

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-L935-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-L935-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

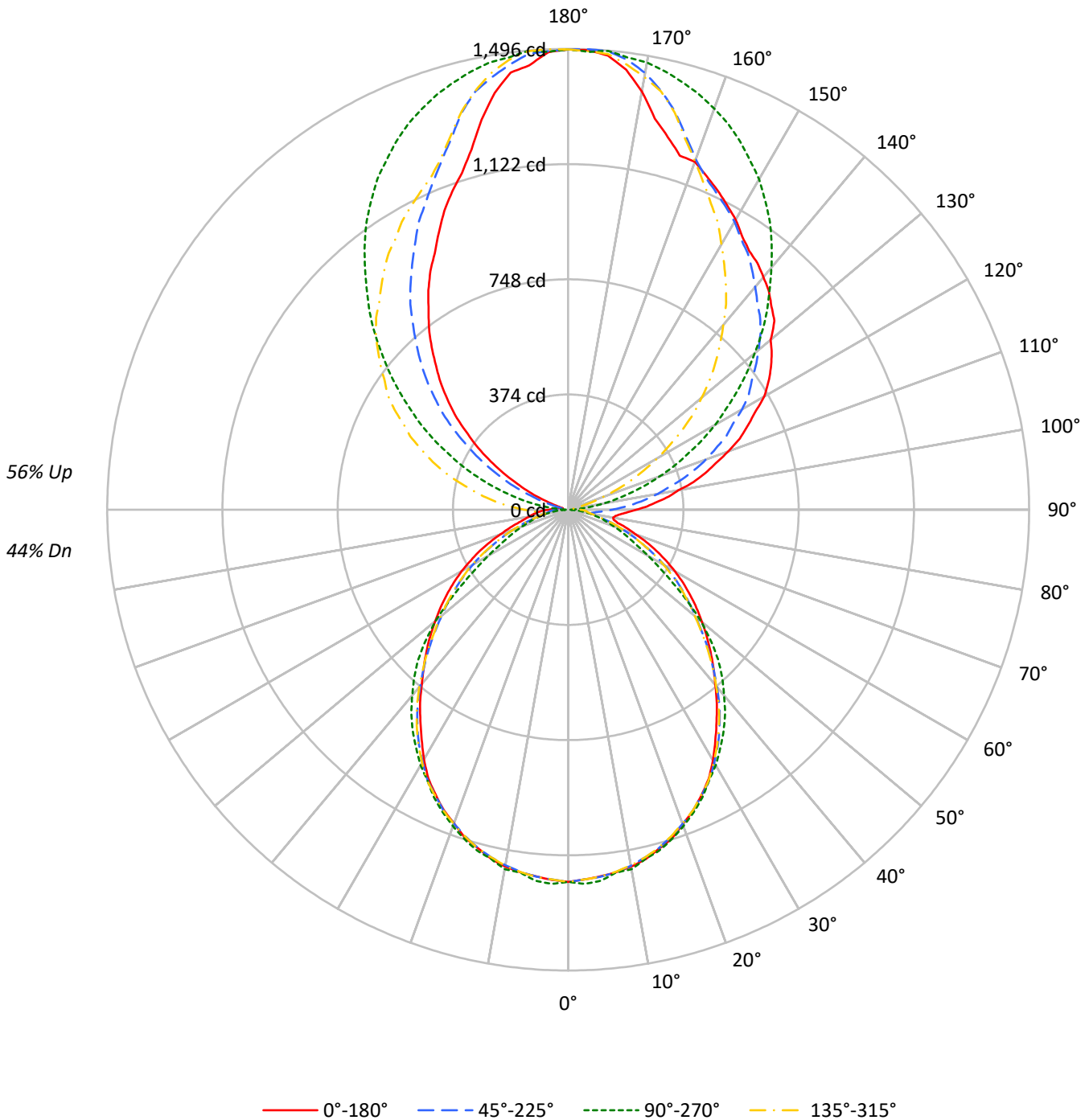
Lumens per Lamp: N/A
Luminaire Lumens: 6416.5 lumens
Efficiency: N/A
Efficacy: 82.4 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 77.871
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



TEST NUMBER: P392674
CATALOG NUMBER: MWL-4-42-33-UNV-L935-EDD

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°	7804	7804	7804	7804
5°	7677	7210	7677	7210
10°	7578	6604	7578	6604
15°	7410	6039	7390	6039
20°	7195	5508	7175	5508
25°	6950	5008	6929	5008
30°	6610	4527	6581	4527
35°	6167	4075	6145	4075
40°	5758	3609	5726	3609
45°	5406	3142	5379	3142
50°	5060	2570	5031	2570
55°	4731	1922	4711	1922
60°	4370	1422	4359	1422
65°	3949	1057	3949	1057
70°	3405	793	3421	793
75°	2993	583	3051	583
80°	3463	374	2993	374
85°	5737	173	3416	173



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.8	1.8
10°-20°	321.0	5.0
20°-30°	471.6	7.3
30°-40°	535.9	8.4
40°-50°	505.0	7.9
50°-60°	403.1	6.3
60°-70°	266.2	4.1
70°-80°	139.7	2.2
80°-90°	86.8	1.4
90°-100°	124.4	1.9
100°-110°	233.0	3.6
110°-120°	397.1	6.2
120°-130°	539.5	8.4
130°-140°	615.4	9.6
140°-150°	613.7	9.6
150°-160°	534.4	8.3
160°-170°	375.9	5.9
170°-180°	140.0	2.2
0°-30°	906.3	14.1
0°-40°	1442.2	22.5
0°-60°	2350.3	36.6
0°-90°	2843.0	44.3
90°-120°	754.6	11.8
90°-150°	2523.1	39.3
90°-180°	3573.0	55.7
0°-180°	6416.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1208	1208	1208	1208	1208	
5°	1195	1209	1195	1209	1195	114
15°	1139	1145	1136	1145	1139	321
25°	1023	1030	1020	1030	1023	470
35°	839	879	836	879	839	526
45°	654	688	650	688	654	505
55°	483	414	481	414	483	432
65°	316	218	316	218	316	312
75°	167	110	170	110	167	187
85°	170	29	101	29	170	135
90°	221	2	62	2	221	122
95°	289	43	39	43	289	253
105°	462	209	18	209	462	486
115°	642	427	148	427	642	637
125°	803	668	365	668	803	717
135°	933	912	587	912	933	720
145°	1025	1141	790	1141	1025	646
155°	1145	1320	993	1320	1145	528
165°	1252	1436	1210	1436	1252	355
175°	1480	1495	1448	1495	1480	138
180°	1494	1494	1494	1494	1494	



TEST NUMBER: P392674

CATALOG NUMBER: MWL-4-42-33-UNV-L935-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1208.3	1208.3	1208.3	1208.3	1208.3	1208.3	1208.3	1208.3	1208.3	1208.3	1208.3
2.5°	1201.8	1201.3	1201.7	1208.8	1215.5	1207.6	1201.7	1201.3	1202.8	1201.3	1201.7
5°	1195.0	1197.1	1196.6	1204.3	1209.4	1204.3	1195.5	1197.1	1195.0	1197.1	1195.5
7.5°	1187.5	1191.3	1186.2	1194.1	1188.1	1193.0	1185.3	1190.4	1187.5	1190.4	1185.3
10°	1176.7	1176.9	1173.5	1181.1	1184.6	1180.2	1172.5	1174.8	1176.7	1174.8	1172.5
12.5°	1161.8	1156.5	1155.6	1160.7	1160.4	1160.7	1155.6	1154.5	1159.8	1154.5	1155.6
15°	1139.2	1141.3	1136.9	1142.0	1145.2	1140.9	1135.8	1139.2	1136.1	1139.2	1135.8
17.5°	1118.8	1117.5	1112.3	1115.5	1120.6	1115.5	1111.2	1116.5	1115.7	1116.5	1111.2
20°	1086.6	1088.0	1085.2	1093.4	1093.2	1092.3	1084.1	1086.0	1083.5	1086.0	1084.1
22.5°	1057.5	1059.2	1058.0	1057.7	1063.5	1056.8	1056.9	1057.1	1055.5	1057.1	1056.9
25°	1022.7	1022.7	1023.4	1032.3	1030.5	1031.3	1021.3	1019.6	1019.6	1019.6	1021.3
27.5°	986.3	984.6	991.2	997.0	989.7	995.9	989.1	981.5	983.1	981.5	989.1
30°	939.6	941.3	948.1	963.2	957.6	961.1	945.0	938.1	935.5	938.1	945.0
32.5°	888.7	895.5	904.8	925.0	918.6	923.0	901.7	891.4	884.6	891.4	901.7
35°	839.3	841.9	856.3	880.9	878.7	877.8	853.2	838.8	836.2	838.8	853.2
37.5°	792.7	788.5	806.3	832.6	836.4	829.4	803.2	785.3	789.6	785.3	803.2
40°	742.7	743.6	751.2	782.4	787.2	780.2	746.9	739.3	738.5	739.3	746.9
42.5°	697.7	689.3	695.8	728.1	739.8	726.0	692.6	685.1	693.5	685.1	692.6
45°	653.5	642.4	643.3	671.2	688.0	669.2	639.1	639.2	650.3	639.2	639.1
47.5°	610.2	596.6	589.9	611.6	626.1	610.7	585.7	593.4	607.0	593.4	585.7
50°	566.1	553.4	539.8	553.1	560.6	551.0	535.6	549.1	562.9	549.1	535.6
52.5°	525.4	511.0	493.8	495.5	486.8	493.3	490.6	506.8	522.2	506.8	490.6
55°	482.7	470.0	448.8	435.1	414.5	433.0	445.7	466.9	480.6	466.9	445.7
57.5°	442.1	432.7	405.6	378.3	350.9	376.1	402.5	429.6	439.9	429.6	402.5
60°	399.4	391.8	360.4	321.2	300.8	320.1	358.4	389.7	398.4	389.7	358.4
62.5°	357.1	351.1	314.6	269.5	253.2	268.4	312.5	349.0	355.9	349.0	312.5
65°	316.1	306.8	269.5	227.0	217.5	226.0	268.4	305.7	316.1	305.7	268.4
67.5°	274.6	263.5	227.9	188.7	187.0	188.7	226.9	262.5	274.6	262.5	226.9
70°	231.9	220.9	189.6	156.4	157.3	156.4	189.6	221.9	233.0	221.9	189.6
72.5°	199.8	181.0	155.7	129.3	132.5	128.2	155.7	182.1	201.8	182.1	155.7
75°	166.6	146.3	122.3	102.8	110.5	102.8	123.4	147.3	169.8	147.3	123.4
77.5°	151.3	124.3	95.2	82.4	87.5	82.4	96.3	121.1	147.1	121.1	96.3
80°	148.1	116.9	77.1	62.0	67.1	62.0	75.1	100.1	128.0	100.1	75.1
82.5°	154.7	124.9	77.1	44.3	46.9	44.3	64.5	86.9	114.7	86.9	64.5
85°	169.6	143.8	91.0	37.3	29.0	35.2	60.4	79.5	101.0	79.5	60.4
87.5°	192.3	171.8	112.2	45.5	7.6	30.7	52.0	70.6	83.7	70.6	52.0
90°	220.7	203.4	143.4	60.8	1.9	20.8	39.0	54.7	62.5	54.7	39.0
92.5°	257.0	240.9	174.8	85.9	17.7	13.1	30.3	45.8	50.2	45.8	30.3
95°	288.8	282.4	214.3	113.0	43.0	7.6	24.3	37.7	38.7	37.7	24.3
97.5°	329.2	323.2	253.9	148.5	75.8	13.5	20.8	33.0	33.9	33.0	20.8
100°	363.6	360.9	294.5	193.9	115.9	35.6	15.0	29.6	31.3	29.6	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°	461.7	444.3	383.6	282.5	208.6	107.3	42.8	20.3	17.5	20.3	42.8
107.5°	501.9	488.8	430.0	328.9	261.4	154.9	78.7	41.6	29.3	41.6	78.7
110°	552.1	538.6	475.3	376.1	316.3	206.3	119.9	74.5	58.4	74.5	119.9



TEST NUMBER: P392674

CATALOG NUMBER: MWL-4-42-33-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	602.7	592.4	517.5	424.6	373.2	261.2	170.5	116.7	101.6	116.7	170.5
115°	641.7	635.7	566.1	470.0	426.8	323.4	226.3	166.2	148.1	166.2	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	651.4	562.9	550.2	438.4	335.0	273.6	253.6	273.6	335.0
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	700.1	730.5	611.4	512.0	442.4	418.2	442.4	512.0
130°	858.1	868.6	806.3	744.3	789.6	673.7	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	532.2	550.0	622.8
135°	933.0	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	1140.9	1017.3	891.8	816.9	789.5	816.9	891.8
147.5°	1051.1	1069.0	1042.6	1064.7	1189.4	1073.2	942.5	868.6	844.3	868.6	942.5
150°	1086.9	1095.4	1079.6	1121.7	1239.0	1135.5	994.1	918.2	893.9	918.2	994.1
152.5°	1115.4	1126.0	1108.0	1184.0	1278.0	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	1096.5	1020.5	993.0	1020.5	1096.5
157.5°	1172.3	1180.8	1166.0	1289.5	1355.9	1296.9	1148.1	1074.2	1050.0	1074.2	1148.1
160°	1201.8	1201.8	1210.4	1342.2	1385.4	1339.0	1203.0	1133.3	1099.6	1133.3	1203.0
162.5°	1205.1	1225.1	1270.4	1379.1	1413.9	1375.9	1262.0	1175.5	1146.0	1175.5	1262.0
165°	1251.5	1269.4	1338.0	1411.8	1436.0	1408.6	1334.7	1245.1	1210.4	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°	1378.3	1410.9	1439.2	1462.4	1474.0	1463.5	1425.5	1394.0	1374.0	1394.0	1425.5
172.5°	1440.5	1462.4	1473.0	1487.7	1480.4	1476.2	1457.2	1442.4	1431.0	1442.4	1457.2
175°	1479.5	1484.5	1494.0	1488.8	1495.1	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



TEST NUMBER: P392674

CATALOG NUMBER: MWL-4-42-33-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1208.3	1208.3	1208.3	1208.3	1208.3	1208.3
2.5°	1207.6	1215.5	1208.8	1201.7	1201.3	1201.8
5°	1204.3	1209.4	1204.3	1196.6	1197.1	1195.0
7.5°	1193.0	1188.1	1194.1	1186.2	1191.3	1187.5
10°	1180.2	1184.6	1181.1	1173.5	1176.9	1176.7
12.5°	1160.7	1160.4	1160.7	1155.6	1156.5	1161.8
15°	1140.9	1145.2	1142.0	1136.9	1141.3	1139.2
17.5°	1115.5	1120.6	1115.5	1112.3	1117.5	1118.8
20°	1092.3	1093.2	1093.4	1085.2	1088.0	1086.6
22.5°	1056.8	1063.5	1057.7	1058.0	1059.2	1057.5
25°	1031.3	1030.5	1032.3	1023.4	1022.7	1022.7
27.5°	995.9	989.7	997.0	991.2	984.6	986.3
30°	961.1	957.6	963.2	948.1	941.3	939.6
32.5°	923.0	918.6	925.0	904.8	895.5	888.7
35°	877.8	878.7	880.9	856.3	841.9	839.3
37.5°	829.4	836.4	832.6	806.3	788.5	792.7
40°	780.2	787.2	782.4	751.2	743.6	742.7
42.5°	726.0	739.8	728.1	695.8	689.3	697.7
45°	669.2	688.0	671.2	643.3	642.4	653.5
47.5°	610.7	626.1	611.6	589.9	596.6	610.2
50°	551.0	560.6	553.1	539.8	553.4	566.1
52.5°	493.3	486.8	495.5	493.8	511.0	525.4
55°	433.0	414.5	435.1	448.8	470.0	482.7
57.5°	376.1	350.9	378.3	405.6	432.7	442.1
60°	320.1	300.8	321.2	360.4	391.8	399.4
62.5°	268.4	253.2	269.5	314.6	351.1	357.1
65°	226.0	217.5	227.0	269.5	306.8	316.1
67.5°	188.7	187.0	188.7	227.9	263.5	274.6
70°	156.4	157.3	156.4	189.6	220.9	231.9
72.5°	128.2	132.5	129.3	155.7	181.0	199.8
75°	102.8	110.5	102.8	122.3	146.3	166.6
77.5°	82.4	87.5	82.4	95.2	124.3	151.3
80°	62.0	67.1	62.0	77.1	116.9	148.1
82.5°	44.3	46.9	44.3	77.1	124.9	154.7
85°	35.2	29.0	37.3	91.0	143.8	169.6
87.5°	30.7	7.6	45.5	112.2	171.8	192.3
90°	20.8	1.9	60.8	143.4	203.4	220.7
92.5°	13.1	17.7	85.9	174.8	240.9	257.0
95°	7.6	43.0	113.0	214.3	282.4	288.8
97.5°	13.5	75.8	148.5	253.9	323.2	329.2
100°	35.6	115.9	193.9	294.5	360.9	363.6
102.5°	66.3	159.1	237.1	332.7	401.8	417.0
105°	107.3	208.6	282.5	383.6	444.3	461.7
107.5°	154.9	261.4	328.9	430.0	488.8	501.9
110°	206.3	316.3	376.1	475.3	538.6	552.1



TEST NUMBER: P392674

CATALOG NUMBER: MWL-4-42-33-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	261.2	373.2	424.6	517.5	592.4	602.7
115°	323.4	426.8	470.0	566.1	635.7	641.7
117.5°	379.3	490.0	516.4	601.9	681.9	682.9
120°	438.4	550.2	562.9	651.4	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°	611.4	730.5	700.1	767.3	835.8	832.7
130°	673.7	789.6	744.3	806.3	868.6	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	933.0
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	1140.9	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	1239.0	1121.7	1079.6	1095.4	1086.9
152.5°	1192.4	1278.0	1184.0	1108.0	1126.0	1115.4
155°	1248.3	1320.0	1244.1	1136.4	1149.1	1145.0
157.5°	1296.9	1355.9	1289.5	1166.0	1180.8	1172.3
160°	1339.0	1385.4	1342.2	1210.4	1201.8	1201.8
162.5°	1375.9	1413.9	1379.1	1270.4	1225.1	1205.1
165°	1408.6	1436.0	1411.8	1338.0	1269.4	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	1410.9	1378.3
172.5°	1476.2	1480.4	1487.7	1473.0	1462.4	1440.5
175°	1483.5	1495.1	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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