

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: P392599

Luminaire Tested: **MWL-3-37-33-UNV-L835-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392599
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-3-37-33-UNV-L835-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

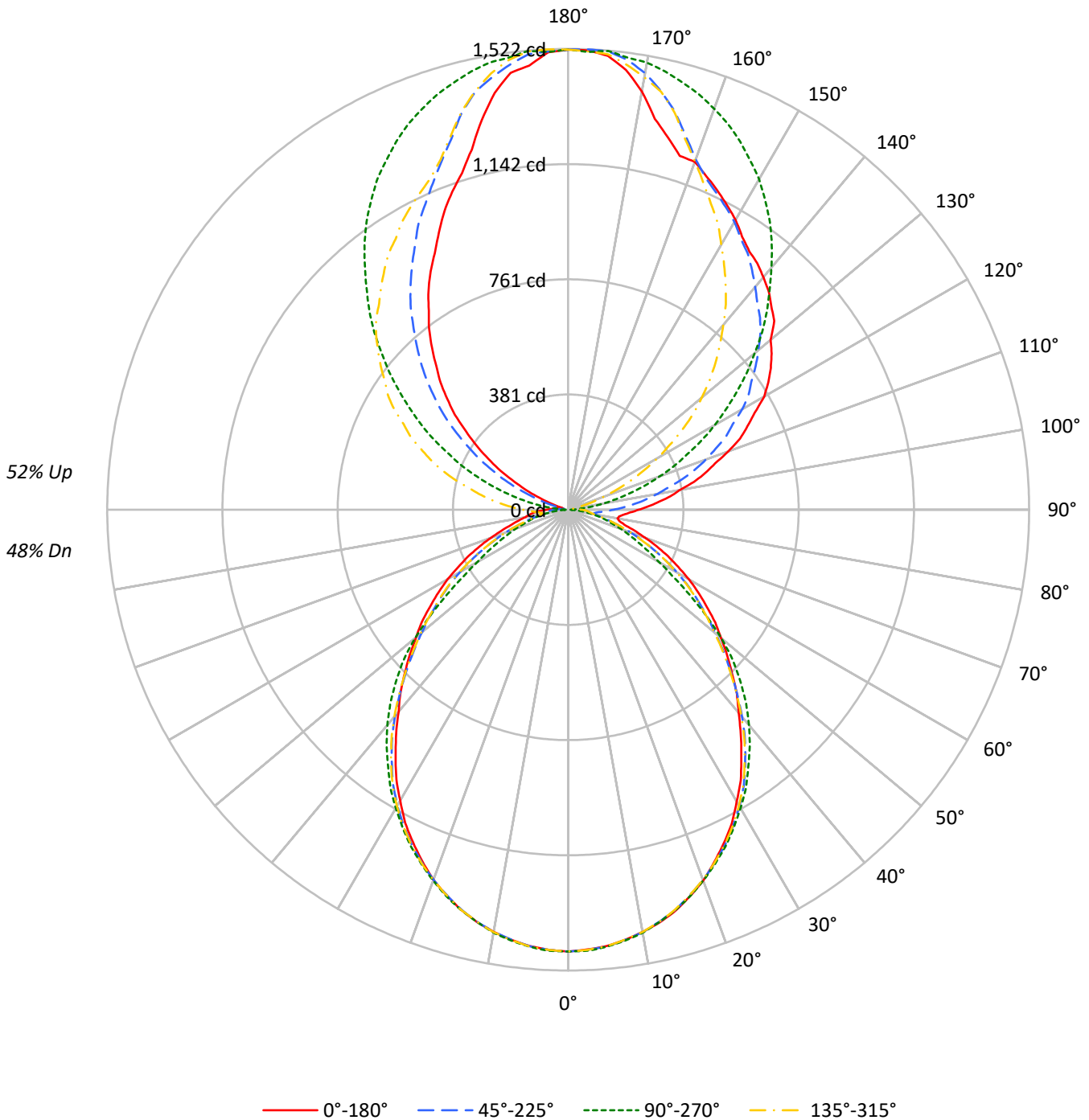
Lumens per Lamp: N/A
Luminaire Lumens: 6983.0 lumens
Efficiency: N/A
Efficacy: 97.5 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 71.6
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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48	48	48	48	
1	97	93	89	86	89	86	83	80	72	70	68	60	58	56	48	47	46	41	41	41	41	
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	35	35	35	35	
3	81	72	65	59	75	67	60	55	56	52	48	47	44	41	38	36	34	30	30	30	30	
4	75	64	56	50	68	59	53	47	50	45	41	42	38	35	34	32	29	26	26	26	26	
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	31	28	26	23	23	23	23	
6	63	51	43	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20	20	20	20	
7	59	46	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18	18	18	18	
8	54	42	35	29	50	39	33	28	34	28	25	29	25	21	24	21	18	16	16	16	16	
9	51	39	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	15	15	15	15	
10	47	35	28	24	44	33	27	22	29	24	20	24	20	18	21	17	15	13	13	13	13	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12564	12564	12564	12564
5°	12359	11520	12359	11520
10°	12084	10546	12084	10546
15°	11782	9623	11755	9623
20°	11375	8758	11347	8758
25°	10846	7957	10818	7957
30°	10247	7177	10208	7177
35°	9544	6407	9513	6407
40°	8812	5679	8770	5679
45°	8182	4898	8148	4898
50°	7564	4033	7526	4033
55°	6987	3016	6961	3016
60°	6390	2189	6376	2189
65°	5699	1645	5699	1645
70°	4911	1243	4931	1243
75°	4203	899	4275	899
80°	4594	578	4028	578
85°	7037	250	4376	250



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.2	2.0
10°-20°	385.2	5.5
20°-30°	562.1	8.1
30°-40°	635.4	9.1
40°-50°	594.3	8.5
50°-60°	469.2	6.7
60°-70°	306.9	4.4
70°-80°	160.2	2.3
80°-90°	95.7	1.4
90°-100°	129.3	1.9
100°-110°	236.8	3.4
110°-120°	403.9	5.8
120°-130°	548.7	7.9
130°-140°	625.7	9.0
140°-150°	624.1	8.9
150°-160°	543.5	7.8
160°-170°	382.3	5.5
170°-180°	142.4	2.0
0°-30°	1084.6	15.5
0°-40°	1720.0	24.6
0°-60°	2783.5	39.9
0°-90°	3346.4	47.9
90°-120°	770.0	11.0
90°-150°	2568.4	36.8
90°-180°	3637.0	52.1
0°-180°	6983.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1459	1459	1459	1459	1459	
5°	1447	1449	1447	1449	1447	137
15°	1371	1369	1368	1369	1371	386
25°	1215	1228	1212	1228	1215	559
35°	996	1036	993	1036	996	623
45°	765	804	762	804	765	592
55°	558	488	556	488	558	500
65°	363	254	363	254	363	359
75°	192	128	195	128	192	214
85°	184	32	115	32	184	147
90°	232	2	71	2	232	128
95°	301	44	46	44	301	262
105°	468	212	16	212	468	494
115°	653	434	151	434	653	648
125°	816	680	371	680	816	729
135°	949	928	597	928	949	732
145°	1042	1161	803	1161	1042	657
155°	1164	1342	1010	1342	1164	537
165°	1273	1460	1231	1460	1273	361
175°	1505	1521	1472	1521	1505	140
180°	1520	1520	1520	1520	1520	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1459.1	1459.1	1459.1	1459.1	1459.1	1459.1	1459.1	1459.1	1459.1	1459.1	1459.1
2.5°	1454.0	1457.1	1455.2	1456.3	1458.3	1455.2	1455.2	1457.1	1455.0	1457.1	1455.2
5°	1447.1	1449.2	1448.4	1448.4	1449.3	1448.4	1447.3	1449.2	1447.1	1449.2	1447.3
7.5°	1433.4	1436.5	1433.5	1435.6	1435.6	1434.5	1432.5	1435.5	1433.4	1435.5	1432.5
10°	1415.8	1418.8	1416.8	1416.8	1418.8	1415.8	1415.8	1416.7	1415.8	1416.7	1415.8
12.5°	1396.3	1396.2	1393.2	1395.2	1394.1	1395.2	1393.2	1394.1	1394.2	1394.1	1393.2
15°	1370.8	1368.7	1367.7	1368.7	1368.6	1367.6	1366.6	1366.6	1367.7	1366.6	1366.6
17.5°	1338.4	1339.2	1335.2	1338.1	1338.1	1338.1	1334.2	1338.2	1335.2	1338.2	1334.2
20°	1304.0	1302.9	1301.8	1303.7	1303.6	1302.6	1300.7	1300.8	1300.8	1300.8	1300.7
22.5°	1259.7	1262.6	1263.5	1267.3	1266.2	1266.2	1262.4	1260.5	1257.6	1260.5	1262.4
25°	1215.4	1220.4	1223.2	1229.0	1227.9	1227.9	1221.1	1217.2	1212.3	1217.2	1221.1
27.5°	1169.2	1170.2	1179.0	1187.8	1183.7	1186.7	1176.9	1167.1	1166.1	1167.1	1176.9
30°	1113.2	1118.1	1130.9	1140.6	1138.5	1138.6	1127.8	1115.0	1109.0	1115.0	1127.8
32.5°	1060.2	1062.1	1078.8	1090.5	1091.4	1088.5	1075.7	1057.9	1055.9	1057.9	1075.7
35°	996.2	1001.1	1018.8	1039.4	1036.3	1036.3	1015.6	997.9	993.0	997.9	1015.6
37.5°	936.2	939.2	958.8	984.4	984.3	981.2	955.7	936.0	933.1	936.0	955.7
40°	875.3	874.3	893.0	921.5	929.2	919.3	888.8	870.1	871.1	870.1	888.8
42.5°	824.2	812.4	825.2	856.6	869.3	854.5	821.9	808.2	820.0	808.2	821.9
45°	765.2	753.4	760.3	789.8	804.4	787.6	756.0	750.2	762.0	750.2	756.0
47.5°	712.1	697.4	696.4	717.9	738.6	716.9	692.1	694.2	708.9	694.2	692.1
50°	658.1	644.3	634.5	649.1	659.9	647.0	630.2	640.0	654.8	640.0	630.2
52.5°	611.9	593.2	576.4	580.3	572.4	578.2	573.2	588.9	608.7	588.9	573.2
55°	557.7	545.9	522.4	509.5	487.8	507.3	519.1	542.7	555.6	542.7	519.1
57.5°	509.6	498.8	470.3	439.7	409.1	437.5	467.0	495.5	507.4	495.5	467.0
60°	460.3	449.5	415.1	370.8	347.2	369.7	413.0	447.4	459.3	447.4	413.0
62.5°	409.2	402.4	363.0	312.8	299.0	311.7	360.9	400.2	408.2	400.2	360.9
65°	363.0	351.2	310.9	262.7	253.8	261.6	309.8	350.1	363.0	350.1	309.8
67.5°	315.8	301.0	262.7	218.4	217.4	218.4	261.6	300.0	315.8	300.0	261.6
70°	269.5	252.8	217.4	181.0	185.0	181.0	217.4	253.9	270.6	253.9	217.4
72.5°	229.2	206.6	178.1	148.6	152.4	147.5	178.1	207.7	231.4	207.7	178.1
75°	191.8	166.3	141.6	119.0	127.9	119.0	142.7	167.4	195.1	167.4	142.7
77.5°	172.9	140.1	109.2	93.5	102.3	93.5	110.3	136.9	168.6	136.9	110.3
80°	165.6	131.5	88.8	71.8	77.7	71.8	86.7	114.4	145.2	114.4	86.7
82.5°	169.7	136.5	86.0	51.2	55.1	51.2	73.1	97.9	128.9	97.9	73.1
85°	184.3	154.9	97.8	41.7	31.5	39.5	66.6	89.4	114.6	89.4	66.6
87.5°	205.3	182.8	120.1	48.8	8.8	33.9	58.9	79.8	94.7	79.8	58.9
90°	232.3	213.8	149.9	63.6	2.1	22.8	43.6	62.5	71.4	62.5	43.6
92.5°	266.8	250.0	182.7	88.0	18.2	14.0	35.7	51.5	56.5	51.5	35.7
95°	300.8	292.4	220.9	114.6	43.9	7.3	27.8	43.4	46.5	43.4	27.8
97.5°	340.1	331.9	258.4	151.3	77.2	13.9	21.2	36.8	39.7	36.8	21.2
100°	373.2	368.2	298.8	197.3	117.9	36.4	14.3	31.2	35.1	31.2	14.3
102.5°	425.6	408.7	337.9	241.4	162.0	67.5	18.1	22.3	26.2	22.3	18.1
105°	468.2	448.3	390.5	287.6	212.4	109.4	43.8	16.8	16.3	16.8	43.8
107.5°	508.4	496.7	437.7	334.7	266.0	157.6	80.3	41.7	27.6	41.7	80.3
110°	562.1	548.2	483.8	382.0	321.9	209.2	122.2	76.0	59.9	76.0	122.2



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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°	613.7	603.0	526.8	431.4	379.9	265.0	173.7	118.9	103.8	118.9	173.7
115°	653.4	647.0	576.1	477.5	433.5	328.4	230.6	169.4	151.1	169.4	230.6
117.5°	694.3	693.2	612.7	524.7	497.9	385.2	283.1	219.9	199.4	219.9	283.1
120°	746.8	738.2	663.1	572.0	559.0	445.3	341.1	277.7	257.4	277.7	341.1
122.5°	783.3	777.9	706.0	618.0	618.0	507.4	397.0	333.6	312.1	333.6	397.0
125°	816.5	814.5	738.2	663.1	680.3	564.3	459.2	394.8	371.2	394.8	459.2
127.5°	846.6	849.8	780.1	712.4	743.6	622.3	520.3	449.5	424.9	449.5	520.3
130°	872.3	883.1	819.8	757.5	803.6	685.6	575.0	504.3	488.2	504.3	575.0
132.5°	922.8	916.4	860.5	803.6	868.1	743.6	633.0	559.0	540.7	559.0	633.0
135°	948.6	950.7	895.9	843.3	928.2	801.6	687.8	614.7	596.6	614.7	687.8
137.5°	979.7	973.3	923.8	891.7	984.0	857.3	741.4	673.8	644.8	673.8	741.4
140°	1002.3	1001.2	960.4	934.6	1044.0	912.0	796.2	727.5	700.6	727.5	796.2
142.5°	1025.9	1032.2	996.9	981.8	1104.2	970.0	855.2	780.1	754.3	780.1	855.2
145°	1042.0	1055.9	1033.3	1040.9	1161.1	1034.4	906.7	830.5	802.6	830.5	906.7
147.5°	1068.8	1087.0	1060.2	1082.8	1210.4	1091.3	958.2	883.1	858.4	883.1	958.2
150°	1105.3	1113.8	1097.7	1140.6	1260.8	1154.6	1010.8	933.6	908.9	933.6	1010.8
152.5°	1134.3	1145.0	1126.7	1204.0	1300.5	1212.6	1068.8	982.9	953.9	982.9	1068.8
155°	1164.3	1168.6	1155.7	1265.2	1342.4	1269.5	1114.9	1037.6	1009.7	1037.6	1114.9
157.5°	1192.1	1200.8	1185.8	1311.4	1379.0	1318.8	1167.5	1092.4	1067.7	1092.4	1167.5
160°	1222.2	1222.2	1230.9	1365.0	1409.0	1361.8	1223.3	1152.4	1118.1	1152.4	1223.3
162.5°	1225.5	1245.8	1292.0	1402.6	1437.9	1399.3	1283.4	1195.4	1165.3	1195.4	1283.4
165°	1272.6	1290.9	1360.7	1435.8	1460.4	1432.6	1357.5	1266.2	1230.9	1266.2	1357.5
167.5°	1322.1	1360.7	1416.5	1473.4	1482.0	1463.7	1414.4	1351.1	1318.8	1351.1	1414.4
170°	1402.6	1435.8	1463.7	1487.4	1499.2	1488.4	1449.7	1418.7	1398.2	1418.7	1449.7
172.5°	1464.9	1487.4	1498.1	1513.1	1505.6	1501.2	1482.0	1466.9	1455.2	1466.9	1482.0
175°	1504.6	1509.9	1519.5	1514.2	1520.6	1508.8	1509.9	1517.4	1472.4	1517.4	1509.9
177.5°	1518.5	1527.1	1521.7	1512.0	1513.1	1511.0	1515.2	1519.5	1512.1	1519.5	1515.2
180°	1519.5	1519.5	1519.5	1519.5	1519.5	1519.5	1519.5	1519.5	1519.5	1519.5	1519.5



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1459.1	1459.1	1459.1	1459.1	1459.1	1459.1
2.5°	1455.2	1458.3	1456.3	1455.2	1457.1	1454.0
5°	1448.4	1449.3	1448.4	1448.4	1449.2	1447.1
7.5°	1434.5	1435.6	1435.6	1433.5	1436.5	1433.4
10°	1415.8	1418.8	1416.8	1416.8	1418.8	1415.8
12.5°	1395.2	1394.1	1395.2	1393.2	1396.2	1396.3
15°	1367.6	1368.6	1368.7	1367.7	1368.7	1370.8
17.5°	1338.1	1338.1	1338.1	1335.2	1339.2	1338.4
20°	1302.6	1303.6	1303.7	1301.8	1302.9	1304.0
22.5°	1266.2	1266.2	1267.3	1263.5	1262.6	1259.7
25°	1227.9	1227.9	1229.0	1223.2	1220.4	1215.4
27.5°	1186.7	1183.7	1187.8	1179.0	1170.2	1169.2
30°	1138.6	1138.5	1140.6	1130.9	1118.1	1113.2
32.5°	1088.5	1091.4	1090.5	1078.8	1062.1	1060.2
35°	1036.3	1036.3	1039.4	1018.8	1001.1	996.2
37.5°	981.2	984.3	984.4	958.8	939.2	936.2
40°	919.3	929.2	921.5	893.0	874.3	875.3
42.5°	854.5	869.3	856.6	825.2	812.4	824.2
45°	787.6	804.4	789.8	760.3	753.4	765.2
47.5°	716.9	738.6	717.9	696.4	697.4	712.1
50°	647.0	659.9	649.1	634.5	644.3	658.1
52.5°	578.2	572.4	580.3	576.4	593.2	611.9
55°	507.3	487.8	509.5	522.4	545.9	557.7
57.5°	437.5	409.1	439.7	470.3	498.8	509.6
60°	369.7	347.2	370.8	415.1	449.5	460.3
62.5°	311.7	299.0	312.8	363.0	402.4	409.2
65°	261.6	253.8	262.7	310.9	351.2	363.0
67.5°	218.4	217.4	218.4	262.7	301.0	315.8
70°	181.0	185.0	181.0	217.4	252.8	269.5
72.5°	147.5	152.4	148.6	178.1	206.6	229.2
75°	119.0	127.9	119.0	141.6	166.3	191.8
77.5°	93.5	102.3	93.5	109.2	140.1	172.9
80°	71.8	77.7	71.8	88.8	131.5	165.6
82.5°	51.2	55.1	51.2	86.0	136.5	169.7
85°	39.5	31.5	41.7	97.8	154.9	184.3
87.5°	33.9	8.8	48.8	120.1	182.8	205.3
90°	22.8	2.1	63.6	149.9	213.8	232.3
92.5°	14.0	18.2	88.0	182.7	250.0	266.8
95°	7.3	43.9	114.6	220.9	292.4	300.8
97.5°	13.9	77.2	151.3	258.4	331.9	340.1
100°	36.4	117.9	197.3	298.8	368.2	373.2
102.5°	67.5	162.0	241.4	337.9	408.7	425.6
105°	109.4	212.4	287.6	390.5	448.3	468.2
107.5°	157.6	266.0	334.7	437.7	496.7	508.4
110°	209.2	321.9	382.0	483.8	548.2	562.1



TEST NUMBER: P392599

CATALOG NUMBER: MWL-3-37-33-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	265.0	379.9	431.4	526.8	603.0	613.7
115°	328.4	433.5	477.5	576.1	647.0	653.4
117.5°	385.2	497.9	524.7	612.7	693.2	694.3
120°	445.3	559.0	572.0	663.1	738.2	746.8
122.5°	507.4	618.0	618.0	706.0	777.9	783.3
125°	564.3	680.3	663.1	738.2	814.5	816.5
127.5°	622.3	743.6	712.4	780.1	849.8	846.6
130°	685.6	803.6	757.5	819.8	883.1	872.3
132.5°	743.6	868.1	803.6	860.5	916.4	922.8
135°	801.6	928.2	843.3	895.9	950.7	948.6
137.5°	857.3	984.0	891.7	923.8	973.3	979.7
140°	912.0	1044.0	934.6	960.4	1001.2	1002.3
142.5°	970.0	1104.2	981.8	996.9	1032.2	1025.9
145°	1034.4	1161.1	1040.9	1033.3	1055.9	1042.0
147.5°	1091.3	1210.4	1082.8	1060.2	1087.0	1068.8
150°	1154.6	1260.8	1140.6	1097.7	1113.8	1105.3
152.5°	1212.6	1300.5	1204.0	1126.7	1145.0	1134.3
155°	1269.5	1342.4	1265.2	1155.7	1168.6	1164.3
157.5°	1318.8	1379.0	1311.4	1185.8	1200.8	1192.1
160°	1361.8	1409.0	1365.0	1230.9	1222.2	1222.2
162.5°	1399.3	1437.9	1402.6	1292.0	1245.8	1225.5
165°	1432.6	1460.4	1435.8	1360.7	1290.9	1272.6
167.5°	1463.7	1482.0	1473.4	1416.5	1360.7	1322.1
170°	1488.4	1499.2	1487.4	1463.7	1435.8	1402.6
172.5°	1501.2	1505.6	1513.1	1498.1	1487.4	1464.9
175°	1508.8	1520.6	1514.2	1519.5	1509.9	1504.6
177.5°	1511.0	1513.1	1512.0	1521.7	1527.1	1518.5
180°	1519.5	1519.5	1519.5	1519.5	1519.5	1519.5

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