

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: P392701

Luminaire Tested: **MWL-4-66-25-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392701  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-4-66-25-UNV-L935-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7739.4 lumens  
Efficiency: N/A  
Efficacy: 70.9 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Semi-Indirect

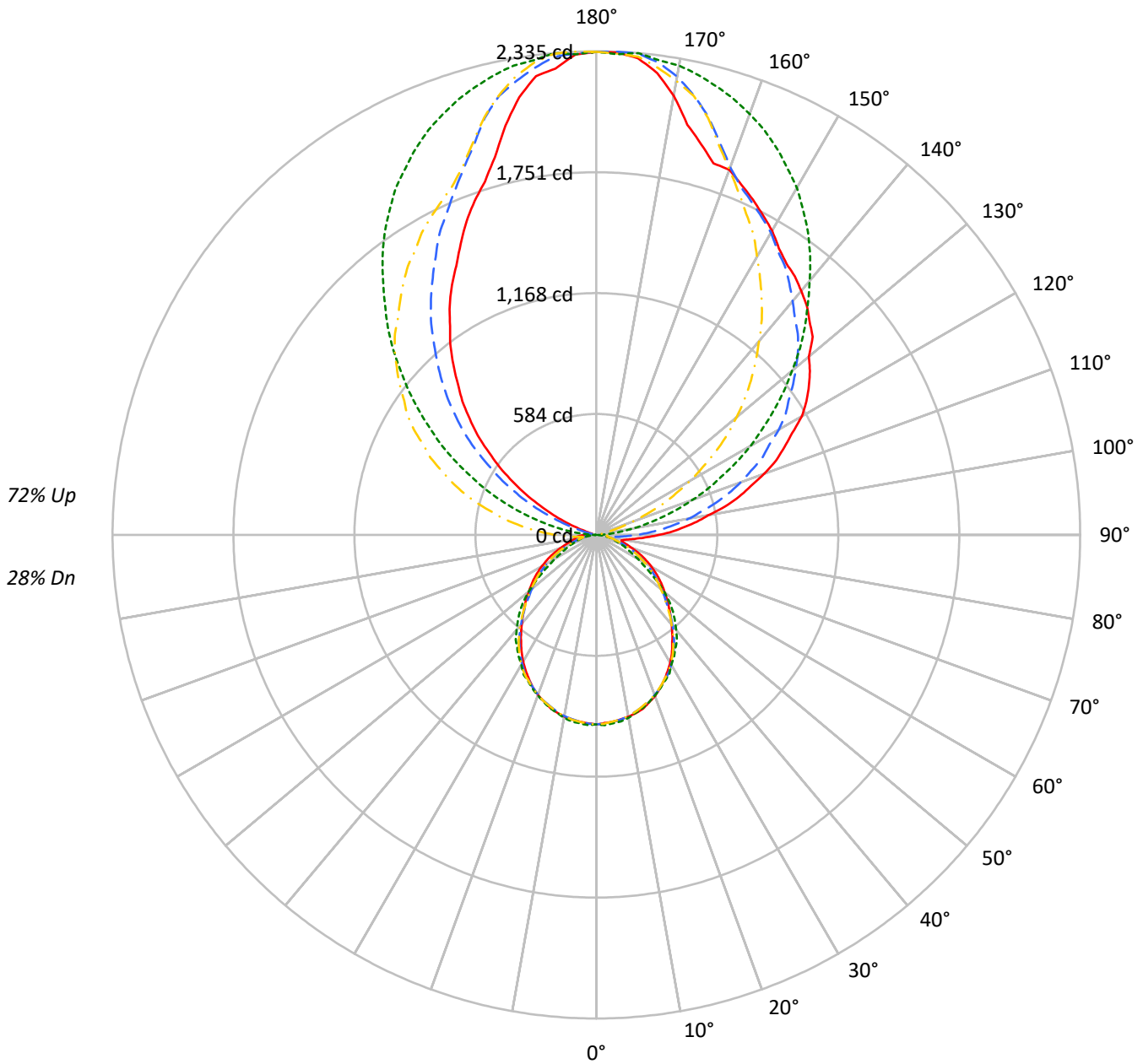
Input Watts (W): 109.181  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	93	89	85	81	83	79	76	73	62	60	58	46	45	44	32	31	30	24
2	85	77	72	67	75	70	65	60	55	51	48	41	39	37	28	27	26	20
3	77	68	61	56	69	61	55	51	48	44	41	36	33	31	25	23	22	17
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	22	21	19	15
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	20	18	17	13
6	60	48	40	35	53	43	37	32	34	30	26	26	23	20	18	16	15	11
7	55	43	36	30	49	39	33	28	31	26	23	24	20	18	17	15	13	10
8	51	39	32	27	46	35	29	25	28	24	20	22	18	16	15	13	12	9
9	47	36	28	24	42	32	26	22	26	21	18	20	17	14	14	12	11	8
10	44	33	26	21	40	30	24	19	24	19	16	18	15	13	13	11	10	8

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

	0°	90°	180°	270°
0°	5907	5907	5907	5907
5°	5817	5442	5817	5442
10°	5738	5000	5738	5000
15°	5651	4564	5619	4564
20°	5483	4157	5451	4157
25°	5259	3787	5225	3787
30°	5014	3423	4968	3423
35°	4690	3087	4654	3087
40°	4383	2743	4331	2743
45°	4095	2384	4053	2384
50°	3841	1951	3796	1951
55°	3613	1466	3582	1466
60°	3348	1090	3330	1090
65°	3039	807	3039	807
70°	2638	607	2662	607
75°	2330	442	2418	442
80°	3163	288	2429	288
85°	6725	131	3098	131



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	86.2	1.1
10°-20°	243.1	3.1
20°-30°	357.3	4.6
30°-40°	406.5	5.3
40°-50°	382.8	4.9
50°-60°	307.3	4.0
60°-70°	204.6	2.6
70°-80°	108.8	1.4
80°-90°	88.9	1.1
90°-100°	176.6	2.3
100°-110°	360.0	4.7
110°-120°	619.1	8.0
120°-130°	841.5	10.9
130°-140°	959.9	12.4
140°-150°	957.6	12.4
150°-160°	834.0	10.8
160°-170°	586.7	7.6
170°-180°	218.6	2.8
0°-30°	686.6	8.9
0°-40°	1093.1	14.1
0°-60°	1783.1	23.0
0°-90°	2185.4	28.2
90°-120°	1155.7	14.9
90°-150°	3914.6	50.6
90°-180°	5554.0	71.8
0°-180°	7739.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	915	915	915	915	915	
5°	906	913	906	913	906	86
15°	869	866	864	866	869	244
25°	774	779	769	779	774	356
35°	638	666	633	666	638	400
45°	495	522	490	522	495	383
55°	369	316	365	316	369	330
65°	243	166	243	166	243	241
75°	130	84	135	84	130	149
85°	199	22	92	22	199	150
90°	301	2	54	2	301	166
95°	423	67	32	67	423	373
105°	713	326	19	326	713	749
115°	1000	665	229	665	1000	993
125°	1253	1043	569	1043	1253	1119
135°	1455	1424	915	1424	1455	1123
145°	1599	1782	1231	1782	1599	1008
155°	1787	2060	1549	2060	1787	824
165°	1953	2242	1889	2242	1953	554
175°	2310	2335	2260	2335	2310	215
180°	2332	2332	2332	2332	2332	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	914.7	914.7	914.7	914.7	914.7	914.7	914.7	914.7	914.7	914.7	914.7
2.5°	908.9	910.5	912.1	923.0	919.7	921.4	912.1	910.5	910.5	910.5	912.1
5°	905.5	907.2	906.1	913.7	912.9	913.7	904.5	907.2	905.5	907.2	904.5
7.5°	898.6	900.3	899.4	906.1	908.6	904.5	897.8	898.6	898.6	898.6	897.8
10°	891.0	891.8	890.1	895.2	896.9	893.5	888.4	888.4	891.0	888.4	888.4
12.5°	881.5	882.5	874.0	879.1	879.1	879.1	874.0	879.1	878.3	879.1	874.0
15°	868.8	862.1	858.8	866.4	865.6	864.7	857.1	858.8	863.8	858.8	857.1
17.5°	847.6	846.9	842.7	846.1	846.1	846.1	841.0	845.2	842.7	845.2	841.0
20°	828.1	826.4	823.2	826.6	824.9	824.9	821.5	823.2	823.2	823.2	821.5
22.5°	801.8	804.4	800.3	802.8	803.8	801.2	798.6	801.1	798.6	801.1	798.6
25°	773.8	774.7	776.4	779.9	779.2	778.3	773.2	769.8	768.9	769.8	773.2
27.5°	743.3	746.7	753.6	759.6	760.5	757.9	750.3	741.7	738.4	741.7	750.3
30°	712.8	712.8	722.1	728.1	724.1	724.8	717.2	707.8	706.2	707.8	717.2
32.5°	677.1	677.1	689.9	701.0	697.7	697.7	685.0	670.6	670.6	670.6	685.0
35°	638.2	640.8	652.6	669.6	665.6	664.7	647.7	635.9	633.3	635.9	647.7
37.5°	601.8	600.1	613.6	633.1	639.2	628.2	608.7	595.1	596.9	595.1	608.7
40°	565.3	561.9	572.1	593.3	598.4	590.1	565.5	555.3	558.6	555.3	565.5
42.5°	530.5	524.6	528.9	551.8	560.3	548.5	524.0	518.0	524.0	518.0	524.0
45°	495.0	488.2	486.5	511.1	522.1	507.8	479.9	483.2	490.0	483.2	479.9
47.5°	464.5	455.1	448.4	462.8	478.0	461.1	441.7	450.2	459.5	450.2	441.7
50°	429.7	422.0	412.7	418.7	425.6	415.4	406.1	415.5	424.7	415.5	406.1
52.5°	400.9	391.5	377.1	378.0	370.4	374.7	372.2	384.9	395.9	384.9	372.2
55°	368.6	360.2	344.0	333.1	316.2	329.8	339.1	355.3	365.4	355.3	339.1
57.5°	338.1	332.1	311.0	289.8	268.6	286.6	306.1	327.2	334.8	327.2	306.1
60°	306.0	300.0	276.3	243.3	230.5	241.6	273.0	296.8	304.3	296.8	273.0
62.5°	275.4	271.2	243.3	205.9	193.3	204.2	239.9	267.9	273.7	267.9	239.9
65°	243.3	236.4	210.1	172.8	166.1	171.2	208.6	234.8	243.3	234.8	208.6
67.5°	211.0	204.2	177.9	145.0	144.1	145.0	176.3	202.6	211.0	202.6	176.3
70°	179.7	169.6	145.7	120.4	120.4	120.4	145.7	171.1	181.3	171.1	145.7
72.5°	152.6	139.9	119.5	100.0	101.6	98.3	119.5	141.4	155.8	141.4	119.5
75°	129.7	113.6	94.1	79.6	83.9	79.6	95.8	115.2	134.6	115.2	95.8
77.5°	123.3	99.8	73.7	62.6	67.7	62.6	75.4	94.8	116.8	94.8	75.4
80°	135.3	106.7	62.6	47.4	51.7	47.4	59.3	80.4	103.9	80.4	59.3
82.5°	161.2	130.3	72.1	33.8	36.4	33.8	52.4	71.0	98.6	71.0	52.4
85°	198.8	169.6	100.9	32.0	22.0	28.7	53.0	69.0	91.6	69.0	53.0
87.5°	246.2	222.9	141.8	50.8	6.8	27.7	47.8	64.7	76.5	64.7	47.8
90°	301.2	278.7	196.1	80.3	1.6	17.7	32.9	46.4	53.9	46.4	32.9
92.5°	365.2	342.8	252.0	125.5	27.2	11.8	26.1	38.0	42.1	38.0	26.1
95°	422.6	411.9	317.7	174.7	66.7	10.0	21.1	29.6	32.0	29.6	21.1
97.5°	489.4	481.8	385.2	231.6	117.9	20.6	21.0	28.6	27.8	28.6	21.0
100°	549.3	546.8	454.2	302.5	180.4	55.2	17.4	29.3	30.1	29.3	17.4
102.5°	638.1	616.7	517.6	370.0	248.1	103.0	26.5	23.3	25.0	23.3	26.5
105°	713.0	688.2	597.6	440.9	325.6	167.3	65.1	25.7	19.2	25.7	65.1
107.5°	779.7	761.5	670.0	513.4	407.9	241.5	121.2	62.6	41.3	62.6	121.2
110°	860.4	840.6	740.8	585.9	493.7	320.6	185.4	115.5	89.1	115.5	185.4



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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°	939.5	924.7	806.8	661.8	582.7	406.3	264.6	181.3	156.6	181.3	264.6
115°	1000.5	992.2	883.4	732.6	665.0	503.6	352.8	258.8	229.1	258.8	352.8
117.5°	1064.8	1063.1	939.5	805.9	763.9	591.8	433.5	336.3	304.9	336.3	433.5
120°	1145.5	1132.4	1016.9	878.5	858.7	684.0	522.6	425.3	394.0	425.3	522.6
122.5°	1201.6	1193.3	1082.9	947.7	947.7	778.0	608.2	510.9	478.0	510.9	608.2
125°	1252.6	1249.3	1132.4	1016.9	1043.3	865.3	703.8	604.9	568.7	604.9	703.8
127.5°	1298.8	1303.8	1196.7	1092.8	1140.6	954.4	797.8	688.9	651.1	688.9	797.8
130°	1338.4	1354.8	1257.6	1162.0	1232.8	1051.5	881.8	773.1	748.3	773.1	881.8
132.5°	1415.8	1405.9	1320.2	1232.8	1331.7	1140.6	970.8	857.1	829.1	857.1	970.8
135°	1455.4	1458.7	1374.7	1293.8	1424.1	1229.5	1054.9	942.7	914.8	942.7	1054.9
137.5°	1503.1	1493.2	1417.5	1368.0	1509.7	1315.3	1137.3	1033.4	989.0	1033.4	1137.3
140°	1537.8	1536.1	1473.6	1434.0	1602.1	1399.4	1221.3	1115.8	1074.7	1115.8	1221.3
142.5°	1574.0	1584.8	1529.5	1506.5	1694.4	1488.3	1312.0	1197.5	1157.1	1197.5	1312.0
145°	1598.8	1620.2	1585.6	1597.1	1781.7	1587.2	1391.1	1274.1	1231.3	1274.1	1391.1
147.5°	1640.0	1668.0	1626.7	1661.3	1857.5	1674.6	1470.2	1354.8	1316.9	1354.8	1470.2
150°	1695.9	1709.2	1684.5	1750.4	1935.0	1771.8	1551.0	1432.3	1394.4	1432.3	1551.0
152.5°	1740.5	1757.0	1729.0	1847.6	1996.0	1860.8	1640.0	1508.1	1463.7	1508.1	1640.0
155°	1786.6	1793.3	1773.5	1941.5	2060.3	1948.2	1710.8	1592.1	1549.3	1592.1	1710.8
157.5°	1829.5	1842.6	1819.6	2012.5	2116.3	2024.0	1791.6	1676.2	1638.3	1676.2	1791.6
160°	1875.7	1875.7	1888.8	2094.9	2162.4	2089.9	1877.2	1768.6	1715.8	1768.6	1877.2
162.5°	1880.6	1911.8	1982.8	2152.5	2206.9	2147.6	1969.7	1834.4	1788.4	1834.4	1969.7
165°	1953.1	1981.1	2088.3	2203.6	2241.5	2198.7	2083.4	1943.3	1888.8	1943.3	2083.4
167.5°	2028.9	2088.3	2174.0	2261.3	2274.5	2246.5	2170.7	2073.5	2024.0	2073.5	2170.7
170°	2152.5	2203.6	2246.5	2282.7	2300.8	2284.4	2225.1	2177.2	2145.9	2177.2	2225.1
172.5°	2249.0	2282.7	2299.3	2322.3	2311.6	2304.2	2274.5	2251.4	2234.1	2251.4	2274.5
175°	2310.0	2317.3	2332.2	2324.0	2334.7	2315.7	2317.3	2328.9	2260.5	2328.9	2317.3
177.5°	2331.3	2343.7	2335.4	2320.6	2323.2	2319.0	2325.6	2332.2	2321.5	2332.2	2325.6
180°	2332.2	2332.2	2332.2	2332.2	2332.2	2332.2	2332.2	2332.2	2332.2	2332.2	2332.2



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	914.7	914.7	914.7	914.7	914.7	914.7
2.5°	921.4	919.7	923.0	912.1	910.5	908.9
5°	913.7	912.9	913.7	906.1	907.2	905.5
7.5°	904.5	908.6	906.1	899.4	900.3	898.6
10°	893.5	896.9	895.2	890.1	891.8	891.0
12.5°	879.1	879.1	879.1	874.0	882.5	881.5
15°	864.7	865.6	866.4	858.8	862.1	868.8
17.5°	846.1	846.1	846.1	842.7	846.9	847.6
20°	824.9	824.9	826.6	823.2	826.4	828.1
22.5°	801.2	803.8	802.8	800.3	804.4	801.8
25°	778.3	779.2	779.9	776.4	774.7	773.8
27.5°	757.9	760.5	759.6	753.6	746.7	743.3
30°	724.8	724.1	728.1	722.1	712.8	712.8
32.5°	697.7	697.7	701.0	689.9	677.1	677.1
35°	664.7	665.6	669.6	652.6	640.8	638.2
37.5°	628.2	639.2	633.1	613.6	600.1	601.8
40°	590.1	598.4	593.3	572.1	561.9	565.3
42.5°	548.5	560.3	551.8	528.9	524.6	530.5
45°	507.8	522.1	511.1	486.5	488.2	495.0
47.5°	461.1	478.0	462.8	448.4	455.1	464.5
50°	415.4	425.6	418.7	412.7	422.0	429.7
52.5°	374.7	370.4	378.0	377.1	391.5	400.9
55°	329.8	316.2	333.1	344.0	360.2	368.6
57.5°	286.6	268.6	289.8	311.0	332.1	338.1
60°	241.6	230.5	243.3	276.3	300.0	306.0
62.5°	204.2	193.3	205.9	243.3	271.2	275.4
65°	171.2	166.1	172.8	210.1	236.4	243.3
67.5°	145.0	144.1	145.0	177.9	204.2	211.0
70°	120.4	120.4	120.4	145.7	169.6	179.7
72.5°	98.3	101.6	100.0	119.5	139.9	152.6
75°	79.6	83.9	79.6	94.1	113.6	129.7
77.5°	62.6	67.7	62.6	73.7	99.8	123.3
80°	47.4	51.7	47.4	62.6	106.7	135.3
82.5°	33.8	36.4	33.8	72.1	130.3	161.2
85°	28.7	22.0	32.0	100.9	169.6	198.8
87.5°	27.7	6.8	50.8	141.8	222.9	246.2
90°	17.7	1.6	80.3	196.1	278.7	301.2
92.5°	11.8	27.2	125.5	252.0	342.8	365.2
95°	10.0	66.7	174.7	317.7	411.9	422.6
97.5°	20.6	117.9	231.6	385.2	481.8	489.4
100°	55.2	180.4	302.5	454.2	546.8	549.3
102.5°	103.0	248.1	370.0	517.6	616.7	638.1
105°	167.3	325.6	440.9	597.6	688.2	713.0
107.5°	241.5	407.9	513.4	670.0	761.5	779.7
110°	320.6	493.7	585.9	740.8	840.6	860.4





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	406.3	582.7	661.8	806.8	924.7	939.5
115°	503.6	665.0	732.6	883.4	992.2	1000.5
117.5°	591.8	763.9	805.9	939.5	1063.1	1064.8
120°	684.0	858.7	878.5	1016.9	1132.4	1145.5
122.5°	778.0	947.7	947.7	1082.9	1193.3	1201.6
125°	865.3	1043.3	1016.9	1132.4	1249.3	1252.6
127.5°	954.4	1140.6	1092.8	1196.7	1303.8	1298.8
130°	1051.5	1232.8	1162.0	1257.6	1354.8	1338.4
132.5°	1140.6	1331.7	1232.8	1320.2	1405.9	1415.8
135°	1229.5	1424.1	1293.8	1374.7	1458.7	1455.4
137.5°	1315.3	1509.7	1368.0	1417.5	1493.2	1503.1
140°	1399.4	1602.1	1434.0	1473.6	1536.1	1537.8
142.5°	1488.3	1694.4	1506.5	1529.5	1584.8	1574.0
145°	1587.2	1781.7	1597.1	1585.6	1620.2	1598.8
147.5°	1674.6	1857.5	1661.3	1626.7	1668.0	1640.0
150°	1771.8	1935.0	1750.4	1684.5	1709.2	1695.9
152.5°	1860.8	1996.0	1847.6	1729.0	1757.0	1740.5
155°	1948.2	2060.3	1941.5	1773.5	1793.3	1786.6
157.5°	2024.0	2116.3	2012.5	1819.6	1842.6	1829.5
160°	2089.9	2162.4	2094.9	1888.8	1875.7	1875.7
162.5°	2147.6	2206.9	2152.5	1982.8	1911.8	1880.6
165°	2198.7	2241.5	2203.6	2088.3	1981.1	1953.1
167.5°	2246.5	2274.5	2261.3	2174.0	2088.3	2028.9
170°	2284.4	2300.8	2282.7	2246.5	2203.6	2152.5
172.5°	2304.2	2311.6	2322.3	2299.3	2282.7	2249.0
175°	2315.7	2334.7	2324.0	2332.2	2317.3	2310.0
177.5°	2319.0	2323.2	2320.6	2335.4	2343.7	2331.3
180°	2332.2	2332.2	2332.2	2332.2	2332.2	2332.2

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