

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: P392682

Luminaire Tested: **MWL-4-42-73-UNV-L930-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392682  
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-4-42-73-UNV-L930-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

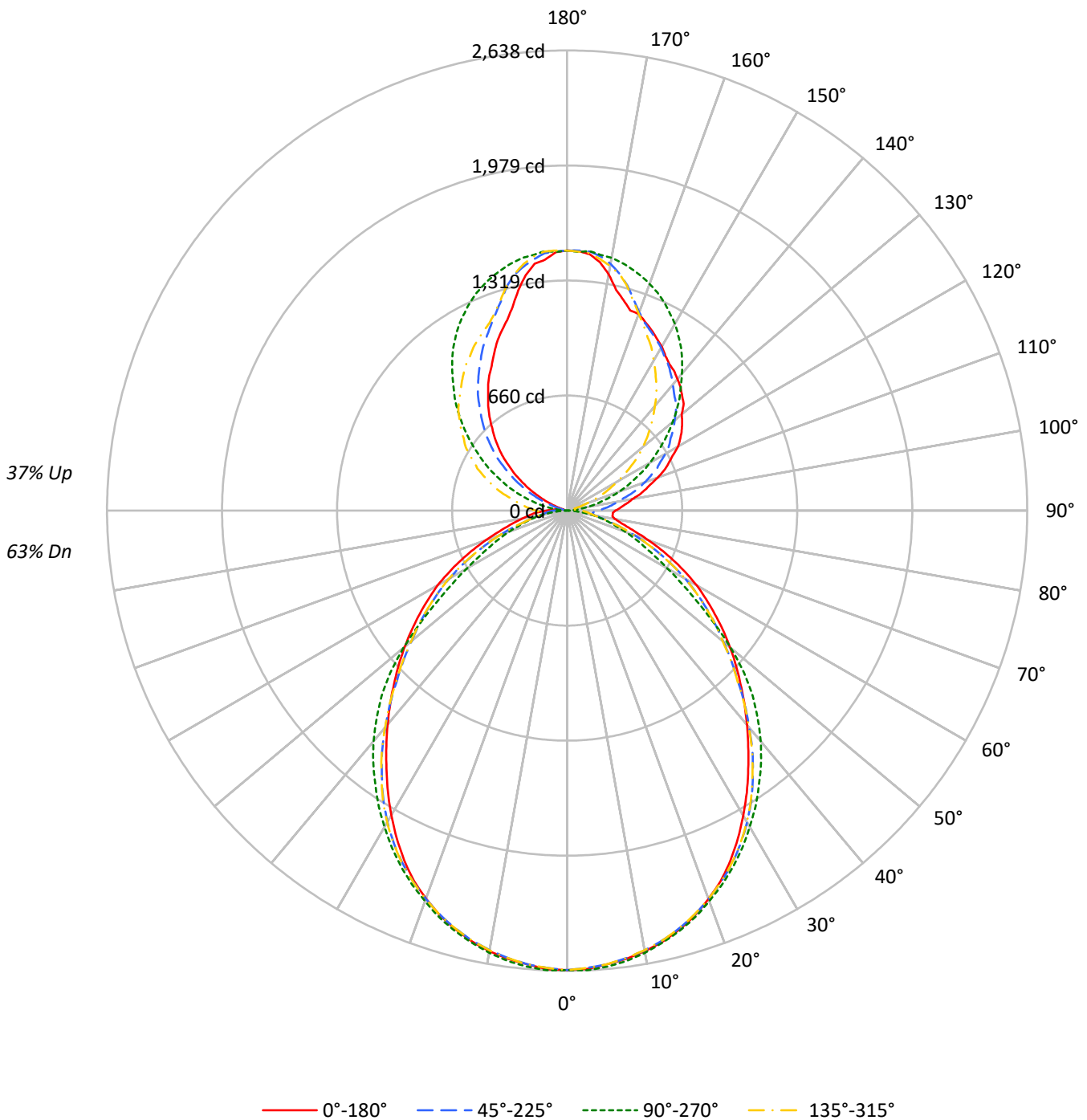
Lumens per Lamp: N/A  
Luminaire Lumens: 9728.7 lumens  
Efficiency: N/A  
Efficacy: 75.1 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 129.482  
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



TEST NUMBER: P392682  
CATALOG NUMBER: MWL-4-42-73-UNV-L930-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	63
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	59	58	54
2	92	85	79	74	86	80	74	70	70	66	63	62	59	56	54	52	49	46
3	84	75	68	62	79	71	64	59	63	57	53	55	51	48	48	45	43	39
4	78	67	59	53	72	63	56	50	56	50	46	49	45	41	43	40	37	34
5	71	60	52	46	67	56	49	44	50	44	40	45	40	36	39	35	33	30
6	66	54	46	40	62	51	44	38	45	39	35	40	36	32	36	32	29	26
7	61	49	41	35	57	46	39	34	41	35	31	37	32	28	33	29	26	23
8	57	44	37	31	53	42	35	30	38	32	28	34	29	25	30	26	23	21
9	53	41	33	28	50	39	32	27	35	29	25	31	26	23	28	24	21	19
10	50	37	30	25	47	36	29	24	32	27	23	29	24	21	26	22	19	17

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

	0°	90°	180°	270°
0°	17013	17013	17013	17013
5°	16778	15649	16778	15649
10°	16516	14351	16516	14351
15°	16169	13148	16149	13148
20°	15688	12005	15668	12005
25°	15048	10946	15026	10946
30°	14203	9902	14174	9902
35°	13295	8893	13272	8893
40°	12441	7912	12409	7912
45°	11630	6871	11603	6871
50°	10889	5614	10860	5614
55°	10133	4224	10112	4224
60°	9396	3144	9384	3144
65°	8358	2368	8358	2368
70°	7264	1782	7280	1782
75°	6341	1276	6397	1276
80°	6514	821	6044	821
85°	8863	369	6549	369



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L930-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	248.3	2.6
10°-20°	700.5	7.2
20°-30°	1027.3	10.6
30°-40°	1162.9	12.0
40°-50°	1095.8	11.3
50°-60°	876.9	9.0
60°-70°	577.5	5.9
70°-80°	295.5	3.0
80°-90°	151.5	1.6
90°-100°	145.8	1.5
100°-110°	235.2	2.4
110°-120°	397.1	4.1
120°-130°	539.0	5.5
130°-140°	614.5	6.3
140°-150°	612.7	6.3
150°-160°	533.4	5.5
160°-170°	375.1	3.9
170°-180°	139.7	1.4
0°-30°	1976.1	20.3
0°-40°	3139.0	32.3
0°-60°	5111.7	52.5
0°-90°	6136.2	63.1
90°-120°	778.1	8.0
90°-150°	2544.3	26.2
90°-180°	3592.0	36.9
0°-180°	9728.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2634	2634	2634	2634	2634	
5°	2612	2625	2612	2625	2612	248
15°	2486	2493	2483	2493	2486	700
25°	2214	2252	2211	2252	2214	1017
35°	1809	1918	1806	1918	1809	1132
45°	1406	1505	1403	1505	1406	1087
55°	1034	911	1032	911	1034	926
65°	669	487	669	487	669	665
75°	353	242	356	242	353	387
85°	262	62	194	62	262	216
90°	277	2	119	2	277	153
95°	322	44	73	44	322	276
105°	463	209	21	209	463	490
115°	641	426	149	426	641	636
125°	802	667	366	667	802	716
135°	931	910	587	910	931	719
145°	1023	1139	788	1139	1023	645
155°	1143	1317	991	1317	1143	527
165°	1249	1434	1208	1434	1249	354
175°	1475	1492	1444	1492	1475	138
180°	1490	1490	1490	1490	1490	



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L930-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2634.2	2634.2	2634.2	2634.2	2634.2	2634.2	2634.2	2634.2	2634.2	2634.2	2634.2
2.5°	2630.1	2630.6	2624.2	2638.8	2638.0	2637.7	2624.2	2630.6	2631.2	2630.6	2624.2
5°	2611.6	2617.1	2611.5	2625.9	2625.0	2625.9	2610.5	2617.1	2611.6	2617.1	2610.5
7.5°	2592.3	2599.5	2588.5	2605.6	2603.9	2604.6	2587.5	2598.5	2592.3	2598.5	2587.5
10°	2564.7	2567.4	2559.8	2575.0	2574.1	2574.0	2558.7	2565.2	2564.7	2565.2	2558.7
12.5°	2531.2	2530.2	2524.1	2537.6	2535.7	2537.6	2524.1	2528.1	2529.1	2528.1	2524.1
15°	2485.8	2484.6	2480.2	2493.7	2493.4	2492.6	2479.0	2482.5	2482.7	2482.5	2479.0
17.5°	2434.2	2432.1	2429.5	2443.6	2443.6	2443.6	2428.3	2431.1	2431.1	2431.1	2428.3
20°	2369.2	2371.5	2369.4	2383.6	2382.5	2382.5	2368.4	2369.4	2366.1	2369.4	2368.4
22.5°	2299.6	2302.2	2306.0	2324.4	2320.8	2323.4	2305.0	2300.1	2297.6	2300.1	2305.0
25°	2214.3	2219.4	2234.4	2253.4	2252.4	2252.4	2232.2	2216.2	2211.1	2216.2	2232.2
27.5°	2119.6	2133.1	2153.3	2177.6	2177.2	2176.5	2151.1	2130.0	2116.5	2130.0	2151.1
30°	2019.1	2033.4	2063.8	2098.3	2094.4	2096.2	2060.7	2030.3	2014.9	2030.3	2060.7
32.5°	1916.8	1931.1	1965.8	2007.0	2010.0	2004.9	1962.6	1927.0	1912.6	1927.0	1962.6
35°	1809.3	1816.0	1855.7	1918.3	1917.7	1915.2	1852.7	1812.9	1806.2	1812.9	1852.7
37.5°	1705.4	1707.0	1746.7	1812.7	1826.6	1809.5	1743.6	1703.9	1702.2	1703.9	1743.6
40°	1604.7	1596.3	1624.2	1697.5	1726.0	1695.4	1619.9	1592.0	1600.5	1592.0	1619.9
42.5°	1505.0	1494.8	1506.5	1579.2	1617.0	1577.1	1503.3	1490.6	1500.8	1490.6	1503.3
45°	1406.0	1387.3	1384.9	1457.5	1504.6	1455.4	1380.6	1384.1	1402.7	1384.1	1380.6
47.5°	1312.1	1290.2	1277.5	1333.0	1375.3	1332.0	1273.3	1286.9	1309.0	1286.9	1273.3
50°	1218.3	1197.2	1167.6	1206.2	1224.7	1204.1	1163.4	1193.0	1215.1	1193.0	1163.4
52.5°	1125.4	1109.3	1071.0	1084.5	1063.2	1082.4	1067.9	1105.0	1122.1	1105.0	1067.9
55°	1033.8	1019.4	973.0	955.1	910.9	953.0	969.9	1016.4	1031.7	1016.4	969.9
57.5°	944.2	935.8	878.3	825.7	778.2	823.6	875.2	932.6	942.1	932.6	875.2
60°	858.7	849.4	782.6	701.2	664.9	700.3	780.5	847.3	857.6	847.3	780.5
62.5°	762.3	758.1	682.9	591.3	567.6	590.4	680.8	756.0	761.3	756.0	680.8
65°	669.1	656.4	586.3	496.7	487.3	495.7	585.3	655.4	669.1	655.4	585.3
67.5°	579.5	561.0	495.9	414.5	417.1	414.5	494.8	559.9	579.5	559.9	494.8
70°	494.8	466.1	407.8	342.7	353.7	342.7	407.8	467.1	495.9	467.1	407.8
72.5°	416.2	380.7	327.5	279.3	292.6	278.2	327.5	381.8	418.3	381.8	327.5
75°	352.9	308.1	254.6	222.4	241.9	222.4	255.7	309.1	356.0	309.1	255.7
77.5°	309.7	257.4	198.8	171.7	195.4	171.7	199.9	254.1	305.5	254.1	199.9
80°	278.6	227.3	160.6	127.0	147.2	127.0	158.5	210.4	258.5	210.4	158.5
82.5°	262.3	215.7	146.2	91.5	103.3	91.5	133.6	177.9	222.4	177.9	133.6
85°	262.0	220.1	147.3	74.4	61.9	72.3	116.8	156.1	193.6	156.1	116.8
87.5°	262.7	232.9	157.4	74.8	22.8	60.1	97.6	132.0	154.4	132.0	97.6
90°	276.7	254.2	179.3	80.9	1.8	41.0	75.2	106.1	119.0	106.1	75.2
92.5°	300.9	283.3	204.6	97.5	18.5	24.9	60.6	88.8	94.8	88.8	60.6
95°	322.4	314.4	235.4	116.9	43.7	11.8	46.2	70.6	73.3	70.6	46.2
97.5°	352.6	347.4	264.8	148.8	76.3	14.3	32.6	58.3	58.3	58.3	32.6
100°	379.2	375.7	298.6	194.1	116.3	36.4	20.0	45.5	48.1	45.5	20.0
102.5°	424.8	408.8	333.3	237.1	159.4	66.8	20.0	30.4	33.7	30.4	20.0
105°	463.4	444.5	383.0	282.4	208.8	107.9	43.5	21.9	20.9	21.9	43.5
107.5°	501.0	488.9	429.3	329.5	261.3	156.0	79.2	43.1	30.1	43.1	79.2
110°	551.9	539.3	474.5	375.7	316.9	206.5	120.3	76.8	60.0	76.8	120.3



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	602.4	592.9	516.6	424.0	373.6	261.2	170.7	118.9	103.0	118.9	170.7
115°	641.3	635.2	565.7	469.2	426.2	323.1	227.3	167.4	149.2	167.4	227.3
117.5°	682.2	680.4	601.5	515.4	489.2	378.9	278.9	216.8	197.6	216.8	278.9
120°	733.8	724.5	650.9	561.8	549.1	437.7	335.6	273.5	254.4	273.5	335.6
122.5°	769.5	764.2	693.0	606.8	605.9	498.5	390.2	329.0	308.0	329.0	390.2
125°	802.0	799.9	724.5	650.9	666.8	554.2	451.2	388.9	365.8	388.9	451.2
127.5°	831.5	834.6	766.3	699.3	729.8	611.0	511.9	442.5	418.3	442.5	511.9
130°	856.7	867.2	805.2	743.4	788.7	673.1	565.6	496.2	480.4	496.2	565.6
132.5°	906.1	899.9	845.2	788.7	851.7	729.8	622.3	549.8	531.9	549.8	622.3
135°	931.4	933.5	879.8	827.5	910.5	786.6	675.9	604.5	586.6	604.5	675.9
137.5°	961.8	955.5	907.2	875.7	965.2	842.0	728.4	662.3	633.9	662.3	728.4
140°	984.0	982.8	942.9	917.7	1024.1	895.6	782.1	714.9	688.6	714.9	782.1
142.5°	1007.9	1014.2	978.6	963.9	1082.9	952.3	839.9	767.2	742.0	767.2	839.9
145°	1022.8	1037.3	1014.3	1021.7	1138.7	1015.5	890.4	816.6	788.4	816.6	890.4
147.5°	1050.0	1067.0	1040.7	1062.8	1187.0	1071.2	940.8	867.2	843.9	867.2	940.8
150°	1084.9	1093.2	1077.6	1119.6	1236.4	1133.2	992.3	916.7	892.5	916.7	992.3
152.5°	1113.2	1123.8	1105.8	1181.5	1275.3	1189.9	1049.1	965.0	936.6	965.0	1049.1
155°	1142.7	1146.9	1134.3	1241.5	1317.1	1245.6	1094.4	1018.6	991.3	1018.6	1094.4
157.5°	1170.0	1178.5	1163.7	1286.7	1352.9	1294.1	1145.8	1072.2	1048.1	1072.2	1145.8
160°	1199.4	1199.4	1207.9	1339.2	1382.3	1336.1	1200.5	1131.1	1097.5	1131.1	1200.5
162.5°	1202.6	1222.6	1267.7	1376.0	1410.6	1372.8	1259.3	1173.1	1143.7	1173.1	1259.3
165°	1248.8	1266.7	1335.0	1408.5	1433.5	1405.5	1331.8	1242.5	1207.9	1242.5	1331.8
167.5°	1296.4	1334.2	1389.6	1446.2	1454.7	1436.8	1387.6	1324.7	1293.2	1324.7	1387.6
170°	1374.4	1408.5	1435.9	1459.9	1471.5	1460.9	1422.3	1391.7	1370.1	1391.7	1422.3
172.5°	1436.4	1459.0	1469.6	1485.1	1477.8	1473.6	1453.8	1439.1	1426.9	1439.1	1453.8
175°	1475.3	1481.1	1490.5	1486.2	1492.5	1480.9	1481.1	1488.5	1443.8	1488.5	1481.1
177.5°	1488.8	1497.9	1492.6	1484.1	1485.1	1483.0	1486.4	1490.5	1482.6	1490.5	1486.4
180°	1490.5	1490.5	1490.5	1490.5	1490.5	1490.5	1490.5	1490.5	1490.5	1490.5	1490.5



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2634.2	2634.2	2634.2	2634.2	2634.2	2634.2
2.5°	2637.7	2638.0	2638.8	2624.2	2630.6	2630.1
5°	2625.9	2625.0	2625.9	2611.5	2617.1	2611.6
7.5°	2604.6	2603.9	2605.6	2588.5	2599.5	2592.3
10°	2574.0	2574.1	2575.0	2559.8	2567.4	2564.7
12.5°	2537.6	2535.7	2537.6	2524.1	2530.2	2531.2
15°	2492.6	2493.4	2493.7	2480.2	2484.6	2485.8
17.5°	2443.6	2443.6	2443.6	2429.5	2432.1	2434.2
20°	2382.5	2382.5	2383.6	2369.4	2371.5	2369.2
22.5°	2323.4	2320.8	2324.4	2306.0	2302.2	2299.6
25°	2252.4	2252.4	2253.4	2234.4	2219.4	2214.3
27.5°	2176.5	2177.2	2177.6	2153.3	2133.1	2119.6
30°	2096.2	2094.4	2098.3	2063.8	2033.4	2019.1
32.5°	2004.9	2010.0	2007.0	1965.8	1931.1	1916.8
35°	1915.2	1917.7	1918.3	1855.7	1816.0	1809.3
37.5°	1809.5	1826.6	1812.7	1746.7	1707.0	1705.4
40°	1695.4	1726.0	1697.5	1624.2	1596.3	1604.7
42.5°	1577.1	1617.0	1579.2	1506.5	1494.8	1505.0
45°	1455.4	1504.6	1457.5	1384.9	1387.3	1406.0
47.5°	1332.0	1375.3	1333.0	1277.5	1290.2	1312.1
50°	1204.1	1224.7	1206.2	1167.6	1197.2	1218.3
52.5°	1082.4	1063.2	1084.5	1071.0	1109.3	1125.4
55°	953.0	910.9	955.1	973.0	1019.4	1033.8
57.5°	823.6	778.2	825.7	878.3	935.8	944.2
60°	700.3	664.9	701.2	782.6	849.4	858.7
62.5°	590.4	567.6	591.3	682.9	758.1	762.3
65°	495.7	487.3	496.7	586.3	656.4	669.1
67.5°	414.5	417.1	414.5	495.9	561.0	579.5
70°	342.7	353.7	342.7	407.8	466.1	494.8
72.5°	278.2	292.6	279.3	327.5	380.7	416.2
75°	222.4	241.9	222.4	254.6	308.1	352.9
77.5°	171.7	195.4	171.7	198.8	257.4	309.7
80°	127.0	147.2	127.0	160.6	227.3	278.6
82.5°	91.5	103.3	91.5	146.2	215.7	262.3
85°	72.3	61.9	74.4	147.3	220.1	262.0
87.5°	60.1	22.8	74.8	157.4	232.9	262.7
90°	41.0	1.8	80.9	179.3	254.2	276.7
92.5°	24.9	18.5	97.5	204.6	283.3	300.9
95°	11.8	43.7	116.9	235.4	314.4	322.4
97.5°	14.3	76.3	148.8	264.8	347.4	352.6
100°	36.4	116.3	194.1	298.6	375.7	379.2
102.5°	66.8	159.4	237.1	333.3	408.8	424.8
105°	107.9	208.8	282.4	383.0	444.5	463.4
107.5°	156.0	261.3	329.5	429.3	488.9	501.0
110°	206.5	316.9	375.7	474.5	539.3	551.9





TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	261.2	373.6	424.0	516.6	592.9	602.4
115°	323.1	426.2	469.2	565.7	635.2	641.3
117.5°	378.9	489.2	515.4	601.5	680.4	682.2
120°	437.7	549.1	561.8	650.9	724.5	733.8
122.5°	498.5	605.9	606.8	693.0	764.2	769.5
125°	554.2	666.8	650.9	724.5	799.9	802.0
127.5°	611.0	729.8	699.3	766.3	834.6	831.5
130°	673.1	788.7	743.4	805.2	867.2	856.7
132.5°	729.8	851.7	788.7	845.2	899.9	906.1
135°	786.6	910.5	827.5	879.8	933.5	931.4
137.5°	842.0	965.2	875.7	907.2	955.5	961.8
140°	895.6	1024.1	917.7	942.9	982.8	984.0
142.5°	952.3	1082.9	963.9	978.6	1014.2	1007.9
145°	1015.5	1138.7	1021.7	1014.3	1037.3	1022.8
147.5°	1071.2	1187.0	1062.8	1040.7	1067.0	1050.0
150°	1133.2	1236.4	1119.6	1077.6	1093.2	1084.9
152.5°	1189.9	1275.3	1181.5	1105.8	1123.8	1113.2
155°	1245.6	1317.1	1241.5	1134.3	1146.9	1142.7
157.5°	1294.1	1352.9	1286.7	1163.7	1178.5	1170.0
160°	1336.1	1382.3	1339.2	1207.9	1199.4	1199.4
162.5°	1372.8	1410.6	1376.0	1267.7	1222.6	1202.6
165°	1405.5	1433.5	1408.5	1335.0	1266.7	1248.8
167.5°	1436.8	1454.7	1446.2	1389.6	1334.2	1296.4
170°	1460.9	1471.5	1459.9	1435.9	1408.5	1374.4
172.5°	1473.6	1477.8	1485.1	1469.6	1459.0	1436.4
175°	1480.9	1492.5	1486.2	1490.5	1481.1	1475.3
177.5°	1483.0	1485.1	1484.1	1492.6	1497.9	1488.8
180°	1490.5	1490.5	1490.5	1490.5	1490.5	1490.5

(END OF REPORT)