

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: P392697

Luminaire Tested: **MWL-4-55-73-UNV-L930-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392697  
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-L930-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

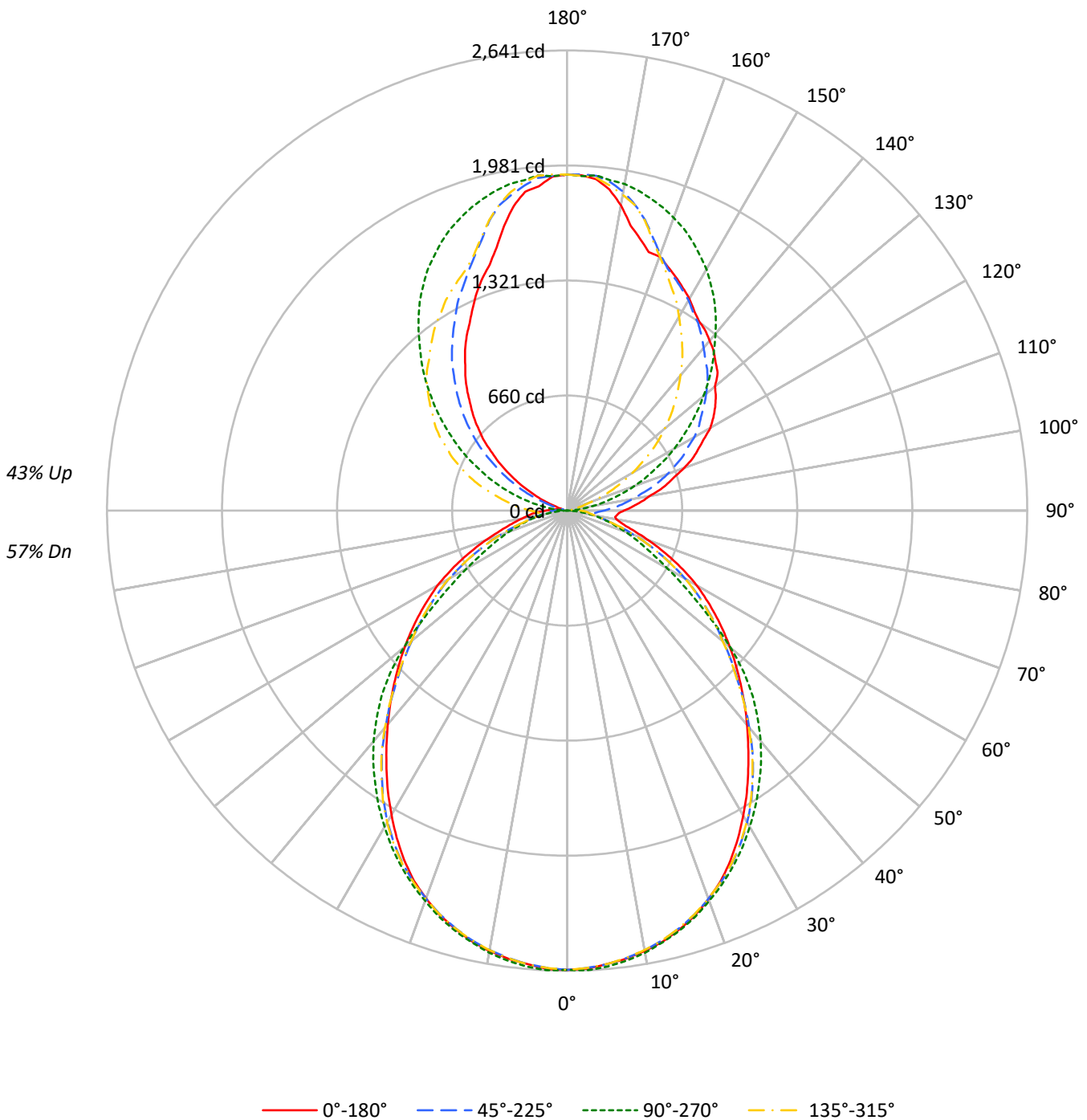
Lumens per Lamp: N/A  
Luminaire Lumens: 10781.7 lumens  
Efficiency: N/A  
Efficacy: 71.5 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 150.894  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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: P392697  
CATALOG NUMBER: MWL-4-55-73-UNV-L930-EDD

### 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°	17027	17027	17027	17027
5°	16786	15664	16786	15664
10°	16528	14363	16528	14363
15°	16187	13157	16161	13157
20°	15707	12011	15680	12011
25°	15065	10952	15038	10952
30°	14220	9907	14182	9907
35°	13311	8898	13280	8898
40°	12458	7920	12417	7920
45°	11645	6878	11611	6878
50°	10906	5619	10869	5619
55°	10149	4228	10122	4228
60°	9409	3148	9394	3148
65°	8370	2371	8370	2371
70°	7275	1785	7294	1785
75°	6350	1277	6425	1277
80°	6710	823	6105	823
85°	9722	371	6731	371



TEST NUMBER: P392697

CATALOG NUMBER: MWL-4-55-73-UNV-L930-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	248.5	2.3
10°-20°	701.0	6.5
20°-30°	1028.1	9.5
30°-40°	1164.0	10.8
40°-50°	1096.9	10.2
50°-60°	877.9	8.1
60°-70°	578.3	5.4
70°-80°	296.4	2.7
80°-90°	159.9	1.5
90°-100°	175.8	1.6
100°-110°	302.1	2.8
110°-120°	513.1	4.8
120°-130°	696.8	6.5
130°-140°	794.5	7.4
140°-150°	792.4	7.3
150°-160°	689.9	6.4
160°-170°	485.3	4.5
170°-180°	180.7	1.7
0°-30°	1977.7	18.3
0°-40°	3141.6	29.1
0°-60°	5116.4	47.5
0°-90°	6151.0	57.1
90°-120°	991.1	9.2
90°-150°	3274.8	30.4
90°-180°	4631.0	43.0
0°-180°	10781.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2636	2636	2636	2636	2636	
5°	2613	2628	2613	2628	2613	248
15°	2489	2495	2485	2495	2489	701
25°	2217	2254	2213	2254	2217	1018
35°	1812	1919	1807	1919	1812	1134
45°	1408	1506	1404	1506	1408	1088
55°	1035	912	1033	912	1035	927
65°	670	488	670	488	670	666
75°	353	242	358	242	353	389
85°	287	62	199	62	287	234
90°	325	2	121	2	325	180
95°	397	56	74	56	397	343
105°	596	270	23	270	596	629
115°	829	551	192	551	829	823
125°	1037	863	472	863	1037	926
135°	1204	1178	758	1178	1204	930
145°	1323	1473	1019	1473	1323	834
155°	1478	1704	1282	1704	1478	682
165°	1615	1854	1562	1854	1615	458
175°	1909	1931	1868	1931	1909	178
180°	1928	1928	1928	1928	1928	



TEST NUMBER: P392697

CATALOG NUMBER: MWL-4-55-73-UNV-L930-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2636.4	2636.4	2636.4	2636.4	2636.4	2636.4	2636.4	2636.4	2636.4	2636.4	2636.4
2.5°	2631.4	2632.4	2626.7	2641.6	2640.7	2640.3	2626.7	2632.4	2632.8	2632.4	2626.7
5°	2612.8	2619.0	2614.0	2628.4	2627.6	2628.4	2612.7	2619.0	2612.8	2619.0	2612.7
7.5°	2594.0	2601.7	2590.7	2608.1	2606.5	2606.8	2589.4	2600.4	2594.0	2600.4	2589.4
10°	2566.6	2569.6	2562.0	2577.2	2576.3	2575.8	2560.6	2566.8	2566.6	2566.8	2560.6
12.5°	2533.7	2532.4	2526.0	2539.5	2537.3	2539.5	2526.0	2529.7	2531.1	2529.7	2526.0
15°	2488.6	2486.8	2482.0	2495.5	2495.1	2494.2	2480.6	2484.1	2484.6	2484.1	2480.6
17.5°	2437.0	2434.3	2431.3	2445.1	2445.1	2445.1	2429.9	2433.0	2433.0	2433.0	2429.9
20°	2372.0	2374.0	2371.3	2385.2	2383.7	2383.7	2370.0	2371.3	2367.9	2371.3	2370.0
22.5°	2302.2	2304.7	2307.9	2326.0	2322.1	2324.6	2306.6	2302.0	2299.4	2302.0	2306.6
25°	2216.8	2221.9	2236.6	2255.0	2253.6	2253.6	2233.9	2217.8	2212.8	2217.8	2233.9
27.5°	2122.2	2135.7	2155.5	2179.4	2178.4	2178.1	2152.7	2131.6	2118.1	2131.6	2152.7
30°	2021.5	2036.0	2066.4	2100.5	2095.5	2097.8	2062.3	2031.8	2016.1	2031.8	2062.3
32.5°	1919.3	1933.7	1968.4	2009.2	2011.6	2006.5	1964.3	1928.2	1913.9	1928.2	1964.3
35°	1811.5	1818.2	1857.9	1920.5	1918.9	1916.3	1853.8	1814.1	1807.3	1814.1	1853.8
37.5°	1707.5	1709.2	1748.9	1814.8	1828.2	1810.7	1744.8	1705.1	1703.3	1705.1	1744.8
40°	1606.9	1598.5	1626.4	1699.4	1727.6	1696.6	1620.9	1593.0	1601.5	1593.0	1620.9
42.5°	1507.2	1497.0	1508.4	1581.0	1618.6	1578.3	1504.2	1491.6	1501.7	1491.6	1504.2
45°	1407.8	1389.3	1386.7	1459.3	1506.2	1456.6	1381.2	1385.1	1403.7	1385.1	1381.2
47.5°	1314.0	1292.0	1279.4	1334.6	1376.8	1333.2	1273.8	1287.9	1309.8	1287.9	1273.8
50°	1220.2	1199.1	1169.5	1207.9	1225.8	1205.1	1163.9	1193.5	1216.1	1193.5	1163.9
52.5°	1127.2	1111.2	1072.6	1086.1	1064.4	1083.4	1068.5	1105.6	1123.1	1105.6	1068.5
55°	1035.4	1021.0	974.5	956.2	911.8	953.5	970.4	1016.9	1032.7	1016.9	970.4
57.5°	945.8	937.4	879.9	826.9	779.1	824.2	875.7	933.2	943.0	933.2	875.7
60°	859.9	850.6	783.8	702.2	665.8	700.8	781.1	847.9	858.5	847.9	781.1
62.5°	763.6	759.3	684.1	592.3	568.1	590.9	681.4	756.6	762.2	756.6	681.4
65°	670.1	657.4	587.2	497.7	487.8	496.2	585.9	656.1	670.1	656.1	585.9
67.5°	580.4	561.8	496.8	415.2	417.7	415.2	495.5	560.5	580.4	560.5	495.5
70°	495.5	466.7	408.4	343.3	354.3	343.3	408.4	468.1	496.8	468.1	408.4
72.5°	416.8	381.3	328.1	279.9	292.9	278.6	328.1	382.7	419.6	382.7	328.1
75°	353.4	308.6	254.9	222.8	242.2	222.8	256.2	310.0	357.6	310.0	256.2
77.5°	312.8	259.2	199.1	172.0	195.7	172.0	200.5	255.1	307.4	255.1	200.5
80°	287.0	233.4	161.7	127.3	147.6	127.3	159.0	211.7	261.1	211.7	159.0
82.5°	278.1	228.7	151.1	91.7	103.6	91.7	134.7	179.8	226.5	179.8	134.7
85°	287.4	242.5	159.0	75.5	62.2	72.8	119.6	159.5	199.0	159.5	119.6
87.5°	299.2	266.6	178.2	80.8	22.8	61.8	100.6	135.9	159.0	135.9	100.6
90°	325.3	299.8	211.1	93.3	2.2	41.6	76.4	107.9	121.2	107.9	76.4
92.5°	363.1	341.7	247.9	119.4	23.5	25.5	61.5	89.9	96.4	89.9	61.5
95°	396.8	386.9	292.1	149.1	56.1	13.0	47.2	71.1	74.2	71.1	47.2
97.5°	440.6	433.7	335.1	192.2	98.3	18.0	34.4	59.5	59.5	59.5	34.4
100°	479.3	475.3	382.8	250.7	150.0	46.6	22.2	48.1	50.6	48.1	22.2
102.5°	542.5	522.8	430.2	306.5	205.8	86.0	24.7	32.8	36.3	32.8	24.7
105°	595.9	572.7	495.2	365.1	269.8	139.1	55.6	25.6	23.1	25.6	55.6
107.5°	646.9	631.6	555.1	425.7	337.8	201.2	101.9	54.6	37.2	54.6	101.9
110°	713.2	696.8	613.5	485.6	409.4	266.5	154.9	98.1	76.3	98.1	154.9



TEST NUMBER: P392697

CATALOG NUMBER: MWL-4-55-73-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	778.5	766.3	667.9	548.2	483.0	337.3	220.2	152.6	132.1	152.6	220.2
115°	828.9	821.2	731.4	606.8	550.9	417.6	293.2	215.7	192.0	215.7	293.2
117.5°	881.9	879.7	777.7	666.6	632.6	489.7	359.9	279.6	254.6	279.6	359.9
120°	948.7	936.9	841.6	726.5	710.1	565.9	433.4	353.1	328.1	353.1	433.4
122.5°	994.9	988.1	896.1	784.5	783.6	644.3	504.2	424.7	397.5	424.7	504.2
125°	1037.1	1034.3	936.9	841.6	862.6	716.5	583.1	502.3	472.4	502.3	583.1
127.5°	1075.2	1079.3	990.8	904.3	943.7	789.9	661.5	571.7	540.4	571.7	661.5
130°	1107.8	1121.5	1041.2	961.4	1019.9	870.2	730.9	641.1	620.7	641.1	730.9
132.5°	1171.9	1163.7	1092.9	1019.9	1101.5	943.7	804.3	710.5	687.4	710.5	804.3
135°	1204.4	1207.2	1137.8	1070.2	1177.8	1017.2	873.7	781.3	758.1	781.3	873.7
137.5°	1244.0	1235.7	1173.2	1132.3	1248.5	1088.7	941.9	856.1	819.3	856.1	941.9
140°	1272.5	1271.2	1219.4	1186.8	1324.7	1158.2	1011.3	924.1	890.1	924.1	1011.3
142.5°	1303.2	1311.4	1265.7	1246.6	1401.0	1231.6	1086.0	991.6	959.0	991.6	1086.0
145°	1322.9	1341.4	1311.9	1321.5	1473.1	1313.4	1151.3	1055.6	1019.4	1055.6	1151.3
147.5°	1357.7	1380.0	1346.0	1374.5	1535.7	1385.4	1216.7	1121.5	1091.0	1121.5	1216.7
150°	1403.2	1414.1	1393.6	1448.1	1599.6	1465.7	1283.4	1185.4	1154.1	1185.4	1283.4
152.5°	1439.9	1453.4	1430.4	1528.3	1650.0	1539.2	1356.9	1248.0	1211.3	1248.0	1356.9
155°	1477.9	1483.5	1467.1	1605.9	1703.9	1611.3	1415.4	1317.4	1282.0	1317.4	1415.4
157.5°	1513.4	1524.2	1505.1	1664.4	1750.1	1673.9	1482.1	1386.9	1355.5	1386.9	1482.1
160°	1551.5	1551.5	1562.4	1732.5	1788.2	1728.4	1552.8	1463.0	1419.5	1463.0	1552.8
162.5°	1555.6	1581.4	1639.9	1780.1	1825.0	1776.0	1629.0	1517.5	1479.3	1517.5	1629.0
165°	1615.4	1638.5	1727.0	1822.3	1854.4	1818.2	1722.9	1607.3	1562.4	1607.3	1722.9
167.5°	1677.2	1726.2	1797.8	1870.7	1881.6	1858.5	1795.1	1713.9	1673.1	1713.9	1795.1
170°	1778.4	1822.3	1857.6	1888.5	1903.4	1889.8	1840.0	1800.4	1772.9	1800.4	1840.0
172.5°	1858.7	1887.6	1901.2	1921.1	1911.6	1906.1	1880.7	1861.7	1846.4	1861.7	1880.7
175°	1909.0	1916.1	1928.5	1922.4	1930.7	1915.7	1916.1	1925.7	1868.2	1925.7	1916.1
177.5°	1926.7	1937.9	1931.1	1919.8	1921.1	1918.3	1922.9	1928.5	1918.5	1928.5	1922.9
180°	1928.5	1928.5	1928.5	1928.5	1928.5	1928.5	1928.5	1928.5	1928.5	1928.5	1928.5



TEST NUMBER: P392697

CATALOG NUMBER: MWL-4-55-73-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2636.4	2636.4	2636.4	2636.4	2636.4	2636.4
2.5°	2640.3	2640.7	2641.6	2626.7	2632.4	2631.4
5°	2628.4	2627.6	2628.4	2614.0	2619.0	2612.8
7.5°	2606.8	2606.5	2608.1	2590.7	2601.7	2594.0
10°	2575.8	2576.3	2577.2	2562.0	2569.6	2566.6
12.5°	2539.5	2537.3	2539.5	2526.0	2532.4	2533.7
15°	2494.2	2495.1	2495.5	2482.0	2486.8	2488.6
17.5°	2445.1	2445.1	2445.1	2431.3	2434.3	2437.0
20°	2383.7	2383.7	2385.2	2371.3	2374.0	2372.0
22.5°	2324.6	2322.1	2326.0	2307.9	2304.7	2302.2
25°	2253.6	2253.6	2255.0	2236.6	2221.9	2216.8
27.5°	2178.1	2178.4	2179.4	2155.5	2135.7	2122.2
30°	2097.8	2095.5	2100.5	2066.4	2036.0	2021.5
32.5°	2006.5	2011.6	2009.2	1968.4	1933.7	1919.3
35°	1916.3	1918.9	1920.5	1857.9	1818.2	1811.5
37.5°	1810.7	1828.2	1814.8	1748.9	1709.2	1707.5
40°	1696.6	1727.6	1699.4	1626.4	1598.5	1606.9
42.5°	1578.3	1618.6	1581.0	1508.4	1497.0	1507.2
45°	1456.6	1506.2	1459.3	1386.7	1389.3	1407.8
47.5°	1333.2	1376.8	1334.6	1279.4	1292.0	1314.0
50°	1205.1	1225.8	1207.9	1169.5	1199.1	1220.2
52.5°	1083.4	1064.4	1086.1	1072.6	1111.2	1127.2
55°	953.5	911.8	956.2	974.5	1021.0	1035.4
57.5°	824.2	779.1	826.9	879.9	937.4	945.8
60°	700.8	665.8	702.2	783.8	850.6	859.9
62.5°	590.9	568.1	592.3	684.1	759.3	763.6
65°	496.2	487.8	497.7	587.2	657.4	670.1
67.5°	415.2	417.7	415.2	496.8	561.8	580.4
70°	343.3	354.3	343.3	408.4	466.7	495.5
72.5°	278.6	292.9	279.9	328.1	381.3	416.8
75°	222.8	242.2	222.8	254.9	308.6	353.4
77.5°	172.0	195.7	172.0	199.1	259.2	312.8
80°	127.3	147.6	127.3	161.7	233.4	287.0
82.5°	91.7	103.6	91.7	151.1	228.7	278.1
85°	72.8	62.2	75.5	159.0	242.5	287.4
87.5°	61.8	22.8	80.8	178.2	266.6	299.2
90°	41.6	2.2	93.3	211.1	299.8	325.3
92.5°	25.5	23.5	119.4	247.9	341.7	363.1
95°	13.0	56.1	149.1	292.1	386.9	396.8
97.5°	18.0	98.3	192.2	335.1	433.7	440.6
100°	46.6	150.0	250.7	382.8	475.3	479.3
102.5°	86.0	205.8	306.5	430.2	522.8	542.5
105°	139.1	269.8	365.1	495.2	572.7	595.9
107.5°	201.2	337.8	425.7	555.1	631.6	646.9
110°	266.5	409.4	485.6	613.5	696.8	713.2





TEST NUMBER: P392697

CATALOG NUMBER: MWL-4-55-73-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	337.3	483.0	548.2	667.9	766.3	778.5
115°	417.6	550.9	606.8	731.4	821.2	828.9
117.5°	489.7	632.6	666.6	777.7	879.7	881.9
120°	565.9	710.1	726.5	841.6	936.9	948.7
122.5°	644.3	783.6	784.5	896.1	988.1	994.9
125°	716.5	862.6	841.6	936.9	1034.3	1037.1
127.5°	789.9	943.7	904.3	990.8	1079.3	1075.2
130°	870.2	1019.9	961.4	1041.2	1121.5	1107.8
132.5°	943.7	1101.5	1019.9	1092.9	1163.7	1171.9
135°	1017.2	1177.8	1070.2	1137.8	1207.2	1204.4
137.5°	1088.7	1248.5	1132.3	1173.2	1235.7	1244.0
140°	1158.2	1324.7	1186.8	1219.4	1271.2	1272.5
142.5°	1231.6	1401.0	1246.6	1265.7	1311.4	1303.2
145°	1313.4	1473.1	1321.5	1311.9	1341.4	1322.9
147.5°	1385.4	1535.7	1374.5	1346.0	1380.0	1357.7
150°	1465.7	1599.6	1448.1	1393.6	1414.1	1403.2
152.5°	1539.2	1650.0	1528.3	1430.4	1453.4	1439.9
155°	1611.3	1703.9	1605.9	1467.1	1483.5	1477.9
157.5°	1673.9	1750.1	1664.4	1505.1	1524.2	1513.4
160°	1728.4	1788.2	1732.5	1562.4	1551.5	1551.5
162.5°	1776.0	1825.0	1780.1	1639.9	1581.4	1555.6
165°	1818.2	1854.4	1822.3	1727.0	1638.5	1615.4
167.5°	1858.5	1881.6	1870.7	1797.8	1726.2	1677.2
170°	1889.8	1903.4	1888.5	1857.6	1822.3	1778.4
172.5°	1906.1	1911.6	1921.1	1901.2	1887.6	1858.7
175°	1915.7	1930.7	1922.4	1928.5	1916.1	1909.0
177.5°	1918.3	1921.1	1919.8	1931.1	1937.9	1926.7
180°	1928.5	1928.5	1928.5	1928.5	1928.5	1928.5

(END OF REPORT)