

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: P392603

Luminaire Tested: **MWL-3-37-47-UNV-L940-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392603  
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-3-37-47-UNV-L940-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7732.7 lumens  
Efficiency: N/A  
Efficacy: 84.7 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: General Diffuse

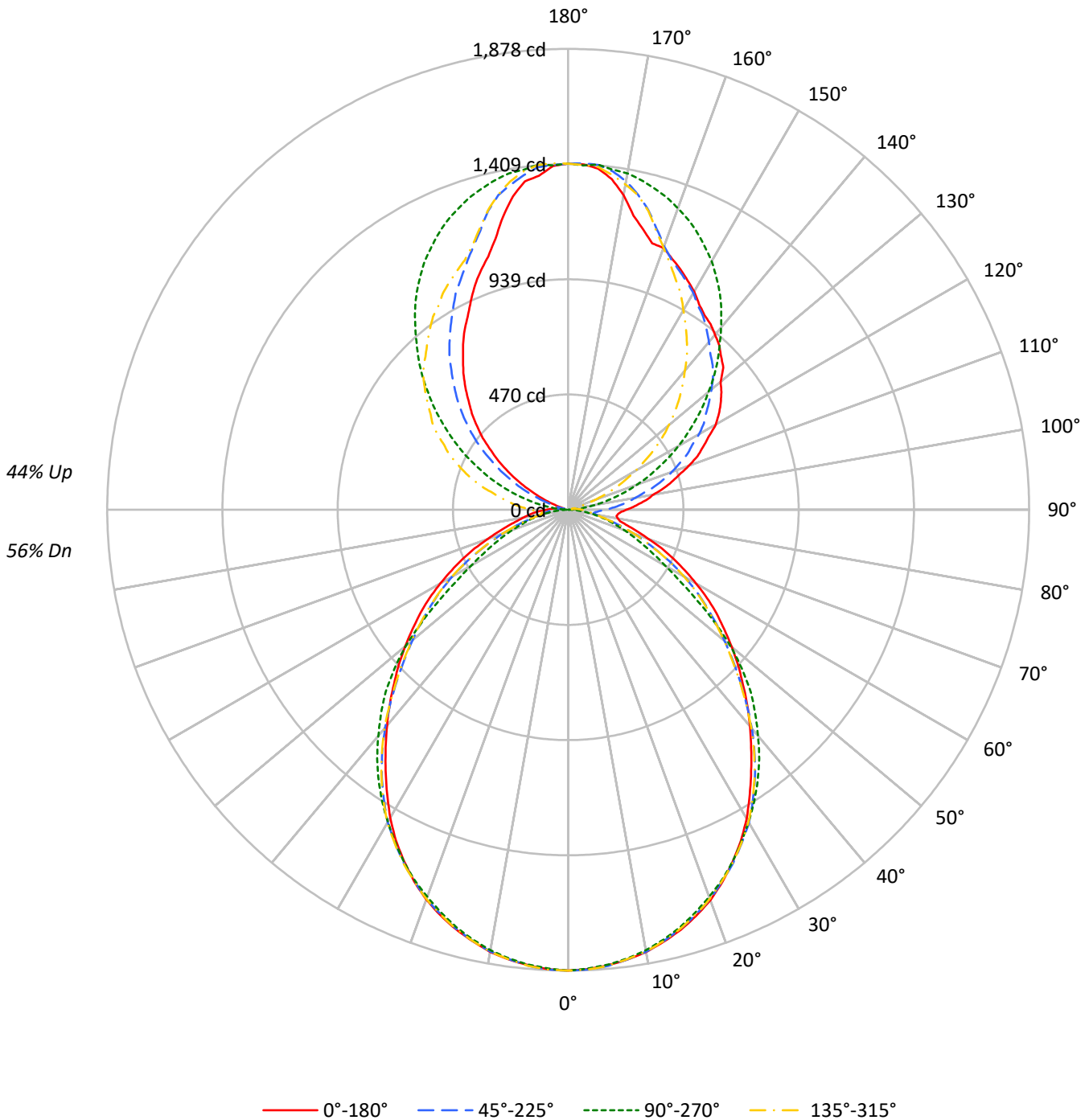
Input Watts (W): 91.304  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: MWL-3-37-47-UNV-L940-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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	56
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	55	54	53	48
2	91	83	77	72	84	78	73	68	67	63	60	58	55	52	49	47	45	41
3	83	74	66	61	77	69	63	57	60	55	51	51	48	45	44	41	39	35
4	76	66	58	52	71	61	54	49	53	48	44	46	42	39	39	36	34	30
5	70	59	51	45	65	55	48	42	48	42	38	42	37	34	36	32	30	26
6	65	53	45	39	60	50	42	37	43	38	33	38	33	30	32	29	26	23
7	60	48	40	34	56	45	38	33	39	34	30	34	30	26	30	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	32	27	24	27	24	21	19
9	52	40	32	27	48	38	31	26	33	28	24	29	25	21	25	22	19	17
10	49	37	29	25	45	35	28	24	31	25	21	27	23	19	23	20	17	15

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

	0°	90°	180°	270°
0°	16173	16173	16173	16173
5°	15915	14792	15915	14792
10°	15618	13549	15618	13549
15°	15236	12385	15211	12385
20°	14772	11277	14746	11277
25°	14135	10257	14109	10257
30°	13382	9260	13346	9260
35°	12453	8322	12425	8322
40°	11600	7354	11561	7354
45°	10761	6405	10729	6405
50°	9996	5271	9962	5271
55°	9239	3934	9214	3934
60°	8353	2885	8339	2885
65°	7413	2180	7413	2180
70°	6313	1617	6331	1617
75°	5454	1166	5520	1166
80°	5673	739	5148	739
85°	7774	312	5308	312



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	176.8	2.3
10°-20°	497.7	6.4
20°-30°	729.3	9.4
30°-40°	826.8	10.7
40°-50°	777.6	10.1
50°-60°	617.4	8.0
60°-70°	402.0	5.2
70°-80°	205.5	2.7
80°-90°	112.4	1.5
90°-100°	128.4	1.7
100°-110°	220.9	2.9
110°-120°	375.4	4.9
120°-130°	509.8	6.6
130°-140°	581.3	7.5
140°-150°	579.6	7.5
150°-160°	504.6	6.5
160°-170°	354.9	4.6
170°-180°	132.1	1.7
0°-30°	1403.8	18.2
0°-40°	2230.6	28.8
0°-60°	3625.7	46.9
0°-90°	4345.5	56.2
90°-120°	724.8	9.4
90°-150°	2395.5	31.0
90°-180°	3387.0	43.8
0°-180°	7732.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1878	1878	1878	1878	1878	
5°	1864	1861	1864	1861	1864	177
15°	1773	1762	1770	1762	1773	499
25°	1584	1583	1581	1583	1584	728
35°	1300	1346	1297	1346	1300	813
45°	1006	1052	1003	1052	1006	778
55°	738	636	736	636	738	658
65°	472	336	472	336	472	469
75°	249	166	252	166	249	274
85°	204	39	139	39	204	167
90°	236	2	87	2	236	131
95°	293	41	57	41	293	253
105°	436	198	17	198	436	460
115°	607	403	141	403	607	602
125°	759	632	346	632	759	678
135°	881	861	555	861	881	680
145°	968	1077	746	1077	968	610
155°	1081	1245	938	1245	1081	499
165°	1182	1356	1143	1356	1182	335
175°	1396	1411	1366	1411	1396	130
180°	1410	1410	1410	1410	1410	



TEST NUMBER: P392603

CATALOG NUMBER: MWL-3-37-47-UNV-L940-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2
2.5°	1873.5	1876.4	1875.6	1872.9	1871.1	1871.9	1875.6	1876.4	1874.5	1876.4	1875.6
5°	1863.5	1866.4	1866.5	1862.8	1861.0	1862.8	1865.5	1866.4	1863.5	1866.4	1865.5
7.5°	1849.0	1852.7	1848.2	1847.3	1844.6	1846.3	1847.3	1851.8	1849.0	1851.8	1847.3
10°	1829.9	1831.8	1829.0	1824.5	1822.7	1823.6	1828.1	1829.9	1829.9	1829.9	1828.1
12.5°	1802.7	1802.6	1799.9	1796.2	1794.3	1796.2	1799.9	1800.7	1800.8	1800.7	1799.9
15°	1772.7	1769.8	1768.0	1765.3	1761.5	1764.3	1767.0	1767.9	1769.8	1767.9	1767.0
17.5°	1735.4	1733.4	1729.7	1726.9	1721.4	1726.9	1728.7	1732.5	1732.5	1732.5	1728.7
20°	1693.5	1690.6	1688.7	1684.1	1678.5	1683.1	1687.7	1688.7	1690.5	1688.7	1687.7
22.5°	1641.4	1641.4	1638.6	1637.6	1634.8	1636.6	1637.6	1639.5	1639.5	1639.5	1637.6
25°	1584.0	1585.9	1589.4	1587.5	1582.9	1586.5	1587.5	1582.9	1581.1	1582.9	1587.5
27.5°	1522.1	1524.8	1531.1	1534.7	1527.3	1533.7	1529.2	1521.9	1519.2	1521.9	1529.2
30°	1453.8	1458.3	1472.9	1478.3	1469.0	1476.3	1470.0	1455.4	1449.8	1455.4	1470.0
32.5°	1376.3	1383.6	1400.9	1413.6	1410.7	1411.7	1398.0	1379.7	1372.4	1379.7	1398.0
35°	1299.8	1306.2	1327.1	1347.1	1346.0	1344.1	1324.2	1303.2	1296.9	1303.2	1324.2
37.5°	1224.2	1225.1	1246.9	1274.3	1278.7	1271.3	1244.0	1222.1	1221.2	1222.1	1244.0
40°	1152.2	1149.4	1164.0	1195.9	1203.1	1193.9	1160.1	1145.5	1148.3	1145.5	1160.1
42.5°	1079.3	1069.3	1075.6	1114.8	1128.4	1112.8	1072.6	1065.3	1075.4	1065.3	1072.6
45°	1006.4	992.7	990.9	1025.5	1051.9	1023.5	986.9	989.7	1003.4	989.7	986.9
47.5°	939.0	921.7	908.9	934.3	960.8	933.3	904.9	918.7	936.0	918.7	904.9
50°	869.7	850.6	831.5	846.9	862.3	844.9	827.5	846.6	866.7	846.6	827.5
52.5°	801.4	785.9	757.6	756.7	750.2	754.7	754.6	781.9	798.4	781.9	754.6
55°	737.5	722.0	686.5	670.0	636.2	668.0	683.5	719.0	735.5	719.0	683.5
57.5°	671.0	659.2	618.2	578.0	536.0	576.0	615.2	656.2	669.0	656.2	615.2
60°	601.7	595.3	547.9	485.0	457.6	484.0	545.9	593.3	600.7	593.3	545.9
62.5°	536.1	530.6	476.9	409.4	392.0	408.4	474.9	528.6	535.1	528.6	474.9
65°	472.2	459.5	405.7	341.9	336.4	340.9	404.7	458.5	472.2	458.5	404.7
67.5°	412.1	395.7	340.1	286.3	286.3	286.3	339.1	394.7	412.1	394.7	339.1
70°	346.4	326.4	282.6	237.1	240.7	237.1	282.6	327.4	347.4	327.4	282.6
72.5°	296.3	263.5	229.8	192.4	199.6	191.4	229.8	264.5	298.3	264.5	229.8
75°	248.9	214.3	178.7	152.2	165.9	152.2	179.7	215.3	251.9	215.3	179.7
77.5°	216.8	177.3	137.7	119.4	133.1	119.4	138.7	174.3	212.8	174.3	138.7
80°	204.5	162.0	112.4	89.4	99.4	89.4	110.4	146.1	185.6	146.1	110.4
82.5°	198.3	160.3	104.3	64.8	71.2	64.8	92.4	124.5	160.5	124.5	92.4
85°	203.6	170.0	111.6	52.3	39.3	50.3	82.7	109.3	139.0	109.3	82.7
87.5°	214.9	193.2	127.7	56.2	11.8	42.4	71.0	97.7	112.4	97.7	71.0
90°	236.3	219.1	153.5	66.2	1.9	28.4	55.0	78.9	87.1	78.9	55.0
92.5°	266.5	250.0	181.2	86.1	16.9	17.5	44.9	66.0	71.5	66.0	44.9
95°	292.6	283.8	213.0	107.1	40.7	7.7	34.0	53.0	56.8	53.0	34.0
97.5°	326.3	318.6	243.2	141.1	71.5	13.8	23.3	45.0	47.7	45.0	23.3
100°	351.4	345.9	277.9	183.9	109.3	34.6	14.2	33.4	38.0	33.4	14.2
102.5°	396.3	379.8	314.1	224.7	150.1	63.5	17.7	21.6	26.1	21.6	17.7
105°	435.9	418.3	362.9	267.5	197.8	102.3	41.5	18.3	16.9	18.3	41.5
107.5°	474.0	462.3	406.7	311.2	247.5	147.1	75.3	40.5	28.3	40.5	75.3
110°	522.9	510.0	449.4	355.1	299.3	194.9	114.2	72.3	57.3	72.3	114.2



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CATALOG NUMBER: MWL-3-37-47-UNV-L940-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	569.8	559.9	489.3	400.8	353.1	246.5	161.9	111.2	97.1	111.2	161.9
115°	606.6	600.7	535.0	443.6	402.8	305.3	214.7	158.0	140.9	158.0	214.7
117.5°	645.4	643.5	568.9	487.3	462.5	358.0	263.4	204.7	186.7	204.7	263.4
120°	694.2	686.1	615.6	531.2	519.1	413.7	317.2	259.3	240.4	259.3	317.2
122.5°	728.0	723.0	655.4	573.8	573.8	471.3	368.9	311.0	291.2	311.0	368.9
125°	758.8	756.9	685.2	615.6	631.6	524.1	426.6	367.8	345.9	367.8	426.6
127.5°	786.6	789.7	724.1	661.4	690.2	577.8	483.2	418.6	395.7	418.6	483.2
130°	810.5	820.4	761.8	703.2	745.9	636.5	534.9	469.3	454.4	469.3	534.9
132.5°	857.3	851.3	799.6	745.9	805.7	690.2	588.7	520.1	503.1	520.1	588.7
135°	881.2	883.1	832.4	782.7	861.4	744.0	639.4	571.7	554.9	571.7	639.4
137.5°	910.0	904.1	858.3	828.5	913.1	796.6	689.2	626.5	599.6	626.5	689.2
140°	931.0	930.0	892.1	868.3	968.8	847.3	739.9	676.2	651.3	676.2	739.9
142.5°	952.8	958.8	926.0	912.0	1024.5	901.1	794.7	725.0	701.1	725.0	794.7
145°	967.8	980.7	959.8	966.8	1077.3	960.8	842.4	771.7	745.8	771.7	842.4
147.5°	992.6	1009.5	984.6	1005.6	1123.0	1013.5	890.1	820.4	797.6	820.4	890.1
150°	1026.4	1034.4	1019.4	1059.2	1169.8	1072.2	938.9	867.3	844.4	867.3	938.9
152.5°	1053.3	1063.3	1046.3	1118.0	1206.6	1125.9	992.6	913.0	886.1	913.0	992.6
155°	1081.2	1085.1	1073.2	1174.7	1245.4	1178.7	1035.4	963.8	937.9	963.8	1035.4
157.5°	1107.0	1115.0	1101.1	1216.6	1279.3	1223.5	1084.1	1014.5	991.6	1014.5	1084.1
160°	1134.9	1134.9	1142.9	1267.2	1307.1	1264.2	1135.9	1070.2	1038.4	1070.2	1135.9
162.5°	1137.9	1156.7	1199.6	1302.1	1334.9	1299.0	1191.6	1110.0	1082.1	1110.0	1191.6
165°	1181.6	1198.6	1263.2	1332.8	1355.6	1329.9	1260.2	1175.7	1142.9	1175.7	1260.2
167.5°	1227.4	1263.2	1315.0	1367.7	1375.6	1358.6	1313.0	1254.3	1224.4	1254.3	1313.0
170°	1301.1	1331.9	1358.6	1380.6	1391.5	1381.5	1345.7	1316.1	1297.1	1316.1	1345.7
172.5°	1358.8	1379.7	1390.5	1404.5	1397.4	1393.4	1375.6	1360.7	1349.9	1360.7	1375.6
175°	1395.6	1400.5	1410.4	1405.5	1411.4	1400.5	1401.5	1407.5	1365.8	1407.5	1401.5
177.5°	1408.6	1416.5	1412.4	1403.5	1404.5	1402.5	1406.4	1409.5	1402.6	1409.5	1406.4
180°	1410.4	1410.4	1410.4	1410.4	1410.4	1410.4	1410.4	1410.4	1410.4	1410.4	1410.4



TEST NUMBER: P392603

CATALOG NUMBER: MWL-3-37-47-UNV-L940-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1878.2	1878.2	1878.2	1878.2	1878.2	1878.2
2.5°	1871.9	1871.1	1872.9	1875.6	1876.4	1873.5
5°	1862.8	1861.0	1862.8	1866.5	1866.4	1863.5
7.5°	1846.3	1844.6	1847.3	1848.2	1852.7	1849.0
10°	1823.6	1822.7	1824.5	1829.0	1831.8	1829.9
12.5°	1796.2	1794.3	1796.2	1799.9	1802.6	1802.7
15°	1764.3	1761.5	1765.3	1768.0	1769.8	1772.7
17.5°	1726.9	1721.4	1726.9	1729.7	1733.4	1735.4
20°	1683.1	1678.5	1684.1	1688.7	1690.6	1693.5
22.5°	1636.6	1634.8	1637.6	1638.6	1641.4	1641.4
25°	1586.5	1582.9	1587.5	1589.4	1585.9	1584.0
27.5°	1533.7	1527.3	1534.7	1531.1	1524.8	1522.1
30°	1476.3	1469.0	1478.3	1472.9	1458.3	1453.8
32.5°	1411.7	1410.7	1413.6	1400.9	1383.6	1376.3
35°	1344.1	1346.0	1347.1	1327.1	1306.2	1299.8
37.5°	1271.3	1278.7	1274.3	1246.9	1225.1	1224.2
40°	1193.9	1203.1	1195.9	1164.0	1149.4	1152.2
42.5°	1112.8	1128.4	1114.8	1075.6	1069.3	1079.3
45°	1023.5	1051.9	1025.5	990.9	992.7	1006.4
47.5°	933.3	960.8	934.3	908.9	921.7	939.0
50°	844.9	862.3	846.9	831.5	850.6	869.7
52.5°	754.7	750.2	756.7	757.6	785.9	801.4
55°	668.0	636.2	670.0	686.5	722.0	737.5
57.5°	576.0	536.0	578.0	618.2	659.2	671.0
60°	484.0	457.6	485.0	547.9	595.3	601.7
62.5°	408.4	392.0	409.4	476.9	530.6	536.1
65°	340.9	336.4	341.9	405.7	459.5	472.2
67.5°	286.3	286.3	286.3	340.1	395.7	412.1
70°	237.1	240.7	237.1	282.6	326.4	346.4
72.5°	191.4	199.6	192.4	229.8	263.5	296.3
75°	152.2	165.9	152.2	178.7	214.3	248.9
77.5°	119.4	133.1	119.4	137.7	177.3	216.8
80°	89.4	99.4	89.4	112.4	162.0	204.5
82.5°	64.8	71.2	64.8	104.3	160.3	198.3
85°	50.3	39.3	52.3	111.6	170.0	203.6
87.5°	42.4	11.8	56.2	127.7	193.2	214.9
90°	28.4	1.9	66.2	153.5	219.1	236.3
92.5°	17.5	16.9	86.1	181.2	250.0	266.5
95°	7.7	40.7	107.1	213.0	283.8	292.6
97.5°	13.8	71.5	141.1	243.2	318.6	326.3
100°	34.6	109.3	183.9	277.9	345.9	351.4
102.5°	63.5	150.1	224.7	314.1	379.8	396.3
105°	102.3	197.8	267.5	362.9	418.3	435.9
107.5°	147.1	247.5	311.2	406.7	462.3	474.0
110°	194.9	299.3	355.1	449.4	510.0	522.9





TEST NUMBER: P392603

CATALOG NUMBER: MWL-3-37-47-UNV-L940-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	246.5	353.1	400.8	489.3	559.9	569.8
115°	305.3	402.8	443.6	535.0	600.7	606.6
117.5°	358.0	462.5	487.3	568.9	643.5	645.4
120°	413.7	519.1	531.2	615.6	686.1	694.2
122.5°	471.3	573.8	573.8	655.4	723.0	728.0
125°	524.1	631.6	615.6	685.2	756.9	758.8
127.5°	577.8	690.2	661.4	724.1	789.7	786.6
130°	636.5	745.9	703.2	761.8	820.4	810.5
132.5°	690.2	805.7	745.9	799.6	851.3	857.3
135°	744.0	861.4	782.7	832.4	883.1	881.2
137.5°	796.6	913.1	828.5	858.3	904.1	910.0
140°	847.3	968.8	868.3	892.1	930.0	931.0
142.5°	901.1	1024.5	912.0	926.0	958.8	952.8
145°	960.8	1077.3	966.8	959.8	980.7	967.8
147.5°	1013.5	1123.0	1005.6	984.6	1009.5	992.6
150°	1072.2	1169.8	1059.2	1019.4	1034.4	1026.4
152.5°	1125.9	1206.6	1118.0	1046.3	1063.3	1053.3
155°	1178.7	1245.4	1174.7	1073.2	1085.1	1081.2
157.5°	1223.5	1279.3	1216.6	1101.1	1115.0	1107.0
160°	1264.2	1307.1	1267.2	1142.9	1134.9	1134.9
162.5°	1299.0	1334.9	1302.1	1199.6	1156.7	1137.9
165°	1329.9	1355.6	1332.8	1263.2	1198.6	1181.6
167.5°	1358.6	1375.6	1367.7	1315.0	1263.2	1227.4
170°	1381.5	1391.5	1380.6	1358.6	1331.9	1301.1
172.5°	1393.4	1397.4	1404.5	1390.5	1379.7	1358.8
175°	1400.5	1411.4	1405.5	1410.4	1400.5	1395.6
177.5°	1402.5	1404.5	1403.5	1412.4	1416.5	1408.6
180°	1410.4	1410.4	1410.4	1410.4	1410.4	1410.4

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