

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: P392675

Luminaire Tested: **MWL-4-42-33-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392675
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-4-42-33-UNV-L840-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

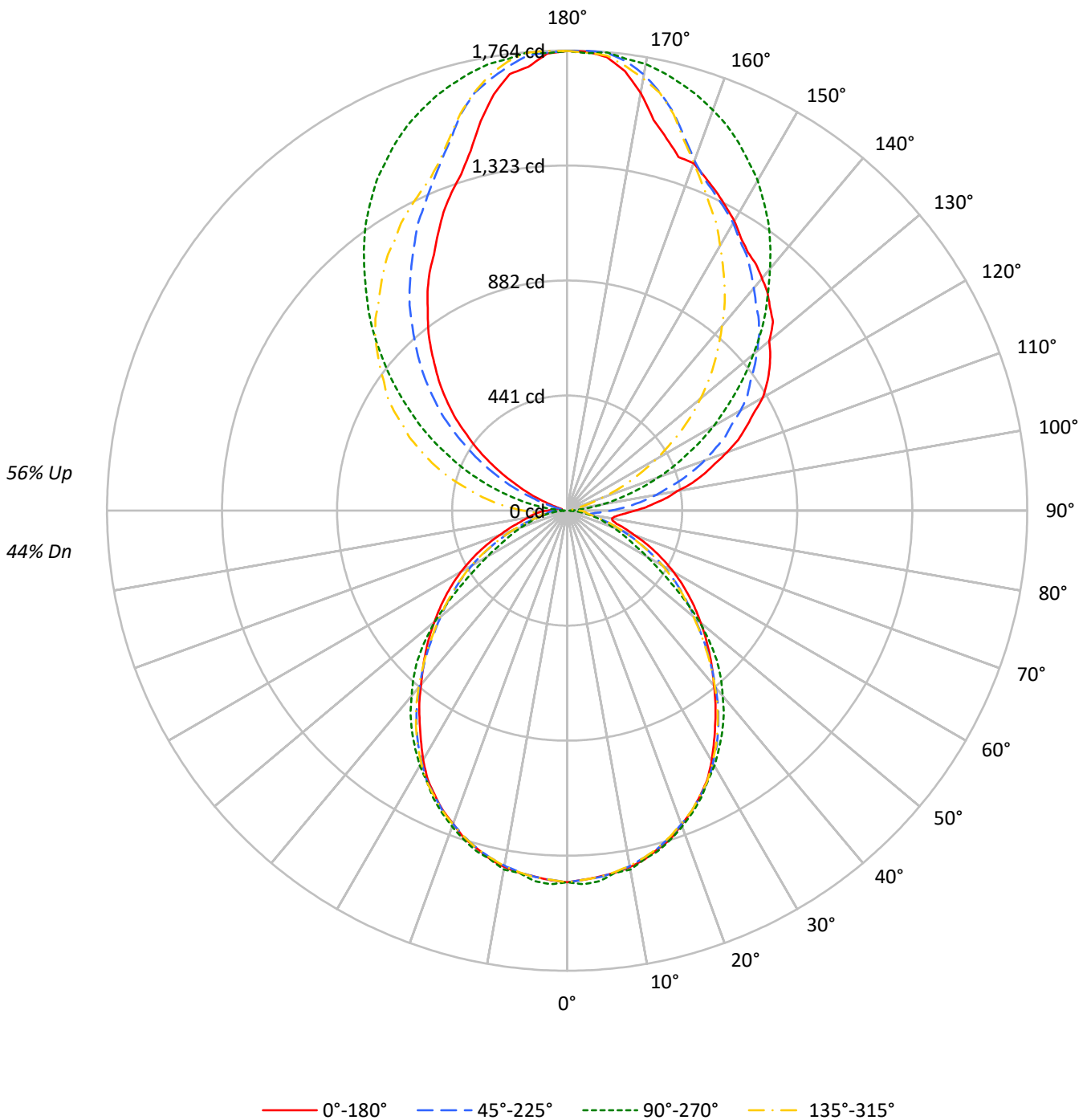
Lumens per Lamp: N/A
Luminaire Lumens: 7565.9 lumens
Efficiency: N/A
Efficacy: 98.1 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 77.1
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43	37
2	88	81	75	70	80	74	69	65	62	58	55	50	48	46	40	38	37	32
3	81	71	64	58	73	66	59	54	55	50	46	45	42	39	36	33	31	27
4	74	63	56	50	67	58	52	46	49	44	40	40	36	34	32	29	27	24
5	68	56	49	43	62	52	45	40	44	39	34	36	32	29	29	26	24	21
6	63	51	43	37	57	47	40	35	40	34	30	33	29	26	26	23	21	18
7	58	46	38	33	53	42	35	31	36	31	27	30	26	23	24	21	19	16
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	15
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	21	18	15	13
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9202	9202	9202	9202
5°	9053	8501	9053	8501
10°	8936	7787	8936	7787
15°	8738	7120	8714	7120
20°	8484	6496	8460	6496
25°	8196	5905	8171	5905
30°	7794	5338	7760	5338
35°	7273	4805	7245	4805
40°	6789	4255	6751	4255
45°	6373	3705	6342	3705
50°	5966	3030	5932	3030
55°	5579	2266	5555	2266
60°	5154	1677	5140	1677
65°	4656	1247	4656	1247
70°	4015	935	4033	935
75°	3531	687	3597	687
80°	4082	442	3528	442
85°	6765	204	4029	204



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.2	1.8
10°-20°	378.5	5.0
20°-30°	556.1	7.3
30°-40°	631.9	8.4
40°-50°	595.5	7.9
50°-60°	475.3	6.3
60°-70°	313.9	4.1
70°-80°	164.7	2.2
80°-90°	102.3	1.4
90°-100°	146.7	1.9
100°-110°	274.7	3.6
110°-120°	468.3	6.2
120°-130°	636.2	8.4
130°-140°	725.6	9.6
140°-150°	723.7	9.6
150°-160°	630.2	8.3
160°-170°	443.3	5.9
170°-180°	165.1	2.2
0°-30°	1068.7	14.1
0°-40°	1700.6	22.5
0°-60°	2771.3	36.6
0°-90°	3352.3	44.3
90°-120°	889.7	11.8
90°-150°	2975.1	39.3
90°-180°	4214.0	55.7
0°-180°	7565.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1425	1425	1425	1425	1425	
5°	1409	1426	1409	1426	1409	134
15°	1343	1350	1340	1350	1343	379
25°	1206	1215	1202	1215	1206	554
35°	990	1036	986	1036	990	620
45°	770	811	767	811	770	595
55°	569	489	567	489	569	510
65°	373	256	373	256	373	368
75°	196	130	200	130	196	220
85°	200	34	119	34	200	159
90°	260	2	74	2	260	144
95°	340	51	46	51	340	298
105°	544	246	21	246	544	572
115°	757	503	175	503	757	751
125°	947	788	431	788	947	846
135°	1100	1075	692	1075	1100	849
145°	1208	1345	931	1345	1208	762
155°	1350	1556	1171	1556	1350	623
165°	1476	1693	1427	1693	1476	419
175°	1745	1763	1707	1763	1745	163
180°	1762	1762	1762	1762	1762	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1424.8	1424.8	1424.8	1424.8	1424.8	1424.8	1424.8	1424.8	1424.8	1424.8	1424.8
2.5°	1417.1	1416.6	1417.0	1425.3	1433.3	1424.0	1417.0	1416.6	1418.3	1416.6	1417.0
5°	1409.1	1411.6	1411.0	1420.0	1426.0	1420.0	1409.8	1411.6	1409.1	1411.6	1409.8
7.5°	1400.3	1404.8	1398.8	1408.0	1401.0	1406.8	1397.6	1403.6	1400.3	1403.6	1397.6
10°	1387.6	1387.8	1383.8	1392.8	1396.8	1391.6	1382.6	1385.3	1387.6	1385.3	1382.6
12.5°	1370.0	1363.8	1362.6	1368.6	1368.3	1368.6	1362.6	1361.3	1367.6	1361.3	1362.6
15°	1343.3	1345.8	1340.6	1346.6	1350.3	1345.3	1339.3	1343.3	1339.6	1343.3	1339.3
17.5°	1319.3	1317.8	1311.6	1315.3	1321.3	1315.3	1310.3	1316.6	1315.6	1316.6	1310.3
20°	1281.3	1283.0	1279.6	1289.3	1289.1	1288.1	1278.3	1280.6	1277.6	1280.6	1278.3
22.5°	1247.0	1249.0	1247.6	1247.3	1254.1	1246.1	1246.3	1246.6	1244.6	1246.6	1246.3
25°	1206.0	1206.0	1206.8	1217.3	1215.1	1216.1	1204.3	1202.3	1202.3	1202.3	1204.3
27.5°	1163.0	1161.0	1168.8	1175.6	1167.1	1174.3	1166.3	1157.3	1159.3	1157.3	1166.3
30°	1108.0	1110.0	1118.0	1135.8	1129.1	1133.3	1114.3	1106.3	1103.1	1106.3	1114.3
32.5°	1048.0	1056.0	1067.0	1090.8	1083.3	1088.3	1063.3	1051.1	1043.1	1051.1	1063.3
35°	989.7	992.8	1009.8	1038.8	1036.1	1035.1	1006.1	989.0	986.0	989.0	1006.1
37.5°	934.7	929.7	950.7	981.7	986.2	978.0	947.0	926.0	931.0	926.0	947.0
40°	875.7	876.7	885.7	922.5	928.2	920.0	880.7	871.7	870.7	871.7	880.7
42.5°	822.7	812.7	820.5	858.5	872.2	856.0	816.7	807.7	817.7	807.7	816.7
45°	770.5	757.5	758.5	791.5	811.2	789.0	753.5	753.7	766.7	753.7	753.5
47.5°	719.5	703.5	695.5	721.2	738.2	720.0	690.5	699.7	715.7	699.7	690.5
50°	667.5	652.5	636.5	652.2	661.0	649.7	631.5	647.5	663.7	647.5	631.5
52.5°	619.5	602.5	582.2	584.2	574.0	581.7	578.5	597.5	615.7	597.5	578.5
55°	569.2	554.2	529.2	513.0	488.7	510.5	525.5	550.5	566.7	550.5	525.5
57.5°	521.2	510.2	478.2	446.0	413.7	443.5	474.5	506.5	518.7	506.5	474.5
60°	471.0	462.0	425.0	378.7	354.7	377.5	422.5	459.5	469.7	459.5	422.5
62.5°	421.0	414.0	371.0	317.7	298.5	316.5	368.5	411.5	419.7	411.5	368.5
65°	372.7	361.7	317.7	267.7	256.5	266.5	316.5	360.5	372.7	360.5	316.5
67.5°	323.7	310.7	268.7	222.5	220.5	222.5	267.5	309.5	323.7	309.5	267.5
70°	273.5	260.5	223.5	184.5	185.5	184.5	223.5	261.7	274.7	261.7	223.5
72.5°	235.5	213.5	183.5	152.5	156.2	151.2	183.5	214.7	238.0	214.7	183.5
75°	196.5	172.5	144.2	121.2	130.2	121.2	145.5	173.7	200.2	173.7	145.5
77.5°	178.4	146.5	112.2	97.2	103.2	97.2	113.5	142.7	173.5	142.7	113.5
80°	174.6	137.9	91.0	73.2	79.2	73.2	88.5	118.0	150.9	118.0	88.5
82.5°	182.4	147.2	90.9	52.2	55.2	52.2	76.0	102.5	135.2	102.5	76.0
85°	200.0	169.5	107.3	44.0	34.2	41.5	71.2	93.7	119.1	93.7	71.2
87.5°	226.8	202.6	132.3	53.6	9.0	36.2	61.4	83.2	98.7	83.2	61.4
90°	260.3	239.8	169.1	71.7	2.2	24.5	46.0	64.5	73.7	64.5	46.0
92.5°	303.0	284.1	206.1	101.3	20.9	15.5	35.7	54.0	59.2	54.0	35.7
95°	340.5	333.0	252.6	133.3	50.7	9.0	28.7	44.5	45.7	44.5	28.7
97.5°	388.2	381.0	299.3	175.1	89.3	15.9	24.5	39.0	40.0	39.0	24.5
100°	428.7	425.5	347.3	228.6	136.6	42.0	17.7	34.9	36.9	34.9	17.7
102.5°	491.6	473.7	392.3	279.6	187.6	78.1	21.7	25.9	28.9	25.9	21.7
105°	544.3	523.9	452.2	333.1	246.0	126.6	50.5	23.9	20.7	23.9	50.5
107.5°	591.8	576.4	507.0	387.8	308.2	182.6	92.8	49.0	34.6	49.0	92.8
110°	651.0	635.1	560.4	443.5	372.9	243.3	141.3	87.8	68.9	87.8	141.3



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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°	710.7	698.5	610.2	500.7	440.0	308.0	201.0	137.6	119.9	137.6	201.0
115°	756.7	749.5	667.4	554.2	503.2	381.3	266.9	196.0	174.6	196.0	266.9
117.5°	805.2	804.0	709.7	608.9	577.8	447.3	327.9	255.5	231.8	255.5	327.9
120°	866.2	856.2	768.1	663.7	648.7	516.9	395.0	322.6	299.0	322.6	395.0
122.5°	908.4	902.2	818.9	715.9	715.9	587.8	460.7	387.3	362.4	387.3	460.7
125°	947.0	944.5	856.2	768.1	788.0	653.7	532.8	458.2	430.8	458.2	532.8
127.5°	981.8	985.5	904.7	825.4	861.4	720.9	603.7	521.6	493.0	521.6	603.7
130°	1011.8	1024.2	950.7	877.6	931.1	794.3	667.2	585.1	566.4	585.1	667.2
132.5°	1070.2	1062.8	998.1	932.1	1005.8	862.4	734.3	648.5	627.4	648.5	734.3
135°	1100.1	1102.6	1039.1	978.1	1075.4	929.6	797.7	713.2	692.0	713.2	797.7
137.5°	1136.1	1128.7	1071.5	1034.2	1140.1	994.4	859.9	781.6	748.0	781.6	859.9
140°	1162.3	1161.0	1113.8	1083.9	1209.8	1057.8	923.4	843.8	812.7	843.8	923.4
142.5°	1189.6	1197.1	1156.0	1138.6	1279.4	1124.9	991.8	904.7	874.9	904.7	991.8
145°	1208.3	1224.4	1198.3	1207.0	1345.3	1199.6	1051.6	963.2	930.8	963.2	1051.6
147.5°	1239.4	1260.5	1229.4	1255.5	1402.5	1265.5	1111.3	1024.2	995.6	1024.2	1111.3
150°	1281.7	1291.6	1273.0	1322.7	1461.0	1338.9	1172.2	1082.7	1054.1	1082.7	1172.2
152.5°	1315.2	1327.7	1306.5	1396.1	1507.0	1406.0	1239.4	1139.9	1106.3	1139.9	1239.4
155°	1350.1	1355.0	1340.1	1467.0	1556.5	1471.9	1292.9	1203.3	1171.0	1203.3	1292.9
157.5°	1382.4	1392.4	1374.9	1520.5	1598.8	1529.2	1353.8	1266.7	1238.1	1266.7	1353.8
160°	1417.2	1417.2	1427.2	1582.6	1633.6	1578.9	1418.5	1336.4	1296.6	1336.4	1418.5
162.5°	1421.0	1444.6	1498.1	1626.2	1667.2	1622.4	1488.1	1386.1	1351.3	1386.1	1488.1
165°	1475.7	1496.8	1577.7	1664.7	1693.3	1661.0	1573.9	1468.2	1427.2	1468.2	1573.9
167.5°	1532.9	1577.7	1642.3	1708.3	1718.2	1697.1	1639.9	1566.5	1529.2	1566.5	1639.9
170°	1625.2	1663.7	1697.1	1724.4	1738.1	1725.7	1680.9	1643.8	1620.2	1643.8	1680.9
172.5°	1698.6	1724.4	1736.9	1754.3	1745.6	1740.6	1718.2	1700.8	1687.4	1700.8	1718.2
175°	1744.6	1750.5	1761.7	1755.5	1763.0	1749.3	1750.5	1759.3	1707.3	1759.3	1750.5
177.5°	1760.7	1770.4	1764.2	1753.0	1754.3	1751.8	1756.8	1761.7	1753.3	1761.7	1756.8
180°	1761.7	1761.7	1761.7	1761.7	1761.7	1761.7	1761.7	1761.7	1761.7	1761.7	1761.7



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1424.8	1424.8	1424.8	1424.8	1424.8	1424.8
2.5°	1424.0	1433.3	1425.3	1417.0	1416.6	1417.1
5°	1420.0	1426.0	1420.0	1411.0	1411.6	1409.1
7.5°	1406.8	1401.0	1408.0	1398.8	1404.8	1400.3
10°	1391.6	1396.8	1392.8	1383.8	1387.8	1387.6
12.5°	1368.6	1368.3	1368.6	1362.6	1363.8	1370.0
15°	1345.3	1350.3	1346.6	1340.6	1345.8	1343.3
17.5°	1315.3	1321.3	1315.3	1311.6	1317.8	1319.3
20°	1288.1	1289.1	1289.3	1279.6	1283.0	1281.3
22.5°	1246.1	1254.1	1247.3	1247.6	1249.0	1247.0
25°	1216.1	1215.1	1217.3	1206.8	1206.0	1206.0
27.5°	1174.3	1167.1	1175.6	1168.8	1161.0	1163.0
30°	1133.3	1129.1	1135.8	1118.0	1110.0	1108.0
32.5°	1088.3	1083.3	1090.8	1067.0	1056.0	1048.0
35°	1035.1	1036.1	1038.8	1009.8	992.8	989.7
37.5°	978.0	986.2	981.7	950.7	929.7	934.7
40°	920.0	928.2	922.5	885.7	876.7	875.7
42.5°	856.0	872.2	858.5	820.5	812.7	822.7
45°	789.0	811.2	791.5	758.5	757.5	770.5
47.5°	720.0	738.2	721.2	695.5	703.5	719.5
50°	649.7	661.0	652.2	636.5	652.5	667.5
52.5°	581.7	574.0	584.2	582.2	602.5	619.5
55°	510.5	488.7	513.0	529.2	554.2	569.2
57.5°	443.5	413.7	446.0	478.2	510.2	521.2
60°	377.5	354.7	378.7	425.0	462.0	471.0
62.5°	316.5	298.5	317.7	371.0	414.0	421.0
65°	266.5	256.5	267.7	317.7	361.7	372.7
67.5°	222.5	220.5	222.5	268.7	310.7	323.7
70°	184.5	185.5	184.5	223.5	260.5	273.5
72.5°	151.2	156.2	152.5	183.5	213.5	235.5
75°	121.2	130.2	121.2	144.2	172.5	196.5
77.5°	97.2	103.2	97.2	112.2	146.5	178.4
80°	73.2	79.2	73.2	91.0	137.9	174.6
82.5°	52.2	55.2	52.2	90.9	147.2	182.4
85°	41.5	34.2	44.0	107.3	169.5	200.0
87.5°	36.2	9.0	53.6	132.3	202.6	226.8
90°	24.5	2.2	71.7	169.1	239.8	260.3
92.5°	15.5	20.9	101.3	206.1	284.1	303.0
95°	9.0	50.7	133.3	252.6	333.0	340.5
97.5°	15.9	89.3	175.1	299.3	381.0	388.2
100°	42.0	136.6	228.6	347.3	425.5	428.7
102.5°	78.1	187.6	279.6	392.3	473.7	491.6
105°	126.6	246.0	333.1	452.2	523.9	544.3
107.5°	182.6	308.2	387.8	507.0	576.4	591.8
110°	243.3	372.9	443.5	560.4	635.1	651.0



TEST NUMBER: P392675

CATALOG NUMBER: MWL-4-42-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	308.0	440.0	500.7	610.2	698.5	710.7
115°	381.3	503.2	554.2	667.4	749.5	756.7
117.5°	447.3	577.8	608.9	709.7	804.0	805.2
120°	516.9	648.7	663.7	768.1	856.2	866.2
122.5°	587.8	715.9	715.9	818.9	902.2	908.4
125°	653.7	788.0	768.1	856.2	944.5	947.0
127.5°	720.9	861.4	825.4	904.7	985.5	981.8
130°	794.3	931.1	877.6	950.7	1024.2	1011.8
132.5°	862.4	1005.8	932.1	998.1	1062.8	1070.2
135°	929.6	1075.4	978.1	1039.1	1102.6	1100.1
137.5°	994.4	1140.1	1034.2	1071.5	1128.7	1136.1
140°	1057.8	1209.8	1083.9	1113.8	1161.0	1162.3
142.5°	1124.9	1279.4	1138.6	1156.0	1197.1	1189.6
145°	1199.6	1345.3	1207.0	1198.3	1224.4	1208.3
147.5°	1265.5	1402.5	1255.5	1229.4	1260.5	1239.4
150°	1338.9	1461.0	1322.7	1273.0	1291.6	1281.7
152.5°	1406.0	1507.0	1396.1	1306.5	1327.7	1315.2
155°	1471.9	1556.5	1467.0	1340.1	1355.0	1350.1
157.5°	1529.2	1598.8	1520.5	1374.9	1392.4	1382.4
160°	1578.9	1633.6	1582.6	1427.2	1417.2	1417.2
162.5°	1622.4	1667.2	1626.2	1498.1	1444.6	1421.0
165°	1661.0	1693.3	1664.7	1577.7	1496.8	1475.7
167.5°	1697.1	1718.2	1708.3	1642.3	1577.7	1532.9
170°	1725.7	1738.1	1724.4	1697.1	1663.7	1625.2
172.5°	1740.6	1745.6	1754.3	1736.9	1724.4	1698.6
175°	1749.3	1763.0	1755.5	1761.7	1750.5	1744.6
177.5°	1751.8	1754.3	1753.0	1764.2	1770.4	1760.7
180°	1761.7	1761.7	1761.7	1761.7	1761.7	1761.7

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