

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: P392612

Luminaire Tested: **MWL-3-44-28-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392612
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-3-44-28-UNV-L940-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

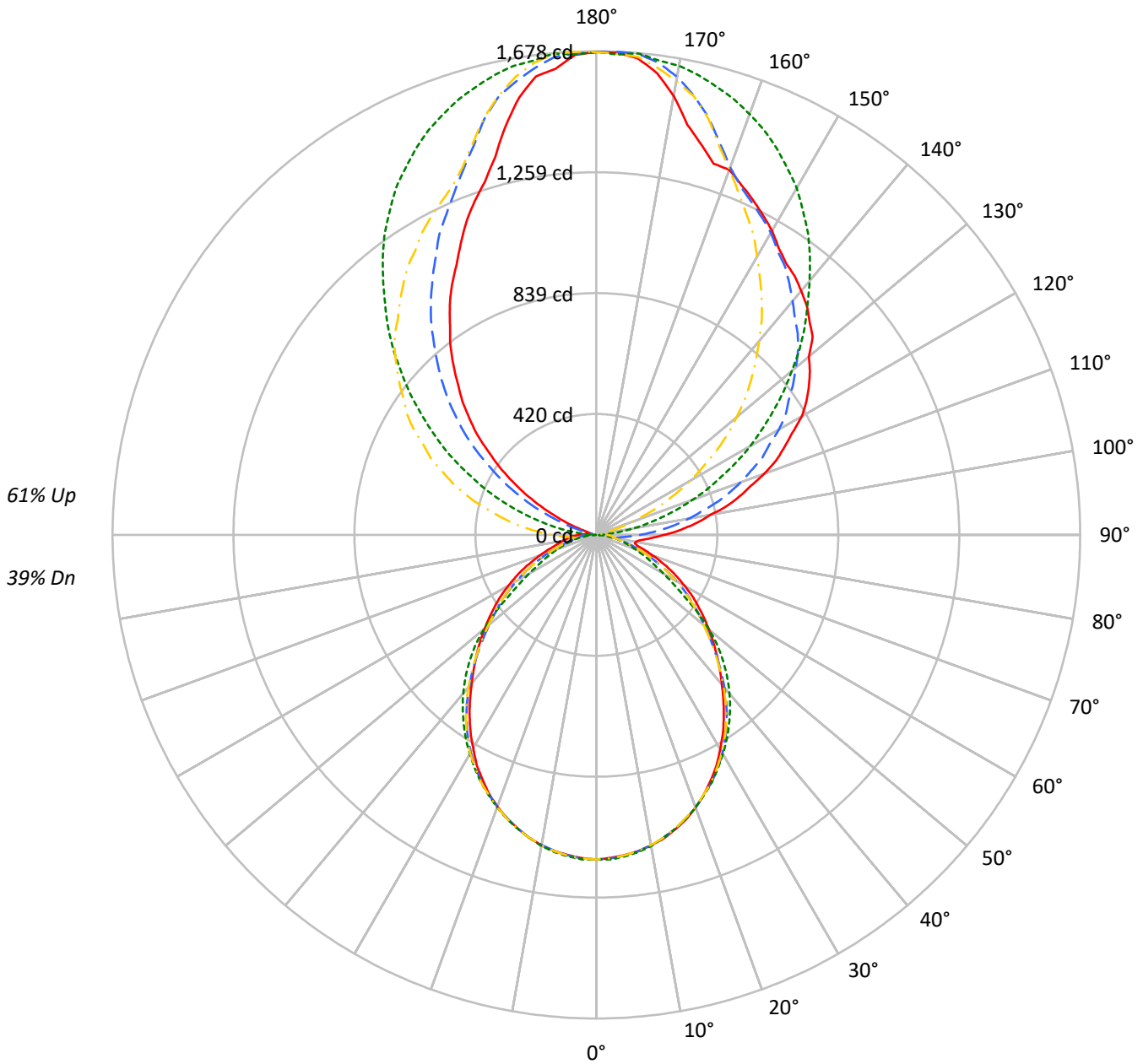
Lumens per Lamp: N/A
Luminaire Lumens: 6591.0 lumens
Efficiency: N/A
Efficacy: 79.0 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 83.426
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



TEST NUMBER: P392612
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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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39
1	95	91	87	84	87	83	80	77	68	66	64	54	52	51	41	40	39	33
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	36	35	33	28
3	80	70	63	58	72	64	58	53	53	48	45	42	39	37	32	30	29	24
4	73	62	55	49	66	57	51	45	47	42	38	38	34	32	29	27	25	21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	27	26	24	22	18
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16
7	57	45	37	32	52	42	35	30	35	29	26	28	24	21	22	19	17	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	20	18	16	13
9	49	37	30	25	45	34	28	24	29	24	20	24	20	17	19	16	14	12
10	46	34	27	23	42	32	25	21	27	22	18	22	18	16	17	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9698	9698	9698	9698
5°	9526	8903	9526	8903
10°	9330	8148	9330	8148
15°	9089	7421	9059	7421
20°	8780	6759	8748	6759
25°	8377	6135	8345	6135
30°	7904	5532	7860	5532
35°	7377	4959	7343	4959
40°	6816	4391	6769	4391
45°	6321	3797	6283	3797
50°	5852	3114	5811	3114
55°	5393	2303	5363	2303
60°	4898	1699	4881	1699
65°	4375	1285	4375	1285
70°	3780	953	3801	953
75°	3245	688	3324	688
80°	3845	456	3221	456
85°	6522	191	3585	191



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.9	1.6
10°-20°	297.4	4.5
20°-30°	433.9	6.6
30°-40°	490.5	7.4
40°-50°	458.6	7.0
50°-60°	361.9	5.5
60°-70°	236.9	3.6
70°-80°	124.2	1.9
80°-90°	83.4	1.3
90°-100°	134.2	2.0
100°-110°	259.4	3.9
110°-120°	444.9	6.8
120°-130°	604.5	9.2
130°-140°	689.6	10.5
140°-150°	687.9	10.4
150°-160°	599.2	9.1
160°-170°	421.5	6.4
170°-180°	157.0	2.4
0°-30°	837.3	12.7
0°-40°	1327.8	20.1
0°-60°	2148.3	32.6
0°-90°	2592.9	39.3
90°-120°	838.4	12.7
90°-150°	2820.4	42.8
90°-180°	3998.0	60.7
0°-180°	6591.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1126	1126	1126	1126	1126	
5°	1115	1120	1115	1120	1115	106
15°	1058	1056	1054	1056	1058	298
25°	939	947	935	947	939	432
35°	770	802	766	802	770	481
45°	591	624	588	624	591	456
55°	430	372	428	372	430	385
65°	279	198	279	198	279	276
75°	148	98	152	98	148	167
85°	171	24	94	24	171	133
90°	234	2	57	2	234	130
95°	318	48	37	48	318	278
105°	513	234	15	234	513	540
115°	719	478	165	478	719	714
125°	900	749	409	749	900	804
135°	1046	1022	658	1022	1046	807
145°	1149	1279	885	1279	1149	724
155°	1284	1480	1113	1480	1284	592
165°	1403	1610	1357	1610	1403	398
175°	1659	1676	1624	1676	1659	155
180°	1675	1675	1675	1675	1675	



TEST NUMBER: P392612

CATALOG NUMBER: MWL-3-44-28-UNV-L940-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1126.2	1126.2	1126.2	1126.2	1126.2	1126.2	1126.2	1126.2	1126.2	1126.2	1126.2
2.5°	1121.7	1124.1	1123.8	1125.8	1126.8	1124.7	1123.8	1124.1	1122.9	1124.1	1123.8
5°	1115.4	1117.7	1117.4	1118.3	1120.1	1118.3	1116.2	1117.7	1115.4	1117.7	1116.2
7.5°	1106.5	1108.9	1107.1	1109.2	1110.1	1108.0	1105.9	1107.7	1106.5	1107.7	1105.9
10°	1093.1	1094.3	1093.4	1094.3	1096.1	1093.1	1092.2	1092.0	1093.1	1092.0	1092.2
12.5°	1079.1	1077.9	1075.8	1076.7	1075.6	1076.7	1075.8	1075.6	1076.7	1075.6	1075.8
15°	1057.5	1057.0	1055.8	1057.6	1055.5	1056.4	1054.6	1054.6	1054.0	1054.6	1054.6
17.5°	1034.7	1033.3	1031.2	1032.7	1032.7	1032.7	1030.0	1032.1	1031.2	1032.1	1030.0
20°	1006.5	1007.1	1005.7	1007.2	1006.0	1006.0	1004.5	1004.8	1002.9	1004.8	1004.5
22.5°	974.3	976.2	975.6	979.0	976.9	977.8	974.4	973.8	972.0	973.8	974.4
25°	938.8	941.5	946.7	948.0	946.8	946.8	944.4	938.0	935.2	938.0	944.4
27.5°	902.4	905.1	910.3	914.6	913.1	913.4	907.9	901.5	898.8	901.5	907.9
30°	858.6	864.1	875.0	880.2	877.6	877.8	871.5	860.5	853.9	860.5	871.5
32.5°	816.7	821.3	833.1	842.9	841.4	840.5	829.6	816.5	812.0	816.5	829.6
35°	770.0	772.7	788.2	801.9	802.0	798.3	784.6	769.2	766.4	769.2	784.6
37.5°	723.5	724.4	740.8	759.9	761.2	756.4	737.3	720.9	720.0	720.9	737.3
40°	677.0	675.2	689.8	712.3	718.4	709.9	685.1	670.5	672.3	670.5	685.1
42.5°	633.3	626.9	638.5	664.0	671.9	661.6	634.9	622.2	628.6	622.2	634.9
45°	591.1	580.2	586.6	609.3	623.6	607.0	581.8	576.6	587.6	576.6	581.8
47.5°	549.2	539.2	536.5	554.4	570.8	553.2	531.7	535.6	545.7	535.6	531.7
50°	509.1	498.2	490.0	500.6	509.5	498.3	485.3	493.5	505.6	493.5	485.3
52.5°	469.0	459.0	445.1	446.9	443.0	444.5	441.5	454.3	465.5	454.3	441.5
55°	430.5	421.4	403.2	393.8	372.5	391.4	399.6	417.8	428.1	417.8	399.6
57.5°	394.1	385.9	363.1	340.0	317.0	337.7	359.5	382.3	391.7	382.3	359.5
60°	352.8	348.2	321.8	286.9	269.6	285.7	319.4	345.9	351.6	345.9	319.4
62.5°	316.3	310.9	280.8	242.3	228.3	241.1	278.4	308.5	315.1	308.5	278.4
65°	278.7	270.5	239.5	202.2	198.3	201.0	238.3	269.3	278.7	269.3	238.3
67.5°	241.4	233.2	204.0	170.0	167.3	170.0	202.8	232.0	241.4	232.0	202.8
70°	207.4	194.6	169.1	139.9	141.8	139.9	169.1	195.8	208.6	195.8	169.1
72.5°	176.4	158.2	139.0	115.3	118.7	114.2	139.0	159.4	178.8	159.4	139.0
75°	148.1	128.1	107.8	92.3	97.8	92.3	109.0	129.3	151.7	129.3	109.0
77.5°	136.7	109.1	84.1	73.2	80.5	73.2	85.3	105.6	131.9	105.6	85.3
80°	138.6	107.5	69.4	55.9	61.3	55.9	67.1	88.6	116.1	88.6	67.1
82.5°	147.8	119.9	72.7	39.5	42.2	39.5	58.5	77.3	102.9	77.3	58.5
85°	170.8	144.4	89.7	33.9	24.0	31.5	55.3	72.3	93.9	72.3	55.3
87.5°	199.8	180.0	116.6	44.4	6.4	27.8	49.2	66.4	77.9	66.4	49.2
90°	234.1	217.8	152.0	62.9	2.1	17.9	34.8	50.8	56.6	50.8	34.8
92.5°	278.0	260.1	190.3	93.1	19.9	11.5	28.2	41.2	46.0	41.2	28.2
95°	317.8	308.9	234.8	125.8	48.3	7.5	21.8	34.3	37.3	34.3	21.8
97.5°	362.5	354.8	280.5	166.6	84.9	15.1	19.0	29.3	31.2	29.3	19.0
100°	402.3	398.4	326.4	217.5	129.9	40.0	12.8	26.8	29.5	26.8	12.8
102.5°	463.4	445.5	371.4	266.0	178.5	74.3	18.7	19.5	23.1	19.5	18.7
105°	512.9	492.7	429.3	316.9	234.1	120.4	47.1	16.9	14.7	16.9	47.1
107.5°	559.2	547.4	481.4	369.0	293.3	173.7	87.3	45.6	29.1	45.6	87.3
110°	618.5	604.2	532.4	421.0	354.8	230.5	133.5	83.5	64.5	83.5	133.5



TEST NUMBER: P392612

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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°	675.2	664.6	579.6	475.5	418.7	292.1	190.2	130.8	113.1	130.8	190.2
115°	719.0	713.1	635.0	526.4	477.9	361.9	253.9	186.4	165.2	186.4	253.9
117.5°	765.2	764.0	675.2	578.5	548.8	424.6	311.9	242.1	219.6	242.1	311.9
120°	823.2	813.7	730.9	630.6	616.4	490.9	375.8	305.9	283.5	305.9	375.8
122.5°	863.4	857.5	778.3	680.2	680.2	558.3	437.3	367.5	343.8	367.5	437.3
125°	900.1	897.8	813.7	730.0	748.9	621.1	506.0	435.0	409.0	435.0	506.0
127.5°	933.2	936.8	859.9	784.4	818.7	685.0	573.4	495.4	468.1	495.4	573.4
130°	961.7	973.5	903.6	834.1	885.0	754.8	633.9	555.7	538.0	555.7	633.9
132.5°	1017.3	1010.2	948.6	885.0	956.0	818.7	697.7	616.1	596.0	616.1	697.7
135°	1045.7	1048.0	987.7	929.7	1022.3	883.6	758.1	677.6	657.5	677.6	758.1
137.5°	1080.0	1072.9	1018.5	983.0	1083.8	945.1	817.3	742.7	710.7	742.7	817.3
140°	1104.9	1103.7	1058.7	1030.3	1150.1	1005.5	877.7	801.9	772.3	801.9	877.7
142.5°	1130.9	1138.1	1099.0	1082.4	1216.4	1069.4	942.7	859.9	831.5	859.9	942.7
145°	1148.6	1164.0	1139.1	1147.4	1279.1	1140.3	999.6	915.5	884.8	915.5	999.6
147.5°	1178.2	1198.4	1168.8	1193.6	1333.6	1203.1	1056.3	973.5	946.3	973.5	1056.3
150°	1218.5	1228.0	1210.2	1257.6	1390.1	1272.9	1114.4	1029.1	1001.9	1029.1	1114.4
152.5°	1250.5	1262.2	1242.2	1327.4	1433.9	1336.9	1178.2	1083.6	1051.6	1083.6	1178.2
155°	1283.6	1288.3	1274.1	1394.8	1480.1	1399.5	1229.2	1143.9	1113.2	1143.9	1229.2
157.5°	1314.4	1323.8	1307.2	1445.7	1520.3	1454.0	1287.1	1204.3	1177.1	1204.3	1287.1
160°	1347.5	1347.5	1357.0	1504.9	1553.4	1501.3	1348.7	1270.5	1232.7	1270.5	1348.7
162.5°	1351.1	1373.6	1424.4	1546.3	1585.4	1542.8	1414.9	1317.9	1284.7	1317.9	1414.9
165°	1403.1	1423.2	1500.1	1583.0	1610.3	1579.5	1496.7	1396.0	1357.0	1396.0	1496.7
167.5°	1457.6	1500.1	1561.7	1624.4	1633.9	1613.8	1559.3	1489.6	1454.0	1489.6	1559.3
170°	1546.3	1583.0	1613.8	1639.8	1652.8	1641.0	1598.4	1564.1	1541.6	1564.1	1598.4
172.5°	1615.3	1639.8	1651.6	1668.2	1659.9	1655.2	1633.9	1617.3	1604.6	1617.3	1633.9
175°	1659.0	1664.7	1675.3	1669.4	1676.5	1663.5	1664.7	1673.0	1623.5	1673.0	1664.7
177.5°	1674.4	1683.6	1677.7	1667.0	1668.2	1665.9	1670.6	1675.3	1667.3	1675.3	1670.6
180°	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3



TEST NUMBER: P392612

CATALOG NUMBER: MWL-3-44-28-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1126.2	1126.2	1126.2	1126.2	1126.2	1126.2
2.5°	1124.7	1126.8	1125.8	1123.8	1124.1	1121.7
5°	1118.3	1120.1	1118.3	1117.4	1117.7	1115.4
7.5°	1108.0	1110.1	1109.2	1107.1	1108.9	1106.5
10°	1093.1	1096.1	1094.3	1093.4	1094.3	1093.1
12.5°	1076.7	1075.6	1076.7	1075.8	1077.9	1079.1
15°	1056.4	1055.5	1057.6	1055.8	1057.0	1057.5
17.5°	1032.7	1032.7	1032.7	1031.2	1033.3	1034.7
20°	1006.0	1006.0	1007.2	1005.7	1007.1	1006.5
22.5°	977.8	976.9	979.0	975.6	976.2	974.3
25°	946.8	946.8	948.0	946.7	941.5	938.8
27.5°	913.4	913.1	914.6	910.3	905.1	902.4
30°	877.8	877.6	880.2	875.0	864.1	858.6
32.5°	840.5	841.4	842.9	833.1	821.3	816.7
35°	798.3	802.0	801.9	788.2	772.7	770.0
37.5°	756.4	761.2	759.9	740.8	724.4	723.5
40°	709.9	718.4	712.3	689.8	675.2	677.0
42.5°	661.6	671.9	664.0	638.5	626.9	633.3
45°	607.0	623.6	609.3	586.6	580.2	591.1
47.5°	553.2	570.8	554.4	536.5	539.2	549.2
50°	498.3	509.5	500.6	490.0	498.2	509.1
52.5°	444.5	443.0	446.9	445.1	459.0	469.0
55°	391.4	372.5	393.8	403.2	421.4	430.5
57.5°	337.7	317.0	340.0	363.1	385.9	394.1
60°	285.7	269.6	286.9	321.8	348.2	352.8
62.5°	241.1	228.3	242.3	280.8	310.9	316.3
65°	201.0	198.3	202.2	239.5	270.5	278.7
67.5°	170.0	167.3	170.0	204.0	233.2	241.4
70°	139.9	141.8	139.9	169.1	194.6	207.4
72.5°	114.2	118.7	115.3	139.0	158.2	176.4
75°	92.3	97.8	92.3	107.8	128.1	148.1
77.5°	73.2	80.5	73.2	84.1	109.1	136.7
80°	55.9	61.3	55.9	69.4	107.5	138.6
82.5°	39.5	42.2	39.5	72.7	119.9	147.8
85°	31.5	24.0	33.9	89.7	144.4	170.8
87.5°	27.8	6.4	44.4	116.6	180.0	199.8
90°	17.9	2.1	62.9	152.0	217.8	234.1
92.5°	11.5	19.9	93.1	190.3	260.1	278.0
95°	7.5	48.3	125.8	234.8	308.9	317.8
97.5°	15.1	84.9	166.6	280.5	354.8	362.5
100°	40.0	129.9	217.5	326.4	398.4	402.3
102.5°	74.3	178.5	266.0	371.4	445.5	463.4
105°	120.4	234.1	316.9	429.3	492.7	512.9
107.5°	173.7	293.3	369.0	481.4	547.4	559.2
110°	230.5	354.8	421.0	532.4	604.2	618.5



TEST NUMBER: P392612

CATALOG NUMBER: MWL-3-44-28-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	292.1	418.7	475.5	579.6	664.6	675.2
115°	361.9	477.9	526.4	635.0	713.1	719.0
117.5°	424.6	548.8	578.5	675.2	764.0	765.2
120°	490.9	616.4	630.6	730.9	813.7	823.2
122.5°	558.3	680.2	680.2	778.3	857.5	863.4
125°	621.1	748.9	730.0	813.7	897.8	900.1
127.5°	685.0	818.7	784.4	859.9	936.8	933.2
130°	754.8	885.0	834.1	903.6	973.5	961.7
132.5°	818.7	956.0	885.0	948.6	1010.2	1017.3
135°	883.6	1022.3	929.7	987.7	1048.0	1045.7
137.5°	945.1	1083.8	983.0	1018.5	1072.9	1080.0
140°	1005.5	1150.1	1030.3	1058.7	1103.7	1104.9
142.5°	1069.4	1216.4	1082.4	1099.0	1138.1	1130.9
145°	1140.3	1279.1	1147.4	1139.1	1164.0	1148.6
147.5°	1203.1	1333.6	1193.6	1168.8	1198.4	1178.2
150°	1272.9	1390.1	1257.6	1210.2	1228.0	1218.5
152.5°	1336.9	1433.9	1327.4	1242.2	1262.2	1250.5
155°	1399.5	1480.1	1394.8	1274.1	1288.3	1283.6
157.5°	1454.0	1520.3	1445.7	1307.2	1323.8	1314.4
160°	1501.3	1553.4	1504.9	1357.0	1347.5	1347.5
162.5°	1542.8	1585.4	1546.3	1424.4	1373.6	1351.1
165°	1579.5	1610.3	1583.0	1500.1	1423.2	1403.1
167.5°	1613.8	1633.9	1624.4	1561.7	1500.1	1457.6
170°	1641.0	1652.8	1639.8	1613.8	1583.0	1546.3
172.5°	1655.2	1659.9	1668.2	1651.6	1639.8	1615.3
175°	1663.5	1676.5	1669.4	1675.3	1664.7	1659.0
177.5°	1665.9	1668.2	1667.0	1677.7	1683.6	1674.4
180°	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3

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