528.2	534.2	531.3	513.3	500.3	501.3
40°	496.2	503.2	498.2	475.3	465.3	467.3
42.5°	462.2	474.2	464.2	437.2	433.3	435.3
45°	423.2	439.2	425.2	401.2	400.2	403.2
47.5°	383.2	405.2	384.2	367.2	370.2	375.2
50°	344.1	362.2	346.2	334.2	342.2	347.2
52.5°	308.1	315.2	310.2	304.2	316.2	319.2
55°	271.1	265.1	273.2	276.2	290.2	294.2
57.5°	234.1	222.1	236.2	248.2	265.2	267.2
60°	198.1	189.1	199.1	216.2	236.2	241.2
62.5°	164.1	160.1	165.1	186.2	208.2	211.2
65°	137.1	136.1	138.1	156.1	178.1	184.1
67.5°	114.1	115.1	114.1	130.1	149.1	159.1
70°	94.1	98.1	94.1	107.1	122.1	133.1
72.5°	76.0	80.0	77.1	87.1	99.1	112.1
75°	61.0	66.0	61.0	68.0	79.1	92.1
77.5°	49.0	53.0	49.0	52.0	69.2	84.4
80°	37.0	41.0	37.0	43.2	72.8	88.0
82.5°	26.0	28.0	26.0	49.6	88.6	102.0
85°	21.1	17.0	23.2	67.5	112.8	125.2
87.5°	20.2	4.0	34.7	92.6	146.2	154.5
90°	13.1	1.0	52.5	126.0	181.7	189.0
92.5°	7.1	16.6	78.7	161.4	220.3	229.7
95°	5.2	41.5	109.0	201.0	262.0	267.2
97.5°	12.5	73.7	145.4	240.7	302.7	307.9
100°	34.3	113.2	190.0	283.5	341.4	343.4
102.5°	64.4	155.8	232.6	326.1	384.2	398.6
105°	105.9	205.6	278.3	376.9	430.9	445.5
107.5°	152.6	257.5	324.0	422.6	479.7	490.1
110°	202.5	311.5	369.7	467.3	529.6	542.1



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	256.5	367.6	417.4	508.8	582.6	591.9
115°	317.7	419.5	462.1	556.6	625.1	630.3
117.5°	372.8	481.8	507.8	591.9	669.8	670.8
120°	430.9	541.0	553.5	640.7	713.4	721.7
122.5°	490.1	597.1	597.1	682.3	751.8	757.0
125°	545.2	657.3	640.7	713.4	787.1	789.2
127.5°	601.3	718.6	688.5	753.9	821.4	818.3
130°	662.5	776.8	732.1	792.3	853.6	843.2
132.5°	718.6	839.1	776.8	831.8	885.8	892.0
135°	774.7	897.2	815.2	866.1	919.0	917.0
137.5°	828.7	951.2	861.9	893.1	940.8	947.1
140°	881.7	1009.4	903.5	929.4	968.8	969.9
142.5°	937.7	1067.5	949.2	964.7	999.0	992.7
145°	1001.0	1122.6	1007.3	1000.0	1021.8	1008.3
147.5°	1056.1	1170.4	1047.8	1026.0	1051.9	1034.3
150°	1117.4	1219.2	1103.9	1062.3	1077.9	1069.6
152.5°	1173.4	1257.6	1165.1	1090.4	1108.0	1097.6
155°	1228.5	1298.1	1224.3	1118.4	1130.9	1126.7
157.5°	1276.2	1333.4	1269.0	1147.5	1162.0	1153.7
160°	1316.8	1362.5	1319.9	1191.1	1182.8	1182.8
162.5°	1353.1	1390.5	1356.2	1250.3	1205.6	1185.9
165°	1385.3	1412.3	1388.4	1316.7	1249.2	1231.6
167.5°	1415.4	1433.1	1424.8	1369.7	1316.7	1279.4
170°	1440.3	1450.7	1439.3	1415.4	1389.4	1356.2
172.5°	1452.8	1456.9	1464.2	1448.7	1438.3	1417.5
175°	1460.1	1471.5	1465.3	1470.4	1460.1	1455.9
177.5°	1462.1	1464.2	1463.2	1472.5	1476.7	1469.4
180°	1470.4	1470.4	1470.4	1470.4	1470.4	1470.4

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