

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: P392686

Luminaire Tested: **MWL-4-55-25-UNV-L835-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392686  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-4-55-25-UNV-L835-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

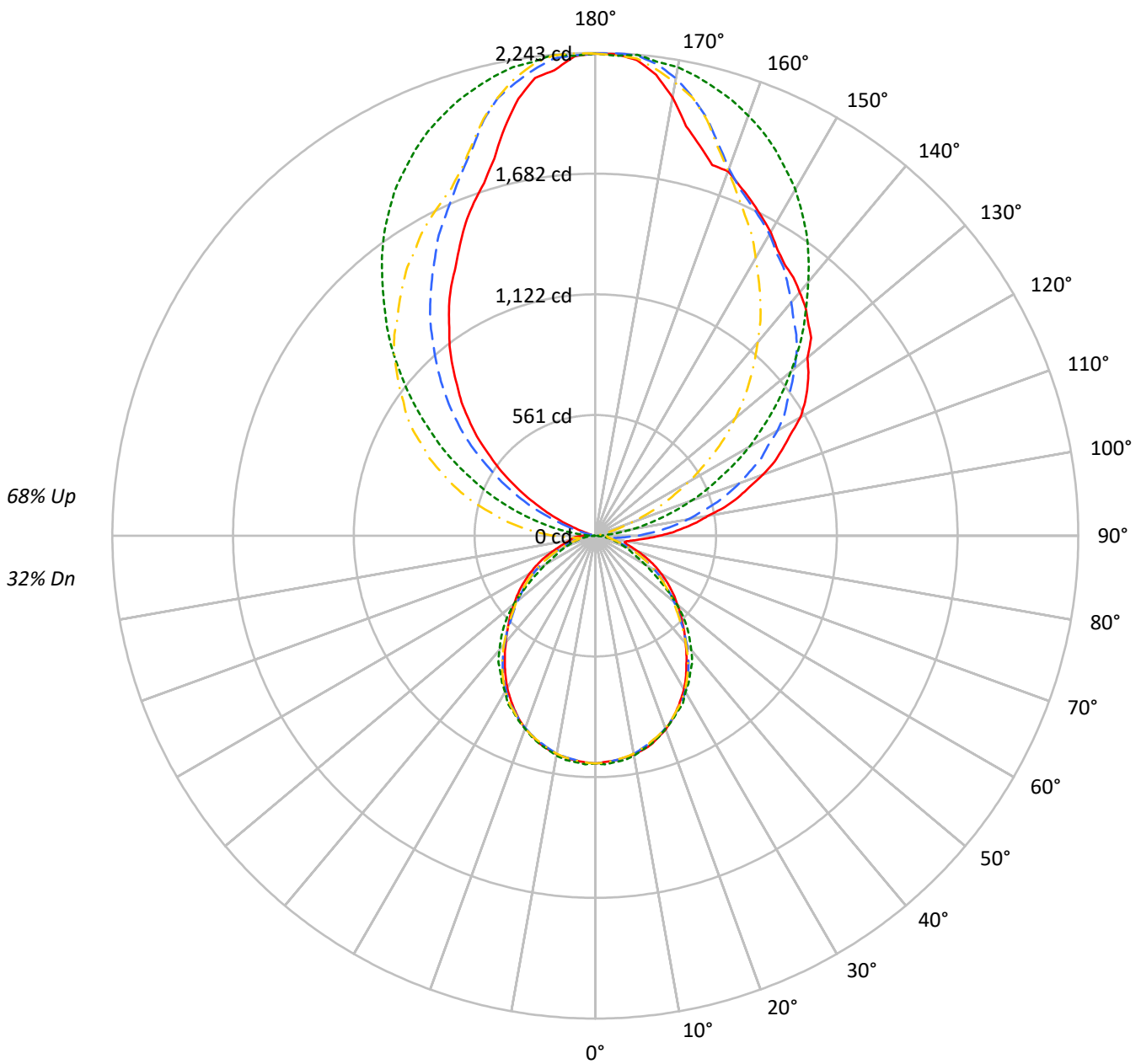
Lumens per Lamp: N/A  
Luminaire Lumens: 7855.0 lumens  
Efficiency: N/A  
Efficacy: 89.5 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Semi-Indirect

Input Watts (W): 87.8  
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: P392686  
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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	73	73	73	56	56	56	40	40	40	32
1	94	89	86	82	84	81	77	75	64	62	60	49	47	46	35	34	33	27
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28	23
3	78	69	62	56	70	62	56	51	50	46	42	38	35	33	28	26	24	20
4	71	61	53	48	64	55	49	44	44	40	36	34	31	28	25	23	21	17
5	65	54	47	41	59	49	43	37	40	35	31	31	27	25	22	20	18	15
6	60	49	41	35	54	44	37	32	36	31	27	28	24	22	20	18	16	13
7	56	44	36	31	50	40	33	28	32	27	24	25	22	19	19	16	15	12
8	52	40	32	27	46	36	30	25	29	25	21	23	20	17	17	15	13	10
9	48	36	29	24	43	33	27	22	27	22	19	21	18	15	16	13	12	9
10	45	33	26	22	40	30	24	20	25	20	17	20	16	14	15	12	11	9

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	6832	6832	6832	6832
5°	6733	6292	6733	6292
10°	6637	5782	6637	5782
15°	6531	5282	6499	5282
20°	6336	4811	6305	4811
25°	6078	4382	6046	4382
30°	5793	3961	5748	3961
35°	5419	3570	5383	3570
40°	5062	3172	5012	3172
45°	4729	2756	4689	2756
50°	4433	2255	4390	2255
55°	4173	1694	4140	1694
60°	3865	1258	3848	1258
65°	3509	932	3509	932
70°	3048	699	3070	699
75°	2688	511	2774	511
80°	3458	332	2754	332
85°	6880	150	3403	150



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.7	1.3
10°-20°	281.2	3.6
20°-30°	413.2	5.3
30°-40°	470.0	6.0
40°-50°	442.5	5.6
50°-60°	355.1	4.5
60°-70°	236.2	3.0
70°-80°	125.1	1.6
80°-90°	94.2	1.2
90°-100°	172.9	2.2
100°-110°	346.4	4.4
110°-120°	594.6	7.6
120°-130°	808.2	10.3
130°-140°	921.9	11.7
140°-150°	919.6	11.7
150°-160°	800.9	10.2
160°-170°	563.4	7.2
170°-180°	209.9	2.7
0°-30°	794.1	10.1
0°-40°	1264.1	16.1
0°-60°	2061.6	26.2
0°-90°	2517.1	32.0
90°-120°	1114.0	14.2
90°-150°	3763.7	47.9
90°-180°	5338.0	68.0
0°-180°	7855.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1058	1058	1058	1058	1058	
5°	1048	1056	1048	1056	1048	99
15°	1004	1002	999	1002	1004	282
25°	894	902	890	902	894	411
35°	737	770	733	770	737	462
45°	572	604	567	604	572	443
55°	426	365	422	365	426	381
65°	281	192	281	192	281	278
75°	150	97	154	97	150	170
85°	203	25	101	25	203	156
90°	298	2	60	2	298	164
95°	411	64	36	64	411	362
105°	686	313	20	313	686	721
115°	961	639	220	639	961	954
125°	1203	1002	546	1002	1203	1074
135°	1398	1368	879	1368	1398	1079
145°	1535	1711	1182	1711	1535	968
155°	1716	1978	1488	1978	1716	791
165°	1876	2152	1814	2152	1876	532
175°	2218	2242	2170	2242	2218	207
180°	2240	2240	2240	2240	2240	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1057.8	1057.8	1057.8	1057.8	1057.8	1057.8	1057.8	1057.8	1057.8	1057.8	1057.8
2.5°	1052.0	1053.3	1054.5	1066.9	1062.9	1065.3	1054.5	1053.3	1053.7	1053.3	1054.5
5°	1048.1	1049.4	1047.6	1056.4	1055.5	1056.4	1046.0	1049.4	1048.1	1049.4	1046.0
7.5°	1039.9	1041.1	1040.1	1047.6	1050.5	1046.0	1038.5	1039.5	1039.9	1039.5	1038.5
10°	1030.7	1031.3	1029.3	1035.2	1037.2	1033.6	1027.7	1028.1	1030.7	1028.1	1027.7
12.5°	1019.1	1020.5	1011.0	1016.9	1017.3	1016.9	1011.0	1017.3	1015.9	1017.3	1011.0
15°	1004.0	996.9	993.3	1002.2	1001.6	1000.6	991.8	993.7	999.2	993.7	991.8
17.5°	979.4	979.2	974.7	979.0	979.0	979.0	973.1	977.6	974.7	977.6	973.1
20°	956.8	955.2	952.1	956.4	954.7	954.7	950.5	952.1	952.1	952.1	950.5
22.5°	926.7	929.7	925.5	928.9	930.1	927.2	924.0	926.5	923.6	926.5	924.0
25°	894.3	895.3	897.6	902.3	901.6	900.7	894.5	890.5	889.6	890.5	894.5
27.5°	858.9	862.8	871.1	878.3	880.0	876.8	867.9	858.1	854.2	858.1	867.9
30°	823.5	823.5	834.3	841.6	837.8	838.4	829.6	818.8	817.1	818.8	829.6
32.5°	782.2	782.2	797.0	810.1	807.0	807.0	792.3	775.8	775.8	775.8	792.3
35°	737.4	740.4	754.1	773.8	769.9	769.0	749.3	735.5	732.6	735.5	749.3
37.5°	695.2	693.2	708.9	731.5	739.2	726.7	704.1	688.4	690.3	688.4	704.1
40°	652.9	649.0	660.8	685.7	692.0	682.5	654.4	642.6	646.5	642.6	654.4
42.5°	612.6	605.7	611.0	637.6	647.8	634.3	606.2	599.3	606.2	599.3	606.2
45°	571.7	563.8	561.9	590.4	603.6	587.1	555.5	559.0	566.9	559.0	555.5
47.5°	536.3	525.5	517.7	534.8	552.4	533.1	511.3	520.7	531.5	520.7	511.3
50°	496.0	487.2	476.4	483.6	491.8	480.4	470.0	480.8	491.2	480.8	470.0
52.5°	462.6	451.8	435.5	436.5	427.9	433.2	430.7	445.4	457.8	445.4	430.7
55°	425.7	415.8	397.2	384.7	365.4	381.5	392.3	411.0	422.4	411.0	392.3
57.5°	390.3	383.4	358.8	334.6	310.4	331.4	354.0	378.6	387.0	378.6	354.0
60°	353.2	346.3	318.8	280.9	266.1	279.3	315.7	343.2	351.7	343.2	315.7
62.5°	317.8	312.9	280.5	237.6	223.3	236.1	277.4	309.8	316.3	309.8	277.4
65°	280.9	273.0	242.6	199.3	191.8	197.7	241.0	271.5	280.9	271.5	241.0
67.5°	243.5	235.7	205.2	167.3	166.3	167.3	203.6	234.1	243.5	234.1	203.6
70°	207.6	195.8	168.3	138.8	138.8	138.8	168.3	197.4	209.1	197.4	168.3
72.5°	176.1	161.4	137.8	115.2	117.5	113.6	137.8	163.0	179.3	163.0	137.8
75°	149.6	130.9	108.7	92.0	96.9	92.0	110.3	132.5	154.4	132.5	110.3
77.5°	139.7	113.7	85.1	72.3	78.2	72.3	86.7	108.9	133.4	108.9	86.7
80°	147.9	117.2	71.2	54.6	59.6	54.6	68.0	91.8	117.8	91.8	68.0
82.5°	170.1	137.2	78.4	38.9	41.9	38.9	59.4	80.3	110.0	80.3	59.4
85°	203.4	172.9	104.4	35.8	25.2	32.6	58.5	76.4	100.6	76.4	58.5
87.5°	246.7	222.6	142.4	52.7	7.9	30.6	52.2	70.7	83.7	70.7	52.2
90°	297.6	274.9	193.4	80.0	1.6	19.9	36.8	51.8	60.2	51.8	36.8
92.5°	357.4	335.4	246.1	122.2	26.3	13.0	29.3	42.7	47.3	42.7	29.3
95°	411.2	400.8	308.2	168.5	64.3	10.2	23.4	33.6	36.2	33.6	23.4
97.5°	474.0	467.0	372.0	222.5	113.3	20.0	22.3	31.8	30.9	31.8	22.3
100°	530.8	528.2	437.3	290.5	173.5	53.2	18.0	31.4	32.3	31.4	18.0
102.5°	615.1	594.1	497.3	355.5	238.3	99.1	25.7	24.5	26.4	24.5	25.7
105°	686.1	662.0	573.9	423.5	312.7	160.8	62.7	25.8	20.0	25.8	62.7
107.5°	749.3	731.5	643.5	493.1	391.9	232.0	116.5	60.5	40.3	60.5	116.5
110°	826.5	807.4	711.5	562.8	474.1	308.0	178.2	111.2	85.8	111.2	178.2



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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°	902.3	888.2	774.8	635.5	559.6	390.3	254.2	174.5	150.7	174.5	254.2
115°	960.9	953.0	848.6	703.6	638.7	483.6	339.0	248.9	220.3	248.9	339.0
117.5°	1022.6	1021.1	902.3	774.2	733.7	568.5	416.5	323.2	293.2	323.2	416.5
120°	1100.2	1087.5	976.7	843.9	824.8	657.1	502.0	408.7	378.6	408.7	502.0
122.5°	1153.9	1146.1	1040.0	910.3	910.3	747.3	584.3	490.9	459.3	490.9	584.3
125°	1203.1	1199.8	1087.5	976.7	1002.1	831.2	676.1	581.1	546.4	581.1	676.1
127.5°	1247.3	1252.1	1149.2	1049.6	1095.5	916.6	766.3	661.8	625.5	661.8	766.3
130°	1285.3	1301.2	1207.8	1116.0	1184.0	1009.9	847.0	742.5	718.8	742.5	847.0
132.5°	1359.7	1350.2	1267.9	1184.0	1278.9	1095.5	932.4	823.2	796.4	823.2	932.4
135°	1397.7	1400.8	1320.1	1242.6	1367.6	1180.9	1013.1	905.6	878.6	905.6	1013.1
137.5°	1443.6	1434.0	1361.3	1313.8	1449.9	1263.1	1092.3	992.6	949.8	992.6	1092.3
140°	1476.8	1475.2	1415.1	1377.1	1538.5	1343.9	1173.0	1071.7	1032.2	1071.7	1173.0
142.5°	1511.6	1522.1	1468.9	1446.7	1627.2	1429.3	1260.0	1150.2	1111.3	1150.2	1260.0
145°	1535.4	1555.9	1522.7	1533.8	1711.0	1524.3	1336.0	1223.6	1182.4	1223.6	1336.0
147.5°	1574.9	1601.8	1562.3	1595.5	1783.8	1608.1	1411.9	1301.2	1264.8	1301.2	1411.9
150°	1628.7	1641.4	1617.6	1680.9	1858.1	1701.5	1489.5	1375.6	1339.1	1375.6	1489.5
152.5°	1671.4	1687.2	1660.4	1774.3	1916.7	1787.0	1574.9	1448.3	1405.6	1448.3	1574.9
155°	1715.7	1722.1	1703.0	1864.5	1978.4	1870.8	1643.0	1529.0	1487.9	1529.0	1643.0
157.5°	1756.9	1769.6	1747.4	1932.5	2032.2	1943.6	1720.5	1609.8	1573.3	1609.8	1720.5
160°	1801.2	1801.2	1813.9	2011.6	2076.5	2006.9	1802.8	1698.3	1647.7	1698.3	1802.8
162.5°	1805.9	1836.0	1904.0	2067.1	2119.3	2062.3	1891.3	1761.6	1717.3	1761.6	1891.3
165°	1875.5	1902.4	2005.4	2116.1	2152.5	2111.4	2000.5	1866.1	1813.9	1866.1	2000.5
167.5°	1948.3	2005.4	2087.6	2171.4	2184.1	2157.2	2084.5	1991.1	1943.6	1991.1	2084.5
170°	2067.1	2116.1	2157.2	2192.1	2209.5	2193.7	2136.7	2090.8	2060.7	2090.8	2136.7
172.5°	2159.5	2192.1	2207.9	2230.0	2219.9	2212.6	2184.1	2162.0	2145.2	2162.0	2184.1
175°	2217.9	2225.3	2239.6	2231.6	2242.1	2223.7	2225.3	2236.3	2170.5	2236.3	2225.3
177.5°	2238.6	2250.6	2242.7	2228.5	2231.0	2226.9	2233.2	2239.6	2229.0	2239.6	2233.2
180°	2239.6	2239.6	2239.6	2239.6	2239.6	2239.6	2239.6	2239.6	2239.6	2239.6	2239.6



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1057.8	1057.8	1057.8	1057.8	1057.8	1057.8
2.5°	1065.3	1062.9	1066.9	1054.5	1053.3	1052.0
5°	1056.4	1055.5	1056.4	1047.6	1049.4	1048.1
7.5°	1046.0	1050.5	1047.6	1040.1	1041.1	1039.9
10°	1033.6	1037.2	1035.2	1029.3	1031.3	1030.7
12.5°	1016.9	1017.3	1016.9	1011.0	1020.5	1019.1
15°	1000.6	1001.6	1002.2	993.3	996.9	1004.0
17.5°	979.0	979.0	979.0	974.7	979.2	979.4
20°	954.7	954.7	956.4	952.1	955.2	956.8
22.5°	927.2	930.1	928.9	925.5	929.7	926.7
25°	900.7	901.6	902.3	897.6	895.3	894.3
27.5°	876.8	880.0	878.3	871.1	862.8	858.9
30°	838.4	837.8	841.6	834.3	823.5	823.5
32.5°	807.0	807.0	810.1	797.0	782.2	782.2
35°	769.0	769.9	773.8	754.1	740.4	737.4
37.5°	726.7	739.2	731.5	708.9	693.2	695.2
40°	682.5	692.0	685.7	660.8	649.0	652.9
42.5°	634.3	647.8	637.6	611.0	605.7	612.6
45°	587.1	603.6	590.4	561.9	563.8	571.7
47.5°	533.1	552.4	534.8	517.7	525.5	536.3
50°	480.4	491.8	483.6	476.4	487.2	496.0
52.5°	433.2	427.9	436.5	435.5	451.8	462.6
55°	381.5	365.4	384.7	397.2	415.8	425.7
57.5°	331.4	310.4	334.6	358.8	383.4	390.3
60°	279.3	266.1	280.9	318.8	346.3	353.2
62.5°	236.1	223.3	237.6	280.5	312.9	317.8
65°	197.7	191.8	199.3	242.6	273.0	280.9
67.5°	167.3	166.3	167.3	205.2	235.7	243.5
70°	138.8	138.8	138.8	168.3	195.8	207.6
72.5°	113.6	117.5	115.2	137.8	161.4	176.1
75°	92.0	96.9	92.0	108.7	130.9	149.6
77.5°	72.3	78.2	72.3	85.1	113.7	139.7
80°	54.6	59.6	54.6	71.2	117.2	147.9
82.5°	38.9	41.9	38.9	78.4	137.2	170.1
85°	32.6	25.2	35.8	104.4	172.9	203.4
87.5°	30.6	7.9	52.7	142.4	222.6	246.7
90°	19.9	1.6	80.0	193.4	274.9	297.6
92.5°	13.0	26.3	122.2	246.1	335.4	357.4
95°	10.2	64.3	168.5	308.2	400.8	411.2
97.5°	20.0	113.3	222.5	372.0	467.0	474.0
100°	53.2	173.5	290.5	437.3	528.2	530.8
102.5°	99.1	238.3	355.5	497.3	594.1	615.1
105°	160.8	312.7	423.5	573.9	662.0	686.1
107.5°	232.0	391.9	493.1	643.5	731.5	749.3
110°	308.0	474.1	562.8	711.5	807.4	826.5





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	390.3	559.6	635.5	774.8	888.2	902.3
115°	483.6	638.7	703.6	848.6	953.0	960.9
117.5°	568.5	733.7	774.2	902.3	1021.1	1022.6
120°	657.1	824.8	843.9	976.7	1087.5	1100.2
122.5°	747.3	910.3	910.3	1040.0	1146.1	1153.9
125°	831.2	1002.1	976.7	1087.5	1199.8	1203.1
127.5°	916.6	1095.5	1049.6	1149.2	1252.1	1247.3
130°	1009.9	1184.0	1116.0	1207.8	1301.2	1285.3
132.5°	1095.5	1278.9	1184.0	1267.9	1350.2	1359.7
135°	1180.9	1367.6	1242.6	1320.1	1400.8	1397.7
137.5°	1263.1	1449.9	1313.8	1361.3	1434.0	1443.6
140°	1343.9	1538.5	1377.1	1415.1	1475.2	1476.8
142.5°	1429.3	1627.2	1446.7	1468.9	1522.1	1511.6
145°	1524.3	1711.0	1533.8	1522.7	1555.9	1535.4
147.5°	1608.1	1783.8	1595.5	1562.3	1601.8	1574.9
150°	1701.5	1858.1	1680.9	1617.6	1641.4	1628.7
152.5°	1787.0	1916.7	1774.3	1660.4	1687.2	1671.4
155°	1870.8	1978.4	1864.5	1703.0	1722.1	1715.7
157.5°	1943.6	2032.2	1932.5	1747.4	1769.6	1756.9
160°	2006.9	2076.5	2011.6	1813.9	1801.2	1801.2
162.5°	2062.3	2119.3	2067.1	1904.0	1836.0	1805.9
165°	2111.4	2152.5	2116.1	2005.4	1902.4	1875.5
167.5°	2157.2	2184.1	2171.4	2087.6	2005.4	1948.3
170°	2193.7	2209.5	2192.1	2157.2	2116.1	2067.1
172.5°	2212.6	2219.9	2230.0	2207.9	2192.1	2159.5
175°	2223.7	2242.1	2231.6	2239.6	2225.3	2217.9
177.5°	2226.9	2231.0	2228.5	2242.7	2250.6	2238.6
180°	2239.6	2239.6	2239.6	2239.6	2239.6	2239.6

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