

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: P392677

Luminaire Tested: **MWL-4-42-45-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392677
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-4-42-45-UNV-L935-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7414.9 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

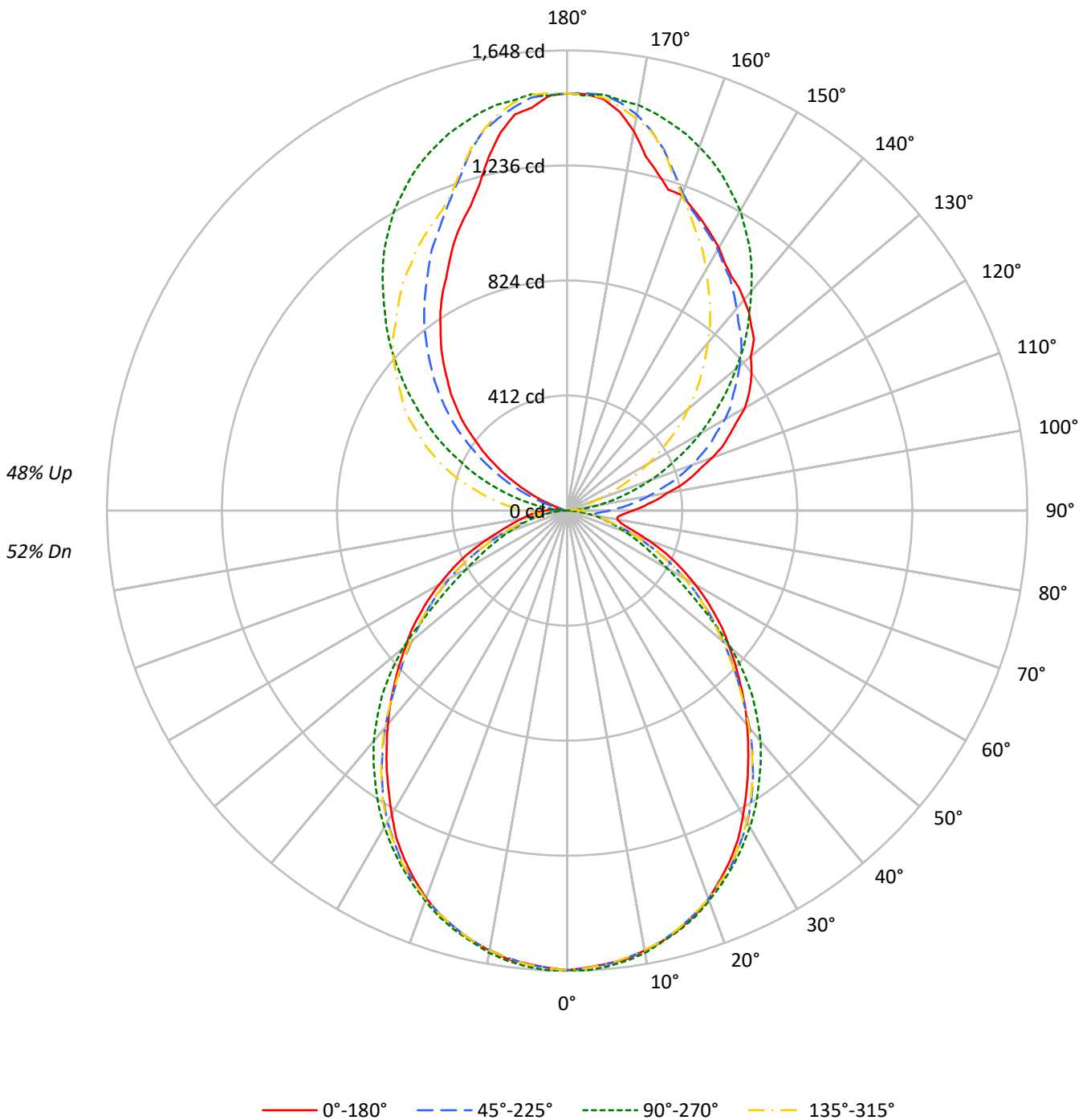
Input Watts (W): 89.789
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	99	99	99	99	84	84	84		70	70	70		58	58	58	52
1	98	94	90	87	91	87	84	81	74	72	69		62	60	59		51	50	49	44
2	90	82	76	71	83	77	71	67	65	61	58		55	52	50		45	44	42	37
3	82	73	66	60	76	68	61	56	58	53	49		49	45	42		41	38	36	32
4	75	65	57	51	69	60	53	48	52	46	42		44	40	37		37	34	31	28
5	69	58	50	44	64	54	47	41	46	41	37		40	35	32		33	30	27	24
6	64	52	44	38	59	48	41	36	42	36	32		36	31	28		30	27	24	21
7	59	47	39	34	55	44	37	32	38	33	28		33	28	25		28	24	22	19
8	55	43	35	30	51	40	33	28	35	29	25		30	26	22		25	22	20	17
9	51	39	32	27	47	37	30	25	32	27	23		28	23	20		23	20	18	16
10	48	36	29	24	44	34	27	23	30	24	21		26	21	18		22	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10630	10630	10630	10630
5°	10467	9773	10467	9773
10°	10304	8968	10304	8968
15°	10091	8203	10070	8203
20°	9801	7492	9780	7492
25°	9389	6826	9367	6826
30°	8865	6187	8835	6187
35°	8299	5549	8276	5549
40°	7770	4938	7737	4938
45°	7250	4281	7224	4281
50°	6765	3518	6736	3518
55°	6311	2630	6290	2630
60°	5791	1947	5779	1947
65°	5240	1482	5240	1482
70°	4501	1109	4516	1109
75°	3894	802	3951	802
80°	4274	511	3804	511
85°	6512	238	4191	238



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.1	2.1
10°-20°	437.2	5.9
20°-30°	641.0	8.6
30°-40°	725.7	9.8
40°-50°	683.7	9.2
50°-60°	546.1	7.4
60°-70°	359.1	4.8
70°-80°	184.2	2.5
80°-90°	104.3	1.4
90°-100°	129.3	1.7
100°-110°	232.9	3.1
110°-120°	397.3	5.4
120°-130°	539.6	7.3
130°-140°	615.4	8.3
140°-150°	613.7	8.3
150°-160°	534.4	7.2
160°-170°	375.9	5.1
170°-180°	140.0	1.9
0°-30°	1233.3	16.6
0°-40°	1959.0	26.4
0°-60°	3188.7	43.0
0°-90°	3836.3	51.7
90°-120°	759.5	10.2
90°-150°	2528.2	34.1
90°-180°	3579.0	48.3
0°-180°	7414.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1646	1646	1646	1646	1646	
5°	1629	1639	1629	1639	1629	155
15°	1551	1556	1548	1556	1551	437
25°	1382	1404	1378	1404	1382	635
35°	1129	1197	1126	1197	1129	707
45°	876	937	873	937	876	678
55°	644	567	642	567	644	577
65°	420	305	420	305	420	414
75°	217	152	220	152	217	241
85°	192	40	124	40	192	156
90°	235	2	77	2	235	130
95°	296	43	46	43	296	257
105°	460	209	16	209	460	485
115°	642	427	148	427	642	637
125°	803	668	365	668	803	717
135°	933	912	587	912	933	720
145°	1025	1142	789	1142	1025	646
155°	1145	1320	993	1320	1145	528
165°	1252	1436	1210	1436	1252	355
175°	1480	1496	1448	1496	1480	138
180°	1494	1494	1494	1494	1494	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9
2.5°	1637.7	1643.2	1639.3	1648.9	1648.1	1647.8	1639.3	1643.2	1638.7	1643.2	1639.3
5°	1629.2	1634.8	1631.7	1638.5	1639.3	1638.5	1630.6	1634.8	1629.2	1634.8	1630.6
7.5°	1620.1	1621.3	1617.1	1626.6	1626.6	1625.5	1616.0	1620.4	1620.1	1620.4	1616.0
10°	1600.0	1603.5	1599.3	1608.6	1608.6	1607.6	1598.3	1601.4	1600.0	1601.4	1598.3
12.5°	1579.1	1579.8	1577.0	1584.7	1581.0	1584.7	1577.0	1577.6	1577.0	1577.6	1577.0
15°	1551.3	1550.1	1549.1	1557.5	1555.6	1556.4	1548.0	1548.0	1548.2	1548.0	1548.0
17.5°	1520.0	1518.7	1516.0	1524.2	1525.1	1524.2	1514.9	1517.7	1516.8	1517.7	1514.9
20°	1480.1	1479.0	1480.4	1486.9	1486.8	1485.9	1479.3	1477.0	1477.0	1477.0	1479.3
22.5°	1431.6	1436.6	1437.9	1447.9	1446.9	1446.9	1436.9	1434.6	1429.5	1434.6	1436.9
25°	1381.5	1387.5	1396.6	1404.6	1404.5	1403.6	1394.4	1384.3	1378.3	1384.3	1394.4
27.5°	1326.4	1333.2	1342.3	1359.9	1357.9	1358.8	1340.2	1330.0	1323.3	1330.0	1340.2
30°	1260.2	1270.4	1289.9	1308.4	1308.7	1306.3	1286.8	1267.3	1256.0	1267.3	1286.8
32.5°	1194.1	1204.3	1228.0	1252.4	1256.2	1250.3	1224.8	1200.0	1189.9	1200.0	1224.8
35°	1129.4	1136.2	1160.0	1194.8	1196.7	1191.6	1156.8	1133.1	1126.3	1133.1	1156.8
37.5°	1065.0	1066.6	1089.6	1131.1	1138.3	1128.0	1086.4	1063.5	1061.8	1063.5	1086.4
40°	1002.2	997.9	1017.4	1059.7	1077.2	1057.6	1013.2	993.7	997.9	993.7	1013.2
42.5°	941.2	931.8	938.4	989.3	1007.7	987.2	935.2	927.6	936.9	927.6	935.2
45°	876.5	865.5	865.5	911.3	937.4	909.2	861.3	862.3	873.3	862.3	861.3
47.5°	817.2	803.6	797.7	835.5	856.8	834.5	793.4	800.3	814.0	800.3	793.4
50°	756.9	745.9	729.0	751.6	767.5	749.5	724.7	741.7	753.7	741.7	724.7
52.5°	705.2	690.0	666.8	674.4	664.1	672.3	663.7	685.7	702.0	685.7	663.7
55°	643.9	635.4	606.5	597.9	567.1	595.8	603.4	632.2	641.7	632.2	603.4
57.5°	587.9	582.8	546.4	514.8	485.7	512.6	543.2	579.7	585.8	579.7	543.2
60°	529.2	526.7	487.6	439.9	411.9	438.9	485.6	524.6	528.1	524.6	485.6
62.5°	472.4	469.0	425.8	368.6	356.6	367.7	423.6	466.9	471.3	466.9	423.6
65°	419.5	410.2	365.3	307.6	304.9	306.6	364.2	409.2	419.5	409.2	364.2
67.5°	362.8	348.4	305.9	256.5	260.8	256.5	304.9	347.3	362.8	347.3	304.9
70°	306.6	287.9	254.0	213.3	220.1	213.3	254.0	289.0	307.6	289.0	254.0
72.5°	256.5	235.3	204.9	174.3	184.2	173.2	204.9	236.3	258.7	236.3	204.9
75°	216.7	192.1	160.5	138.4	152.0	138.4	161.5	193.1	219.9	193.1	161.5
77.5°	194.6	159.9	123.1	107.0	122.3	107.0	124.3	156.6	190.4	156.6	124.3
80°	182.8	148.3	101.0	79.9	91.7	79.9	98.8	131.4	162.7	131.4	98.8
82.5°	181.8	147.7	95.8	57.0	64.6	57.0	83.1	109.8	141.8	109.8	83.1
85°	192.5	164.1	106.3	47.5	40.0	45.4	75.7	99.8	123.9	99.8	75.7
87.5°	211.0	187.9	124.1	53.9	13.5	39.2	63.9	86.6	102.3	86.6	63.9
90°	235.1	216.9	152.7	65.9	1.9	25.9	48.3	68.3	76.9	68.3	48.3
92.5°	266.3	251.1	183.3	89.3	17.7	16.6	38.7	56.0	59.5	56.0	38.7
95°	295.5	290.0	219.3	114.8	43.0	9.3	29.4	45.4	45.6	45.4	29.4
97.5°	331.8	327.4	255.5	148.5	75.8	13.5	22.4	37.3	36.5	37.3	22.4
100°	364.4	362.6	294.5	193.9	115.9	35.6	15.0	31.3	32.2	31.3	15.0
102.5°	417.0	401.8	332.7	237.1	159.1	66.3	18.4	22.0	24.5	22.0	18.4
105°	459.9	442.7	383.5	282.5	208.6	107.3	42.8	18.6	15.9	18.6	42.8
107.5°	500.2	488.8	430.0	329.7	261.4	155.8	78.7	41.6	27.6	41.6	78.7
110°	552.1	539.5	475.3	376.1	317.1	206.3	119.9	75.3	58.4	75.3	119.9



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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°	602.7	593.2	517.5	424.6	374.0	261.2	170.5	117.5	101.6	117.5	170.5
115°	641.7	636.5	566.1	470.0	426.8	323.4	226.3	167.1	148.1	167.1	226.3
117.5°	682.9	681.9	601.9	516.4	490.0	379.3	278.1	216.7	196.6	216.7	278.1
120°	734.7	726.1	652.3	562.9	550.2	438.4	335.8	273.6	253.6	273.6	335.8
122.5°	770.4	765.1	694.5	607.1	607.1	498.5	390.7	328.5	307.4	328.5	390.7
125°	803.2	801.0	726.1	651.4	668.3	554.4	451.9	388.6	365.4	388.6	451.9
127.5°	832.7	835.8	767.3	700.8	730.5	612.2	512.0	442.4	418.1	442.4	512.0
130°	858.1	868.5	806.3	745.1	789.6	674.5	565.9	496.3	480.4	496.3	565.9
132.5°	907.6	901.3	846.4	790.5	853.0	731.4	622.8	550.0	532.1	550.0	622.8
135°	932.9	935.0	881.2	829.5	912.0	788.4	676.5	604.9	586.9	604.9	676.5
137.5°	963.4	957.2	908.6	877.1	966.9	843.3	729.3	662.9	634.4	662.9	729.3
140°	985.7	984.6	944.5	919.2	1026.0	897.1	783.2	715.6	689.3	715.6	783.2
142.5°	1008.8	1015.2	980.3	965.6	1085.0	953.9	841.2	767.3	742.0	767.3	841.2
145°	1024.7	1038.3	1016.2	1023.6	1141.7	1017.3	891.8	816.9	789.4	816.9	891.8
147.5°	1051.1	1069.0	1042.6	1064.7	1189.4	1073.2	942.5	868.5	844.3	868.5	942.5
150°	1086.9	1095.4	1079.6	1121.7	1239.8	1135.5	994.1	918.1	893.9	918.1	994.1
152.5°	1115.4	1125.9	1108.0	1184.0	1278.9	1192.4	1051.1	966.7	938.1	966.7	1051.1
155°	1145.0	1149.1	1136.4	1244.1	1320.0	1248.3	1096.4	1020.5	993.0	1020.5	1096.4
157.5°	1172.3	1180.8	1166.0	1289.4	1355.9	1296.9	1148.1	1074.2	1050.0	1074.2	1148.1
160°	1201.8	1201.8	1210.3	1342.2	1385.4	1339.0	1203.0	1133.3	1099.6	1133.3	1203.0
162.5°	1205.0	1225.1	1270.4	1379.1	1413.9	1375.9	1262.0	1175.4	1145.9	1175.4	1262.0
165°	1251.5	1269.3	1338.0	1411.8	1436.0	1408.6	1334.7	1245.1	1210.3	1245.1	1334.7
167.5°	1300.0	1338.0	1392.8	1448.7	1457.2	1439.2	1390.7	1328.5	1296.9	1328.5	1390.7
170°	1378.2	1411.8	1439.2	1462.4	1474.0	1463.5	1425.5	1394.9	1374.0	1394.9	1425.5
172.5°	1440.5	1462.4	1473.0	1487.7	1481.3	1476.2	1457.2	1442.3	1431.0	1442.3	1457.2
175°	1479.5	1484.5	1494.0	1488.8	1496.0	1483.5	1484.5	1492.0	1447.9	1492.0	1484.5
177.5°	1493.2	1501.4	1496.2	1486.7	1487.7	1485.7	1489.9	1494.0	1486.9	1494.0	1489.9
180°	1494.0	1494.0	1494.0	1494.0	1494.0	1494.0	1494.0	1494.0	1494.0	1494.0	1494.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1645.9	1645.9	1645.9	1645.9	1645.9	1645.9
2.5°	1647.8	1648.1	1648.9	1639.3	1643.2	1637.7
5°	1638.5	1639.3	1638.5	1631.7	1634.8	1629.2
7.5°	1625.5	1626.6	1626.6	1617.1	1621.3	1620.1
10°	1607.6	1608.6	1608.6	1599.3	1603.5	1600.0
12.5°	1584.7	1581.0	1584.7	1577.0	1579.8	1579.1
15°	1556.4	1555.6	1557.5	1549.1	1550.1	1551.3
17.5°	1524.2	1525.1	1524.2	1516.0	1518.7	1520.0
20°	1485.9	1486.8	1486.9	1480.4	1479.0	1480.1
22.5°	1446.9	1446.9	1447.9	1437.9	1436.6	1431.6
25°	1403.6	1404.5	1404.6	1396.6	1387.5	1381.5
27.5°	1358.8	1357.9	1359.9	1342.3	1333.2	1326.4
30°	1306.3	1308.7	1308.4	1289.9	1270.4	1260.2
32.5°	1250.3	1256.2	1252.4	1228.0	1204.3	1194.1
35°	1191.6	1196.7	1194.8	1160.0	1136.2	1129.4
37.5°	1128.0	1138.3	1131.1	1089.6	1066.6	1065.0
40°	1057.6	1077.2	1059.7	1017.4	997.9	1002.2
42.5°	987.2	1007.7	989.3	938.4	931.8	941.2
45°	909.2	937.4	911.3	865.5	865.5	876.5
47.5°	834.5	856.8	835.5	797.7	803.6	817.2
50°	749.5	767.5	751.6	729.0	745.9	756.9
52.5°	672.3	664.1	674.4	666.8	690.0	705.2
55°	595.8	567.1	597.9	606.5	635.4	643.9
57.5°	512.6	485.7	514.8	546.4	582.8	587.9
60°	438.9	411.9	439.9	487.6	526.7	529.2
62.5°	367.7	356.6	368.6	425.8	469.0	472.4
65°	306.6	304.9	307.6	365.3	410.2	419.5
67.5°	256.5	260.8	256.5	305.9	348.4	362.8
70°	213.3	220.1	213.3	254.0	287.9	306.6
72.5°	173.2	184.2	174.3	204.9	235.3	256.5
75°	138.4	152.0	138.4	160.5	192.1	216.7
77.5°	107.0	122.3	107.0	123.1	159.9	194.6
80°	79.9	91.7	79.9	101.0	148.3	182.8
82.5°	57.0	64.6	57.0	95.8	147.7	181.8
85°	45.4	40.0	47.5	106.3	164.1	192.5
87.5°	39.2	13.5	53.9	124.1	187.9	211.0
90°	25.9	1.9	65.9	152.7	216.9	235.1
92.5°	16.6	17.7	89.3	183.3	251.1	266.3
95°	9.3	43.0	114.8	219.3	290.0	295.5
97.5°	13.5	75.8	148.5	255.5	327.4	331.8
100°	35.6	115.9	193.9	294.5	362.6	364.4
102.5°	66.3	159.1	237.1	332.7	401.8	417.0
105°	107.3	208.6	282.5	383.5	442.7	459.9
107.5°	155.8	261.4	329.7	430.0	488.8	500.2
110°	206.3	317.1	376.1	475.3	539.5	552.1



TEST NUMBER: P392677

CATALOG NUMBER: MWL-4-42-45-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	261.2	374.0	424.6	517.5	593.2	602.7
115°	323.4	426.8	470.0	566.1	636.5	641.7
117.5°	379.3	490.0	516.4	601.9	681.9	682.9
120°	438.4	550.2	562.9	652.3	726.1	734.7
122.5°	498.5	607.1	607.1	694.5	765.1	770.4
125°	554.4	668.3	651.4	726.1	801.0	803.2
127.5°	612.2	730.5	700.8	767.3	835.8	832.7
130°	674.5	789.6	745.1	806.3	868.5	858.1
132.5°	731.4	853.0	790.5	846.4	901.3	907.6
135°	788.4	912.0	829.5	881.2	935.0	932.9
137.5°	843.3	966.9	877.1	908.6	957.2	963.4
140°	897.1	1026.0	919.2	944.5	984.6	985.7
142.5°	953.9	1085.0	965.6	980.3	1015.2	1008.8
145°	1017.3	1141.7	1023.6	1016.2	1038.3	1024.7
147.5°	1073.2	1189.4	1064.7	1042.6	1069.0	1051.1
150°	1135.5	1239.8	1121.7	1079.6	1095.4	1086.9
152.5°	1192.4	1278.9	1184.0	1108.0	1125.9	1115.4
155°	1248.3	1320.0	1244.1	1136.4	1149.1	1145.0
157.5°	1296.9	1355.9	1289.4	1166.0	1180.8	1172.3
160°	1339.0	1385.4	1342.2	1210.3	1201.8	1201.8
162.5°	1375.9	1413.9	1379.1	1270.4	1225.1	1205.0
165°	1408.6	1436.0	1411.8	1338.0	1269.3	1251.5
167.5°	1439.2	1457.2	1448.7	1392.8	1338.0	1300.0
170°	1463.5	1474.0	1462.4	1439.2	1411.8	1378.2
172.5°	1476.2	1481.3	1487.7	1473.0	1462.4	1440.5
175°	1483.5	1496.0	1488.8	1494.0	1484.5	1479.5
177.5°	1485.7	1487.7	1486.7	1496.2	1501.4	1493.2
180°	1494.0	1494.0	1494.0	1494.0	1494.0	1494.0

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