

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: P392506

Luminaire Tested: **MWL-2-22-17-UNV-L835-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392506  
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-2-22-17-UNV-L835-EDD  
Description: MWL 2FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

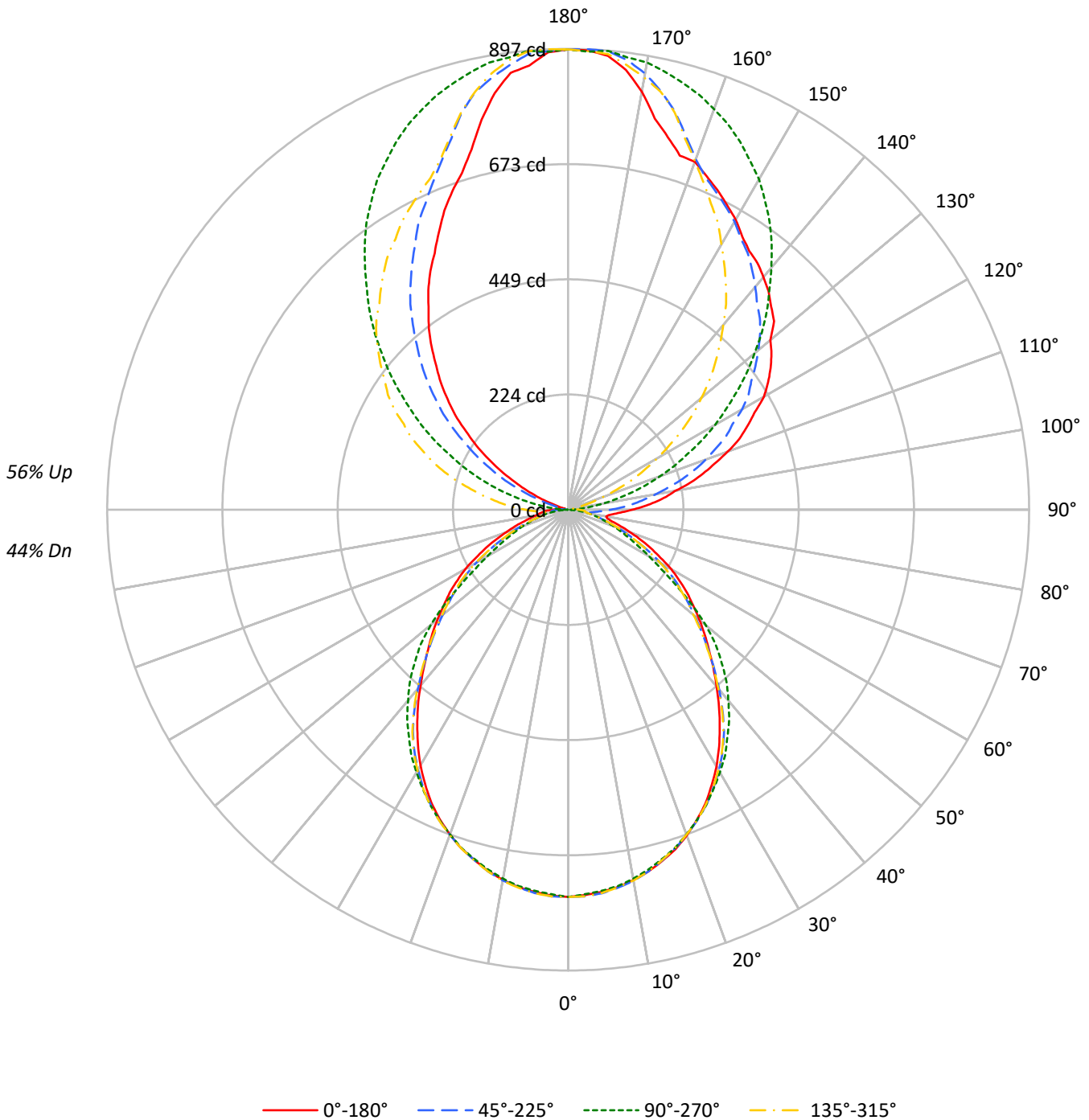
Lumens per Lamp: N/A  
Luminaire Lumens: 3847.0 lumens  
Efficiency: N/A  
Efficacy: 100.7 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 38.2  
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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44				
1	97	92	89	85	88	85	82	79	71	68	66	57	56	54	45	44	43	38				
2	88	81	75	70	81	75	69	65	62	59	55	51	48	46	40	39	37	32				
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32	28				
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	32	30	28	24				
5	68	57	49	43	62	52	45	40	44	39	35	37	33	30	29	27	24	21				
6	63	51	43	37	57	47	40	35	40	35	31	33	29	26	27	24	22	19				
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	25	22	19	17				
8	54	42	34	29	49	39	32	27	33	28	24	28	24	21	23	20	17	15				
9	50	38	31	26	46	36	29	25	30	25	22	25	22	19	21	18	16	14				
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	19	16	14	12				

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

	0°	90°	180°	270°
0°	9735	9735	9735	9735
5°	9511	8878	9511	8878
10°	9258	8134	9258	8134
15°	8962	7426	8938	7426
20°	8621	6777	8596	6777
25°	8203	6170	8180	6170
30°	7687	5582	7653	5582
35°	7072	5008	7046	5008
40°	6447	4443	6411	4443
45°	5860	3862	5831	3862
50°	5367	3196	5338	3196
55°	4905	2367	4882	2367
60°	4397	1719	4387	1719
65°	3737	1271	3737	1271
70°	3072	948	3089	948
75°	2479	670	2532	670
80°	2561	438	2148	438
85°	3967	192	2165	192



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	70.9	1.8
10°-20°	199.0	5.2
20°-30°	291.1	7.6
30°-40°	328.6	8.5
40°-50°	305.1	7.9
50°-60°	239.8	6.2
60°-70°	151.6	3.9
70°-80°	75.9	2.0
80°-90°	48.0	1.2
90°-100°	71.9	1.9
100°-110°	138.1	3.6
110°-120°	237.9	6.2
120°-130°	323.1	8.4
130°-140°	368.5	9.6
140°-150°	368.0	9.6
150°-160°	320.4	8.3
160°-170°	225.3	5.9
170°-180°	83.9	2.2
0°-30°	561.0	14.6
0°-40°	889.6	23.1
0°-60°	1434.5	37.3
0°-90°	1710.0	44.4
90°-120°	447.9	11.6
90°-150°	1507.4	39.2
90°-180°	2137.0	55.5
0°-180°	3847.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	754	754	754	754	754	
5°	747	745	747	745	747	71
15°	708	704	706	704	708	199
25°	632	635	630	635	632	290
35°	514	540	512	540	514	321
45°	388	423	386	423	388	300
55°	283	255	281	255	283	252
65°	177	131	177	131	177	176
75°	88	64	90	64	88	99
85°	90	16	49	16	90	71
90°	124	1	30	1	124	69
95°	169	25	19	25	169	147
105°	272	126	5	126	272	287
115°	384	256	88	256	384	381
125°	481	400	218	400	481	429
135°	559	546	351	546	559	431
145°	614	684	474	684	614	387
155°	687	790	596	790	687	317
165°	750	860	726	860	750	213
175°	887	896	868	896	887	83
180°	896	896	896	896	896	



TEST NUMBER: P392506

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	753.7	753.7	753.7	753.7	753.7	753.7	753.7	753.7	753.7	753.7	753.7
2.5°	750.8	752.1	753.3	751.1	749.2	750.4	753.3	752.1	751.5	752.1	753.3
5°	746.9	748.2	749.5	746.5	744.6	746.5	748.9	748.2	746.9	748.2	748.9
7.5°	740.8	742.1	742.1	740.7	738.8	740.2	741.4	741.4	740.8	741.4	741.4
10°	731.8	733.4	733.4	731.5	729.5	730.8	732.7	732.1	731.8	732.1	732.7
12.5°	721.4	721.8	721.1	719.2	717.6	719.2	721.1	720.5	720.2	720.5	721.1
15°	707.6	707.3	706.6	705.7	704.1	705.1	706.0	706.0	705.7	706.0	706.0
17.5°	693.1	691.8	691.2	691.5	690.6	691.5	690.6	691.2	691.2	691.2	690.6
20°	674.7	675.0	673.8	674.1	672.5	673.5	673.2	673.8	672.8	673.8	673.2
22.5°	653.7	654.7	655.4	654.8	654.1	654.1	654.8	653.4	652.5	653.4	654.8
25°	631.5	632.5	634.8	634.5	634.8	633.8	633.5	630.6	629.7	630.6	633.5
27.5°	604.4	608.3	611.6	612.8	612.6	612.3	610.3	606.5	602.6	606.5	610.3
30°	577.4	580.3	586.1	591.3	590.3	590.0	584.2	578.4	574.8	578.4	584.2
32.5°	546.4	550.3	559.0	566.1	567.8	564.9	557.2	547.8	543.9	547.8	557.2
35°	513.9	515.9	528.4	538.1	540.0	536.2	526.5	513.9	512.0	513.9	526.5
37.5°	482.0	481.1	493.6	511.0	514.6	509.1	491.7	479.1	480.1	479.1	491.7
40°	449.2	447.2	456.9	479.4	484.6	478.2	454.4	444.7	446.7	444.7	454.4
42.5°	418.2	416.3	420.5	446.6	456.6	445.3	418.6	413.8	415.7	413.8	418.6
45°	387.6	384.7	385.6	408.9	422.8	407.6	383.1	382.8	385.7	382.8	383.1
47.5°	360.5	355.7	352.8	369.6	389.9	368.9	350.3	353.8	358.7	353.8	350.3
50°	333.4	328.6	320.9	332.9	348.6	331.6	318.4	326.1	331.6	326.1	318.4
52.5°	306.4	303.5	292.3	298.1	303.2	296.8	290.3	301.0	304.5	301.0	290.3
55°	282.6	278.7	265.2	262.6	255.2	261.3	263.3	276.8	281.3	276.8	263.3
57.5°	256.5	254.6	238.1	226.8	213.7	225.6	236.2	252.6	255.2	252.6	236.2
60°	231.6	226.8	207.5	191.4	181.8	190.7	206.2	225.6	231.1	225.6	206.2
62.5°	202.6	199.7	178.5	158.6	154.0	157.9	177.2	198.5	202.1	198.5	177.2
65°	176.9	171.1	149.9	132.4	130.8	131.8	149.2	170.4	176.9	170.4	149.2
67.5°	152.8	143.1	124.7	109.5	110.5	109.5	124.0	142.4	152.8	142.4	124.0
70°	127.9	117.3	102.8	90.2	94.1	90.2	102.8	117.9	128.6	117.9	102.8
72.5°	107.6	95.0	83.4	73.8	77.1	73.2	83.4	95.7	108.9	95.7	83.4
75°	88.3	75.7	65.5	58.7	63.5	58.7	66.0	76.4	90.2	76.4	66.0
77.5°	77.8	64.7	50.0	47.1	50.9	47.1	50.6	62.8	75.3	62.8	50.6
80°	75.1	62.9	40.2	35.5	39.3	35.5	39.0	52.8	63.0	52.8	39.0
82.5°	79.6	70.1	42.1	24.8	26.8	24.8	34.4	47.3	55.6	47.3	34.4
85°	90.5	82.3	51.0	20.9	16.1	19.6	32.8	43.7	49.4	43.7	32.8
87.5°	105.6	100.8	64.6	26.5	3.9	17.7	28.5	40.1	40.4	40.1	28.5
90°	124.4	120.9	83.5	36.0	0.7	11.9	20.9	31.8	29.6	31.8	20.9
92.5°	147.3	142.7	103.9	49.7	10.2	6.1	17.4	25.7	23.5	25.7	17.4
95°	169.1	166.3	126.4	66.7	25.3	3.5	12.6	19.6	19.3	19.6	12.6
97.5°	192.1	188.9	148.3	88.5	44.9	7.5	8.6	15.1	15.1	15.1	8.6
100°	211.9	210.4	173.0	115.7	68.9	20.9	5.4	11.8	12.8	11.8	5.4
102.5°	244.1	234.5	198.9	141.6	94.8	39.2	10.4	7.0	8.9	7.0	10.4
105°	271.6	262.7	229.8	169.8	125.5	64.8	25.6	8.5	5.4	8.5	25.6
107.5°	298.7	292.5	257.6	197.6	157.1	93.3	47.1	24.4	15.5	24.4	47.1
110°	330.3	322.7	284.8	225.4	190.0	123.7	71.7	44.6	34.5	44.6	71.7



TEST NUMBER: P392506

CATALOG NUMBER: MWL-2-22-17-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	360.7	355.0	310.1	254.5	224.1	156.5	102.1	69.9	60.4	69.9	102.1
115°	384.1	380.9	339.1	281.6	255.7	193.7	135.6	99.6	88.2	99.6	135.6
117.5°	408.8	408.1	360.7	309.5	293.7	227.3	166.6	129.3	117.3	129.3	166.6
120°	439.7	434.7	390.4	337.3	329.7	262.7	200.7	163.5	151.4	163.5	200.7
122.5°	461.3	458.1	415.7	363.8	363.8	298.7	233.6	196.4	183.7	196.4	233.6
125°	480.8	479.5	434.7	390.4	400.5	332.3	270.3	232.3	218.4	232.3	270.3
127.5°	498.5	500.4	459.3	419.5	437.9	366.4	306.3	264.6	250.0	264.6	306.3
130°	513.7	520.0	482.7	446.1	473.2	403.6	338.6	296.8	287.3	296.8	338.6
132.5°	543.4	539.6	506.7	473.2	511.1	437.9	372.7	329.1	318.4	329.1	372.7
135°	558.6	559.9	527.6	496.6	546.5	472.0	405.0	362.0	351.2	362.0	405.0
137.5°	576.9	573.1	544.0	525.1	579.4	504.9	436.5	396.8	379.7	396.8	436.5
140°	591.1	590.5	566.4	550.4	614.9	537.0	469.8	429.3	413.5	429.3	469.8
142.5°	605.0	608.9	588.0	578.1	650.3	571.2	504.6	460.3	445.1	460.3	504.6
145°	614.5	622.7	609.5	613.9	683.7	610.1	534.9	490.0	473.5	490.0	534.9
147.5°	630.3	641.1	625.3	638.6	712.8	643.6	565.2	521.0	506.4	521.0	565.2
150°	651.8	656.9	647.4	672.7	742.5	680.9	596.2	550.7	536.2	550.7	596.2
152.5°	668.9	675.2	664.5	710.0	765.9	715.0	630.3	579.8	562.7	579.8	630.3
155°	686.6	689.1	681.6	746.1	790.5	748.6	657.5	612.0	595.5	612.0	657.5
157.5°	703.0	708.1	699.3	773.2	812.1	777.7	688.5	644.3	629.7	644.3	688.5
160°	720.7	720.7	725.8	803.9	829.8	801.9	721.4	679.6	659.4	679.6	721.4
162.5°	722.7	734.7	761.8	826.0	846.8	824.1	756.8	705.0	687.2	705.0	756.8
165°	750.4	761.2	802.3	845.5	860.1	843.7	800.4	746.6	725.8	746.6	800.4
167.5°	779.5	802.3	834.2	867.7	872.7	862.0	833.0	796.6	777.7	796.6	833.0
170°	826.0	846.5	862.0	876.9	883.8	877.5	853.8	836.5	823.4	836.5	853.8
172.5°	863.2	875.9	882.3	892.1	887.6	885.1	872.7	863.9	857.6	863.9	872.7
175°	886.6	889.2	895.8	892.7	896.5	889.5	890.2	893.6	867.7	893.6	890.2
177.5°	894.9	899.3	897.1	891.5	892.1	890.8	893.3	894.9	891.1	894.9	893.3
180°	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8



TEST NUMBER: P392506

CATALOG NUMBER: MWL-2-22-17-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	753.7	753.7	753.7	753.7	753.7	753.7
2.5°	750.4	749.2	751.1	753.3	752.1	750.8
5°	746.5	744.6	746.5	749.5	748.2	746.9
7.5°	740.2	738.8	740.7	742.1	742.1	740.8
10°	730.8	729.5	731.5	733.4	733.4	731.8
12.5°	719.2	717.6	719.2	721.1	721.8	721.4
15°	705.1	704.1	705.7	706.6	707.3	707.6
17.5°	691.5	690.6	691.5	691.2	691.8	693.1
20°	673.5	672.5	674.1	673.8	675.0	674.7
22.5°	654.1	654.1	654.8	655.4	654.7	653.7
25°	633.8	634.8	634.5	634.8	632.5	631.5
27.5°	612.3	612.6	612.8	611.6	608.3	604.4
30°	590.0	590.3	591.3	586.1	580.3	577.4
32.5°	564.9	567.8	566.1	559.0	550.3	546.4
35°	536.2	540.0	538.1	528.4	515.9	513.9
37.5°	509.1	514.6	511.0	493.6	481.1	482.0
40°	478.2	484.6	479.4	456.9	447.2	449.2
42.5°	445.3	456.6	446.6	420.5	416.3	418.2
45°	407.6	422.8	408.9	385.6	384.7	387.6
47.5°	368.9	389.9	369.6	352.8	355.7	360.5
50°	331.6	348.6	332.9	320.9	328.6	333.4
52.5°	296.8	303.2	298.1	292.3	303.5	306.4
55°	261.3	255.2	262.6	265.2	278.7	282.6
57.5°	225.6	213.7	226.8	238.1	254.6	256.5
60°	190.7	181.8	191.4	207.5	226.8	231.6
62.5°	157.9	154.0	158.6	178.5	199.7	202.6
65°	131.8	130.8	132.4	149.9	171.1	176.9
67.5°	109.5	110.5	109.5	124.7	143.1	152.8
70°	90.2	94.1	90.2	102.8	117.3	127.9
72.5°	73.2	77.1	73.8	83.4	95.0	107.6
75°	58.7	63.5	58.7	65.5	75.7	88.3
77.5°	47.1	50.9	47.1	50.0	64.7	77.8
80°	35.5	39.3	35.5	40.2	62.9	75.1
82.5°	24.8	26.8	24.8	42.1	70.1	79.6
85°	19.6	16.1	20.9	51.0	82.3	90.5
87.5°	17.7	3.9	26.5	64.6	100.8	105.6
90°	11.9	0.7	36.0	83.5	120.9	124.4
92.5°	6.1	10.2	49.7	103.9	142.7	147.3
95°	3.5	25.3	66.7	126.4	166.3	169.1
97.5°	7.5	44.9	88.5	148.3	188.9	192.1
100°	20.9	68.9	115.7	173.0	210.4	211.9
102.5°	39.2	94.8	141.6	198.9	234.5	244.1
105°	64.8	125.5	169.8	229.8	262.7	271.6
107.5°	93.3	157.1	197.6	257.6	292.5	298.7
110°	123.7	190.0	225.4	284.8	322.7	330.3





TEST NUMBER: P392506

CATALOG NUMBER: MWL-2-22-17-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	156.5	224.1	254.5	310.1	355.0	360.7
115°	193.7	255.7	281.6	339.1	380.9	384.1
117.5°	227.3	293.7	309.5	360.7	408.1	408.8
120°	262.7	329.7	337.3	390.4	434.7	439.7
122.5°	298.7	363.8	363.8	415.7	458.1	461.3
125°	332.3	400.5	390.4	434.7	479.5	480.8
127.5°	366.4	437.9	419.5	459.3	500.4	498.5
130°	403.6	473.2	446.1	482.7	520.0	513.7
132.5°	437.9	511.1	473.2	506.7	539.6	543.4
135°	472.0	546.5	496.6	527.6	559.9	558.6
137.5°	504.9	579.4	525.1	544.0	573.1	576.9
140°	537.0	614.9	550.4	566.4	590.5	591.1
142.5°	571.2	650.3	578.1	588.0	608.9	605.0
145°	610.1	683.7	613.9	609.5	622.7	614.5
147.5°	643.6	712.8	638.6	625.3	641.1	630.3
150°	680.9	742.5	672.7	647.4	656.9	651.8
152.5°	715.0	765.9	710.0	664.5	675.2	668.9
155°	748.6	790.5	746.1	681.6	689.1	686.6
157.5°	777.7	812.1	773.2	699.3	708.1	703.0
160°	801.9	829.8	803.9	725.8	720.7	720.7
162.5°	824.1	846.8	826.0	761.8	734.7	722.7
165°	843.7	860.1	845.5	802.3	761.2	750.4
167.5°	862.0	872.7	867.7	834.2	802.3	779.5
170°	877.5	883.8	876.9	862.0	846.5	826.0
172.5°	885.1	887.6	892.1	882.3	875.9	863.2
175°	889.5	896.5	892.7	895.8	889.2	886.6
177.5°	890.8	892.1	891.5	897.1	899.3	894.9
180°	895.8	895.8	895.8	895.8	895.8	895.8

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