

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: P392582

Luminaire Tested: **MWL-3-30-28-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392582
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-3-30-28-UNV-L940-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5379.1 lumens
Efficiency: N/A
Efficacy: 94.3 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: General Diffuse

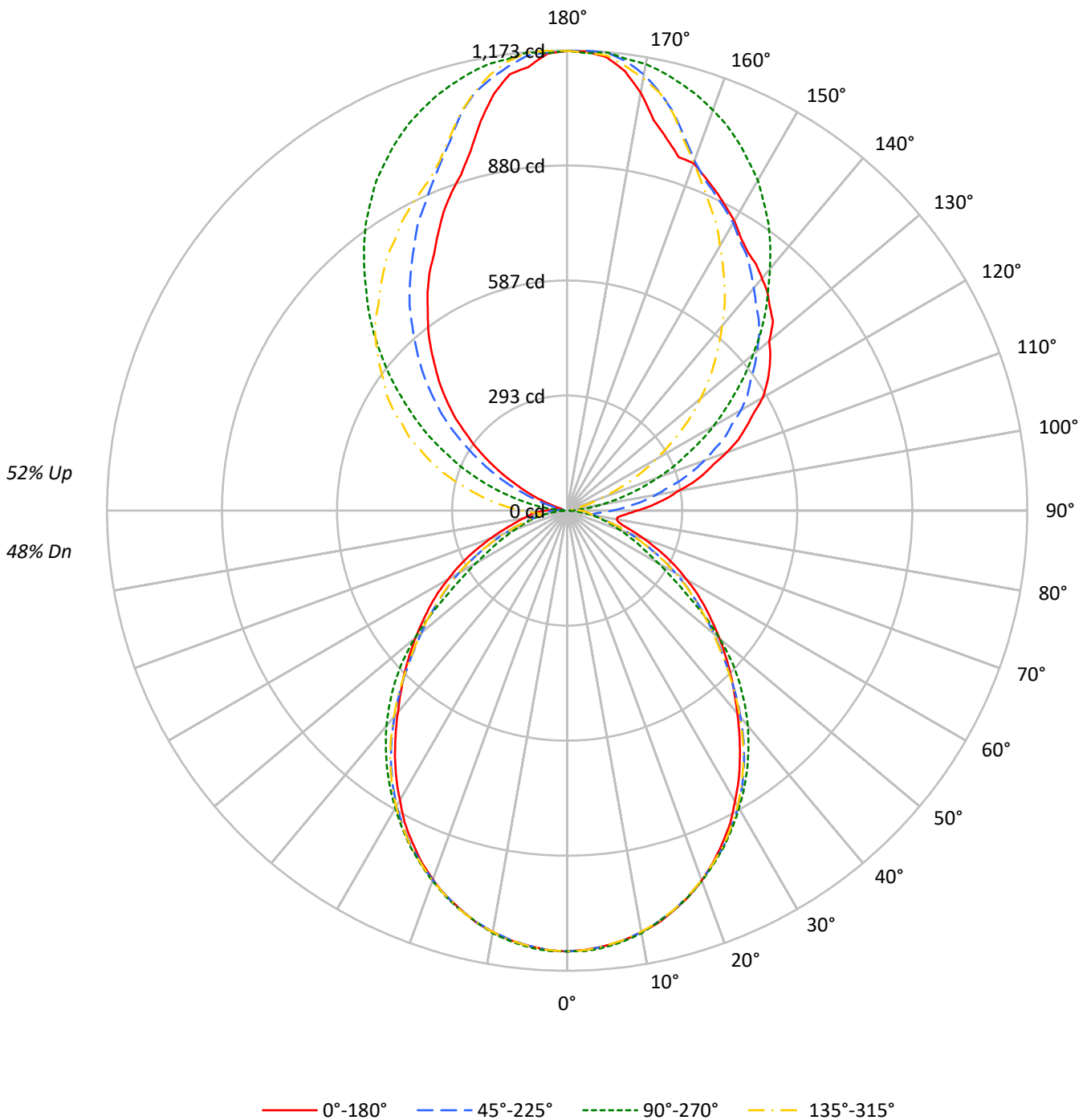
Input Watts (W): 57.065
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P392582

CATALOG NUMBER: MWL-3-30-28-UNV-L940-EDD

Luminous Intensity Polar Plot





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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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48
1	97	93	89	86	89	86	83	80	72	70	68	60	58	56	48	47	46	41
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	34
3	81	72	65	59	75	67	60	55	56	52	48	47	44	41	38	36	34	30
4	75	64	56	50	68	59	53	47	50	45	41	42	38	35	34	32	29	26
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	31	28	26	23
6	63	51	43	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20
7	59	46	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18
8	54	42	35	29	50	39	33	28	34	28	25	29	25	21	24	21	18	16
9	51	39	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	15
10	47	35	28	24	44	33	27	22	29	24	20	24	20	18	21	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9677	9677	9677	9677
5°	9513	8881	9513	8881
10°	9312	8130	9312	8130
15°	9062	7409	9040	7409
20°	8752	6749	8730	6749
25°	8352	6126	8329	6126
30°	7878	5523	7846	5523
35°	7353	4949	7329	4949
40°	6792	4380	6757	4380
45°	6297	3786	6271	3786
50°	5826	3105	5799	3105
55°	5371	2297	5349	2297
60°	4877	1693	4866	1693
65°	4358	1280	4358	1280
70°	3765	947	3781	947
75°	3230	685	3285	685
80°	3576	453	3140	453
85°	5411	188	3353	188



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.7	2.0
10°-20°	296.8	5.5
20°-30°	433.0	8.0
30°-40°	489.2	9.1
40°-50°	457.3	8.5
50°-60°	360.8	6.7
60°-70°	236.0	4.4
70°-80°	123.2	2.3
80°-90°	73.7	1.4
90°-100°	99.6	1.9
100°-110°	182.3	3.4
110°-120°	311.4	5.8
120°-130°	422.9	7.9
130°-140°	482.4	9.0
140°-150°	481.2	8.9
150°-160°	419.0	7.8
160°-170°	294.8	5.5
170°-180°	109.8	2.0
0°-30°	835.5	15.5
0°-40°	1324.7	24.6
0°-60°	2142.8	39.8
0°-90°	2575.7	47.9
90°-120°	593.3	11.0
90°-150°	1979.8	36.8
90°-180°	2803.0	52.1
0°-180°	5379.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1124	1124	1124	1124	1124	
5°	1114	1117	1114	1117	1114	106
15°	1054	1054	1052	1054	1054	297
25°	936	945	933	945	936	430
35°	768	800	765	800	768	480
45°	589	622	586	622	589	455
55°	429	372	427	372	429	384
65°	278	198	278	198	278	275
75°	147	97	150	97	147	165
85°	142	24	88	24	142	113
90°	178	2	54	2	178	99
95°	232	34	36	34	232	202
105°	360	164	12	164	360	380
115°	503	334	116	334	503	499
125°	630	524	286	524	630	562
135°	731	715	460	715	731	565
145°	803	894	619	894	803	507
155°	898	1035	779	1035	898	414
165°	981	1126	949	1126	981	278
175°	1160	1172	1135	1172	1160	108
180°	1172	1172	1172	1172	1172	



TEST NUMBER: P392582

CATALOG NUMBER: MWL-3-30-28-UNV-L940-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1123.8	1123.8	1123.8	1123.8	1123.8	1123.8	1123.8	1123.8	1123.8	1123.8	1123.8
2.5°	1120.3	1121.9	1120.9	1122.7	1123.6	1121.8	1120.9	1121.9	1121.1	1121.9	1120.9
5°	1113.9	1115.6	1114.5	1115.5	1117.3	1115.5	1113.7	1115.6	1113.9	1115.6	1113.7
7.5°	1104.7	1106.4	1104.6	1106.3	1107.3	1105.5	1103.7	1105.5	1104.7	1105.5	1103.7
10°	1091.0	1091.9	1091.0	1091.9	1093.7	1091.0	1090.0	1090.1	1091.0	1090.1	1090.0
12.5°	1076.3	1075.5	1073.6	1074.6	1073.7	1074.6	1073.6	1073.7	1074.6	1073.7	1073.6
15°	1054.3	1054.5	1053.6	1055.4	1053.7	1054.6	1052.8	1052.8	1051.8	1052.8	1052.8
17.5°	1031.5	1030.8	1029.0	1030.9	1030.9	1030.9	1028.2	1029.9	1029.0	1029.9	1028.2
20°	1003.3	1004.3	1003.5	1005.4	1004.6	1004.6	1002.7	1002.6	1000.8	1002.6	1002.7
22.5°	971.5	973.3	973.4	977.2	975.4	976.3	972.6	971.6	969.8	971.6	972.6
25°	936.0	938.7	944.3	946.2	945.4	945.4	942.5	936.2	933.4	936.2	942.5
27.5°	899.5	902.3	907.8	912.4	911.6	911.6	906.1	899.7	897.0	899.7	906.1
30°	855.8	861.3	872.2	877.8	876.1	876.0	869.6	858.7	852.4	858.7	869.6
32.5°	813.9	818.4	830.3	840.4	839.6	838.7	827.7	815.1	810.5	815.1	827.7
35°	767.5	770.2	785.7	799.4	800.5	796.8	783.2	767.7	765.0	767.7	783.2
37.5°	721.0	722.0	738.4	757.5	759.4	754.9	735.8	719.4	718.5	719.4	735.8
40°	674.6	672.8	687.3	710.1	716.6	708.5	684.0	669.4	671.2	669.4	684.0
42.5°	630.8	624.5	636.3	661.8	670.1	660.2	633.9	621.1	627.5	621.1	633.9
45°	588.9	578.0	584.4	607.2	621.8	605.5	581.1	575.5	586.5	575.5	581.1
47.5°	547.0	537.0	534.3	552.6	569.0	551.8	531.0	534.5	544.6	534.5	531.0
50°	506.9	496.0	487.8	498.8	508.0	497.2	484.5	492.7	504.5	492.7	484.5
52.5°	466.8	456.8	443.3	445.1	441.5	443.4	440.8	453.5	464.4	453.5	440.8
55°	428.7	419.6	401.3	392.3	371.5	390.7	398.9	417.1	427.0	417.1	398.9
57.5°	392.2	384.0	361.3	338.6	315.9	336.9	358.8	381.6	390.6	381.6	358.8
60°	351.3	346.8	320.3	285.8	268.5	285.0	318.7	345.1	350.5	345.1	318.7
62.5°	314.9	309.4	279.3	241.2	227.6	240.3	277.7	307.8	314.1	307.8	277.7
65°	277.6	269.4	238.4	201.1	197.5	200.3	237.6	268.6	277.6	268.6	237.6
67.5°	240.3	232.1	202.9	169.3	166.5	169.3	202.1	231.2	240.3	231.2	202.1
70°	206.6	193.9	168.4	139.2	141.0	139.2	168.4	194.7	207.5	194.7	168.4
72.5°	175.7	157.4	138.3	114.6	118.4	113.8	138.3	158.3	177.3	158.3	138.3
75°	147.4	127.4	107.4	91.9	97.4	91.9	108.2	128.2	149.9	128.2	108.2
77.5°	133.1	107.0	83.7	72.8	80.1	72.8	84.6	104.5	129.7	104.5	84.6
80°	128.9	100.4	68.0	55.5	61.0	55.5	66.3	87.1	113.2	87.1	66.3
82.5°	129.6	104.9	67.0	39.1	41.8	39.1	57.0	75.1	98.2	75.1	57.0
85°	141.7	118.8	76.1	32.4	23.6	30.8	52.1	68.3	87.8	68.3	52.1
87.5°	157.7	141.2	92.7	37.6	6.4	26.0	45.6	61.8	72.5	61.8	45.6
90°	178.1	165.4	115.3	48.6	1.7	17.1	33.3	48.7	54.1	48.7	33.3
92.5°	206.4	192.8	140.4	67.9	14.1	10.8	27.1	39.7	44.2	39.7	27.1
95°	232.2	225.5	169.6	88.7	34.0	6.0	20.7	33.5	36.2	33.5	20.7
97.5°	261.4	255.4	199.6	116.7	59.7	10.8	16.8	27.9	29.7	27.9	16.8
100°	287.3	283.7	229.6	152.3	91.1	28.2	10.4	24.0	26.7	24.0	10.4
102.5°	328.0	314.4	259.8	186.2	125.0	52.2	13.3	16.7	20.3	16.7	13.3
105°	360.4	345.2	300.4	221.8	163.9	84.5	33.2	12.7	12.2	12.7	33.2
107.5°	391.4	383.2	336.7	258.2	205.3	121.7	61.3	32.4	20.9	32.4	61.3
110°	432.8	422.8	372.4	294.6	248.3	161.4	93.6	58.9	45.6	58.9	93.6



TEST NUMBER: P392582

CATALOG NUMBER: MWL-3-30-28-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	472.5	465.1	405.4	332.6	292.9	204.5	133.3	92.0	79.5	92.0	133.3
115°	503.1	499.0	444.4	368.2	334.3	253.2	178.0	130.8	116.0	130.8	178.0
117.5°	535.4	534.5	472.5	404.6	383.9	297.0	218.6	169.7	154.1	169.7	218.6
120°	575.9	569.3	511.4	441.0	431.0	343.4	263.2	214.4	198.7	214.4	263.2
122.5°	604.1	600.0	544.5	475.8	475.8	390.5	306.2	257.5	240.9	257.5	306.2
125°	629.7	628.0	569.3	510.5	523.7	434.4	354.2	304.6	286.4	304.6	354.2
127.5°	652.9	655.4	601.6	548.6	572.5	479.1	401.3	346.8	327.7	346.8	401.3
130°	672.8	681.0	632.2	583.3	618.8	527.9	443.5	388.9	376.6	388.9	443.5
132.5°	711.6	706.6	663.6	618.8	668.5	572.5	488.3	431.1	417.1	431.1	488.3
135°	731.4	733.1	690.9	650.3	714.8	618.1	530.4	474.1	460.1	474.1	530.4
137.5°	755.4	750.5	712.4	687.6	757.9	661.1	571.8	519.7	497.4	519.7	571.8
140°	772.8	772.0	740.5	720.7	804.1	703.3	614.0	561.1	540.4	561.1	614.0
142.5°	791.0	795.9	768.7	757.1	850.5	748.0	659.5	601.6	581.7	601.6	659.5
145°	803.4	814.2	796.8	802.6	894.3	797.7	699.2	640.4	618.9	640.4	699.2
147.5°	824.1	838.1	817.4	834.8	932.4	841.5	738.9	681.0	661.9	681.0	738.9
150°	852.2	858.8	846.4	879.5	972.1	890.2	779.4	719.9	700.8	719.9	779.4
152.5°	874.6	882.9	868.7	928.3	1002.8	935.0	824.1	757.9	735.6	757.9	824.1
155°	897.7	901.0	891.1	975.5	1035.0	978.8	859.6	800.1	778.6	800.1	859.6
157.5°	919.2	925.9	914.3	1011.0	1063.2	1016.9	900.2	842.3	823.3	842.3	900.2
160°	942.4	942.4	949.0	1052.4	1086.3	1050.0	943.3	888.6	862.2	888.6	943.3
162.5°	944.9	960.6	996.2	1081.4	1108.6	1078.9	989.5	921.7	898.5	921.7	989.5
165°	981.3	995.4	1049.1	1107.0	1126.0	1104.5	1046.6	976.3	949.0	976.3	1046.6
167.5°	1019.3	1049.1	1092.1	1136.0	1142.6	1128.5	1090.5	1041.7	1016.9	1041.7	1090.5
170°	1081.4	1107.0	1128.5	1146.7	1155.8	1147.5	1117.7	1093.8	1078.0	1093.8	1117.7
172.5°	1129.3	1146.7	1155.0	1166.6	1160.7	1157.5	1142.6	1131.0	1121.8	1131.0	1142.6
175°	1159.8	1164.1	1171.5	1167.4	1172.4	1163.3	1164.1	1169.9	1135.0	1169.9	1164.1
177.5°	1170.6	1177.3	1173.2	1165.8	1166.6	1164.9	1168.2	1171.5	1165.7	1171.5	1168.2
180°	1171.5	1171.5	1171.5	1171.5	1171.5	1171.5	1171.5	1171.5	1171.5	1171.5	1171.5



TEST NUMBER: P392582

CATALOG NUMBER: MWL-3-30-28-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1123.8	1123.8	1123.8	1123.8	1123.8	1123.8
2.5°	1121.8	1123.6	1122.7	1120.9	1121.9	1120.3
5°	1115.5	1117.3	1115.5	1114.5	1115.6	1113.9
7.5°	1105.5	1107.3	1106.3	1104.6	1106.4	1104.7
10°	1091.0	1093.7	1091.9	1091.0	1091.9	1091.0
12.5°	1074.6	1073.7	1074.6	1073.6	1075.5	1076.3
15°	1054.6	1053.7	1055.4	1053.6	1054.5	1054.3
17.5°	1030.9	1030.9	1030.9	1029.0	1030.8	1031.5
20°	1004.6	1004.6	1005.4	1003.5	1004.3	1003.3
22.5°	976.3	975.4	977.2	973.4	973.3	971.5
25°	945.4	945.4	946.2	944.3	938.7	936.0
27.5°	911.6	911.6	912.4	907.8	902.3	899.5
30°	876.0	876.1	877.8	872.2	861.3	855.8
32.5°	838.7	839.6	840.4	830.3	818.4	813.9
35°	796.8	800.5	799.4	785.7	770.2	767.5
37.5°	754.9	759.4	757.5	738.4	722.0	721.0
40°	708.5	716.6	710.1	687.3	672.8	674.6
42.5°	660.2	670.1	661.8	636.3	624.5	630.8
45°	605.5	621.8	607.2	584.4	578.0	588.9
47.5°	551.8	569.0	552.6	534.3	537.0	547.0
50°	497.2	508.0	498.8	487.8	496.0	506.9
52.5°	443.4	441.5	445.1	443.3	456.8	466.8
55°	390.7	371.5	392.3	401.3	419.6	428.7
57.5°	336.9	315.9	338.6	361.3	384.0	392.2
60°	285.0	268.5	285.8	320.3	346.8	351.3
62.5°	240.3	227.6	241.2	279.3	309.4	314.9
65°	200.3	197.5	201.1	238.4	269.4	277.6
67.5°	169.3	166.5	169.3	202.9	232.1	240.3
70°	139.2	141.0	139.2	168.4	193.9	206.6
72.5°	113.8	118.4	114.6	138.3	157.4	175.7
75°	91.9	97.4	91.9	107.4	127.4	147.4
77.5°	72.8	80.1	72.8	83.7	107.0	133.1
80°	55.5	61.0	55.5	68.0	100.4	128.9
82.5°	39.1	41.8	39.1	67.0	104.9	129.6
85°	30.8	23.6	32.4	76.1	118.8	141.7
87.5°	26.0	6.4	37.6	92.7	141.2	157.7
90°	17.1	1.7	48.6	115.3	165.4	178.1
92.5°	10.8	14.1	67.9	140.4	192.8	206.4
95°	6.0	34.0	88.7	169.6	225.5	232.2
97.5°	10.8	59.7	116.7	199.6	255.4	261.4
100°	28.2	91.1	152.3	229.6	283.7	287.3
102.5°	52.2	125.0	186.2	259.8	314.4	328.0
105°	84.5	163.9	221.8	300.4	345.2	360.4
107.5°	121.7	205.3	258.2	336.7	383.2	391.4
110°	161.4	248.3	294.6	372.4	422.8	432.8



TEST NUMBER: P392582

CATALOG NUMBER: MWL-3-30-28-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	204.5	292.9	332.6	405.4	465.1	472.5
115°	253.2	334.3	368.2	444.4	499.0	503.1
117.5°	297.0	383.9	404.6	472.5	534.5	535.4
120°	343.4	431.0	441.0	511.4	569.3	575.9
122.5°	390.5	475.8	475.8	544.5	600.0	604.1
125°	434.4	523.7	510.5	569.3	628.0	629.7
127.5°	479.1	572.5	548.6	601.6	655.4	652.9
130°	527.9	618.8	583.3	632.2	681.0	672.8
132.5°	572.5	668.5	618.8	663.6	706.6	711.6
135°	618.1	714.8	650.3	690.9	733.1	731.4
137.5°	661.1	757.9	687.6	712.4	750.5	755.4
140°	703.3	804.1	720.7	740.5	772.0	772.8
142.5°	748.0	850.5	757.1	768.7	795.9	791.0
145°	797.7	894.3	802.6	796.8	814.2	803.4
147.5°	841.5	932.4	834.8	817.4	838.1	824.1
150°	890.2	972.1	879.5	846.4	858.8	852.2
152.5°	935.0	1002.8	928.3	868.7	882.9	874.6
155°	978.8	1035.0	975.5	891.1	901.0	897.7
157.5°	1016.9	1063.2	1011.0	914.3	925.9	919.2
160°	1050.0	1086.3	1052.4	949.0	942.4	942.4
162.5°	1078.9	1108.6	1081.4	996.2	960.6	944.9
165°	1104.5	1126.0	1107.0	1049.1	995.4	981.3
167.5°	1128.5	1142.6	1136.0	1092.1	1049.1	1019.3
170°	1147.5	1155.8	1146.7	1128.5	1107.0	1081.4
172.5°	1157.5	1160.7	1166.6	1155.0	1146.7	1129.3
175°	1163.3	1172.4	1167.4	1171.5	1164.1	1159.8
177.5°	1164.9	1166.6	1165.8	1173.2	1177.3	1170.6
180°	1171.5	1171.5	1171.5	1171.5	1171.5	1171.5

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