

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: P392619

Luminaire Tested: **MWL-3-53-28-UNV-L930-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392619  
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-3-53-28-UNV-L930-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6858.2 lumens  
Efficiency: N/A  
Efficacy: 69.8 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

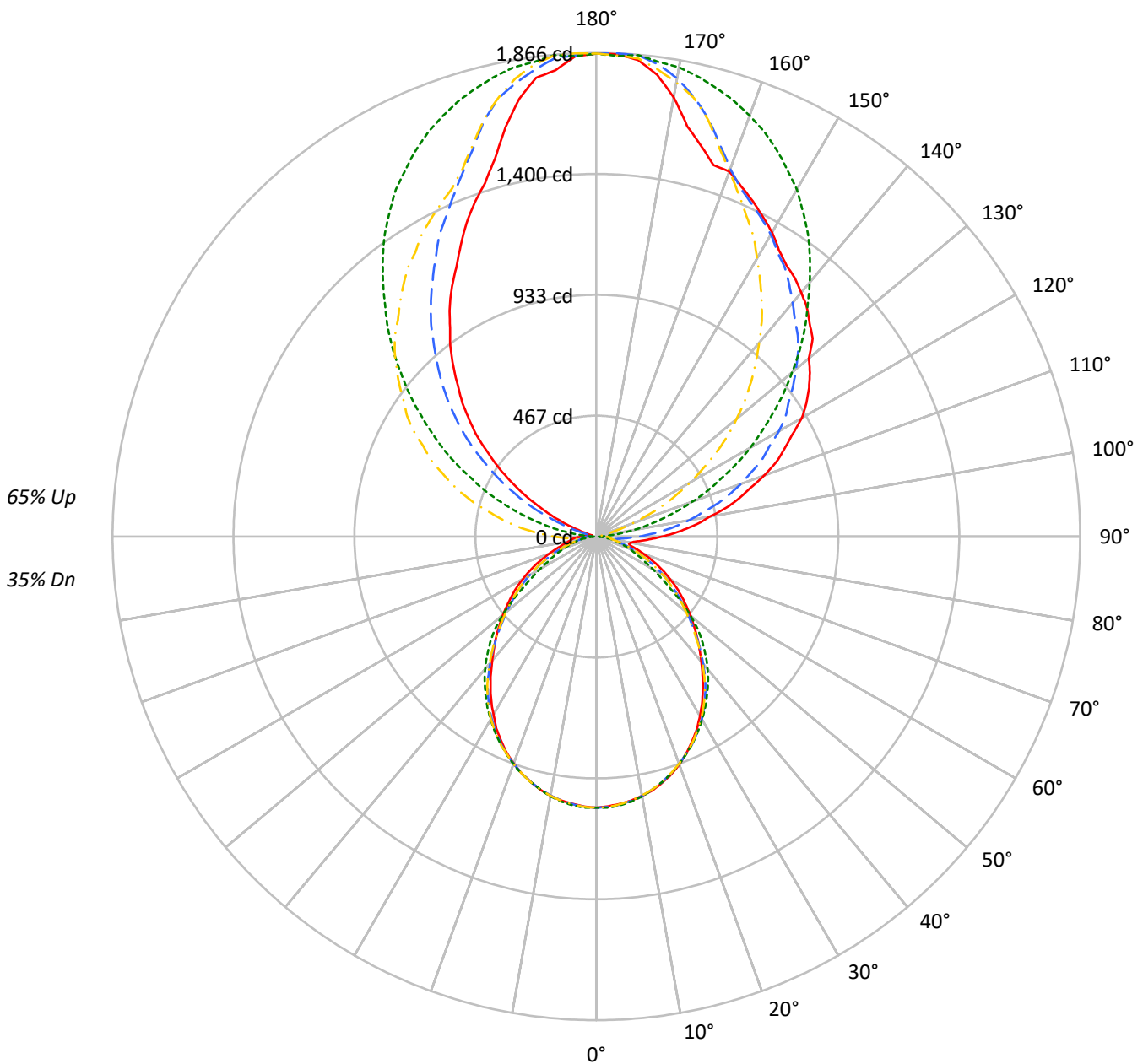
Input Watts (W): 98.273  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: MWL-3-53-28-UNV-L930-EDD

### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - - - 90°-270°    - - - 135°-315°



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CATALOG NUMBER: MWL-3-53-28-UNV-L930-EDD

**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	104	104	104	104	94	94	94	94	75	75	75		58	58	58		43	43	43	35
1	94	90	86	83	85	82	79	76	66	64	62		51	50	48		38	37	36	30
2	86	79	73	68	78	72	67	62	58	54	51		45	43	41		33	32	31	25
3	79	70	63	57	71	63	57	52	51	47	43		40	37	35		30	28	26	22
4	72	62	54	48	65	56	50	45	46	41	37		36	33	30		27	25	23	19
5	66	55	47	41	60	50	43	38	41	36	32		32	29	26		24	22	20	16
6	61	49	42	36	55	45	38	33	37	32	28		29	26	23		22	20	18	15
7	56	44	37	31	51	41	34	29	33	28	25		27	23	20		20	18	16	13
8	52	40	33	28	47	37	30	26	30	25	22		24	21	18		19	16	14	12
9	49	37	30	25	44	34	27	23	28	23	20		22	19	16		17	15	13	11
10	45	34	27	22	41	31	25	21	26	21	18		21	17	15		16	13	12	10

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

	0°	90°	180°	270°
0°	9009	9009	9009	9009
5°	8843	8273	8843	8273
10°	8665	7569	8665	7569
15°	8448	6892	8414	6892
20°	8160	6275	8126	6275
25°	7787	5696	7751	5696
30°	7348	5137	7299	5137
35°	6858	4604	6819	4604
40°	6339	4080	6285	4080
45°	5877	3529	5835	3529
50°	5442	2894	5399	2894
55°	5017	2141	4984	2141
60°	4555	1581	4537	1581
65°	4069	1194	4069	1194
70°	3512	886	3539	886
75°	3020	640	3107	640
80°	3731	424	3035	424
85°	6739	179	3471	179



TEST NUMBER: P392619

CATALOG NUMBER: MWL-3-53-28-UNV-L930-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.4	1.4
10°-20°	276.2	4.0
20°-30°	403.1	5.9
30°-40°	455.7	6.6
40°-50°	426.2	6.2
50°-60°	336.4	4.9
60°-70°	220.3	3.2
70°-80°	115.9	1.7
80°-90°	83.3	1.2
90°-100°	145.6	2.1
100°-110°	287.9	4.2
110°-120°	494.8	7.2
120°-130°	672.3	9.8
130°-140°	767.0	11.2
140°-150°	765.2	11.2
150°-160°	666.4	9.7
160°-170°	468.9	6.8
170°-180°	174.6	2.5
0°-30°	777.7	11.3
0°-40°	1233.5	18.0
0°-60°	1996.0	29.1
0°-90°	2415.5	35.2
90°-120°	928.3	13.5
90°-150°	3132.7	45.7
90°-180°	4443.0	64.8
0°-180°	6858.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1046	1046	1046	1046	1046	
5°	1036	1041	1036	1041	1036	98
15°	983	980	979	980	983	277
25°	873	879	869	879	873	401
35°	716	745	712	745	716	447
45°	550	580	546	580	550	424
55°	400	346	398	346	400	359
65°	259	184	259	184	259	257
75°	138	91	142	91	138	157
85°	176	22	91	22	176	136
90°	252	2	54	2	252	139
95°	347	54	35	54	347	305
105°	569	260	15	260	569	599
115°	800	532	183	532	800	793
125°	1001	833	455	833	1001	894
135°	1163	1137	731	1137	1163	898
145°	1278	1423	984	1423	1278	805
155°	1428	1646	1238	1646	1428	659
165°	1561	1791	1509	1791	1561	443
175°	1846	1865	1806	1865	1846	172
180°	1864	1864	1864	1864	1864	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1046.2	1046.2	1046.2	1046.2	1046.2	1046.2	1046.2	1046.2	1046.2	1046.2	1046.2
2.5°	1041.4	1044.0	1044.2	1046.3	1047.1	1045.0	1044.2	1044.0	1042.7	1044.0	1044.2
5°	1035.5	1038.1	1038.2	1039.1	1040.8	1039.1	1036.9	1038.1	1035.5	1038.1	1036.9
7.5°	1027.5	1030.1	1028.4	1030.6	1031.5	1029.3	1027.1	1028.8	1027.5	1028.8	1027.1
10°	1015.2	1016.6	1015.7	1016.6	1018.3	1015.2	1014.4	1014.0	1015.2	1014.0	1014.4
12.5°	1002.7	1001.4	999.2	1000.1	998.8	1000.1	999.2	998.8	1000.1	998.8	999.2
15°	982.9	981.9	980.6	982.3	980.2	981.1	979.3	979.3	978.9	979.3	979.3
17.5°	961.8	960.0	957.8	959.0	959.0	959.0	956.5	958.6	957.8	958.6	956.5
20°	935.5	936.0	934.1	935.4	934.0	934.0	932.9	933.2	931.6	933.2	932.9
22.5°	905.6	907.3	906.2	909.2	907.0	907.8	905.0	904.5	902.9	904.5	905.0
25°	872.6	875.1	879.7	880.4	879.1	879.1	877.1	871.2	868.6	871.2	877.1
27.5°	838.8	841.3	845.9	849.6	847.8	848.4	843.3	837.4	834.8	837.4	843.3
30°	798.3	803.3	813.4	818.0	814.9	815.3	809.4	799.3	792.9	799.3	809.4
32.5°	759.3	763.6	774.6	783.4	781.5	780.7	770.6	758.3	754.1	758.3	770.6
35°	715.8	718.3	732.7	745.3	744.7	741.4	728.7	714.3	711.8	714.3	728.7
37.5°	672.6	673.5	688.7	706.4	707.2	702.5	684.7	669.5	668.7	669.5	684.7
40°	629.6	627.9	641.4	662.0	667.5	659.4	636.2	622.6	624.3	622.6	636.2
42.5°	589.0	583.1	593.5	617.2	624.4	614.6	589.7	577.8	583.8	577.8	589.7
45°	549.6	539.5	545.4	566.5	579.5	563.9	540.1	535.5	545.7	535.5	540.1
47.5°	510.7	501.4	498.9	515.4	530.6	514.0	493.6	497.5	506.8	497.5	493.6
50°	473.5	463.4	455.7	465.5	473.4	462.9	450.6	458.1	469.7	458.1	450.6
52.5°	436.4	427.0	413.9	415.6	411.7	413.0	410.0	421.8	432.4	421.8	410.0
55°	400.5	392.0	375.1	366.1	346.2	363.5	371.1	388.0	397.8	388.0	371.1
57.5°	366.6	359.0	337.8	316.3	294.7	313.6	333.9	355.0	364.0	355.0	333.9
60°	328.1	323.8	299.4	266.8	250.8	265.5	296.7	321.2	326.8	321.2	296.7
62.5°	294.3	289.2	261.3	225.4	212.2	224.0	258.7	286.6	293.0	286.6	258.7
65°	259.2	251.6	222.9	188.3	184.3	186.8	221.5	250.2	259.2	250.2	221.5
67.5°	224.5	217.0	189.9	158.1	155.6	158.1	188.5	215.6	224.5	215.6	188.5
70°	192.7	180.9	157.3	130.2	131.9	130.2	157.3	182.3	194.2	182.3	157.3
72.5°	164.0	147.1	129.3	107.4	110.4	106.2	129.3	148.5	166.7	148.5	129.3
75°	137.8	119.2	100.2	85.8	91.0	85.8	101.5	120.6	141.8	120.6	101.5
77.5°	129.0	102.5	78.3	68.2	74.8	68.2	79.5	98.6	123.6	98.6	79.5
80°	134.5	104.2	65.2	52.0	57.1	52.0	62.6	83.0	109.4	83.0	62.6
82.5°	148.3	120.4	70.9	36.8	39.4	36.8	55.1	72.9	98.3	72.9	55.1
85°	176.5	149.8	91.5	32.3	22.5	29.7	53.3	69.4	90.9	69.4	53.3
87.5°	211.1	190.8	122.9	45.3	5.9	26.9	47.8	64.5	75.5	64.5	47.8
90°	251.5	234.1	163.5	67.0	2.2	17.0	33.1	48.4	54.0	48.4	33.1
92.5°	301.8	282.7	207.2	102.0	21.9	11.1	26.8	39.0	43.8	39.0	26.8
95°	347.3	337.7	257.8	139.5	53.5	7.7	20.9	32.2	35.2	32.2	20.9
97.5°	398.5	390.2	309.9	185.2	94.3	16.6	18.8	28.1	29.8	28.1	18.8
100°	443.9	440.1	362.4	241.8	144.3	44.3	13.5	26.6	29.1	26.6	13.5
102.5°	513.1	493.9	413.0	295.8	198.4	82.5	20.6	19.9	23.2	19.9	20.6
105°	569.4	547.7	477.5	352.4	260.2	133.8	52.2	18.3	15.1	18.3	52.2
107.5°	621.8	608.8	535.4	410.4	326.0	193.1	96.9	50.4	32.0	50.4	96.9
110°	687.7	671.9	592.1	468.2	394.6	256.3	148.3	92.5	71.5	92.5	148.3



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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°	750.9	739.1	644.7	528.9	465.7	324.8	211.5	145.2	125.5	145.2	211.5
115°	799.7	793.1	706.2	585.5	531.5	402.5	282.2	207.2	183.4	207.2	282.2
117.5°	850.9	849.7	750.9	643.4	610.5	472.2	346.7	269.0	244.0	269.0	346.7
120°	915.5	905.0	812.9	701.4	685.6	545.9	417.7	340.0	315.0	340.0	417.7
122.5°	960.3	953.8	865.5	756.6	756.6	621.0	486.3	408.6	382.2	408.6	486.3
125°	1001.1	998.4	905.0	812.0	833.0	690.8	562.6	483.6	454.7	483.6	562.6
127.5°	1038.0	1042.0	956.3	872.5	910.7	762.0	637.7	550.8	520.6	550.8	637.7
130°	1069.6	1082.8	1005.0	927.9	984.5	839.6	704.8	617.9	598.2	617.9	704.8
132.5°	1131.4	1123.6	1055.0	984.5	1063.4	910.7	775.9	685.0	662.7	685.0	775.9
135°	1163.1	1165.7	1098.6	1034.0	1137.2	982.6	843.1	753.5	731.2	753.5	843.1
137.5°	1201.3	1193.3	1132.8	1093.2	1205.7	1051.1	908.9	825.9	790.4	825.9	908.9
140°	1228.9	1227.5	1177.5	1145.9	1279.5	1118.2	976.1	891.8	858.9	891.8	976.1
142.5°	1257.9	1265.7	1222.3	1203.9	1353.2	1189.5	1048.5	956.3	924.7	956.3	1048.5
145°	1277.6	1294.8	1267.1	1276.3	1423.0	1268.4	1111.7	1018.2	984.0	1018.2	1111.7
147.5°	1310.5	1332.9	1300.0	1327.7	1483.6	1338.2	1174.9	1082.8	1052.5	1082.8	1174.9
150°	1355.4	1365.8	1346.1	1398.8	1546.2	1415.8	1239.5	1144.6	1114.4	1144.6	1239.5
152.5°	1390.8	1404.0	1381.6	1476.4	1594.9	1487.0	1310.5	1205.2	1169.7	1205.2	1310.5
155°	1427.7	1433.0	1417.2	1551.4	1646.3	1556.8	1367.2	1272.3	1238.1	1272.3	1367.2
157.5°	1462.0	1472.5	1454.1	1608.1	1691.1	1617.3	1431.6	1339.5	1309.2	1339.5	1431.6
160°	1498.8	1498.8	1509.4	1673.9	1728.0	1670.0	1500.2	1413.2	1371.1	1413.2	1500.2
162.5°	1502.8	1527.8	1584.5	1720.1	1763.6	1716.1	1573.9	1465.9	1429.1	1465.9	1573.9
165°	1560.7	1583.1	1668.7	1760.9	1791.2	1756.9	1664.8	1552.8	1509.4	1552.8	1664.8
167.5°	1621.3	1668.7	1737.1	1807.0	1817.4	1795.2	1734.5	1656.8	1617.3	1656.8	1734.5
170°	1720.1	1760.9	1795.2	1824.0	1838.6	1825.4	1778.0	1739.8	1714.8	1739.8	1778.0
172.5°	1796.9	1824.0	1837.3	1855.7	1846.4	1841.2	1817.4	1799.0	1785.0	1799.0	1817.4
175°	1845.6	1851.8	1863.6	1857.0	1864.8	1850.4	1851.8	1860.9	1806.1	1860.9	1851.8
177.5°	1862.7	1872.8	1866.2	1854.3	1855.7	1853.0	1858.3	1863.6	1854.8	1863.6	1858.3
180°	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6



TEST NUMBER: P392619

CATALOG NUMBER: MWL-3-53-28-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1046.2	1046.2	1046.2	1046.2	1046.2	1046.2
2.5°	1045.0	1047.1	1046.3	1044.2	1044.0	1041.4
5°	1039.1	1040.8	1039.1	1038.2	1038.1	1035.5
7.5°	1029.3	1031.5	1030.6	1028.4	1030.1	1027.5
10°	1015.2	1018.3	1016.6	1015.7	1016.6	1015.2
12.5°	1000.1	998.8	1000.1	999.2	1001.4	1002.7
15°	981.1	980.2	982.3	980.6	981.9	982.9
17.5°	959.0	959.0	959.0	957.8	960.0	961.8
20°	934.0	934.0	935.4	934.1	936.0	935.5
22.5°	907.8	907.0	909.2	906.2	907.3	905.6
25°	879.1	879.1	880.4	879.7	875.1	872.6
27.5°	848.4	847.8	849.6	845.9	841.3	838.8
30°	815.3	814.9	818.0	813.4	803.3	798.3
32.5°	780.7	781.5	783.4	774.6	763.6	759.3
35°	741.4	744.7	745.3	732.7	718.3	715.8
37.5°	702.5	707.2	706.4	688.7	673.5	672.6
40°	659.4	667.5	662.0	641.4	627.9	629.6
42.5°	614.6	624.4	617.2	593.5	583.1	589.0
45°	563.9	579.5	566.5	545.4	539.5	549.6
47.5°	514.0	530.6	515.4	498.9	501.4	510.7
50°	462.9	473.4	465.5	455.7	463.4	473.5
52.5°	413.0	411.7	415.6	413.9	427.0	436.4
55°	363.5	346.2	366.1	375.1	392.0	400.5
57.5°	313.6	294.7	316.3	337.8	359.0	366.6
60°	265.5	250.8	266.8	299.4	323.8	328.1
62.5°	224.0	212.2	225.4	261.3	289.2	294.3
65°	186.8	184.3	188.3	222.9	251.6	259.2
67.5°	158.1	155.6	158.1	189.9	217.0	224.5
70°	130.2	131.9	130.2	157.3	180.9	192.7
72.5°	106.2	110.4	107.4	129.3	147.1	164.0
75°	85.8	91.0	85.8	100.2	119.2	137.8
77.5°	68.2	74.8	68.2	78.3	102.5	129.0
80°	52.0	57.1	52.0	65.2	104.2	134.5
82.5°	36.8	39.4	36.8	70.9	120.4	148.3
85°	29.7	22.5	32.3	91.5	149.8	176.5
87.5°	26.9	5.9	45.3	122.9	190.8	211.1
90°	17.0	2.2	67.0	163.5	234.1	251.5
92.5°	11.1	21.9	102.0	207.2	282.7	301.8
95°	7.7	53.5	139.5	257.8	337.7	347.3
97.5°	16.6	94.3	185.2	309.9	390.2	398.5
100°	44.3	144.3	241.8	362.4	440.1	443.9
102.5°	82.5	198.4	295.8	413.0	493.9	513.1
105°	133.8	260.2	352.4	477.5	547.7	569.4
107.5°	193.1	326.0	410.4	535.4	608.8	621.8
110°	256.3	394.6	468.2	592.1	671.9	687.7





TEST NUMBER: P392619

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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	324.8	465.7	528.9	644.7	739.1	750.9
115°	402.5	531.5	585.5	706.2	793.1	799.7
117.5°	472.2	610.5	643.4	750.9	849.7	850.9
120°	545.9	685.6	701.4	812.9	905.0	915.5
122.5°	621.0	756.6	756.6	865.5	953.8	960.3
125°	690.8	833.0	812.0	905.0	998.4	1001.1
127.5°	762.0	910.7	872.5	956.3	1042.0	1038.0
130°	839.6	984.5	927.9	1005.0	1082.8	1069.6
132.5°	910.7	1063.4	984.5	1055.0	1123.6	1131.4
135°	982.6	1137.2	1034.0	1098.6	1165.7	1163.1
137.5°	1051.1	1205.7	1093.2	1132.8	1193.3	1201.3
140°	1118.2	1279.5	1145.9	1177.5	1227.5	1228.9
142.5°	1189.5	1353.2	1203.9	1222.3	1265.7	1257.9
145°	1268.4	1423.0	1276.3	1267.1	1294.8	1277.6
147.5°	1338.2	1483.6	1327.7	1300.0	1332.9	1310.5
150°	1415.8	1546.2	1398.8	1346.1	1365.8	1355.4
152.5°	1487.0	1594.9	1476.4	1381.6	1404.0	1390.8
155°	1556.8	1646.3	1551.4	1417.2	1433.0	1427.7
157.5°	1617.3	1691.1	1608.1	1454.1	1472.5	1462.0
160°	1670.0	1728.0	1673.9	1509.4	1498.8	1498.8
162.5°	1716.1	1763.6	1720.1	1584.5	1527.8	1502.8
165°	1756.9	1791.2	1760.9	1668.7	1583.1	1560.7
167.5°	1795.2	1817.4	1807.0	1737.1	1668.7	1621.3
170°	1825.4	1838.6	1824.0	1795.2	1760.9	1720.1
172.5°	1841.2	1846.4	1855.7	1837.3	1824.0	1796.9
175°	1850.4	1864.8	1857.0	1863.6	1851.8	1845.6
177.5°	1853.0	1855.7	1854.3	1866.2	1872.8	1862.7
180°	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6

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