

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: P392568

Luminaire Tested: **MWL-3-27-33-UNV-L930-EDD**

Issue Date: 3/12/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P392568  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &  
Test Lab: INNOVATION CENTER  
Issue Date: 3/12/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-3-27-33-UNV-L930-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

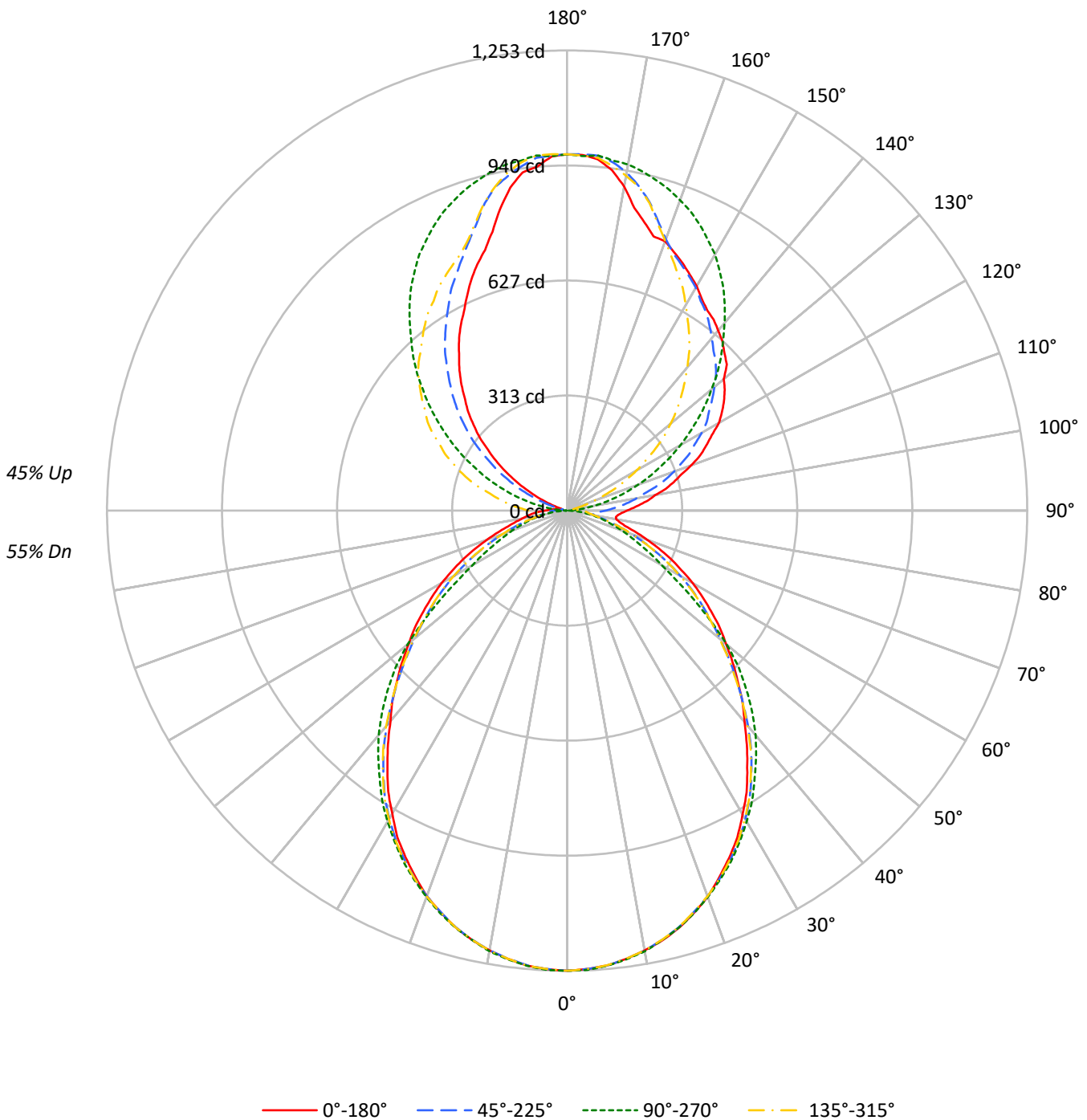
Lumens per Lamp: N/A  
Luminaire Lumens: 5194.9 lumens  
Efficiency: N/A  
Efficacy: 85.2 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 61.004  
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



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### Luminous Intensity Polar Plot





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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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	91	83	77	72	84	78	72	68	67	63	60	57	54	52	48	46	44	40
3	83	74	66	61	77	69	62	57	59	55	51	51	47	44	43	40	38	34
4	76	65	58	52	70	61	54	49	53	48	43	46	42	38	39	36	33	30
5	70	58	50	44	65	55	48	42	48	42	38	41	37	33	35	32	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	32	28	26	23
7	60	48	40	34	56	45	38	33	39	34	29	34	30	26	29	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	31	27	23	27	23	21	19
9	52	40	32	27	48	37	31	26	33	27	24	29	24	21	25	21	19	17
10	48	36	29	25	45	34	28	23	30	25	21	27	22	19	23	20	17	15

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

	0°	90°	180°	270°
0°	10790	10790	10790	10790
5°	10619	9891	10619	9891
10°	10379	9057	10379	9057
15°	10113	8266	10096	8266
20°	9763	7524	9745	7524
25°	9310	6835	9292	6835
30°	8795	6165	8769	6165
35°	8191	5503	8171	5503
40°	7562	4877	7533	4877
45°	7021	4205	6998	4205
50°	6488	3462	6464	3462
55°	5995	2589	5976	2589
60°	5481	1877	5473	1877
65°	4887	1411	4887	1411
70°	4213	1066	4226	1066
75°	3605	771	3651	771
80°	3770	495	3412	495
85°	5304	214	3608	214



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.9	2.3
10°-20°	330.9	6.4
20°-30°	482.8	9.3
30°-40°	545.6	10.5
40°-50°	510.2	9.8
50°-60°	402.7	7.8
60°-70°	263.3	5.1
70°-80°	137.1	2.6
80°-90°	75.8	1.5
90°-100°	88.1	1.7
100°-110°	152.1	2.9
110°-120°	258.1	5.0
120°-130°	350.5	6.7
130°-140°	399.6	7.7
140°-150°	398.5	7.7
150°-160°	347.0	6.7
160°-170°	244.1	4.7
170°-180°	90.9	1.7
0°-30°	931.5	17.9
0°-40°	1477.1	28.4
0°-60°	2389.9	46.0
0°-90°	2866.1	55.2
90°-120°	498.3	9.6
90°-150°	1646.9	31.7
90°-180°	2329.0	44.8
0°-180°	5194.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1253	1253	1253	1253	1253	
5°	1243	1244	1243	1244	1243	118
15°	1177	1176	1175	1176	1177	331
25°	1043	1055	1041	1055	1043	480
35°	855	890	853	890	855	535
45°	657	691	654	691	657	508
55°	478	419	477	419	478	429
65°	311	218	311	218	311	308
75°	164	110	167	110	164	182
85°	139	27	94	27	139	113
90°	162	2	60	2	162	90
95°	202	28	39	28	202	174
105°	301	136	12	136	301	318
115°	418	277	97	277	418	414
125°	521	434	237	434	521	466
135°	606	593	381	593	606	468
145°	665	741	512	741	665	419
155°	743	857	645	857	743	343
165°	812	932	786	932	812	231
175°	960	971	940	971	960	90
180°	970	970	970	970	970	



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CATALOG NUMBER: MWL-3-27-33-UNV-L930-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0
2.5°	1249.3	1251.5	1249.5	1250.2	1251.9	1249.5	1249.5	1251.5	1250.0	1251.5	1249.5
5°	1243.4	1244.8	1243.6	1243.6	1244.4	1243.6	1242.9	1244.8	1243.4	1244.8	1242.9
7.5°	1231.4	1233.6	1231.1	1232.6	1232.6	1231.9	1230.4	1233.0	1231.4	1233.0	1230.4
10°	1216.1	1218.4	1216.7	1216.7	1218.4	1216.1	1216.1	1217.0	1216.1	1217.0	1216.1
12.5°	1198.8	1199.0	1196.6	1198.3	1197.7	1198.3	1196.6	1197.7	1197.5	1197.7	1196.6
15°	1176.6	1175.3	1174.6	1175.5	1175.6	1174.8	1174.0	1174.0	1174.6	1174.0	1174.0
17.5°	1148.8	1149.9	1146.8	1149.4	1149.4	1149.4	1146.1	1149.3	1146.8	1149.3	1146.1
20°	1119.2	1118.5	1118.0	1119.8	1119.9	1119.1	1117.4	1117.2	1117.2	1117.2	1117.4
22.5°	1081.3	1083.9	1085.0	1088.6	1087.9	1087.9	1084.3	1082.5	1079.9	1082.5	1084.3
25°	1043.3	1047.5	1050.3	1055.6	1054.8	1054.8	1048.9	1045.5	1041.3	1045.5	1048.9
27.5°	1003.6	1004.4	1012.2	1020.0	1016.8	1019.3	1010.8	1002.4	1001.6	1002.4	1010.8
30°	955.4	959.7	970.6	979.2	978.0	977.9	968.6	957.6	952.6	957.6	968.6
32.5°	909.7	911.5	925.8	936.1	937.3	934.7	923.8	908.7	907.0	908.7	923.8
35°	855.0	859.2	874.4	892.2	890.1	890.1	872.3	857.1	852.9	857.1	872.3
37.5°	803.5	806.0	822.9	844.8	845.2	842.7	820.8	803.9	801.3	803.9	820.8
40°	751.1	750.2	766.3	791.0	797.9	789.5	763.5	747.5	748.2	747.5	763.5
42.5°	707.1	697.0	708.1	735.1	746.3	733.7	706.0	694.2	704.3	694.2	706.0
45°	656.6	646.5	652.4	677.7	690.6	676.2	649.5	644.3	654.5	644.3	649.5
47.5°	610.9	598.3	597.4	616.2	634.0	615.4	594.6	596.2	608.8	596.2	594.6
50°	564.5	552.6	544.1	557.0	566.4	555.6	541.4	549.9	562.4	549.9	541.4
52.5°	524.7	508.7	494.5	497.8	491.1	496.4	492.4	505.8	522.6	505.8	492.4
55°	478.5	468.2	448.0	437.1	418.7	435.8	445.9	466.1	477.0	466.1	445.9
57.5°	437.0	427.7	403.2	377.1	351.1	375.7	401.1	425.6	435.6	425.6	401.1
60°	394.8	385.6	356.0	318.1	297.8	317.4	354.6	384.2	394.2	384.2	354.6
62.5°	350.9	345.0	311.2	268.2	256.6	267.6	309.8	343.7	350.2	343.7	309.8
65°	311.3	301.2	266.5	225.1	217.7	224.4	265.9	300.5	311.3	300.5	265.9
67.5°	270.8	258.1	225.1	187.3	186.4	187.3	224.4	257.5	270.8	257.5	224.4
70°	231.2	216.9	186.4	155.1	158.6	155.1	186.4	217.6	231.9	217.6	186.4
72.5°	196.6	177.2	152.6	127.2	130.8	126.6	152.6	177.8	197.9	177.8	152.6
75°	164.5	142.5	121.5	102.0	109.7	102.0	122.2	143.2	166.6	143.2	122.2
77.5°	146.3	119.0	93.6	80.1	87.7	80.1	94.3	116.9	143.6	116.9	94.3
80°	135.9	108.3	75.4	61.5	66.6	61.5	74.1	97.4	123.0	97.4	74.1
82.5°	133.7	107.3	70.2	43.8	47.2	43.8	61.9	82.8	107.8	82.8	61.9
85°	138.9	116.0	75.0	34.8	26.9	33.5	55.2	74.3	94.5	74.3	55.2
87.5°	148.4	131.3	87.3	37.5	7.6	28.0	48.3	65.5	77.9	65.5	48.3
90°	162.5	148.8	104.3	45.2	1.5	19.1	36.5	52.3	59.8	52.3	36.5
92.5°	181.6	170.0	123.7	58.7	11.8	11.5	29.9	43.2	47.4	43.2	29.9
95°	201.5	195.7	146.4	73.8	28.3	5.3	23.2	36.8	39.2	36.8	23.2
97.5°	224.9	219.0	168.1	96.7	49.4	9.1	16.8	30.6	33.1	30.6	16.8
100°	244.0	239.9	192.2	126.2	75.5	23.4	10.7	24.9	28.4	24.9	10.7
102.5°	275.4	263.9	216.0	154.3	103.6	43.2	12.0	17.3	20.7	17.3	12.0
105°	300.7	287.0	249.5	183.8	135.7	70.0	28.4	11.5	12.4	11.5	28.4
107.5°	325.1	317.4	279.7	213.8	170.0	100.8	51.7	27.0	18.2	27.0	51.7
110°	359.3	350.3	309.1	244.0	205.6	133.7	78.5	49.0	38.8	49.0	78.5



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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°	392.2	385.2	336.6	275.4	242.6	169.3	111.3	76.3	66.9	76.3	111.3
115°	417.5	413.2	368.0	304.9	276.8	209.7	147.6	108.5	97.0	108.5	147.6
117.5°	443.4	442.7	391.4	335.0	317.9	246.0	181.1	140.7	127.7	140.7	181.1
120°	477.0	471.5	423.6	365.1	357.0	284.4	218.1	177.7	164.7	177.7	218.1
122.5°	500.2	496.9	451.0	394.7	394.7	324.3	253.7	213.3	199.6	213.3	253.7
125°	521.4	520.1	471.5	423.6	434.4	360.6	293.4	252.4	237.3	252.4	293.4
127.5°	540.6	542.7	498.2	455.0	474.9	397.5	332.5	287.2	271.5	287.2	332.5
130°	557.1	564.0	523.5	483.8	513.2	438.0	367.3	322.2	312.0	322.2	367.3
132.5°	589.3	585.2	549.6	513.2	554.3	474.9	404.4	357.1	345.5	357.1	404.4
135°	605.7	607.0	572.1	538.6	592.7	511.9	439.3	392.7	381.1	392.7	439.3
137.5°	625.6	621.5	589.9	569.4	628.3	547.5	473.5	430.4	411.9	430.4	473.5
140°	639.9	639.2	613.2	596.8	666.6	582.5	508.5	464.6	447.5	464.6	508.5
142.5°	655.1	659.1	636.5	626.9	705.0	619.3	546.1	498.2	481.7	498.2	546.1
145°	665.3	674.2	659.8	664.6	741.3	660.5	579.0	530.4	512.5	530.4	579.0
147.5°	682.4	694.1	676.9	691.3	772.8	696.8	611.9	564.0	548.1	564.0	611.9
150°	705.6	711.2	701.0	728.3	805.0	737.2	645.4	596.2	580.3	596.2	645.4
152.5°	724.2	731.0	719.4	768.7	830.3	774.2	682.4	627.6	609.1	627.6	682.4
155°	743.4	746.0	737.9	807.8	857.0	810.5	711.9	662.6	644.7	662.6	711.9
157.5°	761.2	766.6	757.1	837.2	880.3	842.0	745.4	697.4	681.8	697.4	745.4
160°	780.4	780.4	785.8	871.4	899.5	869.4	781.1	735.8	714.0	735.8	781.1
162.5°	782.4	795.4	824.9	895.4	917.9	893.4	819.3	763.2	744.0	763.2	819.3
165°	812.5	824.1	868.7	916.6	932.4	914.6	866.7	808.5	785.8	808.5	866.7
167.5°	844.0	868.7	904.3	940.6	946.1	934.5	903.0	862.5	842.0	862.5	903.0
170°	895.4	916.6	934.5	949.5	957.0	950.1	925.5	905.6	892.7	905.6	925.5
172.5°	934.9	949.5	956.3	966.0	961.2	958.3	946.1	936.5	928.8	936.5	946.1
175°	960.3	963.9	970.0	966.6	970.7	963.2	963.9	968.6	939.8	968.6	963.9
177.5°	969.2	974.8	971.4	965.2	966.0	964.5	967.3	970.0	965.1	970.0	967.3
180°	970.0	970.0	970.0	970.0	970.0	970.0	970.0	970.0	970.0	970.0	970.0



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0
2.5°	1249.5	1251.9	1250.2	1249.5	1251.5	1249.3
5°	1243.6	1244.4	1243.6	1243.6	1244.8	1243.4
7.5°	1231.9	1232.6	1232.6	1231.1	1233.6	1231.4
10°	1216.1	1218.4	1216.7	1216.7	1218.4	1216.1
12.5°	1198.3	1197.7	1198.3	1196.6	1199.0	1198.8
15°	1174.8	1175.6	1175.5	1174.6	1175.3	1176.6
17.5°	1149.4	1149.4	1149.4	1146.8	1149.9	1148.8
20°	1119.1	1119.9	1119.8	1118.0	1118.5	1119.2
22.5°	1087.9	1087.9	1088.6	1085.0	1083.9	1081.3
25°	1054.8	1054.8	1055.6	1050.3	1047.5	1043.3
27.5°	1019.3	1016.8	1020.0	1012.2	1004.4	1003.6
30°	977.9	978.0	979.2	970.6	959.7	955.4
32.5°	934.7	937.3	936.1	925.8	911.5	909.7
35°	890.1	890.1	892.2	874.4	859.2	855.0
37.5°	842.7	845.2	844.8	822.9	806.0	803.5
40°	789.5	797.9	791.0	766.3	750.2	751.1
42.5°	733.7	746.3	735.1	708.1	697.0	707.1
45°	676.2	690.6	677.7	652.4	646.5	656.6
47.5°	615.4	634.0	616.2	597.4	598.3	610.9
50°	555.6	566.4	557.0	544.1	552.6	564.5
52.5°	496.4	491.1	497.8	494.5	508.7	524.7
55°	435.8	418.7	437.1	448.0	468.2	478.5
57.5°	375.7	351.1	377.1	403.2	427.7	437.0
60°	317.4	297.8	318.1	356.0	385.6	394.8
62.5°	267.6	256.6	268.2	311.2	345.0	350.9
65°	224.4	217.7	225.1	266.5	301.2	311.3
67.5°	187.3	186.4	187.3	225.1	258.1	270.8
70°	155.1	158.6	155.1	186.4	216.9	231.2
72.5°	126.6	130.8	127.2	152.6	177.2	196.6
75°	102.0	109.7	102.0	121.5	142.5	164.5
77.5°	80.1	87.7	80.1	93.6	119.0	146.3
80°	61.5	66.6	61.5	75.4	108.3	135.9
82.5°	43.8	47.2	43.8	70.2	107.3	133.7
85°	33.5	26.9	34.8	75.0	116.0	138.9
87.5°	28.0	7.6	37.5	87.3	131.3	148.4
90°	19.1	1.5	45.2	104.3	148.8	162.5
92.5°	11.5	11.8	58.7	123.7	170.0	181.6
95°	5.3	28.3	73.8	146.4	195.7	201.5
97.5°	9.1	49.4	96.7	168.1	219.0	224.9
100°	23.4	75.5	126.2	192.2	239.9	244.0
102.5°	43.2	103.6	154.3	216.0	263.9	275.4
105°	70.0	135.7	183.8	249.5	287.0	300.7
107.5°	100.8	170.0	213.8	279.7	317.4	325.1
110°	133.7	205.6	244.0	309.1	350.3	359.3





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	169.3	242.6	275.4	336.6	385.2	392.2
115°	209.7	276.8	304.9	368.0	413.2	417.5
117.5°	246.0	317.9	335.0	391.4	442.7	443.4
120°	284.4	357.0	365.1	423.6	471.5	477.0
122.5°	324.3	394.7	394.7	451.0	496.9	500.2
125°	360.6	434.4	423.6	471.5	520.1	521.4
127.5°	397.5	474.9	455.0	498.2	542.7	540.6
130°	438.0	513.2	483.8	523.5	564.0	557.1
132.5°	474.9	554.3	513.2	549.6	585.2	589.3
135°	511.9	592.7	538.6	572.1	607.0	605.7
137.5°	547.5	628.3	569.4	589.9	621.5	625.6
140°	582.5	666.6	596.8	613.2	639.2	639.9
142.5°	619.3	705.0	626.9	636.5	659.1	655.1
145°	660.5	741.3	664.6	659.8	674.2	665.3
147.5°	696.8	772.8	691.3	676.9	694.1	682.4
150°	737.2	805.0	728.3	701.0	711.2	705.6
152.5°	774.2	830.3	768.7	719.4	731.0	724.2
155°	810.5	857.0	807.8	737.9	746.0	743.4
157.5°	842.0	880.3	837.2	757.1	766.6	761.2
160°	869.4	899.5	871.4	785.8	780.4	780.4
162.5°	893.4	917.9	895.4	824.9	795.4	782.4
165°	914.6	932.4	916.6	868.7	824.1	812.5
167.5°	934.5	946.1	940.6	904.3	868.7	844.0
170°	950.1	957.0	949.5	934.5	916.6	895.4
172.5°	958.3	961.2	966.0	956.3	949.5	934.9
175°	963.2	970.7	966.6	970.0	963.9	960.3
177.5°	964.5	966.0	965.2	971.4	974.8	969.2
180°	970.0	970.0	970.0	970.0	970.0	970.0

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