

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: P392701

Luminaire Tested: **MWL-4-66-25-UNV-L835-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392701  
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-4-66-25-UNV-L835-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8969.0 lumens  
Efficiency: N/A  
Efficacy: 83.0 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

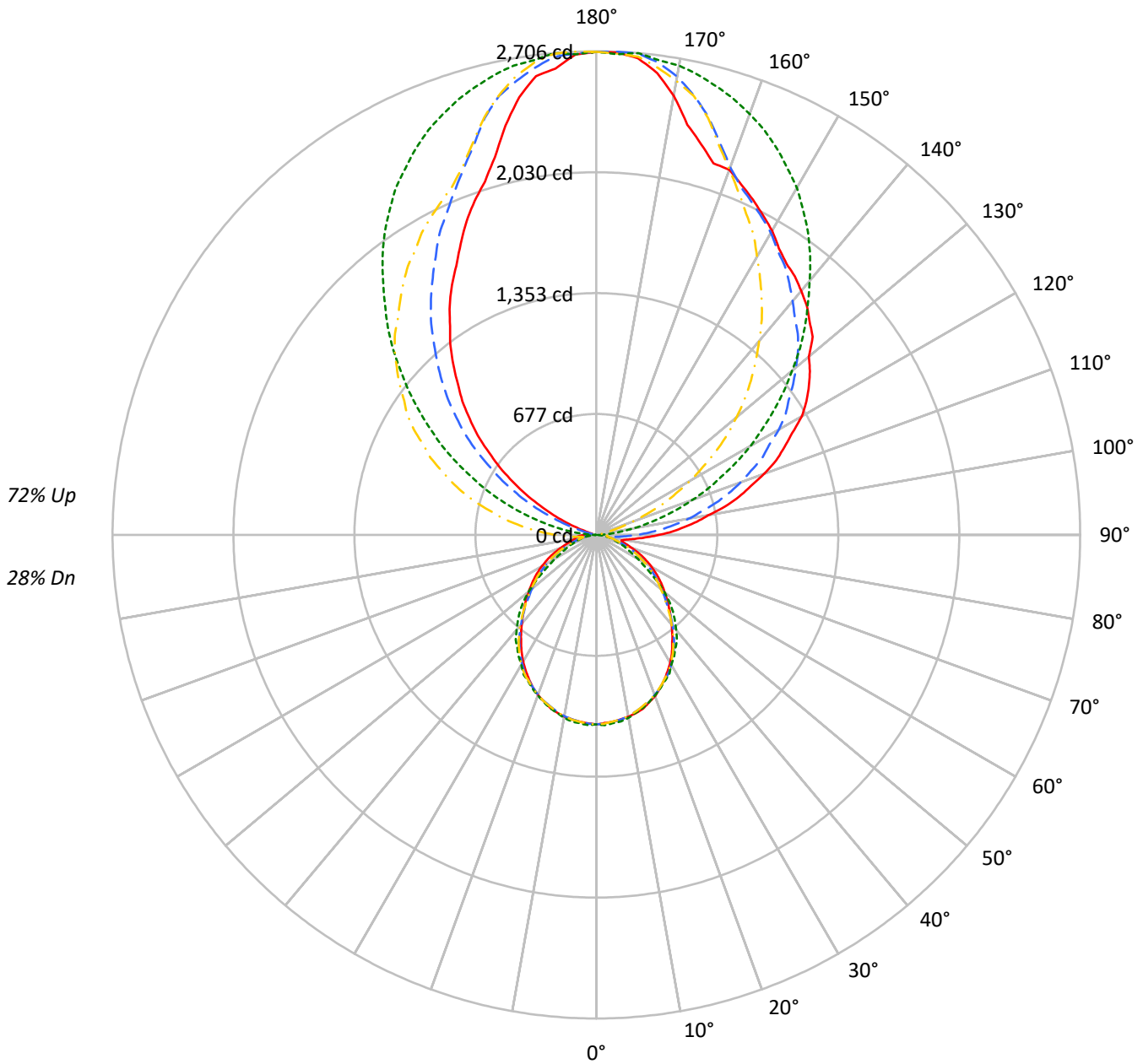
Input Watts (W): 108.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot



— 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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	93	89	85	81	83	79	76	73	62	60	58	46	45	44	32	31	30	24
2	85	77	72	67	75	70	65	60	55	51	48	41	39	37	28	27	26	20
3	77	68	61	56	69	61	55	51	48	44	41	36	33	31	25	23	22	17
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	22	21	19	15
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	20	18	17	13
6	60	48	40	35	53	43	37	32	34	30	26	26	23	20	18	16	15	11
7	55	43	36	30	49	39	33	28	31	26	23	24	20	18	17	15	13	10
8	51	39	32	27	46	35	29	25	28	24	20	22	18	16	15	13	12	9
9	47	36	28	24	42	32	26	22	26	21	18	20	17	14	14	12	11	8
10	44	33	26	21	40	30	24	19	24	19	16	18	15	13	13	11	10	8

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

	0°	90°	180°	270°
0°	6846	6846	6846	6846
5°	6742	6307	6742	6307
10°	6650	5795	6650	5795
15°	6549	5290	6512	5290
20°	6355	4817	6317	4817
25°	6095	4388	6056	4388
30°	5810	3967	5757	3967
35°	5435	3577	5393	3577
40°	5079	3179	5019	3179
45°	4745	2763	4697	2763
50°	4451	2261	4399	2261
55°	4187	1699	4150	1699
60°	3880	1263	3858	1263
65°	3521	936	3521	936
70°	3057	703	3085	703
75°	2701	513	2803	513
80°	3666	334	2815	334
85°	7794	152	3589	152



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.9	1.1
10°-20°	281.7	3.1
20°-30°	414.0	4.6
30°-40°	471.1	5.3
40°-50°	443.6	4.9
50°-60°	356.1	4.0
60°-70°	237.1	2.6
70°-80°	126.1	1.4
80°-90°	103.1	1.1
90°-100°	204.7	2.3
100°-110°	417.2	4.7
110°-120°	717.4	8.0
120°-130°	975.1	10.9
130°-140°	1112.4	12.4
140°-150°	1109.7	12.4
150°-160°	966.5	10.8
160°-170°	680.0	7.6
170°-180°	253.3	2.8
0°-30°	795.7	8.9
0°-40°	1266.8	14.1
0°-60°	2066.4	23.0
0°-90°	2532.6	28.2
90°-120°	1339.3	14.9
90°-150°	4536.6	50.6
90°-180°	6436.0	71.8
0°-180°	8969.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1060	1060	1060	1060	1060	
5°	1049	1058	1049	1058	1049	100
15°	1007	1003	1001	1003	1007	283
25°	897	903	891	903	897	412
35°	740	771	734	771	740	463
45°	574	605	568	605	574	444
55°	427	366	423	366	427	382
65°	282	192	282	192	282	279
75°	150	97	156	97	150	172
85°	230	26	106	26	230	174
90°	349	2	62	2	349	193
95°	490	77	37	77	490	432
105°	826	377	22	377	826	868
115°	1160	771	266	771	1160	1151
125°	1452	1209	659	1209	1452	1296
135°	1687	1650	1060	1650	1687	1302
145°	1853	2065	1427	2065	1853	1168
155°	2070	2388	1796	2388	2070	955
165°	2263	2598	2189	2598	2263	642
175°	2677	2706	2620	2706	2677	250
180°	2703	2703	2703	2703	2703	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1060.0	1060.0	1060.0	1060.0	1060.0	1060.0	1060.0	1060.0	1060.0	1060.0	1060.0
2.5°	1053.3	1055.2	1057.0	1069.7	1065.8	1067.8	1057.0	1055.2	1055.2	1055.2	1057.0
5°	1049.4	1051.3	1050.1	1058.9	1057.9	1058.9	1048.2	1051.3	1049.4	1051.3	1048.2
7.5°	1041.4	1043.3	1042.3	1050.1	1053.0	1048.2	1040.5	1041.4	1041.4	1041.4	1040.5
10°	1032.6	1033.5	1031.5	1037.4	1039.4	1035.5	1029.6	1029.6	1032.6	1029.6	1029.6
12.5°	1021.6	1022.7	1012.9	1018.8	1018.8	1018.8	1012.9	1018.8	1017.8	1018.8	1012.9
15°	1006.8	999.1	995.2	1004.1	1003.1	1002.1	993.3	995.2	1001.1	995.2	993.3
17.5°	982.3	981.4	976.6	980.5	980.5	980.5	974.6	979.5	976.6	979.5	974.6
20°	959.7	957.7	954.0	957.9	956.0	956.0	952.0	954.0	954.0	954.0	952.0
22.5°	929.2	932.2	927.4	930.4	931.5	928.5	925.5	928.4	925.5	928.4	925.5
25°	896.8	897.8	899.8	903.8	903.0	902.0	896.0	892.1	891.1	892.1	896.0
27.5°	861.4	865.3	873.3	880.3	881.3	878.3	869.5	859.6	855.7	859.6	869.5
30°	826.0	826.0	836.8	843.8	839.1	840.0	831.1	820.3	818.4	820.3	831.1
32.5°	784.7	784.7	799.5	812.4	808.5	808.5	793.8	777.2	777.2	777.2	793.8
35°	739.6	742.6	756.3	776.0	771.3	770.3	750.6	736.9	733.9	736.9	750.6
37.5°	697.4	695.4	711.1	733.7	740.7	728.0	705.4	689.7	691.7	689.7	705.4
40°	655.1	651.2	663.0	687.6	693.5	683.8	655.3	643.5	647.4	643.5	655.3
42.5°	614.8	607.9	612.9	639.5	649.3	635.7	607.2	600.3	607.2	600.3	607.2
45°	573.6	565.8	563.8	592.3	605.1	588.5	556.1	560.0	567.8	560.0	556.1
47.5°	538.3	527.4	519.6	536.3	554.0	534.4	511.9	521.7	532.5	521.7	511.9
50°	498.0	489.1	478.3	485.2	493.2	481.4	470.6	481.5	492.2	481.5	470.6
52.5°	464.6	453.7	437.0	438.0	429.3	434.2	431.3	446.1	458.8	446.1	431.3
55°	427.2	417.4	398.7	386.0	366.4	382.2	393.0	411.7	423.4	411.7	393.0
57.5°	391.8	384.9	360.4	335.9	311.3	332.1	354.7	379.2	388.0	379.2	354.7
60°	354.6	347.7	320.2	281.9	267.1	280.0	316.4	343.9	352.6	343.9	316.4
62.5°	319.2	314.3	281.9	238.6	224.0	236.7	278.0	310.5	317.2	310.5	278.0
65°	281.9	274.0	243.5	200.3	192.5	198.4	241.7	272.1	281.9	272.1	241.7
67.5°	244.5	236.6	206.2	168.0	167.0	168.0	204.3	234.8	244.5	234.8	204.3
70°	208.2	196.5	168.9	139.5	139.5	139.5	168.9	198.3	210.1	198.3	168.9
72.5°	176.8	162.1	138.5	115.9	117.8	113.9	138.5	163.9	180.6	163.9	138.5
75°	150.3	131.6	109.0	92.3	97.2	92.3	111.0	133.5	156.0	133.5	111.0
77.5°	142.9	115.7	85.4	72.6	78.5	72.6	87.4	109.9	135.3	109.9	87.4
80°	156.8	123.7	72.5	54.9	59.9	54.9	68.7	93.2	120.4	93.2	68.7
82.5°	186.8	151.0	83.6	39.2	42.2	39.2	60.7	82.3	114.3	82.3	60.7
85°	230.4	196.5	116.9	37.1	25.5	33.3	61.4	80.0	106.1	80.0	61.4
87.5°	285.3	258.3	164.3	58.9	7.9	32.1	55.4	75.0	88.6	75.0	55.4
90°	349.0	323.0	227.2	93.1	1.9	20.5	38.1	53.8	62.5	53.8	38.1
92.5°	423.2	397.3	292.0	145.4	31.5	13.7	30.3	44.0	48.8	44.0	30.3
95°	489.8	477.4	368.2	202.5	77.3	11.6	24.4	34.3	37.1	34.3	24.4
97.5°	567.1	558.4	446.4	268.4	136.6	23.9	24.3	33.2	32.2	33.2	24.3
100°	636.6	633.7	526.4	350.6	209.1	64.0	20.2	33.9	34.9	33.9	20.2
102.5°	739.5	714.7	599.8	428.8	287.5	119.4	30.7	27.0	29.0	27.0	30.7
105°	826.3	797.6	692.5	510.9	377.3	193.9	75.5	29.8	22.2	29.8	75.5
107.5°	903.6	882.5	776.5	595.0	472.7	279.9	140.4	72.6	47.9	72.6	140.4
110°	997.1	974.2	858.5	679.0	572.1	371.5	214.9	133.8	103.2	133.8	214.9



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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°	1088.8	1071.6	935.0	766.9	675.3	470.8	306.6	210.1	181.5	210.1	306.6
115°	1159.5	1149.9	1023.8	849.0	770.7	583.6	408.8	299.9	265.5	299.9	408.8
117.5°	1234.0	1232.0	1088.8	934.0	885.3	685.8	502.4	389.7	353.4	389.7	502.4
120°	1327.5	1312.3	1178.5	1018.1	995.1	792.7	605.6	492.9	456.6	492.9	605.6
122.5°	1392.5	1382.9	1254.9	1098.3	1098.3	901.6	704.8	592.1	554.0	592.1	704.8
125°	1451.6	1447.8	1312.3	1178.5	1209.1	1002.8	815.6	701.0	659.0	701.0	815.6
127.5°	1505.1	1510.9	1386.8	1266.4	1321.8	1106.0	924.5	798.4	754.5	798.4	924.5
130°	1551.0	1570.1	1457.4	1346.6	1428.7	1218.6	1021.9	895.9	867.2	895.9	1021.9
132.5°	1640.7	1629.3	1530.0	1428.7	1543.3	1321.8	1125.1	993.3	960.8	993.3	1125.1
135°	1686.6	1690.5	1593.1	1499.4	1650.4	1424.9	1222.5	1092.5	1060.1	1092.5	1222.5
137.5°	1741.9	1730.5	1642.7	1585.4	1749.6	1524.3	1318.0	1197.6	1146.1	1197.6	1318.0
140°	1782.1	1780.2	1707.7	1661.8	1856.6	1621.7	1415.4	1293.1	1245.4	1293.1	1415.4
142.5°	1824.1	1836.6	1772.5	1745.8	1963.6	1724.8	1520.4	1387.8	1340.9	1387.8	1520.4
145°	1852.8	1877.6	1837.5	1850.8	2064.8	1839.4	1612.1	1476.5	1426.9	1476.5	1612.1
147.5°	1900.6	1933.0	1885.2	1925.3	2152.6	1940.7	1703.8	1570.1	1526.1	1570.1	1703.8
150°	1965.4	1980.8	1952.1	2028.5	2242.4	2053.3	1797.4	1659.9	1616.0	1659.9	1797.4
152.5°	2017.0	2036.1	2003.7	2141.1	2313.1	2156.5	1900.6	1747.7	1696.2	1747.7	1900.6
155°	2070.5	2078.2	2055.3	2250.0	2387.6	2257.7	1982.6	1845.1	1795.5	1845.1	1982.6
157.5°	2120.2	2135.4	2108.7	2332.2	2452.5	2345.6	2076.3	1942.5	1898.6	1942.5	2076.3
160°	2173.7	2173.7	2188.9	2427.7	2506.0	2421.9	2175.5	2049.6	1988.4	2049.6	2175.5
162.5°	2179.4	2215.6	2297.8	2494.5	2557.5	2488.8	2282.6	2125.9	2072.5	2125.9	2282.6
165°	2263.4	2295.9	2420.1	2553.7	2597.6	2548.0	2414.4	2252.0	2188.9	2252.0	2414.4
167.5°	2351.3	2420.1	2519.4	2620.6	2635.9	2603.4	2515.6	2402.9	2345.6	2402.9	2515.6
170°	2494.5	2553.7	2603.4	2645.4	2666.4	2647.4	2578.6	2523.1	2486.9	2523.1	2578.6
172.5°	2606.3	2645.4	2664.6	2691.3	2678.9	2670.3	2635.9	2609.1	2589.1	2609.1	2635.9
175°	2677.0	2685.5	2702.7	2693.2	2705.6	2683.6	2685.5	2698.9	2619.7	2698.9	2685.5
177.5°	2701.7	2716.1	2706.5	2689.3	2692.3	2687.5	2695.1	2702.7	2690.3	2702.7	2695.1
180°	2702.7	2702.7	2702.7	2702.7	2702.7	2702.7	2702.7	2702.7	2702.7	2702.7	2702.7



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CATALOG NUMBER: MWL-4-66-25-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1060.0	1060.0	1060.0	1060.0	1060.0	1060.0
2.5°	1067.8	1065.8	1069.7	1057.0	1055.2	1053.3
5°	1058.9	1057.9	1058.9	1050.1	1051.3	1049.4
7.5°	1048.2	1053.0	1050.1	1042.3	1043.3	1041.4
10°	1035.5	1039.4	1037.4	1031.5	1033.5	1032.6
12.5°	1018.8	1018.8	1018.8	1012.9	1022.7	1021.6
15°	1002.1	1003.1	1004.1	995.2	999.1	1006.8
17.5°	980.5	980.5	980.5	976.6	981.4	982.3
20°	956.0	956.0	957.9	954.0	957.7	959.7
22.5°	928.5	931.5	930.4	927.4	932.2	929.2
25°	902.0	903.0	903.8	899.8	897.8	896.8
27.5°	878.3	881.3	880.3	873.3	865.3	861.4
30°	840.0	839.1	843.8	836.8	826.0	826.0
32.5°	808.5	808.5	812.4	799.5	784.7	784.7
35°	770.3	771.3	776.0	756.3	742.6	739.6
37.5°	728.0	740.7	733.7	711.1	695.4	697.4
40°	683.8	693.5	687.6	663.0	651.2	655.1
42.5°	635.7	649.3	639.5	612.9	607.9	614.8
45°	588.5	605.1	592.3	563.8	565.8	573.6
47.5°	534.4	554.0	536.3	519.6	527.4	538.3
50°	481.4	493.2	485.2	478.3	489.1	498.0
52.5°	434.2	429.3	438.0	437.0	453.7	464.6
55°	382.2	366.4	386.0	398.7	417.4	427.2
57.5°	332.1	311.3	335.9	360.4	384.9	391.8
60°	280.0	267.1	281.9	320.2	347.7	354.6
62.5°	236.7	224.0	238.6	281.9	314.3	319.2
65°	198.4	192.5	200.3	243.5	274.0	281.9
67.5°	168.0	167.0	168.0	206.2	236.6	244.5
70°	139.5	139.5	139.5	168.9	196.5	208.2
72.5°	113.9	117.8	115.9	138.5	162.1	176.8
75°	92.3	97.2	92.3	109.0	131.6	150.3
77.5°	72.6	78.5	72.6	85.4	115.7	142.9
80°	54.9	59.9	54.9	72.5	123.7	156.8
82.5°	39.2	42.2	39.2	83.6	151.0	186.8
85°	33.3	25.5	37.1	116.9	196.5	230.4
87.5°	32.1	7.9	58.9	164.3	258.3	285.3
90°	20.5	1.9	93.1	227.2	323.0	349.0
92.5°	13.7	31.5	145.4	292.0	397.3	423.2
95°	11.6	77.3	202.5	368.2	477.4	489.8
97.5°	23.9	136.6	268.4	446.4	558.4	567.1
100°	64.0	209.1	350.6	526.4	633.7	636.6
102.5°	119.4	287.5	428.8	599.8	714.7	739.5
105°	193.9	377.3	510.9	692.5	797.6	826.3
107.5°	279.9	472.7	595.0	776.5	882.5	903.6
110°	371.5	572.1	679.0	858.5	974.2	997.1





TEST NUMBER: P392701

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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	470.8	675.3	766.9	935.0	1071.6	1088.8
115°	583.6	770.7	849.0	1023.8	1149.9	1159.5
117.5°	685.8	885.3	934.0	1088.8	1232.0	1234.0
120°	792.7	995.1	1018.1	1178.5	1312.3	1327.5
122.5°	901.6	1098.3	1098.3	1254.9	1382.9	1392.5
125°	1002.8	1209.1	1178.5	1312.3	1447.8	1451.6
127.5°	1106.0	1321.8	1266.4	1386.8	1510.9	1505.1
130°	1218.6	1428.7	1346.6	1457.4	1570.1	1551.0
132.5°	1321.8	1543.3	1428.7	1530.0	1629.3	1640.7
135°	1424.9	1650.4	1499.4	1593.1	1690.5	1686.6
137.5°	1524.3	1749.6	1585.4	1642.7	1730.5	1741.9
140°	1621.7	1856.6	1661.8	1707.7	1780.2	1782.1
142.5°	1724.8	1963.6	1745.8	1772.5	1836.6	1824.1
145°	1839.4	2064.8	1850.8	1837.5	1877.6	1852.8
147.5°	1940.7	2152.6	1925.3	1885.2	1933.0	1900.6
150°	2053.3	2242.4	2028.5	1952.1	1980.8	1965.4
152.5°	2156.5	2313.1	2141.1	2003.7	2036.1	2017.0
155°	2257.7	2387.6	2250.0	2055.3	2078.2	2070.5
157.5°	2345.6	2452.5	2332.2	2108.7	2135.4	2120.2
160°	2421.9	2506.0	2427.7	2188.9	2173.7	2173.7
162.5°	2488.8	2557.5	2494.5	2297.8	2215.6	2179.4
165°	2548.0	2597.6	2553.7	2420.1	2295.9	2263.4
167.5°	2603.4	2635.9	2620.6	2519.4	2420.1	2351.3
170°	2647.4	2666.4	2645.4	2603.4	2553.7	2494.5
172.5°	2670.3	2678.9	2691.3	2664.6	2645.4	2606.3
175°	2683.6	2705.6	2693.2	2702.7	2685.5	2677.0
177.5°	2687.5	2692.3	2689.3	2706.5	2716.1	2701.7
180°	2702.7	2702.7	2702.7	2702.7	2702.7	2702.7

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