

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: P392685

Luminaire Tested: **MWL-4-55-25-UNV-L830-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392685  
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-L830-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

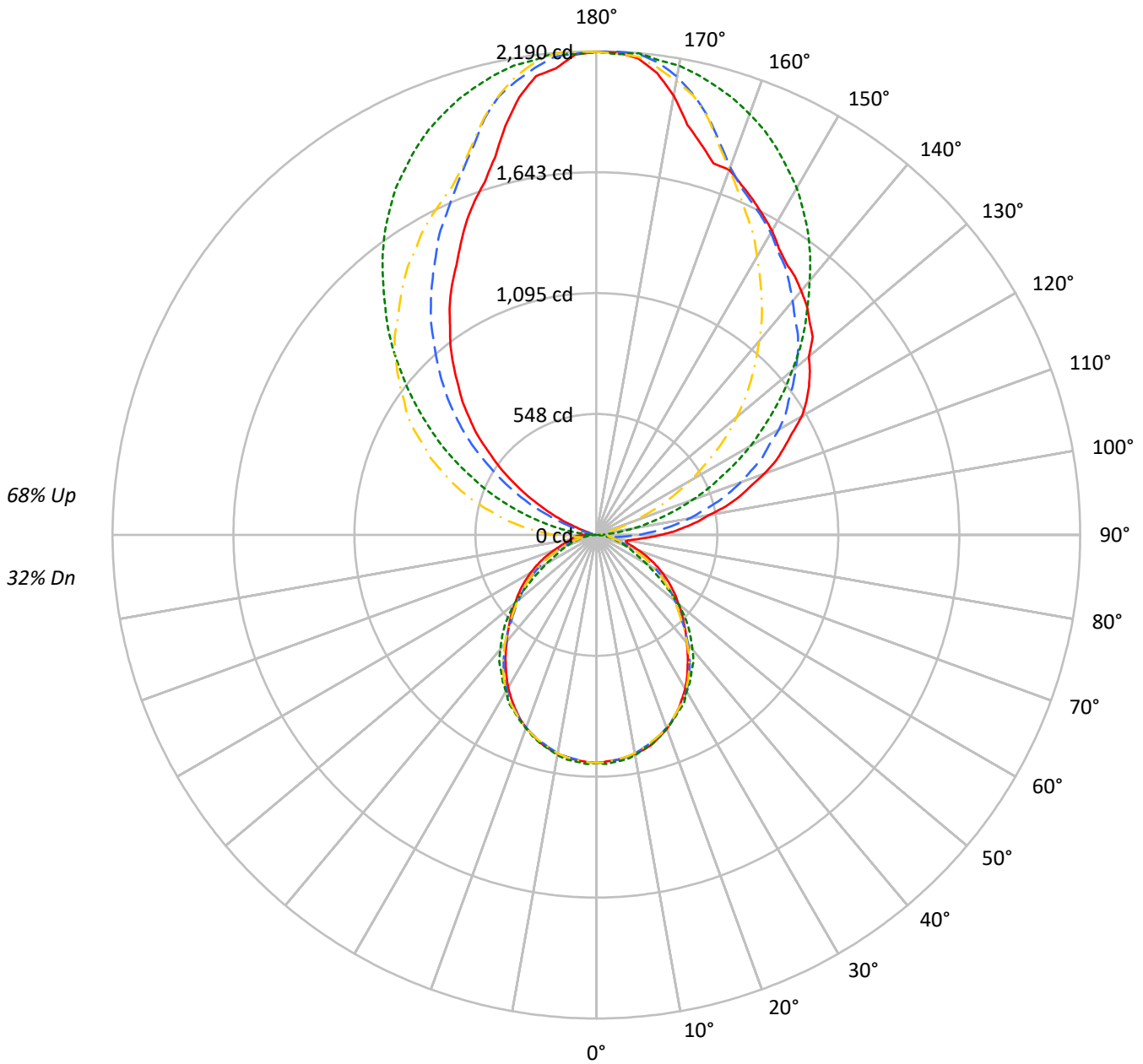
Lumens per Lamp: N/A  
Luminaire Lumens: 7671.0 lumens  
Efficiency: N/A  
Efficacy: 87.4 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Semi-Indirect

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: P392685  
CATALOG NUMBER: MWL-4-55-25-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	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°	6671	6671	6671	6671
5°	6575	6144	6575	6144
10°	6482	5647	6482	5647
15°	6377	5158	6347	5158
20°	6187	4698	6157	4698
25°	5935	4279	5904	4279
30°	5657	3868	5613	3868
35°	5291	3487	5257	3487
40°	4943	3098	4895	3098
45°	4618	2692	4579	2692
50°	4329	2202	4287	2202
55°	4075	1655	4043	1655
60°	3775	1229	3758	1229
65°	3426	911	3426	911
70°	2976	683	2998	683
75°	2625	499	2710	499
80°	3376	324	2691	324
85°	6721	147	3325	147



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	97.4	1.3
10°-20°	274.6	3.6
20°-30°	403.5	5.3
30°-40°	458.9	6.0
40°-50°	432.1	5.6
50°-60°	346.7	4.5
60°-70°	230.7	3.0
70°-80°	122.2	1.6
80°-90°	91.9	1.2
90°-100°	168.9	2.2
100°-110°	338.3	4.4
110°-120°	580.7	7.6
120°-130°	789.3	10.3
130°-140°	900.3	11.7
140°-150°	898.1	11.7
150°-160°	782.1	10.2
160°-170°	550.2	7.2
170°-180°	205.0	2.7
0°-30°	775.5	10.1
0°-40°	1234.5	16.1
0°-60°	2013.3	26.2
0°-90°	2458.1	32.0
90°-120°	1087.9	14.2
90°-150°	3675.5	47.9
90°-180°	5213.0	68.0
0°-180°	7671.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1033	1033	1033	1033	1033	
5°	1024	1031	1024	1031	1024	97
15°	980	978	976	978	980	275
25°	873	880	869	880	873	402
35°	720	752	715	752	720	451
45°	558	589	554	589	558	432
55°	416	357	412	357	416	372
65°	274	187	274	187	274	271
75°	146	95	151	95	146	166
85°	199	25	98	25	199	152
90°	291	2	59	2	291	160
95°	402	63	35	63	402	353
105°	670	305	20	305	670	704
115°	938	624	215	624	938	931
125°	1175	979	534	979	1175	1049
135°	1365	1336	858	1336	1365	1054
145°	1499	1671	1155	1671	1499	945
155°	1676	1932	1453	1932	1676	773
165°	1832	2102	1771	2102	1832	520
175°	2166	2190	2120	2190	2166	202
180°	2187	2187	2187	2187	2187	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1033.0	1033.0	1033.0	1033.0	1033.0	1033.0	1033.0	1033.0	1033.0	1033.0	1033.0
2.5°	1027.4	1028.6	1029.8	1041.9	1038.0	1040.3	1029.8	1028.6	1029.0	1028.6	1029.8
5°	1023.5	1024.8	1023.1	1031.7	1030.7	1031.7	1021.5	1024.8	1023.5	1024.8	1021.5
7.5°	1015.6	1016.7	1015.8	1023.1	1025.9	1021.5	1014.2	1015.2	1015.6	1015.2	1014.2
10°	1006.5	1007.1	1005.2	1011.0	1012.9	1009.4	1003.7	1004.0	1006.5	1004.0	1003.7
12.5°	995.2	996.6	987.3	993.1	993.5	993.1	987.3	993.5	992.1	993.5	987.3
15°	980.4	973.5	970.1	978.7	978.1	977.2	968.5	970.5	975.8	970.5	968.5
17.5°	956.4	956.2	951.8	956.1	956.1	956.1	950.3	954.7	951.8	954.7	950.3
20°	934.4	932.8	929.8	934.0	932.3	932.3	928.2	929.8	929.8	929.8	928.2
22.5°	905.0	907.9	903.8	907.1	908.4	905.5	902.3	904.8	901.9	904.8	902.3
25°	873.3	874.3	876.6	881.2	880.5	879.6	873.5	869.7	868.7	869.7	873.5
27.5°	838.8	842.6	850.7	857.8	859.4	856.2	847.6	838.0	834.2	838.0	847.6
30°	804.2	804.2	814.8	821.9	818.1	818.8	810.2	799.6	798.0	799.6	810.2
32.5°	763.9	763.9	778.3	791.2	788.1	788.1	773.7	757.7	757.7	757.7	773.7
35°	720.1	723.0	736.5	755.7	751.9	750.9	731.8	718.3	715.4	718.3	731.8
37.5°	678.9	676.9	692.3	714.4	721.9	709.7	687.6	672.2	674.2	672.2	687.6
40°	637.6	633.8	645.3	669.7	675.8	666.5	639.0	627.5	631.4	627.5	639.0
42.5°	598.2	591.5	596.7	622.6	632.6	619.5	592.0	585.3	592.0	585.3	592.0
45°	558.3	550.6	548.7	576.6	589.4	573.4	542.5	545.9	553.6	545.9	542.5
47.5°	523.8	513.2	505.5	522.2	539.5	520.6	499.3	508.5	519.1	508.5	499.3
50°	484.4	475.8	465.2	472.3	480.3	469.2	459.0	469.5	479.7	469.5	459.0
52.5°	451.8	441.2	425.3	426.2	417.9	423.1	420.6	435.0	447.1	435.0	420.6
55°	415.7	406.1	387.9	375.7	356.9	372.6	383.2	401.4	412.5	401.4	383.2
57.5°	381.1	374.4	350.4	326.7	303.1	323.6	345.7	369.7	378.0	369.7	345.7
60°	345.0	338.2	311.4	274.3	259.9	272.8	308.3	335.2	343.4	335.2	308.3
62.5°	310.4	305.6	273.9	232.1	218.1	230.5	270.9	302.5	308.9	302.5	270.9
65°	274.3	266.6	236.9	194.6	187.4	193.1	235.3	265.1	274.3	265.1	235.3
67.5°	237.8	230.2	200.4	163.4	162.4	163.4	198.9	228.6	237.8	228.6	198.9
70°	202.7	191.2	164.3	135.5	135.5	135.5	164.3	192.7	204.2	192.7	164.3
72.5°	172.0	157.6	134.6	112.5	114.8	111.0	134.6	159.1	175.1	159.1	134.6
75°	146.1	127.8	106.2	89.8	94.6	89.8	107.7	129.4	150.8	129.4	107.7
77.5°	136.4	111.0	83.1	70.6	76.4	70.6	84.7	106.3	130.2	106.3	84.7
80°	144.4	114.4	69.5	53.4	58.2	53.4	66.4	89.6	115.1	89.6	66.4
82.5°	166.1	134.0	76.6	38.0	40.9	38.0	58.0	78.4	107.4	78.4	58.0
85°	198.7	168.8	101.9	34.9	24.6	31.9	57.1	74.6	98.3	74.6	57.1
87.5°	240.9	217.4	139.1	51.4	7.7	29.8	51.0	69.0	81.8	69.0	51.0
90°	290.6	268.5	188.9	78.1	1.5	19.4	35.9	50.6	58.8	50.6	35.9
92.5°	349.0	327.6	240.3	119.3	25.7	12.7	28.6	41.7	46.2	41.7	28.6
95°	401.6	391.4	301.0	164.5	62.8	10.0	22.8	32.8	35.3	32.8	22.8
97.5°	462.9	456.1	363.3	217.3	110.7	19.5	21.8	31.1	30.1	31.1	21.8
100°	518.4	515.8	427.0	283.7	169.4	51.9	17.6	30.6	31.6	30.6	17.6
102.5°	600.6	580.2	485.7	347.2	232.8	96.7	25.1	23.9	25.8	23.9	25.1
105°	670.0	646.5	560.4	413.6	305.4	157.0	61.2	25.2	19.5	25.2	61.2
107.5°	731.8	714.4	628.4	481.5	382.7	226.6	113.7	59.1	39.4	59.1	113.7
110°	807.1	788.5	694.8	549.6	463.0	300.8	174.0	108.6	83.8	108.6	174.0



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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°	881.2	867.4	756.6	620.6	546.5	381.1	248.2	170.4	147.1	170.4	248.2
115°	938.4	930.7	828.7	687.1	623.8	472.3	331.0	243.0	215.2	243.0	331.0
117.5°	998.7	997.1	881.2	756.0	716.5	555.1	406.8	315.6	286.3	315.6	406.8
120°	1074.4	1062.0	953.8	824.1	805.5	641.7	490.3	399.1	369.7	399.1	490.3
122.5°	1126.9	1119.2	1015.7	889.0	889.0	729.8	570.6	479.4	448.5	479.4	570.6
125°	1174.9	1171.7	1062.0	953.8	978.6	811.7	660.2	567.5	533.6	567.5	660.2
127.5°	1218.1	1222.8	1122.3	1025.0	1069.8	895.1	748.4	646.3	610.8	646.3	748.4
130°	1255.2	1270.7	1179.5	1089.9	1156.3	986.3	827.2	725.1	702.0	725.1	827.2
132.5°	1327.9	1318.6	1238.2	1156.3	1249.0	1069.8	910.6	803.9	777.7	803.9	910.6
135°	1364.9	1368.0	1289.2	1213.5	1335.6	1153.2	989.4	884.4	858.1	884.4	989.4
137.5°	1409.8	1400.4	1329.4	1283.1	1415.9	1233.5	1066.7	969.3	927.6	969.3	1066.7
140°	1442.2	1440.7	1381.9	1344.9	1502.5	1312.4	1145.5	1046.6	1008.0	1046.6	1145.5
142.5°	1476.2	1486.4	1434.5	1412.8	1589.0	1395.8	1230.5	1123.3	1085.2	1123.3	1230.5
145°	1499.4	1519.5	1487.0	1497.9	1670.9	1488.6	1304.7	1195.0	1154.7	1195.0	1304.7
147.5°	1538.0	1564.3	1525.7	1558.1	1742.0	1570.4	1378.8	1270.7	1235.2	1270.7	1378.8
150°	1590.6	1603.0	1579.7	1641.5	1814.6	1661.6	1454.6	1343.3	1307.7	1343.3	1454.6
152.5°	1632.2	1647.7	1621.5	1732.7	1871.8	1745.1	1538.0	1414.4	1372.7	1414.4	1538.0
155°	1675.5	1681.8	1663.1	1820.8	1932.1	1827.0	1604.5	1493.2	1453.0	1493.2	1604.5
157.5°	1715.7	1728.1	1706.4	1887.3	1984.6	1898.1	1680.2	1572.1	1536.4	1572.1	1680.2
160°	1759.0	1759.0	1771.4	1964.5	2027.9	1959.9	1760.6	1658.5	1609.1	1658.5	1760.6
162.5°	1763.6	1793.0	1859.4	2018.7	2069.6	2013.9	1847.0	1720.3	1677.1	1720.3	1847.0
165°	1831.6	1857.9	1958.4	2066.5	2102.1	2061.9	1953.7	1822.4	1771.4	1822.4	1953.7
167.5°	1902.7	1958.4	2038.7	2120.6	2133.0	2106.7	2035.6	1944.5	1898.1	1944.5	2035.6
170°	2018.7	2066.5	2106.7	2140.7	2157.7	2142.3	2086.6	2041.8	2012.4	2041.8	2086.6
172.5°	2108.9	2140.7	2156.2	2177.8	2167.9	2160.8	2133.0	2111.4	2095.0	2111.4	2133.0
175°	2166.0	2173.2	2187.1	2179.3	2189.6	2171.6	2173.2	2183.9	2119.6	2183.9	2173.2
177.5°	2186.1	2197.8	2190.2	2176.3	2178.7	2174.7	2180.9	2187.1	2176.8	2187.1	2180.9
180°	2187.1	2187.1	2187.1	2187.1	2187.1	2187.1	2187.1	2187.1	2187.1	2187.1	2187.1



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CATALOG NUMBER: MWL-4-55-25-UNV-L830-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1033.0	1033.0	1033.0	1033.0	1033.0	1033.0
2.5°	1040.3	1038.0	1041.9	1029.8	1028.6	1027.4
5°	1031.7	1030.7	1031.7	1023.1	1024.8	1023.5
7.5°	1021.5	1025.9	1023.1	1015.8	1016.7	1015.6
10°	1009.4	1012.9	1011.0	1005.2	1007.1	1006.5
12.5°	993.1	993.5	993.1	987.3	996.6	995.2
15°	977.2	978.1	978.7	970.1	973.5	980.4
17.5°	956.1	956.1	956.1	951.8	956.2	956.4
20°	932.3	932.3	934.0	929.8	932.8	934.4
22.5°	905.5	908.4	907.1	903.8	907.9	905.0
25°	879.6	880.5	881.2	876.6	874.3	873.3
27.5°	856.2	859.4	857.8	850.7	842.6	838.8
30°	818.8	818.1	821.9	814.8	804.2	804.2
32.5°	788.1	788.1	791.2	778.3	763.9	763.9
35°	750.9	751.9	755.7	736.5	723.0	720.1
37.5°	709.7	721.9	714.4	692.3	676.9	678.9
40°	666.5	675.8	669.7	645.3	633.8	637.6
42.5°	619.5	632.6	622.6	596.7	591.5	598.2
45°	573.4	589.4	576.6	548.7	550.6	558.3
47.5°	520.6	539.5	522.2	505.5	513.2	523.8
50°	469.2	480.3	472.3	465.2	475.8	484.4
52.5°	423.1	417.9	426.2	425.3	441.2	451.8
55°	372.6	356.9	375.7	387.9	406.1	415.7
57.5°	323.6	303.1	326.7	350.4	374.4	381.1
60°	272.8	259.9	274.3	311.4	338.2	345.0
62.5°	230.5	218.1	232.1	273.9	305.6	310.4
65°	193.1	187.4	194.6	236.9	266.6	274.3
67.5°	163.4	162.4	163.4	200.4	230.2	237.8
70°	135.5	135.5	135.5	164.3	191.2	202.7
72.5°	111.0	114.8	112.5	134.6	157.6	172.0
75°	89.8	94.6	89.8	106.2	127.8	146.1
77.5°	70.6	76.4	70.6	83.1	111.0	136.4
80°	53.4	58.2	53.4	69.5	114.4	144.4
82.5°	38.0	40.9	38.0	76.6	134.0	166.1
85°	31.9	24.6	34.9	101.9	168.8	198.7
87.5°	29.8	7.7	51.4	139.1	217.4	240.9
90°	19.4	1.5	78.1	188.9	268.5	290.6
92.5°	12.7	25.7	119.3	240.3	327.6	349.0
95°	10.0	62.8	164.5	301.0	391.4	401.6
97.5°	19.5	110.7	217.3	363.3	456.1	462.9
100°	51.9	169.4	283.7	427.0	515.8	518.4
102.5°	96.7	232.8	347.2	485.7	580.2	600.6
105°	157.0	305.4	413.6	560.4	646.5	670.0
107.5°	226.6	382.7	481.5	628.4	714.4	731.8
110°	300.8	463.0	549.6	694.8	788.5	807.1





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	381.1	546.5	620.6	756.6	867.4	881.2
115°	472.3	623.8	687.1	828.7	930.7	938.4
117.5°	555.1	716.5	756.0	881.2	997.1	998.7
120°	641.7	805.5	824.1	953.8	1062.0	1074.4
122.5°	729.8	889.0	889.0	1015.7	1119.2	1126.9
125°	811.7	978.6	953.8	1062.0	1171.7	1174.9
127.5°	895.1	1069.8	1025.0	1122.3	1222.8	1218.1
130°	986.3	1156.3	1089.9	1179.5	1270.7	1255.2
132.5°	1069.8	1249.0	1156.3	1238.2	1318.6	1327.9
135°	1153.2	1335.6	1213.5	1289.2	1368.0	1364.9
137.5°	1233.5	1415.9	1283.1	1329.4	1400.4	1409.8
140°	1312.4	1502.5	1344.9	1381.9	1440.7	1442.2
142.5°	1395.8	1589.0	1412.8	1434.5	1486.4	1476.2
145°	1488.6	1670.9	1497.9	1487.0	1519.5	1499.4
147.5°	1570.4	1742.0	1558.1	1525.7	1564.3	1538.0
150°	1661.6	1814.6	1641.5	1579.7	1603.0	1590.6
152.5°	1745.1	1871.8	1732.7	1621.5	1647.7	1632.2
155°	1827.0	1932.1	1820.8	1663.1	1681.8	1675.5
157.5°	1898.1	1984.6	1887.3	1706.4	1728.1	1715.7
160°	1959.9	2027.9	1964.5	1771.4	1759.0	1759.0
162.5°	2013.9	2069.6	2018.7	1859.4	1793.0	1763.6
165°	2061.9	2102.1	2066.5	1958.4	1857.9	1831.6
167.5°	2106.7	2133.0	2120.6	2038.7	1958.4	1902.7
170°	2142.3	2157.7	2140.7	2106.7	2066.5	2018.7
172.5°	2160.8	2167.9	2177.8	2156.2	2140.7	2108.9
175°	2171.6	2189.6	2179.3	2187.1	2173.2	2166.0
177.5°	2174.7	2178.7	2176.3	2190.2	2197.8	2186.1
180°	2187.1	2187.1	2187.1	2187.1	2187.1	2187.1

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