

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: P392698

Luminaire Tested: **MWL-4-55-73-UNV-L835-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392698
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-4-55-73-UNV-L835-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

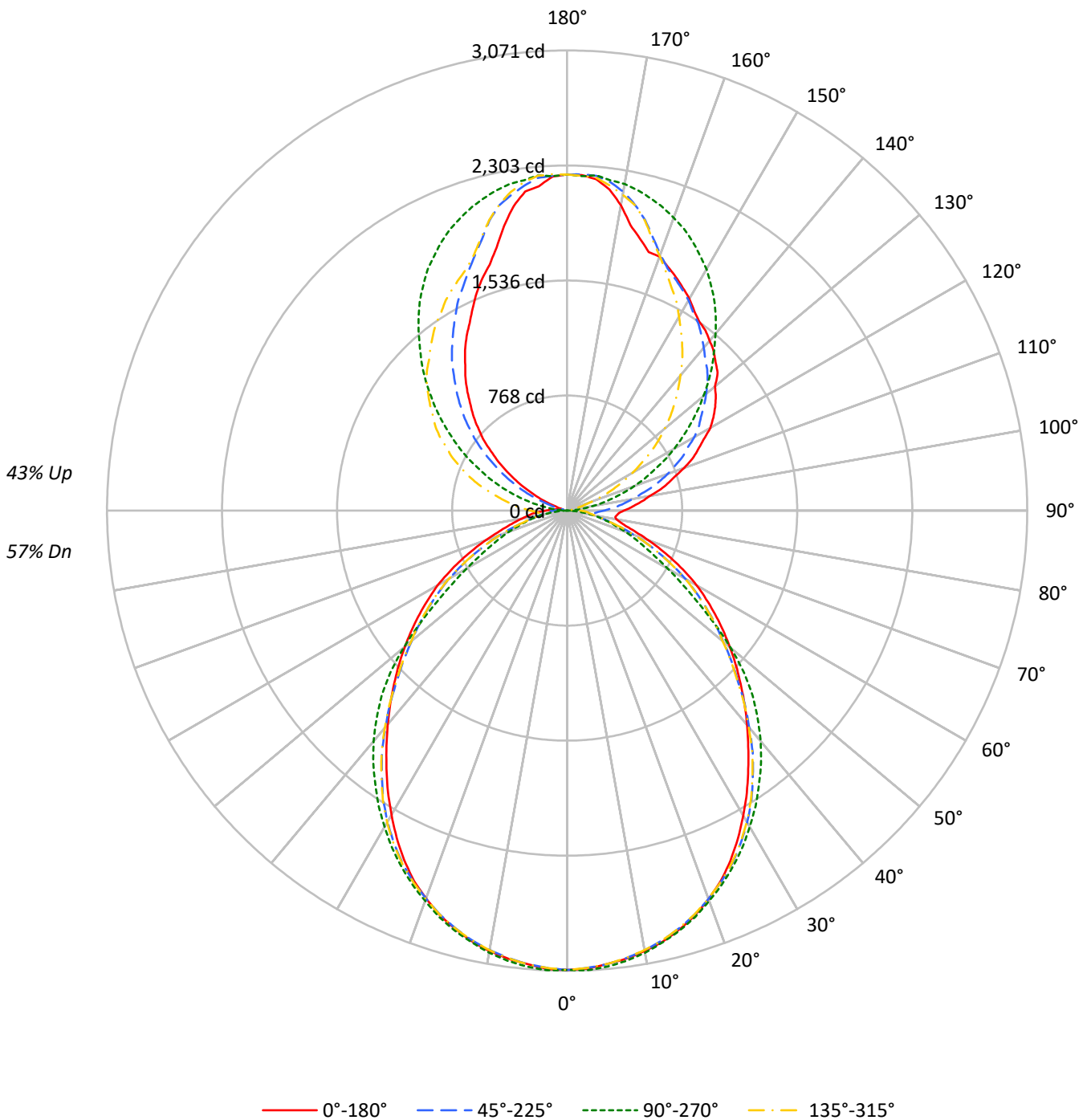
Lumens per Lamp: N/A
Luminaire Lumens: 12538.0 lumens
Efficiency: N/A
Efficacy: 83.9 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 149.4
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	101	101	101	101	87	87	87	74	74	74	63	63	63	57
1	100	95	91	88	93	89	85	82	77	74	72	66	64	62	56	54	53	48
2	91	84	77	72	84	78	73	68	68	64	60	58	55	53	49	47	45	41
3	83	74	67	61	77	69	63	57	60	55	51	52	48	45	44	41	39	35
4	76	66	58	52	71	61	54	49	54	48	44	46	42	39	40	37	34	31
5	70	59	51	45	65	55	48	42	48	43	38	42	37	34	36	33	30	27
6	65	53	45	39	60	50	42	37	44	38	33	38	33	30	33	29	26	24
7	60	48	40	34	56	45	38	33	40	34	30	35	30	27	30	26	24	21
8	56	44	36	30	52	41	34	29	36	31	26	32	27	24	28	24	21	19
9	52	40	32	27	48	38	31	26	33	28	24	29	25	22	26	22	19	17
10	49	37	29	25	45	35	28	24	31	25	22	27	23	20	24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	19800	19800	19800	19800
5°	19520	18216	19520	18216
10°	19220	16703	19220	16703
15°	18824	15300	18794	15300
20°	18265	13968	18234	13968
25°	17519	12736	17487	12736
30°	16537	11521	16492	11521
35°	15479	10348	15444	10348
40°	14488	9210	14439	9210
45°	13542	7999	13502	7999
50°	12682	6535	12639	6535
55°	11802	4917	11770	4917
60°	10941	3661	10925	3661
65°	9733	2757	9733	2757
70°	8458	2076	8481	2076
75°	7385	1485	7471	1485
80°	7802	957	7098	957
85°	11305	431	7827	431



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	289.0	2.3
10°-20°	815.2	6.5
20°-30°	1195.6	9.5
30°-40°	1353.6	10.8
40°-50°	1275.5	10.2
50°-60°	1020.9	8.1
60°-70°	672.5	5.4
70°-80°	344.6	2.7
80°-90°	186.0	1.5
90°-100°	204.5	1.6
100°-110°	351.4	2.8
110°-120°	596.7	4.8
120°-130°	810.3	6.5
130°-140°	924.0	7.4
140°-150°	921.5	7.3
150°-160°	802.3	6.4
160°-170°	564.3	4.5
170°-180°	210.2	1.7
0°-30°	2299.8	18.3
0°-40°	3653.4	29.1
0°-60°	5949.8	47.5
0°-90°	7153.0	57.1
90°-120°	1152.5	9.2
90°-150°	3808.3	30.4
90°-180°	5385.0	42.9
0°-180°	12538.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3066	3066	3066	3066	3066	
5°	3038	3056	3038	3056	3038	288
15°	2894	2902	2889	2902	2894	815
25°	2578	2621	2573	2621	2578	1184
35°	2106	2232	2102	2232	2106	1319
45°	1637	1752	1632	1752	1637	1266
55°	1204	1060	1201	1060	1204	1078
65°	779	567	779	567	779	774
75°	411	282	416	282	411	452
85°	334	72	231	72	334	272
90°	378	3	141	3	378	209
95°	461	65	86	65	461	398
105°	693	314	27	314	693	731
115°	964	641	223	641	964	956
125°	1206	1003	549	1003	1206	1077
135°	1401	1370	882	1370	1401	1081
145°	1538	1713	1185	1713	1538	970
155°	1719	1981	1491	1981	1719	793
165°	1878	2156	1817	2156	1878	533
175°	2220	2245	2172	2245	2220	207
180°	2243	2243	2243	2243	2243	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3065.8	3065.8	3065.8	3065.8	3065.8	3065.8	3065.8	3065.8	3065.8	3065.8	3065.8
2.5°	3060.0	3061.3	3054.6	3071.9	3070.9	3070.3	3054.6	3061.3	3061.7	3061.3	3054.6
5°	3038.4	3045.5	3039.8	3056.6	3055.6	3056.6	3038.3	3045.5	3038.4	3045.5	3038.3
7.5°	3016.5	3025.5	3012.7	3033.0	3031.0	3031.4	3011.1	3023.9	3016.5	3023.9	3011.1
10°	2984.6	2988.2	2979.3	2997.0	2996.0	2995.4	2977.7	2985.0	2984.6	2985.0	2977.7
12.5°	2946.5	2944.9	2937.4	2953.2	2950.6	2953.2	2937.4	2941.8	2943.3	2941.8	2937.4
15°	2894.0	2891.8	2886.3	2902.1	2901.5	2900.5	2884.8	2888.7	2889.3	2888.7	2884.8
17.5°	2834.0	2830.9	2827.4	2843.5	2843.5	2843.5	2825.8	2829.3	2829.3	2829.3	2825.8
20°	2758.4	2760.7	2757.6	2773.7	2772.0	2772.0	2756.0	2757.6	2753.6	2757.6	2756.0
22.5°	2677.2	2680.1	2683.9	2704.9	2700.3	2703.2	2682.3	2677.0	2674.0	2677.0	2682.3
25°	2577.9	2583.8	2600.9	2622.3	2620.7	2620.7	2597.8	2579.1	2573.2	2579.1	2597.8
27.5°	2467.8	2483.6	2506.6	2534.5	2533.2	2532.9	2503.4	2478.8	2463.1	2478.8	2503.4
30°	2350.9	2367.6	2403.0	2442.7	2436.9	2439.5	2398.2	2362.9	2344.5	2362.9	2398.2
32.5°	2231.9	2248.7	2289.0	2336.5	2339.3	2333.4	2284.2	2242.3	2225.6	2242.3	2284.2
35°	2106.5	2114.4	2160.6	2233.3	2231.5	2228.5	2155.8	2109.6	2101.7	2109.6	2155.8
37.5°	1985.6	1987.6	2033.8	2110.5	2126.0	2105.7	2029.0	1982.8	1980.8	1982.8	2029.0
40°	1868.7	1858.9	1891.3	1976.2	2009.0	1973.0	1884.9	1852.5	1862.3	1852.5	1884.9
42.5°	1752.7	1740.9	1754.1	1838.6	1882.3	1835.4	1749.3	1734.5	1746.3	1734.5	1749.3
45°	1637.1	1615.5	1612.6	1697.1	1751.5	1693.8	1606.2	1610.7	1632.3	1610.7	1606.2
47.5°	1528.0	1502.5	1487.7	1552.0	1601.2	1550.3	1481.3	1497.7	1523.2	1497.7	1481.3
50°	1418.9	1394.4	1360.0	1404.6	1425.5	1401.3	1353.6	1388.0	1414.1	1388.0	1353.6
52.5°	1310.8	1292.1	1247.3	1263.1	1237.8	1259.8	1242.5	1285.8	1306.0	1285.8	1242.5
55°	1204.1	1187.4	1133.3	1112.0	1060.3	1108.8	1128.5	1182.6	1200.8	1182.6	1128.5
57.5°	1099.9	1090.1	1023.2	961.6	906.0	958.5	1018.4	1085.3	1096.7	1085.3	1018.4
60°	999.9	989.1	911.5	816.5	774.3	815.0	908.3	986.0	998.4	986.0	908.3
62.5°	887.9	883.0	795.5	688.8	660.7	687.2	792.4	879.8	886.3	879.8	792.4
65°	779.2	764.5	682.9	578.7	567.3	577.1	681.3	762.9	779.2	762.9	681.3
67.5°	675.0	653.4	577.7	482.8	485.7	482.8	576.1	651.8	675.0	651.8	576.1
70°	576.1	542.7	474.9	399.2	412.0	399.2	474.9	544.3	577.7	544.3	474.9
72.5°	484.7	443.5	381.5	325.5	340.7	323.9	381.5	445.0	487.9	445.0	381.5
75°	411.0	358.9	296.4	259.1	281.7	259.1	298.0	360.5	415.8	360.5	298.0
77.5°	363.8	301.4	231.6	200.1	227.6	200.1	233.1	296.6	357.5	296.6	233.1
80°	333.7	271.5	188.1	148.0	171.6	148.0	185.0	246.1	303.6	246.1	185.0
82.5°	323.5	266.0	175.7	106.7	120.5	106.7	156.7	209.1	263.3	209.1	156.7
85°	334.2	282.0	185.0	87.9	72.3	84.7	139.1	185.5	231.4	185.5	139.1
87.5°	347.9	310.1	207.3	94.0	26.5	71.8	117.1	158.1	185.0	158.1	117.1
90°	378.2	348.6	245.5	108.5	2.6	48.4	88.8	125.5	140.8	125.5	88.8
92.5°	422.2	397.4	288.4	138.9	27.3	29.7	71.6	104.6	112.1	104.6	71.6
95°	461.3	449.9	339.7	173.4	65.3	15.1	54.8	82.8	86.3	82.8	54.8
97.5°	512.4	504.4	389.7	223.5	114.3	20.9	40.0	69.2	69.2	69.2	40.0
100°	557.4	552.8	445.1	291.5	174.5	54.2	25.8	55.9	58.9	55.9	25.8
102.5°	630.8	607.9	500.3	356.5	239.3	100.1	28.7	38.2	42.2	38.2	28.7
105°	693.0	666.0	575.9	424.5	313.7	161.8	64.7	29.8	26.8	29.8	64.7
107.5°	752.3	734.5	645.4	495.1	392.8	234.0	118.4	63.5	43.2	63.5	118.4
110°	829.4	810.4	713.4	564.7	476.1	310.0	180.2	114.1	88.8	114.1	180.2



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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°	905.3	891.1	776.7	637.5	561.6	392.3	256.1	177.4	153.6	177.4	256.1
115°	963.9	955.0	850.6	705.6	640.7	485.6	340.9	250.8	223.3	250.8	340.9
117.5°	1025.6	1023.0	904.3	775.2	735.7	569.5	418.5	325.1	296.1	325.1	418.5
120°	1103.1	1089.5	978.7	844.9	825.8	658.1	504.0	410.6	381.5	410.6	504.0
122.5°	1156.9	1149.0	1042.0	912.3	911.3	749.3	586.3	493.9	462.2	493.9	586.3
125°	1206.1	1202.8	1089.5	978.7	1003.1	833.2	678.1	584.1	549.3	584.1	678.1
127.5°	1250.3	1255.1	1152.2	1051.5	1097.4	918.6	769.3	664.8	628.4	664.8	769.3
130°	1288.3	1304.1	1210.8	1118.0	1186.0	1011.9	850.0	745.5	721.8	745.5	850.0
132.5°	1362.7	1353.2	1270.9	1186.0	1280.9	1097.4	935.4	826.2	799.3	826.2	935.4
135°	1400.7	1403.8	1323.1	1244.6	1369.6	1182.9	1016.1	908.5	881.6	908.5	1016.1
137.5°	1446.6	1437.0	1364.3	1316.8	1451.9	1266.1	1095.3	995.5	952.8	995.5	1095.3
140°	1479.8	1478.2	1418.1	1380.1	1540.5	1346.9	1176.0	1074.6	1035.1	1074.6	1176.0
142.5°	1515.6	1525.1	1471.9	1449.7	1629.2	1432.3	1263.0	1153.2	1115.2	1153.2	1263.0
145°	1538.4	1559.9	1525.7	1536.8	1713.0	1527.2	1338.9	1227.6	1185.4	1227.6	1338.9
147.5°	1578.8	1604.8	1565.3	1598.5	1785.8	1611.1	1414.9	1304.1	1268.8	1304.1	1414.9
150°	1631.7	1644.4	1620.6	1683.9	1860.1	1704.5	1492.5	1378.5	1342.1	1378.5	1492.5
152.5°	1674.4	1690.2	1663.4	1777.3	1918.7	1790.0	1577.9	1451.3	1408.6	1451.3	1577.9
155°	1718.7	1725.1	1706.0	1867.5	1981.4	1873.8	1646.0	1532.0	1490.9	1532.0	1646.0
157.5°	1759.9	1772.6	1750.4	1935.5	2035.2	1946.6	1723.5	1612.8	1576.3	1612.8	1723.5
160°	1804.2	1804.2	1816.9	2014.6	2079.5	2009.9	1805.8	1701.3	1650.7	1701.3	1805.8
162.5°	1808.9	1839.0	1907.0	2070.1	2122.3	2065.3	1894.3	1764.6	1720.3	1764.6	1894.3
165°	1878.5	1905.4	2008.4	2119.1	2156.5	2114.4	2003.5	1869.1	1816.9	1869.1	2003.5
167.5°	1950.4	2007.4	2090.6	2175.4	2188.1	2161.2	2087.5	1993.1	1945.6	1993.1	2087.5
170°	2068.1	2119.1	2160.2	2196.1	2213.5	2197.6	2139.7	2093.8	2061.7	2093.8	2139.7
172.5°	2161.5	2195.1	2210.9	2234.0	2222.9	2216.6	2187.1	2165.0	2147.2	2165.0	2187.1
175°	2220.0	2228.3	2242.6	2235.6	2245.1	2227.7	2228.3	2239.3	2172.5	2239.3	2228.3
177.5°	2240.6	2253.6	2245.7	2232.4	2234.0	2230.9	2236.2	2242.6	2231.1	2242.6	2236.2
180°	2242.6	2242.6	2242.6	2242.6	2242.6	2242.6	2242.6	2242.6	2242.6	2242.6	2242.6



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3065.8	3065.8	3065.8	3065.8	3065.8	3065.8
2.5°	3070.3	3070.9	3071.9	3054.6	3061.3	3060.0
5°	3056.6	3055.6	3056.6	3039.8	3045.5	3038.4
7.5°	3031.4	3031.0	3033.0	3012.7	3025.5	3016.5
10°	2995.4	2996.0	2997.0	2979.3	2988.2	2984.6
12.5°	2953.2	2950.6	2953.2	2937.4	2944.9	2946.5
15°	2900.5	2901.5	2902.1	2886.3	2891.8	2894.0
17.5°	2843.5	2843.5	2843.5	2827.4	2830.9	2834.0
20°	2772.0	2772.0	2773.7	2757.6	2760.7	2758.4
22.5°	2703.2	2700.3	2704.9	2683.9	2680.1	2677.2
25°	2620.7	2620.7	2622.3	2600.9	2583.8	2577.9
27.5°	2532.9	2533.2	2534.5	2506.6	2483.6	2467.8
30°	2439.5	2436.9	2442.7	2403.0	2367.6	2350.9
32.5°	2333.4	2339.3	2336.5	2289.0	2248.7	2231.9
35°	2228.5	2231.5	2233.3	2160.6	2114.4	2106.5
37.5°	2105.7	2126.0	2110.5	2033.8	1987.6	1985.6
40°	1973.0	2009.0	1976.2	1891.3	1858.9	1868.7
42.5°	1835.4	1882.3	1838.6	1754.1	1740.9	1752.7
45°	1693.8	1751.5	1697.1	1612.6	1615.5	1637.1
47.5°	1550.3	1601.2	1552.0	1487.7	1502.5	1528.0
50°	1401.3	1425.5	1404.6	1360.0	1394.4	1418.9
52.5°	1259.8	1237.8	1263.1	1247.3	1292.1	1310.8
55°	1108.8	1060.3	1112.0	1133.3	1187.4	1204.1
57.5°	958.5	906.0	961.6	1023.2	1090.1	1099.9
60°	815.0	774.3	816.5	911.5	989.1	999.9
62.5°	687.2	660.7	688.8	795.5	883.0	887.9
65°	577.1	567.3	578.7	682.9	764.5	779.2
67.5°	482.8	485.7	482.8	577.7	653.4	675.0
70°	399.2	412.0	399.2	474.9	542.7	576.1
72.5°	323.9	340.7	325.5	381.5	443.5	484.7
75°	259.1	281.7	259.1	296.4	358.9	411.0
77.5°	200.1	227.6	200.1	231.6	301.4	363.8
80°	148.0	171.6	148.0	188.1	271.5	333.7
82.5°	106.7	120.5	106.7	175.7	266.0	323.5
85°	84.7	72.3	87.9	185.0	282.0	334.2
87.5°	71.8	26.5	94.0	207.3	310.1	347.9
90°	48.4	2.6	108.5	245.5	348.6	378.2
92.5°	29.7	27.3	138.9	288.4	397.4	422.2
95°	15.1	65.3	173.4	339.7	449.9	461.3
97.5°	20.9	114.3	223.5	389.7	504.4	512.4
100°	54.2	174.5	291.5	445.1	552.8	557.4
102.5°	100.1	239.3	356.5	500.3	607.9	630.8
105°	161.8	313.7	424.5	575.9	666.0	693.0
107.5°	234.0	392.8	495.1	645.4	734.5	752.3
110°	310.0	476.1	564.7	713.4	810.4	829.4



TEST NUMBER: P392698

CATALOG NUMBER: MWL-4-55-73-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	392.3	561.6	637.5	776.7	891.1	905.3
115°	485.6	640.7	705.6	850.6	955.0	963.9
117.5°	569.5	735.7	775.2	904.3	1023.0	1025.6
120°	658.1	825.8	844.9	978.7	1089.5	1103.1
122.5°	749.3	911.3	912.3	1042.0	1149.0	1156.9
125°	833.2	1003.1	978.7	1089.5	1202.8	1206.1
127.5°	918.6	1097.4	1051.5	1152.2	1255.1	1250.3
130°	1011.9	1186.0	1118.0	1210.8	1304.1	1288.3
132.5°	1097.4	1280.9	1186.0	1270.9	1353.2	1362.7
135°	1182.9	1369.6	1244.6	1323.1	1403.8	1400.7
137.5°	1266.1	1451.9	1316.8	1364.3	1437.0	1446.6
140°	1346.9	1540.5	1380.1	1418.1	1478.2	1479.8
142.5°	1432.3	1629.2	1449.7	1471.9	1525.1	1515.6
145°	1527.2	1713.0	1536.8	1525.7	1559.9	1538.4
147.5°	1611.1	1785.8	1598.5	1565.3	1604.8	1578.8
150°	1704.5	1860.1	1683.9	1620.6	1644.4	1631.7
152.5°	1790.0	1918.7	1777.3	1663.4	1690.2	1674.4
155°	1873.8	1981.4	1867.5	1706.0	1725.1	1718.7
157.5°	1946.6	2035.2	1935.5	1750.4	1772.6	1759.9
160°	2009.9	2079.5	2014.6	1816.9	1804.2	1804.2
162.5°	2065.3	2122.3	2070.1	1907.0	1839.0	1808.9
165°	2114.4	2156.5	2119.1	2008.4	1905.4	1878.5
167.5°	2161.2	2188.1	2175.4	2090.6	2007.4	1950.4
170°	2197.6	2213.5	2196.1	2160.2	2119.1	2068.1
172.5°	2216.6	2222.9	2234.0	2210.9	2195.1	2161.5
175°	2227.7	2245.1	2235.6	2242.6	2228.3	2220.0
177.5°	2230.9	2234.0	2232.4	2245.7	2253.6	2240.6
180°	2242.6	2242.6	2242.6	2242.6	2242.6	2242.6

(END OF REPORT)