

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: P392687

Luminaire Tested: **MWL-4-55-25-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392687
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-L840-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7992.1 lumens
Efficiency: N/A
Efficacy: 91.0 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

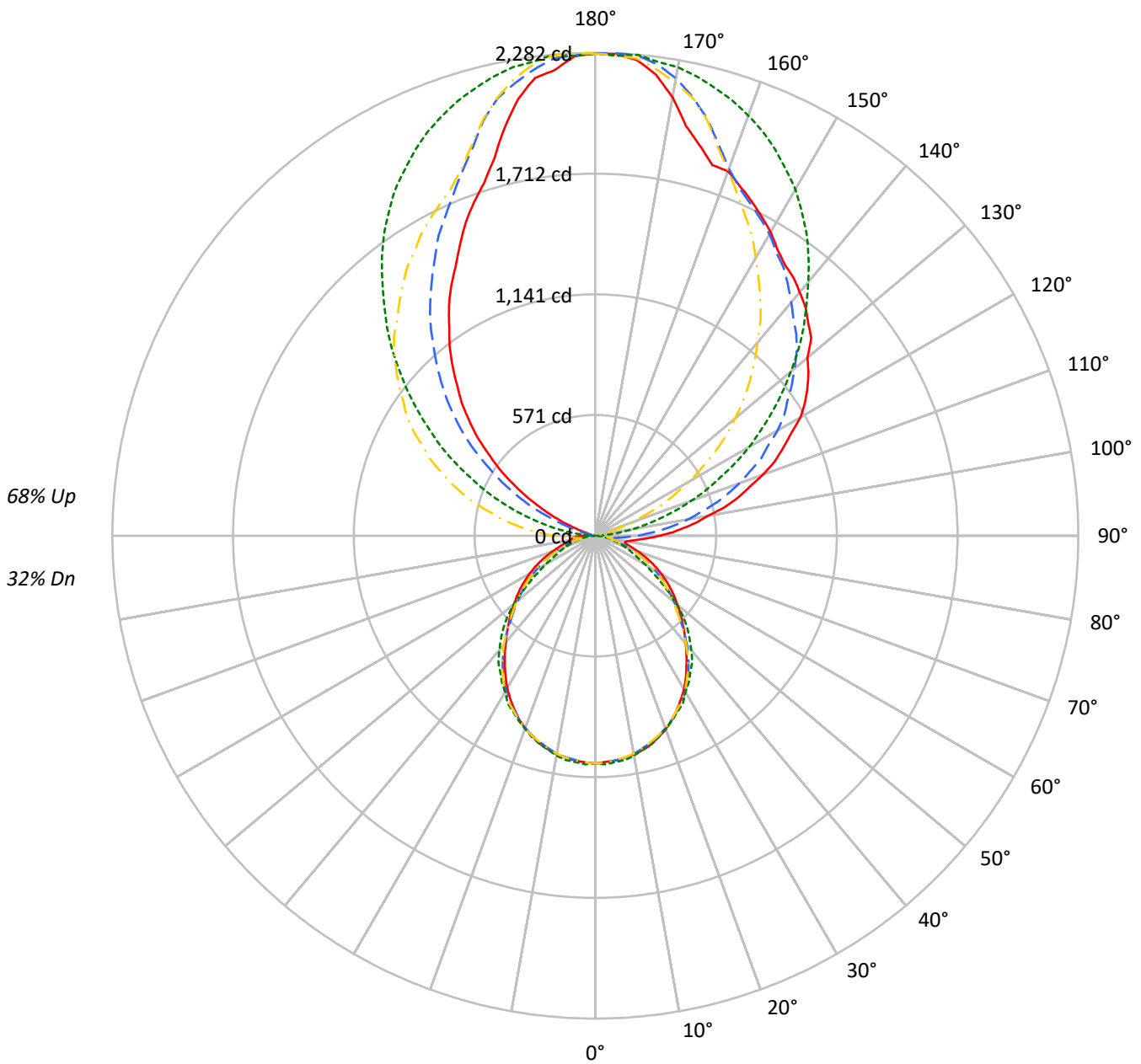
Input Watts (W): 87.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P392687

CATALOG NUMBER: MWL-4-55-25-UNV-L840-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	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°	6951	6951	6951	6951
5°	6851	6402	6851	6402
10°	6753	5883	6753	5883
15°	6644	5374	6613	5374
20°	6446	4895	6415	4895
25°	6184	4458	6151	4458
30°	5894	4030	5848	4030
35°	5513	3633	5477	3633
40°	5150	3228	5100	3228
45°	4812	2804	4771	2804
50°	4511	2294	4467	2294
55°	4245	1724	4213	1724
60°	3933	1280	3915	1280
65°	3570	949	3570	949
70°	3101	711	3124	711
75°	2735	520	2823	520
80°	3519	338	2803	338
85°	7002	153	3464	153



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.5	1.3
10°-20°	286.1	3.6
20°-30°	420.4	5.3
30°-40°	478.2	6.0
40°-50°	450.2	5.6
50°-60°	361.3	4.5
60°-70°	240.3	3.0
70°-80°	127.3	1.6
80°-90°	95.8	1.2
90°-100°	176.0	2.2
100°-110°	352.5	4.4
110°-120°	605.0	7.6
120°-130°	822.3	10.3
130°-140°	938.0	11.7
140°-150°	935.7	11.7
150°-160°	814.8	10.2
160°-170°	573.3	7.2
170°-180°	213.5	2.7
0°-30°	808.0	10.1
0°-40°	1286.2	16.1
0°-60°	2097.7	26.2
0°-90°	2561.1	32.0
90°-120°	1133.5	14.2
90°-150°	3829.4	47.9
90°-180°	5431.0	68.0
0°-180°	7992.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1076	1076	1076	1076	1076	
5°	1066	1074	1066	1074	1066	101
15°	1022	1019	1017	1019	1022	287
25°	910	917	905	917	910	418
35°	750	783	745	783	750	470
45°	582	614	577	614	582	450
55°	433	372	430	372	433	387
65°	286	195	286	195	286	283
75°	152	99	157	99	152	173
85°	207	26	102	26	207	158
90°	303	2	61	2	303	167
95°	418	65	37	65	418	368
105°	698	318	20	318	698	733
115°	978	650	224	650	978	970
125°	1224	1020	556	1020	1224	1093
135°	1422	1391	894	1391	1422	1098
145°	1562	1741	1203	1741	1562	985
155°	1746	2013	1514	2013	1746	805
165°	1908	2190	1846	2190	1908	541
175°	2257	2281	2208	2281	2257	210
180°	2279	2279	2279	2279	2279	



TEST NUMBER: P392687

CATALOG NUMBER: MWL-4-55-25-UNV-L840-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3
2.5°	1070.4	1071.7	1072.9	1085.5	1081.5	1083.9	1072.9	1071.7	1072.1	1071.7	1072.9
5°	1066.4	1067.7	1065.9	1074.9	1073.9	1074.9	1064.3	1067.7	1066.4	1067.7	1064.3
7.5°	1058.1	1059.3	1058.3	1065.9	1068.9	1064.3	1056.7	1057.7	1058.1	1057.7	1056.7
10°	1048.7	1049.3	1047.3	1053.3	1055.3	1051.7	1045.7	1046.1	1048.7	1046.1	1045.7
12.5°	1036.9	1038.3	1028.7	1034.7	1035.1	1034.7	1028.7	1035.1	1033.7	1035.1	1028.7
15°	1021.5	1014.3	1010.7	1019.7	1019.1	1018.1	1009.1	1011.1	1016.7	1011.1	1009.1
17.5°	996.5	996.3	991.7	996.1	996.1	996.1	990.1	994.7	991.7	994.7	990.1
20°	973.5	971.9	968.7	973.1	971.4	971.4	967.1	968.7	968.7	968.7	967.1
22.5°	942.9	945.9	941.7	945.1	946.4	943.4	940.1	942.7	939.7	942.7	940.1
25°	909.9	910.9	913.3	918.1	917.4	916.4	910.1	906.1	905.1	906.1	910.1
27.5°	873.9	877.9	886.3	893.7	895.4	892.1	883.1	873.1	869.1	873.1	883.1
30°	837.9	837.9	848.9	856.3	852.4	853.1	844.1	833.1	831.4	833.1	844.1
32.5°	795.9	795.9	810.9	824.3	821.1	821.1	806.1	789.4	789.4	789.4	806.1
35°	750.3	753.3	767.3	787.3	783.4	782.4	762.4	748.4	745.4	748.4	762.4
37.5°	707.3	705.3	721.3	744.3	752.1	739.4	716.4	700.4	702.4	700.4	716.4
40°	664.3	660.3	672.3	697.7	704.1	694.4	665.8	653.8	657.8	653.8	665.8
42.5°	623.3	616.3	621.7	648.7	659.1	645.4	616.8	609.8	616.8	609.8	616.8
45°	581.7	573.7	571.7	600.7	614.1	597.4	565.2	568.8	576.8	568.8	565.2
47.5°	545.7	534.7	526.7	544.1	562.1	542.4	520.2	529.8	540.8	529.8	520.2
50°	504.7	495.7	484.7	492.1	500.4	488.8	478.2	489.2	499.8	489.2	478.2
52.5°	470.7	459.7	443.1	444.1	435.4	440.8	438.2	453.2	465.8	453.2	438.2
55°	433.1	423.1	404.1	391.4	371.8	388.2	399.2	418.2	429.8	418.2	399.2
57.5°	397.1	390.1	365.1	340.4	315.8	337.2	360.2	385.2	393.8	385.2	360.2
60°	359.4	352.4	324.4	285.8	270.8	284.2	321.2	349.2	357.8	349.2	321.2
62.5°	323.4	318.4	285.4	241.8	227.2	240.2	282.2	315.2	321.8	315.2	282.2
65°	285.8	277.8	246.8	202.8	195.2	201.2	245.2	276.2	285.8	276.2	245.2
67.5°	247.8	239.8	208.8	170.2	169.2	170.2	207.2	238.2	247.8	238.2	207.2
70°	211.2	199.2	171.2	141.2	141.2	141.2	171.2	200.8	212.8	200.8	171.2
72.5°	179.2	164.2	140.2	117.2	119.6	115.6	140.2	165.8	182.4	165.8	140.2
75°	152.2	133.2	110.6	93.6	98.6	93.6	112.2	134.8	157.1	134.8	112.2
77.5°	142.1	115.7	86.6	73.6	79.6	73.6	88.2	110.8	135.7	110.8	88.2
80°	150.5	119.2	72.4	55.6	60.6	55.6	69.2	93.4	119.9	93.4	69.2
82.5°	173.1	139.6	79.8	39.6	42.6	39.6	60.4	81.7	111.9	81.7	60.4
85°	207.0	175.9	106.2	36.4	25.6	33.2	59.5	77.7	102.4	77.7	59.5
87.5°	251.0	226.5	144.9	53.6	8.0	31.1	53.1	71.9	85.2	71.9	53.1
90°	302.8	279.7	196.8	81.4	1.6	20.2	37.4	52.7	61.3	52.7	37.4
92.5°	363.6	341.3	250.4	124.3	26.8	13.2	29.8	43.4	48.1	43.4	29.8
95°	418.4	407.8	313.6	171.4	65.4	10.4	23.8	34.2	36.8	34.2	23.8
97.5°	482.3	475.2	378.5	226.4	115.3	20.3	22.7	32.4	31.4	32.4	22.7
100°	540.1	537.4	444.9	295.6	176.5	54.1	18.3	31.9	32.9	31.9	18.3
102.5°	625.8	604.5	506.0	361.7	242.5	100.8	26.2	24.9	26.9	24.9	26.2
105°	698.1	673.6	583.9	430.9	318.2	163.6	63.8	26.3	20.3	26.3	63.8
107.5°	762.4	744.3	654.7	501.7	398.7	236.1	118.5	61.6	41.0	61.6	118.5
110°	840.9	821.5	723.9	572.6	482.4	313.4	181.3	113.1	87.3	113.1	181.3



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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°	918.1	903.7	788.3	646.6	569.4	397.1	258.6	177.5	153.3	177.5	258.6
115°	977.7	969.7	863.4	715.9	649.9	492.1	344.9	253.2	224.2	253.2	344.9
117.5°	1040.5	1038.9	918.1	787.7	746.5	578.4	423.8	328.8	298.3	328.8	423.8
120°	1119.4	1106.5	993.8	858.6	839.2	668.6	510.8	415.8	385.2	415.8	510.8
122.5°	1174.1	1166.1	1058.2	926.2	926.2	760.4	594.5	499.5	467.3	499.5	594.5
125°	1224.1	1220.8	1106.5	993.8	1019.6	845.7	687.9	591.3	555.9	591.3	687.9
127.5°	1269.1	1274.0	1169.3	1067.9	1114.6	932.6	779.7	673.4	636.4	673.4	779.7
130°	1307.8	1323.9	1228.9	1135.5	1204.7	1027.6	861.8	755.5	731.4	755.5	861.8
132.5°	1383.5	1373.8	1290.1	1204.7	1301.3	1114.6	948.7	837.6	810.3	837.6	948.7
135°	1422.0	1425.2	1343.2	1264.3	1391.4	1201.5	1030.8	921.4	894.0	921.4	1030.8
137.5°	1468.7	1459.0	1385.0	1336.8	1475.1	1285.2	1111.4	1009.9	966.4	1009.9	1111.4
140°	1502.5	1500.9	1439.7	1401.1	1565.3	1367.4	1193.5	1090.4	1050.2	1090.4	1193.5
142.5°	1537.9	1548.6	1494.5	1471.9	1655.5	1454.2	1282.0	1170.3	1130.7	1170.3	1282.0
145°	1562.1	1583.0	1549.2	1560.5	1740.8	1550.8	1359.3	1245.0	1203.1	1245.0	1359.3
147.5°	1602.3	1629.7	1589.5	1623.3	1814.9	1636.1	1436.5	1323.9	1286.9	1323.9	1436.5
150°	1657.1	1670.0	1645.8	1710.2	1890.5	1731.1	1515.4	1399.5	1362.5	1399.5	1515.4
152.5°	1700.5	1716.6	1689.3	1805.2	1950.1	1818.1	1602.3	1473.5	1430.1	1473.5	1602.3
155°	1745.6	1752.1	1732.7	1897.0	2012.9	1903.4	1671.6	1555.6	1513.8	1555.6	1671.6
157.5°	1787.5	1800.4	1777.8	1966.2	2067.6	1977.5	1750.5	1637.8	1600.7	1637.8	1750.5
160°	1832.6	1832.6	1845.5	2046.7	2112.7	2041.9	1834.2	1727.9	1676.4	1727.9	1834.2
162.5°	1837.4	1868.0	1937.2	2103.1	2156.2	2098.2	1924.3	1792.3	1747.2	1792.3	1924.3
165°	1908.2	1935.6	2040.3	2153.0	2190.0	2148.2	2035.4	1898.6	1845.5	1898.6	2035.4
167.5°	1982.3	2040.3	2124.0	2209.3	2222.2	2194.8	2120.8	2025.8	1977.5	2025.8	2120.8
170°	2103.1	2153.0	2194.8	2230.3	2248.0	2231.9	2173.9	2127.2	2096.6	2127.2	2173.9
172.5°	2197.1	2230.3	2246.4	2268.9	2258.6	2251.2	2222.2	2199.7	2182.6	2199.7	2222.2
175°	2256.6	2264.1	2278.6	2270.5	2281.2	2262.5	2264.1	2275.3	2208.3	2275.3	2264.1
177.5°	2277.6	2289.8	2281.8	2267.3	2269.9	2265.7	2272.1	2278.6	2267.9	2278.6	2272.1
180°	2278.6	2278.6	2278.6	2278.6	2278.6	2278.6	2278.6	2278.6	2278.6	2278.6	2278.6



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CATALOG NUMBER: MWL-4-55-25-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1076.3	1076.3	1076.3	1076.3	1076.3	1076.3
2.5°	1083.9	1081.5	1085.5	1072.9	1071.7	1070.4
5°	1074.9	1073.9	1074.9	1065.9	1067.7	1066.4
7.5°	1064.3	1068.9	1065.9	1058.3	1059.3	1058.1
10°	1051.7	1055.3	1053.3	1047.3	1049.3	1048.7
12.5°	1034.7	1035.1	1034.7	1028.7	1038.3	1036.9
15°	1018.1	1019.1	1019.7	1010.7	1014.3	1021.5
17.5°	996.1	996.1	996.1	991.7	996.3	996.5
20°	971.4	971.4	973.1	968.7	971.9	973.5
22.5°	943.4	946.4	945.1	941.7	945.9	942.9
25°	916.4	917.4	918.1	913.3	910.9	909.9
27.5°	892.1	895.4	893.7	886.3	877.9	873.9
30°	853.1	852.4	856.3	848.9	837.9	837.9
32.5°	821.1	821.1	824.3	810.9	795.9	795.9
35°	782.4	783.4	787.3	767.3	753.3	750.3
37.5°	739.4	752.1	744.3	721.3	705.3	707.3
40°	694.4	704.1	697.7	672.3	660.3	664.3
42.5°	645.4	659.1	648.7	621.7	616.3	623.3
45°	597.4	614.1	600.7	571.7	573.7	581.7
47.5°	542.4	562.1	544.1	526.7	534.7	545.7
50°	488.8	500.4	492.1	484.7	495.7	504.7
52.5°	440.8	435.4	444.1	443.1	459.7	470.7
55°	388.2	371.8	391.4	404.1	423.1	433.1
57.5°	337.2	315.8	340.4	365.1	390.1	397.1
60°	284.2	270.8	285.8	324.4	352.4	359.4
62.5°	240.2	227.2	241.8	285.4	318.4	323.4
65°	201.2	195.2	202.8	246.8	277.8	285.8
67.5°	170.2	169.2	170.2	208.8	239.8	247.8
70°	141.2	141.2	141.2	171.2	199.2	211.2
72.5°	115.6	119.6	117.2	140.2	164.2	179.2
75°	93.6	98.6	93.6	110.6	133.2	152.2
77.5°	73.6	79.6	73.6	86.6	115.7	142.1
80°	55.6	60.6	55.6	72.4	119.2	150.5
82.5°	39.6	42.6	39.6	79.8	139.6	173.1
85°	33.2	25.6	36.4	106.2	175.9	207.0
87.5°	31.1	8.0	53.6	144.9	226.5	251.0
90°	20.2	1.6	81.4	196.8	279.7	302.8
92.5°	13.2	26.8	124.3	250.4	341.3	363.6
95°	10.4	65.4	171.4	313.6	407.8	418.4
97.5°	20.3	115.3	226.4	378.5	475.2	482.3
100°	54.1	176.5	295.6	444.9	537.4	540.1
102.5°	100.8	242.5	361.7	506.0	604.5	625.8
105°	163.6	318.2	430.9	583.9	673.6	698.1
107.5°	236.1	398.7	501.7	654.7	744.3	762.4
110°	313.4	482.4	572.6	723.9	821.5	840.9



TEST NUMBER: P392687

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	397.1	569.4	646.6	788.3	903.7	918.1
115°	492.1	649.9	715.9	863.4	969.7	977.7
117.5°	578.4	746.5	787.7	918.1	1038.9	1040.5
120°	668.6	839.2	858.6	993.8	1106.5	1119.4
122.5°	760.4	926.2	926.2	1058.2	1166.1	1174.1
125°	845.7	1019.6	993.8	1106.5	1220.8	1224.1
127.5°	932.6	1114.6	1067.9	1169.3	1274.0	1269.1
130°	1027.6	1204.7	1135.5	1228.9	1323.9	1307.8
132.5°	1114.6	1301.3	1204.7	1290.1	1373.8	1383.5
135°	1201.5	1391.4	1264.3	1343.2	1425.2	1422.0
137.5°	1285.2	1475.1	1336.8	1385.0	1459.0	1468.7
140°	1367.4	1565.3	1401.1	1439.7	1500.9	1502.5
142.5°	1454.2	1655.5	1471.9	1494.5	1548.6	1537.9
145°	1550.8	1740.8	1560.5	1549.2	1583.0	1562.1
147.5°	1636.1	1814.9	1623.3	1589.5	1629.7	1602.3
150°	1731.1	1890.5	1710.2	1645.8	1670.0	1657.1
152.5°	1818.1	1950.1	1805.2	1689.3	1716.6	1700.5
155°	1903.4	2012.9	1897.0	1732.7	1752.1	1745.6
157.5°	1977.5	2067.6	1966.2	1777.8	1800.4	1787.5
160°	2041.9	2112.7	2046.7	1845.5	1832.6	1832.6
162.5°	2098.2	2156.2	2103.1	1937.2	1868.0	1837.4
165°	2148.2	2190.0	2153.0	2040.3	1935.6	1908.2
167.5°	2194.8	2222.2	2209.3	2124.0	2040.3	1982.3
170°	2231.9	2248.0	2230.3	2194.8	2153.0	2103.1
172.5°	2251.2	2258.6	2268.9	2246.4	2230.3	2197.1
175°	2262.5	2281.2	2270.5	2278.6	2264.1	2256.6
177.5°	2265.7	2269.9	2267.3	2281.8	2289.8	2277.6
180°	2278.6	2278.6	2278.6	2278.6	2278.6	2278.6

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