

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: P392545

Luminaire Tested: **MWL-2-35-38-UNV-L835-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392545  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-25 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-2-35-38-UNV-L835-EDD  
Description: MWL 2FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

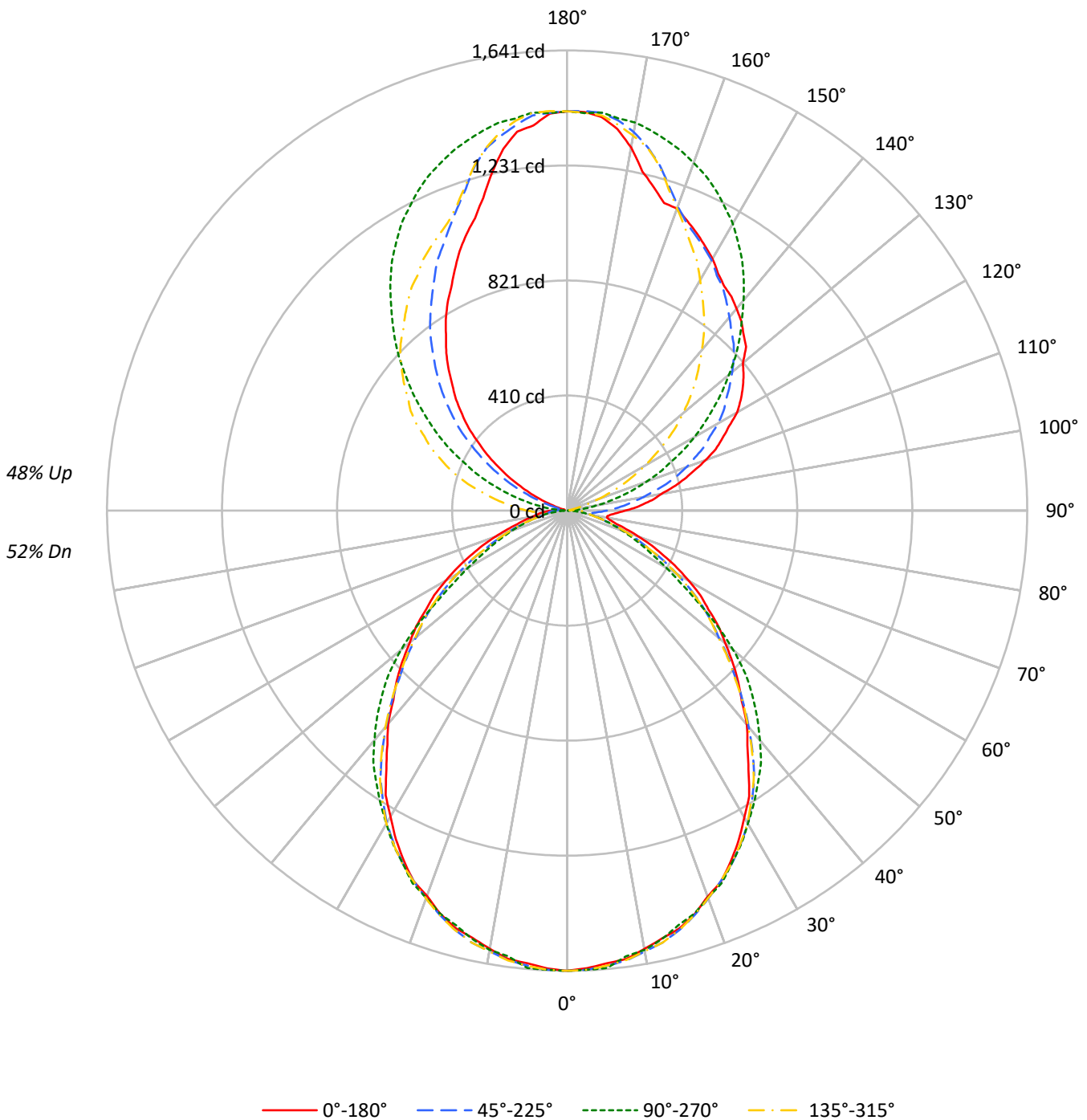
Lumens per Lamp: N/A  
Luminaire Lumens: 7136.0 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.18 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 84.5  
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52				
1	99	94	91	87	91	87	84	81	75	72	70	63	61	60	52	51	50	45				
2	90	83	77	72	83	77	72	67	66	62	59	56	53	50	46	44	43	38				
3	82	73	66	60	76	68	62	57	58	54	50	50	46	43	41	39	37	33				
4	76	65	57	51	70	61	54	49	52	47	43	44	41	37	37	34	32	28				
5	70	58	50	44	64	54	47	42	47	41	37	40	36	33	34	31	28	25				
6	64	52	44	39	59	49	42	37	42	37	33	36	32	29	31	27	25	22				
7	59	47	40	34	55	44	37	32	39	33	29	33	29	26	28	25	22	20				
8	55	43	35	30	51	40	34	29	35	30	26	30	26	23	26	23	20	18				
9	52	39	32	27	48	37	30	26	32	27	23	28	24	21	24	21	18	16				
10	48	36	29	24	45	34	28	23	30	25	21	26	22	19	22	19	17	15				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	21198	21198	21198	21198
5°	20638	19520	20638	19520
10°	20076	17737	20076	17737
15°	19548	16144	19511	16144
20°	18719	14803	18681	14803
25°	17939	13488	17900	13488
30°	16828	12189	16776	12189
35°	15504	10996	15463	10996
40°	14312	9806	14254	9806
45°	13042	8542	12996	8542
50°	11848	7094	11800	7094
55°	10675	5265	10641	5265
60°	9511	3868	9492	3868
65°	8051	2877	8051	2877
70°	6504	2105	6528	2105
75°	5051	1479	5135	1479
80°	4913	938	4262	938
85°	6960	392	4098	392



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.3	2.2
10°-20°	434.0	6.1
20°-30°	636.8	8.9
30°-40°	722.3	10.1
40°-50°	674.2	9.4
50°-60°	529.7	7.4
60°-70°	330.0	4.6
70°-80°	160.2	2.2
80°-90°	90.4	1.3
90°-100°	118.3	1.7
100°-110°	219.6	3.1
110°-120°	378.5	5.3
120°-130°	514.3	7.2
130°-140°	586.9	8.2
140°-150°	585.2	8.2
150°-160°	509.6	7.1
160°-170°	358.2	5.0
170°-180°	133.4	1.9
0°-30°	1225.1	17.2
0°-40°	1947.4	27.3
0°-60°	3151.2	44.2
0°-90°	3731.9	52.3
90°-120°	716.4	10.0
90°-150°	2402.8	33.7
90°-180°	3404.0	47.7
0°-180°	7136.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1641	1641	1641	1641	1641	
5°	1621	1637	1621	1637	1621	154
15°	1543	1531	1540	1531	1543	434
25°	1381	1388	1378	1388	1381	634
35°	1127	1186	1124	1186	1127	707
45°	863	935	860	935	863	665
55°	615	568	613	568	615	554
65°	381	296	381	296	381	380
75°	180	140	183	140	180	202
85°	159	33	94	33	159	127
90°	207	2	56	2	207	115
95°	275	41	37	41	275	239
105°	432	199	9	199	432	456
115°	611	407	142	407	611	606
125°	765	638	348	638	765	683
135°	890	870	560	870	890	687
145°	977	1088	753	1088	977	616
155°	1092	1258	948	1258	1092	504
165°	1194	1368	1155	1368	1194	339
175°	1409	1425	1379	1425	1409	131
180°	1424	1424	1424	1424	1424	



TEST NUMBER: P392545

CATALOG NUMBER: MWL-2-35-38-UNV-L835-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1641.1	1641.1	1641.1	1641.1	1641.1	1641.1	1641.1	1641.1	1641.1	1641.1	1641.1
2.5°	1633.3	1630.4	1639.2	1634.3	1639.2	1633.4	1639.2	1630.4	1634.2	1630.4	1639.2
5°	1620.7	1625.5	1629.5	1626.6	1637.2	1626.6	1628.5	1625.5	1620.7	1625.5	1628.5
7.5°	1613.0	1616.9	1617.9	1614.0	1603.4	1613.1	1616.8	1615.9	1613.0	1615.9	1616.8
10°	1586.9	1599.5	1596.6	1592.8	1590.8	1591.7	1595.6	1597.5	1586.9	1597.5	1595.6
12.5°	1562.8	1565.7	1577.2	1568.5	1564.6	1568.5	1577.2	1563.7	1560.8	1563.7	1577.2
15°	1543.4	1539.6	1548.2	1538.5	1530.8	1537.6	1547.2	1537.6	1540.5	1537.6	1547.2
17.5°	1509.6	1503.8	1512.4	1511.4	1507.6	1511.4	1511.4	1502.7	1506.6	1502.7	1511.4
20°	1465.1	1473.8	1471.8	1473.7	1468.9	1472.8	1470.8	1471.8	1462.1	1471.8	1470.8
22.5°	1432.3	1430.3	1431.2	1434.1	1438.9	1433.1	1430.2	1428.3	1430.2	1428.3	1430.2
25°	1381.0	1378.1	1389.7	1386.7	1387.7	1385.7	1387.7	1375.1	1378.0	1375.1	1387.7
27.5°	1324.9	1323.0	1340.4	1343.2	1343.2	1342.2	1338.4	1320.0	1321.9	1320.0	1338.4
30°	1264.0	1268.9	1289.2	1291.1	1289.1	1289.1	1286.2	1265.9	1260.1	1265.9	1286.2
32.5°	1207.9	1204.1	1226.3	1241.8	1238.8	1239.7	1223.3	1200.1	1204.0	1200.1	1223.3
35°	1126.7	1131.6	1163.5	1182.8	1185.6	1179.8	1160.5	1128.6	1123.7	1128.6	1160.5
37.5°	1056.1	1060.0	1086.1	1124.8	1135.3	1121.8	1083.1	1057.0	1053.1	1057.0	1083.1
40°	997.2	985.6	1007.8	1053.1	1069.6	1051.2	1003.7	981.5	993.1	981.5	1003.7
42.5°	921.7	916.9	930.3	980.6	1003.8	978.7	927.3	912.8	917.7	912.8	927.3
45°	862.7	849.1	851.1	902.3	935.2	900.4	847.1	846.1	859.7	846.1	847.1
47.5°	799.8	782.4	780.5	822.1	863.6	821.1	776.5	779.4	796.8	779.4	776.5
50°	736.0	727.3	708.0	737.9	773.7	735.9	704.0	723.3	733.0	723.3	704.0
52.5°	680.9	669.3	647.0	665.4	675.1	663.4	644.0	665.3	677.9	665.3	644.0
55°	615.1	610.3	585.2	586.1	567.7	584.1	582.2	607.3	613.1	607.3	582.2
57.5°	563.9	557.1	519.4	502.0	478.7	500.0	516.4	554.1	561.9	554.1	516.4
60°	501.0	493.3	451.7	420.7	409.1	419.7	449.7	491.3	500.0	491.3	449.7
62.5°	442.1	433.4	388.9	349.1	344.3	348.2	386.9	431.3	441.0	431.3	386.9
65°	381.1	366.5	322.1	289.2	296.0	288.2	321.1	365.6	381.1	365.6	321.1
67.5°	326.9	304.7	270.8	239.9	250.5	239.9	269.9	303.7	326.9	303.7	269.9
70°	270.8	246.7	222.5	197.3	208.9	197.3	222.5	247.6	271.8	247.6	222.5
72.5°	221.5	199.3	179.0	161.6	171.1	160.5	179.0	200.2	223.5	200.2	179.0
75°	179.9	155.8	138.3	127.6	140.2	127.6	139.3	156.7	182.9	156.7	139.3
77.5°	156.1	131.7	103.5	99.6	111.2	99.6	104.5	128.7	152.0	128.7	104.5
80°	144.1	124.5	83.3	74.5	84.1	74.5	81.3	108.5	125.0	108.5	81.3
82.5°	145.0	130.1	81.8	52.2	56.1	52.2	69.8	94.0	106.8	94.0	69.8
85°	158.8	146.8	93.3	42.7	32.9	40.7	64.1	85.5	93.5	85.5	64.1
87.5°	179.4	174.2	113.7	49.0	9.7	35.0	56.5	77.8	76.0	77.8	56.5
90°	206.9	202.8	142.1	60.4	1.9	22.3	42.7	61.1	56.4	61.1	42.7
92.5°	244.3	235.2	171.5	80.0	17.0	10.7	33.9	49.5	47.6	49.5	33.9
95°	274.8	269.8	204.0	105.4	41.1	5.0	23.3	36.8	36.8	36.8	23.3
97.5°	311.2	303.3	236.6	141.6	72.2	13.1	14.7	27.3	30.2	27.3	14.7
100°	339.8	334.0	275.1	184.7	110.4	34.1	9.0	18.7	23.5	18.7	9.0
102.5°	387.3	373.4	315.3	225.9	151.6	63.2	16.1	11.9	13.8	11.9	16.1
105°	431.7	417.6	365.4	269.1	198.8	102.4	41.1	14.0	9.0	14.0	41.1
107.5°	474.8	464.8	409.6	314.2	249.0	148.5	75.2	39.1	25.0	39.1	75.2
110°	525.1	513.0	452.8	358.4	302.2	196.8	114.4	71.3	55.1	71.3	114.4



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CATALOG NUMBER: MWL-2-35-38-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	573.3	564.3	492.9	404.5	356.4	249.0	162.6	111.4	96.3	111.4	162.6
115°	611.4	605.4	539.1	447.8	406.6	308.1	215.8	158.6	141.5	158.6	215.8
117.5°	650.5	649.6	574.2	492.0	466.8	361.4	266.0	206.7	187.7	206.7	266.0
120°	699.7	691.7	621.4	537.1	525.0	418.6	320.2	261.0	241.9	261.0	320.2
122.5°	733.9	728.8	661.6	579.3	579.3	475.8	372.4	313.2	293.1	313.2	372.4
125°	765.0	763.0	691.7	621.4	637.5	529.1	430.7	370.4	348.3	370.4	430.7
127.5°	793.1	796.1	730.9	667.6	696.7	583.3	487.9	421.7	398.6	421.7	487.9
130°	818.2	827.3	768.0	709.8	753.0	642.5	539.1	472.8	458.7	472.8	539.1
132.5°	865.4	859.4	806.2	754.0	814.2	697.7	593.3	525.0	507.9	525.0	593.3
135°	889.5	891.5	840.3	791.1	870.4	752.0	645.5	577.2	560.1	577.2	645.5
137.5°	918.6	912.6	866.4	836.3	922.6	804.2	695.7	632.4	605.4	632.4	695.7
140°	939.7	938.7	900.6	876.5	978.9	855.4	746.9	682.6	657.6	682.6	746.9
142.5°	961.8	967.9	934.7	920.7	1035.1	909.6	802.1	731.8	707.8	731.8	802.1
145°	976.9	989.9	968.8	975.9	1088.3	969.8	850.4	779.0	752.9	779.0	850.4
147.5°	1002.0	1019.0	994.0	1015.0	1134.6	1023.1	898.5	828.2	805.1	828.2	898.5
150°	1037.1	1045.1	1030.0	1069.3	1181.7	1082.3	948.7	876.4	853.3	876.4	948.7
152.5°	1064.2	1074.2	1057.2	1128.5	1218.9	1136.5	1003.0	922.6	895.5	922.6	1003.0
155°	1092.3	1096.4	1083.3	1185.7	1258.0	1189.8	1045.1	973.9	947.7	973.9	1045.1
157.5°	1118.4	1126.4	1111.4	1228.9	1292.2	1235.9	1094.3	1025.0	1001.9	1025.0	1094.3
160°	1146.5	1146.5	1153.6	1279.1	1319.3	1276.1	1146.5	1081.3	1049.1	1081.3	1146.5
162.5°	1149.5	1167.6	1210.8	1314.2	1346.4	1311.2	1202.8	1120.4	1093.3	1120.4	1202.8
165°	1193.7	1209.8	1275.0	1345.3	1367.5	1342.3	1272.0	1186.8	1154.6	1186.8	1272.0
167.5°	1239.0	1275.0	1327.3	1379.6	1387.6	1370.5	1325.3	1266.0	1235.9	1266.0	1325.3
170°	1314.2	1345.3	1370.5	1393.6	1404.6	1394.5	1357.4	1329.3	1310.2	1329.3	1357.4
172.5°	1372.5	1393.6	1402.7	1417.7	1410.6	1406.6	1387.6	1374.5	1363.5	1374.5	1387.6
175°	1408.7	1413.7	1423.7	1418.7	1424.7	1413.7	1414.7	1420.8	1378.6	1420.8	1414.7
177.5°	1422.7	1429.7	1425.7	1417.7	1418.6	1416.6	1419.7	1422.7	1416.7	1422.7	1419.7
180°	1423.7	1423.7	1423.7	1423.7	1423.7	1423.7	1423.7	1423.7	1423.7	1423.7	1423.7



TEST NUMBER: P392545

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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1641.1	1641.1	1641.1	1641.1	1641.1	1641.1
2.5°	1633.4	1639.2	1634.3	1639.2	1630.4	1633.3
5°	1626.6	1637.2	1626.6	1629.5	1625.5	1620.7
7.5°	1613.1	1603.4	1614.0	1617.9	1616.9	1613.0
10°	1591.7	1590.8	1592.8	1596.6	1599.5	1586.9
12.5°	1568.5	1564.6	1568.5	1577.2	1565.7	1562.8
15°	1537.6	1530.8	1538.5	1548.2	1539.6	1543.4
17.5°	1511.4	1507.6	1511.4	1512.4	1503.8	1509.6
20°	1472.8	1468.9	1473.7	1471.8	1473.8	1465.1
22.5°	1433.1	1438.9	1434.1	1431.2	1430.3	1432.3
25°	1385.7	1387.7	1386.7	1389.7	1378.1	1381.0
27.5°	1342.2	1343.2	1343.2	1340.4	1323.0	1324.9
30°	1289.1	1289.1	1291.1	1289.2	1268.9	1264.0
32.5°	1239.7	1238.8	1241.8	1226.3	1204.1	1207.9
35°	1179.8	1185.6	1182.8	1163.5	1131.6	1126.7
37.5°	1121.8	1135.3	1124.8	1086.1	1060.0	1056.1
40°	1051.2	1069.6	1053.1	1007.8	985.6	997.2
42.5°	978.7	1003.8	980.6	930.3	916.9	921.7
45°	900.4	935.2	902.3	851.1	849.1	862.7
47.5°	821.1	863.6	822.1	780.5	782.4	799.8
50°	735.9	773.7	737.9	708.0	727.3	736.0
52.5°	663.4	675.1	665.4	647.0	669.3	680.9
55°	584.1	567.7	586.1	585.2	610.3	615.1
57.5°	500.0	478.7	502.0	519.4	557.1	563.9
60°	419.7	409.1	420.7	451.7	493.3	501.0
62.5°	348.2	344.3	349.1	388.9	433.4	442.1
65°	288.2	296.0	289.2	322.1	366.5	381.1
67.5°	239.9	250.5	239.9	270.8	304.7	326.9
70°	197.3	208.9	197.3	222.5	246.7	270.8
72.5°	160.5	171.1	161.6	179.0	199.3	221.5
75°	127.6	140.2	127.6	138.3	155.8	179.9
77.5°	99.6	111.2	99.6	103.5	131.7	156.1
80°	74.5	84.1	74.5	83.3	124.5	144.1
82.5°	52.2	56.1	52.2	81.8	130.1	145.0
85°	40.7	32.9	42.7	93.3	146.8	158.8
87.5°	35.0	9.7	49.0	113.7	174.2	179.4
90°	22.3	1.9	60.4	142.1	202.8	206.9
92.5°	10.7	17.0	80.0	171.5	235.2	244.3
95°	5.0	41.1	105.4	204.0	269.8	274.8
97.5°	13.1	72.2	141.6	236.6	303.3	311.2
100°	34.1	110.4	184.7	275.1	334.0	339.8
102.5°	63.2	151.6	225.9	315.3	373.4	387.3
105°	102.4	198.8	269.1	365.4	417.6	431.7
107.5°	148.5	249.0	314.2	409.6	464.8	474.8
110°	196.8	302.2	358.4	452.8	513.0	525.1





TEST NUMBER: P392545

CATALOG NUMBER: MWL-2-35-38-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	249.0	356.4	404.5	492.9	564.3	573.3
115°	308.1	406.6	447.8	539.1	605.4	611.4
117.5°	361.4	466.8	492.0	574.2	649.6	650.5
120°	418.6	525.0	537.1	621.4	691.7	699.7
122.5°	475.8	579.3	579.3	661.6	728.8	733.9
125°	529.1	637.5	621.4	691.7	763.0	765.0
127.5°	583.3	696.7	667.6	730.9	796.1	793.1
130°	642.5	753.0	709.8	768.0	827.3	818.2
132.5°	697.7	814.2	754.0	806.2	859.4	865.4
135°	752.0	870.4	791.1	840.3	891.5	889.5
137.5°	804.2	922.6	836.3	866.4	912.6	918.6
140°	855.4	978.9	876.5	900.6	938.7	939.7
142.5°	909.6	1035.1	920.7	934.7	967.9	961.8
145°	969.8	1088.3	975.9	968.8	989.9	976.9
147.5°	1023.1	1134.6	1015.0	994.0	1019.0	1002.0
150°	1082.3	1181.7	1069.3	1030.0	1045.1	1037.1
152.5°	1136.5	1218.9	1128.5	1057.2	1074.2	1064.2
155°	1189.8	1258.0	1185.7	1083.3	1096.4	1092.3
157.5°	1235.9	1292.2	1228.9	1111.4	1126.4	1118.4
160°	1276.1	1319.3	1279.1	1153.6	1146.5	1146.5
162.5°	1311.2	1346.4	1314.2	1210.8	1167.6	1149.5
165°	1342.3	1367.5	1345.3	1275.0	1209.8	1193.7
167.5°	1370.5	1387.6	1379.6	1327.3	1275.0	1239.0
170°	1394.5	1404.6	1393.6	1370.5	1345.3	1314.2
172.5°	1406.6	1410.6	1417.7	1402.7	1393.6	1372.5
175°	1413.7	1424.7	1418.7	1423.7	1413.7	1408.7
177.5°	1416.6	1418.6	1417.7	1425.7	1429.7	1422.7
180°	1423.7	1423.7	1423.7	1423.7	1423.7	1423.7

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