

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: P392613

Luminaire Tested: **MWL-3-44-33-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392613
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-3-44-33-UNV-L930-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

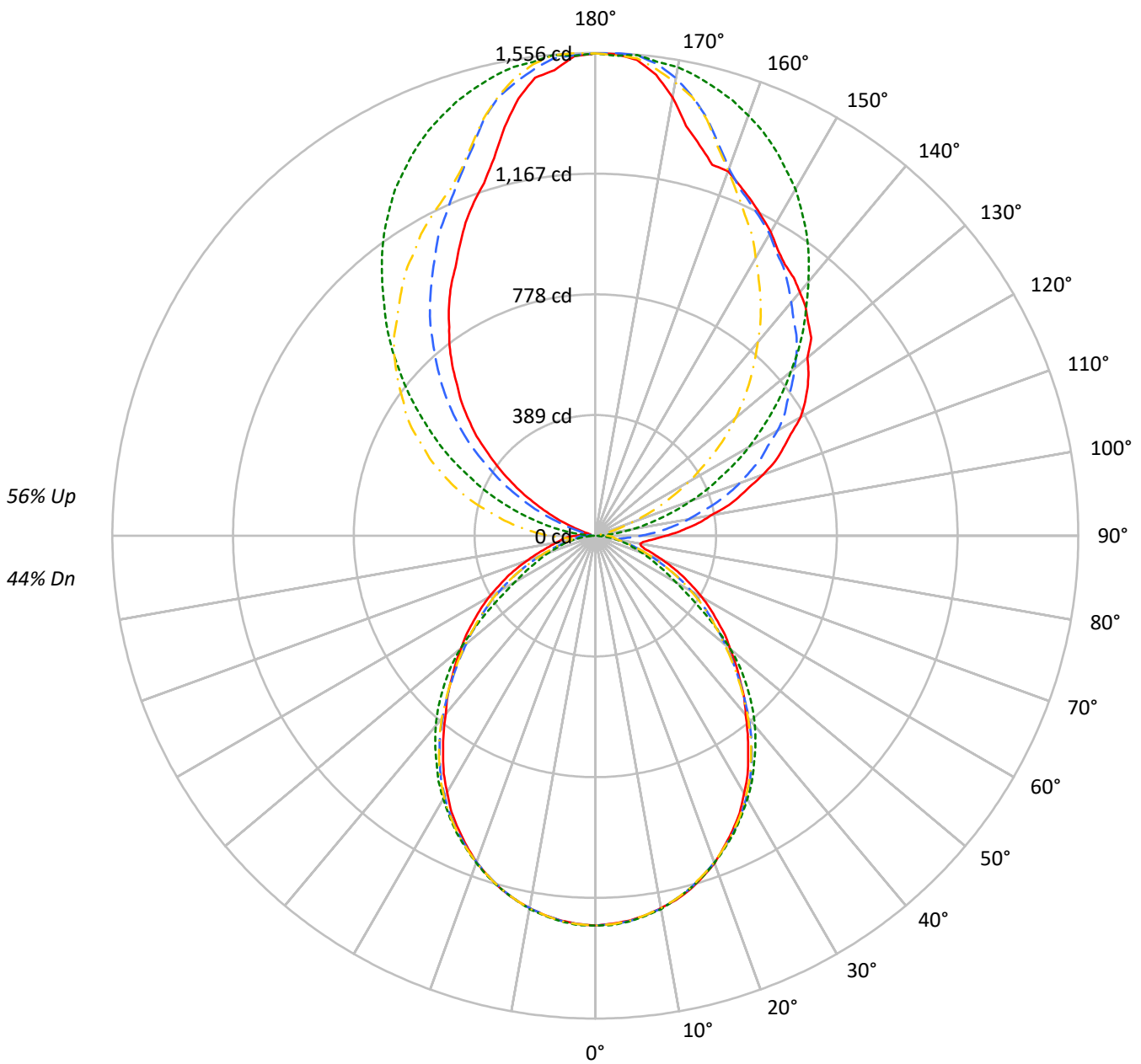
Lumens per Lamp: N/A
Luminaire Lumens: 6600.2 lumens
Efficiency: N/A
Efficacy: 72.5 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 91.001
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: P392613
CATALOG NUMBER: MWL-3-44-33-UNV-L930-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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44				
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	45	44	43	37				
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	40	38	36	31				
3	81	71	64	58	73	66	59	54	55	50	46	45	41	39	35	33	31	27				
4	74	63	56	50	67	58	52	46	49	44	40	40	36	33	32	29	27	23				
5	68	56	49	43	62	52	45	40	44	39	34	36	32	29	29	26	24	21				
6	63	51	43	37	57	47	40	35	40	34	30	33	29	26	26	23	21	18				
7	58	46	38	33	53	42	36	31	36	31	27	30	26	23	24	21	19	16				
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	15				
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	18	15	13				
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10816	10816	10816	10816
5°	10633	9918	10633	9918
10°	10401	9079	10401	9079
15°	10146	8281	10118	8281
20°	9796	7537	9767	7537
25°	9340	6847	9311	6847
30°	8826	6176	8785	6176
35°	8220	5515	8188	5515
40°	7591	4890	7547	4890
45°	7048	4217	7012	4217
50°	6517	3472	6479	3472
55°	6020	2597	5992	2597
60°	5506	1885	5489	1885
65°	4909	1416	4909	1416
70°	4230	1071	4250	1071
75°	3624	775	3694	775
80°	4080	498	3504	498
85°	6598	217	3876	217



TEST NUMBER: P392613

CATALOG NUMBER: MWL-3-44-33-UNV-L930-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.1	1.8
10°-20°	331.6	5.0
20°-30°	483.9	7.3
30°-40°	547.1	8.3
40°-50°	511.7	7.8
50°-60°	404.0	6.1
60°-70°	264.4	4.0
70°-80°	138.3	2.1
80°-90°	87.1	1.3
90°-100°	128.2	1.9
100°-110°	241.4	3.7
110°-120°	412.9	6.3
120°-130°	561.0	8.5
130°-140°	639.9	9.7
140°-150°	638.2	9.7
150°-160°	555.8	8.4
160°-170°	391.0	5.9
170°-180°	145.6	2.2
0°-30°	933.6	14.1
0°-40°	1480.7	22.4
0°-60°	2396.4	36.3
0°-90°	2886.1	43.7
90°-120°	782.5	11.9
90°-150°	2621.6	39.7
90°-180°	3714.0	56.3
0°-180°	6600.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1256	1256	1256	1256	1256	
5°	1245	1248	1245	1248	1245	118
15°	1180	1178	1177	1178	1180	332
25°	1047	1057	1043	1057	1047	481
35°	858	892	855	892	858	537
45°	659	693	656	693	659	510
55°	480	420	478	420	480	431
65°	313	218	313	218	313	310
75°	165	110	169	110	165	186
85°	173	27	102	27	173	136
90°	227	2	63	2	227	126
95°	301	45	40	45	301	262
105°	478	217	15	217	478	503
115°	668	443	154	443	668	662
125°	835	696	379	696	835	746
135°	970	949	610	949	970	749
145°	1066	1187	821	1187	1066	672
155°	1191	1373	1033	1373	1191	549
165°	1302	1494	1259	1494	1302	369
175°	1539	1555	1506	1555	1539	143
180°	1554	1554	1554	1554	1554	



TEST NUMBER: P392613

CATALOG NUMBER: MWL-3-44-33-UNV-L930-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1256.0	1256.0	1256.0	1256.0	1256.0	1256.0	1256.0	1256.0	1256.0	1256.0	1256.0
2.5°	1251.1	1254.1	1253.0	1254.0	1255.7	1253.0	1253.0	1254.1	1252.2	1254.1	1253.0
5°	1245.1	1247.3	1247.0	1247.0	1247.8	1247.0	1245.9	1247.3	1245.1	1247.3	1245.9
7.5°	1233.6	1236.6	1234.1	1236.0	1236.0	1234.9	1233.0	1235.5	1233.6	1235.5	1233.0
10°	1218.6	1221.4	1219.7	1219.7	1221.4	1218.6	1218.6	1219.2	1218.6	1219.2	1218.6
12.5°	1202.2	1202.0	1199.2	1200.8	1199.8	1200.8	1199.2	1199.8	1200.0	1199.8	1199.2
15°	1180.5	1178.3	1177.2	1178.0	1177.8	1177.0	1176.1	1176.1	1177.2	1176.1	1176.1
17.5°	1152.6	1152.9	1149.3	1151.6	1151.6	1151.6	1148.2	1151.9	1149.3	1151.9	1148.2
20°	1123.0	1121.9	1120.5	1122.0	1121.8	1120.9	1119.5	1119.7	1119.7	1119.7	1119.5
22.5°	1084.7	1087.2	1087.6	1090.8	1089.6	1089.6	1086.5	1085.0	1082.5	1085.0	1086.5
25°	1046.7	1050.9	1053.2	1057.7	1056.7	1056.7	1051.0	1047.6	1043.4	1047.6	1051.0
27.5°	1006.9	1007.8	1015.1	1022.5	1018.7	1021.4	1012.9	1004.5	1003.7	1004.5	1012.9
30°	958.8	963.0	974.0	982.2	979.7	980.0	970.8	959.7	954.4	959.7	970.8
32.5°	913.2	914.8	929.2	939.1	939.4	936.9	925.9	910.4	908.8	910.4	925.9
35°	858.0	862.2	877.4	895.1	891.9	891.9	874.1	858.9	854.7	858.9	874.1
37.5°	806.4	808.9	825.8	847.8	847.3	844.5	822.6	805.7	803.1	805.7	822.6
40°	754.0	753.2	769.2	793.5	800.0	791.3	764.8	748.8	749.6	748.8	764.8
42.5°	710.0	699.9	710.7	737.7	748.4	735.5	707.3	695.5	705.6	695.5	707.3
45°	659.1	648.9	654.8	680.2	692.6	678.0	650.4	645.7	655.8	645.7	650.4
47.5°	613.4	600.8	599.9	618.3	636.0	617.1	595.6	597.5	610.2	597.5	613.4
50°	567.0	555.2	546.7	559.1	568.1	556.9	542.3	550.8	563.7	550.8	567.0
52.5°	527.2	511.2	496.5	499.9	492.9	497.7	493.3	506.8	523.9	506.8	527.2
55°	480.5	470.4	450.1	438.8	420.0	436.6	446.8	467.0	478.3	467.0	480.5
57.5°	439.1	429.8	405.3	378.8	352.4	376.6	401.9	426.5	436.9	426.5	439.1
60°	396.6	387.2	357.7	319.4	299.1	318.3	355.5	385.0	395.4	385.0	396.6
62.5°	352.6	346.7	312.9	269.5	257.5	268.5	310.7	344.5	351.5	344.5	352.6
65°	312.7	302.5	267.8	226.5	218.5	225.3	266.7	301.4	312.7	301.4	312.7
67.5°	272.1	259.4	226.5	188.2	187.3	188.2	225.3	258.3	272.1	258.3	272.1
70°	232.1	217.7	187.3	156.0	159.4	156.0	187.3	218.8	233.2	218.8	232.1
72.5°	197.4	178.0	153.5	128.1	131.3	127.1	153.5	179.1	199.6	179.1	197.4
75°	165.4	143.3	121.9	102.5	110.2	102.5	123.1	144.4	168.6	144.4	165.4
77.5°	150.5	121.5	94.0	80.6	88.1	80.6	95.2	118.3	146.1	118.3	150.5
80°	147.1	116.7	77.0	62.0	67.0	62.0	74.8	99.1	126.3	99.1	147.1
82.5°	154.9	124.8	76.8	44.2	47.5	44.2	63.6	85.2	113.1	85.2	154.9
85°	172.8	145.8	90.8	36.5	27.3	34.3	58.9	78.9	101.5	78.9	172.8
87.5°	197.1	176.3	114.9	45.3	7.6	30.0	52.4	70.9	84.1	70.9	197.1
90°	227.3	209.6	146.9	61.7	1.9	20.0	38.2	54.8	62.6	54.8	227.3
92.5°	264.6	248.0	181.6	88.0	18.4	12.3	31.2	45.0	49.5	45.0	264.6
95°	300.7	292.4	222.1	116.8	44.8	7.0	24.4	37.7	40.5	37.7	300.7
97.5°	342.3	334.1	261.9	154.6	78.8	14.0	19.3	32.3	34.8	32.3	342.3
100°	377.5	373.0	304.6	201.7	120.5	37.1	13.6	28.3	31.6	28.3	377.5
102.5°	432.4	415.9	345.3	246.8	165.5	68.9	18.1	20.6	24.0	20.6	432.4
105°	477.5	457.9	399.1	294.0	217.1	111.7	44.6	16.6	15.3	16.6	477.5
107.5°	519.7	507.8	447.5	342.3	272.1	161.2	81.8	42.4	27.8	42.4	519.7
110°	574.5	560.5	494.7	390.6	329.1	213.9	124.7	77.4	60.7	77.4	574.5



TEST NUMBER: P392613

CATALOG NUMBER: MWL-3-44-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	627.2	616.5	538.6	441.1	388.5	270.9	177.3	121.3	105.7	121.3	177.3
115°	667.9	661.5	589.1	488.3	443.3	335.7	235.5	172.9	154.1	172.9	235.5
117.5°	709.9	708.8	626.4	536.6	509.1	393.8	289.3	224.5	203.7	224.5	289.3
120°	763.7	754.9	678.0	585.0	571.8	455.4	348.7	283.8	263.0	283.8	348.7
122.5°	801.0	795.5	722.0	631.8	631.8	518.8	405.7	340.9	319.0	340.9	405.7
125°	835.0	832.9	754.9	678.0	695.6	577.0	469.4	403.5	379.4	403.5	469.4
127.5°	865.7	869.1	797.7	728.4	760.3	636.2	532.0	459.5	434.3	459.5	532.0
130°	892.1	903.1	838.2	774.7	821.9	701.1	588.0	515.4	499.1	515.4	588.0
132.5°	943.7	937.1	880.1	821.9	887.7	760.3	647.3	571.5	552.9	571.5	647.3
135°	970.0	972.2	916.2	862.4	949.2	819.7	703.3	628.6	610.0	628.6	703.3
137.5°	1001.9	995.3	944.9	911.8	1006.3	876.7	758.1	689.0	659.3	689.0	758.1
140°	1025.0	1023.8	982.1	955.8	1067.8	932.8	814.2	743.8	716.5	743.8	814.2
142.5°	1049.1	1055.7	1019.4	1004.1	1129.2	992.0	874.5	797.7	771.3	797.7	874.5
145°	1065.6	1079.8	1056.8	1064.4	1187.4	1057.8	927.3	849.2	820.8	849.2	927.3
147.5°	1093.1	1111.7	1084.2	1107.3	1238.0	1116.1	979.9	903.1	877.9	903.1	979.9
150°	1130.4	1139.2	1122.6	1166.7	1289.5	1180.8	1033.8	954.6	929.5	954.6	1033.8
152.5°	1160.1	1171.0	1152.3	1231.4	1330.2	1240.2	1093.1	1005.2	975.5	1005.2	1093.1
155°	1190.7	1195.1	1181.9	1293.9	1373.1	1298.3	1140.2	1061.2	1032.7	1061.2	1140.2
157.5°	1219.3	1228.0	1212.7	1341.2	1410.3	1348.8	1194.0	1117.2	1091.9	1117.2	1194.0
160°	1250.0	1250.0	1258.9	1396.0	1441.0	1392.7	1251.2	1178.6	1143.6	1178.6	1251.2
162.5°	1253.3	1274.3	1321.4	1434.5	1470.7	1431.2	1312.6	1222.6	1191.8	1222.6	1312.6
165°	1301.6	1320.3	1391.6	1468.5	1493.8	1465.2	1388.4	1295.0	1258.9	1295.0	1388.4
167.5°	1352.2	1391.6	1448.8	1506.9	1515.7	1497.1	1446.6	1381.9	1348.8	1381.9	1446.6
170°	1434.5	1468.5	1497.1	1521.2	1533.3	1522.3	1482.9	1451.0	1430.1	1451.0	1482.9
172.5°	1498.4	1521.2	1532.2	1547.6	1539.9	1535.5	1515.7	1500.3	1488.6	1500.3	1515.7
175°	1539.0	1544.2	1554.2	1548.6	1555.2	1543.2	1544.2	1552.0	1506.1	1552.0	1544.2
177.5°	1553.3	1561.8	1556.4	1546.4	1547.6	1545.4	1549.8	1554.2	1546.7	1554.2	1549.8
180°	1554.2	1554.2	1554.2	1554.2	1554.2	1554.2	1554.2	1554.2	1554.2	1554.2	1554.2



TEST NUMBER: P392613

CATALOG NUMBER: MWL-3-44-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1256.0	1256.0	1256.0	1256.0	1256.0	1256.0
2.5°	1253.0	1255.7	1254.0	1253.0	1254.1	1251.1
5°	1247.0	1247.8	1247.0	1247.0	1247.3	1245.1
7.5°	1234.9	1236.0	1236.0	1234.1	1236.6	1233.6
10°	1218.6	1221.4	1219.7	1219.7	1221.4	1218.6
12.5°	1200.8	1199.8	1200.8	1199.2	1202.0	1202.2
15°	1177.0	1177.8	1178.0	1177.2	1178.3	1180.5
17.5°	1151.6	1151.6	1151.6	1149.3	1152.9	1152.6
20°	1120.9	1121.8	1122.0	1120.5	1121.9	1123.0
22.5°	1089.6	1089.6	1090.8	1087.6	1087.2	1084.7
25°	1056.7	1056.7	1057.7	1053.2	1050.9	1046.7
27.5°	1021.4	1018.7	1022.5	1015.1	1007.8	1006.9
30°	980.0	979.7	982.2	974.0	963.0	958.8
32.5°	936.9	939.4	939.1	929.2	914.8	913.2
35°	891.9	891.9	895.1	877.4	862.2	858.0
37.5°	844.5	847.3	847.8	825.8	808.9	806.4
40°	791.3	800.0	793.5	769.2	753.2	754.0
42.5°	735.5	748.4	737.7	710.7	699.9	710.0
45°	678.0	692.6	680.2	654.8	648.9	659.1
47.5°	617.1	636.0	618.3	599.9	600.8	613.4
50°	556.9	568.1	559.1	546.7	555.2	567.0
52.5°	497.7	492.9	499.9	496.5	511.2	527.2
55°	436.6	420.0	438.8	450.1	470.4	480.5
57.5°	376.6	352.4	378.8	405.3	429.8	439.1
60°	318.3	299.1	319.4	357.7	387.2	396.6
62.5°	268.5	257.5	269.5	312.9	346.7	352.6
65°	225.3	218.5	226.5	267.8	302.5	312.7
67.5°	188.2	187.3	188.2	226.5	259.4	272.1
70°	156.0	159.4	156.0	187.3	217.7	232.1
72.5°	127.1	131.3	128.1	153.5	178.0	197.4
75°	102.5	110.2	102.5	121.9	143.3	165.4
77.5°	80.6	88.1	80.6	94.0	121.5	150.5
80°	62.0	67.0	62.0	77.0	116.7	147.1
82.5°	44.2	47.5	44.2	76.8	124.8	154.9
85°	34.3	27.3	36.5	90.8	145.8	172.8
87.5°	30.0	7.6	45.3	114.9	176.3	197.1
90°	20.0	1.9	61.7	146.9	209.6	227.3
92.5°	12.3	18.4	88.0	181.6	248.0	264.6
95°	7.0	44.8	116.8	222.1	292.4	300.7
97.5°	14.0	78.8	154.6	261.9	334.1	342.3
100°	37.1	120.5	201.7	304.6	373.0	377.5
102.5°	68.9	165.5	246.8	345.3	415.9	432.4
105°	111.7	217.1	294.0	399.1	457.9	477.5
107.5°	161.2	272.1	342.3	447.5	507.8	519.7
110°	213.9	329.1	390.6	494.7	560.5	574.5



TEST NUMBER: P392613

CATALOG NUMBER: MWL-3-44-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	270.9	388.5	441.1	538.6	616.5	627.2
115°	335.7	443.3	488.3	589.1	661.5	667.9
117.5°	393.8	509.1	536.6	626.4	708.8	709.9
120°	455.4	571.8	585.0	678.0	754.9	763.7
122.5°	518.8	631.8	631.8	722.0	795.5	801.0
125°	577.0	695.6	678.0	754.9	832.9	835.0
127.5°	636.2	760.3	728.4	797.7	869.1	865.7
130°	701.1	821.9	774.7	838.2	903.1	892.1
132.5°	760.3	887.7	821.9	880.1	937.1	943.7
135°	819.7	949.2	862.4	916.2	972.2	970.0
137.5°	876.7	1006.3	911.8	944.9	995.3	1001.9
140°	932.8	1067.8	955.8	982.1	1023.8	1025.0
142.5°	992.0	1129.2	1004.1	1019.4	1055.7	1049.1
145°	1057.8	1187.4	1064.4	1056.8	1079.8	1065.6
147.5°	1116.1	1238.0	1107.3	1084.2	1111.7	1093.1
150°	1180.8	1289.5	1166.7	1122.6	1139.2	1130.4
152.5°	1240.2	1330.2	1231.4	1152.3	1171.0	1160.1
155°	1298.3	1373.1	1293.9	1181.9	1195.1	1190.7
157.5°	1348.8	1410.3	1341.2	1212.7	1228.0	1219.3
160°	1392.7	1441.0	1396.0	1258.9	1250.0	1250.0
162.5°	1431.2	1470.7	1434.5	1321.4	1274.3	1253.3
165°	1465.2	1493.8	1468.5	1391.6	1320.3	1301.6
167.5°	1497.1	1515.7	1506.9	1448.8	1391.6	1352.2
170°	1522.3	1533.3	1521.2	1497.1	1468.5	1434.5
172.5°	1535.5	1539.9	1547.6	1532.2	1521.2	1498.4
175°	1543.2	1555.2	1548.6	1554.2	1544.2	1539.0
177.5°	1545.4	1547.6	1546.4	1556.4	1561.8	1553.3
180°	1554.2	1554.2	1554.2	1554.2	1554.2	1554.2

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