

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: P392546

Luminaire Tested: **MWL-2-35-38-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392546
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-25 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-2-35-38-UNV-L940-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

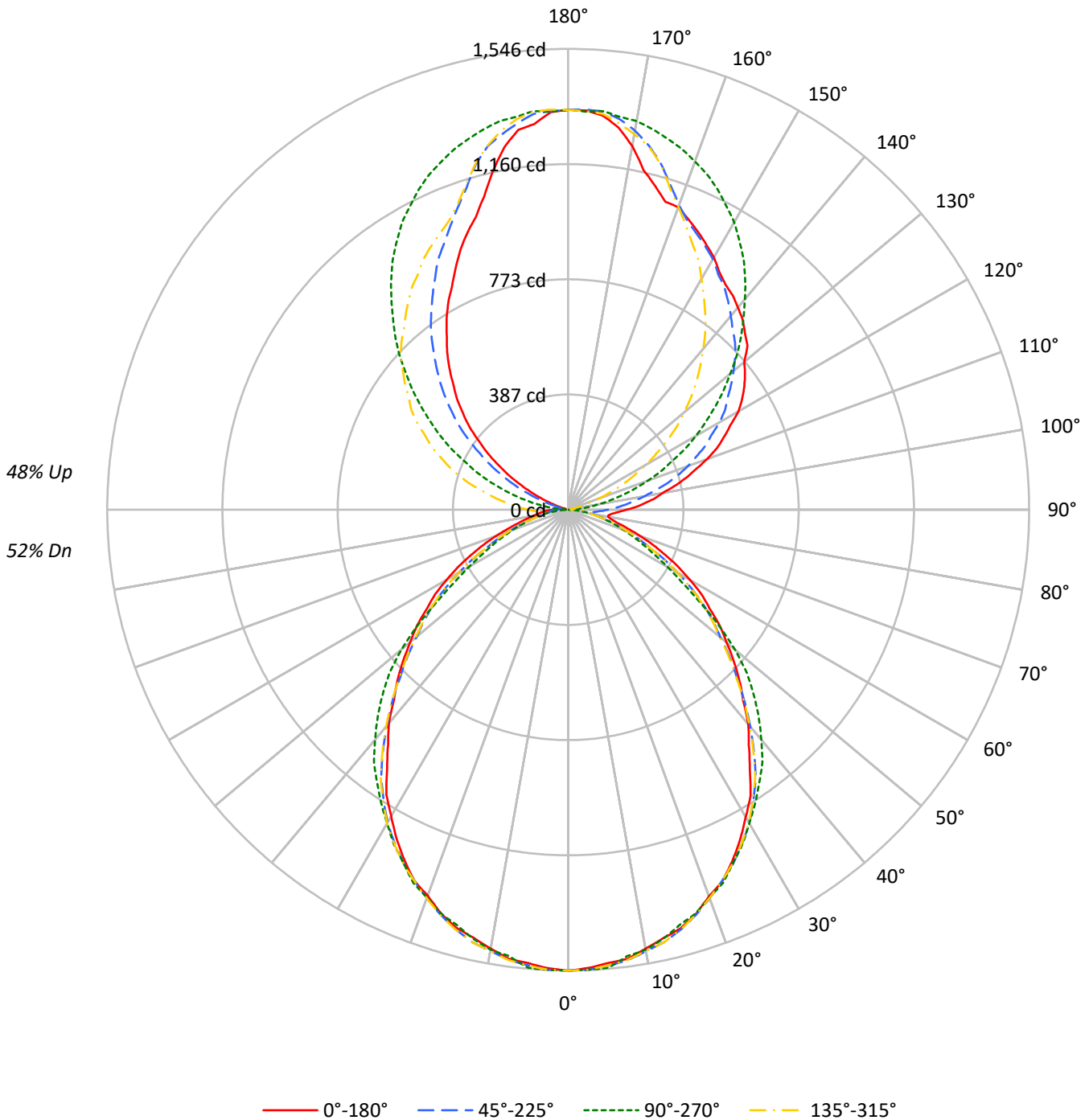
Lumens per Lamp: N/A
Luminaire Lumens: 6724.0 lumens
Efficiency: N/A
Efficacy: 78.8 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.18 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 85.345
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			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	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	99	94	91	87	91	87	84	81	75	72	70	63	61	60	52	51	50	45
2	90	83	77	72	83	77	72	67	66	62	59	56	53	50	46	44	43	38
3	82	73	66	60	76	68	62	57	58	54	50	50	46	43	41	39	37	33
4	76	65	57	51	70	61	54	49	52	47	43	44	41	37	37	34	32	28
5	70	58	50	44	64	54	47	42	47	41	37	40	36	33	34	31	28	25
6	64	52	44	39	59	49	42	37	42	37	33	36	32	29	31	27	25	22
7	59	47	40	34	55	44	37	32	39	33	29	33	29	26	28	25	22	20
8	55	43	35	30	51	40	34	29	35	30	26	30	26	23	26	23	20	18
9	52	39	32	27	48	37	30	26	32	27	23	28	24	21	24	21	18	16
10	48	36	29	24	45	34	28	23	30	25	21	26	22	19	22	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	19973	19973	19973	19973
5°	19446	18393	19446	18393
10°	18916	16713	18916	16713
15°	18419	15212	18384	15212
20°	17638	13949	17603	13949
25°	16903	12708	16866	12708
30°	15856	11485	15807	11485
35°	14609	10360	14570	10360
40°	13486	9240	13431	9240
45°	12289	8048	12247	8048
50°	11164	6685	11119	6685
55°	10059	4961	10026	4961
60°	8962	3645	8943	3645
65°	7586	2711	7586	2711
70°	6129	1984	6151	1984
75°	4762	1393	4840	1393
80°	4630	884	4017	884
85°	6557	370	3861	370



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.4	2.2
10°-20°	409.0	6.1
20°-30°	600.0	8.9
30°-40°	680.5	10.1
40°-50°	635.3	9.4
50°-60°	499.1	7.4
60°-70°	310.9	4.6
70°-80°	151.0	2.2
80°-90°	85.2	1.3
90°-100°	111.4	1.7
100°-110°	206.9	3.1
110°-120°	356.7	5.3
120°-130°	484.7	7.2
130°-140°	553.0	8.2
140°-150°	551.4	8.2
150°-160°	480.2	7.1
160°-170°	337.6	5.0
170°-180°	125.7	1.9
0°-30°	1154.4	17.2
0°-40°	1834.9	27.3
0°-60°	2969.3	44.2
0°-90°	3516.4	52.3
90°-120°	675.0	10.0
90°-150°	2264.1	33.7
90°-180°	3208.0	47.7
0°-180°	6724.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1546	1546	1546	1546	1546	
5°	1527	1543	1527	1543	1527	145
15°	1454	1442	1452	1442	1454	409
25°	1301	1308	1298	1308	1301	597
35°	1062	1117	1059	1117	1062	666
45°	813	881	810	881	813	627
55°	580	535	578	535	580	522
65°	359	279	359	279	359	358
75°	170	132	172	132	170	190
85°	150	31	88	31	150	120
90°	195	2	53	2	195	108
95°	259	39	35	39	259	225
105°	407	187	8	187	407	430
115°	576	383	133	383	576	571
125°	721	601	328	601	721	644
135°	838	820	528	820	838	647
145°	920	1025	710	1025	920	580
155°	1029	1185	893	1185	1029	475
165°	1125	1288	1088	1288	1125	319
175°	1327	1342	1299	1342	1327	124
180°	1341	1341	1341	1341	1341	



TEST NUMBER: P392546

CATALOG NUMBER: MWL-2-35-38-UNV-L940-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1546.3	1546.3	1546.3	1546.3	1546.3	1546.3	1546.3	1546.3	1546.3	1546.3	1546.3
2.5°	1538.9	1536.2	1544.5	1539.9	1544.5	1539.0	1544.5	1536.2	1539.9	1536.2	1544.5
5°	1527.1	1531.7	1535.4	1532.7	1542.7	1532.7	1534.5	1531.7	1527.1	1531.7	1534.5
7.5°	1519.8	1523.5	1524.5	1520.8	1510.8	1519.9	1523.5	1522.5	1519.8	1522.5	1523.5
10°	1495.2	1507.1	1504.4	1500.8	1498.9	1499.8	1503.4	1505.2	1495.2	1505.2	1503.4
12.5°	1472.5	1475.3	1486.1	1477.9	1474.3	1477.9	1486.1	1473.3	1470.6	1473.3	1486.1
15°	1454.3	1450.7	1458.8	1449.7	1442.4	1448.7	1457.9	1448.7	1451.5	1448.7	1457.9
17.5°	1422.4	1416.9	1425.1	1424.1	1420.5	1424.1	1424.1	1415.9	1419.6	1415.9	1424.1
20°	1380.5	1388.7	1386.8	1388.6	1384.1	1387.7	1385.9	1386.8	1377.7	1386.8	1385.9
22.5°	1349.5	1347.7	1348.5	1351.3	1355.8	1350.3	1347.6	1345.8	1347.6	1345.8	1347.6
25°	1301.2	1298.5	1309.4	1306.6	1307.5	1305.7	1307.5	1295.7	1298.4	1295.7	1307.5
27.5°	1248.4	1246.6	1263.0	1265.6	1265.6	1264.7	1261.1	1243.7	1245.6	1243.7	1261.1
30°	1191.0	1195.5	1214.7	1216.5	1214.6	1214.6	1211.9	1192.7	1187.3	1192.7	1211.9
32.5°	1138.1	1134.5	1155.5	1170.0	1167.2	1168.1	1152.6	1130.8	1134.4	1130.8	1152.6
35°	1061.6	1066.2	1096.2	1114.5	1117.1	1111.6	1093.4	1063.3	1058.8	1063.3	1093.4
37.5°	995.1	998.7	1023.3	1059.8	1069.7	1057.0	1020.5	995.9	992.3	995.9	1020.5
40°	939.6	928.7	949.6	992.3	1007.8	990.5	945.8	924.9	935.8	924.9	945.8
42.5°	868.6	864.0	876.7	924.0	945.9	922.2	873.8	860.2	864.7	860.2	873.8
45°	812.9	800.1	802.0	850.2	881.2	848.4	798.2	797.3	810.1	797.3	798.2
47.5°	753.7	737.3	735.4	774.6	813.8	773.7	731.7	734.4	750.8	734.4	731.7
50°	693.5	685.3	667.1	695.4	729.1	693.4	663.4	681.6	690.7	681.6	663.4
52.5°	641.6	630.7	609.7	627.0	636.1	625.1	606.9	626.9	638.8	626.9	606.9
55°	579.6	575.1	551.4	552.3	534.9	550.4	548.6	572.3	577.7	572.3	548.6
57.5°	531.4	525.0	489.4	473.0	451.1	471.1	486.6	522.2	529.4	522.2	486.6
60°	472.1	464.8	425.7	396.4	385.5	395.5	423.8	462.9	471.1	462.9	423.8
62.5°	416.6	408.4	366.4	329.0	324.4	328.1	364.5	406.4	415.6	406.4	364.5
65°	359.1	345.4	303.5	272.5	278.9	271.6	302.6	344.5	359.1	344.5	302.6
67.5°	308.0	287.1	255.2	226.0	236.1	226.0	254.3	286.2	308.0	286.2	254.3
70°	255.2	232.4	209.6	186.0	196.9	186.0	209.6	233.3	256.1	233.3	209.6
72.5°	208.7	187.8	168.6	152.2	161.3	151.2	168.6	188.7	210.6	188.7	168.6
75°	169.6	146.8	130.3	120.3	132.1	120.3	131.3	147.7	172.4	147.7	131.3
77.5°	147.1	124.1	97.5	93.8	104.8	93.8	98.5	121.3	143.2	121.3	98.5
80°	135.8	117.3	78.5	70.2	79.3	70.2	76.6	102.2	117.8	102.2	76.6
82.5°	136.7	122.6	77.1	49.2	52.8	49.2	65.8	88.6	100.7	88.6	65.8
85°	149.6	138.3	87.9	40.3	31.0	38.4	60.4	80.5	88.1	80.5	60.4
87.5°	169.0	164.2	107.1	46.2	9.1	33.0	53.2	73.3	71.6	73.3	53.2
90°	195.0	191.1	133.9	56.9	1.8	21.0	40.3	57.6	53.1	57.6	40.3
92.5°	230.2	221.7	161.6	75.3	16.0	10.1	32.0	46.6	44.8	46.6	32.0
95°	258.9	254.2	192.2	99.3	38.7	4.7	22.0	34.7	34.7	34.7	22.0
97.5°	293.3	285.8	222.9	133.4	68.1	12.3	13.8	25.7	28.4	25.7	13.8
100°	320.2	314.7	259.2	174.0	104.0	32.2	8.5	17.6	22.1	17.6	8.5
102.5°	365.0	351.9	297.1	212.8	142.9	59.6	15.1	11.2	13.0	11.2	15.1
105°	406.8	393.5	344.3	253.6	187.3	96.5	38.7	13.2	8.5	13.2	38.7
107.5°	447.4	438.0	385.9	296.1	234.6	139.9	70.9	36.8	23.6	36.8	70.9
110°	494.8	483.4	426.7	337.7	284.7	185.4	107.8	67.1	51.9	67.1	107.8



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CATALOG NUMBER: MWL-2-35-38-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	540.2	531.7	464.5	381.2	335.8	234.6	153.2	105.0	90.7	105.0	153.2
115°	576.1	570.4	508.0	421.9	383.1	290.4	203.4	149.4	133.3	149.4	203.4
117.5°	613.0	612.1	541.1	463.6	439.9	340.6	250.6	194.8	176.8	194.8	250.6
120°	659.4	651.8	585.6	506.1	494.7	394.4	301.8	245.9	228.0	245.9	301.8
122.5°	691.5	686.8	623.5	545.8	545.8	448.4	351.0	295.1	276.2	295.1	351.0
125°	720.9	718.9	651.8	585.6	600.7	498.6	405.8	349.0	328.2	349.0	405.8
127.5°	747.4	750.2	688.7	629.1	656.5	549.7	459.7	397.3	375.6	397.3	459.7
130°	771.0	779.5	723.7	668.8	709.6	605.4	508.0	445.5	432.2	445.5	508.0
132.5°	815.4	809.8	759.7	710.5	767.2	657.4	559.1	494.7	478.6	494.7	559.1
135°	838.2	840.0	791.8	745.5	820.2	708.6	608.3	543.9	527.8	543.9	608.3
137.5°	865.6	859.9	816.4	788.0	869.4	757.8	655.5	596.0	570.4	596.0	655.5
140°	885.5	884.5	848.6	825.9	922.4	806.1	703.8	643.2	619.6	643.2	703.8
142.5°	906.3	912.0	880.8	867.5	975.2	857.1	755.8	689.6	666.9	689.6	755.8
145°	920.5	932.8	912.9	919.6	1025.4	913.8	801.3	734.1	709.5	734.1	801.3
147.5°	944.2	960.2	936.6	956.5	1069.0	964.0	846.7	780.4	758.7	780.4	846.7
150°	977.2	984.7	970.5	1007.5	1113.5	1019.8	894.0	825.8	804.0	825.8	894.0
152.5°	1002.7	1012.1	996.1	1063.3	1148.4	1070.8	945.1	869.4	843.9	869.4	945.1
155°	1029.2	1033.0	1020.7	1117.2	1185.3	1121.0	984.7	917.7	893.1	917.7	984.7
157.5°	1053.8	1061.3	1047.2	1157.9	1217.5	1164.5	1031.1	965.9	944.1	965.9	1031.1
160°	1080.3	1080.3	1086.9	1205.2	1243.1	1202.4	1080.3	1018.8	988.5	1018.8	1080.3
162.5°	1083.1	1100.2	1140.9	1238.3	1268.6	1235.5	1133.3	1055.7	1030.1	1055.7	1133.3
165°	1124.8	1139.9	1201.4	1267.6	1288.5	1264.8	1198.6	1118.2	1087.9	1118.2	1198.6
167.5°	1167.4	1201.4	1250.6	1299.9	1307.4	1291.3	1248.8	1192.9	1164.5	1192.9	1248.8
170°	1238.3	1267.6	1291.3	1313.1	1323.5	1314.0	1279.0	1252.5	1234.5	1252.5	1279.0
172.5°	1293.2	1313.1	1321.6	1335.8	1329.1	1325.4	1307.4	1295.1	1284.7	1295.1	1307.4
175°	1327.3	1332.0	1341.4	1336.8	1342.4	1332.0	1332.9	1338.7	1299.0	1338.7	1332.9
177.5°	1340.5	1347.2	1343.3	1335.8	1336.7	1334.8	1337.7	1340.5	1334.9	1340.5	1337.7
180°	1341.4	1341.4	1341.4	1341.4	1341.4	1341.4	1341.4	1341.4	1341.4	1341.4	1341.4



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CATALOG NUMBER: MWL-2-35-38-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1546.3	1546.3	1546.3	1546.3	1546.3	1546.3
2.5°	1539.0	1544.5	1539.9	1544.5	1536.2	1538.9
5°	1532.7	1542.7	1532.7	1535.4	1531.7	1527.1
7.5°	1519.9	1510.8	1520.8	1524.5	1523.5	1519.8
10°	1499.8	1498.9	1500.8	1504.4	1507.1	1495.2
12.5°	1477.9	1474.3	1477.9	1486.1	1475.3	1472.5
15°	1448.7	1442.4	1449.7	1458.8	1450.7	1454.3
17.5°	1424.1	1420.5	1424.1	1425.1	1416.9	1422.4
20°	1387.7	1384.1	1388.6	1386.8	1388.7	1380.5
22.5°	1350.3	1355.8	1351.3	1348.5	1347.7	1349.5
25°	1305.7	1307.5	1306.6	1309.4	1298.5	1301.2
27.5°	1264.7	1265.6	1265.6	1263.0	1246.6	1248.4
30°	1214.6	1214.6	1216.5	1214.7	1195.5	1191.0
32.5°	1168.1	1167.2	1170.0	1155.5	1134.5	1138.1
35°	1111.6	1117.1	1114.5	1096.2	1066.2	1061.6
37.5°	1057.0	1069.7	1059.8	1023.3	998.7	995.1
40°	990.5	1007.8	992.3	949.6	928.7	939.6
42.5°	922.2	945.9	924.0	876.7	864.0	868.6
45°	848.4	881.2	850.2	802.0	800.1	812.9
47.5°	773.7	813.8	774.6	735.4	737.3	753.7
50°	693.4	729.1	695.4	667.1	685.3	693.5
52.5°	625.1	636.1	627.0	609.7	630.7	641.6
55°	550.4	534.9	552.3	551.4	575.1	579.6
57.5°	471.1	451.1	473.0	489.4	525.0	531.4
60°	395.5	385.5	396.4	425.7	464.8	472.1
62.5°	328.1	324.4	329.0	366.4	408.4	416.6
65°	271.6	278.9	272.5	303.5	345.4	359.1
67.5°	226.0	236.1	226.0	255.2	287.1	308.0
70°	186.0	196.9	186.0	209.6	232.4	255.2
72.5°	151.2	161.3	152.2	168.6	187.8	208.7
75°	120.3	132.1	120.3	130.3	146.8	169.6
77.5°	93.8	104.8	93.8	97.5	124.1	147.1
80°	70.2	79.3	70.2	78.5	117.3	135.8
82.5°	49.2	52.8	49.2	77.1	122.6	136.7
85°	38.4	31.0	40.3	87.9	138.3	149.6
87.5°	33.0	9.1	46.2	107.1	164.2	169.0
90°	21.0	1.8	56.9	133.9	191.1	195.0
92.5°	10.1	16.0	75.3	161.6	221.7	230.2
95°	4.7	38.7	99.3	192.2	254.2	258.9
97.5°	12.3	68.1	133.4	222.9	285.8	293.3
100°	32.2	104.0	174.0	259.2	314.7	320.2
102.5°	59.6	142.9	212.8	297.1	351.9	365.0
105°	96.5	187.3	253.6	344.3	393.5	406.8
107.5°	139.9	234.6	296.1	385.9	438.0	447.4
110°	185.4	284.7	337.7	426.7	483.4	494.8



TEST NUMBER: P392546

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	234.6	335.8	381.2	464.5	531.7	540.2
115°	290.4	383.1	421.9	508.0	570.4	576.1
117.5°	340.6	439.9	463.6	541.1	612.1	613.0
120°	394.4	494.7	506.1	585.6	651.8	659.4
122.5°	448.4	545.8	545.8	623.5	686.8	691.5
125°	498.6	600.7	585.6	651.8	718.9	720.9
127.5°	549.7	656.5	629.1	688.7	750.2	747.4
130°	605.4	709.6	668.8	723.7	779.5	771.0
132.5°	657.4	767.2	710.5	759.7	809.8	815.4
135°	708.6	820.2	745.5	791.8	840.0	838.2
137.5°	757.8	869.4	788.0	816.4	859.9	865.6
140°	806.1	922.4	825.9	848.6	884.5	885.5
142.5°	857.1	975.2	867.5	880.8	912.0	906.3
145°	913.8	1025.4	919.6	912.9	932.8	920.5
147.5°	964.0	1069.0	956.5	936.6	960.2	944.2
150°	1019.8	1113.5	1007.5	970.5	984.7	977.2
152.5°	1070.8	1148.4	1063.3	996.1	1012.1	1002.7
155°	1121.0	1185.3	1117.2	1020.7	1033.0	1029.2
157.5°	1164.5	1217.5	1157.9	1047.2	1061.3	1053.8
160°	1202.4	1243.1	1205.2	1086.9	1080.3	1080.3
162.5°	1235.5	1268.6	1238.3	1140.9	1100.2	1083.1
165°	1264.8	1288.5	1267.6	1201.4	1139.9	1124.8
167.5°	1291.3	1307.4	1299.9	1250.6	1201.4	1167.4
170°	1314.0	1323.5	1313.1	1291.3	1267.6	1238.3
172.5°	1325.4	1329.1	1335.8	1321.6	1313.1	1293.2
175°	1332.0	1342.4	1336.8	1341.4	1332.0	1327.3
177.5°	1334.8	1336.7	1335.8	1343.3	1347.2	1340.5
180°	1341.4	1341.4	1341.4	1341.4	1341.4	1341.4

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