

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: P392617

Luminaire Tested: **MWL-3-53-25-UNV-L835-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392617
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-53-25-UNV-L835-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

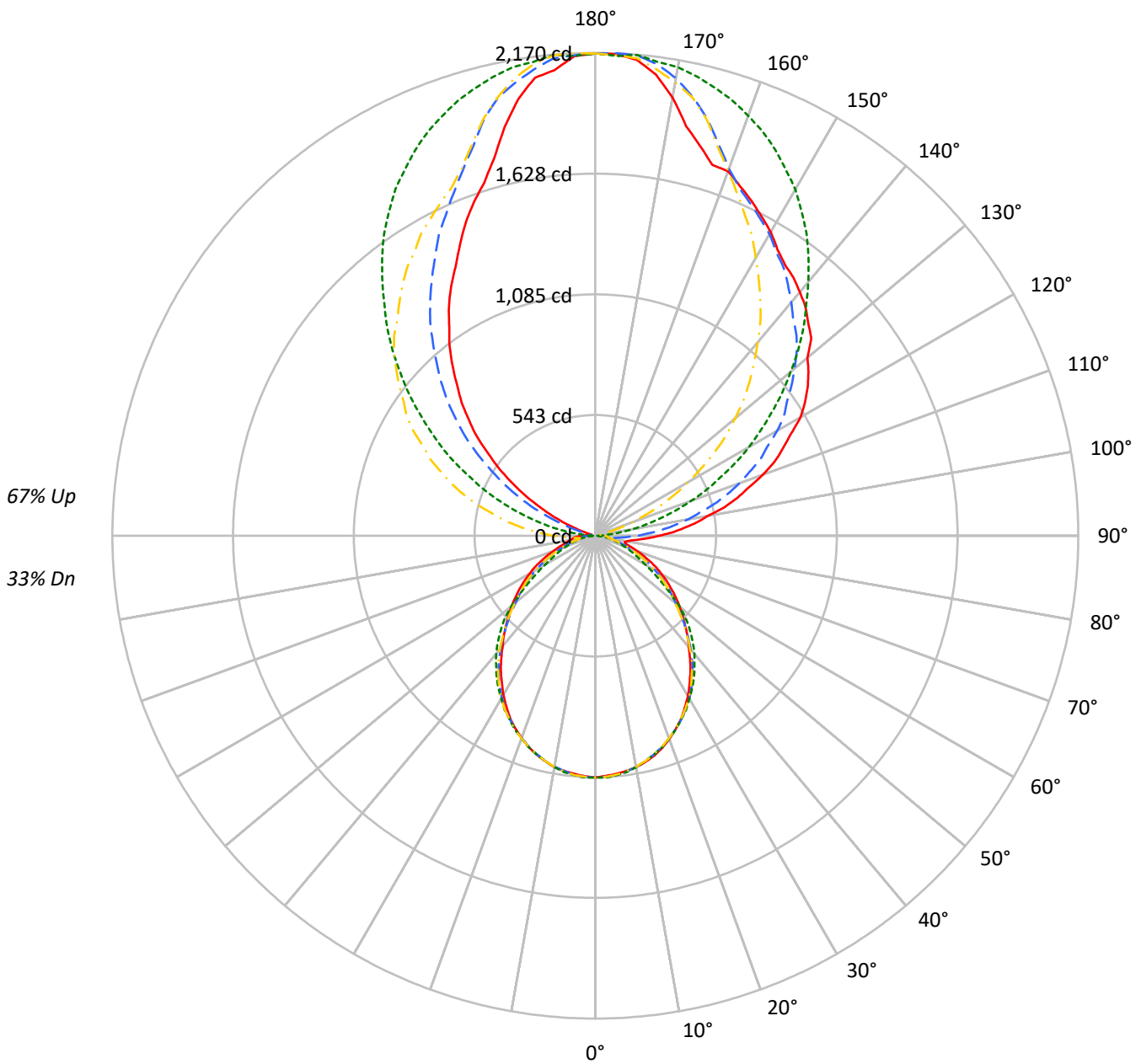
Lumens per Lamp: N/A
Luminaire Lumens: 7678.0 lumens
Efficiency: N/A
Efficacy: 82.0 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.16 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 93.6
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		56	56	56		40	40	40	33
1	94	90	86	82	84	81	78	75	65	62	60		49	48	47		36	35	34	28
2	86	79	73	68	77	71	66	62	57	53	50		44	41	39		32	30	29	23
3	78	69	62	57	70	63	57	52	50	46	42		39	36	33		28	26	25	20
4	72	61	54	48	64	56	49	44	45	40	36		35	31	29		25	23	22	17
5	66	55	47	41	59	50	43	38	40	35	31		31	28	25		23	21	19	15
6	61	49	41	36	54	44	38	33	36	31	27		28	25	22		21	18	17	14
7	56	44	36	31	50	40	33	29	33	28	24		26	22	19		19	17	15	12
8	52	40	33	27	47	36	30	25	30	25	21		23	20	17		17	15	13	11
9	48	36	29	24	43	33	27	23	27	22	19		22	18	16		16	14	12	10
10	45	33	26	22	41	30	24	20	25	20	17		20	16	14		15	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9359	9359	9359	9359
5°	9176	8589	9176	8589
10°	9011	7853	9011	7853
15°	8794	7158	8754	7158
20°	8479	6518	8438	6518
25°	8117	5905	8076	5905
30°	7658	5329	7601	5329
35°	7137	4784	7092	4784
40°	6579	4234	6518	4234
45°	6098	3661	6050	3661
50°	5675	2999	5622	2999
55°	5230	2235	5192	2235
60°	4751	1640	4730	1640
65°	4223	1242	4223	1242
70°	3601	918	3630	918
75°	3147	667	3247	667
80°	3983	436	3176	436
85°	7499	192	3696	192



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.2	1.3
10°-20°	286.8	3.7
20°-30°	418.8	5.5
30°-40°	473.4	6.2
40°-50°	443.1	5.8
50°-60°	350.1	4.6
60°-70°	229.2	3.0
70°-80°	120.6	1.6
80°-90°	90.9	1.2
90°-100°	167.0	2.2
100°-110°	334.5	4.4
110°-120°	575.2	7.5
120°-130°	781.6	10.2
130°-140°	891.8	11.6
140°-150°	889.8	11.6
150°-160°	774.8	10.1
160°-170°	545.2	7.1
170°-180°	203.1	2.6
0°-30°	807.8	10.5
0°-40°	1281.2	16.7
0°-60°	2074.4	27.0
0°-90°	2515.1	32.8
90°-120°	1076.8	14.0
90°-150°	3639.9	47.4
90°-180°	5163.0	67.2
0°-180°	7678.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1087	1087	1087	1087	1087	
5°	1074	1081	1074	1081	1074	102
15°	1023	1018	1018	1018	1023	288
25°	910	911	905	911	910	417
35°	745	774	740	774	745	465
45°	570	601	566	601	570	441
55°	418	361	414	361	418	374
65°	269	192	269	192	269	267
75°	144	95	148	95	144	163
85°	196	24	97	24	196	150
90°	287	2	57	2	287	159
95°	400	62	37	62	400	351
105°	661	303	17	303	661	696
115°	930	618	213	618	930	923
125°	1164	969	529	969	1164	1040
135°	1352	1322	850	1322	1352	1044
145°	1486	1655	1144	1655	1486	937
155°	1660	1914	1440	1914	1660	766
165°	1815	2083	1755	2083	1815	515
175°	2146	2169	2100	2169	2146	200
180°	2167	2167	2167	2167	2167	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1086.9	1086.9	1086.9	1086.9	1086.9	1086.9	1086.9	1086.9	1086.9	1086.9	1086.9
2.5°	1080.3	1085.3	1084.5	1087.0	1088.0	1085.5	1084.5	1085.3	1081.9	1085.3	1084.5
5°	1074.4	1079.4	1079.6	1079.6	1080.6	1079.6	1078.0	1079.4	1074.4	1079.4	1078.0
7.5°	1066.1	1070.2	1068.2	1070.8	1071.7	1069.2	1066.6	1068.6	1066.1	1068.6	1066.6
10°	1055.8	1056.4	1055.4	1056.4	1056.4	1054.8	1053.9	1053.4	1055.8	1053.4	1053.9
12.5°	1041.3	1038.7	1037.1	1039.1	1037.6	1039.1	1037.1	1035.7	1038.1	1035.7	1037.1
15°	1023.1	1020.0	1017.5	1019.5	1018.0	1018.0	1016.0	1017.0	1018.5	1017.0	1016.0
17.5°	999.5	996.5	994.9	996.4	996.4	996.4	993.4	994.9	994.9	994.9	993.4
20°	972.0	972.5	969.3	971.8	970.2	970.2	967.9	969.3	967.4	969.3	967.9
22.5°	941.0	943.0	941.8	943.3	942.7	941.7	940.3	939.9	937.9	939.9	940.3
25°	909.6	908.6	911.9	914.8	911.3	913.2	908.9	904.0	905.0	904.0	908.9
27.5°	870.3	876.2	879.5	883.8	881.8	882.4	876.5	871.5	865.6	871.5	876.5
30°	831.9	834.9	844.7	850.0	845.4	847.0	840.1	830.3	825.7	830.3	840.1
32.5°	787.7	793.6	804.4	813.7	810.6	810.6	799.8	787.4	781.5	787.4	799.8
35°	744.9	746.8	760.6	774.3	773.7	769.7	756.0	742.2	740.2	742.2	756.0
37.5°	698.7	700.6	716.4	733.1	732.0	728.5	711.7	696.0	694.1	696.0	711.7
40°	653.5	654.4	667.2	688.3	692.7	685.2	661.1	648.4	647.4	648.4	661.1
42.5°	614.2	607.3	615.5	641.1	648.5	638.0	611.0	601.2	608.1	601.2	611.0
45°	570.3	562.5	567.4	591.0	601.3	587.9	561.3	557.9	565.8	557.9	561.3
47.5°	531.0	521.2	520.2	536.4	552.1	534.8	514.1	516.7	526.5	516.7	514.1
50°	493.7	481.9	473.0	484.3	490.6	481.3	466.9	475.8	489.1	475.8	466.9
52.5°	456.3	444.5	430.3	433.2	424.8	430.2	425.7	438.4	451.8	438.4	425.7
55°	417.5	407.7	391.0	380.5	361.4	377.5	386.3	403.0	414.4	403.0	386.3
57.5°	381.1	373.3	352.6	330.4	307.3	327.4	348.0	368.6	378.1	368.6	348.0
60°	342.2	338.3	310.8	278.8	260.1	277.2	307.7	335.2	340.7	335.2	307.7
62.5°	307.8	300.9	271.4	234.6	221.2	233.0	268.4	297.9	306.3	297.9	268.4
65°	269.0	264.1	230.7	198.2	191.7	196.7	229.1	262.5	269.0	262.5	229.1
67.5°	234.6	224.8	197.2	162.3	162.3	162.3	195.7	223.2	234.6	223.2	195.7
70°	197.6	187.8	162.3	135.7	136.7	135.7	162.3	189.4	199.2	189.4	162.3
72.5°	169.1	154.4	132.8	111.2	113.6	109.7	132.8	156.0	172.2	156.0	132.8
75°	143.6	125.9	104.8	90.0	94.9	90.0	106.2	127.5	148.2	127.5	106.2
77.5°	134.3	107.4	82.2	70.4	76.3	70.4	83.6	102.9	128.1	102.9	83.6
80°	143.6	111.3	69.0	53.7	58.6	53.7	65.9	86.7	114.5	86.7	65.9
82.5°	161.7	132.1	75.6	38.9	40.9	38.9	57.2	77.0	103.5	77.0	57.2
85°	196.4	167.3	100.4	33.6	24.2	30.6	56.0	73.8	96.8	73.8	56.0
87.5°	238.6	216.0	138.0	50.7	6.9	29.3	50.7	69.1	81.0	69.1	50.7
90°	286.6	267.3	187.2	76.0	1.6	17.8	35.6	51.4	56.9	51.4	35.6
92.5°	345.2	324.8	237.9	117.5	25.5	11.9	28.2	41.5	45.0	41.5	28.2
95°	399.9	388.8	297.9	161.2	62.2	8.1	22.3	33.5	37.1	33.5	22.3
97.5°	460.4	450.8	358.4	215.3	109.7	19.4	20.0	29.7	31.6	29.7	20.0
100°	513.2	509.8	421.4	281.2	167.9	51.5	15.6	29.0	31.0	29.0	15.6
102.5°	594.7	573.4	480.3	344.0	230.7	95.9	24.0	22.1	25.1	22.1	24.0
105°	661.2	636.9	555.3	409.8	302.6	155.7	60.7	21.3	16.6	21.3	60.7
107.5°	723.1	707.9	622.7	477.2	379.2	224.6	112.7	58.6	37.1	58.6	112.7
110°	799.7	781.3	688.5	544.6	458.9	298.1	172.5	107.6	83.1	107.6	172.5



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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°	873.2	859.5	749.8	615.0	541.5	377.7	246.0	168.8	145.9	168.8	246.0
115°	929.9	922.3	820.2	680.9	618.1	468.0	327.2	240.9	213.3	240.9	327.2
117.5°	989.6	988.1	872.2	748.2	710.0	549.2	402.2	312.8	283.7	312.8	402.2
120°	1064.7	1052.4	944.3	815.6	797.2	634.9	484.8	395.5	366.4	395.5	484.8
122.5°	1116.8	1109.1	1005.5	879.9	879.9	722.2	564.5	475.1	444.5	475.1	564.5
125°	1164.2	1161.1	1051.4	944.3	968.7	803.3	653.3	562.4	528.7	562.4	653.3
127.5°	1207.1	1211.7	1111.2	1014.6	1059.1	886.1	740.5	640.5	605.3	640.5	740.5
130°	1243.8	1259.2	1167.8	1079.0	1144.9	976.4	818.7	718.6	695.6	718.6	818.7
132.5°	1315.8	1306.6	1226.9	1144.9	1236.7	1059.1	902.3	796.7	770.6	796.7	902.3
135°	1352.5	1355.6	1277.5	1201.5	1322.5	1141.7	980.4	876.3	850.3	876.3	980.4
137.5°	1397.0	1387.7	1316.4	1270.4	1402.1	1221.4	1056.0	960.5	919.2	960.5	1056.0
140°	1429.1	1427.5	1369.3	1332.6	1487.9	1300.4	1135.1	1037.1	998.8	1037.1	1135.1
142.5°	1462.8	1471.9	1421.4	1399.0	1573.6	1382.2	1219.3	1112.1	1075.4	1112.1	1219.3
145°	1485.7	1505.6	1473.5	1484.2	1654.7	1475.0	1292.8	1184.1	1144.3	1184.1	1292.8
147.5°	1524.0	1550.1	1511.7	1544.0	1725.2	1556.2	1366.3	1259.2	1223.9	1259.2	1366.3
150°	1576.1	1588.3	1565.4	1626.6	1797.1	1646.5	1441.4	1331.1	1295.9	1331.1	1441.4
152.5°	1617.4	1632.7	1605.7	1716.0	1853.8	1728.3	1523.0	1401.6	1360.2	1401.6	1523.0
155°	1660.3	1666.4	1648.1	1803.2	1913.5	1809.4	1589.9	1479.6	1439.8	1479.6	1589.9
157.5°	1700.1	1712.3	1690.9	1869.1	1965.6	1879.8	1664.9	1557.7	1522.5	1557.7	1664.9
160°	1743.0	1743.0	1755.3	1946.6	2008.4	1942.0	1744.6	1643.4	1594.5	1643.4	1744.6
162.5°	1747.6	1775.7	1842.6	2000.3	2050.8	1995.7	1830.3	1703.8	1661.8	1703.8	1830.3
165°	1814.9	1840.0	1940.5	2047.8	2082.9	2043.1	1935.9	1804.8	1755.3	1804.8	1935.9
167.5°	1885.4	1939.6	2020.1	2101.3	2113.5	2087.6	2017.1	1925.8	1880.8	1925.8	2017.1
170°	1999.3	2046.8	2087.6	2121.2	2138.1	2122.7	2067.6	2022.2	1993.1	2022.2	2067.6
172.5°	2089.6	2120.2	2136.5	2157.9	2147.2	2141.1	2113.5	2091.1	2075.9	2091.1	2113.5
175°	2146.2	2152.4	2167.2	2159.5	2168.6	2151.8	2153.4	2163.1	2100.3	2163.1	2153.4
177.5°	2166.2	2176.9	2170.2	2156.5	2157.9	2154.9	2161.0	2166.2	2157.0	2166.2	2161.0
180°	2167.2	2167.2	2167.2	2167.2	2167.2	2167.2	2167.2	2167.2	2167.2	2167.2	2167.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1086.9	1086.9	1086.9	1086.9	1086.9	1086.9
2.5°	1085.5	1088.0	1087.0	1084.5	1085.3	1080.3
5°	1079.6	1080.6	1079.6	1079.6	1079.4	1074.4
7.5°	1069.2	1071.7	1070.8	1068.2	1070.2	1066.1
10°	1054.8	1056.4	1056.4	1055.4	1056.4	1055.8
12.5°	1039.1	1037.6	1039.1	1037.1	1038.7	1041.3
15°	1018.0	1018.0	1019.5	1017.5	1020.0	1023.1
17.5°	996.4	996.4	996.4	994.9	996.5	999.5
20°	970.2	970.2	971.8	969.3	972.5	972.0
22.5°	941.7	942.7	943.3	941.8	943.0	941.0
25°	913.2	911.3	914.8	911.9	908.6	909.6
27.5°	882.4	881.8	883.8	879.5	876.2	870.3
30°	847.0	845.4	850.0	844.7	834.9	831.9
32.5°	810.6	810.6	813.7	804.4	793.6	787.7
35°	769.7	773.7	774.3	760.6	746.8	744.9
37.5°	728.5	732.0	733.1	716.4	700.6	698.7
40°	685.2	692.7	688.3	667.2	654.4	653.5
42.5°	638.0	648.5	641.1	615.5	607.3	614.2
45°	587.9	601.3	591.0	567.4	562.5	570.3
47.5°	534.8	552.1	536.4	520.2	521.2	531.0
50°	481.3	490.6	484.3	473.0	481.9	493.7
52.5°	430.2	424.8	433.2	430.3	444.5	456.3
55°	377.5	361.4	380.5	391.0	407.7	417.5
57.5°	327.4	307.3	330.4	352.6	373.3	381.1
60°	277.2	260.1	278.8	310.8	338.3	342.2
62.5°	233.0	221.2	234.6	271.4	300.9	307.8
65°	196.7	191.7	198.2	230.7	264.1	269.0
67.5°	162.3	162.3	162.3	197.2	224.8	234.6
70°	135.7	136.7	135.7	162.3	187.8	197.6
72.5°	109.7	113.6	111.2	132.8	154.4	169.1
75°	90.0	94.9	90.0	104.8	125.9	143.6
77.5°	70.4	76.3	70.4	82.2	107.4	134.3
80°	53.7	58.6	53.7	69.0	111.3	143.6
82.5°	38.9	40.9	38.9	75.6	132.1	161.7
85°	30.6	24.2	33.6	100.4	167.3	196.4
87.5°	29.3	6.9	50.7	138.0	216.0	238.6
90°	17.8	1.6	76.0	187.2	267.3	286.6
92.5°	11.9	25.5	117.5	237.9	324.8	345.2
95°	8.1	62.2	161.2	297.9	388.8	399.9
97.5°	19.4	109.7	215.3	358.4	450.8	460.4
100°	51.5	167.9	281.2	421.4	509.8	513.2
102.5°	95.9	230.7	344.0	480.3	573.4	594.7
105°	155.7	302.6	409.8	555.3	636.9	661.2
107.5°	224.6	379.2	477.2	622.7	707.9	723.1
110°	298.1	458.9	544.6	688.5	781.3	799.7



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	377.7	541.5	615.0	749.8	859.5	873.2
115°	468.0	618.1	680.9	820.2	922.3	929.9
117.5°	549.2	710.0	748.2	872.2	988.1	989.6
120°	634.9	797.2	815.6	944.3	1052.4	1064.7
122.5°	722.2	879.9	879.9	1005.5	1109.1	1116.8
125°	803.3	968.7	944.3	1051.4	1161.1	1164.2
127.5°	886.1	1059.1	1014.6	1111.2	1211.7	1207.1
130°	976.4	1144.9	1079.0	1167.8	1259.2	1243.8
132.5°	1059.1	1236.7	1144.9	1226.9	1306.6	1315.8
135°	1141.7	1322.5	1201.5	1277.5	1355.6	1352.5
137.5°	1221.4	1402.1	1270.4	1316.4	1387.7	1397.0
140°	1300.4	1487.9	1332.6	1369.3	1427.5	1429.1
142.5°	1382.2	1573.6	1399.0	1421.4	1471.9	1462.8
145°	1475.0	1654.7	1484.2	1473.5	1505.6	1485.7
147.5°	1556.2	1725.2	1544.0	1511.7	1550.1	1524.0
150°	1646.5	1797.1	1626.6	1565.4	1588.3	1576.1
152.5°	1728.3	1853.8	1716.0	1605.7	1632.7	1617.4
155°	1809.4	1913.5	1803.2	1648.1	1666.4	1660.3
157.5°	1879.8	1965.6	1869.1	1690.9	1712.3	1700.1
160°	1942.0	2008.4	1946.6	1755.3	1743.0	1743.0
162.5°	1995.7	2050.8	2000.3	1842.6	1775.7	1747.6
165°	2043.1	2082.9	2047.8	1940.5	1840.0	1814.9
167.5°	2087.6	2113.5	2101.3	2020.1	1939.6	1885.4
170°	2122.7	2138.1	2121.2	2087.6	2046.8	1999.3
172.5°	2141.1	2147.2	2157.9	2136.5	2120.2	2089.6
175°	2151.8	2168.6	2159.5	2167.2	2152.4	2146.2
177.5°	2154.9	2157.9	2156.5	2170.2	2176.9	2166.2
180°	2167.2	2167.2	2167.2	2167.2	2167.2	2167.2

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