

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: P392586

Luminaire Tested: **MWL-3-30-47-UNV-L930-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392586  
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-3-30-47-UNV-L930-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

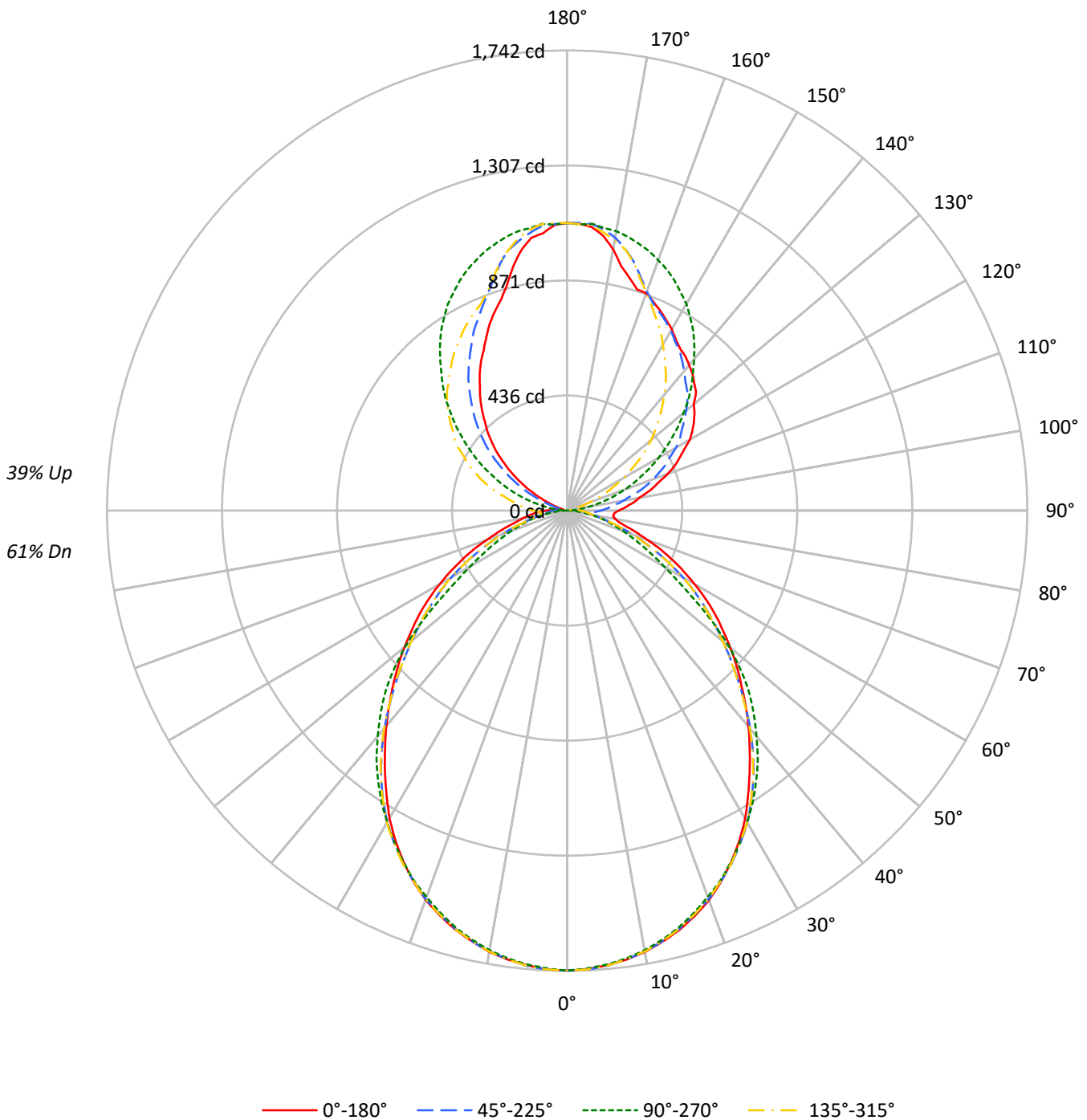
Lumens per Lamp: N/A  
Luminaire Lumens: 6644.3 lumens  
Efficiency: N/A  
Efficacy: 79.5 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 83.628  
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-3-30-47-UNV-L930-EDD

### 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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	100	96	92	89	94	90	87	84	79	76	74	68	66	65	59	57	56	51
2	92	84	78	73	86	79	74	69	69	65	62	60	57	55	52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	52	54	50	47	46	44	41	38
4	77	66	58	52	72	62	55	50	55	50	45	48	44	40	42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39	43	39	35	38	34	32	29
6	66	53	45	40	61	50	43	38	45	39	34	39	35	31	35	31	28	25
7	61	48	40	35	57	46	39	33	41	35	31	36	31	28	32	28	25	23
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	23	20
9	53	40	33	28	49	38	31	27	34	29	25	31	26	22	27	23	20	18
10	49	37	30	25	46	35	29	24	32	26	22	28	24	20	25	21	19	17

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

	0°	90°	180°	270°
0°	14996	14996	14996	14996
5°	14759	13714	14759	13714
10°	14480	12561	14480	12561
15°	14124	11484	14104	11484
20°	13693	10457	13672	10457
25°	13103	9511	13082	9511
30°	12404	8586	12374	8586
35°	11543	7716	11520	7716
40°	10751	6816	10719	6816
45°	9972	5937	9948	5937
50°	9262	4885	9235	4885
55°	8562	3646	8543	3646
60°	7740	2673	7728	2673
65°	6870	2020	6870	2020
70°	5850	1498	5862	1498
75°	5053	1081	5103	1081
80°	5146	684	4743	684
85°	6728	289	4823	289



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	163.9	2.5
10°-20°	461.5	6.9
20°-30°	676.2	10.2
30°-40°	766.5	11.5
40°-50°	720.8	10.8
50°-60°	572.2	8.6
60°-70°	372.5	5.6
70°-80°	190.1	2.9
80°-90°	100.0	1.5
90°-100°	104.0	1.6
100°-110°	171.3	2.6
110°-120°	290.0	4.4
120°-130°	393.6	5.9
130°-140°	448.8	6.8
140°-150°	447.4	6.7
150°-160°	389.4	5.9
160°-170°	273.9	4.1
170°-180°	102.0	1.5
0°-30°	1301.6	19.6
0°-40°	2068.1	31.1
0°-60°	3361.1	50.6
0°-90°	4023.7	60.6
90°-120°	565.4	8.5
90°-150°	1855.2	27.9
90°-180°	2621.0	39.4
0°-180°	6644.3	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1742	1742	1742	1742	1742	
5°	1728	1725	1728	1725	1728	164
15°	1643	1633	1641	1633	1643	463
25°	1468	1468	1466	1468	1468	675
35°	1205	1248	1202	1248	1205	754
45°	933	975	930	975	933	721
55°	683	590	682	590	683	610
65°	438	312	438	312	438	434
75°	231	154	233	154	231	253
85°	176	36	126	36	176	146
90°	195	2	80	2	195	108
95°	234	32	52	32	234	201
105°	338	153	15	153	338	357
115°	468	311	109	311	468	465
125°	586	488	267	488	586	523
135°	680	665	428	665	680	525
145°	747	831	576	831	747	471
155°	834	961	724	961	834	385
165°	912	1046	882	1046	912	259
175°	1077	1089	1054	1089	1077	100
180°	1088	1088	1088	1088	1088	



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CATALOG NUMBER: MWL-3-30-47-UNV-L930-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1741.5	1741.5	1741.5	1741.5	1741.5	1741.5	1741.5	1741.5	1741.5	1741.5	1741.5
2.5°	1737.4	1739.8	1738.8	1736.3	1734.5	1735.5	1738.8	1739.8	1738.2	1739.8	1738.8
5°	1728.2	1730.4	1730.4	1727.0	1725.3	1727.0	1729.7	1730.4	1728.2	1730.4	1729.7
7.5°	1714.5	1717.8	1713.5	1712.7	1710.1	1711.9	1712.7	1717.0	1714.5	1717.0	1712.7
10°	1696.6	1698.4	1695.8	1691.6	1689.9	1690.7	1695.0	1696.7	1696.6	1696.7	1695.0
12.5°	1671.2	1671.3	1668.8	1665.4	1663.8	1665.4	1668.8	1669.7	1669.6	1669.7	1668.8
15°	1643.3	1640.9	1639.2	1636.7	1633.3	1635.9	1638.4	1639.3	1640.9	1639.3	1638.4
17.5°	1608.6	1607.1	1603.7	1601.3	1596.2	1601.3	1603.0	1606.2	1606.2	1606.2	1603.0
20°	1569.8	1567.3	1565.7	1561.6	1556.5	1560.8	1564.9	1565.7	1567.4	1565.7	1564.9
22.5°	1521.6	1521.6	1519.2	1518.4	1516.0	1517.6	1518.4	1520.0	1520.0	1520.0	1518.4
25°	1468.4	1470.1	1473.5	1471.9	1467.8	1471.1	1471.9	1467.7	1466.0	1467.7	1471.9
27.5°	1410.9	1413.5	1419.5	1422.8	1416.2	1422.1	1417.9	1411.1	1408.5	1411.1	1417.9
30°	1347.5	1351.7	1365.3	1370.4	1362.1	1368.8	1362.9	1349.4	1344.3	1349.4	1362.9
32.5°	1275.7	1282.4	1298.5	1310.4	1308.0	1308.8	1296.1	1279.3	1272.6	1279.3	1296.1
35°	1204.8	1210.7	1230.1	1248.7	1248.0	1246.3	1227.8	1208.3	1202.4	1208.3	1227.8
37.5°	1134.6	1135.5	1155.7	1181.1	1185.4	1178.7	1153.4	1133.1	1132.2	1133.1	1153.4
40°	1067.9	1065.3	1078.8	1108.4	1115.2	1106.9	1075.7	1062.1	1064.7	1062.1	1075.7
42.5°	1000.2	990.9	996.8	1033.2	1045.9	1031.7	994.5	987.8	997.1	987.8	994.5
45°	932.6	919.9	918.3	950.3	975.0	948.8	915.2	917.7	930.3	917.7	915.2
47.5°	870.0	854.0	842.2	865.9	890.4	865.2	839.1	851.7	867.7	851.7	839.1
50°	805.8	788.0	770.3	784.8	799.2	783.3	767.3	785.1	803.5	785.1	767.3
52.5°	742.4	728.1	701.9	701.1	695.2	699.6	699.6	725.0	740.1	725.0	699.6
55°	683.4	669.0	636.0	620.9	589.7	619.3	633.7	666.7	681.9	666.7	633.7
57.5°	621.6	610.6	572.6	535.5	496.7	534.0	570.4	608.4	620.1	608.4	570.4
60°	557.5	551.5	507.6	449.4	424.0	448.6	506.1	550.0	556.7	550.0	506.1
62.5°	496.6	491.6	441.7	379.2	363.3	378.5	440.2	490.1	495.9	490.1	440.2
65°	437.6	425.7	375.9	316.7	311.7	315.9	375.1	424.9	437.6	424.9	375.1
67.5°	381.8	366.6	315.0	265.2	265.2	265.2	314.3	365.8	381.8	365.8	314.3
70°	321.0	302.5	261.9	219.6	222.9	219.6	261.9	303.2	321.7	303.2	261.9
72.5°	274.5	244.1	212.8	178.2	185.0	177.4	212.8	244.9	276.0	244.9	212.8
75°	230.6	198.5	165.5	141.1	153.7	141.1	166.3	199.3	232.9	199.3	166.3
77.5°	199.5	163.4	127.6	110.7	123.4	110.7	128.3	161.2	196.4	161.2	128.3
80°	185.5	147.2	103.6	82.8	92.0	82.8	102.1	134.9	171.0	134.9	102.1
82.5°	176.1	142.1	94.2	60.0	65.9	60.0	85.1	114.5	146.9	114.5	85.1
85°	176.2	146.6	97.6	47.8	36.3	46.3	75.4	99.8	126.3	99.8	75.4
87.5°	180.9	162.3	108.0	49.3	11.0	38.5	64.3	88.6	102.0	88.6	64.3
90°	194.9	180.4	126.4	55.2	1.6	26.1	50.4	72.2	79.8	72.2	50.4
92.5°	216.0	202.5	146.3	68.9	13.1	15.8	41.1	60.5	65.5	60.5	41.1
95°	234.0	226.9	169.2	83.2	31.5	6.4	31.0	48.9	52.1	48.9	31.0
97.5°	258.5	252.1	190.3	109.1	55.4	10.9	20.6	41.1	43.6	41.1	20.6
100°	275.8	270.8	215.5	142.2	84.5	27.0	12.2	29.8	34.1	29.8	12.2
102.5°	308.5	295.1	242.8	173.6	116.0	49.3	14.0	18.8	23.1	18.8	14.0
105°	337.8	323.7	280.4	206.6	152.9	79.2	32.5	15.1	14.7	15.1	32.5
107.5°	366.5	357.2	314.1	240.4	191.2	113.8	58.6	31.8	22.7	31.8	58.6
110°	404.0	393.9	347.1	274.1	231.1	150.6	88.5	56.3	44.9	56.3	88.5



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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°	440.0	432.3	377.8	309.4	272.6	190.5	125.4	86.2	75.5	86.2	125.4
115°	468.4	463.8	413.1	342.4	311.0	235.7	166.0	122.2	109.3	122.2	166.0
117.5°	498.4	496.7	439.2	376.2	357.0	276.4	203.6	158.3	144.6	158.3	203.6
120°	536.0	529.9	475.3	410.0	400.7	319.4	245.0	200.6	186.0	200.6	245.0
122.5°	562.0	558.2	505.9	443.1	443.1	363.9	284.9	240.6	225.1	240.6	284.9
125°	585.8	584.3	529.0	475.3	487.5	404.7	329.5	284.2	267.3	284.2	329.5
127.5°	607.4	609.7	558.9	510.6	532.8	446.1	373.2	323.4	305.7	323.4	373.2
130°	625.8	633.4	588.2	542.8	575.8	491.4	413.1	362.5	351.1	362.5	413.1
132.5°	661.8	657.2	617.3	575.8	621.8	532.8	454.6	401.7	388.7	401.7	454.6
135°	680.2	681.8	642.6	604.2	664.9	574.3	493.8	441.6	428.5	441.6	493.8
137.5°	702.5	697.9	662.6	639.6	704.8	614.9	532.2	483.8	463.1	483.8	532.2
140°	718.6	717.9	688.6	670.2	747.6	654.1	571.3	522.1	502.9	522.1	571.3
142.5°	735.5	740.1	714.8	704.0	790.7	695.6	613.4	559.8	541.3	559.8	613.4
145°	747.0	757.0	740.9	746.2	831.4	741.6	650.3	595.7	575.8	595.7	650.3
147.5°	766.2	779.2	760.0	776.2	866.7	782.3	687.1	633.4	615.7	633.4	687.1
150°	792.3	798.3	786.9	817.5	902.7	827.6	724.7	669.5	651.8	669.5	724.7
152.5°	813.0	820.7	807.6	862.9	931.0	869.1	766.2	704.8	684.1	704.8	766.2
155°	834.4	837.5	828.4	906.7	961.0	909.7	799.1	743.9	724.0	743.9	799.1
157.5°	854.4	860.6	849.9	938.8	987.1	944.2	836.7	783.1	765.4	783.1	836.7
160°	875.9	875.9	882.1	978.0	1008.6	975.7	876.7	826.0	801.5	826.0	876.7
162.5°	878.3	892.8	925.8	1004.8	1030.2	1002.6	919.7	856.7	835.2	856.7	919.7
165°	912.0	925.1	975.0	1028.6	1046.3	1026.3	972.6	907.4	882.1	907.4	972.6
167.5°	947.3	975.0	1014.9	1055.5	1061.7	1048.6	1013.3	968.0	945.0	968.0	1013.3
170°	1004.0	1027.8	1048.6	1065.5	1073.9	1066.2	1038.5	1015.5	1000.9	1015.5	1038.5
172.5°	1048.5	1064.6	1073.2	1083.9	1078.5	1075.4	1061.7	1050.1	1041.5	1050.1	1061.7
175°	1076.8	1080.7	1088.5	1084.7	1089.3	1080.8	1081.6	1086.1	1053.8	1086.1	1081.6
177.5°	1086.8	1093.1	1090.1	1083.1	1083.9	1082.4	1085.4	1087.6	1082.2	1087.6	1085.4
180°	1088.5	1088.5	1088.5	1088.5	1088.5	1088.5	1088.5	1088.5	1088.5	1088.5	1088.5



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1741.5	1741.5	1741.5	1741.5	1741.5	1741.5
2.5°	1735.5	1734.5	1736.3	1738.8	1739.8	1737.4
5°	1727.0	1725.3	1727.0	1730.4	1730.4	1728.2
7.5°	1711.9	1710.1	1712.7	1713.5	1717.8	1714.5
10°	1690.7	1689.9	1691.6	1695.8	1698.4	1696.6
12.5°	1665.4	1663.8	1665.4	1668.8	1671.3	1671.2
15°	1635.9	1633.3	1636.7	1639.2	1640.9	1643.3
17.5°	1601.3	1596.2	1601.3	1603.7	1607.1	1608.6
20°	1560.8	1556.5	1561.6	1565.7	1567.3	1569.8
22.5°	1517.6	1516.0	1518.4	1519.2	1521.6	1521.6
25°	1471.1	1467.8	1471.9	1473.5	1470.1	1468.4
27.5°	1422.1	1416.2	1422.8	1419.5	1413.5	1410.9
30°	1368.8	1362.1	1370.4	1365.3	1351.7	1347.5
32.5°	1308.8	1308.0	1310.4	1298.5	1282.4	1275.7
35°	1246.3	1248.0	1248.7	1230.1	1210.7	1204.8
37.5°	1178.7	1185.4	1181.1	1155.7	1135.5	1134.6
40°	1106.9	1115.2	1108.4	1078.8	1065.3	1067.9
42.5°	1031.7	1045.9	1033.2	996.8	990.9	1000.2
45°	948.8	975.0	950.3	918.3	919.9	932.6
47.5°	865.2	890.4	865.9	842.2	854.0	870.0
50°	783.3	799.2	784.8	770.3	788.0	805.8
52.5°	699.6	695.2	701.1	701.9	728.1	742.4
55°	619.3	589.7	620.9	636.0	669.0	683.4
57.5°	534.0	496.7	535.5	572.6	610.6	621.6
60°	448.6	424.0	449.4	507.6	551.5	557.5
62.5°	378.5	363.3	379.2	441.7	491.6	496.6
65°	315.9	311.7	316.7	375.9	425.7	437.6
67.5°	265.2	265.2	265.2	315.0	366.6	381.8
70°	219.6	222.9	219.6	261.9	302.5	321.0
72.5°	177.4	185.0	178.2	212.8	244.1	274.5
75°	141.1	153.7	141.1	165.5	198.5	230.6
77.5°	110.7	123.4	110.7	127.6	163.4	199.5
80°	82.8	92.0	82.8	103.6	147.2	185.5
82.5°	60.0	65.9	60.0	94.2	142.1	176.1
85°	46.3	36.3	47.8	97.6	146.6	176.2
87.5°	38.5	11.0	49.3	108.0	162.3	180.9
90°	26.1	1.6	55.2	126.4	180.4	194.9
92.5°	15.8	13.1	68.9	146.3	202.5	216.0
95°	6.4	31.5	83.2	169.2	226.9	234.0
97.5°	10.9	55.4	109.1	190.3	252.1	258.5
100°	27.0	84.5	142.2	215.5	270.8	275.8
102.5°	49.3	116.0	173.6	242.8	295.1	308.5
105°	79.2	152.9	206.6	280.4	323.7	337.8
107.5°	113.8	191.2	240.4	314.1	357.2	366.5
110°	150.6	231.1	274.1	347.1	393.9	404.0





TEST NUMBER: P392586

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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	190.5	272.6	309.4	377.8	432.3	440.0
115°	235.7	311.0	342.4	413.1	463.8	468.4
117.5°	276.4	357.0	376.2	439.2	496.7	498.4
120°	319.4	400.7	410.0	475.3	529.9	536.0
122.5°	363.9	443.1	443.1	505.9	558.2	562.0
125°	404.7	487.5	475.3	529.0	584.3	585.8
127.5°	446.1	532.8	510.6	558.9	609.7	607.4
130°	491.4	575.8	542.8	588.2	633.4	625.8
132.5°	532.8	621.8	575.8	617.3	657.2	661.8
135°	574.3	664.9	604.2	642.6	681.8	680.2
137.5°	614.9	704.8	639.6	662.6	697.9	702.5
140°	654.1	747.6	670.2	688.6	717.9	718.6
142.5°	695.6	790.7	704.0	714.8	740.1	735.5
145°	741.6	831.4	746.2	740.9	757.0	747.0
147.5°	782.3	866.7	776.2	760.0	779.2	766.2
150°	827.6	902.7	817.5	786.9	798.3	792.3
152.5°	869.1	931.0	862.9	807.6	820.7	813.0
155°	909.7	961.0	906.7	828.4	837.5	834.4
157.5°	944.2	987.1	938.8	849.9	860.6	854.4
160°	975.7	1008.6	978.0	882.1	875.9	875.9
162.5°	1002.6	1030.2	1004.8	925.8	892.8	878.3
165°	1026.3	1046.3	1028.6	975.0	925.1	912.0
167.5°	1048.6	1061.7	1055.5	1014.9	975.0	947.3
170°	1066.2	1073.9	1065.5	1048.6	1027.8	1004.0
172.5°	1075.4	1078.5	1083.9	1073.2	1064.6	1048.5
175°	1080.8	1089.3	1084.7	1088.5	1080.7	1076.8
177.5°	1082.4	1083.9	1083.1	1090.1	1093.1	1086.8
180°	1088.5	1088.5	1088.5	1088.5	1088.5	1088.5

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