

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: P392616

Luminaire Tested: **MWL-3-53-25-UNV-L830-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392616  
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-L830-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

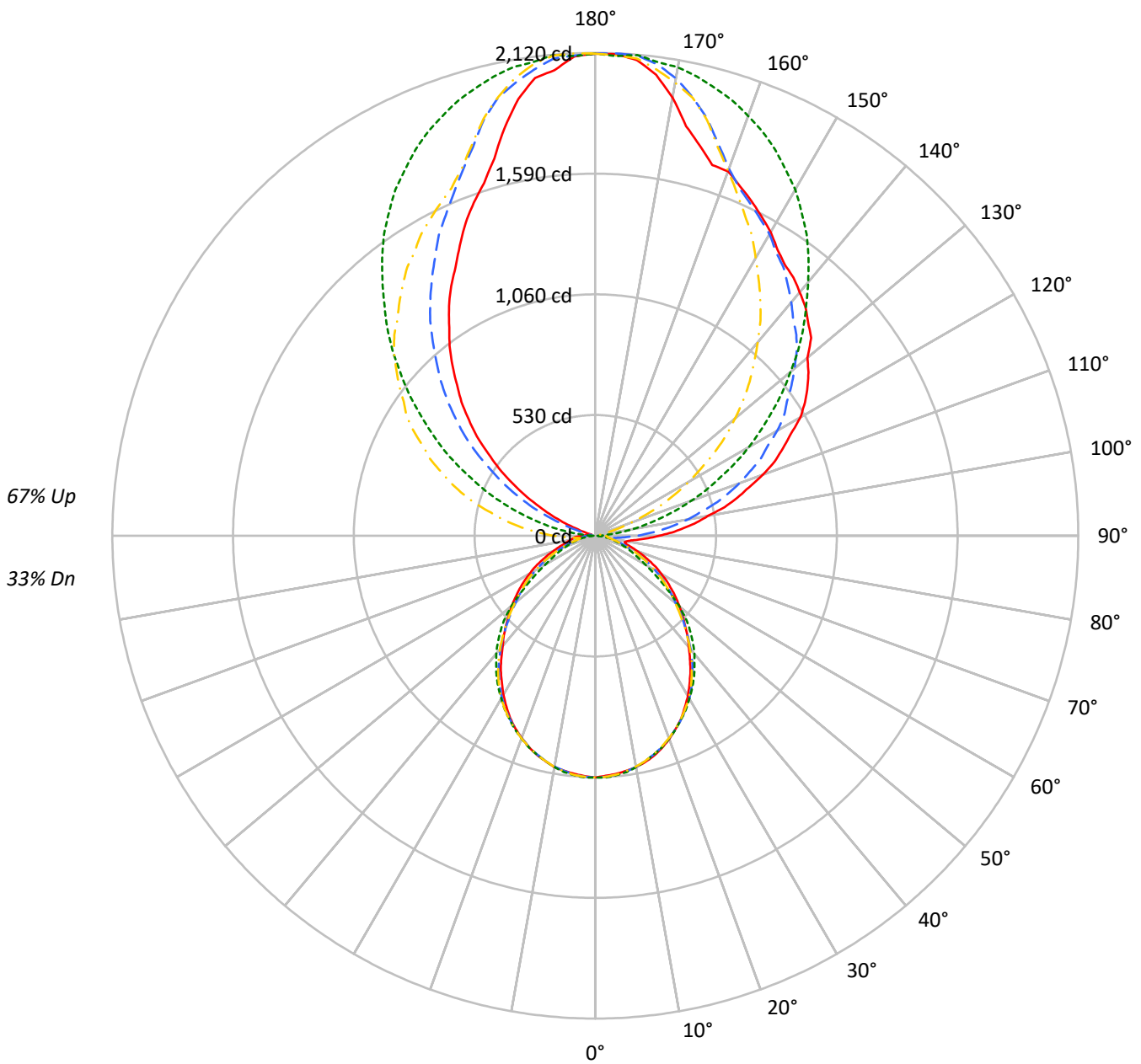
Lumens per Lamp: N/A  
Luminaire Lumens: 7499.0 lumens  
Efficiency: N/A  
Efficacy: 80.1 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.16 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: Semi-Indirect

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



TEST NUMBER: P392616  
CATALOG NUMBER: MWL-3-53-25-UNV-L830-EDD

### 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°	9141	9141	9141	9141
5°	8961	8389	8961	8389
10°	8801	7670	8801	7670
15°	8588	6991	8549	6991
20°	8281	6366	8241	6366
25°	7928	5767	7887	5767
30°	7479	5205	7424	5205
35°	6970	4672	6927	4672
40°	6425	4135	6366	4135
45°	5956	3576	5909	3576
50°	5542	2929	5491	2929
55°	5109	2183	5071	2183
60°	4640	1602	4620	1602
65°	4124	1214	4124	1214
70°	3517	897	3546	897
75°	3072	652	3173	652
80°	3889	425	3101	425
85°	7324	188	3608	188



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.9	1.3
10°-20°	280.1	3.7
20°-30°	409.0	5.5
30°-40°	462.3	6.2
40°-50°	432.8	5.8
50°-60°	341.9	4.6
60°-70°	223.8	3.0
70°-80°	117.8	1.6
80°-90°	88.8	1.2
90°-100°	163.1	2.2
100°-110°	326.7	4.4
110°-120°	561.8	7.5
120°-130°	763.3	10.2
130°-140°	871.0	11.6
140°-150°	869.0	11.6
150°-160°	756.8	10.1
160°-170°	532.5	7.1
170°-180°	198.3	2.6
0°-30°	789.0	10.5
0°-40°	1251.3	16.7
0°-60°	2026.0	27.0
0°-90°	2456.4	32.8
90°-120°	1051.7	14.0
90°-150°	3555.0	47.4
90°-180°	5043.0	67.2
0°-180°	7499.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1062	1062	1062	1062	1062	
5°	1049	1055	1049	1055	1049	100
15°	999	994	995	994	999	281
25°	888	890	884	890	888	408
35°	728	756	723	756	728	454
45°	557	587	553	587	557	431
55°	408	353	405	353	408	365
65°	263	187	263	187	263	261
75°	140	93	145	93	140	159
85°	192	24	94	24	192	146
90°	280	2	56	2	280	155
95°	391	61	36	61	391	343
105°	646	296	16	296	646	680
115°	908	604	208	604	908	901
125°	1137	946	516	946	1137	1015
135°	1321	1292	830	1292	1321	1020
145°	1451	1616	1118	1616	1451	915
155°	1622	1869	1406	1869	1622	748
165°	1773	2034	1714	2034	1773	503
175°	2096	2118	2051	2118	2096	195
180°	2117	2117	2117	2117	2117	



TEST NUMBER: P392616

CATALOG NUMBER: MWL-3-53-25-UNV-L830-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1061.5	1061.5	1061.5	1061.5	1061.5	1061.5	1061.5	1061.5	1061.5	1061.5	1061.5
2.5°	1055.1	1060.0	1059.2	1061.6	1062.6	1060.2	1059.2	1060.0	1056.6	1060.0	1059.2
5°	1049.3	1054.2	1054.4	1054.4	1055.4	1054.4	1052.9	1054.2	1049.3	1054.2	1052.9
7.5°	1041.3	1045.2	1043.3	1045.8	1046.8	1044.3	1041.8	1043.7	1041.3	1043.7	1041.8
10°	1031.2	1031.8	1030.8	1031.8	1031.8	1030.2	1029.3	1028.8	1031.2	1028.8	1029.3
12.5°	1017.0	1014.5	1013.0	1014.9	1013.4	1014.9	1013.0	1011.5	1013.9	1011.5	1013.0
15°	999.2	996.3	993.8	995.7	994.3	994.3	992.3	993.3	994.7	993.3	992.3
17.5°	976.2	973.2	971.7	973.1	973.1	973.1	970.3	971.7	971.7	971.7	970.3
20°	949.3	949.8	946.7	949.1	947.6	947.6	945.3	946.7	944.8	946.7	945.3
22.5°	919.1	921.0	919.9	921.3	920.7	919.8	918.4	917.9	916.0	917.9	918.4
25°	888.4	887.4	890.7	893.5	890.0	891.9	887.7	882.9	883.9	882.9	887.7
27.5°	850.0	855.7	859.0	863.2	861.2	861.8	856.0	851.2	845.5	851.2	856.0
30°	812.5	815.4	825.0	830.2	825.7	827.2	820.5	810.9	806.5	810.9	820.5
32.5°	769.3	775.1	785.7	794.7	791.7	791.7	781.2	769.1	763.3	769.1	781.2
35°	727.5	729.4	742.9	756.3	755.6	751.8	738.3	724.9	723.0	724.9	738.3
37.5°	682.4	684.3	699.7	716.0	714.9	711.5	695.2	679.8	677.9	679.8	695.2
40°	638.2	639.2	651.7	672.2	676.5	669.2	645.7	633.2	632.3	633.2	645.7
42.5°	599.8	593.1	601.2	626.1	633.3	623.2	596.8	587.2	593.9	587.2	596.8
45°	557.0	549.3	554.1	577.2	587.3	574.2	548.2	544.9	552.6	544.9	548.2
47.5°	518.6	509.0	508.1	523.9	539.3	522.4	502.1	504.6	514.2	504.6	502.1
50°	482.2	470.6	462.0	473.0	479.2	470.1	456.0	464.7	477.7	464.7	456.0
52.5°	445.7	434.2	420.2	423.1	414.9	420.1	415.7	428.2	441.3	428.2	415.7
55°	407.8	398.2	381.8	371.7	353.0	368.7	377.3	393.6	404.8	393.6	377.3
57.5°	372.2	364.6	344.4	322.7	300.2	319.7	339.9	360.1	369.3	360.1	339.9
60°	334.2	330.4	303.5	272.3	254.1	270.8	300.5	327.4	332.8	327.4	300.5
62.5°	300.6	293.9	265.1	229.1	216.1	227.6	262.1	290.9	299.2	290.9	262.1
65°	262.7	257.9	225.3	193.6	187.3	192.1	223.7	256.4	262.7	256.4	223.7
67.5°	229.1	219.5	192.6	158.5	158.5	158.5	191.1	218.0	229.1	218.0	191.1
70°	193.0	183.4	158.5	132.6	133.5	132.6	158.5	185.0	194.6	185.0	158.5
72.5°	165.2	150.8	129.7	108.6	111.0	107.1	129.7	152.3	168.2	152.3	129.7
75°	140.2	123.0	102.3	87.9	92.7	87.9	103.8	124.5	144.8	124.5	103.8
77.5°	131.1	104.9	80.2	68.7	74.5	68.7	81.7	100.5	125.1	100.5	81.7
80°	140.2	108.7	67.4	52.4	57.2	52.4	64.4	84.7	111.8	84.7	64.4
82.5°	157.9	129.0	73.8	38.0	39.9	38.0	55.9	75.2	101.1	75.2	55.9
85°	191.8	163.4	98.1	32.8	23.6	29.9	54.7	72.1	94.5	72.1	54.7
87.5°	233.1	211.0	134.8	49.5	6.7	28.6	49.5	67.5	79.1	67.5	49.5
90°	279.9	261.1	182.9	74.2	1.5	17.4	34.7	50.2	55.6	50.2	34.7
92.5°	337.1	317.2	232.4	114.8	24.9	11.6	27.5	40.5	44.0	40.5	27.5
95°	390.6	379.7	290.9	157.4	60.8	7.9	21.8	32.7	36.2	32.7	21.8
97.5°	449.7	440.3	350.1	210.3	107.1	18.9	19.5	29.0	30.9	29.0	19.5
100°	501.3	497.9	411.6	274.6	163.9	50.3	15.3	28.3	30.2	28.3	15.3
102.5°	580.8	560.0	469.1	336.0	225.3	93.7	23.4	21.6	24.5	21.6	23.4
105°	645.8	622.0	542.3	400.3	295.5	152.0	59.3	20.8	16.2	20.8	59.3
107.5°	706.3	691.4	608.2	466.1	370.3	219.3	110.1	57.2	36.3	57.2	110.1
110°	781.1	763.1	672.5	531.9	448.2	291.1	168.5	105.1	81.2	105.1	168.5



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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°	852.9	839.4	732.3	600.7	528.9	368.9	240.3	164.9	142.5	164.9	240.3
115°	908.2	900.8	801.1	665.0	603.7	457.1	319.5	235.3	208.3	235.3	319.5
117.5°	966.5	965.1	851.9	730.8	693.4	536.4	392.8	305.5	277.1	305.5	392.8
120°	1039.8	1027.8	922.3	796.6	778.7	620.1	473.5	386.3	357.8	386.3	473.5
122.5°	1090.7	1083.2	982.1	859.4	859.4	705.3	551.4	464.0	434.2	464.0	551.4
125°	1137.1	1134.0	1026.9	922.3	946.2	784.6	638.0	549.2	516.4	549.2	638.0
127.5°	1178.9	1183.4	1085.2	991.0	1034.4	865.4	723.3	625.6	591.2	625.6	723.3
130°	1214.8	1229.8	1140.5	1053.9	1118.2	953.6	799.6	701.9	679.4	701.9	799.6
132.5°	1285.1	1276.2	1198.3	1118.2	1207.8	1034.4	881.3	778.1	752.6	778.1	881.3
135°	1321.0	1324.0	1247.8	1173.5	1291.6	1115.1	957.6	855.8	830.5	855.8	957.6
137.5°	1364.4	1355.4	1285.7	1240.8	1369.4	1192.9	1031.4	938.1	897.8	938.1	1031.4
140°	1395.8	1394.2	1337.4	1301.5	1453.2	1270.1	1108.7	1012.9	975.5	1012.9	1108.7
142.5°	1428.7	1437.6	1388.3	1366.4	1536.9	1350.0	1190.8	1086.2	1050.3	1086.2	1190.8
145°	1451.1	1470.5	1439.2	1449.6	1616.2	1440.6	1262.6	1156.5	1117.6	1156.5	1262.6
147.5°	1488.5	1513.9	1476.5	1508.0	1685.0	1519.9	1334.4	1229.8	1195.3	1229.8	1334.4
150°	1539.4	1551.3	1528.9	1588.7	1755.2	1608.1	1407.8	1300.1	1265.7	1300.1	1407.8
152.5°	1579.7	1594.7	1568.3	1676.0	1810.5	1688.0	1487.5	1368.9	1328.5	1368.9	1487.5
155°	1621.6	1627.6	1609.6	1761.2	1868.9	1767.2	1552.8	1445.1	1406.2	1445.1	1552.8
157.5°	1660.5	1672.4	1651.5	1825.5	1919.8	1836.0	1626.0	1521.4	1487.0	1521.4	1626.0
160°	1702.4	1702.4	1714.4	1901.2	1961.6	1896.7	1703.9	1605.1	1557.3	1605.1	1703.9
162.5°	1706.9	1734.3	1799.6	1953.7	2003.0	1949.1	1787.6	1664.1	1623.1	1664.1	1787.6
165°	1772.6	1797.1	1895.3	2000.0	2034.4	1995.5	1890.8	1762.7	1714.4	1762.7	1890.8
167.5°	1841.4	1894.3	1973.0	2052.3	2064.2	2038.9	1970.1	1880.9	1836.9	1880.9	1970.1
170°	1952.7	1999.1	2038.9	2071.7	2088.2	2073.3	2019.4	1975.1	1946.7	1975.1	2019.4
172.5°	2040.9	2070.8	2086.7	2107.6	2097.2	2091.2	2064.2	2042.4	2027.5	2042.4	2064.2
175°	2096.2	2102.2	2116.6	2109.2	2118.1	2101.7	2103.2	2112.7	2051.4	2112.7	2103.2
177.5°	2115.7	2126.2	2119.6	2106.2	2107.6	2104.6	2110.6	2115.7	2106.7	2115.7	2110.6
180°	2116.6	2116.6	2116.6	2116.6	2116.6	2116.6	2116.6	2116.6	2116.6	2116.6	2116.6



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1061.5	1061.5	1061.5	1061.5	1061.5	1061.5
2.5°	1060.2	1062.6	1061.6	1059.2	1060.0	1055.1
5°	1054.4	1055.4	1054.4	1054.4	1054.2	1049.3
7.5°	1044.3	1046.8	1045.8	1043.3	1045.2	1041.3
10°	1030.2	1031.8	1031.8	1030.8	1031.8	1031.2
12.5°	1014.9	1013.4	1014.9	1013.0	1014.5	1017.0
15°	994.3	994.3	995.7	993.8	996.3	999.2
17.5°	973.1	973.1	973.1	971.7	973.2	976.2
20°	947.6	947.6	949.1	946.7	949.8	949.3
22.5°	919.8	920.7	921.3	919.9	921.0	919.1
25°	891.9	890.0	893.5	890.7	887.4	888.4
27.5°	861.8	861.2	863.2	859.0	855.7	850.0
30°	827.2	825.7	830.2	825.0	815.4	812.5
32.5°	791.7	791.7	794.7	785.7	775.1	769.3
35°	751.8	755.6	756.3	742.9	729.4	727.5
37.5°	711.5	714.9	716.0	699.7	684.3	682.4
40°	669.2	676.5	672.2	651.7	639.2	638.2
42.5°	623.2	633.3	626.1	601.2	593.1	599.8
45°	574.2	587.3	577.2	554.1	549.3	557.0
47.5°	522.4	539.3	523.9	508.1	509.0	518.6
50°	470.1	479.2	473.0	462.0	470.6	482.2
52.5°	420.1	414.9	423.1	420.2	434.2	445.7
55°	368.7	353.0	371.7	381.8	398.2	407.8
57.5°	319.7	300.2	322.7	344.4	364.6	372.2
60°	270.8	254.1	272.3	303.5	330.4	334.2
62.5°	227.6	216.1	229.1	265.1	293.9	300.6
65°	192.1	187.3	193.6	225.3	257.9	262.7
67.5°	158.5	158.5	158.5	192.6	219.5	229.1
70°	132.6	133.5	132.6	158.5	183.4	193.0
72.5°	107.1	111.0	108.6	129.7	150.8	165.2
75°	87.9	92.7	87.9	102.3	123.0	140.2
77.5°	68.7	74.5	68.7	80.2	104.9	131.1
80°	52.4	57.2	52.4	67.4	108.7	140.2
82.5°	38.0	39.9	38.0	73.8	129.0	157.9
85°	29.9	23.6	32.8	98.1	163.4	191.8
87.5°	28.6	6.7	49.5	134.8	211.0	233.1
90°	17.4	1.5	74.2	182.9	261.1	279.9
92.5°	11.6	24.9	114.8	232.4	317.2	337.1
95°	7.9	60.8	157.4	290.9	379.7	390.6
97.5°	18.9	107.1	210.3	350.1	440.3	449.7
100°	50.3	163.9	274.6	411.6	497.9	501.3
102.5°	93.7	225.3	336.0	469.1	560.0	580.8
105°	152.0	295.5	400.3	542.3	622.0	645.8
107.5°	219.3	370.3	466.1	608.2	691.4	706.3
110°	291.1	448.2	531.9	672.5	763.1	781.1





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	368.9	528.9	600.7	732.3	839.4	852.9
115°	457.1	603.7	665.0	801.1	900.8	908.2
117.5°	536.4	693.4	730.8	851.9	965.1	966.5
120°	620.1	778.7	796.6	922.3	1027.8	1039.8
122.5°	705.3	859.4	859.4	982.1	1083.2	1090.7
125°	784.6	946.2	922.3	1026.9	1134.0	1137.1
127.5°	865.4	1034.4	991.0	1085.2	1183.4	1178.9
130°	953.6	1118.2	1053.9	1140.5	1229.8	1214.8
132.5°	1034.4	1207.8	1118.2	1198.3	1276.2	1285.1
135°	1115.1	1291.6	1173.5	1247.8	1324.0	1321.0
137.5°	1192.9	1369.4	1240.8	1285.7	1355.4	1364.4
140°	1270.1	1453.2	1301.5	1337.4	1394.2	1395.8
142.5°	1350.0	1536.9	1366.4	1388.3	1437.6	1428.7
145°	1440.6	1616.2	1449.6	1439.2	1470.5	1451.1
147.5°	1519.9	1685.0	1508.0	1476.5	1513.9	1488.5
150°	1608.1	1755.2	1588.7	1528.9	1551.3	1539.4
152.5°	1688.0	1810.5	1676.0	1568.3	1594.7	1579.7
155°	1767.2	1868.9	1761.2	1609.6	1627.6	1621.6
157.5°	1836.0	1919.8	1825.5	1651.5	1672.4	1660.5
160°	1896.7	1961.6	1901.2	1714.4	1702.4	1702.4
162.5°	1949.1	2003.0	1953.7	1799.6	1734.3	1706.9
165°	1995.5	2034.4	2000.0	1895.3	1797.1	1772.6
167.5°	2038.9	2064.2	2052.3	1973.0	1894.3	1841.4
170°	2073.3	2088.2	2071.7	2038.9	1999.1	1952.7
172.5°	2091.2	2097.2	2107.6	2086.7	2070.8	2040.9
175°	2101.7	2118.1	2109.2	2116.6	2102.2	2096.2
177.5°	2104.6	2107.6	2106.2	2119.6	2126.2	2115.7
180°	2116.6	2116.6	2116.6	2116.6	2116.6	2116.6

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