

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: P392692

Luminaire Tested: **MWL-4-55-45-UNV-L835-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392692  
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-4-55-45-UNV-L835-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9817.0 lumens  
Efficiency: N/A  
Efficacy: 89.2 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

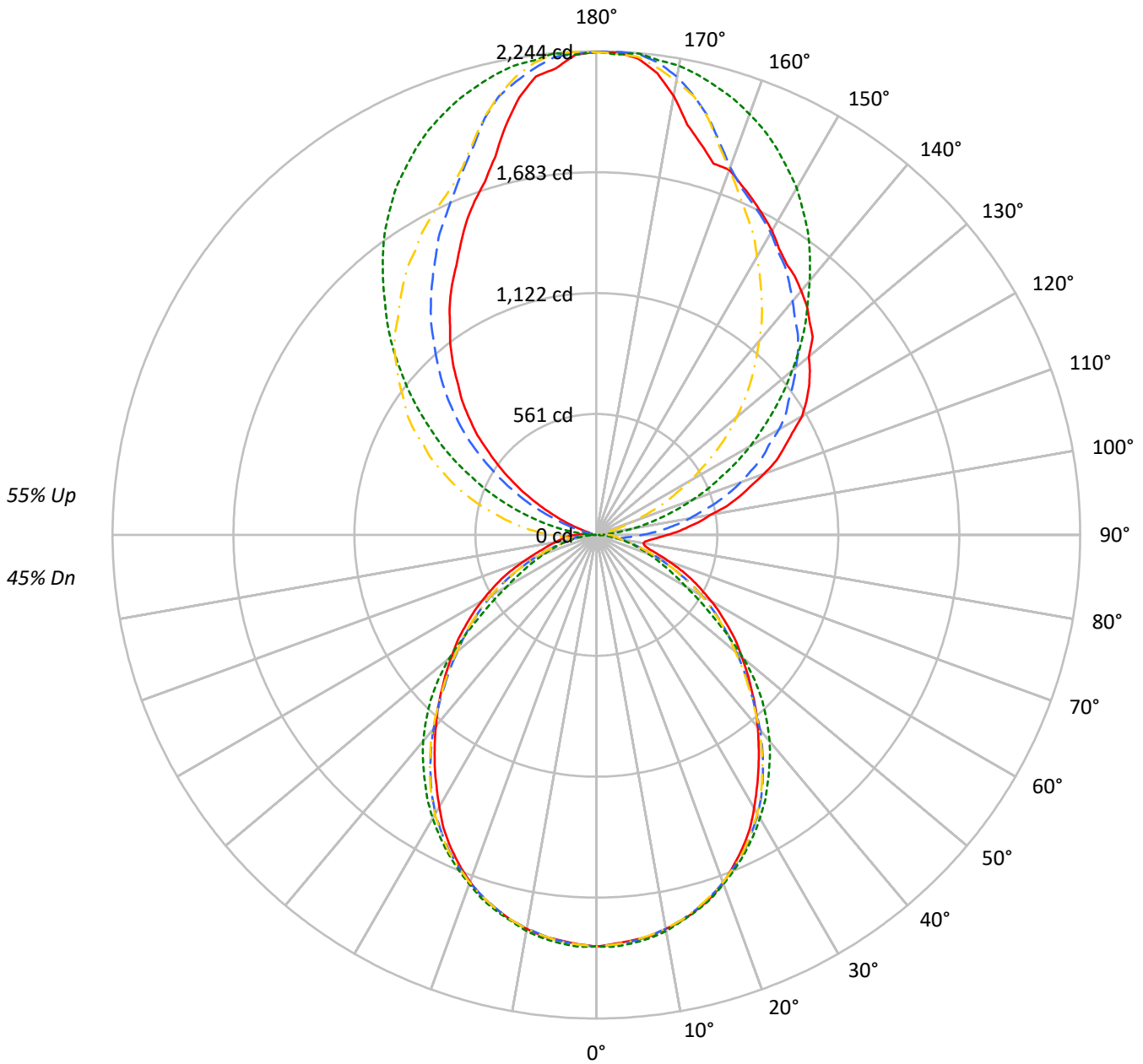
Input Watts (W): 110.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45				
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44	38				
2	88	81	75	70	81	75	69	65	62	59	55	51	49	46	41	39	37	33				
3	81	72	64	59	74	66	60	55	55	51	47	46	42	39	36	34	32	28				
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	33	30	28	24				
5	68	57	49	43	62	52	45	40	44	39	35	37	33	30	30	27	25	21				
6	63	51	43	37	57	47	40	35	40	35	31	33	29	26	27	24	22	19				
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	25	22	19	17				
8	54	42	34	29	49	39	32	27	33	28	24	28	24	21	23	20	17	15				
9	50	38	31	26	46	36	29	24	30	25	22	26	22	19	21	18	16	14				
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	14	12				

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

	0°	90°	180°	270°
0°	12335	12335	12335	12335
5°	12138	11342	12138	11342
10°	11953	10406	11953	10406
15°	11715	9516	11684	9516
20°	11379	8688	11348	8688
25°	10899	7916	10867	7916
30°	10293	7176	10248	7176
35°	9636	6437	9600	6437
40°	9024	5731	8974	5731
45°	8420	4969	8380	4969
50°	7859	4084	7816	4084
55°	7332	3053	7300	3053
60°	6725	2262	6709	2262
65°	6087	1720	6087	1720
70°	5227	1288	5249	1288
75°	4524	931	4611	931
80°	5181	595	4477	595
85°	8545	279	5067	279



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	179.9	1.8
10°-20°	507.3	5.2
20°-30°	743.7	7.6
30°-40°	842.2	8.6
40°-50°	793.5	8.1
50°-60°	633.9	6.5
60°-70°	417.0	4.2
70°-80°	214.5	2.2
80°-90°	130.7	1.3
90°-100°	184.7	1.9
100°-110°	347.8	3.5
110°-120°	595.4	6.1
120°-130°	808.8	8.2
130°-140°	922.5	9.4
140°-150°	920.1	9.4
150°-160°	801.3	8.2
160°-170°	563.7	5.7
170°-180°	210.0	2.1
0°-30°	1430.9	14.6
0°-40°	2273.1	23.2
0°-60°	3700.6	37.7
0°-90°	4462.7	45.5
90°-120°	1127.8	11.5
90°-150°	3779.3	38.5
90°-180°	5354.0	54.5
0°-180°	9817.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1910	1910	1910	1910	1910	
5°	1889	1903	1889	1903	1889	179
15°	1801	1804	1796	1804	1801	507
25°	1604	1629	1599	1629	1604	737
35°	1311	1388	1306	1388	1311	821
45°	1018	1088	1013	1088	1018	787
55°	748	658	745	658	748	670
65°	487	354	487	354	487	480
75°	252	176	257	176	252	282
85°	253	47	150	47	253	200
90°	329	3	92	3	329	182
95°	429	64	54	64	429	374
105°	687	313	21	313	687	723
115°	962	640	221	640	962	955
125°	1204	1002	547	1002	1204	1075
135°	1399	1368	880	1368	1399	1080
145°	1536	1712	1183	1712	1536	969
155°	1717	1979	1489	1979	1717	792
165°	1876	2153	1815	2153	1876	532
175°	2219	2243	2171	2243	2219	207
180°	2240	2240	2240	2240	2240	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1909.9	1909.9	1909.9	1909.9	1909.9	1909.9	1909.9	1909.9	1909.9	1909.9	1909.9
2.5°	1899.2	1906.3	1902.6	1914.0	1913.0	1912.4	1902.6	1906.3	1900.8	1906.3	1902.6
5°	1889.3	1896.5	1893.7	1901.6	1902.6	1901.6	1892.2	1896.5	1889.3	1896.5	1892.2
7.5°	1879.2	1881.4	1876.5	1887.9	1887.9	1886.3	1874.9	1879.8	1879.2	1879.8	1874.9
10°	1856.2	1860.7	1855.8	1866.6	1866.6	1865.0	1854.2	1857.6	1856.2	1857.6	1854.2
12.5°	1832.8	1833.2	1829.7	1838.5	1834.0	1838.5	1829.7	1830.1	1829.7	1830.1	1829.7
15°	1801.0	1798.8	1797.2	1807.1	1804.5	1805.5	1795.7	1795.7	1796.3	1795.7	1795.7
17.5°	1764.6	1762.4	1758.9	1768.1	1769.1	1768.1	1757.3	1760.9	1759.9	1760.9	1757.3
20°	1718.4	1716.8	1717.6	1724.9	1724.2	1723.2	1716.1	1713.7	1713.7	1713.7	1716.1
22.5°	1661.8	1667.7	1668.5	1679.7	1678.0	1678.0	1666.9	1664.6	1658.7	1664.6	1666.9
25°	1603.8	1610.7	1620.9	1629.6	1628.9	1627.9	1617.8	1606.0	1599.1	1606.0	1617.8
27.5°	1539.9	1547.8	1558.0	1578.1	1574.8	1576.5	1554.9	1543.1	1535.2	1543.1	1554.9
30°	1463.3	1475.1	1497.7	1518.7	1517.8	1515.6	1493.0	1470.4	1456.9	1470.4	1493.0
32.5°	1386.6	1398.4	1425.9	1453.8	1457.6	1450.7	1421.2	1392.0	1380.2	1392.0	1421.2
35°	1311.3	1319.2	1346.7	1387.0	1388.1	1382.2	1341.9	1314.4	1306.5	1314.4	1341.9
37.5°	1236.7	1238.6	1265.2	1313.3	1321.0	1308.5	1260.3	1233.8	1231.8	1233.8	1260.3
40°	1163.9	1159.0	1181.6	1230.2	1250.2	1226.9	1175.2	1152.6	1157.5	1152.6	1175.2
42.5°	1093.2	1082.4	1089.6	1148.6	1169.6	1145.3	1084.8	1076.0	1086.8	1076.0	1084.8
45°	1017.9	1005.1	1005.1	1058.2	1088.1	1054.9	998.7	1000.3	1013.1	1000.3	998.7
47.5°	949.1	933.4	926.5	970.1	994.7	968.4	920.1	928.5	944.3	928.5	920.1
50°	879.3	866.5	846.9	872.8	890.8	869.6	840.5	860.1	874.5	860.1	840.5
52.5°	819.4	801.7	774.5	783.4	770.9	780.1	769.7	795.3	814.5	795.3	769.7
55°	748.0	738.2	704.8	694.2	658.3	691.1	699.9	733.4	744.8	733.4	699.9
57.5°	683.1	677.2	635.0	597.9	563.9	594.8	630.2	672.4	679.9	672.4	630.2
60°	614.6	611.7	566.5	510.9	478.4	509.3	563.3	608.5	613.1	608.5	563.3
62.5°	548.8	544.9	494.7	428.3	414.0	426.7	491.6	541.7	547.2	541.7	491.6
65°	487.3	476.5	424.4	357.5	354.0	356.0	422.8	474.9	487.3	474.9	422.8
67.5°	421.4	404.7	355.6	298.0	302.9	298.0	354.0	403.1	421.4	403.1	354.0
70°	356.0	334.3	295.0	247.9	255.7	247.9	295.0	335.9	357.5	335.9	295.0
72.5°	298.0	273.4	238.0	202.7	213.9	201.1	238.0	275.0	301.1	275.0	238.0
75°	251.8	223.3	186.3	160.8	176.5	160.8	187.9	224.9	256.6	224.9	187.9
77.5°	229.1	187.4	143.1	124.4	142.1	124.4	144.7	182.6	222.8	182.6	144.7
80°	221.6	179.1	118.3	93.0	106.7	93.0	115.2	153.7	191.5	153.7	115.2
82.5°	229.1	186.3	116.8	66.4	75.3	66.4	97.7	129.4	168.9	129.4	97.7
85°	252.6	216.1	136.8	56.4	46.8	53.3	90.9	119.6	149.8	119.6	90.9
87.5°	287.0	257.0	168.0	69.4	15.7	47.3	77.7	105.1	124.0	105.1	77.7
90°	329.0	304.4	214.1	90.8	2.6	30.7	57.4	81.3	91.7	81.3	57.4
92.5°	380.9	359.0	262.8	129.0	26.3	19.9	46.0	66.2	70.9	66.2	46.0
95°	428.9	420.4	320.0	170.4	64.3	12.2	35.2	53.3	53.9	53.3	35.2
97.5°	486.8	479.8	377.9	222.5	113.3	20.0	28.2	44.6	43.6	44.6	28.2
100°	538.7	536.0	439.2	290.5	173.5	53.2	20.0	39.2	40.2	39.2	20.0
102.5°	619.9	598.0	498.3	355.5	238.3	99.1	26.7	28.4	31.4	28.4	26.7
105°	687.1	662.0	574.8	423.5	312.7	160.8	63.7	25.8	20.9	25.8	63.7
107.5°	749.3	732.5	644.4	494.1	391.8	233.0	117.4	61.5	40.3	61.5	117.4
110°	827.4	808.3	712.4	563.7	475.1	309.0	179.2	112.1	86.8	112.1	179.2



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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°	903.3	889.1	775.7	636.5	560.6	391.3	255.1	175.4	151.6	175.4	255.1
115°	961.9	954.0	848.5	704.6	639.7	484.6	339.0	249.8	221.3	249.8	339.0
117.5°	1023.6	1022.0	902.3	774.1	734.6	568.4	416.5	324.1	294.2	324.1	416.5
120°	1101.1	1088.4	977.7	843.8	824.8	657.1	503.0	409.6	379.6	409.6	503.0
122.5°	1154.9	1147.0	1041.0	910.3	910.3	747.3	585.3	491.9	460.2	491.9	585.3
125°	1204.0	1200.8	1088.4	976.7	1002.1	831.1	677.0	582.1	547.3	582.1	677.0
127.5°	1248.2	1253.1	1150.2	1050.5	1095.4	917.5	767.3	662.8	626.4	662.8	767.3
130°	1286.3	1302.1	1208.7	1116.9	1184.0	1010.9	848.0	743.5	719.8	743.5	848.0
132.5°	1360.7	1351.1	1268.9	1185.0	1278.9	1096.4	933.4	824.2	797.3	824.2	933.4
135°	1398.6	1401.8	1321.1	1243.5	1367.6	1181.8	1014.0	906.5	879.6	906.5	1014.0
137.5°	1444.5	1435.0	1362.3	1314.8	1449.8	1264.1	1093.3	993.5	950.8	993.5	1093.3
140°	1477.7	1476.2	1416.0	1378.1	1538.5	1344.9	1173.9	1072.6	1033.1	1072.6	1173.9
142.5°	1512.5	1522.1	1469.9	1447.7	1627.1	1430.3	1260.9	1150.2	1112.2	1150.2	1260.9
145°	1536.3	1556.8	1523.6	1534.7	1711.9	1525.2	1336.9	1224.6	1183.4	1224.6	1336.9
147.5°	1575.8	1602.7	1563.2	1596.5	1783.8	1609.0	1412.9	1302.1	1265.7	1302.1	1412.9
150°	1629.7	1642.3	1618.6	1681.9	1859.1	1702.4	1490.4	1376.5	1340.0	1376.5	1490.4
152.5°	1672.3	1688.1	1661.3	1775.2	1917.6	1787.9	1575.8	1449.2	1406.6	1449.2	1575.8
155°	1716.6	1723.0	1704.0	1865.4	1979.3	1871.7	1643.9	1529.9	1488.8	1529.9	1643.9
157.5°	1757.8	1770.5	1748.3	1933.5	2033.1	1944.6	1721.5	1610.7	1574.2	1610.7	1721.5
160°	1802.2	1802.2	1814.8	2012.6	2077.4	2007.9	1803.7	1699.3	1648.6	1699.3	1803.7
162.5°	1806.9	1836.9	1905.0	2068.0	2120.2	2063.2	1892.3	1762.5	1718.2	1762.5	1892.3
165°	1876.5	1903.4	2006.3	2117.0	2153.4	2112.3	2001.5	1867.0	1814.8	1867.0	2001.5
167.5°	1949.3	2006.3	2088.5	2172.4	2185.0	2158.1	2085.4	1992.0	1944.6	1992.0	2085.4
170°	2067.0	2117.0	2158.1	2193.0	2210.4	2194.6	2137.6	2091.7	2060.6	2091.7	2137.6
172.5°	2160.4	2193.0	2208.8	2230.9	2220.8	2213.5	2185.0	2162.9	2146.1	2162.9	2185.0
175°	2218.9	2226.2	2240.5	2232.5	2243.0	2224.7	2226.2	2237.2	2171.4	2237.2	2226.2
177.5°	2239.5	2251.5	2243.6	2229.4	2230.9	2227.8	2234.1	2240.5	2230.0	2240.5	2234.1
180°	2240.5	2240.5	2240.5	2240.5	2240.5	2240.5	2240.5	2240.5	2240.5	2240.5	2240.5



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1909.9	1909.9	1909.9	1909.9	1909.9	1909.9
2.5°	1912.4	1913.0	1914.0	1902.6	1906.3	1899.2
5°	1901.6	1902.6	1901.6	1893.7	1896.5	1889.3
7.5°	1886.3	1887.9	1887.9	1876.5	1881.4	1879.2
10°	1865.0	1866.6	1866.6	1855.8	1860.7	1856.2
12.5°	1838.5	1834.0	1838.5	1829.7	1833.2	1832.8
15°	1805.5	1804.5	1807.1	1797.2	1798.8	1801.0
17.5°	1768.1	1769.1	1768.1	1758.9	1762.4	1764.6
20°	1723.2	1724.2	1724.9	1717.6	1716.8	1718.4
22.5°	1678.0	1678.0	1679.7	1668.5	1667.7	1661.8
25°	1627.9	1628.9	1629.6	1620.9	1610.7	1603.8
27.5°	1576.5	1574.8	1578.1	1558.0	1547.8	1539.9
30°	1515.6	1517.8	1518.7	1497.7	1475.1	1463.3
32.5°	1450.7	1457.6	1453.8	1425.9	1398.4	1386.6
35°	1382.2	1388.1	1387.0	1346.7	1319.2	1311.3
37.5°	1308.5	1321.0	1313.3	1265.2	1238.6	1236.7
40°	1226.9	1250.2	1230.2	1181.6	1159.0	1163.9
42.5°	1145.3	1169.6	1148.6	1089.6	1082.4	1093.2
45°	1054.9	1088.1	1058.2	1005.1	1005.1	1017.9
47.5°	968.4	994.7	970.1	926.5	933.4	949.1
50°	869.6	890.8	872.8	846.9	866.5	879.3
52.5°	780.1	770.9	783.4	774.5	801.7	819.4
55°	691.1	658.3	694.2	704.8	738.2	748.0
57.5°	594.8	563.9	597.9	635.0	677.2	683.1
60°	509.3	478.4	510.9	566.5	611.7	614.6
62.5°	426.7	414.0	428.3	494.7	544.9	548.8
65°	356.0	354.0	357.5	424.4	476.5	487.3
67.5°	298.0	302.9	298.0	355.6	404.7	421.4
70°	247.9	255.7	247.9	295.0	334.3	356.0
72.5°	201.1	213.9	202.7	238.0	273.4	298.0
75°	160.8	176.5	160.8	186.3	223.3	251.8
77.5°	124.4	142.1	124.4	143.1	187.4	229.1
80°	93.0	106.7	93.0	118.3	179.1	221.6
82.5°	66.4	75.3	66.4	116.8	186.3	229.1
85°	53.3	46.8	56.4	136.8	216.1	252.6
87.5°	47.3	15.7	69.4	168.0	257.0	287.0
90°	30.7	2.6	90.8	214.1	304.4	329.0
92.5°	19.9	26.3	129.0	262.8	359.0	380.9
95°	12.2	64.3	170.4	320.0	420.4	428.9
97.5°	20.0	113.3	222.5	377.9	479.8	486.8
100°	53.2	173.5	290.5	439.2	536.0	538.7
102.5°	99.1	238.3	355.5	498.3	598.0	619.9
105°	160.8	312.7	423.5	574.8	662.0	687.1
107.5°	233.0	391.8	494.1	644.4	732.5	749.3
110°	309.0	475.1	563.7	712.4	808.3	827.4





TEST NUMBER: P392692

CATALOG NUMBER: MWL-4-55-45-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	391.3	560.6	636.5	775.7	889.1	903.3
115°	484.6	639.7	704.6	848.5	954.0	961.9
117.5°	568.4	734.6	774.1	902.3	1022.0	1023.6
120°	657.1	824.8	843.8	977.7	1088.4	1101.1
122.5°	747.3	910.3	910.3	1041.0	1147.0	1154.9
125°	831.1	1002.1	976.7	1088.4	1200.8	1204.0
127.5°	917.5	1095.4	1050.5	1150.2	1253.1	1248.2
130°	1010.9	1184.0	1116.9	1208.7	1302.1	1286.3
132.5°	1096.4	1278.9	1185.0	1268.9	1351.1	1360.7
135°	1181.8	1367.6	1243.5	1321.1	1401.8	1398.6
137.5°	1264.1	1449.8	1314.8	1362.3	1435.0	1444.5
140°	1344.9	1538.5	1378.1	1416.0	1476.2	1477.7
142.5°	1430.3	1627.1	1447.7	1469.9	1522.1	1512.5
145°	1525.2	1711.9	1534.7	1523.6	1556.8	1536.3
147.5°	1609.0	1783.8	1596.5	1563.2	1602.7	1575.8
150°	1702.4	1859.1	1681.9	1618.6	1642.3	1629.7
152.5°	1787.9	1917.6	1775.2	1661.3	1688.1	1672.3
155°	1871.7	1979.3	1865.4	1704.0	1723.0	1716.6
157.5°	1944.6	2033.1	1933.5	1748.3	1770.5	1757.8
160°	2007.9	2077.4	2012.6	1814.8	1802.2	1802.2
162.5°	2063.2	2120.2	2068.0	1905.0	1836.9	1806.9
165°	2112.3	2153.4	2117.0	2006.3	1903.4	1876.5
167.5°	2158.1	2185.0	2172.4	2088.5	2006.3	1949.3
170°	2194.6	2210.4	2193.0	2158.1	2117.0	2067.0
172.5°	2213.5	2220.8	2230.9	2208.8	2193.0	2160.4
175°	2224.7	2243.0	2232.5	2240.5	2226.2	2218.9
177.5°	2227.8	2230.9	2229.4	2243.6	2251.5	2239.5
180°	2240.5	2240.5	2240.5	2240.5	2240.5	2240.5

(END OF REPORT)