

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: P392660

Luminaire Tested: **MWL-4-34-33-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392660
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-4-34-33-UNV-L940-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

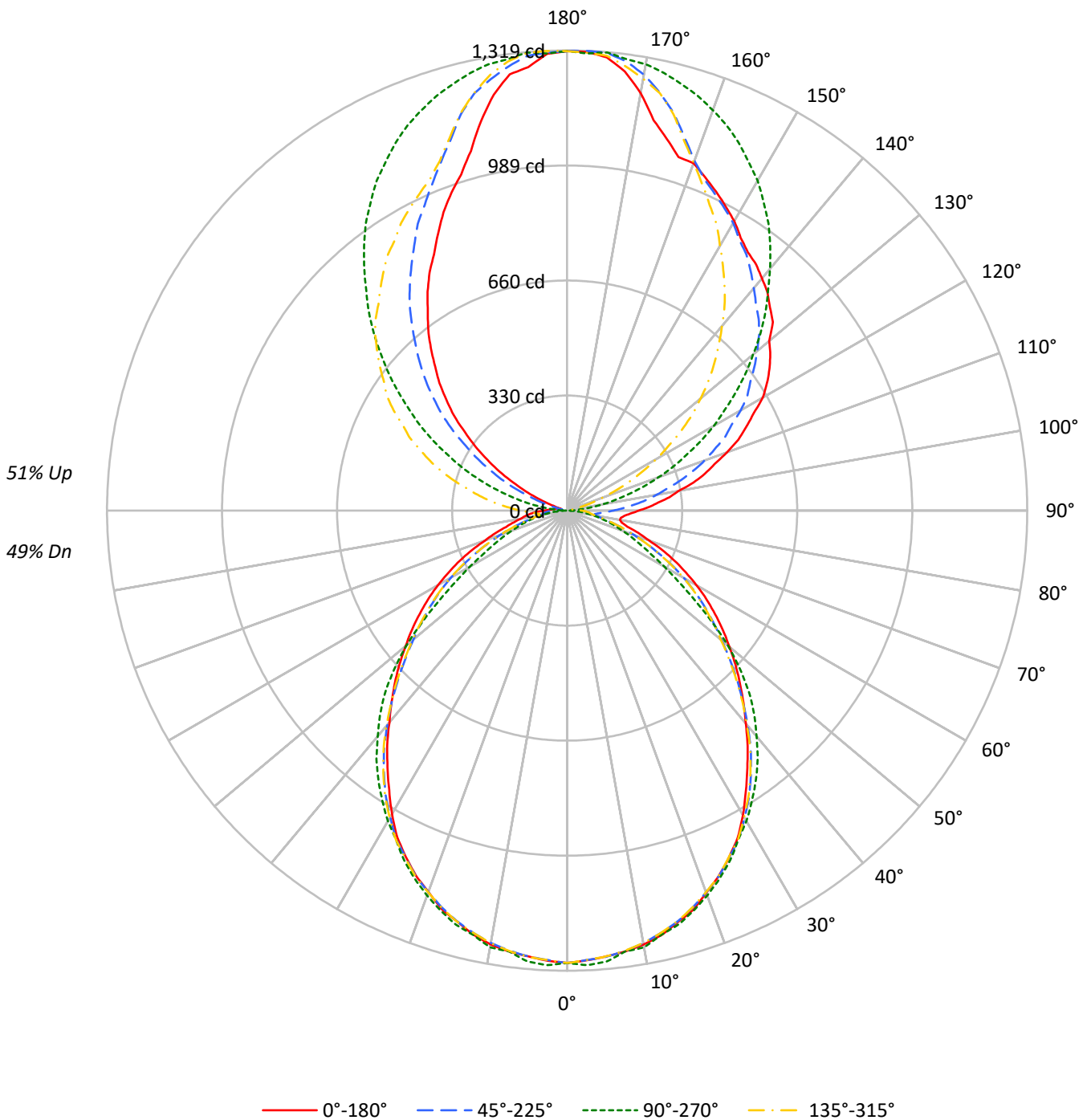
Lumens per Lamp: N/A
Luminaire Lumens: 6200.0 lumens
Efficiency: N/A
Efficacy: 90.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 68.276
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	99	99	99	99	83	83	83	68	68	68	55	55	55	49				
1	98	93	90	86	90	86	83	80	73	70	68	60	59	57	49	48	47	42				
2	89	82	76	71	82	76	70	66	64	60	57	53	51	48	43	42	40	35				
3	82	72	65	59	75	67	61	56	57	52	48	47	44	41	39	36	34	30				
4	75	64	56	50	69	59	53	47	51	45	41	42	39	35	35	32	30	26				
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	32	29	26	23				
6	63	51	43	38	58	48	41	36	41	36	31	35	30	27	29	26	23	20				
7	59	47	39	33	54	43	36	31	37	32	28	32	27	24	26	23	21	18				
8	54	42	35	29	50	39	33	28	34	29	25	29	25	22	24	21	19	16				
9	51	39	31	26	47	36	29	25	31	26	22	27	23	20	22	19	17	15				
10	47	35	28	24	44	33	27	22	29	24	20	25	21	18	21	18	15	13				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	8375	8375	8375	8375
5°	8243	7736	8243	7736
10°	8133	7087	8133	7087
15°	7949	6482	7930	6482
20°	7718	5914	7699	5914
25°	7456	5376	7437	5376
30°	7090	4860	7064	4860
35°	6616	4374	6596	4374
40°	6175	3872	6146	3872
45°	5796	3371	5774	3371
50°	5424	2757	5400	2757
55°	5073	2062	5056	2062
60°	4687	1525	4677	1525
65°	4235	1133	4235	1133
70°	3651	850	3666	850
75°	3209	624	3259	624
80°	3589	401	3177	401
85°	5598	185	3552	185



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.1	2.0
10°-20°	344.5	5.6
20°-30°	506.1	8.2
30°-40°	575.0	9.3
40°-50°	541.8	8.7
50°-60°	432.4	7.0
60°-70°	285.4	4.6
70°-80°	149.5	2.4
80°-90°	87.7	1.4
90°-100°	113.9	1.8
100°-110°	206.2	3.3
110°-120°	350.2	5.6
120°-130°	475.7	7.7
130°-140°	542.5	8.8
140°-150°	541.0	8.7
150°-160°	471.1	7.6
160°-170°	331.4	5.3
170°-180°	123.4	2.0
0°-30°	972.7	15.7
0°-40°	1547.7	25.0
0°-60°	2521.9	40.7
0°-90°	3044.5	49.1
90°-120°	670.4	10.8
90°-150°	2229.6	36.0
90°-180°	3155.0	50.9
0°-180°	6200.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1297	1297	1297	1297	1297	
5°	1283	1298	1283	1298	1283	122
15°	1222	1229	1219	1229	1222	345
25°	1097	1106	1094	1106	1097	504
35°	900	943	898	943	900	564
45°	701	738	698	738	701	541
55°	518	445	516	445	518	463
65°	339	233	339	233	339	335
75°	179	118	181	118	179	199
85°	166	31	105	31	166	133
90°	205	2	66	2	205	113
95°	261	38	41	38	261	228
105°	409	184	17	184	409	430
115°	566	376	131	376	566	562
125°	708	589	322	589	708	632
135°	822	804	518	804	822	635
145°	903	1006	696	1006	903	570
155°	1009	1164	876	1164	1009	466
165°	1103	1266	1067	1266	1103	313
175°	1304	1318	1276	1318	1304	122
180°	1317	1317	1317	1317	1317	



TEST NUMBER: P392660

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1296.7	1296.7	1296.7	1296.7	1296.7	1296.7	1296.7	1296.7	1296.7	1296.7	1296.7
2.5°	1290.3	1289.4	1289.5	1296.8	1304.1	1295.9	1289.5	1289.4	1291.2	1289.4	1289.5
5°	1283.0	1284.8	1284.0	1292.2	1297.7	1292.2	1283.0	1284.8	1283.0	1284.8	1283.0
7.5°	1274.8	1278.5	1273.0	1281.3	1274.9	1280.3	1272.1	1277.5	1274.8	1277.5	1272.1
10°	1263.0	1263.0	1259.3	1267.5	1271.2	1266.6	1258.4	1261.1	1263.0	1261.1	1258.4
12.5°	1246.7	1241.1	1240.2	1245.7	1245.7	1245.7	1240.2	1239.3	1244.7	1239.3	1240.2
15°	1222.1	1224.7	1220.1	1225.6	1229.3	1224.7	1219.2	1222.9	1219.2	1222.9	1219.2
17.5°	1200.2	1199.2	1193.7	1197.4	1202.8	1197.4	1192.8	1198.3	1197.4	1198.3	1192.8
20°	1165.6	1167.4	1164.6	1173.7	1173.7	1172.8	1163.7	1165.5	1162.7	1165.5	1163.7
22.5°	1134.6	1136.4	1135.4	1135.4	1141.8	1134.5	1134.5	1134.5	1132.7	1134.5	1134.5
25°	1097.2	1097.2	1098.1	1108.1	1106.3	1107.2	1096.2	1094.4	1094.4	1094.4	1096.2
27.5°	1058.1	1056.2	1063.4	1069.8	1062.5	1068.9	1061.6	1053.4	1055.2	1053.4	1061.6
30°	1007.9	1009.8	1017.1	1033.4	1027.9	1031.5	1014.2	1006.9	1004.2	1006.9	1014.2
32.5°	953.3	960.6	970.6	992.4	986.0	990.5	967.8	956.8	949.5	956.8	967.8
35°	900.3	903.1	918.6	945.0	943.2	942.3	915.8	900.3	897.6	900.3	915.8
37.5°	850.1	845.6	864.8	893.1	897.6	890.3	862.1	842.9	847.4	842.9	862.1
40°	796.4	797.3	805.5	839.2	844.7	837.4	801.9	793.7	792.7	793.7	801.9
42.5°	748.1	739.0	746.3	780.9	793.7	779.1	743.5	735.3	744.5	735.3	743.5
45°	700.7	688.9	689.8	719.9	738.1	718.0	686.1	686.1	698.0	686.1	686.1
47.5°	654.3	639.7	632.4	656.1	671.6	655.2	628.7	637.0	651.5	637.0	628.7
50°	606.9	593.2	578.6	593.2	601.4	591.4	574.9	589.5	604.2	589.5	574.9
52.5°	563.2	547.7	529.4	531.3	522.2	529.4	526.6	543.9	560.4	543.9	526.6
55°	517.6	503.9	481.2	466.6	444.7	464.7	478.3	501.1	515.8	501.1	478.3
57.5°	473.9	463.8	434.7	405.5	376.4	403.6	431.9	461.0	472.0	461.0	431.9
60°	428.3	420.1	386.4	344.5	322.6	343.5	384.5	418.2	427.4	418.2	384.5
62.5°	382.8	376.4	337.2	288.9	271.5	287.9	335.3	374.5	381.8	374.5	335.3
65°	339.0	329.0	288.9	243.4	233.2	242.4	287.9	328.0	339.0	328.0	287.9
67.5°	294.4	282.5	244.3	202.3	200.4	202.3	243.3	281.5	294.4	281.5	243.3
70°	248.7	236.9	203.2	167.6	168.6	167.6	203.2	237.9	249.7	237.9	203.2
72.5°	214.1	194.1	166.7	138.5	142.1	137.6	166.7	195.1	216.0	195.1	166.7
75°	178.6	156.7	131.2	110.2	118.4	110.2	132.1	157.7	181.4	157.7	132.1
77.5°	160.5	132.2	102.0	88.4	93.8	88.4	103.0	129.5	156.8	129.5	103.0
80°	153.5	121.5	82.1	66.5	72.0	66.5	80.2	106.7	135.9	106.7	80.2
82.5°	155.8	125.5	79.5	47.4	50.1	47.4	68.4	92.1	120.5	92.1	68.4
85°	165.5	139.8	90.0	39.3	31.0	37.4	63.0	83.1	105.0	83.1	63.0
87.5°	182.6	162.4	106.9	45.0	8.2	32.0	53.9	73.2	86.8	73.2	53.9
90°	205.1	188.5	133.1	57.2	1.8	21.9	41.1	57.5	65.7	57.5	41.1
92.5°	235.1	220.3	159.3	77.8	15.8	13.7	32.0	48.4	52.9	48.4	32.0
95°	261.3	255.7	192.9	100.3	38.1	7.4	25.6	40.1	41.1	40.1	25.6
97.5°	295.8	290.3	226.4	131.0	66.9	12.0	21.0	34.7	35.6	34.7	21.0
100°	324.8	322.0	260.9	171.0	102.2	31.6	14.7	30.2	32.1	30.2	14.7
102.5°	370.5	356.6	293.6	209.1	140.3	58.5	16.7	22.0	24.8	22.0	16.7
105°	408.7	393.0	338.2	249.0	184.0	94.8	38.1	19.3	17.4	19.3	38.1
107.5°	443.2	431.1	379.1	289.9	230.4	136.6	69.7	37.1	26.9	37.1	69.7
110°	486.9	474.9	419.1	331.7	278.8	182.1	105.9	66.0	52.0	66.0	105.9



TEST NUMBER: P392660

CATALOG NUMBER: MWL-4-34-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	531.5	522.2	456.3	374.5	329.0	230.4	150.5	103.1	90.1	103.1	150.5
115°	565.9	560.3	499.0	414.5	376.4	285.3	199.8	146.8	131.0	146.8	199.8
117.5°	602.1	601.2	530.6	455.3	432.1	334.6	245.3	191.4	173.7	191.4	245.3
120°	647.7	640.2	574.3	496.2	485.1	386.6	295.5	241.5	223.9	241.5	295.5
122.5°	679.2	674.6	612.4	535.3	535.3	439.5	344.8	289.9	271.3	289.9	344.8
125°	708.1	706.2	640.2	574.3	589.1	488.8	398.6	342.8	322.4	342.8	398.6
127.5°	734.1	736.9	676.5	617.0	644.0	538.9	451.6	390.2	368.9	390.2	451.6
130°	756.4	765.7	710.8	656.1	696.0	593.8	499.0	437.7	423.8	437.7	499.0
132.5°	800.0	794.5	746.2	696.9	751.7	644.9	549.1	485.1	469.2	485.1	549.1
135°	822.4	824.3	776.8	731.3	803.8	695.1	596.6	533.4	517.6	533.4	596.6
137.5°	849.3	843.8	801.0	773.2	852.2	743.4	643.1	584.5	559.4	584.5	643.1
140°	868.9	868.0	832.6	810.3	904.3	790.7	690.4	630.9	607.7	630.9	690.4
142.5°	889.4	895.0	864.3	851.1	956.3	840.9	741.5	676.5	654.2	676.5	741.5
145°	903.4	915.4	895.9	902.4	1005.6	896.8	786.1	720.1	696.0	720.1	786.1
147.5°	926.6	942.4	919.1	938.6	1048.3	946.1	830.7	765.7	744.3	765.7	830.7
150°	958.1	965.6	951.6	988.8	1092.0	1000.9	876.4	809.3	788.0	809.3	876.4
152.5°	983.3	992.6	976.7	1043.7	1126.4	1051.0	926.6	852.2	827.0	852.2	926.6
155°	1009.2	1013.0	1001.8	1096.6	1163.6	1100.3	966.5	899.6	875.5	899.6	966.5
157.5°	1033.5	1040.8	1027.8	1136.6	1195.1	1143.1	1012.0	947.0	925.6	947.0	1012.0
160°	1059.4	1059.4	1066.9	1183.1	1221.1	1180.2	1060.3	999.0	969.3	999.0	1060.3
162.5°	1062.3	1079.9	1119.8	1215.6	1246.2	1212.8	1112.5	1036.2	1010.2	1036.2	1112.5
165°	1103.2	1118.9	1179.3	1244.4	1265.8	1241.6	1176.5	1097.5	1066.9	1097.5	1176.5
167.5°	1145.9	1179.3	1227.6	1276.9	1284.4	1268.5	1225.8	1170.9	1143.1	1170.9	1225.8
170°	1214.7	1243.5	1268.5	1289.0	1299.2	1289.9	1256.5	1228.6	1210.9	1228.6	1256.5
172.5°	1269.5	1289.0	1298.3	1311.3	1304.8	1301.1	1284.4	1271.3	1261.1	1271.3	1284.4
175°	1303.9	1308.5	1316.9	1312.3	1317.8	1307.6	1308.5	1315.0	1276.0	1315.0	1308.5
177.5°	1316.0	1323.4	1318.7	1310.3	1311.3	1309.4	1313.2	1316.9	1310.3	1316.9	1313.2
180°	1316.9	1316.9	1316.9	1316.9	1316.9	1316.9	1316.9	1316.9	1316.9	1316.9	1316.9



TEST NUMBER: P392660

CATALOG NUMBER: MWL-4-34-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1296.7	1296.7	1296.7	1296.7	1296.7	1296.7
2.5°	1295.9	1304.1	1296.8	1289.5	1289.4	1290.3
5°	1292.2	1297.7	1292.2	1284.0	1284.8	1283.0
7.5°	1280.3	1274.9	1281.3	1273.0	1278.5	1274.8
10°	1266.6	1271.2	1267.5	1259.3	1263.0	1263.0
12.5°	1245.7	1245.7	1245.7	1240.2	1241.1	1246.7
15°	1224.7	1229.3	1225.6	1220.1	1224.7	1222.1
17.5°	1197.4	1202.8	1197.4	1193.7	1199.2	1200.2
20°	1172.8	1173.7	1173.7	1164.6	1167.4	1165.6
22.5°	1134.5	1141.8	1135.4	1135.4	1136.4	1134.6
25°	1107.2	1106.3	1108.1	1098.1	1097.2	1097.2
27.5°	1068.9	1062.5	1069.8	1063.4	1056.2	1058.1
30°	1031.5	1027.9	1033.4	1017.1	1009.8	1007.9
32.5°	990.5	986.0	992.4	970.6	960.6	953.3
35°	942.3	943.2	945.0	918.6	903.1	900.3
37.5°	890.3	897.6	893.1	864.8	845.6	850.1
40°	837.4	844.7	839.2	805.5	797.3	796.4
42.5°	779.1	793.7	780.9	746.3	739.0	748.1
45°	718.0	738.1	719.9	689.8	688.9	700.7
47.5°	655.2	671.6	656.1	632.4	639.7	654.3
50°	591.4	601.4	593.2	578.6	593.2	606.9
52.5°	529.4	522.2	531.3	529.4	547.7	563.2
55°	464.7	444.7	466.6	481.2	503.9	517.6
57.5°	403.6	376.4	405.5	434.7	463.8	473.9
60°	343.5	322.6	344.5	386.4	420.1	428.3
62.5°	287.9	271.5	288.9	337.2	376.4	382.8
65°	242.4	233.2	243.4	288.9	329.0	339.0
67.5°	202.3	200.4	202.3	244.3	282.5	294.4
70°	167.6	168.6	167.6	203.2	236.9	248.7
72.5°	137.6	142.1	138.5	166.7	194.1	214.1
75°	110.2	118.4	110.2	131.2	156.7	178.6
77.5°	88.4	93.8	88.4	102.0	132.2	160.5
80°	66.5	72.0	66.5	82.1	121.5	153.5
82.5°	47.4	50.1	47.4	79.5	125.5	155.8
85°	37.4	31.0	39.3	90.0	139.8	165.5
87.5°	32.0	8.2	45.0	106.9	162.4	182.6
90°	21.9	1.8	57.2	133.1	188.5	205.1
92.5°	13.7	15.8	77.8	159.3	220.3	235.1
95°	7.4	38.1	100.3	192.9	255.7	261.3
97.5°	12.0	66.9	131.0	226.4	290.3	295.8
100°	31.6	102.2	171.0	260.9	322.0	324.8
102.5°	58.5	140.3	209.1	293.6	356.6	370.5
105°	94.8	184.0	249.0	338.2	393.0	408.7
107.5°	136.6	230.4	289.9	379.1	431.1	443.2
110°	182.1	278.8	331.7	419.1	474.9	486.9



TEST NUMBER: P392660

CATALOG NUMBER: MWL-4-34-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	230.4	329.0	374.5	456.3	522.2	531.5
115°	285.3	376.4	414.5	499.0	560.3	565.9
117.5°	334.6	432.1	455.3	530.6	601.2	602.1
120°	386.6	485.1	496.2	574.3	640.2	647.7
122.5°	439.5	535.3	535.3	612.4	674.6	679.2
125°	488.8	589.1	574.3	640.2	706.2	708.1
127.5°	538.9	644.0	617.0	676.5	736.9	734.1
130°	593.8	696.0	656.1	710.8	765.7	756.4
132.5°	644.9	751.7	696.9	746.2	794.5	800.0
135°	695.1	803.8	731.3	776.8	824.3	822.4
137.5°	743.4	852.2	773.2	801.0	843.8	849.3
140°	790.7	904.3	810.3	832.6	868.0	868.9
142.5°	840.9	956.3	851.1	864.3	895.0	889.4
145°	896.8	1005.6	902.4	895.9	915.4	903.4
147.5°	946.1	1048.3	938.6	919.1	942.4	926.6
150°	1000.9	1092.0	988.8	951.6	965.6	958.1
152.5°	1051.0	1126.4	1043.7	976.7	992.6	983.3
155°	1100.3	1163.6	1096.6	1001.8	1013.0	1009.2
157.5°	1143.1	1195.1	1136.6	1027.8	1040.8	1033.5
160°	1180.2	1221.1	1183.1	1066.9	1059.4	1059.4
162.5°	1212.8	1246.2	1215.6	1119.8	1079.9	1062.3
165°	1241.6	1265.8	1244.4	1179.3	1118.9	1103.2
167.5°	1268.5	1284.4	1276.9	1227.6	1179.3	1145.9
170°	1289.9	1299.2	1289.0	1268.5	1243.5	1214.7
172.5°	1301.1	1304.8	1311.3	1298.3	1289.0	1269.5
175°	1307.6	1317.8	1312.3	1316.9	1308.5	1303.9
177.5°	1309.4	1311.3	1310.3	1318.7	1323.4	1316.0
180°	1316.9	1316.9	1316.9	1316.9	1316.9	1316.9

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