

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: P392568

Luminaire Tested: **MWL-3-27-33-UNV-L830-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392568
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 3/12/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-27-33-UNV-L830-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

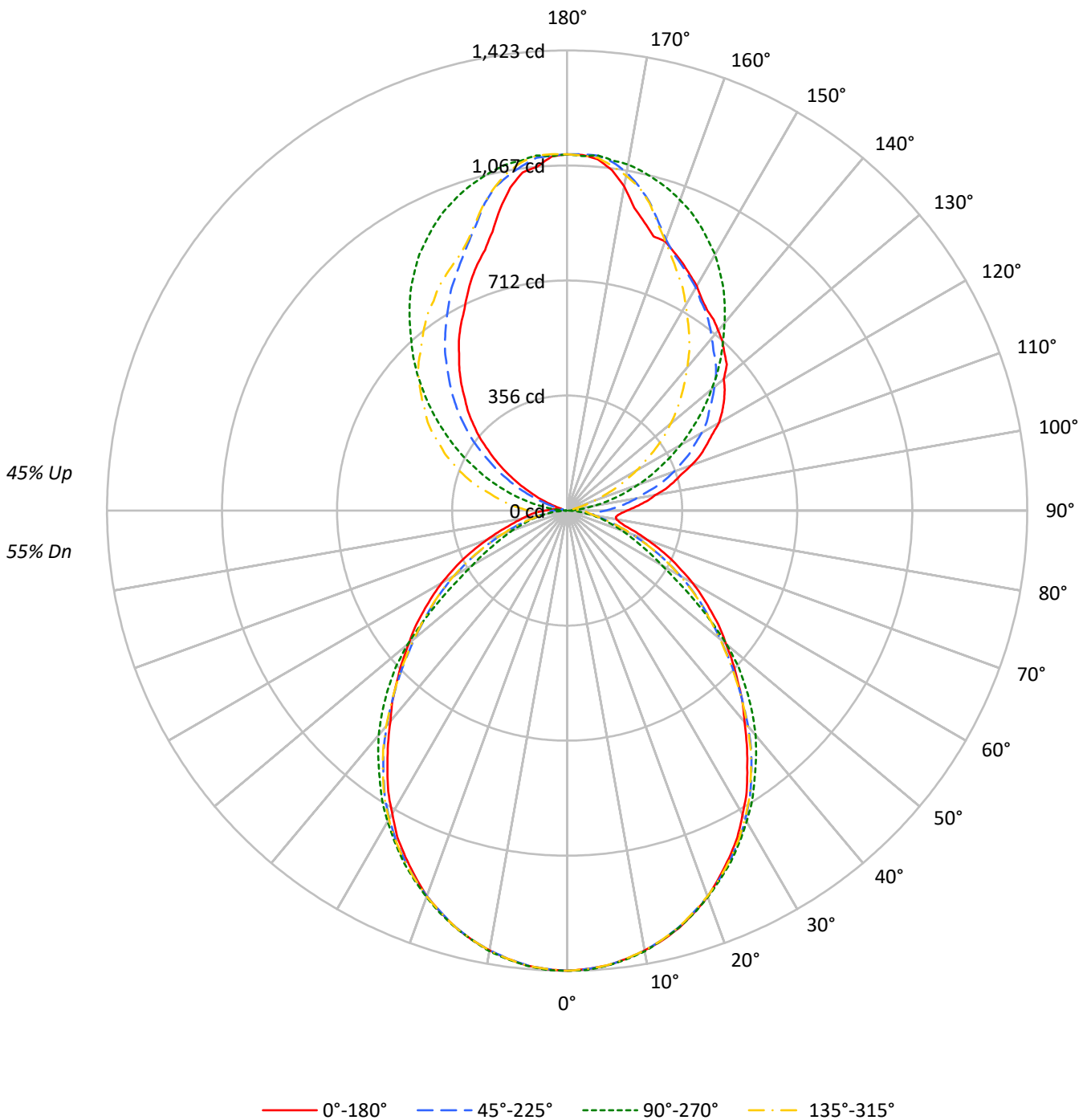
Lumens per Lamp: N/A
Luminaire Lumens: 5900.0 lumens
Efficiency: N/A
Efficacy: 97.7 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 60.4
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: P392568
CATALOG NUMBER: MWL-3-27-33-UNV-L830-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P392568

CATALOG NUMBER: MWL-3-27-33-UNV-L830-EDD

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	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	91	83	77	72	84	78	72	68	67	63	60	57	54	52	48	46	44	40
3	83	74	66	61	77	69	62	57	59	55	51	51	47	44	43	40	38	34
4	76	65	58	52	70	61	54	49	53	48	43	46	42	38	39	36	33	30
5	70	58	50	44	65	55	48	42	48	42	38	41	37	33	35	32	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	32	28	26	23
7	60	48	40	34	56	45	38	33	39	34	29	34	30	26	29	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	31	27	23	27	23	21	19
9	52	40	32	27	48	37	31	26	33	27	24	29	24	21	25	21	19	17
10	48	36	29	25	45	34	28	23	30	25	21	27	22	19	23	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12254	12254	12254	12254
5°	12060	11234	12060	11234
10°	11788	10286	11788	10286
15°	11486	9388	11466	9388
20°	11088	8545	11068	8545
25°	10573	7763	10553	7763
30°	9988	7002	9959	7002
35°	9303	6250	9280	6250
40°	8588	5539	8556	5539
45°	7974	4776	7948	4776
50°	7369	3932	7341	3932
55°	6808	2940	6786	2940
60°	6225	2132	6215	2132
65°	5551	1602	5551	1602
70°	4785	1210	4800	1210
75°	4093	876	4146	876
80°	4283	562	3875	562
85°	6025	242	4097	242



TEST NUMBER: P392568

CATALOG NUMBER: MWL-3-27-33-UNV-L830-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.9	2.3
10°-20°	375.8	6.4
20°-30°	548.3	9.3
30°-40°	619.6	10.5
40°-50°	579.4	9.8
50°-60°	457.3	7.8
60°-70°	299.0	5.1
70°-80°	155.7	2.6
80°-90°	86.1	1.5
90°-100°	100.1	1.7
100°-110°	172.8	2.9
110°-120°	293.1	5.0
120°-130°	398.1	6.7
130°-140°	453.8	7.7
140°-150°	452.6	7.7
150°-160°	394.1	6.7
160°-170°	277.2	4.7
170°-180°	103.2	1.7
0°-30°	1057.9	17.9
0°-40°	1677.5	28.4
0°-60°	2714.3	46.0
0°-90°	3255.0	55.2
90°-120°	565.9	9.6
90°-150°	1870.4	31.7
90°-180°	2645.0	44.8
0°-180°	5900.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1423	1423	1423	1423	1423	
5°	1412	1413	1412	1413	1412	134
15°	1336	1335	1334	1335	1336	376
25°	1185	1198	1183	1198	1185	545
35°	971	1011	969	1011	971	607
45°	746	784	743	784	746	577
55°	543	476	542	476	543	487
65°	354	247	354	247	354	350
75°	187	125	189	125	187	207
85°	158	30	107	30	158	128
90°	184	2	68	2	184	102
95°	229	32	44	32	229	198
105°	342	154	14	154	342	361
115°	474	314	110	314	474	470
125°	592	493	270	493	592	529
135°	688	673	433	673	688	531
145°	756	842	582	842	756	476
155°	844	973	732	973	844	389
165°	923	1059	892	1059	923	262
175°	1091	1102	1067	1102	1091	102
180°	1102	1102	1102	1102	1102	



TEST NUMBER: P392568

CATALOG NUMBER: MWL-3-27-33-UNV-L830-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1423.1	1423.1	1423.1	1423.1	1423.1	1423.1	1423.1	1423.1	1423.1	1423.1	1423.1
2.5°	1418.8	1421.4	1419.1	1419.9	1421.8	1419.1	1419.1	1421.4	1419.7	1421.4	1419.1
5°	1412.1	1413.7	1412.4	1412.4	1413.3	1412.4	1411.6	1413.7	1412.1	1413.7	1411.6
7.5°	1398.5	1401.0	1398.2	1399.9	1399.9	1399.1	1397.4	1400.3	1398.5	1400.3	1397.4
10°	1381.1	1383.8	1381.8	1381.8	1383.8	1381.1	1381.1	1382.2	1381.1	1382.2	1381.1
12.5°	1361.5	1361.7	1359.0	1360.9	1360.2	1360.9	1359.0	1360.2	1360.0	1360.2	1359.0
15°	1336.3	1334.8	1334.0	1335.0	1335.2	1334.2	1333.3	1333.3	1334.0	1333.3	1333.3
17.5°	1304.7	1306.0	1302.4	1305.4	1305.4	1305.4	1301.6	1305.3	1302.4	1305.3	1301.6
20°	1271.1	1270.3	1269.7	1271.8	1271.9	1271.0	1269.0	1268.8	1268.8	1268.8	1269.0
22.5°	1228.1	1231.0	1232.3	1236.3	1235.5	1235.5	1231.5	1229.4	1226.5	1229.4	1231.5
25°	1184.9	1189.7	1192.8	1198.9	1198.0	1198.0	1191.2	1187.4	1182.6	1187.4	1191.2
27.5°	1139.8	1140.7	1149.6	1158.4	1154.8	1157.6	1148.0	1138.4	1137.5	1138.4	1148.0
30°	1085.1	1089.9	1102.3	1112.1	1110.7	1110.6	1100.0	1087.6	1081.9	1087.6	1100.0
32.5°	1033.2	1035.2	1051.5	1063.2	1064.5	1061.6	1049.2	1032.0	1030.1	1032.0	1049.2
35°	971.0	975.8	993.1	1013.3	1010.9	1010.9	990.7	973.4	968.6	973.4	990.7
37.5°	912.5	915.4	934.6	959.5	959.9	957.1	932.2	913.0	910.1	913.0	932.2
40°	853.0	852.0	870.3	898.3	906.2	896.7	867.1	848.9	849.8	848.9	867.1
42.5°	803.1	791.6	804.2	834.9	847.6	833.3	801.8	788.4	799.9	788.4	801.8
45°	745.7	734.2	740.9	769.7	784.3	768.0	737.7	731.8	743.3	731.8	737.7
47.5°	693.8	679.5	678.5	699.8	720.0	698.9	675.3	677.1	691.4	677.1	675.3
50°	641.1	627.6	618.0	632.6	643.3	631.0	614.9	624.5	638.7	624.5	614.9
52.5°	595.9	577.7	561.6	565.4	557.8	563.8	559.2	574.5	593.5	574.5	559.2
55°	543.4	531.8	508.8	496.4	475.5	494.9	506.4	529.4	541.7	529.4	506.4
57.5°	496.3	485.8	457.9	428.3	398.7	426.7	455.5	483.4	494.7	483.4	455.5
60°	448.4	437.9	404.3	361.3	338.2	360.5	402.7	436.3	447.7	436.3	402.7
62.5°	398.5	391.8	353.4	304.6	291.4	303.9	351.9	390.3	397.7	390.3	351.9
65°	353.6	342.1	302.7	255.7	247.2	254.9	302.0	341.3	353.6	341.3	302.0
67.5°	307.5	293.1	255.7	212.7	211.7	212.7	254.9	292.4	307.5	292.4	254.9
70°	262.6	246.3	211.7	176.2	180.1	176.2	211.7	247.1	263.4	247.1	211.7
72.5°	223.3	201.2	173.3	144.5	148.6	143.8	173.3	201.9	224.8	201.9	173.3
75°	186.8	161.8	138.0	115.9	124.6	115.9	138.8	162.6	189.2	162.6	138.8
77.5°	166.1	135.2	106.3	91.0	99.6	91.0	107.1	132.8	163.1	132.8	107.1
80°	154.4	123.0	85.6	69.9	75.6	69.9	84.1	110.6	139.7	110.6	84.1
82.5°	151.9	121.9	79.7	49.7	53.6	49.7	70.3	94.0	122.4	94.0	70.3
85°	157.8	131.8	85.2	39.5	30.5	38.0	62.7	84.4	107.3	84.4	62.7
87.5°	168.5	149.1	99.1	42.6	8.6	31.8	54.8	74.4	88.5	74.4	54.8
90°	184.5	169.0	118.5	51.3	1.7	21.7	41.5	59.4	67.9	59.4	41.5
92.5°	206.3	193.1	140.5	66.7	13.4	13.1	34.0	49.1	53.8	49.1	34.0
95°	228.9	222.3	166.3	83.8	32.1	6.0	26.3	41.8	44.5	41.8	26.3
97.5°	255.4	248.7	190.9	109.8	56.1	10.3	19.1	34.7	37.6	34.7	19.1
100°	277.1	272.5	218.3	143.3	85.7	26.6	12.2	28.3	32.2	28.3	12.2
102.5°	312.8	299.7	245.3	175.2	117.7	49.1	13.6	19.7	23.5	19.7	13.6
105°	341.5	325.9	283.4	208.7	154.1	79.5	32.2	13.1	14.1	13.1	32.2
107.5°	369.2	360.5	317.7	242.8	193.1	114.5	58.7	30.7	20.7	30.7	58.7
110°	408.1	397.8	351.1	277.1	233.5	151.8	89.1	55.6	44.1	55.6	89.1



TEST NUMBER: P392568

CATALOG NUMBER: MWL-3-27-33-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	445.4	437.5	382.3	312.8	275.5	192.3	126.4	86.7	76.0	86.7	126.4
115°	474.2	469.3	418.0	346.3	314.4	238.2	167.6	123.2	110.2	123.2	167.6
117.5°	503.6	502.8	444.5	380.5	361.1	279.4	205.7	159.8	145.0	159.8	205.7
120°	541.7	535.5	481.1	414.7	405.4	323.0	247.7	201.8	187.1	201.8	247.7
122.5°	568.1	564.3	512.2	448.3	448.3	368.3	288.1	242.3	226.7	242.3	288.1
125°	592.2	590.7	535.5	481.1	493.4	409.5	333.2	286.6	269.5	286.6	333.2
127.5°	614.0	616.4	565.8	516.8	539.3	451.5	377.6	326.2	308.4	326.2	377.6
130°	632.7	640.5	594.6	549.5	582.9	497.4	417.2	365.9	354.3	365.9	417.2
132.5°	669.3	664.6	624.2	582.9	629.5	539.3	459.3	405.6	392.4	405.6	459.3
135°	687.9	689.4	649.8	611.7	673.1	581.4	498.9	446.0	432.8	446.0	498.9
137.5°	710.5	705.8	670.0	646.7	713.6	621.8	537.8	488.8	467.8	488.8	537.8
140°	726.8	726.0	696.4	677.8	757.1	661.5	577.5	527.7	508.2	527.7	577.5
142.5°	744.0	748.6	722.9	712.0	800.7	703.4	620.2	565.8	547.1	565.8	620.2
145°	755.6	765.7	749.3	754.8	841.9	750.1	657.6	602.4	582.1	602.4	657.6
147.5°	775.0	788.3	768.8	785.1	877.7	791.4	694.9	640.5	622.5	640.5	694.9
150°	801.4	807.7	796.1	827.2	914.2	837.2	733.0	677.1	659.1	677.1	733.0
152.5°	822.5	830.2	817.0	873.0	943.0	879.3	775.0	712.8	691.8	712.8	775.0
155°	844.3	847.3	838.0	917.4	973.3	920.5	808.5	752.5	732.2	752.5	808.5
157.5°	864.5	870.6	859.8	950.8	999.8	956.3	846.6	792.1	774.3	792.1	846.6
160°	886.3	886.3	892.4	989.7	1021.6	987.4	887.1	835.7	810.9	835.7	887.1
162.5°	888.6	903.4	936.8	1016.9	1042.5	1014.6	930.5	866.8	845.0	866.8	930.5
165°	922.8	936.0	986.6	1041.0	1058.9	1038.7	984.3	918.2	892.4	918.2	984.3
167.5°	958.6	986.6	1027.0	1068.3	1074.5	1061.3	1025.5	979.6	956.3	979.6	1025.5
170°	1016.9	1041.0	1061.3	1078.4	1086.9	1079.1	1051.1	1028.5	1013.8	1028.5	1051.1
172.5°	1061.8	1078.4	1086.1	1097.1	1091.6	1088.4	1074.5	1063.6	1054.8	1063.6	1074.5
175°	1090.6	1094.7	1101.7	1097.8	1102.4	1093.9	1094.7	1100.1	1067.3	1100.1	1094.7
177.5°	1100.7	1107.1	1103.2	1096.2	1097.1	1095.4	1098.6	1101.7	1096.1	1101.7	1098.6
180°	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7



TEST NUMBER: P392568

CATALOG NUMBER: MWL-3-27-33-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1423.1	1423.1	1423.1	1423.1	1423.1	1423.1
2.5°	1419.1	1421.8	1419.9	1419.1	1421.4	1418.8
5°	1412.4	1413.3	1412.4	1412.4	1413.7	1412.1
7.5°	1399.1	1399.9	1399.9	1398.2	1401.0	1398.5
10°	1381.1	1383.8	1381.8	1381.8	1383.8	1381.1
12.5°	1360.9	1360.2	1360.9	1359.0	1361.7	1361.5
15°	1334.2	1335.2	1335.0	1334.0	1334.8	1336.3
17.5°	1305.4	1305.4	1305.4	1302.4	1306.0	1304.7
20°	1271.0	1271.9	1271.8	1269.7	1270.3	1271.1
22.5°	1235.5	1235.5	1236.3	1232.3	1231.0	1228.1
25°	1198.0	1198.0	1198.9	1192.8	1189.7	1184.9
27.5°	1157.6	1154.8	1158.4	1149.6	1140.7	1139.8
30°	1110.6	1110.7	1112.1	1102.3	1089.9	1085.1
32.5°	1061.6	1064.5	1063.2	1051.5	1035.2	1033.2
35°	1010.9	1010.9	1013.3	993.1	975.8	971.0
37.5°	957.1	959.9	959.5	934.6	915.4	912.5
40°	896.7	906.2	898.3	870.3	852.0	853.0
42.5°	833.3	847.6	834.9	804.2	791.6	803.1
45°	768.0	784.3	769.7	740.9	734.2	745.7
47.5°	698.9	720.0	699.8	678.5	679.5	693.8
50°	631.0	643.3	632.6	618.0	627.6	641.1
52.5°	563.8	557.8	565.4	561.6	577.7	595.9
55°	494.9	475.5	496.4	508.8	531.8	543.4
57.5°	426.7	398.7	428.3	457.9	485.8	496.3
60°	360.5	338.2	361.3	404.3	437.9	448.4
62.5°	303.9	291.4	304.6	353.4	391.8	398.5
65°	254.9	247.2	255.7	302.7	342.1	353.6
67.5°	212.7	211.7	212.7	255.7	293.1	307.5
70°	176.2	180.1	176.2	211.7	246.3	262.6
72.5°	143.8	148.6	144.5	173.3	201.2	223.3
75°	115.9	124.6	115.9	138.0	161.8	186.8
77.5°	91.0	99.6	91.0	106.3	135.2	166.1
80°	69.9	75.6	69.9	85.6	123.0	154.4
82.5°	49.7	53.6	49.7	79.7	121.9	151.9
85°	38.0	30.5	39.5	85.2	131.8	157.8
87.5°	31.8	8.6	42.6	99.1	149.1	168.5
90°	21.7	1.7	51.3	118.5	169.0	184.5
92.5°	13.1	13.4	66.7	140.5	193.1	206.3
95°	6.0	32.1	83.8	166.3	222.3	228.9
97.5°	10.3	56.1	109.8	190.9	248.7	255.4
100°	26.6	85.7	143.3	218.3	272.5	277.1
102.5°	49.1	117.7	175.2	245.3	299.7	312.8
105°	79.5	154.1	208.7	283.4	325.9	341.5
107.5°	114.5	193.1	242.8	317.7	360.5	369.2
110°	151.8	233.5	277.1	351.1	397.8	408.1



TEST NUMBER: P392568

CATALOG NUMBER: MWL-3-27-33-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	192.3	275.5	312.8	382.3	437.5	445.4
115°	238.2	314.4	346.3	418.0	469.3	474.2
117.5°	279.4	361.1	380.5	444.5	502.8	503.6
120°	323.0	405.4	414.7	481.1	535.5	541.7
122.5°	368.3	448.3	448.3	512.2	564.3	568.1
125°	409.5	493.4	481.1	535.5	590.7	592.2
127.5°	451.5	539.3	516.8	565.8	616.4	614.0
130°	497.4	582.9	549.5	594.6	640.5	632.7
132.5°	539.3	629.5	582.9	624.2	664.6	669.3
135°	581.4	673.1	611.7	649.8	689.4	687.9
137.5°	621.8	713.6	646.7	670.0	705.8	710.5
140°	661.5	757.1	677.8	696.4	726.0	726.8
142.5°	703.4	800.7	712.0	722.9	748.6	744.0
145°	750.1	841.9	754.8	749.3	765.7	755.6
147.5°	791.4	877.7	785.1	768.8	788.3	775.0
150°	837.2	914.2	827.2	796.1	807.7	801.4
152.5°	879.3	943.0	873.0	817.0	830.2	822.5
155°	920.5	973.3	917.4	838.0	847.3	844.3
157.5°	956.3	999.8	950.8	859.8	870.6	864.5
160°	987.4	1021.6	989.7	892.4	886.3	886.3
162.5°	1014.6	1042.5	1016.9	936.8	903.4	888.6
165°	1038.7	1058.9	1041.0	986.6	936.0	922.8
167.5°	1061.3	1074.5	1068.3	1027.0	986.6	958.6
170°	1079.1	1086.9	1078.4	1061.3	1041.0	1016.9
172.5°	1088.4	1091.6	1097.1	1086.1	1078.4	1061.8
175°	1093.9	1102.4	1097.8	1101.7	1094.7	1090.6
177.5°	1095.4	1097.1	1096.2	1103.2	1107.1	1100.7
180°	1101.7	1101.7	1101.7	1101.7	1101.7	1101.7

(END OF REPORT)