

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: P392601

Luminaire Tested: **MWL-3-37-47-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392601
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-37-47-UNV-L830-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

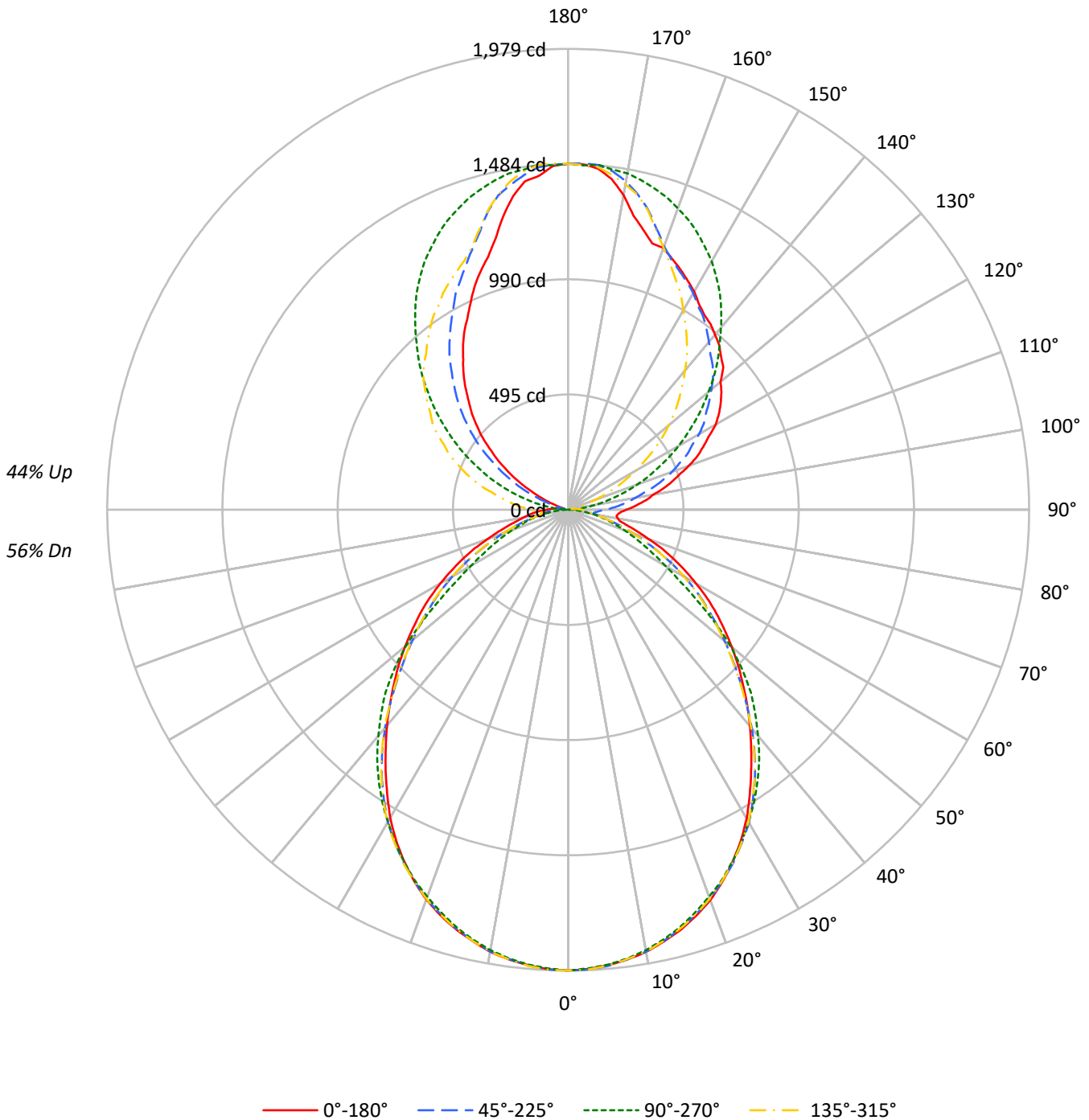
Lumens per Lamp: N/A
Luminaire Lumens: 8147.0 lumens
Efficiency: N/A
Efficacy: 90.1 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 90.4
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	62	62	62	56
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	55	54	53	48
2	91	83	77	72	84	78	73	68	67	63	60	58	55	52	49	47	45	41
3	83	74	66	61	77	69	63	57	60	55	51	51	48	45	44	41	39	35
4	76	66	58	52	71	61	54	49	53	48	44	46	42	39	39	36	34	30
5	70	59	51	45	65	55	48	42	48	42	38	42	37	34	36	32	30	26
6	65	53	45	39	60	50	42	37	43	38	33	38	33	30	32	29	26	23
7	60	48	40	34	56	45	38	33	39	34	30	34	30	26	30	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	32	27	24	27	24	21	19
9	52	40	32	27	48	38	31	26	33	28	24	29	25	21	25	22	19	17
10	49	37	29	25	45	35	28	24	31	25	21	27	23	19	23	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17041	17041	17041	17041
5°	16768	15586	16768	15586
10°	16456	14275	16456	14275
15°	16054	13049	16027	13049
20°	15564	11882	15537	11882
25°	14893	10806	14865	10806
30°	14100	9757	14062	9757
35°	13120	8769	13090	8769
40°	12221	7748	12180	7748
45°	11338	6748	11303	6748
50°	10532	5553	10496	5553
55°	9734	4144	9708	4144
60°	8800	3040	8786	3040
65°	7811	2296	7811	2296
70°	6652	1704	6670	1704
75°	5745	1229	5816	1229
80°	5978	778	5423	778
85°	8190	329	5594	329



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	186.3	2.3
10°-20°	524.4	6.4
20°-30°	768.4	9.4
30°-40°	871.1	10.7
40°-50°	819.3	10.1
50°-60°	650.5	8.0
60°-70°	423.6	5.2
70°-80°	216.5	2.7
80°-90°	118.4	1.5
90°-100°	135.3	1.7
100°-110°	232.8	2.9
110°-120°	395.6	4.9
120°-130°	537.1	6.6
130°-140°	612.4	7.5
140°-150°	610.7	7.5
150°-160°	531.6	6.5
160°-170°	373.9	4.6
170°-180°	139.2	1.7
0°-30°	1479.1	18.2
0°-40°	2350.2	28.8
0°-60°	3820.0	46.9
0°-90°	4578.4	56.2
90°-120°	763.6	9.4
90°-150°	2523.8	31.0
90°-180°	3569.0	43.8
0°-180°	8147.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1979	1979	1979	1979	1979	
5°	1963	1961	1963	1961	1963	186
15°	1868	1856	1865	1856	1868	526
25°	1669	1668	1666	1668	1669	767
35°	1369	1418	1366	1418	1369	857
45°	1060	1108	1057	1108	1060	820
55°	777	670	775	670	777	694
65°	498	354	498	354	498	494
75°	262	175	265	175	262	288
85°	214	41	146	41	214	176
90°	249	2	92	2	249	138
95°	308	43	60	43	308	266
105°	459	208	18	208	459	485
115°	639	424	148	424	639	634
125°	799	665	364	665	799	714
135°	928	908	585	908	928	717
145°	1020	1135	786	1135	1020	643
155°	1139	1312	988	1312	1139	525
165°	1245	1428	1204	1428	1245	353
175°	1470	1487	1439	1487	1470	137
180°	1486	1486	1486	1486	1486	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1978.9	1978.9	1978.9	1978.9	1978.9	1978.9	1978.9	1978.9	1978.9	1978.9	1978.9
2.5°	1974.0	1977.0	1976.2	1973.4	1971.5	1972.3	1976.2	1977.0	1975.0	1977.0	1976.2
5°	1963.4	1966.5	1966.6	1962.7	1960.8	1962.7	1965.5	1966.5	1963.4	1966.5	1965.5
7.5°	1948.1	1952.1	1947.3	1946.4	1943.5	1945.3	1946.3	1951.1	1948.1	1951.1	1946.3
10°	1928.1	1930.0	1927.1	1922.3	1920.4	1921.3	1926.1	1928.0	1928.1	1928.0	1926.1
12.5°	1899.4	1899.3	1896.4	1892.6	1890.5	1892.6	1896.4	1897.3	1897.4	1897.3	1896.4
15°	1867.8	1864.7	1862.8	1859.9	1856.0	1858.9	1861.7	1862.7	1864.7	1862.7	1861.7
17.5°	1828.4	1826.3	1822.5	1819.5	1813.7	1819.5	1821.4	1825.4	1825.4	1825.4	1821.4
20°	1784.3	1781.3	1779.3	1774.4	1768.5	1773.3	1778.2	1779.3	1781.2	1779.3	1778.2
22.5°	1729.5	1729.5	1726.5	1725.4	1722.5	1724.4	1725.4	1727.4	1727.4	1727.4	1725.4
25°	1669.0	1670.9	1674.7	1672.6	1667.7	1671.6	1672.6	1667.8	1665.9	1667.8	1672.6
27.5°	1603.7	1606.6	1613.2	1617.1	1609.2	1616.0	1611.2	1603.5	1600.6	1603.5	1611.2
30°	1531.7	1536.5	1551.9	1557.5	1547.8	1555.5	1548.8	1533.5	1527.6	1533.5	1548.8
32.5°	1450.1	1457.8	1476.0	1489.4	1486.4	1487.4	1473.0	1453.7	1446.0	1453.7	1473.0
35°	1369.4	1376.1	1398.2	1419.3	1418.2	1416.2	1395.1	1373.0	1366.3	1373.0	1395.1
37.5°	1289.7	1290.7	1313.7	1342.5	1347.2	1339.5	1310.7	1287.6	1286.7	1287.6	1310.7
40°	1213.9	1211.0	1226.4	1260.0	1267.6	1257.9	1222.2	1206.9	1209.8	1206.9	1222.2
42.5°	1137.1	1126.5	1133.3	1174.5	1188.8	1172.4	1130.1	1122.4	1133.0	1122.4	1130.1
45°	1060.3	1045.9	1044.0	1080.5	1108.2	1078.4	1039.8	1042.7	1057.1	1042.7	1039.8
47.5°	989.3	971.0	957.6	984.4	1012.2	983.3	953.4	967.9	986.1	967.9	953.4
50°	916.3	896.2	876.0	892.2	908.5	890.1	871.8	891.9	913.2	891.9	871.8
52.5°	844.3	828.0	798.2	797.2	790.4	795.1	795.0	823.8	841.2	823.8	795.0
55°	777.0	760.7	723.3	705.9	670.3	703.8	720.1	757.6	774.9	757.6	720.1
57.5°	707.0	694.5	651.3	609.0	564.7	606.9	648.1	691.3	704.9	691.3	648.1
60°	633.9	627.2	577.3	511.0	482.2	509.9	575.2	625.1	632.9	625.1	575.2
62.5°	564.8	559.0	502.4	431.3	413.0	430.2	500.3	556.9	563.8	556.9	500.3
65°	497.5	484.1	427.4	360.3	354.4	359.2	426.4	483.0	497.5	483.0	426.4
67.5°	434.2	416.9	358.3	301.6	301.6	301.6	357.3	415.8	434.2	415.8	357.3
70°	365.0	343.8	297.8	249.8	253.6	249.8	297.8	344.9	366.0	344.9	297.8
72.5°	312.2	277.6	242.1	202.7	210.3	201.7	242.1	278.7	314.3	278.7	242.1
75°	262.2	225.8	188.2	160.4	174.8	160.4	189.3	226.8	265.4	226.8	189.3
77.5°	228.4	186.8	145.0	125.8	140.2	125.8	146.1	183.6	224.2	183.6	146.1
80°	215.5	170.7	118.5	94.2	104.7	94.2	116.3	154.0	195.5	154.0	116.3
82.5°	209.0	168.8	109.9	68.2	75.0	68.2	97.3	131.1	169.1	131.1	97.3
85°	214.5	179.1	117.6	55.1	41.4	53.0	87.2	115.2	146.5	115.2	87.2
87.5°	226.4	203.5	134.6	59.2	12.5	44.6	74.8	102.9	118.5	102.9	74.8
90°	249.0	230.9	161.7	69.8	2.0	29.9	58.0	83.1	91.8	83.1	58.0
92.5°	280.8	263.4	190.9	90.7	17.8	18.4	47.3	69.5	75.4	69.5	47.3
95°	308.2	299.0	224.4	112.9	42.9	8.1	35.8	55.9	59.8	55.9	35.8
97.5°	343.7	335.7	256.2	148.7	75.4	14.5	24.6	47.4	50.3	47.4	24.6
100°	370.2	364.4	292.8	193.7	115.2	36.5	15.0	35.2	40.0	35.2	15.0
102.5°	417.6	400.2	331.0	236.7	158.2	66.9	18.6	22.7	27.5	22.7	18.6
105°	459.2	440.7	382.3	281.8	208.4	107.8	43.8	19.3	17.9	19.3	43.8
107.5°	499.4	487.1	428.5	327.9	260.8	154.9	79.4	42.6	29.9	42.6	79.4
110°	550.9	537.4	473.5	374.1	315.3	205.3	120.3	76.1	60.4	76.1	120.3



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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°	600.3	589.9	515.5	422.3	372.0	259.8	170.6	117.1	102.3	117.1	170.6
115°	639.1	632.9	563.7	467.4	424.4	321.7	226.2	166.4	148.5	166.4	226.2
117.5°	680.0	678.0	599.4	513.5	487.2	377.1	277.5	215.7	196.7	215.7	277.5
120°	731.4	722.9	648.6	559.6	547.0	435.9	334.1	273.2	253.3	273.2	334.1
122.5°	767.0	761.7	690.6	604.5	604.5	496.6	388.7	327.7	306.8	327.7	388.7
125°	799.4	797.4	721.9	648.6	665.4	552.1	449.4	387.5	364.5	387.5	449.4
127.5°	828.8	832.0	762.8	696.8	727.2	608.8	509.1	441.0	416.9	441.0	509.1
130°	853.9	864.4	802.6	740.9	785.9	670.6	563.6	494.4	478.7	494.4	563.6
132.5°	903.2	896.9	842.4	785.9	848.8	727.2	620.2	547.9	530.1	547.9	620.2
135°	928.4	930.4	877.0	824.7	907.5	783.9	673.7	602.3	584.6	602.3	673.7
137.5°	958.8	952.5	904.2	872.8	962.0	839.2	726.1	660.0	631.7	660.0	726.1
140°	980.8	979.8	939.9	914.8	1020.7	892.7	779.5	712.4	686.2	712.4	779.5
142.5°	1003.9	1010.1	975.6	960.9	1079.4	949.3	837.2	763.8	738.6	763.8	837.2
145°	1019.6	1033.2	1011.2	1018.6	1135.0	1012.2	887.5	813.0	785.8	813.0	887.5
147.5°	1045.8	1063.6	1037.4	1059.4	1183.2	1067.8	937.8	864.4	840.3	864.4	937.8
150°	1081.4	1089.8	1074.0	1116.0	1232.4	1129.6	989.2	913.7	889.6	913.7	989.2
152.5°	1109.7	1120.2	1102.4	1177.9	1271.2	1186.3	1045.8	961.9	933.6	961.9	1045.8
155°	1139.1	1143.2	1130.7	1237.6	1312.1	1241.8	1090.8	1015.4	988.1	1015.4	1090.8
157.5°	1166.3	1174.7	1160.0	1281.8	1347.8	1289.1	1142.2	1068.9	1044.8	1068.9	1142.2
160°	1195.7	1195.7	1204.1	1335.1	1377.1	1332.0	1196.7	1127.5	1094.0	1127.5	1196.7
162.5°	1198.8	1218.7	1263.8	1371.8	1406.4	1368.6	1255.5	1169.5	1140.1	1169.5	1255.5
165°	1244.9	1262.8	1330.9	1404.2	1428.3	1401.2	1327.7	1238.7	1204.1	1238.7	1327.7
167.5°	1293.2	1330.9	1385.4	1441.0	1449.4	1431.5	1383.3	1321.5	1290.0	1321.5	1383.3
170°	1370.8	1403.3	1431.5	1454.6	1466.2	1455.6	1417.9	1386.6	1366.6	1386.6	1417.9
172.5°	1431.7	1453.7	1465.1	1479.8	1472.4	1468.2	1449.4	1433.7	1422.3	1433.7	1449.4
175°	1470.5	1475.7	1486.0	1480.8	1487.1	1475.6	1476.6	1483.0	1439.1	1483.0	1476.6
177.5°	1484.1	1492.5	1488.1	1478.7	1479.8	1477.7	1481.8	1485.1	1477.9	1485.1	1481.8
180°	1486.0	1486.0	1486.0	1486.0	1486.0	1486.0	1486.0	1486.0	1486.0	1486.0	1486.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1978.9	1978.9	1978.9	1978.9	1978.9	1978.9
2.5°	1972.3	1971.5	1973.4	1976.2	1977.0	1974.0
5°	1962.7	1960.8	1962.7	1966.6	1966.5	1963.4
7.5°	1945.3	1943.5	1946.4	1947.3	1952.1	1948.1
10°	1921.3	1920.4	1922.3	1927.1	1930.0	1928.1
12.5°	1892.6	1890.5	1892.6	1896.4	1899.3	1899.4
15°	1858.9	1856.0	1859.9	1862.8	1864.7	1867.8
17.5°	1819.5	1813.7	1819.5	1822.5	1826.3	1828.4
20°	1773.3	1768.5	1774.4	1779.3	1781.3	1784.3
22.5°	1724.4	1722.5	1725.4	1726.5	1729.5	1729.5
25°	1671.6	1667.7	1672.6	1674.7	1670.9	1669.0
27.5°	1616.0	1609.2	1617.1	1613.2	1606.6	1603.7
30°	1555.5	1547.8	1557.5	1551.9	1536.5	1531.7
32.5°	1487.4	1486.4	1489.4	1476.0	1457.8	1450.1
35°	1416.2	1418.2	1419.3	1398.2	1376.1	1369.4
37.5°	1339.5	1347.2	1342.5	1313.7	1290.7	1289.7
40°	1257.9	1267.6	1260.0	1226.4	1211.0	1213.9
42.5°	1172.4	1188.8	1174.5	1133.3	1126.5	1137.1
45°	1078.4	1108.2	1080.5	1044.0	1045.9	1060.3
47.5°	983.3	1012.2	984.4	957.6	971.0	989.3
50°	890.1	908.5	892.2	876.0	896.2	916.3
52.5°	795.1	790.4	797.2	798.2	828.0	844.3
55°	703.8	670.3	705.9	723.3	760.7	777.0
57.5°	606.9	564.7	609.0	651.3	694.5	707.0
60°	509.9	482.2	511.0	577.3	627.2	633.9
62.5°	430.2	413.0	431.3	502.4	559.0	564.8
65°	359.2	354.4	360.3	427.4	484.1	497.5
67.5°	301.6	301.6	301.6	358.3	416.9	434.2
70°	249.8	253.6	249.8	297.8	343.8	365.0
72.5°	201.7	210.3	202.7	242.1	277.6	312.2
75°	160.4	174.8	160.4	188.2	225.8	262.2
77.5°	125.8	140.2	125.8	145.0	186.8	228.4
80°	94.2	104.7	94.2	118.5	170.7	215.5
82.5°	68.2	75.0	68.2	109.9	168.8	209.0
85°	53.0	41.4	55.1	117.6	179.1	214.5
87.5°	44.6	12.5	59.2	134.6	203.5	226.4
90°	29.9	2.0	69.8	161.7	230.9	249.0
92.5°	18.4	17.8	90.7	190.9	263.4	280.8
95°	8.1	42.9	112.9	224.4	299.0	308.2
97.5°	14.5	75.4	148.7	256.2	335.7	343.7
100°	36.5	115.2	193.7	292.8	364.4	370.2
102.5°	66.9	158.2	236.7	331.0	400.2	417.6
105°	107.8	208.4	281.8	382.3	440.7	459.2
107.5°	154.9	260.8	327.9	428.5	487.1	499.4
110°	205.3	315.3	374.1	473.5	537.4	550.9



TEST NUMBER: P392601

CATALOG NUMBER: MWL-3-37-47-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	259.8	372.0	422.3	515.5	589.9	600.3
115°	321.7	424.4	467.4	563.7	632.9	639.1
117.5°	377.1	487.2	513.5	599.4	678.0	680.0
120°	435.9	547.0	559.6	648.6	722.9	731.4
122.5°	496.6	604.5	604.5	690.6	761.7	767.0
125°	552.1	665.4	648.6	721.9	797.4	799.4
127.5°	608.8	727.2	696.8	762.8	832.0	828.8
130°	670.6	785.9	740.9	802.6	864.4	853.9
132.5°	727.2	848.8	785.9	842.4	896.9	903.2
135°	783.9	907.5	824.7	877.0	930.4	928.4
137.5°	839.2	962.0	872.8	904.2	952.5	958.8
140°	892.7	1020.7	914.8	939.9	979.8	980.8
142.5°	949.3	1079.4	960.9	975.6	1010.1	1003.9
145°	1012.2	1135.0	1018.6	1011.2	1033.2	1019.6
147.5°	1067.8	1183.2	1059.4	1037.4	1063.6	1045.8
150°	1129.6	1232.4	1116.0	1074.0	1089.8	1081.4
152.5°	1186.3	1271.2	1177.9	1102.4	1120.2	1109.7
155°	1241.8	1312.1	1237.6	1130.7	1143.2	1139.1
157.5°	1289.1	1347.8	1281.8	1160.0	1174.7	1166.3
160°	1332.0	1377.1	1335.1	1204.1	1195.7	1195.7
162.5°	1368.6	1406.4	1371.8	1263.8	1218.7	1198.8
165°	1401.2	1428.3	1404.2	1330.9	1262.8	1244.9
167.5°	1431.5	1449.4	1441.0	1385.4	1330.9	1293.2
170°	1455.6	1466.2	1454.6	1431.5	1403.3	1370.8
172.5°	1468.2	1472.4	1479.8	1465.1	1453.7	1431.7
175°	1475.6	1487.1	1480.8	1486.0	1475.7	1470.5
177.5°	1477.7	1479.8	1478.7	1488.1	1492.5	1484.1
180°	1486.0	1486.0	1486.0	1486.0	1486.0	1486.0

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