

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: P392702

Luminaire Tested: **MWL-4-66-25-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392702
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-L940-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8314.8 lumens
Efficiency: N/A
Efficacy: 76.2 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

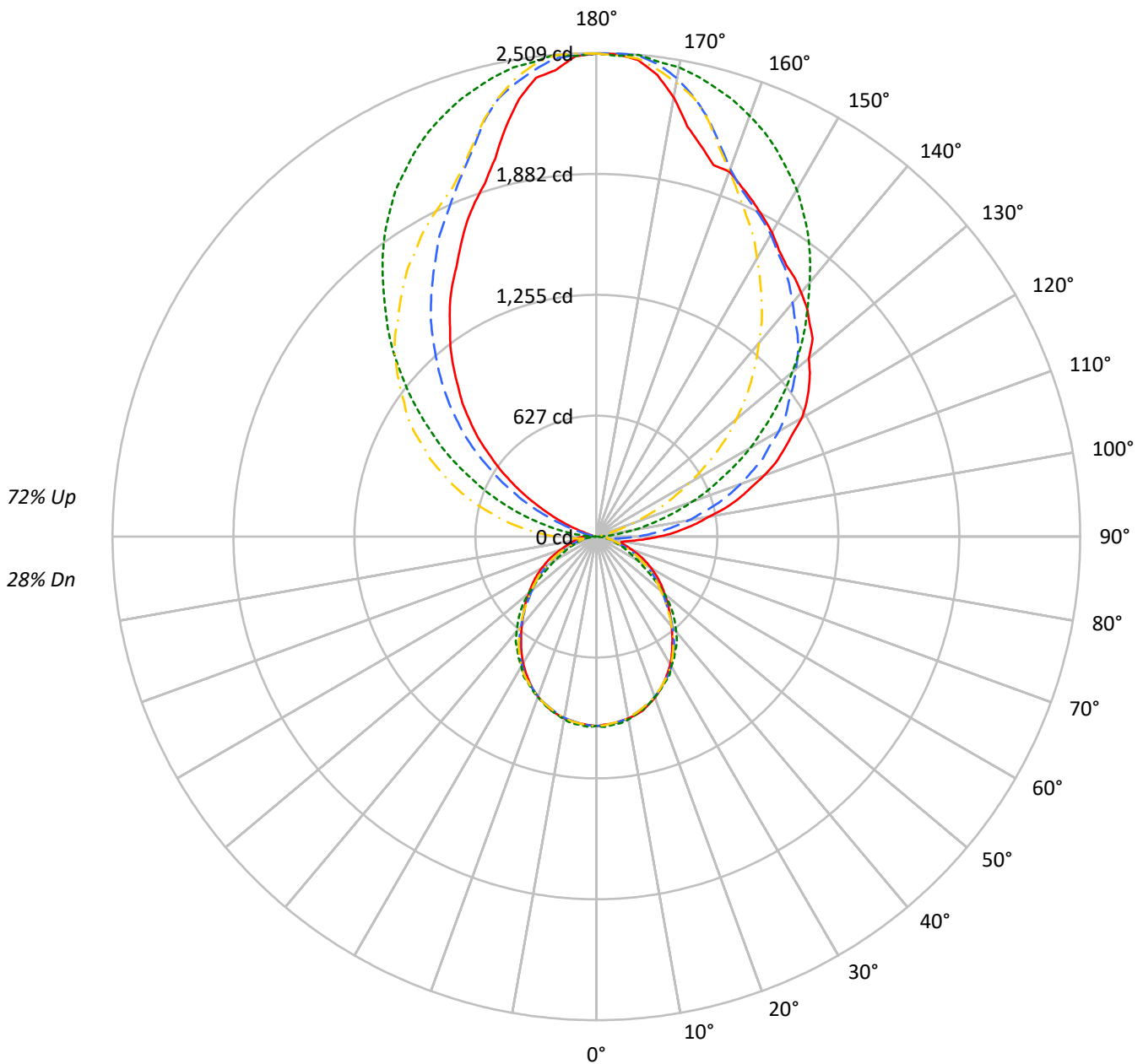
Input Watts (W): 109.181
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	6347	6347	6347	6347
5°	6250	5847	6250	5847
10°	6165	5372	6165	5372
15°	6071	4904	6037	4904
20°	5891	4466	5856	4466
25°	5650	4068	5614	4068
30°	5387	3678	5338	3678
35°	5039	3316	5000	3316
40°	4708	2948	4653	2948
45°	4399	2562	4354	2562
50°	4127	2096	4078	2096
55°	3882	1575	3847	1575
60°	3597	1171	3577	1171
65°	3264	867	3264	867
70°	2835	652	2860	652
75°	2503	475	2598	475
80°	3397	309	2609	309
85°	7225	141	3329	141



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.7	1.1
10°-20°	261.2	3.1
20°-30°	383.9	4.6
30°-40°	436.7	5.3
40°-50°	411.3	4.9
50°-60°	330.1	4.0
60°-70°	219.8	2.6
70°-80°	116.9	1.4
80°-90°	95.5	1.1
90°-100°	189.7	2.3
100°-110°	386.8	4.7
110°-120°	665.1	8.0
120°-130°	904.0	10.9
130°-140°	1031.2	12.4
140°-150°	1028.8	12.4
150°-160°	896.0	10.8
160°-170°	630.4	7.6
170°-180°	234.8	2.8
0°-30°	737.7	8.9
0°-40°	1174.4	14.1
0°-60°	1915.8	23.0
0°-90°	2347.9	28.2
90°-120°	1241.7	14.9
90°-150°	4205.7	50.6
90°-180°	5967.0	71.8
0°-180°	8314.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	983	983	983	983	983	
5°	973	981	973	981	973	92
15°	933	930	928	930	933	262
25°	831	837	826	837	831	382
35°	686	715	680	715	686	429
45°	532	561	526	561	532	412
55°	396	340	392	340	396	354
65°	261	178	261	178	261	258
75°	139	90	145	90	139	160
85°	214	24	98	24	214	161
90°	324	2	58	2	324	179
95°	454	72	34	72	454	400
105°	766	350	21	350	766	805
115°	1075	714	246	714	1075	1067
125°	1346	1121	611	1121	1346	1202
135°	1564	1530	983	1530	1564	1207
145°	1718	1914	1323	1914	1718	1083
155°	1919	2213	1664	2213	1919	885
165°	2098	2408	2029	2408	2098	595
175°	2482	2508	2428	2508	2482	231
180°	2506	2506	2506	2506	2506	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	982.7	982.7	982.7	982.7	982.7	982.7	982.7	982.7	982.7	982.7	982.7
2.5°	976.5	978.2	979.9	991.7	988.1	989.9	979.9	978.2	978.2	978.2	979.9
5°	972.9	974.6	973.5	981.7	980.8	981.7	971.8	974.6	972.9	974.6	971.8
7.5°	965.5	967.2	966.3	973.5	976.2	971.8	964.6	965.5	965.5	965.5	964.6
10°	957.3	958.1	956.3	961.8	963.6	960.0	954.6	954.6	957.3	954.6	954.6
12.5°	947.1	948.1	939.1	944.5	944.5	944.5	939.1	944.5	943.6	944.5	939.1
15°	933.4	926.2	922.7	930.9	930.0	929.0	920.8	922.7	928.1	922.7	920.8
17.5°	910.6	909.8	905.4	909.0	909.0	909.0	903.5	908.1	905.4	908.1	903.5
20°	889.7	887.9	884.4	888.0	886.3	886.3	882.6	884.4	884.4	884.4	882.6
22.5°	861.4	864.2	859.8	862.5	863.5	860.8	858.0	860.7	858.0	860.7	858.0
25°	831.4	832.3	834.2	837.9	837.1	836.2	830.6	827.0	826.1	827.0	830.6
27.5°	798.6	802.2	809.6	816.1	817.1	814.3	806.1	796.9	793.3	796.9	806.1
30°	765.8	765.8	775.8	782.3	777.9	778.7	770.5	760.5	758.8	760.5	770.5
32.5°	727.5	727.5	741.2	753.1	749.6	749.6	735.9	720.5	720.5	720.5	735.9
35°	685.7	688.4	701.2	719.4	715.0	714.1	695.9	683.1	680.4	683.1	695.9
37.5°	646.5	644.7	659.3	680.2	686.7	674.9	654.0	639.4	641.2	639.4	654.0
40°	607.3	603.7	614.6	637.5	643.0	633.9	607.5	596.6	600.2	596.6	607.5
42.5°	570.0	563.6	568.3	592.9	602.0	589.3	562.9	556.5	562.9	556.5	562.9
45°	531.8	524.5	522.7	549.1	561.0	545.6	515.6	519.1	526.4	519.1	515.6
47.5°	499.0	489.0	481.7	497.2	513.6	495.5	474.6	483.6	493.6	483.6	474.6
50°	461.7	453.5	443.4	449.8	457.2	446.3	436.3	446.3	456.3	446.3	436.3
52.5°	430.7	420.7	405.2	406.1	398.0	402.5	399.9	413.5	425.3	413.5	399.9
55°	396.1	386.9	369.6	357.9	339.7	354.3	364.3	381.7	392.5	381.7	364.3
57.5°	363.3	356.9	334.1	311.4	288.6	307.9	328.8	351.6	359.7	351.6	328.8
60°	328.7	322.3	296.8	261.3	247.6	259.6	293.3	318.8	326.9	318.8	293.3
62.5°	295.9	291.4	261.3	221.2	207.6	219.5	257.8	287.8	294.1	287.8	257.8
65°	261.3	254.0	225.8	185.7	178.5	184.0	224.0	252.3	261.3	252.3	224.0
67.5°	226.7	219.4	191.1	155.7	154.8	155.7	189.4	217.7	226.7	217.7	189.4
70°	193.1	182.1	156.6	129.3	129.3	129.3	156.6	183.9	194.8	183.9	156.6
72.5°	163.9	150.2	128.4	107.4	109.2	105.6	128.4	152.0	167.5	152.0	128.4
75°	139.3	122.0	101.0	85.6	90.1	85.6	102.9	123.7	144.6	123.7	102.9
77.5°	132.5	107.2	79.2	67.3	72.8	67.3	81.0	101.9	125.5	101.9	81.0
80°	145.3	114.7	67.2	50.9	55.5	50.9	63.7	86.4	111.6	86.4	63.7
82.5°	173.2	139.9	77.5	36.4	39.1	36.4	56.3	76.3	106.0	76.3	56.3
85°	213.6	182.1	108.3	34.4	23.6	30.9	56.9	74.2	98.4	74.2	56.9
87.5°	264.5	239.4	152.3	54.6	7.3	29.8	51.4	69.5	82.2	69.5	51.4
90°	323.5	299.5	210.6	86.3	1.7	19.0	35.4	49.8	57.9	49.8	35.4
92.5°	392.3	368.4	270.7	134.8	29.2	12.7	28.1	40.8	45.3	40.8	28.1
95°	454.1	442.6	341.4	187.8	71.7	10.8	22.6	31.8	34.4	31.8	22.6
97.5°	525.7	517.7	413.8	248.8	126.6	22.1	22.5	30.8	29.9	30.8	22.5
100°	590.2	587.5	488.0	325.0	193.9	59.3	18.8	31.4	32.3	31.4	18.8
102.5°	685.6	662.6	556.0	397.5	266.5	110.7	28.4	25.1	26.9	25.1	28.4
105°	766.1	739.4	642.0	473.7	349.8	179.8	70.0	27.6	20.6	27.6	70.0
107.5°	837.7	818.2	719.9	551.6	438.2	259.5	130.2	67.3	44.4	67.3	130.2
110°	924.4	903.2	795.9	629.5	530.4	344.4	199.3	124.0	95.7	124.0	199.3



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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°	1009.4	993.5	866.8	711.0	626.0	436.5	284.3	194.8	168.3	194.8	284.3
115°	1074.9	1066.1	949.2	787.1	714.5	541.0	379.0	278.1	246.2	278.1	379.0
117.5°	1144.0	1142.2	1009.4	865.9	820.7	635.8	465.8	361.3	327.6	361.3	465.8
120°	1230.7	1216.6	1092.6	943.9	922.6	734.9	561.4	456.9	423.3	456.9	561.4
122.5°	1290.9	1282.1	1163.4	1018.2	1018.2	835.8	653.4	548.9	513.6	548.9	653.4
125°	1345.8	1342.2	1216.6	1092.6	1120.9	929.7	756.1	649.9	611.0	649.9	756.1
127.5°	1395.3	1400.6	1285.7	1174.0	1225.4	1025.4	857.1	740.2	699.5	740.2	857.1
130°	1437.8	1455.5	1351.2	1248.4	1324.6	1129.8	947.4	830.6	804.0	830.6	947.4
132.5°	1521.0	1510.4	1418.3	1324.6	1430.7	1225.4	1043.0	920.8	890.7	920.8	1043.0
135°	1563.5	1567.1	1476.8	1390.0	1529.9	1321.0	1133.3	1012.9	982.8	1012.9	1133.3
137.5°	1614.8	1604.3	1522.8	1469.7	1621.9	1413.0	1221.9	1110.3	1062.5	1110.3	1221.9
140°	1652.1	1650.3	1583.0	1540.5	1721.2	1503.3	1312.2	1198.8	1154.5	1198.8	1312.2
142.5°	1691.0	1702.6	1643.2	1618.4	1820.3	1599.0	1409.5	1286.6	1243.1	1286.6	1409.5
145°	1717.6	1740.6	1703.4	1715.8	1914.1	1705.2	1494.5	1368.8	1322.8	1368.8	1494.5
147.5°	1761.9	1792.0	1747.7	1784.8	1995.6	1799.1	1579.5	1455.5	1414.8	1455.5	1579.5
150°	1822.0	1836.2	1809.6	1880.5	2078.8	1903.5	1666.2	1538.8	1498.0	1538.8	1666.2
152.5°	1869.9	1887.5	1857.5	1984.9	2144.4	1999.1	1761.9	1620.2	1572.4	1620.2	1761.9
155°	1919.4	1926.5	1905.3	2085.9	2213.4	2093.0	1838.0	1710.5	1664.5	1710.5	1838.0
157.5°	1965.5	1979.6	1954.9	2162.0	2273.6	2174.4	1924.8	1800.8	1760.1	1800.8	1924.8
160°	2015.1	2015.1	2029.2	2250.6	2323.2	2245.2	2016.8	1900.0	1843.3	1900.0	2016.8
162.5°	2020.4	2054.0	2130.2	2312.6	2371.0	2307.3	2116.0	1970.8	1921.2	1970.8	2116.0
165°	2098.3	2128.4	2243.5	2367.4	2408.1	2362.1	2238.2	2087.7	2029.2	2087.7	2238.2
167.5°	2179.7	2243.5	2335.6	2429.4	2443.6	2413.5	2332.1	2227.5	2174.4	2227.5	2332.1
170°	2312.6	2367.4	2413.5	2452.4	2471.9	2454.2	2390.5	2339.1	2305.4	2339.1	2390.5
172.5°	2416.1	2452.4	2470.2	2495.0	2483.5	2475.5	2443.6	2418.8	2400.2	2418.8	2443.6
175°	2481.7	2489.6	2505.5	2496.7	2508.3	2487.8	2489.6	2502.0	2428.5	2502.0	2489.6
177.5°	2504.6	2517.9	2509.1	2493.1	2495.9	2491.4	2498.5	2505.5	2494.0	2505.5	2498.5
180°	2505.5	2505.5	2505.5	2505.5	2505.5	2505.5	2505.5	2505.5	2505.5	2505.5	2505.5



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CATALOG NUMBER: MWL-4-66-25-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	982.7	982.7	982.7	982.7	982.7	982.7
2.5°	989.9	988.1	991.7	979.9	978.2	976.5
5°	981.7	980.8	981.7	973.5	974.6	972.9
7.5°	971.8	976.2	973.5	966.3	967.2	965.5
10°	960.0	963.6	961.8	956.3	958.1	957.3
12.5°	944.5	944.5	944.5	939.1	948.1	947.1
15°	929.0	930.0	930.9	922.7	926.2	933.4
17.5°	909.0	909.0	909.0	905.4	909.8	910.6
20°	886.3	886.3	888.0	884.4	887.9	889.7
22.5°	860.8	863.5	862.5	859.8	864.2	861.4
25°	836.2	837.1	837.9	834.2	832.3	831.4
27.5°	814.3	817.1	816.1	809.6	802.2	798.6
30°	778.7	777.9	782.3	775.8	765.8	765.8
32.5°	749.6	749.6	753.1	741.2	727.5	727.5
35°	714.1	715.0	719.4	701.2	688.4	685.7
37.5°	674.9	686.7	680.2	659.3	644.7	646.5
40°	633.9	643.0	637.5	614.6	603.7	607.3
42.5°	589.3	602.0	592.9	568.3	563.6	570.0
45°	545.6	561.0	549.1	522.7	524.5	531.8
47.5°	495.5	513.6	497.2	481.7	489.0	499.0
50°	446.3	457.2	449.8	443.4	453.5	461.7
52.5°	402.5	398.0	406.1	405.2	420.7	430.7
55°	354.3	339.7	357.9	369.6	386.9	396.1
57.5°	307.9	288.6	311.4	334.1	356.9	363.3
60°	259.6	247.6	261.3	296.8	322.3	328.7
62.5°	219.5	207.6	221.2	261.3	291.4	295.9
65°	184.0	178.5	185.7	225.8	254.0	261.3
67.5°	155.7	154.8	155.7	191.1	219.4	226.7
70°	129.3	129.3	129.3	156.6	182.1	193.1
72.5°	105.6	109.2	107.4	128.4	150.2	163.9
75°	85.6	90.1	85.6	101.0	122.0	139.3
77.5°	67.3	72.8	67.3	79.2	107.2	132.5
80°	50.9	55.5	50.9	67.2	114.7	145.3
82.5°	36.4	39.1	36.4	77.5	139.9	173.2
85°	30.9	23.6	34.4	108.3	182.1	213.6
87.5°	29.8	7.3	54.6	152.3	239.4	264.5
90°	19.0	1.7	86.3	210.6	299.5	323.5
92.5°	12.7	29.2	134.8	270.7	368.4	392.3
95°	10.8	71.7	187.8	341.4	442.6	454.1
97.5°	22.1	126.6	248.8	413.8	517.7	525.7
100°	59.3	193.9	325.0	488.0	587.5	590.2
102.5°	110.7	266.5	397.5	556.0	662.6	685.6
105°	179.8	349.8	473.7	642.0	739.4	766.1
107.5°	259.5	438.2	551.6	719.9	818.2	837.7
110°	344.4	530.4	629.5	795.9	903.2	924.4



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	436.5	626.0	711.0	866.8	993.5	1009.4
115°	541.0	714.5	787.1	949.2	1066.1	1074.9
117.5°	635.8	820.7	865.9	1009.4	1142.2	1144.0
120°	734.9	922.6	943.9	1092.6	1216.6	1230.7
122.5°	835.8	1018.2	1018.2	1163.4	1282.1	1290.9
125°	929.7	1120.9	1092.6	1216.6	1342.2	1345.8
127.5°	1025.4	1225.4	1174.0	1285.7	1400.6	1395.3
130°	1129.8	1324.6	1248.4	1351.2	1455.5	1437.8
132.5°	1225.4	1430.7	1324.6	1418.3	1510.4	1521.0
135°	1321.0	1529.9	1390.0	1476.8	1567.1	1563.5
137.5°	1413.0	1621.9	1469.7	1522.8	1604.3	1614.8
140°	1503.3	1721.2	1540.5	1583.0	1650.3	1652.1
142.5°	1599.0	1820.3	1618.4	1643.2	1702.6	1691.0
145°	1705.2	1914.1	1715.8	1703.4	1740.6	1717.6
147.5°	1799.1	1995.6	1784.8	1747.7	1792.0	1761.9
150°	1903.5	2078.8	1880.5	1809.6	1836.2	1822.0
152.5°	1999.1	2144.4	1984.9	1857.5	1887.5	1869.9
155°	2093.0	2213.4	2085.9	1905.3	1926.5	1919.4
157.5°	2174.4	2273.6	2162.0	1954.9	1979.6	1965.5
160°	2245.2	2323.2	2250.6	2029.2	2015.1	2015.1
162.5°	2307.3	2371.0	2312.6	2130.2	2054.0	2020.4
165°	2362.1	2408.1	2367.4	2243.5	2128.4	2098.3
167.5°	2413.5	2443.6	2429.4	2335.6	2243.5	2179.7
170°	2454.2	2471.9	2452.4	2413.5	2367.4	2312.6
172.5°	2475.5	2483.5	2495.0	2470.2	2452.4	2416.1
175°	2487.8	2508.3	2496.7	2505.5	2489.6	2481.7
177.5°	2491.4	2495.9	2493.1	2509.1	2517.9	2504.6
180°	2505.5	2505.5	2505.5	2505.5	2505.5	2505.5

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