

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: P392674

Luminaire Tested: **MWL-4-42-33-UNV-L835-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392674  
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-L835-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

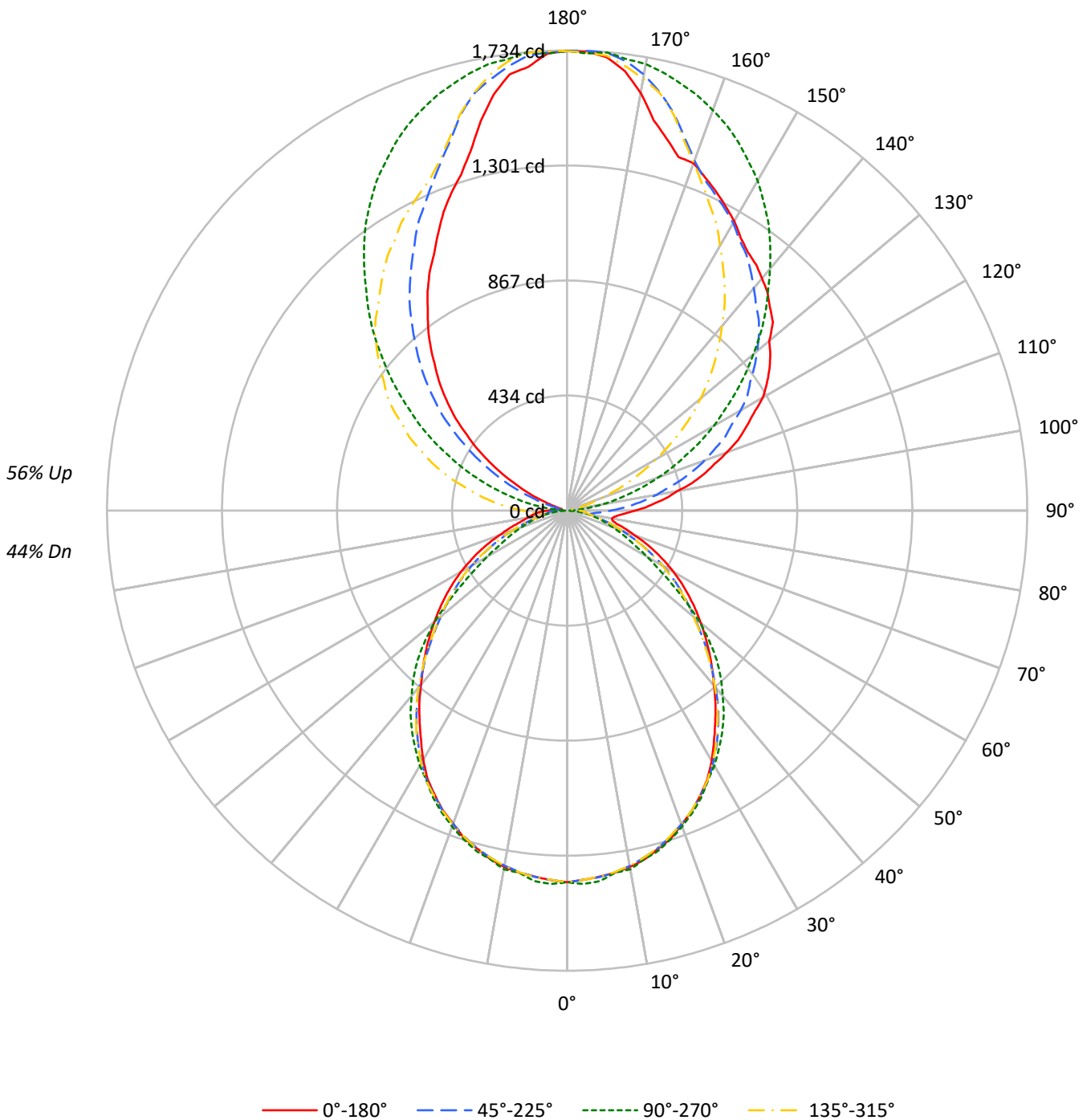
Lumens per Lamp: N/A  
Luminaire Lumens: 7436.0 lumens  
Efficiency: N/A  
Efficacy: 96.4 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: General Diffuse

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	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°	9044	9044	9044	9044
5°	8897	8355	8897	8355
10°	8782	7653	8782	7653
15°	8587	6998	8564	6998
20°	8338	6384	8314	6384
25°	8054	5804	8030	5804
30°	7660	5246	7626	5246
35°	7148	4722	7121	4722
40°	6673	4182	6635	4182
45°	6264	3641	6234	3641
50°	5864	2978	5830	2978
55°	5483	2227	5460	2227
60°	5065	1648	5052	1648
65°	4576	1225	4576	1225
70°	3946	919	3964	919
75°	3470	675	3536	675
80°	4012	434	3467	434
85°	6650	200	3961	200



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.9	1.8
10°-20°	371.9	5.0
20°-30°	546.5	7.3
30°-40°	621.0	8.4
40°-50°	585.3	7.9
50°-60°	467.2	6.3
60°-70°	308.5	4.1
70°-80°	161.9	2.2
80°-90°	100.6	1.4
90°-100°	144.2	1.9
100°-110°	270.0	3.6
110°-120°	460.2	6.2
120°-130°	625.2	8.4
130°-140°	713.1	9.6
140°-150°	711.2	9.6
150°-160°	619.3	8.3
160°-170°	435.7	5.9
170°-180°	162.2	2.2
0°-30°	1050.3	14.1
0°-40°	1671.3	22.5
0°-60°	2723.8	36.6
0°-90°	3294.7	44.3
90°-120°	874.5	11.8
90°-150°	2924.0	39.3
90°-180°	4141.0	55.7
0°-180°	7436.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1400	1400	1400	1400	1400	
5°	1385	1402	1385	1402	1385	132
15°	1320	1327	1317	1327	1320	372
25°	1185	1194	1182	1194	1185	545
35°	973	1018	969	1018	973	609
45°	757	797	754	797	757	585
55°	559	480	557	480	559	501
65°	366	252	366	252	366	362
75°	193	128	197	128	193	216
85°	197	34	117	34	197	156
90°	256	2	72	2	256	141
95°	335	50	45	50	335	293
105°	535	242	20	242	535	563
115°	744	495	172	495	744	738
125°	931	774	423	774	931	831
135°	1081	1057	680	1057	1081	835
145°	1188	1322	915	1322	1188	749
155°	1327	1530	1151	1530	1327	612
165°	1450	1664	1403	1664	1450	411
175°	1715	1733	1678	1733	1715	160
180°	1731	1731	1731	1731	1731	



TEST NUMBER: P392674

CATALOG NUMBER: MWL-4-42-33-UNV-L835-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1400.3	1400.3	1400.3	1400.3	1400.3	1400.3	1400.3	1400.3	1400.3	1400.3	1400.3
2.5°	1392.7	1392.2	1392.6	1400.8	1408.6	1399.5	1392.6	1392.2	1393.9	1392.2	1392.6
5°	1384.9	1387.3	1386.7	1395.6	1401.5	1395.6	1385.5	1387.3	1384.9	1387.3	1385.5
7.5°	1376.2	1380.6	1374.7	1383.8	1376.9	1382.6	1373.6	1379.5	1376.2	1379.5	1373.6
10°	1363.7	1363.9	1360.0	1368.8	1372.8	1367.7	1358.8	1361.5	1363.7	1361.5	1358.8
12.5°	1346.4	1340.3	1339.2	1345.1	1344.8	1345.1	1339.2	1337.9	1344.1	1337.9	1339.2
15°	1320.2	1322.6	1317.5	1323.4	1327.1	1322.2	1316.3	1320.2	1316.6	1320.2	1316.3
17.5°	1296.6	1295.1	1289.0	1292.7	1298.6	1292.7	1287.8	1293.9	1293.0	1293.9	1287.8
20°	1259.2	1260.9	1257.6	1267.1	1266.9	1265.9	1256.3	1258.6	1255.6	1258.6	1256.3
22.5°	1225.5	1227.5	1226.1	1225.8	1232.5	1224.7	1224.8	1225.1	1223.2	1225.1	1224.8
25°	1185.2	1185.2	1186.0	1196.3	1194.2	1195.2	1183.6	1181.6	1181.6	1181.6	1183.6
27.5°	1143.0	1141.0	1148.7	1155.4	1147.0	1154.1	1146.2	1137.4	1139.3	1137.4	1146.2
30°	1088.9	1090.9	1098.7	1116.2	1109.7	1113.8	1095.1	1087.2	1084.1	1087.2	1095.1
32.5°	1029.9	1037.8	1048.6	1072.0	1064.6	1069.6	1045.0	1033.0	1025.1	1033.0	1045.0
35°	972.7	975.7	992.4	1020.9	1018.3	1017.3	988.8	972.1	969.1	972.1	988.8
37.5°	918.7	913.8	934.4	964.9	969.3	961.2	930.8	910.1	915.0	910.1	930.8
40°	860.7	861.7	870.5	906.7	912.3	904.2	865.6	856.8	855.8	856.8	865.6
42.5°	808.6	798.8	806.4	843.8	857.3	841.3	802.7	793.9	803.7	793.9	802.7
45°	757.3	744.5	745.5	777.9	797.3	775.5	740.6	740.8	753.6	740.8	740.6
47.5°	707.2	691.4	683.6	708.8	725.6	707.7	678.7	687.7	703.4	687.7	678.7
50°	656.1	641.3	625.6	641.0	649.7	638.6	620.7	636.4	652.3	636.4	620.7
52.5°	608.9	592.2	572.2	574.2	564.2	571.7	568.6	587.3	605.2	587.3	568.6
55°	559.4	544.7	520.1	504.2	480.3	501.8	516.5	541.1	557.0	541.1	516.5
57.5°	512.3	501.5	470.0	438.4	406.6	435.9	466.4	497.8	509.8	497.8	466.4
60°	462.9	454.1	417.7	372.2	348.6	371.0	415.3	451.6	461.7	451.6	415.3
62.5°	413.8	406.9	364.6	312.3	293.4	311.1	362.2	404.4	412.5	404.4	362.2
65°	366.3	355.5	312.3	263.1	252.1	261.9	311.1	354.3	366.3	354.3	311.1
67.5°	318.2	305.4	264.1	218.7	216.7	218.7	262.9	304.2	318.2	304.2	262.9
70°	268.8	256.0	219.7	181.3	182.3	181.3	219.7	257.2	270.0	257.2	219.7
72.5°	231.5	209.8	180.4	149.9	153.5	148.6	180.4	211.0	233.9	211.0	180.4
75°	193.1	169.5	141.7	119.1	128.0	119.1	143.0	170.7	196.8	170.7	143.0
77.5°	175.3	144.0	110.3	95.5	101.4	95.5	111.6	140.3	170.5	140.3	111.6
80°	171.6	135.5	89.4	71.9	77.8	71.9	87.0	116.0	148.3	116.0	87.0
82.5°	179.3	144.7	89.3	51.3	54.3	51.3	74.7	100.7	132.9	100.7	74.7
85°	196.6	166.6	105.5	43.2	33.6	40.8	70.0	92.1	117.1	92.1	70.0
87.5°	222.9	199.1	130.0	52.7	8.8	35.6	60.3	81.8	97.0	81.8	60.3
90°	255.8	235.7	166.2	70.5	2.2	24.1	45.2	63.4	72.4	63.4	45.2
92.5°	297.8	279.2	202.6	99.6	20.5	15.2	35.1	53.1	58.2	53.1	35.1
95°	334.7	327.3	248.3	131.0	49.8	8.8	28.2	43.7	44.9	43.7	28.2
97.5°	381.5	374.5	294.2	172.1	87.8	15.6	24.1	38.3	39.3	38.3	24.1
100°	421.4	418.2	341.3	224.7	134.3	41.3	17.4	34.3	36.3	34.3	17.4
102.5°	483.2	465.6	385.6	274.8	184.4	76.8	21.3	25.5	28.4	25.5	21.3
105°	535.0	514.9	444.5	327.4	241.8	124.4	49.6	23.5	20.3	23.5	49.6
107.5°	581.7	566.5	498.3	381.2	302.9	179.5	91.2	48.2	34.0	48.2	91.2
110°	639.8	624.2	550.8	435.9	366.5	239.1	138.9	86.3	67.7	86.3	138.9



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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°	698.5	686.5	599.7	492.1	432.5	302.7	197.6	135.2	117.8	135.2	197.6
115°	743.7	736.7	656.0	544.7	494.6	374.8	262.3	192.6	171.6	192.6	262.3
117.5°	791.4	790.2	697.5	598.5	567.9	439.6	322.3	251.1	227.8	251.1	322.3
120°	851.4	841.5	754.9	652.3	637.6	508.0	388.2	317.1	293.9	317.1	388.2
122.5°	892.8	886.7	804.9	703.6	703.6	577.7	452.8	380.7	356.2	380.7	452.8
125°	930.8	928.3	841.5	754.9	774.5	642.5	523.7	450.3	423.4	450.3	523.7
127.5°	965.0	968.6	889.2	811.3	846.6	708.5	593.4	512.7	484.6	512.7	593.4
130°	994.4	1006.6	934.4	862.6	915.1	780.7	655.8	575.1	556.7	575.1	655.8
132.5°	1051.8	1044.5	980.9	916.1	988.5	847.6	721.7	637.4	616.7	637.4	721.7
135°	1081.2	1083.6	1021.2	961.3	1056.9	913.7	784.0	701.0	680.1	701.0	784.0
137.5°	1116.5	1109.3	1053.0	1016.4	1120.5	977.3	845.2	768.2	735.2	768.2	845.2
140°	1142.3	1141.0	1094.6	1065.2	1189.0	1039.6	907.6	829.3	798.8	829.3	907.6
142.5°	1169.1	1176.5	1136.1	1119.0	1257.4	1105.5	974.8	889.2	859.9	889.2	974.8
145°	1187.5	1203.3	1177.7	1186.2	1322.2	1178.9	1033.5	946.7	914.9	946.7	1033.5
147.5°	1218.1	1238.8	1208.2	1233.9	1378.4	1243.7	1092.2	1006.6	978.4	1006.6	1092.2
150°	1259.6	1269.4	1251.1	1299.9	1435.9	1315.9	1152.0	1064.1	1035.9	1064.1	1152.0
152.5°	1292.6	1304.9	1284.0	1372.1	1481.1	1381.8	1218.1	1120.3	1087.2	1120.3	1218.1
155°	1326.9	1331.7	1317.0	1441.8	1529.7	1446.6	1270.7	1182.6	1150.8	1182.6	1270.7
157.5°	1358.6	1368.4	1351.2	1494.4	1571.3	1502.9	1330.5	1244.9	1216.8	1244.9	1330.5
160°	1392.8	1392.8	1402.7	1555.4	1605.5	1551.8	1394.1	1313.4	1274.3	1313.4	1394.1
162.5°	1396.6	1419.8	1472.3	1598.2	1638.5	1594.5	1462.5	1362.3	1328.1	1362.3	1462.5
165°	1450.3	1471.1	1550.6	1636.1	1664.2	1632.4	1546.8	1442.9	1402.7	1442.9	1546.8
167.5°	1506.5	1550.6	1614.1	1678.9	1688.7	1667.9	1611.7	1539.6	1502.9	1539.6	1611.7
170°	1597.3	1635.1	1667.9	1694.8	1708.2	1696.0	1652.0	1615.5	1592.3	1615.5	1652.0
172.5°	1669.4	1694.8	1707.0	1724.1	1715.6	1710.7	1688.7	1671.6	1658.4	1671.6	1688.7
175°	1714.6	1720.4	1731.4	1725.3	1732.7	1719.2	1720.4	1729.1	1678.0	1729.1	1720.4
177.5°	1730.4	1740.0	1733.9	1722.9	1724.1	1721.7	1726.6	1731.4	1723.2	1731.4	1726.6
180°	1731.4	1731.4	1731.4	1731.4	1731.4	1731.4	1731.4	1731.4	1731.4	1731.4	1731.4



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1400.3	1400.3	1400.3	1400.3	1400.3	1400.3
2.5°	1399.5	1408.6	1400.8	1392.6	1392.2	1392.7
5°	1395.6	1401.5	1395.6	1386.7	1387.3	1384.9
7.5°	1382.6	1376.9	1383.8	1374.7	1380.6	1376.2
10°	1367.7	1372.8	1368.8	1360.0	1363.9	1363.7
12.5°	1345.1	1344.8	1345.1	1339.2	1340.3	1346.4
15°	1322.2	1327.1	1323.4	1317.5	1322.6	1320.2
17.5°	1292.7	1298.6	1292.7	1289.0	1295.1	1296.6
20°	1265.9	1266.9	1267.1	1257.6	1260.9	1259.2
22.5°	1224.7	1232.5	1225.8	1226.1	1227.5	1225.5
25°	1195.2	1194.2	1196.3	1186.0	1185.2	1185.2
27.5°	1154.1	1147.0	1155.4	1148.7	1141.0	1143.0
30°	1113.8	1109.7	1116.2	1098.7	1090.9	1088.9
32.5°	1069.6	1064.6	1072.0	1048.6	1037.8	1029.9
35°	1017.3	1018.3	1020.9	992.4	975.7	972.7
37.5°	961.2	969.3	964.9	934.4	913.8	918.7
40°	904.2	912.3	906.7	870.5	861.7	860.7
42.5°	841.3	857.3	843.8	806.4	798.8	808.6
45°	775.5	797.3	777.9	745.5	744.5	757.3
47.5°	707.7	725.6	708.8	683.6	691.4	707.2
50°	638.6	649.7	641.0	625.6	641.3	656.1
52.5°	571.7	564.2	574.2	572.2	592.2	608.9
55°	501.8	480.3	504.2	520.1	544.7	559.4
57.5°	435.9	406.6	438.4	470.0	501.5	512.3
60°	371.0	348.6	372.2	417.7	454.1	462.9
62.5°	311.1	293.4	312.3	364.6	406.9	413.8
65°	261.9	252.1	263.1	312.3	355.5	366.3
67.5°	218.7	216.7	218.7	264.1	305.4	318.2
70°	181.3	182.3	181.3	219.7	256.0	268.8
72.5°	148.6	153.5	149.9	180.4	209.8	231.5
75°	119.1	128.0	119.1	141.7	169.5	193.1
77.5°	95.5	101.4	95.5	110.3	144.0	175.3
80°	71.9	77.8	71.9	89.4	135.5	171.6
82.5°	51.3	54.3	51.3	89.3	144.7	179.3
85°	40.8	33.6	43.2	105.5	166.6	196.6
87.5°	35.6	8.8	52.7	130.0	199.1	222.9
90°	24.1	2.2	70.5	166.2	235.7	255.8
92.5°	15.2	20.5	99.6	202.6	279.2	297.8
95°	8.8	49.8	131.0	248.3	327.3	334.7
97.5°	15.6	87.8	172.1	294.2	374.5	381.5
100°	41.3	134.3	224.7	341.3	418.2	421.4
102.5°	76.8	184.4	274.8	385.6	465.6	483.2
105°	124.4	241.8	327.4	444.5	514.9	535.0
107.5°	179.5	302.9	381.2	498.3	566.5	581.7
110°	239.1	366.5	435.9	550.8	624.2	639.8





TEST NUMBER: P392674

CATALOG NUMBER: MWL-4-42-33-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	302.7	432.5	492.1	599.7	686.5	698.5
115°	374.8	494.6	544.7	656.0	736.7	743.7
117.5°	439.6	567.9	598.5	697.5	790.2	791.4
120°	508.0	637.6	652.3	754.9	841.5	851.4
122.5°	577.7	703.6	703.6	804.9	886.7	892.8
125°	642.5	774.5	754.9	841.5	928.3	930.8
127.5°	708.5	846.6	811.3	889.2	968.6	965.0
130°	780.7	915.1	862.6	934.4	1006.6	994.4
132.5°	847.6	988.5	916.1	980.9	1044.5	1051.8
135°	913.7	1056.9	961.3	1021.2	1083.6	1081.2
137.5°	977.3	1120.5	1016.4	1053.0	1109.3	1116.5
140°	1039.6	1189.0	1065.2	1094.6	1141.0	1142.3
142.5°	1105.5	1257.4	1119.0	1136.1	1176.5	1169.1
145°	1178.9	1322.2	1186.2	1177.7	1203.3	1187.5
147.5°	1243.7	1378.4	1233.9	1208.2	1238.8	1218.1
150°	1315.9	1435.9	1299.9	1251.1	1269.4	1259.6
152.5°	1381.8	1481.1	1372.1	1284.0	1304.9	1292.6
155°	1446.6	1529.7	1441.8	1317.0	1331.7	1326.9
157.5°	1502.9	1571.3	1494.4	1351.2	1368.4	1358.6
160°	1551.8	1605.5	1555.4	1402.7	1392.8	1392.8
162.5°	1594.5	1638.5	1598.2	1472.3	1419.8	1396.6
165°	1632.4	1664.2	1636.1	1550.6	1471.1	1450.3
167.5°	1667.9	1688.7	1678.9	1614.1	1550.6	1506.5
170°	1696.0	1708.2	1694.8	1667.9	1635.1	1597.3
172.5°	1710.7	1715.6	1724.1	1707.0	1694.8	1669.4
175°	1719.2	1732.7	1725.3	1731.4	1720.4	1714.6
177.5°	1721.7	1724.1	1722.9	1733.9	1740.0	1730.4
180°	1731.4	1731.4	1731.4	1731.4	1731.4	1731.4

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