

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: P392623

Luminaire Tested: **MWL-3-53-33-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392623
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-3-53-33-UNV-L935-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

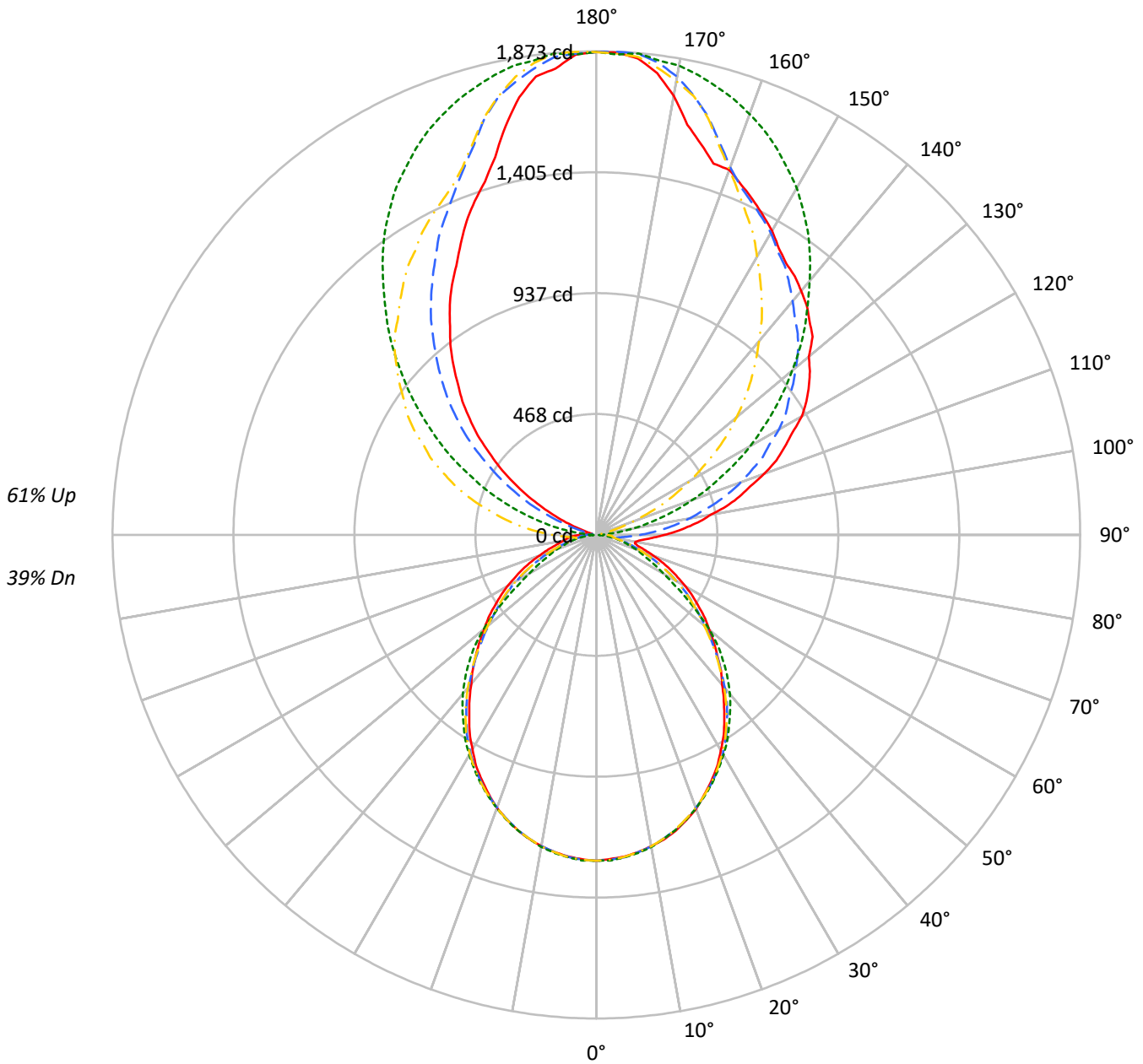
Lumens per Lamp: N/A
Luminaire Lumens: 7370.0 lumens
Efficiency: N/A
Efficacy: 69.6 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 105.848
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: P392623
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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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39
1	95	91	87	84	87	83	80	77	68	66	64	54	52	51	41	40	39	33
2	87	80	74	69	79	73	68	64	60	56	53	48	45	43	36	35	33	28
3	80	70	63	58	72	64	58	53	53	49	45	42	39	37	33	31	29	24
4	73	62	55	49	66	57	51	45	47	42	38	38	34	32	29	27	25	21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22	18
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16
7	57	45	37	32	52	42	35	30	35	29	26	28	24	21	22	19	17	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	20	18	16	13
9	49	37	30	25	45	34	28	24	29	24	20	24	20	17	19	16	14	12
10	46	34	27	23	42	32	25	21	27	22	18	22	18	16	17	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10866	10866	10866	10866
5°	10678	9967	10678	9967
10°	10447	9121	10447	9121
15°	10198	8317	10164	8317
20°	9846	7568	9812	7568
25°	9387	6876	9353	6876
30°	8873	6203	8823	6203
35°	8263	5539	8224	5539
40°	7632	4913	7580	4913
45°	7085	4239	7043	4239
50°	6554	3490	6508	3490
55°	6054	2610	6021	2610
60°	5535	1896	5518	1896
65°	4936	1424	4936	1424
70°	4252	1078	4277	1078
75°	3644	779	3732	779
80°	4261	502	3565	502
85°	7312	219	4032	219



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.7	1.6
10°-20°	333.1	4.5
20°-30°	486.1	6.6
30°-40°	549.7	7.5
40°-50°	514.2	7.0
50°-60°	406.1	5.5
60°-70°	265.8	3.6
70°-80°	139.4	1.9
80°-90°	93.4	1.3
90°-100°	149.9	2.0
100°-110°	289.8	3.9
110°-120°	496.7	6.7
120°-130°	674.9	9.2
130°-140°	769.8	10.4
140°-150°	767.9	10.4
150°-160°	668.8	9.1
160°-170°	470.5	6.4
170°-180°	175.3	2.4
0°-30°	937.9	12.7
0°-40°	1487.6	20.2
0°-60°	2407.9	32.7
0°-90°	2906.5	39.4
90°-120°	936.3	12.7
90°-150°	3148.9	42.7
90°-180°	4464.0	60.6
0°-180°	7370.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1262	1262	1262	1262	1262	
5°	1250	1254	1250	1254	1250	118
15°	1186	1183	1182	1183	1186	334
25°	1052	1061	1048	1061	1052	484
35°	862	896	858	896	862	540
45°	663	696	659	696	663	513
55°	483	422	481	422	483	434
65°	314	220	314	220	314	311
75°	166	111	170	111	166	188
85°	192	28	106	28	192	149
90°	263	2	64	2	263	145
95°	354	54	41	54	354	310
105°	573	261	17	261	573	604
115°	803	533	185	533	803	797
125°	1005	837	456	837	1005	897
135°	1167	1142	734	1142	1167	901
145°	1282	1429	987	1429	1282	808
155°	1433	1652	1242	1652	1433	661
165°	1566	1798	1515	1798	1566	444
175°	1852	1872	1812	1872	1852	173
180°	1870	1870	1870	1870	1870	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9
2.5°	1256.2	1259.7	1259.0	1260.3	1262.0	1259.0	1259.0	1259.7	1257.6	1259.7	1259.0
5°	1250.3	1252.9	1253.1	1253.1	1253.9	1253.1	1251.7	1252.9	1250.3	1252.9	1251.7
7.5°	1238.9	1242.4	1239.8	1242.1	1242.1	1240.7	1238.5	1241.0	1238.9	1241.0	1238.5
10°	1224.0	1227.1	1225.4	1225.4	1227.1	1224.0	1224.0	1224.5	1224.0	1224.5	1224.0
12.5°	1208.1	1207.6	1204.5	1206.2	1205.0	1206.2	1204.5	1205.0	1205.4	1205.0	1204.5
15°	1186.5	1183.9	1182.5	1183.4	1182.9	1182.1	1181.2	1181.2	1182.5	1181.2	1181.2
17.5°	1158.5	1158.4	1154.6	1156.6	1156.6	1156.6	1153.3	1157.1	1154.6	1157.1	1153.3
20°	1128.8	1127.6	1125.7	1126.9	1126.4	1125.6	1124.4	1124.9	1124.9	1124.9	1124.4
22.5°	1090.3	1092.8	1092.6	1095.5	1094.2	1094.2	1091.3	1090.1	1087.5	1090.1	1091.3
25°	1052.0	1056.3	1058.3	1062.5	1061.1	1061.1	1055.8	1052.3	1048.1	1052.3	1055.8
27.5°	1012.2	1013.0	1020.2	1027.3	1023.0	1026.1	1017.5	1009.1	1008.2	1009.1	1017.5
30°	963.9	968.1	979.1	987.1	984.0	984.5	975.2	964.1	958.5	964.1	975.2
32.5°	918.0	919.8	934.2	943.8	943.8	941.3	930.2	914.4	912.7	914.4	930.2
35°	862.5	866.7	882.0	899.7	895.8	895.8	877.9	862.7	858.4	862.7	877.9
37.5°	810.7	813.3	830.2	852.3	851.3	848.2	826.2	809.2	806.7	809.2	826.2
40°	758.1	757.3	773.4	797.5	803.8	794.8	768.2	752.0	752.9	752.0	768.2
42.5°	714.0	703.9	714.4	741.5	752.1	738.9	710.4	698.6	708.8	698.6	710.4
45°	662.6	652.4	658.4	683.8	696.1	681.2	653.1	648.6	658.7	648.6	653.1
47.5°	616.8	604.1	603.3	621.5	639.3	620.2	598.0	600.2	612.9	600.2	598.0
50°	570.2	558.3	549.8	562.1	571.0	559.5	544.6	553.0	566.2	553.0	544.6
52.5°	530.3	514.2	499.4	502.7	495.5	500.1	495.4	508.9	526.5	508.9	495.4
55°	483.2	473.0	452.7	441.2	422.1	438.5	448.7	469.1	480.6	469.1	448.7
57.5°	441.7	432.4	407.8	381.0	354.2	378.3	403.8	428.3	439.0	428.3	403.8
60°	398.7	389.4	359.7	321.2	300.8	319.8	357.2	386.8	397.5	386.8	357.2
62.5°	354.7	348.7	314.8	271.1	258.8	269.7	312.2	346.1	353.4	346.1	312.2
65°	314.4	304.2	269.5	227.9	219.8	226.5	268.1	302.9	314.4	302.9	268.1
67.5°	273.7	260.9	227.9	189.2	188.4	189.2	226.5	259.6	273.7	259.6	226.5
70°	233.3	218.9	188.4	157.0	160.4	157.0	188.4	220.2	234.7	220.2	188.4
72.5°	198.6	179.1	154.5	129.0	131.9	127.7	154.5	180.4	201.1	180.4	154.5
75°	166.3	144.3	122.6	103.1	110.8	103.1	123.9	145.7	170.3	145.7	123.9
77.5°	153.2	123.2	94.7	81.1	88.7	81.1	96.0	119.3	147.8	119.3	96.0
80°	153.6	121.4	78.2	62.4	67.5	62.4	75.6	100.3	128.5	100.3	75.6
82.5°	166.6	134.4	80.5	44.6	48.0	44.6	64.6	86.7	116.4	86.7	64.6
85°	191.5	162.1	99.4	37.4	27.6	34.9	61.1	81.5	105.6	81.5	61.1
87.5°	223.7	200.8	130.1	49.7	7.6	31.2	54.8	74.0	87.7	74.0	54.8
90°	262.6	242.6	170.1	70.7	2.2	20.5	39.2	56.3	64.4	56.3	39.2
92.5°	309.7	290.5	213.0	104.0	22.0	12.8	32.0	46.0	50.7	46.0	32.0
95°	354.4	344.8	263.0	140.0	53.7	7.8	25.2	38.2	41.3	38.2	25.2
97.5°	405.8	396.7	312.7	185.8	94.7	16.7	20.6	33.2	35.8	33.2	20.6
100°	449.7	445.0	365.4	242.6	144.9	44.4	15.2	30.1	33.5	30.1	15.2
102.5°	517.4	498.2	415.3	296.8	199.1	82.8	21.6	22.4	25.9	22.4	21.6
105°	573.1	550.4	480.0	353.6	261.1	134.4	53.2	19.2	16.9	19.2	53.2
107.5°	624.9	610.8	538.2	411.9	327.2	193.8	98.1	50.6	32.9	50.6	98.1
110°	690.9	674.3	595.1	469.9	396.0	257.2	149.7	92.8	72.6	92.8	149.7



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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°	754.3	741.7	647.9	530.8	467.3	325.9	213.1	145.7	126.8	145.7	213.1
115°	803.4	795.9	708.7	587.5	533.4	403.8	283.2	207.9	184.9	207.9	283.2
117.5°	853.9	852.7	753.6	645.6	612.7	473.9	347.9	269.9	244.8	269.9	347.9
120°	918.7	908.1	815.7	703.9	688.0	547.9	419.2	341.3	316.2	341.3	419.2
122.5°	963.7	957.0	868.5	760.1	760.1	624.0	488.0	410.0	383.6	410.0	488.0
125°	1004.7	1001.9	908.1	815.7	836.8	694.1	564.6	485.3	456.3	485.3	564.6
127.5°	1041.6	1045.7	959.7	876.4	914.8	765.5	639.9	552.7	522.3	552.7	639.9
130°	1073.4	1086.6	1008.6	932.0	988.8	843.4	707.3	620.2	600.3	620.2	707.3
132.5°	1135.4	1127.6	1058.8	988.8	1068.0	914.8	778.7	687.5	665.0	687.5	778.7
135°	1167.2	1169.7	1102.4	1037.6	1142.0	986.1	846.1	756.2	733.8	756.2	846.1
137.5°	1205.5	1197.5	1136.8	1097.1	1210.7	1054.9	912.2	828.8	793.3	828.8	912.2
140°	1233.3	1231.9	1181.7	1149.9	1284.8	1122.2	979.6	894.9	862.0	894.9	979.6
142.5°	1262.3	1270.2	1226.6	1208.1	1358.7	1193.6	1052.1	959.7	928.0	959.7	1052.1
145°	1282.1	1299.3	1271.6	1280.8	1428.8	1272.9	1115.6	1021.8	987.4	1021.8	1115.6
147.5°	1315.1	1337.6	1304.5	1332.4	1489.6	1342.8	1179.1	1086.6	1056.1	1086.6	1179.1
150°	1360.1	1370.6	1350.9	1403.7	1551.7	1420.9	1243.8	1148.7	1118.3	1148.7	1243.8
152.5°	1395.7	1408.9	1386.5	1481.6	1600.5	1492.2	1315.1	1209.4	1173.8	1209.4	1315.1
155°	1432.8	1438.0	1422.1	1556.9	1652.1	1562.3	1372.0	1276.8	1242.5	1276.8	1372.0
157.5°	1467.1	1477.6	1459.2	1613.8	1697.1	1623.0	1436.6	1344.2	1313.8	1344.2	1436.6
160°	1504.1	1504.1	1514.7	1679.8	1734.0	1675.8	1505.5	1418.2	1376.0	1418.2	1505.5
162.5°	1508.1	1533.2	1590.0	1726.1	1769.7	1722.2	1579.5	1471.2	1434.1	1471.2	1579.5
165°	1566.2	1588.7	1674.5	1767.1	1797.5	1763.1	1670.6	1558.3	1514.7	1558.3	1670.6
167.5°	1627.0	1674.5	1743.2	1813.3	1823.8	1801.5	1740.6	1662.7	1623.0	1662.7	1740.6
170°	1726.1	1767.1	1801.5	1830.5	1845.1	1831.9	1784.2	1745.9	1720.8	1745.9	1784.2
172.5°	1803.2	1830.5	1843.7	1862.1	1852.9	1847.6	1823.8	1805.4	1791.4	1805.4	1823.8
175°	1852.0	1858.3	1870.2	1863.5	1871.5	1856.9	1858.3	1867.5	1812.4	1867.5	1858.3
177.5°	1869.3	1879.4	1872.8	1860.9	1862.1	1859.5	1864.8	1870.2	1861.4	1870.2	1864.8
180°	1870.2	1870.2	1870.2	1870.2	1870.2	1870.2	1870.2	1870.2	1870.2	1870.2	1870.2



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1261.9	1261.9	1261.9	1261.9	1261.9	1261.9
2.5°	1259.0	1262.0	1260.3	1259.0	1259.7	1256.2
5°	1253.1	1253.9	1253.1	1253.1	1252.9	1250.3
7.5°	1240.7	1242.1	1242.1	1239.8	1242.4	1238.9
10°	1224.0	1227.1	1225.4	1225.4	1227.1	1224.0
12.5°	1206.2	1205.0	1206.2	1204.5	1207.6	1208.1
15°	1182.1	1182.9	1183.4	1182.5	1183.9	1186.5
17.5°	1156.6	1156.6	1156.6	1154.6	1158.4	1158.5
20°	1125.6	1126.4	1126.9	1125.7	1127.6	1128.8
22.5°	1094.2	1094.2	1095.5	1092.6	1092.8	1090.3
25°	1061.1	1061.1	1062.5	1058.3	1056.3	1052.0
27.5°	1026.1	1023.0	1027.3	1020.2	1013.0	1012.2
30°	984.5	984.0	987.1	979.1	968.1	963.9
32.5°	941.3	943.8	943.8	934.2	919.8	918.0
35°	895.8	895.8	899.7	882.0	866.7	862.5
37.5°	848.2	851.3	852.3	830.2	813.3	810.7
40°	794.8	803.8	797.5	773.4	757.3	758.1
42.5°	738.9	752.1	741.5	714.4	703.9	714.0
45°	681.2	696.1	683.8	658.4	652.4	662.6
47.5°	620.2	639.3	621.5	603.3	604.1	616.8
50°	559.5	571.0	562.1	549.8	558.3	570.2
52.5°	500.1	495.5	502.7	499.4	514.2	530.3
55°	438.5	422.1	441.2	452.7	473.0	483.2
57.5°	378.3	354.2	381.0	407.8	432.4	441.7
60°	319.8	300.8	321.2	359.7	389.4	398.7
62.5°	269.7	258.8	271.1	314.8	348.7	354.7
65°	226.5	219.8	227.9	269.5	304.2	314.4
67.5°	189.2	188.4	189.2	227.9	260.9	273.7
70°	157.0	160.4	157.0	188.4	218.9	233.3
72.5°	127.7	131.9	129.0	154.5	179.1	198.6
75°	103.1	110.8	103.1	122.6	144.3	166.3
77.5°	81.1	88.7	81.1	94.7	123.2	153.2
80°	62.4	67.5	62.4	78.2	121.4	153.6
82.5°	44.6	48.0	44.6	80.5	134.4	166.6
85°	34.9	27.6	37.4	99.4	162.1	191.5
87.5°	31.2	7.6	49.7	130.1	200.8	223.7
90°	20.5	2.2	70.7	170.1	242.6	262.6
92.5°	12.8	22.0	104.0	213.0	290.5	309.7
95°	7.8	53.7	140.0	263.0	344.8	354.4
97.5°	16.7	94.7	185.8	312.7	396.7	405.8
100°	44.4	144.9	242.6	365.4	445.0	449.7
102.5°	82.8	199.1	296.8	415.3	498.2	517.4
105°	134.4	261.1	353.6	480.0	550.4	573.1
107.5°	193.8	327.2	411.9	538.2	610.8	624.9
110°	257.2	396.0	469.9	595.1	674.3	690.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	325.9	467.3	530.8	647.9	741.7	754.3
115°	403.8	533.4	587.5	708.7	795.9	803.4
117.5°	473.9	612.7	645.6	753.6	852.7	853.9
120°	547.9	688.0	703.9	815.7	908.1	918.7
122.5°	624.0	760.1	760.1	868.5	957.0	963.7
125°	694.1	836.8	815.7	908.1	1001.9	1004.7
127.5°	765.5	914.8	876.4	959.7	1045.7	1041.6
130°	843.4	988.8	932.0	1008.6	1086.6	1073.4
132.5°	914.8	1068.0	988.8	1058.8	1127.6	1135.4
135°	986.1	1142.0	1037.6	1102.4	1169.7	1167.2
137.5°	1054.9	1210.7	1097.1	1136.8	1197.5	1205.5
140°	1122.2	1284.8	1149.9	1181.7	1231.9	1233.3
142.5°	1193.6	1358.7	1208.1	1226.6	1270.2	1262.3
145°	1272.9	1428.8	1280.8	1271.6	1299.3	1282.1
147.5°	1342.8	1489.6	1332.4	1304.5	1337.6	1315.1
150°	1420.9	1551.7	1403.7	1350.9	1370.6	1360.1
152.5°	1492.2	1600.5	1481.6	1386.5	1408.9	1395.7
155°	1562.3	1652.1	1556.9	1422.1	1438.0	1432.8
157.5°	1623.0	1697.1	1613.8	1459.2	1477.6	1467.1
160°	1675.8	1734.0	1679.8	1514.7	1504.1	1504.1
162.5°	1722.2	1769.7	1726.1	1590.0	1533.2	1508.1
165°	1763.1	1797.5	1767.1	1674.5	1588.7	1566.2
167.5°	1801.5	1823.8	1813.3	1743.2	1674.5	1627.0
170°	1831.9	1845.1	1830.5	1801.5	1767.1	1726.1
172.5°	1847.6	1852.9	1862.1	1843.7	1830.5	1803.2
175°	1856.9	1871.5	1863.5	1870.2	1858.3	1852.0
177.5°	1859.5	1862.1	1860.9	1872.8	1879.4	1869.3
180°	1870.2	1870.2	1870.2	1870.2	1870.2	1870.2

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