

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: P392586

Luminaire Tested: **MWL-3-30-47-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392586
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-3-30-47-UNV-L830-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

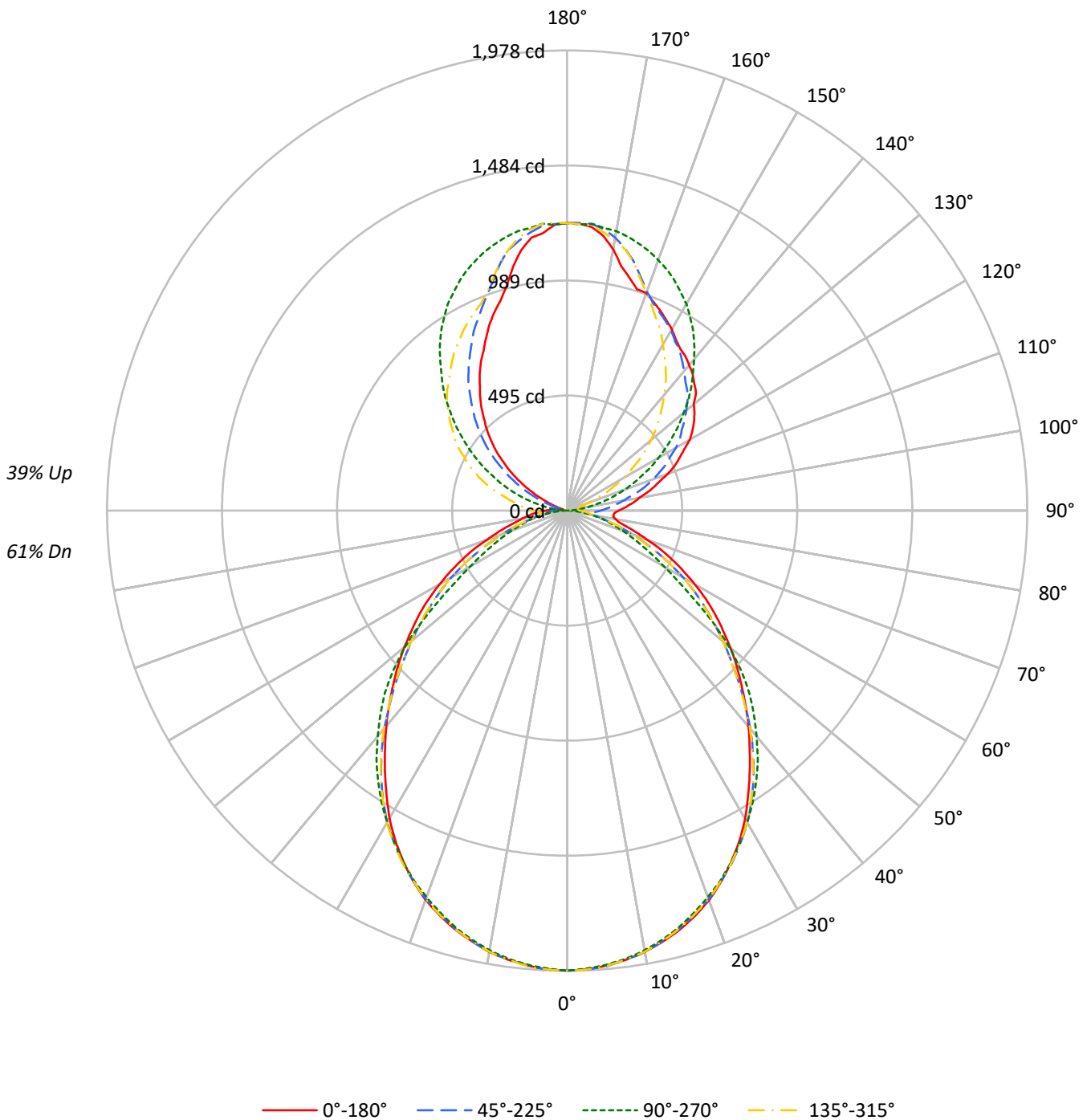
Lumens per Lamp: N/A
Luminaire Lumens: 7546.0 lumens
Efficiency: N/A
Efficacy: 91.1 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 82.8
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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	100	96	92	89	94	90	87	84	79	76	74	68	66	65	59	57	56	51
2	92	84	78	73	86	79	74	69	69	65	62	60	57	55	52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	52	54	50	47	46	44	41	38
4	77	66	58	52	72	62	55	50	55	50	45	48	44	40	42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39	43	39	35	38	34	32	29
6	66	53	45	40	61	50	43	38	45	39	34	39	35	31	35	31	28	25
7	61	48	40	35	57	46	39	33	41	35	31	36	31	28	32	28	25	23
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	23	20
9	53	40	33	28	49	38	31	27	34	29	25	31	26	22	27	23	20	18
10	49	37	30	25	46	35	29	24	32	26	22	28	24	20	25	21	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17031	17031	17031	17031
5°	16762	15575	16762	15575
10°	16446	14267	16446	14267
15°	16041	13042	16018	13042
20°	15551	11877	15527	11877
25°	14882	10802	14857	10802
30°	14088	9752	14054	9752
35°	13109	8764	13083	8764
40°	12210	7742	12174	7742
45°	11326	6742	11298	6742
50°	10519	5548	10489	5548
55°	9723	4141	9702	4141
60°	8790	3036	8778	3036
65°	7803	2294	7803	2294
70°	6644	1701	6659	1701
75°	5739	1228	5796	1228
80°	5845	777	5387	777
85°	7641	327	5476	327



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	186.2	2.5
10°-20°	524.1	6.9
20°-30°	768.0	10.2
30°-40°	870.5	11.5
40°-50°	818.6	10.8
50°-60°	649.9	8.6
60°-70°	423.1	5.6
70°-80°	215.9	2.9
80°-90°	113.6	1.5
90°-100°	118.2	1.6
100°-110°	194.6	2.6
110°-120°	329.3	4.4
120°-130°	447.1	5.9
130°-140°	509.7	6.8
140°-150°	508.1	6.7
150°-160°	442.3	5.9
160°-170°	311.1	4.1
170°-180°	115.8	1.5
0°-30°	1478.2	19.6
0°-40°	2348.7	31.1
0°-60°	3817.3	50.6
0°-90°	4569.9	60.6
90°-120°	642.1	8.5
90°-150°	2107.0	27.9
90°-180°	2976.0	39.4
0°-180°	7546.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1978	1978	1978	1978	1978	
5°	1963	1960	1963	1960	1963	186
15°	1866	1855	1864	1855	1866	526
25°	1668	1667	1665	1667	1668	767
35°	1368	1417	1366	1417	1368	856
45°	1059	1107	1057	1107	1059	819
55°	776	670	774	670	776	693
65°	497	354	497	354	497	493
75°	262	175	264	175	262	287
85°	200	41	143	41	200	166
90°	221	2	91	2	221	122
95°	266	36	59	36	266	228
105°	384	174	17	174	384	406
115°	532	353	124	353	532	528
125°	665	554	304	554	665	594
135°	772	755	487	755	772	596
145°	848	944	654	944	848	535
155°	948	1091	822	1091	948	437
165°	1036	1188	1002	1188	1036	294
175°	1223	1237	1197	1237	1223	114
180°	1236	1236	1236	1236	1236	



TEST NUMBER: P392586

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1977.8	1977.8	1977.8	1977.8	1977.8	1977.8	1977.8	1977.8	1977.8	1977.8	1977.8
2.5°	1973.2	1975.9	1974.8	1971.9	1969.9	1971.0	1974.8	1975.9	1974.1	1975.9	1974.8
5°	1962.7	1965.3	1965.2	1961.4	1959.5	1961.4	1964.4	1965.3	1962.7	1965.3	1964.4
7.5°	1947.2	1950.9	1946.1	1945.1	1942.2	1944.2	1945.2	1950.0	1947.2	1950.0	1945.2
10°	1926.9	1928.9	1926.0	1921.2	1919.3	1920.2	1925.0	1927.0	1926.9	1927.0	1925.0
12.5°	1898.0	1898.1	1895.3	1891.4	1889.6	1891.4	1895.3	1896.3	1896.2	1896.3	1895.3
15°	1866.3	1863.6	1861.7	1858.8	1855.0	1857.9	1860.8	1861.8	1863.6	1861.8	1860.8
17.5°	1826.9	1825.2	1821.4	1818.6	1812.8	1818.6	1820.5	1824.2	1824.2	1824.2	1820.5
20°	1782.8	1780.0	1778.2	1773.5	1767.8	1772.6	1777.3	1778.2	1780.1	1778.2	1777.3
22.5°	1728.1	1728.1	1725.4	1724.5	1721.7	1723.6	1724.5	1726.3	1726.3	1726.3	1724.5
25°	1667.7	1669.6	1673.5	1671.7	1667.0	1670.8	1671.7	1666.9	1665.0	1666.9	1671.7
27.5°	1602.4	1605.3	1612.1	1615.9	1608.4	1615.1	1610.3	1602.6	1599.7	1602.6	1610.3
30°	1530.4	1535.2	1550.6	1556.4	1547.0	1554.6	1547.9	1532.5	1526.8	1532.5	1547.9
32.5°	1448.8	1456.5	1474.7	1488.3	1485.5	1486.4	1472.0	1452.9	1445.3	1452.9	1472.0
35°	1368.3	1375.0	1397.1	1418.2	1417.4	1415.5	1394.4	1372.3	1365.6	1372.3	1394.4
37.5°	1288.6	1289.6	1312.6	1341.4	1346.3	1338.7	1309.9	1286.9	1285.9	1286.9	1309.9
40°	1212.8	1209.9	1225.2	1258.8	1266.6	1257.1	1221.7	1206.3	1209.2	1206.3	1221.7
42.5°	1136.0	1125.4	1132.1	1173.4	1187.9	1171.7	1129.5	1121.9	1132.4	1121.9	1129.5
45°	1059.2	1044.8	1042.9	1079.3	1107.3	1077.6	1039.4	1042.2	1056.6	1042.2	1039.4
47.5°	988.1	969.9	956.5	983.4	1011.3	982.6	953.0	967.3	985.5	967.3	953.0
50°	915.2	895.0	874.9	891.3	907.7	889.6	871.4	891.6	912.6	891.6	871.4
52.5°	843.2	826.9	797.2	796.3	789.6	794.5	794.6	823.4	840.6	823.4	794.6
55°	776.1	759.8	722.3	705.2	669.7	703.4	719.7	757.2	774.4	757.2	719.7
57.5°	706.0	693.5	650.3	608.2	564.1	606.5	647.8	691.0	704.3	691.0	647.8
60°	633.2	626.4	576.5	510.4	481.6	509.5	574.8	624.7	632.3	624.7	574.8
62.5°	564.0	558.3	501.7	430.7	412.6	429.9	499.9	556.6	563.2	556.6	499.9
65°	497.0	483.5	426.9	359.7	354.0	358.8	426.0	482.6	497.0	482.6	426.0
67.5°	433.6	416.3	357.8	301.2	301.2	301.2	356.9	415.5	433.6	415.5	356.9
70°	364.6	343.5	297.4	249.4	253.2	249.4	297.4	344.3	365.4	344.3	297.4
72.5°	311.8	277.2	241.7	202.4	210.1	201.5	241.7	278.1	313.5	278.1	241.7
75°	261.9	225.4	188.0	160.2	174.6	160.2	188.9	226.3	264.5	226.3	188.9
77.5°	226.6	185.6	144.9	125.7	140.1	125.7	145.7	183.1	223.1	183.1	145.7
80°	210.7	167.2	117.7	94.0	104.5	94.0	116.0	153.2	194.2	153.2	116.0
82.5°	200.0	161.4	107.0	68.1	74.8	68.1	96.6	130.0	166.8	130.0	96.6
85°	200.1	166.5	110.9	54.3	41.2	52.6	85.6	113.3	143.4	113.3	85.6
87.5°	205.5	184.3	122.7	56.0	12.5	43.7	73.0	100.6	115.8	100.6	73.0
90°	221.3	204.9	143.5	62.7	1.8	29.6	57.2	82.0	90.6	82.0	57.2
92.5°	245.3	230.0	166.2	78.2	14.9	18.0	46.7	68.7	74.4	68.7	46.7
95°	265.8	257.7	192.2	94.5	35.8	7.3	35.2	55.5	59.2	55.5	35.2
97.5°	293.6	286.3	216.1	123.9	62.9	12.4	23.4	46.7	49.5	46.7	23.4
100°	313.2	307.6	244.8	161.5	96.0	30.7	13.8	33.9	38.7	33.9	13.8
102.5°	350.4	335.1	275.7	197.2	131.7	56.0	15.9	21.4	26.2	21.4	15.9
105°	383.6	367.6	318.4	234.6	173.6	89.9	36.9	17.2	16.7	17.2	36.9
107.5°	416.2	405.7	356.7	273.0	217.2	129.2	66.5	36.1	25.8	36.1	66.5
110°	458.8	447.4	394.2	311.3	262.5	171.0	100.5	63.9	51.0	63.9	100.5



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CATALOG NUMBER: MWL-3-30-47-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	499.7	491.0	429.1	351.4	309.6	216.4	142.4	97.9	85.7	97.9	142.4
115°	532.0	526.7	469.2	388.9	353.2	267.7	188.5	138.8	124.1	138.8	188.5
117.5°	566.0	564.1	498.8	427.3	405.5	313.9	231.2	179.8	164.2	179.8	231.2
120°	608.7	601.8	539.8	465.6	455.1	362.8	278.3	227.8	211.3	227.8	278.3
122.5°	638.3	634.0	574.6	503.2	503.2	413.3	323.6	273.2	255.7	273.2	323.6
125°	665.3	663.6	600.8	539.8	553.7	459.6	374.2	322.8	303.6	322.8	374.2
127.5°	689.8	692.4	634.8	579.9	605.1	506.6	423.8	367.3	347.2	367.3	423.8
130°	710.7	719.4	668.0	616.5	653.9	558.1	469.2	411.7	398.7	411.7	469.2
132.5°	751.6	746.4	701.1	653.9	706.2	605.1	516.3	456.2	441.4	456.2	516.3
135°	772.5	774.3	729.8	686.2	755.1	652.2	560.8	501.5	486.7	501.5	560.8
137.5°	797.8	792.6	752.5	726.4	800.4	698.4	604.4	549.5	525.9	549.5	604.4
140°	816.1	815.3	782.1	761.2	849.1	742.9	648.8	593.0	571.2	593.0	648.8
142.5°	835.3	840.5	811.8	799.6	898.0	790.0	696.7	635.8	614.8	635.8	696.7
145°	848.4	859.7	841.4	847.5	944.2	842.3	738.6	676.6	654.0	676.6	738.6
147.5°	870.2	885.0	863.2	881.5	984.3	888.5	780.4	719.4	699.3	719.4	780.4
150°	899.8	906.7	893.7	928.5	1025.2	939.9	823.1	760.4	740.3	760.4	823.1
152.5°	923.3	932.1	917.2	980.0	1057.4	987.0	870.2	800.5	777.0	800.5	870.2
155°	947.7	951.2	940.8	1029.7	1091.4	1033.2	907.6	844.9	822.3	844.9	907.6
157.5°	970.4	977.4	965.2	1066.2	1121.1	1072.3	950.3	889.4	869.3	889.4	950.3
160°	994.8	994.8	1001.8	1110.7	1145.5	1108.1	995.7	938.1	910.3	938.1	995.7
162.5°	997.5	1014.0	1051.5	1141.2	1170.0	1138.7	1044.5	973.0	948.6	973.0	1044.5
165°	1035.8	1050.6	1107.3	1168.2	1188.3	1165.6	1104.6	1030.6	1001.8	1030.6	1104.6
167.5°	1075.9	1107.3	1152.6	1198.7	1205.8	1190.9	1150.8	1099.4	1073.3	1099.4	1150.8
170°	1140.3	1167.3	1190.9	1210.1	1219.7	1210.9	1179.5	1153.3	1136.7	1153.3	1179.5
172.5°	1190.8	1209.1	1218.8	1231.0	1224.9	1221.4	1205.8	1192.6	1182.9	1192.6	1205.8
175°	1222.9	1227.4	1236.2	1231.9	1237.1	1227.5	1228.4	1233.5	1196.8	1233.5	1228.4
177.5°	1234.3	1241.4	1238.0	1230.1	1231.0	1229.3	1232.7	1235.2	1229.1	1235.2	1232.7
180°	1236.2	1236.2	1236.2	1236.2	1236.2	1236.2	1236.2	1236.2	1236.2	1236.2	1236.2



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CATALOG NUMBER: MWL-3-30-47-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1977.8	1977.8	1977.8	1977.8	1977.8	1977.8
2.5°	1971.0	1969.9	1971.9	1974.8	1975.9	1973.2
5°	1961.4	1959.5	1961.4	1965.2	1965.3	1962.7
7.5°	1944.2	1942.2	1945.1	1946.1	1950.9	1947.2
10°	1920.2	1919.3	1921.2	1926.0	1928.9	1926.9
12.5°	1891.4	1889.6	1891.4	1895.3	1898.1	1898.0
15°	1857.9	1855.0	1858.8	1861.7	1863.6	1866.3
17.5°	1818.6	1812.8	1818.6	1821.4	1825.2	1826.9
20°	1772.6	1767.8	1773.5	1778.2	1780.0	1782.8
22.5°	1723.6	1721.7	1724.5	1725.4	1728.1	1728.1
25°	1670.8	1667.0	1671.7	1673.5	1669.6	1667.7
27.5°	1615.1	1608.4	1615.9	1612.1	1605.3	1602.4
30°	1554.6	1547.0	1556.4	1550.6	1535.2	1530.4
32.5°	1486.4	1485.5	1488.3	1474.7	1456.5	1448.8
35°	1415.5	1417.4	1418.2	1397.1	1375.0	1368.3
37.5°	1338.7	1346.3	1341.4	1312.6	1289.6	1288.6
40°	1257.1	1266.6	1258.8	1225.2	1209.9	1212.8
42.5°	1171.7	1187.9	1173.4	1132.1	1125.4	1136.0
45°	1077.6	1107.3	1079.3	1042.9	1044.8	1059.2
47.5°	982.6	1011.3	983.4	956.5	969.9	988.1
50°	889.6	907.7	891.3	874.9	895.0	915.2
52.5°	794.5	789.6	796.3	797.2	826.9	843.2
55°	703.4	669.7	705.2	722.3	759.8	776.1
57.5°	606.5	564.1	608.2	650.3	693.5	706.0
60°	509.5	481.6	510.4	576.5	626.4	633.2
62.5°	429.9	412.6	430.7	501.7	558.3	564.0
65°	358.8	354.0	359.7	426.9	483.5	497.0
67.5°	301.2	301.2	301.2	357.8	416.3	433.6
70°	249.4	253.2	249.4	297.4	343.5	364.6
72.5°	201.5	210.1	202.4	241.7	277.2	311.8
75°	160.2	174.6	160.2	188.0	225.4	261.9
77.5°	125.7	140.1	125.7	144.9	185.6	226.6
80°	94.0	104.5	94.0	117.7	167.2	210.7
82.5°	68.1	74.8	68.1	107.0	161.4	200.0
85°	52.6	41.2	54.3	110.9	166.5	200.1
87.5°	43.7	12.5	56.0	122.7	184.3	205.5
90°	29.6	1.8	62.7	143.5	204.9	221.3
92.5°	18.0	14.9	78.2	166.2	230.0	245.3
95°	7.3	35.8	94.5	192.2	257.7	265.8
97.5°	12.4	62.9	123.9	216.1	286.3	293.6
100°	30.7	96.0	161.5	244.8	307.6	313.2
102.5°	56.0	131.7	197.2	275.7	335.1	350.4
105°	89.9	173.6	234.6	318.4	367.6	383.6
107.5°	129.2	217.2	273.0	356.7	405.7	416.2
110°	171.0	262.5	311.3	394.2	447.4	458.8



TEST NUMBER: P392586

CATALOG NUMBER: MWL-3-30-47-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	216.4	309.6	351.4	429.1	491.0	499.7
115°	267.7	353.2	388.9	469.2	526.7	532.0
117.5°	313.9	405.5	427.3	498.8	564.1	566.0
120°	362.8	455.1	465.6	539.8	601.8	608.7
122.5°	413.3	503.2	503.2	574.6	634.0	638.3
125°	459.6	553.7	539.8	600.8	663.6	665.3
127.5°	506.6	605.1	579.9	634.8	692.4	689.8
130°	558.1	653.9	616.5	668.0	719.4	710.7
132.5°	605.1	706.2	653.9	701.1	746.4	751.6
135°	652.2	755.1	686.2	729.8	774.3	772.5
137.5°	698.4	800.4	726.4	752.5	792.6	797.8
140°	742.9	849.1	761.2	782.1	815.3	816.1
142.5°	790.0	898.0	799.6	811.8	840.5	835.3
145°	842.3	944.2	847.5	841.4	859.7	848.4
147.5°	888.5	984.3	881.5	863.2	885.0	870.2
150°	939.9	1025.2	928.5	893.7	906.7	899.8
152.5°	987.0	1057.4	980.0	917.2	932.1	923.3
155°	1033.2	1091.4	1029.7	940.8	951.2	947.7
157.5°	1072.3	1121.1	1066.2	965.2	977.4	970.4
160°	1108.1	1145.5	1110.7	1001.8	994.8	994.8
162.5°	1138.7	1170.0	1141.2	1051.5	1014.0	997.5
165°	1165.6	1188.3	1168.2	1107.3	1050.6	1035.8
167.5°	1190.9	1205.8	1198.7	1152.6	1107.3	1075.9
170°	1210.9	1219.7	1210.1	1190.9	1167.3	1140.3
172.5°	1221.4	1224.9	1231.0	1218.8	1209.1	1190.8
175°	1227.5	1237.1	1231.9	1236.2	1227.4	1222.9
177.5°	1229.3	1231.0	1230.1	1238.0	1241.4	1234.3
180°	1236.2	1236.2	1236.2	1236.2	1236.2	1236.2

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