

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: P392682

Luminaire Tested: **MWL-4-42-73-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392682
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-4-42-73-UNV-L830-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

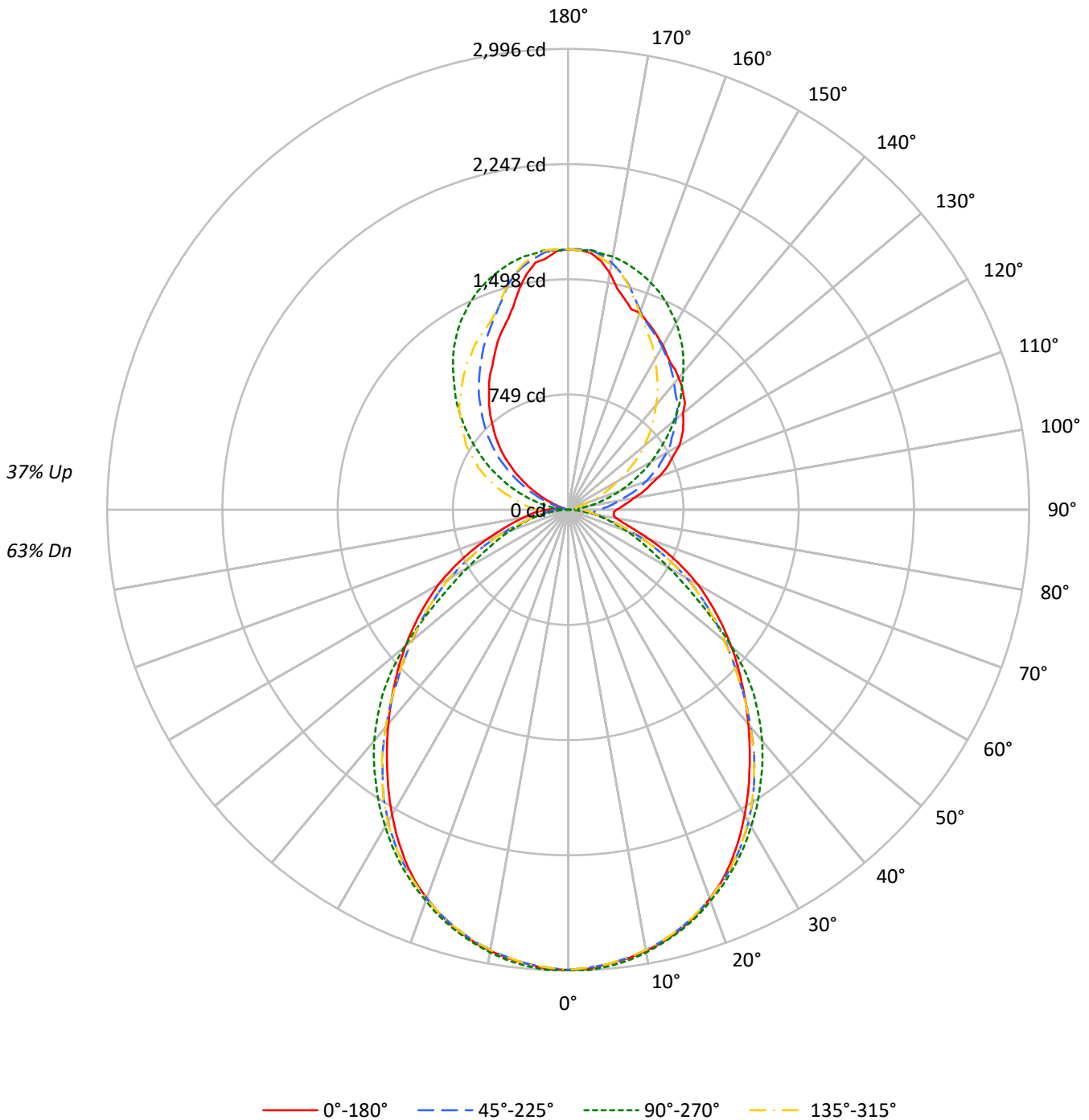
Lumens per Lamp: N/A
Luminaire Lumens: 11049.0 lumens
Efficiency: N/A
Efficacy: 86.2 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 128.2
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



TEST NUMBER: P392682
CATALOG NUMBER: MWL-4-42-73-UNV-L830-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L830-EDD

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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	63
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	59	58	54
2	92	85	79	74	86	80	74	70	70	66	63	62	59	56	54	52	49	46
3	84	75	68	62	79	71	64	59	63	57	53	55	51	48	48	45	43	39
4	78	67	59	53	72	63	56	50	56	50	46	49	45	41	43	40	37	34
5	71	60	52	46	67	56	49	44	50	44	40	45	40	36	39	35	33	30
6	66	54	46	40	62	51	44	38	45	39	35	40	36	32	36	32	29	26
7	61	49	41	35	57	46	39	34	41	35	31	37	32	28	33	29	26	23
8	57	44	37	31	53	42	35	30	38	32	28	34	29	25	30	26	23	21
9	53	41	33	28	50	39	32	27	35	29	25	31	26	23	28	24	21	19
10	50	37	30	25	47	36	29	24	32	27	23	29	24	21	26	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	19321	19321	19321	19321
5°	19055	17773	19055	17773
10°	18758	16298	18758	16298
15°	18364	14933	18340	14933
20°	17817	13635	17794	13635
25°	17090	12432	17066	12432
30°	16131	11246	16098	11246
35°	15099	10100	15073	10100
40°	14130	8986	14093	8986
45°	13208	7804	13178	7804
50°	12367	6376	12334	6376
55°	11508	4797	11485	4797
60°	10671	3570	10658	3570
65°	9492	2689	9492	2689
70°	8251	2024	8268	2024
75°	7202	1449	7264	1449
80°	7397	932	6864	932
85°	10067	419	7438	419



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L830-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	282.0	2.6
10°-20°	795.6	7.2
20°-30°	1166.7	10.6
30°-40°	1320.7	12.0
40°-50°	1244.5	11.3
50°-60°	995.9	9.0
60°-70°	655.9	5.9
70°-80°	335.6	3.0
80°-90°	172.1	1.6
90°-100°	165.6	1.5
100°-110°	267.1	2.4
110°-120°	451.0	4.1
120°-130°	612.1	5.5
130°-140°	697.9	6.3
140°-150°	695.9	6.3
150°-160°	605.7	5.5
160°-170°	426.0	3.9
170°-180°	158.7	1.4
0°-30°	2244.3	20.3
0°-40°	3565.0	32.3
0°-60°	5805.4	52.5
0°-90°	6969.0	63.1
90°-120°	883.7	8.0
90°-150°	2889.6	26.2
90°-180°	4080.0	36.9
0°-180°	11049.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2992	2992	2992	2992	2992	
5°	2966	2981	2966	2981	2966	282
15°	2823	2832	2820	2832	2823	795
25°	2515	2558	2511	2558	2515	1155
35°	2055	2178	2051	2178	2055	1286
45°	1597	1709	1593	1709	1597	1234
55°	1174	1034	1172	1034	1174	1052
65°	760	553	760	553	760	755
75°	401	275	404	275	401	439
85°	298	70	220	70	298	246
90°	314	2	135	2	314	174
95°	366	50	83	50	366	314
105°	526	237	24	237	526	556
115°	728	484	170	484	728	723
125°	911	757	415	757	911	813
135°	1058	1034	666	1034	1058	816
145°	1162	1293	895	1293	1162	733
155°	1298	1496	1126	1496	1298	599
165°	1418	1628	1372	1628	1418	402
175°	1676	1695	1640	1695	1676	156
180°	1693	1693	1693	1693	1693	



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L830-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2991.7	2991.7	2991.7	2991.7	2991.7	2991.7	2991.7	2991.7	2991.7	2991.7	2991.7
2.5°	2987.1	2987.6	2980.3	2996.9	2996.0	2995.7	2980.3	2987.6	2988.3	2987.6	2980.3
5°	2966.0	2972.3	2965.9	2982.3	2981.3	2982.3	2964.8	2972.3	2966.0	2972.3	2964.8
7.5°	2944.1	2952.3	2939.8	2959.2	2957.3	2958.1	2938.7	2951.2	2944.1	2951.2	2938.7
10°	2912.8	2915.8	2907.2	2924.5	2923.5	2923.3	2906.0	2913.4	2912.8	2913.4	2906.0
12.5°	2874.7	2873.6	2866.7	2882.0	2879.8	2882.0	2866.7	2871.2	2872.4	2871.2	2866.7
15°	2823.2	2821.8	2816.8	2832.1	2831.8	2830.9	2815.5	2819.4	2819.6	2819.4	2815.5
17.5°	2764.6	2762.2	2759.2	2775.2	2775.2	2775.2	2757.9	2761.1	2761.1	2761.1	2757.9
20°	2690.7	2693.3	2691.0	2707.1	2705.9	2705.9	2689.8	2691.0	2687.2	2691.0	2689.8
22.5°	2611.7	2614.6	2619.0	2639.9	2635.8	2638.7	2617.8	2612.3	2609.4	2612.3	2617.8
25°	2514.8	2520.6	2537.6	2559.2	2558.1	2558.1	2535.2	2517.0	2511.2	2517.0	2535.2
27.5°	2407.3	2422.6	2445.5	2473.1	2472.7	2471.9	2443.1	2419.1	2403.7	2419.1	2443.1
30°	2293.1	2309.4	2343.9	2383.1	2378.6	2380.7	2340.4	2305.8	2288.4	2305.8	2340.4
32.5°	2176.9	2193.2	2232.6	2279.4	2282.8	2277.0	2229.0	2188.5	2172.2	2188.5	2229.0
35°	2054.8	2062.5	2107.6	2178.6	2178.0	2175.1	2104.1	2058.9	2051.3	2058.9	2104.1
37.5°	1936.8	1938.7	1983.8	2058.7	2074.5	2055.1	1980.2	1935.1	1933.2	1935.1	1980.2
40°	1822.5	1812.9	1844.6	1927.9	1960.3	1925.5	1839.8	1808.1	1817.7	1808.1	1839.8
42.5°	1709.3	1697.7	1711.0	1793.5	1836.4	1791.1	1707.3	1692.9	1704.5	1692.9	1707.3
45°	1596.8	1575.6	1572.8	1655.3	1708.8	1652.9	1568.0	1572.0	1593.1	1572.0	1568.0
47.5°	1490.2	1465.3	1450.9	1513.9	1561.9	1512.8	1446.1	1461.6	1486.6	1461.6	1446.1
50°	1383.7	1359.7	1326.1	1369.9	1390.9	1367.5	1321.3	1354.9	1380.0	1354.9	1321.3
52.5°	1278.1	1259.8	1216.4	1231.7	1207.5	1229.3	1212.8	1255.0	1274.4	1255.0	1212.8
55°	1174.1	1157.8	1105.0	1084.7	1034.5	1082.3	1101.5	1154.3	1171.7	1154.3	1101.5
57.5°	1072.4	1062.8	997.5	937.8	883.8	935.4	994.0	1059.2	1070.0	1059.2	994.0
60°	975.2	964.7	888.8	796.4	755.1	795.3	886.4	962.3	974.0	962.3	886.4
62.5°	865.8	861.0	775.6	671.6	644.6	670.5	773.2	858.6	864.6	858.6	773.2
65°	759.9	745.5	665.9	564.1	553.4	563.0	664.7	744.4	759.9	744.4	664.7
67.5°	658.2	637.1	563.2	470.8	473.7	470.8	562.0	635.9	658.2	635.9	562.0
70°	562.0	529.4	463.1	389.2	401.7	389.2	463.1	530.5	563.2	530.5	463.1
72.5°	472.7	432.4	372.0	317.2	332.3	316.0	372.0	433.6	475.1	433.6	372.0
75°	400.8	349.9	289.1	252.6	274.7	252.6	290.4	351.0	404.3	351.0	290.4
77.5°	351.7	292.3	225.8	195.0	221.9	195.0	227.0	288.6	347.0	288.6	227.0
80°	316.4	258.1	182.4	144.2	167.2	144.2	180.0	239.0	293.6	239.0	180.0
82.5°	297.9	245.0	166.0	103.9	117.3	103.9	151.7	202.1	252.6	202.1	151.7
85°	297.6	250.0	167.3	84.5	70.3	82.1	132.7	177.3	219.9	177.3	132.7
87.5°	298.3	264.5	178.8	85.0	25.9	68.3	110.8	149.9	175.4	149.9	110.8
90°	314.2	288.7	203.6	91.9	2.1	46.6	85.4	120.5	135.1	120.5	85.4
92.5°	341.7	321.7	232.4	110.7	21.0	28.3	68.8	100.8	107.7	100.8	68.8
95°	366.2	357.1	267.4	132.8	49.6	13.4	52.5	80.2	83.2	80.2	52.5
97.5°	400.5	394.5	300.7	169.0	86.7	16.2	37.0	66.2	66.2	66.2	37.0
100°	430.7	426.7	339.1	220.4	132.1	41.3	22.7	51.7	54.6	51.7	22.7
102.5°	482.4	464.3	378.5	269.3	181.0	75.9	22.7	34.5	38.3	34.5	22.7
105°	526.3	504.8	435.0	320.7	237.1	122.5	49.4	24.9	23.7	24.9	49.4
107.5°	569.0	555.2	487.6	374.2	296.8	177.2	90.0	49.0	34.2	49.0	90.0
110°	626.8	612.5	538.9	426.7	359.9	234.5	136.6	87.2	68.1	87.2	136.6



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	684.1	673.4	586.7	481.6	424.3	296.6	193.9	135.0	117.0	135.0	193.9
115°	728.3	721.4	642.5	532.9	484.0	367.0	258.1	190.1	169.5	190.1	258.1
117.5°	774.8	772.7	683.1	585.4	555.6	430.3	316.7	246.2	224.4	246.2	316.7
120°	833.4	822.8	739.2	638.0	623.6	497.1	381.1	310.6	288.9	310.6	381.1
122.5°	873.9	867.9	787.0	689.1	688.1	566.1	443.2	373.7	349.8	373.7	443.2
125°	910.9	908.5	822.8	739.2	757.3	629.4	512.4	441.7	415.4	441.7	512.4
127.5°	944.3	947.9	870.3	794.2	828.8	693.9	581.4	502.6	475.1	502.6	581.4
130°	973.0	984.9	914.5	844.3	895.7	764.4	642.4	563.5	545.6	563.5	642.4
132.5°	1029.1	1022.0	959.9	895.7	967.3	828.8	706.8	624.4	604.1	624.4	706.8
135°	1057.8	1060.2	999.2	939.8	1034.1	893.3	767.6	686.5	666.2	686.5	767.6
137.5°	1092.3	1085.2	1030.3	994.5	1096.2	956.3	827.3	752.2	719.9	752.2	827.3
140°	1117.5	1116.2	1070.9	1042.2	1163.1	1017.2	888.3	811.9	782.0	811.9	888.3
142.5°	1144.7	1151.9	1111.4	1094.7	1229.9	1081.6	953.9	871.3	842.7	871.3	953.9
145°	1161.6	1178.1	1152.0	1160.4	1293.2	1153.3	1011.2	927.4	895.4	927.4	1011.2
147.5°	1192.5	1211.8	1181.9	1207.0	1348.1	1216.6	1068.5	984.9	958.4	984.9	1068.5
150°	1232.1	1241.6	1223.8	1271.5	1404.2	1287.0	1127.0	1041.1	1013.6	1041.1	1127.0
152.5°	1264.3	1276.3	1255.9	1341.9	1448.4	1351.4	1191.5	1096.0	1063.7	1096.0	1191.5
155°	1297.8	1302.5	1288.2	1410.0	1495.9	1414.7	1242.9	1156.8	1125.8	1156.8	1242.9
157.5°	1328.8	1338.4	1321.6	1461.3	1536.5	1469.7	1301.3	1217.7	1190.3	1217.7	1301.3
160°	1362.2	1362.2	1371.8	1520.9	1569.9	1517.4	1363.4	1284.6	1246.4	1284.6	1363.4
162.5°	1365.8	1388.5	1439.8	1562.8	1602.1	1559.1	1430.2	1332.3	1298.9	1332.3	1430.2
165°	1418.3	1438.6	1516.2	1599.7	1628.1	1596.2	1512.6	1411.1	1371.8	1411.1	1512.6
167.5°	1472.3	1515.3	1578.2	1642.5	1652.1	1631.8	1575.9	1504.5	1468.7	1504.5	1575.9
170°	1560.9	1599.7	1630.8	1658.0	1671.2	1659.2	1615.3	1580.6	1556.1	1580.6	1615.3
172.5°	1631.3	1657.0	1669.0	1686.7	1678.4	1673.6	1651.1	1634.4	1620.6	1634.4	1651.1
175°	1675.5	1682.1	1692.8	1687.9	1695.1	1681.9	1682.1	1690.5	1639.7	1690.5	1682.1
177.5°	1690.9	1701.2	1695.2	1685.5	1686.7	1684.3	1688.1	1692.8	1683.8	1692.8	1688.1
180°	1692.8	1692.8	1692.8	1692.8	1692.8	1692.8	1692.8	1692.8	1692.8	1692.8	1692.8



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2991.7	2991.7	2991.7	2991.7	2991.7	2991.7
2.5°	2995.7	2996.0	2996.9	2980.3	2987.6	2987.1
5°	2982.3	2981.3	2982.3	2965.9	2972.3	2966.0
7.5°	2958.1	2957.3	2959.2	2939.8	2952.3	2944.1
10°	2923.3	2923.5	2924.5	2907.2	2915.8	2912.8
12.5°	2882.0	2879.8	2882.0	2866.7	2873.6	2874.7
15°	2830.9	2831.8	2832.1	2816.8	2821.8	2823.2
17.5°	2775.2	2775.2	2775.2	2759.2	2762.2	2764.6
20°	2705.9	2705.9	2707.1	2691.0	2693.3	2690.7
22.5°	2638.7	2635.8	2639.9	2619.0	2614.6	2611.7
25°	2558.1	2558.1	2559.2	2537.6	2520.6	2514.8
27.5°	2471.9	2472.7	2473.1	2445.5	2422.6	2407.3
30°	2380.7	2378.6	2383.1	2343.9	2309.4	2293.1
32.5°	2277.0	2282.8	2279.4	2232.6	2193.2	2176.9
35°	2175.1	2178.0	2178.6	2107.6	2062.5	2054.8
37.5°	2055.1	2074.5	2058.7	1983.8	1938.7	1936.8
40°	1925.5	1960.3	1927.9	1844.6	1812.9	1822.5
42.5°	1791.1	1836.4	1793.5	1711.0	1697.7	1709.3
45°	1652.9	1708.8	1655.3	1572.8	1575.6	1596.8
47.5°	1512.8	1561.9	1513.9	1450.9	1465.3	1490.2
50°	1367.5	1390.9	1369.9	1326.1	1359.7	1383.7
52.5°	1229.3	1207.5	1231.7	1216.4	1259.8	1278.1
55°	1082.3	1034.5	1084.7	1105.0	1157.8	1174.1
57.5°	935.4	883.8	937.8	997.5	1062.8	1072.4
60°	795.3	755.1	796.4	888.8	964.7	975.2
62.5°	670.5	644.6	671.6	775.6	861.0	865.8
65°	563.0	553.4	564.1	665.9	745.5	759.9
67.5°	470.8	473.7	470.8	563.2	637.1	658.2
70°	389.2	401.7	389.2	463.1	529.4	562.0
72.5°	316.0	332.3	317.2	372.0	432.4	472.7
75°	252.6	274.7	252.6	289.1	349.9	400.8
77.5°	195.0	221.9	195.0	225.8	292.3	351.7
80°	144.2	167.2	144.2	182.4	258.1	316.4
82.5°	103.9	117.3	103.9	166.0	245.0	297.9
85°	82.1	70.3	84.5	167.3	250.0	297.6
87.5°	68.3	25.9	85.0	178.8	264.5	298.3
90°	46.6	2.1	91.9	203.6	288.7	314.2
92.5°	28.3	21.0	110.7	232.4	321.7	341.7
95°	13.4	49.6	132.8	267.4	357.1	366.2
97.5°	16.2	86.7	169.0	300.7	394.5	400.5
100°	41.3	132.1	220.4	339.1	426.7	430.7
102.5°	75.9	181.0	269.3	378.5	464.3	482.4
105°	122.5	237.1	320.7	435.0	504.8	526.3
107.5°	177.2	296.8	374.2	487.6	555.2	569.0
110°	234.5	359.9	426.7	538.9	612.5	626.8



TEST NUMBER: P392682

CATALOG NUMBER: MWL-4-42-73-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	296.6	424.3	481.6	586.7	673.4	684.1
115°	367.0	484.0	532.9	642.5	721.4	728.3
117.5°	430.3	555.6	585.4	683.1	772.7	774.8
120°	497.1	623.6	638.0	739.2	822.8	833.4
122.5°	566.1	688.1	689.1	787.0	867.9	873.9
125°	629.4	757.3	739.2	822.8	908.5	910.9
127.5°	693.9	828.8	794.2	870.3	947.9	944.3
130°	764.4	895.7	844.3	914.5	984.9	973.0
132.5°	828.8	967.3	895.7	959.9	1022.0	1029.1
135°	893.3	1034.1	939.8	999.2	1060.2	1057.8
137.5°	956.3	1096.2	994.5	1030.3	1085.2	1092.3
140°	1017.2	1163.1	1042.2	1070.9	1116.2	1117.5
142.5°	1081.6	1229.9	1094.7	1111.4	1151.9	1144.7
145°	1153.3	1293.2	1160.4	1152.0	1178.1	1161.6
147.5°	1216.6	1348.1	1207.0	1181.9	1211.8	1192.5
150°	1287.0	1404.2	1271.5	1223.8	1241.6	1232.1
152.5°	1351.4	1448.4	1341.9	1255.9	1276.3	1264.3
155°	1414.7	1495.9	1410.0	1288.2	1302.5	1297.8
157.5°	1469.7	1536.5	1461.3	1321.6	1338.4	1328.8
160°	1517.4	1569.9	1520.9	1371.8	1362.2	1362.2
162.5°	1559.1	1602.1	1562.8	1439.8	1388.5	1365.8
165°	1596.2	1628.1	1599.7	1516.2	1438.6	1418.3
167.5°	1631.8	1652.1	1642.5	1578.2	1515.3	1472.3
170°	1659.2	1671.2	1658.0	1630.8	1599.7	1560.9
172.5°	1673.6	1678.4	1686.7	1669.0	1657.0	1631.3
175°	1681.9	1695.1	1687.9	1692.8	1682.1	1675.5
177.5°	1684.3	1686.7	1685.5	1695.2	1701.2	1690.9
180°	1692.8	1692.8	1692.8	1692.8	1692.8	1692.8

(END OF REPORT)