

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: P392680

Luminaire Tested: **MWL-4-42-60-UNV-L835-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392680
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-L835-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

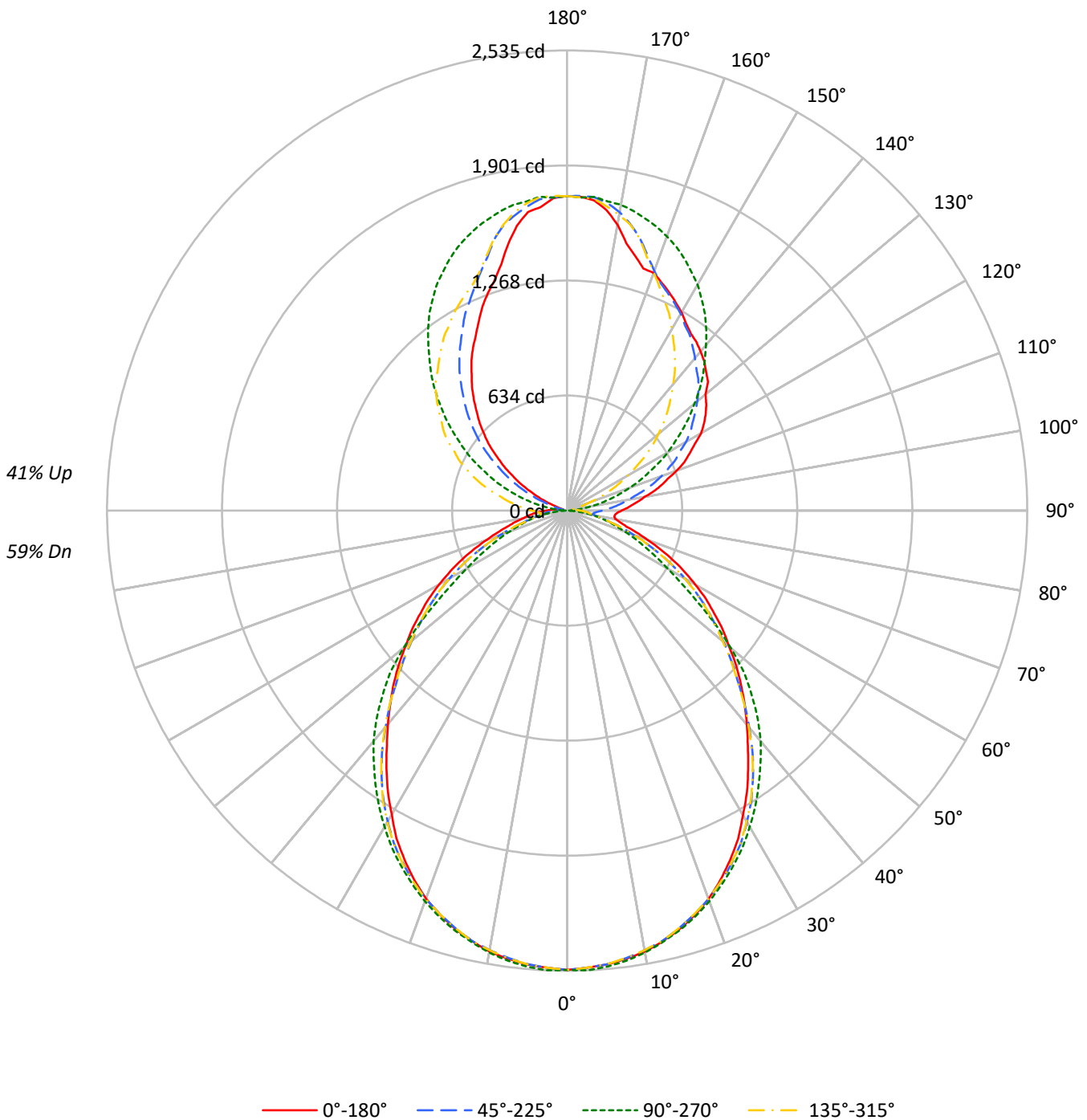
Lumens per Lamp: N/A
Luminaire Lumens: 10057.0 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 108
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°	16342	16342	16342	16342
5°	16126	15034	16126	15034
10°	15883	13784	15883	13784
15°	15536	12626	15512	12626
20°	15080	11543	15056	11543
25°	14433	10508	14408	10508
30°	13626	9511	13592	9511
35°	12773	8536	12747	8536
40°	11945	7606	11907	7606
45°	11207	6572	11176	6572
50°	10405	5388	10371	5388
55°	9693	4059	9668	4059
60°	8915	3014	8902	3014
65°	8013	2286	8013	2286
70°	6890	1691	6908	1691
75°	6048	1229	6113	1229
80°	6310	796	5766	796
85°	8944	358	6255	358



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	238.5	2.4
10°-20°	672.7	6.7
20°-30°	986.4	9.8
30°-40°	1116.8	11.1
40°-50°	1052.2	10.5
50°-60°	841.4	8.4
60°-70°	552.7	5.5
70°-80°	282.9	2.8
80°-90°	150.2	1.5
90°-100°	160.2	1.6
100°-110°	271.9	2.7
110°-120°	461.0	4.6
120°-130°	626.0	6.2
130°-140°	713.9	7.1
140°-150°	711.9	7.1
150°-160°	619.7	6.2
160°-170°	435.9	4.3
170°-180°	162.4	1.6
0°-30°	1897.6	18.9
0°-40°	3014.5	30.0
0°-60°	4908.1	48.8
0°-90°	5894.0	58.6
90°-120°	893.1	8.9
90°-150°	2945.0	29.3
90°-180°	4163.0	41.4
0°-180°	10057.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2530	2530	2530	2530	2530	
5°	2510	2522	2510	2522	2510	238
15°	2388	2394	2385	2394	2388	672
25°	2124	2162	2120	2162	2124	976
35°	1738	1841	1735	1841	1738	1087
45°	1355	1439	1351	1439	1355	1045
55°	989	875	986	875	989	887
65°	642	470	642	470	642	634
75°	337	233	340	233	337	371
85°	264	60	185	60	264	218
90°	299	2	116	2	299	165
95°	360	50	70	50	360	310
105°	536	243	21	243	536	566
115°	745	494	173	494	745	739
125°	932	775	424	775	932	832
135°	1082	1058	681	1058	1082	835
145°	1189	1323	917	1323	1189	750
155°	1328	1531	1152	1531	1328	612
165°	1451	1665	1404	1665	1451	412
175°	1714	1735	1678	1735	1714	160
180°	1732	1732	1732	1732	1732	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2530.4	2530.4	2530.4	2530.4	2530.4	2530.4	2530.4	2530.4	2530.4	2530.4	2530.4
2.5°	2519.9	2527.3	2519.8	2533.9	2534.9	2532.6	2519.8	2527.3	2521.1	2527.3	2519.8
5°	2510.1	2516.5	2509.0	2520.8	2521.8	2520.8	2507.8	2516.5	2510.1	2516.5	2507.8
7.5°	2490.6	2497.0	2487.2	2502.1	2501.1	2501.0	2486.0	2495.8	2490.6	2495.8	2486.0
10°	2466.4	2465.6	2459.7	2472.5	2472.5	2471.3	2458.5	2463.1	2466.4	2463.1	2458.5
12.5°	2430.4	2431.2	2427.0	2436.9	2434.6	2436.9	2427.0	2428.7	2428.0	2428.7	2427.0
15°	2388.4	2385.0	2381.8	2395.6	2394.3	2394.3	2380.6	2382.5	2384.8	2382.5	2380.6
17.5°	2336.3	2335.8	2331.7	2344.2	2345.2	2344.2	2330.4	2334.7	2332.7	2334.7	2330.4
20°	2277.4	2277.1	2276.7	2290.1	2290.9	2289.0	2275.4	2274.7	2273.7	2274.7	2275.4
22.5°	2204.3	2212.2	2213.8	2230.2	2228.0	2229.0	2212.5	2209.8	2202.0	2209.8	2212.5
25°	2123.8	2130.6	2144.2	2163.4	2162.2	2162.2	2141.7	2127.0	2120.1	2127.0	2141.7
27.5°	2039.2	2049.1	2069.5	2093.9	2092.4	2092.6	2067.0	2045.4	2035.6	2045.4	2067.0
30°	1937.0	1949.8	1981.2	2013.5	2011.8	2011.0	1977.6	1946.2	1932.2	1946.2	1977.6
32.5°	1842.7	1852.5	1888.9	1930.9	1929.4	1928.5	1885.2	1847.7	1837.9	1847.7	1885.2
35°	1738.3	1748.1	1785.5	1838.5	1840.8	1834.9	1781.8	1744.5	1734.7	1744.5	1781.8
37.5°	1635.1	1641.0	1678.3	1741.2	1749.6	1737.6	1674.7	1637.4	1631.5	1637.4	1674.7
40°	1540.7	1534.9	1560.4	1632.9	1659.2	1630.5	1555.5	1529.9	1535.8	1529.9	1555.5
42.5°	1446.4	1434.6	1446.2	1519.9	1553.0	1517.5	1442.5	1429.7	1441.5	1429.7	1442.5
45°	1354.8	1329.2	1330.2	1400.0	1439.0	1397.6	1325.3	1325.5	1351.1	1325.5	1325.3
47.5°	1262.4	1237.8	1228.0	1279.8	1323.1	1278.6	1223.1	1234.1	1258.7	1234.1	1223.1
50°	1164.1	1148.4	1122.9	1157.9	1175.4	1155.5	1117.9	1143.5	1160.4	1143.5	1117.9
52.5°	1082.6	1062.9	1025.3	1039.0	1030.0	1036.6	1021.6	1058.0	1078.8	1058.0	1021.6
55°	988.9	978.1	935.8	915.0	875.4	912.5	932.2	974.5	986.4	974.5	932.2
57.5°	906.3	897.5	843.4	797.1	745.7	794.6	839.8	893.9	903.9	893.9	839.8
60°	814.7	814.7	749.9	675.9	637.5	674.7	747.4	812.3	813.5	812.3	747.4
62.5°	727.3	724.3	655.5	567.8	550.9	566.6	653.1	721.9	726.0	721.9	653.1
65°	641.5	627.7	560.9	475.4	470.3	474.2	559.7	626.5	641.5	626.5	559.7
67.5°	553.0	536.3	470.5	394.6	403.4	394.6	469.3	535.1	553.0	535.1	469.3
70°	469.3	445.7	391.6	325.8	335.6	325.8	391.6	446.9	470.5	446.9	391.6
72.5°	400.5	362.2	315.0	266.8	281.3	265.6	315.0	363.3	403.0	363.3	315.0
75°	336.6	293.4	243.9	213.5	233.1	213.5	245.2	294.5	340.2	294.5	245.2
77.5°	299.2	245.2	190.9	165.3	186.9	165.3	192.1	241.5	294.4	241.5	192.1
80°	269.9	219.1	155.3	123.0	142.7	123.0	152.8	199.5	246.6	199.5	152.8
82.5°	261.8	213.5	141.4	88.6	98.5	88.6	126.8	169.5	215.4	169.5	126.8
85°	264.4	223.6	148.7	71.7	60.1	69.3	113.2	149.1	184.9	149.1	113.2
87.5°	277.0	247.3	164.4	76.3	19.7	59.2	94.7	129.9	151.1	129.9	94.7
90°	299.1	275.0	193.7	86.2	2.2	39.8	72.7	102.7	115.7	102.7	72.7
92.5°	330.2	310.7	226.1	107.4	20.5	23.1	58.7	84.5	90.6	84.5	58.7
95°	360.2	352.8	264.0	134.0	49.8	11.8	43.9	69.3	70.5	69.3	43.9
97.5°	398.2	392.1	303.0	173.1	87.8	16.6	32.9	56.0	56.0	56.0	32.9
100°	432.1	429.0	344.3	225.7	135.2	42.3	20.3	45.1	47.1	45.1	20.3
102.5°	488.1	470.5	386.5	275.8	185.4	77.7	22.3	30.4	33.3	30.4	22.3
105°	535.9	514.9	445.4	328.4	242.8	125.4	50.6	23.5	21.3	23.5	50.6
107.5°	581.6	567.5	499.3	382.1	303.9	180.4	92.2	49.1	34.0	49.1	92.2
110°	640.8	626.1	551.7	435.9	367.5	239.1	139.9	88.3	68.7	88.3	139.9



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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°	699.5	688.5	600.7	492.1	433.4	302.7	198.5	137.2	118.8	137.2	198.5
115°	744.7	737.6	656.9	544.7	494.5	374.7	263.3	193.6	172.6	193.6	263.3
117.5°	792.3	790.2	698.5	599.4	568.8	440.6	323.2	251.1	228.8	251.1	323.2
120°	852.3	842.5	755.9	653.3	638.5	509.0	389.2	318.0	294.8	318.0	389.2
122.5°	893.8	887.7	804.8	704.6	704.6	578.7	452.8	381.6	357.2	381.6	452.8
125°	931.7	929.2	842.5	755.9	775.4	643.4	524.6	451.3	424.4	451.3	524.6
127.5°	965.9	969.5	890.1	812.2	847.6	709.5	594.3	513.6	485.5	513.6	594.3
130°	995.3	1007.5	935.3	863.5	916.1	781.6	656.7	576.0	557.6	576.0	656.7
132.5°	1052.7	1045.4	981.8	917.1	989.4	848.6	722.7	638.3	617.6	638.3	722.7
135°	1082.1	1084.5	1022.1	962.3	1057.8	914.6	785.0	701.9	681.1	701.9	785.0
137.5°	1117.5	1110.2	1054.0	1017.3	1121.4	978.2	846.1	769.1	736.1	769.1	846.1
140°	1143.2	1141.9	1095.5	1066.2	1189.9	1040.5	908.5	830.3	799.7	830.3	908.5
142.5°	1170.0	1178.4	1137.0	1119.9	1258.3	1106.4	975.7	891.1	860.8	891.1	975.7
145°	1189.4	1205.2	1178.6	1187.1	1323.1	1179.9	1034.4	948.6	916.8	948.6	1034.4
147.5°	1220.0	1240.7	1209.1	1234.8	1379.3	1244.6	1093.1	1008.5	980.4	1008.5	1093.1
150°	1260.5	1270.3	1252.0	1300.8	1436.8	1316.8	1152.9	1065.0	1036.9	1065.0	1152.9
152.5°	1293.5	1305.8	1284.9	1373.0	1482.0	1382.7	1219.0	1121.2	1088.2	1121.2	1219.0
155°	1327.8	1332.6	1317.9	1442.7	1530.6	1447.5	1271.6	1183.5	1151.8	1183.5	1271.6
157.5°	1359.5	1369.3	1352.1	1495.2	1572.2	1503.8	1331.4	1245.8	1217.7	1245.8	1331.4
160°	1393.7	1393.7	1403.5	1556.3	1606.4	1552.6	1395.0	1314.3	1275.2	1314.3	1395.0
162.5°	1397.5	1420.6	1473.2	1599.1	1639.4	1595.4	1463.4	1363.2	1329.0	1363.2	1463.4
165°	1451.2	1472.0	1551.5	1637.0	1665.1	1633.3	1547.7	1443.8	1403.5	1443.8	1547.7
167.5°	1507.4	1551.5	1615.0	1680.8	1690.5	1669.8	1612.6	1540.5	1503.8	1540.5	1612.6
170°	1598.1	1637.0	1668.8	1695.6	1710.1	1696.9	1652.9	1617.4	1593.2	1617.4	1652.9
172.5°	1669.3	1695.6	1707.9	1726.0	1717.5	1712.5	1689.5	1672.4	1658.3	1672.4	1689.5
175°	1714.5	1721.3	1732.3	1727.2	1734.6	1721.1	1721.3	1729.9	1677.9	1729.9	1721.3
177.5°	1730.3	1740.8	1734.8	1724.7	1726.0	1723.6	1727.5	1732.3	1723.1	1732.3	1727.5
180°	1732.3	1732.3	1732.3	1732.3	1732.3	1732.3	1732.3	1732.3	1732.3	1732.3	1732.3



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CATALOG NUMBER: MWL-4-42-60-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2530.4	2530.4	2530.4	2530.4	2530.4	2530.4
2.5°	2532.6	2534.9	2533.9	2519.8	2527.3	2519.9
5°	2520.8	2521.8	2520.8	2509.0	2516.5	2510.1
7.5°	2501.0	2501.1	2502.1	2487.2	2497.0	2490.6
10°	2471.3	2472.5	2472.5	2459.7	2465.6	2466.4
12.5°	2436.9	2434.6	2436.9	2427.0	2431.2	2430.4
15°	2394.3	2394.3	2395.6	2381.8	2385.0	2388.4
17.5°	2344.2	2345.2	2344.2	2331.7	2335.8	2336.3
20°	2289.0	2290.9	2290.1	2276.7	2277.1	2277.4
22.5°	2229.0	2228.0	2230.2	2213.8	2212.2	2204.3
25°	2162.2	2162.2	2163.4	2144.2	2130.6	2123.8
27.5°	2092.6	2092.4	2093.9	2069.5	2049.1	2039.2
30°	2011.0	2011.8	2013.5	1981.2	1949.8	1937.0
32.5°	1928.5	1929.4	1930.9	1888.9	1852.5	1842.7
35°	1834.9	1840.8	1838.5	1785.5	1748.1	1738.3
37.5°	1737.6	1749.6	1741.2	1678.3	1641.0	1635.1
40°	1630.5	1659.2	1632.9	1560.4	1534.9	1540.7
42.5°	1517.5	1553.0	1519.9	1446.2	1434.6	1446.4
45°	1397.6	1439.0	1400.0	1330.2	1329.2	1354.8
47.5°	1278.6	1323.1	1279.8	1228.0	1237.8	1262.4
50°	1155.5	1175.4	1157.9	1122.9	1148.4	1164.1
52.5°	1036.6	1030.0	1039.0	1025.3	1062.9	1082.6
55°	912.5	875.4	915.0	935.8	978.1	988.9
57.5°	794.6	745.7	797.1	843.4	897.5	906.3
60°	674.7	637.5	675.9	749.9	814.7	814.7
62.5°	566.6	550.9	567.8	655.5	724.3	727.3
65°	474.2	470.3	475.4	560.9	627.7	641.5
67.5°	394.6	403.4	394.6	470.5	536.3	553.0
70°	325.8	335.6	325.8	391.6	445.7	469.3
72.5°	265.6	281.3	266.8	315.0	362.2	400.5
75°	213.5	233.1	213.5	243.9	293.4	336.6
77.5°	165.3	186.9	165.3	190.9	245.2	299.2
80°	123.0	142.7	123.0	155.3	219.1	269.9
82.5°	88.6	98.5	88.6	141.4	213.5	261.8
85°	69.3	60.1	71.7	148.7	223.6	264.4
87.5°	59.2	19.7	76.3	164.4	247.3	277.0
90°	39.8	2.2	86.2	193.7	275.0	299.1
92.5°	23.1	20.5	107.4	226.1	310.7	330.2
95°	11.8	49.8	134.0	264.0	352.8	360.2
97.5°	16.6	87.8	173.1	303.0	392.1	398.2
100°	42.3	135.2	225.7	344.3	429.0	432.1
102.5°	77.7	185.4	275.8	386.5	470.5	488.1
105°	125.4	242.8	328.4	445.4	514.9	535.9
107.5°	180.4	303.9	382.1	499.3	567.5	581.6
110°	239.1	367.5	435.9	551.7	626.1	640.8



TEST NUMBER: P392680

CATALOG NUMBER: MWL-4-42-60-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	302.7	433.4	492.1	600.7	688.5	699.5
115°	374.7	494.5	544.7	656.9	737.6	744.7
117.5°	440.6	568.8	599.4	698.5	790.2	792.3
120°	509.0	638.5	653.3	755.9	842.5	852.3
122.5°	578.7	704.6	704.6	804.8	887.7	893.8
125°	643.4	775.4	755.9	842.5	929.2	931.7
127.5°	709.5	847.6	812.2	890.1	969.5	965.9
130°	781.6	916.1	863.5	935.3	1007.5	995.3
132.5°	848.6	989.4	917.1	981.8	1045.4	1052.7
135°	914.6	1057.8	962.3	1022.1	1084.5	1082.1
137.5°	978.2	1121.4	1017.3	1054.0	1110.2	1117.5
140°	1040.5	1189.9	1066.2	1095.5	1141.9	1143.2
142.5°	1106.4	1258.3	1119.9	1137.0	1178.4	1170.0
145°	1179.9	1323.1	1187.1	1178.6	1205.2	1189.4
147.5°	1244.6	1379.3	1234.8	1209.1	1240.7	1220.0
150°	1316.8	1436.8	1300.8	1252.0	1270.3	1260.5
152.5°	1382.7	1482.0	1373.0	1284.9	1305.8	1293.5
155°	1447.5	1530.6	1442.7	1317.9	1332.6	1327.8
157.5°	1503.8	1572.2	1495.2	1352.1	1369.3	1359.5
160°	1552.6	1606.4	1556.3	1403.5	1393.7	1393.7
162.5°	1595.4	1639.4	1599.1	1473.2	1420.6	1397.5
165°	1633.3	1665.1	1637.0	1551.5	1472.0	1451.2
167.5°	1669.8	1690.5	1680.8	1615.0	1551.5	1507.4
170°	1696.9	1710.1	1695.6	1668.8	1637.0	1598.1
172.5°	1712.5	1717.5	1726.0	1707.9	1695.6	1669.3
175°	1721.1	1734.6	1727.2	1732.3	1721.3	1714.5
177.5°	1723.6	1726.0	1724.7	1734.8	1740.8	1730.3
180°	1732.3	1732.3	1732.3	1732.3	1732.3	1732.3

(END OF REPORT)