

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: P392681

Luminaire Tested: **MWL-4-42-60-UNV-L940-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392681  
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-4-42-60-UNV-L940-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

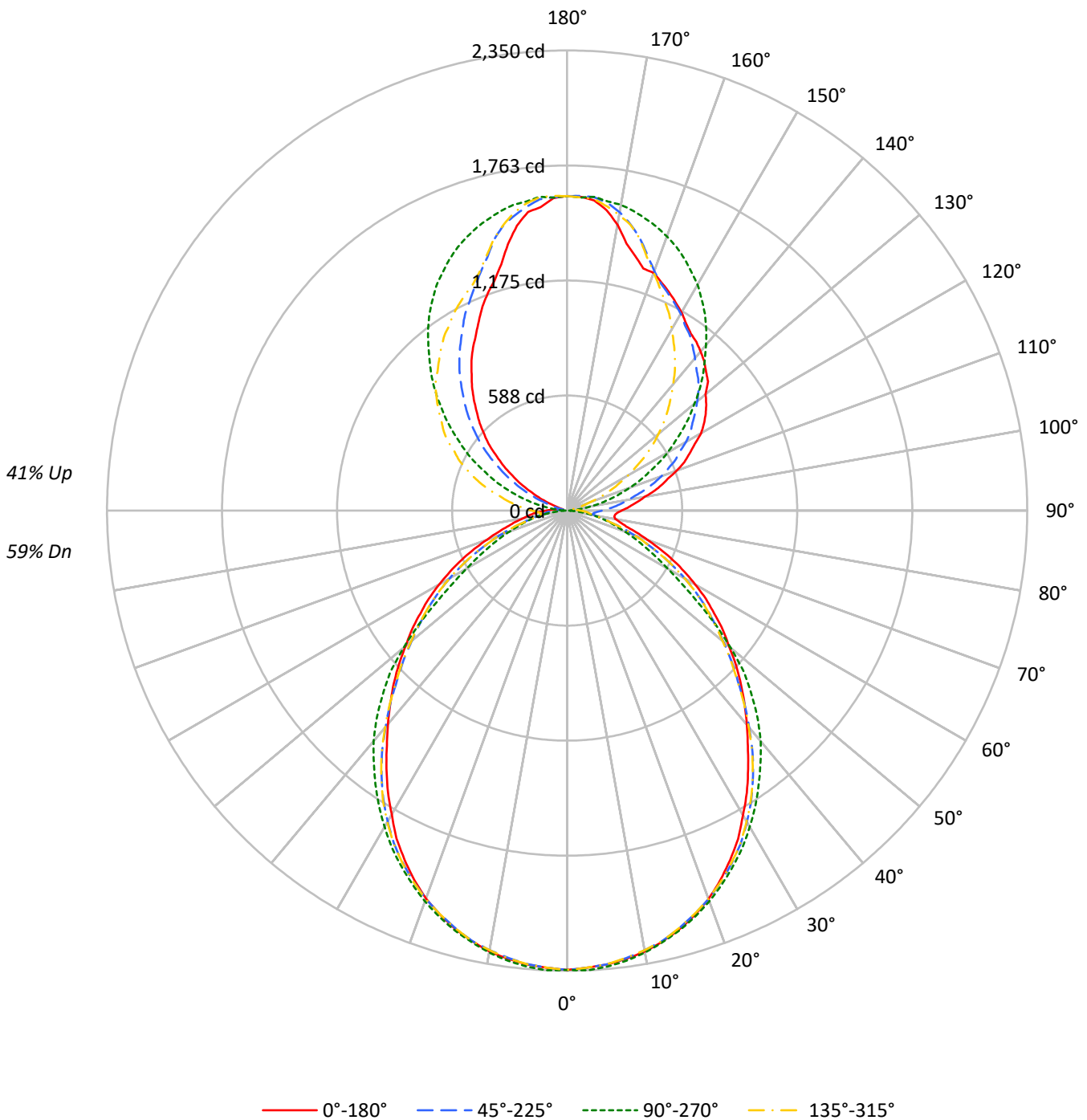
Lumens per Lamp: N/A  
Luminaire Lumens: 9323.2 lumens  
Efficiency: N/A  
Efficacy: 85.5 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 109.08  
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	
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	102	102	102	102	88	88	88	76	76	76	64	64	64	59
1	100	96	92	88	93	89	86	83	78	75	73	67	65	63	57	56	54	50
2	91	84	78	73	85	79	73	69	68	64	61	59	56	54	51	48	46	42
3	84	74	67	61	78	69	63	58	61	56	52	53	49	46	45	42	40	36
4	77	66	58	52	71	62	55	49	54	49	44	47	43	40	41	37	35	31
5	71	59	51	45	66	55	48	43	49	43	39	43	38	35	37	33	31	28
6	65	53	45	39	61	50	43	37	44	38	34	39	34	30	33	30	27	24
7	60	48	40	35	56	45	38	33	40	34	30	35	31	27	31	27	24	22
8	56	44	36	31	52	41	34	29	37	31	27	32	28	24	28	25	22	20
9	52	40	33	28	49	38	31	26	34	28	24	30	25	22	26	22	20	18
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	24	21	18	16

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

	0°	90°	180°	270°
0°	15150	15150	15150	15150
5°	14949	13937	14949	13937
10°	14724	12778	14724	12778
15°	14403	11704	14380	11704
20°	13980	10701	13957	10701
25°	13380	9741	13357	9741
30°	12632	8817	12600	8817
35°	11842	7913	11817	7913
40°	11074	7051	11039	7051
45°	10389	6092	10360	6092
50°	9646	4995	9614	4995
55°	8985	3763	8964	3763
60°	8265	2794	8252	2794
65°	7429	2119	7429	2119
70°	6388	1568	6402	1568
75°	5608	1140	5667	1140
80°	5850	738	5345	738
85°	8291	333	5798	333



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.1	2.4
10°-20°	623.6	6.7
20°-30°	914.4	9.8
30°-40°	1035.4	11.1
40°-50°	975.4	10.5
50°-60°	780.0	8.4
60°-70°	512.4	5.5
70°-80°	262.3	2.8
80°-90°	139.3	1.5
90°-100°	148.5	1.6
100°-110°	252.0	2.7
110°-120°	427.4	4.6
120°-130°	580.4	6.2
130°-140°	661.8	7.1
140°-150°	660.0	7.1
150°-160°	574.5	6.2
160°-170°	404.1	4.3
170°-180°	150.5	1.6
0°-30°	1759.2	18.9
0°-40°	2794.6	30.0
0°-60°	4550.0	48.8
0°-90°	5464.0	58.6
90°-120°	828.0	8.9
90°-150°	2730.1	29.3
90°-180°	3859.0	41.4
0°-180°	9323.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2346	2346	2346	2346	2346	
5°	2327	2338	2327	2338	2327	221
15°	2214	2220	2211	2220	2214	623
25°	1969	2004	1965	2004	1969	905
35°	1612	1706	1608	1706	1612	1008
45°	1256	1334	1252	1334	1256	968
55°	917	812	914	812	917	822
65°	595	436	595	436	595	588
75°	312	216	315	216	312	344
85°	245	56	171	56	245	202
90°	277	2	107	2	277	153
95°	334	46	65	46	334	288
105°	497	225	20	225	497	524
115°	690	458	160	458	690	685
125°	864	719	393	719	864	771
135°	1003	981	631	981	1003	774
145°	1103	1226	850	1226	1103	695
155°	1231	1419	1068	1419	1231	568
165°	1345	1544	1301	1544	1345	382
175°	1589	1608	1555	1608	1589	148
180°	1606	1606	1606	1606	1606	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2345.8	2345.8	2345.8	2345.8	2345.8	2345.8	2345.8	2345.8	2345.8	2345.8	2345.8
2.5°	2336.1	2342.9	2336.0	2349.0	2349.9	2347.8	2336.0	2342.9	2337.2	2342.9	2336.0
5°	2326.9	2332.9	2325.9	2336.9	2337.8	2336.9	2324.9	2332.9	2326.9	2332.9	2324.9
7.5°	2308.9	2314.8	2305.7	2319.6	2318.7	2318.5	2304.6	2313.7	2308.9	2313.7	2304.6
10°	2286.4	2285.7	2280.2	2292.1	2292.1	2291.0	2279.1	2283.4	2286.4	2283.4	2279.1
12.5°	2253.1	2253.8	2250.0	2259.1	2257.0	2259.1	2250.0	2251.5	2250.9	2251.5	2250.0
15°	2214.2	2211.0	2208.1	2220.8	2219.6	2219.6	2206.9	2208.7	2210.8	2208.7	2206.9
17.5°	2165.9	2165.4	2161.6	2173.2	2174.1	2173.2	2160.4	2164.3	2162.5	2164.3	2160.4
20°	2111.2	2110.9	2110.6	2123.0	2123.8	2122.0	2109.4	2108.7	2107.8	2108.7	2109.4
22.5°	2043.5	2050.8	2052.3	2067.5	2065.5	2066.4	2051.1	2048.6	2041.3	2048.6	2051.1
25°	1968.8	1975.2	1987.7	2005.5	2004.4	2004.4	1985.5	1971.8	1965.4	1971.8	1985.5
27.5°	1890.4	1899.6	1918.5	1941.1	1939.7	1939.9	1916.2	1896.2	1887.1	1896.2	1916.2
30°	1795.7	1807.5	1836.7	1866.6	1865.0	1864.3	1833.3	1804.2	1791.2	1804.2	1833.3
32.5°	1708.2	1717.3	1751.0	1790.0	1788.7	1787.8	1747.7	1712.9	1703.8	1712.9	1747.7
35°	1611.5	1620.6	1655.2	1704.4	1706.5	1701.0	1651.8	1617.2	1608.1	1617.2	1651.8
37.5°	1515.8	1521.3	1555.9	1614.2	1621.9	1610.8	1552.5	1517.9	1512.4	1517.9	1552.5
40°	1428.3	1422.9	1446.6	1513.8	1538.1	1511.5	1442.0	1418.3	1423.8	1418.3	1442.0
42.5°	1340.9	1329.9	1340.7	1409.0	1439.7	1406.7	1337.2	1325.4	1336.3	1325.4	1337.2
45°	1256.0	1232.3	1233.2	1297.9	1334.0	1295.6	1228.6	1228.8	1252.5	1228.8	1228.6
47.5°	1170.3	1147.5	1138.4	1186.4	1226.5	1185.3	1133.9	1144.1	1166.8	1144.1	1133.9
50°	1079.2	1064.6	1040.9	1073.5	1089.7	1071.2	1036.4	1060.1	1075.7	1060.1	1036.4
52.5°	1003.6	985.4	950.5	963.2	954.8	960.9	947.1	980.8	1000.1	980.8	947.1
55°	916.7	906.7	867.5	848.2	811.5	846.0	864.2	903.4	914.5	903.4	864.2
57.5°	840.2	832.0	781.9	738.9	691.3	736.6	778.5	828.6	837.9	828.6	778.5
60°	755.3	755.3	695.2	626.6	591.0	625.5	692.9	753.0	754.1	753.0	692.9
62.5°	674.2	671.5	607.7	526.3	510.7	525.2	605.4	669.2	673.0	669.2	605.4
65°	594.7	581.9	520.0	440.7	436.0	439.6	518.9	580.8	594.7	580.8	518.9
67.5°	512.7	497.2	436.1	365.8	374.0	365.8	435.1	496.1	512.7	496.1	435.1
70°	435.1	413.2	363.1	302.0	311.1	302.0	363.1	414.3	436.1	414.3	363.1
72.5°	371.3	335.7	292.0	247.4	260.8	246.2	292.0	336.8	373.6	336.8	292.0
75°	312.1	272.0	226.1	197.9	216.1	197.9	227.3	273.1	315.4	273.1	227.3
77.5°	277.3	227.3	176.9	153.2	173.3	153.2	178.1	223.9	272.9	223.9	178.1
80°	250.2	203.1	144.0	114.1	132.3	114.1	141.7	185.0	228.6	185.0	141.7
82.5°	242.7	197.9	131.1	82.2	91.3	82.2	117.5	157.2	199.7	157.2	117.5
85°	245.1	207.3	137.8	66.5	55.8	64.2	105.0	138.2	171.4	138.2	105.0
87.5°	256.7	229.2	152.4	70.7	18.2	54.8	87.8	120.4	140.0	120.4	87.8
90°	277.2	254.9	179.6	79.9	2.0	36.9	67.4	95.2	107.2	95.2	67.4
92.5°	306.1	288.0	209.6	99.6	19.0	21.4	54.4	78.4	84.0	78.4	54.4
95°	333.9	327.1	244.7	124.2	46.2	10.9	40.7	64.2	65.3	64.2	40.7
97.5°	369.2	363.5	280.9	160.4	81.4	15.4	30.5	51.9	51.9	51.9	30.5
100°	400.6	397.7	319.2	209.2	125.4	39.2	18.9	41.8	43.6	41.8	18.9
102.5°	452.5	436.1	358.3	255.7	171.8	72.1	20.7	28.2	30.9	28.2	20.7
105°	496.8	477.3	412.9	304.4	225.0	116.3	46.9	21.8	19.8	21.8	46.9
107.5°	539.2	526.1	462.8	354.2	281.7	167.3	85.5	45.6	31.5	45.6	85.5
110°	594.0	580.5	511.5	404.1	340.7	221.7	129.6	81.8	63.7	81.8	129.6



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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°	648.4	638.2	556.9	456.2	401.8	280.6	184.0	127.2	110.2	127.2	184.0
115°	690.3	683.8	609.0	504.9	458.5	347.4	244.1	179.5	160.0	179.5	244.1
117.5°	734.5	732.5	647.5	555.7	527.3	408.4	299.7	232.8	212.1	232.8	299.7
120°	790.1	781.0	700.7	605.6	591.9	471.9	360.8	294.8	273.3	294.8	360.8
122.5°	828.6	822.9	746.1	653.2	653.2	536.5	419.7	353.8	331.1	353.8	419.7
125°	863.7	861.4	781.0	700.7	718.9	596.5	486.3	418.4	393.4	418.4	486.3
127.5°	895.4	898.8	825.2	752.9	785.7	657.7	550.9	476.1	450.1	476.1	550.9
130°	922.7	934.0	867.1	800.5	849.2	724.6	608.8	534.0	517.0	534.0	608.8
132.5°	975.9	969.1	910.2	850.1	917.2	786.6	669.9	591.8	572.5	591.8	669.9
135°	1003.1	1005.4	947.5	892.1	980.6	847.9	727.7	650.7	631.4	650.7	727.7
137.5°	1035.9	1029.2	977.1	943.1	1039.6	906.8	784.4	713.0	682.4	713.0	784.4
140°	1059.8	1058.6	1015.6	988.4	1103.1	964.6	842.2	769.7	741.4	769.7	842.2
142.5°	1084.7	1092.4	1054.1	1038.2	1166.5	1025.7	904.5	826.1	798.0	826.1	904.5
145°	1102.6	1117.3	1092.6	1100.5	1226.5	1093.8	958.9	879.4	849.9	879.4	958.9
147.5°	1130.9	1150.2	1120.9	1144.7	1278.6	1153.8	1013.3	934.9	908.8	934.9	1013.3
150°	1168.6	1177.6	1160.7	1205.9	1331.9	1220.7	1068.8	987.3	961.2	987.3	1068.8
152.5°	1199.1	1210.5	1191.2	1272.8	1373.8	1281.8	1130.0	1039.4	1008.8	1039.4	1130.0
155°	1230.9	1235.4	1221.8	1337.4	1418.9	1341.9	1178.8	1097.1	1067.7	1097.1	1178.8
157.5°	1260.3	1269.4	1253.5	1386.1	1457.5	1394.1	1234.3	1154.9	1128.9	1154.9	1234.3
160°	1292.0	1292.0	1301.1	1442.7	1489.2	1439.4	1293.2	1218.4	1182.2	1218.4	1293.2
162.5°	1295.5	1317.0	1365.7	1482.5	1519.8	1479.0	1356.6	1263.7	1232.0	1263.7	1356.6
165°	1345.3	1364.6	1438.3	1517.5	1543.6	1514.2	1434.8	1338.5	1301.1	1338.5	1434.8
167.5°	1397.4	1438.3	1497.1	1558.2	1567.2	1548.0	1494.9	1428.1	1394.1	1428.1	1494.9
170°	1481.5	1517.5	1547.0	1571.9	1585.3	1573.1	1532.3	1499.4	1477.0	1499.4	1532.3
172.5°	1547.5	1571.9	1583.3	1600.1	1592.1	1587.6	1566.3	1550.4	1537.3	1550.4	1566.3
175°	1589.4	1595.7	1605.9	1601.2	1608.0	1595.5	1595.7	1603.7	1555.4	1603.7	1595.7
177.5°	1604.1	1613.8	1608.2	1598.9	1600.1	1597.8	1601.4	1605.9	1597.3	1605.9	1601.4
180°	1605.9	1605.9	1605.9	1605.9	1605.9	1605.9	1605.9	1605.9	1605.9	1605.9	1605.9



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CATALOG NUMBER: MWL-4-42-60-UNV-L940-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2345.8	2345.8	2345.8	2345.8	2345.8	2345.8
2.5°	2347.8	2349.9	2349.0	2336.0	2342.9	2336.1
5°	2336.9	2337.8	2336.9	2325.9	2332.9	2326.9
7.5°	2318.5	2318.7	2319.6	2305.7	2314.8	2308.9
10°	2291.0	2292.1	2292.1	2280.2	2285.7	2286.4
12.5°	2259.1	2257.0	2259.1	2250.0	2253.8	2253.1
15°	2219.6	2219.6	2220.8	2208.1	2211.0	2214.2
17.5°	2173.2	2174.1	2173.2	2161.6	2165.4	2165.9
20°	2122.0	2123.8	2123.0	2110.6	2110.9	2111.2
22.5°	2066.4	2065.5	2067.5	2052.3	2050.8	2043.5
25°	2004.4	2004.4	2005.5	1987.7	1975.2	1968.8
27.5°	1939.9	1939.7	1941.1	1918.5	1899.6	1890.4
30°	1864.3	1865.0	1866.6	1836.7	1807.5	1795.7
32.5°	1787.8	1788.7	1790.0	1751.0	1717.3	1708.2
35°	1701.0	1706.5	1704.4	1655.2	1620.6	1611.5
37.5°	1610.8	1621.9	1614.2	1555.9	1521.3	1515.8
40°	1511.5	1538.1	1513.8	1446.6	1422.9	1428.3
42.5°	1406.7	1439.7	1409.0	1340.7	1329.9	1340.9
45°	1295.6	1334.0	1297.9	1233.2	1232.3	1256.0
47.5°	1185.3	1226.5	1186.4	1138.4	1147.5	1170.3
50°	1071.2	1089.7	1073.5	1040.9	1064.6	1079.2
52.5°	960.9	954.8	963.2	950.5	985.4	1003.6
55°	846.0	811.5	848.2	867.5	906.7	916.7
57.5°	736.6	691.3	738.9	781.9	832.0	840.2
60°	625.5	591.0	626.6	695.2	755.3	755.3
62.5°	525.2	510.7	526.3	607.7	671.5	674.2
65°	439.6	436.0	440.7	520.0	581.9	594.7
67.5°	365.8	374.0	365.8	436.1	497.2	512.7
70°	302.0	311.1	302.0	363.1	413.2	435.1
72.5°	246.2	260.8	247.4	292.0	335.7	371.3
75°	197.9	216.1	197.9	226.1	272.0	312.1
77.5°	153.2	173.3	153.2	176.9	227.3	277.3
80°	114.1	132.3	114.1	144.0	203.1	250.2
82.5°	82.2	91.3	82.2	131.1	197.9	242.7
85°	64.2	55.8	66.5	137.8	207.3	245.1
87.5°	54.8	18.2	70.7	152.4	229.2	256.7
90°	36.9	2.0	79.9	179.6	254.9	277.2
92.5°	21.4	19.0	99.6	209.6	288.0	306.1
95°	10.9	46.2	124.2	244.7	327.1	333.9
97.5°	15.4	81.4	160.4	280.9	363.5	369.2
100°	39.2	125.4	209.2	319.2	397.7	400.6
102.5°	72.1	171.8	255.7	358.3	436.1	452.5
105°	116.3	225.0	304.4	412.9	477.3	496.8
107.5°	167.3	281.7	354.2	462.8	526.1	539.2
110°	221.7	340.7	404.1	511.5	580.5	594.0





TEST NUMBER: P392681

CATALOG NUMBER: MWL-4-42-60-UNV-L940-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	280.6	401.8	456.2	556.9	638.2	648.4
115°	347.4	458.5	504.9	609.0	683.8	690.3
117.5°	408.4	527.3	555.7	647.5	732.5	734.5
120°	471.9	591.9	605.6	700.7	781.0	790.1
122.5°	536.5	653.2	653.2	746.1	822.9	828.6
125°	596.5	718.9	700.7	781.0	861.4	863.7
127.5°	657.7	785.7	752.9	825.2	898.8	895.4
130°	724.6	849.2	800.5	867.1	934.0	922.7
132.5°	786.6	917.2	850.1	910.2	969.1	975.9
135°	847.9	980.6	892.1	947.5	1005.4	1003.1
137.5°	906.8	1039.6	943.1	977.1	1029.2	1035.9
140°	964.6	1103.1	988.4	1015.6	1058.6	1059.8
142.5°	1025.7	1166.5	1038.2	1054.1	1092.4	1084.7
145°	1093.8	1226.5	1100.5	1092.6	1117.3	1102.6
147.5°	1153.8	1278.6	1144.7	1120.9	1150.2	1130.9
150°	1220.7	1331.9	1205.9	1160.7	1177.6	1168.6
152.5°	1281.8	1373.8	1272.8	1191.2	1210.5	1199.1
155°	1341.9	1418.9	1337.4	1221.8	1235.4	1230.9
157.5°	1394.1	1457.5	1386.1	1253.5	1269.4	1260.3
160°	1439.4	1489.2	1442.7	1301.1	1292.0	1292.0
162.5°	1479.0	1519.8	1482.5	1365.7	1317.0	1295.5
165°	1514.2	1543.6	1517.5	1438.3	1364.6	1345.3
167.5°	1548.0	1567.2	1558.2	1497.1	1438.3	1397.4
170°	1573.1	1585.3	1571.9	1547.0	1517.5	1481.5
172.5°	1587.6	1592.1	1600.1	1583.3	1571.9	1547.5
175°	1595.5	1608.0	1601.2	1605.9	1595.7	1589.4
177.5°	1597.8	1600.1	1598.9	1608.2	1613.8	1604.1
180°	1605.9	1605.9	1605.9	1605.9	1605.9	1605.9

(END OF REPORT)