

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: P392658

Luminaire Tested: **MWL-4-34-33-UNV-L930-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392658  
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-L930-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

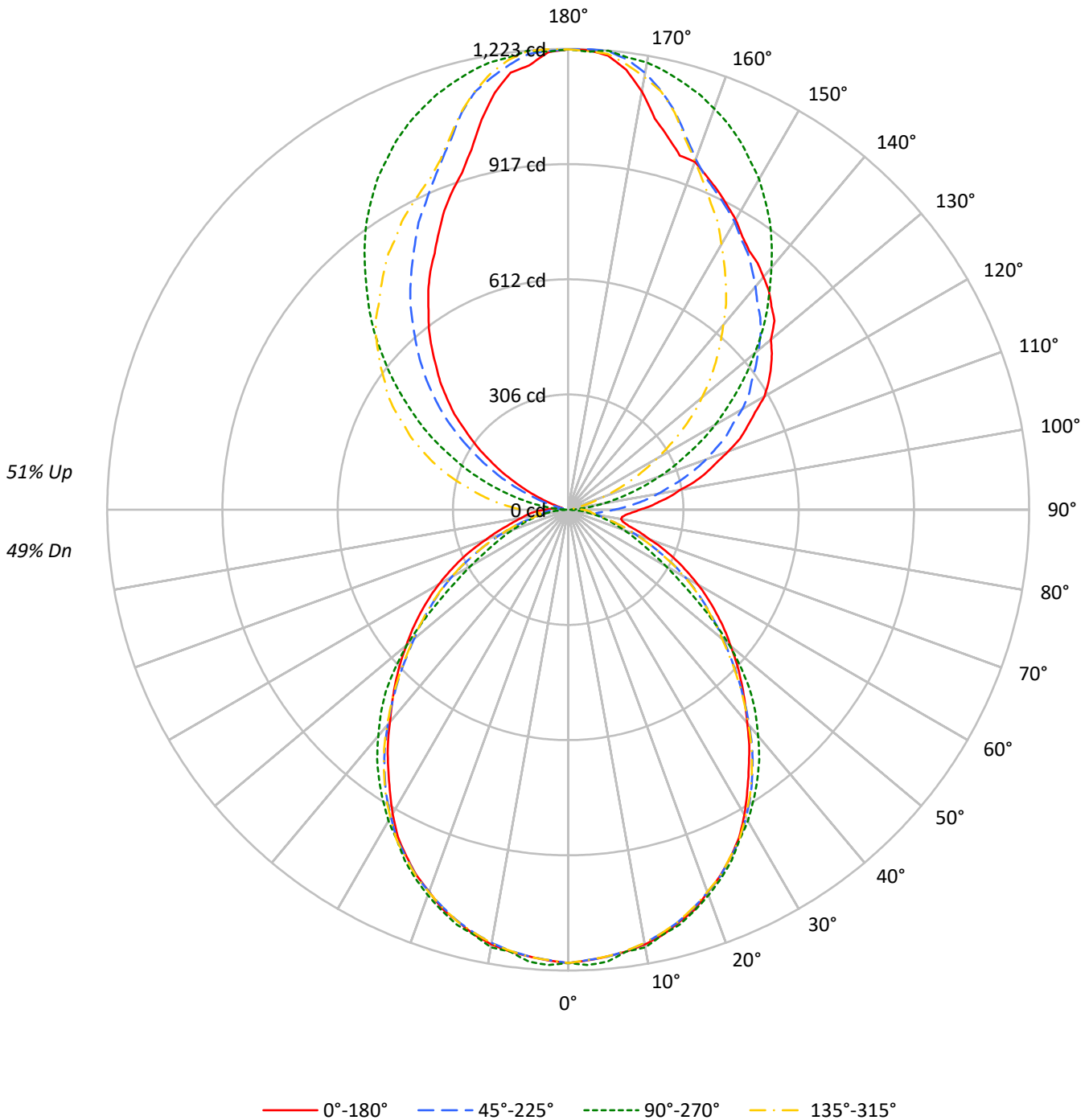
Lumens per Lamp: N/A  
Luminaire Lumens: 5751.4 lumens  
Efficiency: N/A  
Efficacy: 84.2 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: General Diffuse

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



TEST NUMBER: P392658  
CATALOG NUMBER: MWL-4-34-33-UNV-L930-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P392658

CATALOG NUMBER: MWL-4-34-33-UNV-L930-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	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°	7769	7769	7769	7769
5°	7646	7176	7646	7176
10°	7545	6574	7545	6574
15°	7374	6013	7357	6013
20°	7159	5486	7142	5486
25°	6918	4987	6899	4987
30°	6577	4508	6553	4508
35°	6137	4057	6118	4057
40°	5728	3592	5702	3592
45°	5378	3127	5356	3127
50°	5032	2558	5009	2558
55°	4706	1913	4690	1913
60°	4349	1415	4339	1415
65°	3929	1051	3929	1051
70°	3388	788	3402	788
75°	2975	580	3024	580
80°	3329	372	2948	372
85°	5192	171	3298	171



TEST NUMBER: P392658

CATALOG NUMBER: MWL-4-34-33-UNV-L930-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	113.3	2.0
10°-20°	319.5	5.6
20°-30°	469.5	8.2
30°-40°	533.4	9.3
40°-50°	502.6	8.7
50°-60°	401.1	7.0
60°-70°	264.8	4.6
70°-80°	138.7	2.4
80°-90°	81.3	1.4
90°-100°	105.7	1.8
100°-110°	191.3	3.3
110°-120°	324.9	5.6
120°-130°	441.3	7.7
130°-140°	503.3	8.8
140°-150°	501.8	8.7
150°-160°	437.0	7.6
160°-170°	307.4	5.3
170°-180°	114.5	2.0
0°-30°	902.3	15.7
0°-40°	1435.7	25.0
0°-60°	2339.4	40.7
0°-90°	2824.3	49.1
90°-120°	621.9	10.8
90°-150°	2068.3	36.0
90°-180°	2927.0	50.9
0°-180°	5751.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1203	1203	1203	1203	1203	
5°	1190	1204	1190	1204	1190	113
15°	1134	1140	1131	1140	1134	320
25°	1018	1026	1015	1026	1018	468
35°	835	875	833	875	835	523
45°	650	685	648	685	650	502
55°	480	412	478	412	480	430
65°	314	216	314	216	314	311
75°	166	110	168	110	166	185
85°	154	29	98	29	154	124
90°	190	2	61	2	190	105
95°	242	35	38	35	242	211
105°	379	171	16	171	379	399
115°	525	349	122	349	525	521
125°	657	546	299	546	657	587
135°	763	746	480	746	763	589
145°	838	933	646	933	838	528
155°	936	1079	812	1079	936	432
165°	1023	1174	990	1174	1023	290
175°	1210	1222	1184	1222	1210	113
180°	1222	1222	1222	1222	1222	



TEST NUMBER: P392658

CATALOG NUMBER: MWL-4-34-33-UNV-L930-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1202.9	1202.9	1202.9	1202.9	1202.9	1202.9	1202.9	1202.9	1202.9	1202.9	1202.9
2.5°	1197.0	1196.1	1196.2	1202.9	1209.7	1202.1	1196.2	1196.1	1197.7	1196.1	1196.2
5°	1190.2	1191.8	1191.1	1198.7	1203.7	1198.7	1190.2	1191.8	1190.2	1191.8	1190.2
7.5°	1182.5	1185.9	1180.8	1188.6	1182.6	1187.6	1180.0	1185.1	1182.5	1185.1	1180.0
10°	1171.6	1171.6	1168.2	1175.8	1179.2	1174.9	1167.4	1169.8	1171.6	1169.8	1167.4
12.5°	1156.4	1151.3	1150.5	1155.5	1155.5	1155.5	1150.5	1149.6	1154.7	1149.6	1150.5
15°	1133.6	1136.0	1131.8	1136.9	1140.2	1136.0	1131.0	1134.3	1131.0	1134.3	1131.0
17.5°	1113.3	1112.4	1107.3	1110.7	1115.8	1110.7	1106.4	1111.5	1110.7	1111.5	1106.4
20°	1081.2	1082.9	1080.3	1088.7	1088.7	1087.9	1079.4	1081.2	1078.6	1081.2	1079.4
22.5°	1052.5	1054.1	1053.3	1053.3	1059.2	1052.4	1052.4	1052.4	1050.7	1052.4	1052.4
25°	1017.9	1017.9	1018.6	1027.9	1026.2	1027.0	1016.9	1015.2	1015.2	1015.2	1016.9
27.5°	981.5	979.8	986.4	992.4	985.6	991.5	984.8	977.2	978.9	977.2	984.8
30°	935.0	936.7	943.5	958.6	953.5	956.8	940.8	934.0	931.5	934.0	940.8
32.5°	884.3	891.1	900.3	920.6	914.6	918.8	897.7	887.5	880.8	887.5	897.7
35°	835.2	837.7	852.1	876.5	874.9	874.1	849.5	835.2	832.6	835.2	849.5
37.5°	788.7	784.4	802.2	828.4	832.6	825.9	799.7	781.9	786.1	781.9	799.7
40°	738.8	739.6	747.3	778.5	783.6	776.9	743.8	736.3	735.4	736.3	743.8
42.5°	694.0	685.6	692.3	724.5	736.3	722.7	689.8	682.2	690.7	682.2	689.8
45°	650.1	639.1	639.9	667.8	684.7	666.1	636.4	636.5	647.5	636.5	636.4
47.5°	606.9	593.5	586.7	608.6	623.0	607.8	583.2	590.9	604.4	590.9	583.2
50°	563.0	550.3	536.8	550.3	558.0	548.6	533.3	546.9	560.4	546.9	533.3
52.5°	522.4	508.0	491.1	492.8	484.4	491.1	488.5	504.6	519.9	504.6	488.5
55°	480.1	467.5	446.3	432.9	412.5	431.1	443.8	464.9	478.5	464.9	443.8
57.5°	439.6	430.3	403.3	376.2	349.1	374.5	400.6	427.7	437.9	427.7	400.6
60°	397.4	389.7	358.5	319.6	299.3	318.7	356.7	387.9	396.5	387.9	356.7
62.5°	355.1	349.1	312.8	268.0	251.9	267.1	311.1	347.4	354.2	347.4	311.1
65°	314.5	305.2	268.0	225.8	216.3	224.8	267.1	304.3	314.5	304.3	267.1
67.5°	273.1	262.1	226.6	187.6	186.0	187.6	225.7	261.2	273.1	261.2	225.7
70°	230.8	219.8	188.5	155.5	156.4	155.5	188.5	220.7	231.7	220.7	188.5
72.5°	198.6	180.1	154.7	128.5	131.8	127.6	154.7	180.9	200.4	180.9	154.7
75°	165.6	145.4	121.7	102.3	109.9	102.3	122.6	146.3	168.3	146.3	122.6
77.5°	148.9	122.7	94.7	82.0	87.1	82.0	95.5	120.1	145.5	120.1	95.5
80°	142.4	112.8	76.2	61.7	66.7	61.7	74.4	99.0	126.1	99.0	74.4
82.5°	144.5	116.5	73.8	43.9	46.5	43.9	63.5	85.4	111.8	85.4	63.5
85°	153.5	129.7	83.5	36.5	28.7	34.7	58.5	77.0	97.5	77.0	58.5
87.5°	169.4	150.7	99.1	41.7	7.6	29.7	50.0	67.9	80.6	67.9	50.0
90°	190.3	174.9	123.4	53.1	1.7	20.3	38.1	53.4	60.9	53.4	38.1
92.5°	218.1	204.4	147.7	72.2	14.6	12.7	29.7	44.9	49.1	44.9	29.7
95°	242.4	237.3	178.9	93.1	35.3	6.9	23.8	37.2	38.1	37.2	23.8
97.5°	274.5	269.3	210.0	121.5	62.1	11.2	19.5	32.2	33.0	32.2	19.5
100°	301.3	298.7	242.0	158.7	94.8	29.3	13.6	28.1	29.8	28.1	13.6
102.5°	343.7	330.8	272.4	194.0	130.1	54.2	15.5	20.4	23.0	20.4	15.5
105°	379.1	364.5	313.7	231.0	170.6	87.9	35.3	18.0	16.1	18.0	35.3
107.5°	411.1	399.9	351.7	269.0	213.8	126.7	64.6	34.4	24.9	34.4	64.6
110°	451.7	440.5	388.8	307.7	258.6	169.0	98.2	61.2	48.3	61.2	98.2



TEST NUMBER: P392658

CATALOG NUMBER: MWL-4-34-33-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	493.1	484.5	423.3	347.4	305.2	213.8	139.6	95.7	83.6	95.7	139.6
115°	525.0	519.8	463.0	384.5	349.1	264.7	185.3	136.1	121.5	136.1	185.3
117.5°	558.6	557.8	492.3	422.4	400.9	310.4	227.5	177.6	161.2	177.6	227.5
120°	600.9	593.9	532.7	460.3	450.0	358.6	274.1	224.1	207.8	224.1	274.1
122.5°	630.1	625.8	568.1	496.6	496.6	407.8	319.8	269.0	251.7	269.0	319.8
125°	656.9	655.1	593.9	532.7	546.5	453.5	369.8	318.0	299.1	318.0	369.8
127.5°	681.0	683.6	627.6	572.4	597.4	499.9	418.9	362.0	342.3	362.0	418.9
130°	701.7	710.3	659.4	608.6	645.7	550.8	463.0	406.1	393.1	406.1	463.0
132.5°	742.2	737.1	692.2	646.6	697.4	598.2	509.5	450.0	435.3	450.0	509.5
135°	762.9	764.7	720.6	678.4	745.7	644.8	553.5	494.8	480.1	494.8	553.5
137.5°	788.0	782.8	743.1	717.3	790.5	689.6	596.5	542.2	519.0	542.2	596.5
140°	806.0	805.1	772.4	751.8	838.8	733.5	640.5	585.4	563.8	585.4	640.5
142.5°	825.0	830.1	801.7	789.6	887.1	780.1	687.9	627.6	606.8	627.6	687.9
145°	838.0	849.1	831.0	837.0	932.8	831.9	729.2	668.0	645.7	668.0	729.2
147.5°	859.5	874.2	852.6	870.6	972.4	877.6	770.7	710.3	690.5	710.3	770.7
150°	888.8	895.6	882.8	917.2	1012.9	928.5	813.0	750.8	731.0	750.8	813.0
152.5°	912.1	920.7	906.0	968.1	1044.9	975.0	859.5	790.5	767.2	790.5	859.5
155°	936.1	939.7	929.3	1017.2	1079.3	1020.7	896.5	834.4	812.1	834.4	896.5
157.5°	958.7	965.5	953.4	1054.3	1108.5	1060.3	938.8	878.5	858.6	878.5	938.8
160°	982.7	982.7	989.7	1097.5	1132.8	1094.8	983.6	926.7	899.2	926.7	983.6
162.5°	985.4	1001.7	1038.8	1127.6	1156.0	1125.0	1031.9	961.2	937.1	961.2	1031.9
165°	1023.3	1037.9	1093.9	1154.3	1174.1	1151.7	1091.4	1018.0	989.7	1018.0	1091.4
167.5°	1062.9	1093.9	1138.8	1184.5	1191.4	1176.7	1137.1	1086.2	1060.3	1086.2	1137.1
170°	1126.8	1153.5	1176.7	1195.7	1205.2	1196.6	1165.5	1139.7	1123.3	1139.7	1165.5
172.5°	1177.7	1195.7	1204.3	1216.3	1210.3	1206.9	1191.4	1179.3	1169.8	1179.3	1191.4
175°	1209.5	1213.9	1221.6	1217.3	1222.5	1213.0	1213.9	1219.8	1183.7	1219.8	1213.9
177.5°	1220.7	1227.6	1223.3	1215.5	1216.3	1214.6	1218.2	1221.6	1215.5	1221.6	1218.2
180°	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6



TEST NUMBER: P392658

CATALOG NUMBER: MWL-4-34-33-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1202.9	1202.9	1202.9	1202.9	1202.9	1202.9
2.5°	1202.1	1209.7	1202.9	1196.2	1196.1	1197.0
5°	1198.7	1203.7	1198.7	1191.1	1191.8	1190.2
7.5°	1187.6	1182.6	1188.6	1180.8	1185.9	1182.5
10°	1174.9	1179.2	1175.8	1168.2	1171.6	1171.6
12.5°	1155.5	1155.5	1155.5	1150.5	1151.3	1156.4
15°	1136.0	1140.2	1136.9	1131.8	1136.0	1133.6
17.5°	1110.7	1115.8	1110.7	1107.3	1112.4	1113.3
20°	1087.9	1088.7	1088.7	1080.3	1082.9	1081.2
22.5°	1052.4	1059.2	1053.3	1053.3	1054.1	1052.5
25°	1027.0	1026.2	1027.9	1018.6	1017.9	1017.9
27.5°	991.5	985.6	992.4	986.4	979.8	981.5
30°	956.8	953.5	958.6	943.5	936.7	935.0
32.5°	918.8	914.6	920.6	900.3	891.1	884.3
35°	874.1	874.9	876.5	852.1	837.7	835.2
37.5°	825.9	832.6	828.4	802.2	784.4	788.7
40°	776.9	783.6	778.5	747.3	739.6	738.8
42.5°	722.7	736.3	724.5	692.3	685.6	694.0
45°	666.1	684.7	667.8	639.9	639.1	650.1
47.5°	607.8	623.0	608.6	586.7	593.5	606.9
50°	548.6	558.0	550.3	536.8	550.3	563.0
52.5°	491.1	484.4	492.8	491.1	508.0	522.4
55°	431.1	412.5	432.9	446.3	467.5	480.1
57.5°	374.5	349.1	376.2	403.3	430.3	439.6
60°	318.7	299.3	319.6	358.5	389.7	397.4
62.5°	267.1	251.9	268.0	312.8	349.1	355.1
65°	224.8	216.3	225.8	268.0	305.2	314.5
67.5°	187.6	186.0	187.6	226.6	262.1	273.1
70°	155.5	156.4	155.5	188.5	219.8	230.8
72.5°	127.6	131.8	128.5	154.7	180.1	198.6
75°	102.3	109.9	102.3	121.7	145.4	165.6
77.5°	82.0	87.1	82.0	94.7	122.7	148.9
80°	61.7	66.7	61.7	76.2	112.8	142.4
82.5°	43.9	46.5	43.9	73.8	116.5	144.5
85°	34.7	28.7	36.5	83.5	129.7	153.5
87.5°	29.7	7.6	41.7	99.1	150.7	169.4
90°	20.3	1.7	53.1	123.4	174.9	190.3
92.5°	12.7	14.6	72.2	147.7	204.4	218.1
95°	6.9	35.3	93.1	178.9	237.3	242.4
97.5°	11.2	62.1	121.5	210.0	269.3	274.5
100°	29.3	94.8	158.7	242.0	298.7	301.3
102.5°	54.2	130.1	194.0	272.4	330.8	343.7
105°	87.9	170.6	231.0	313.7	364.5	379.1
107.5°	126.7	213.8	269.0	351.7	399.9	411.1
110°	169.0	258.6	307.7	388.8	440.5	451.7





TEST NUMBER: P392658

CATALOG NUMBER: MWL-4-34-33-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	213.8	305.2	347.4	423.3	484.5	493.1
115°	264.7	349.1	384.5	463.0	519.8	525.0
117.5°	310.4	400.9	422.4	492.3	557.8	558.6
120°	358.6	450.0	460.3	532.7	593.9	600.9
122.5°	407.8	496.6	496.6	568.1	625.8	630.1
125°	453.5	546.5	532.7	593.9	655.1	656.9
127.5°	499.9	597.4	572.4	627.6	683.6	681.0
130°	550.8	645.7	608.6	659.4	710.3	701.7
132.5°	598.2	697.4	646.6	692.2	737.1	742.2
135°	644.8	745.7	678.4	720.6	764.7	762.9
137.5°	689.6	790.5	717.3	743.1	782.8	788.0
140°	733.5	838.8	751.8	772.4	805.1	806.0
142.5°	780.1	887.1	789.6	801.7	830.1	825.0
145°	831.9	932.8	837.0	831.0	849.1	838.0
147.5°	877.6	972.4	870.6	852.6	874.2	859.5
150°	928.5	1012.9	917.2	882.8	895.6	888.8
152.5°	975.0	1044.9	968.1	906.0	920.7	912.1
155°	1020.7	1079.3	1017.2	929.3	939.7	936.1
157.5°	1060.3	1108.5	1054.3	953.4	965.5	958.7
160°	1094.8	1132.8	1097.5	989.7	982.7	982.7
162.5°	1125.0	1156.0	1127.6	1038.8	1001.7	985.4
165°	1151.7	1174.1	1154.3	1093.9	1037.9	1023.3
167.5°	1176.7	1191.4	1184.5	1138.8	1093.9	1062.9
170°	1196.6	1205.2	1195.7	1176.7	1153.5	1126.8
172.5°	1206.9	1210.3	1216.3	1204.3	1195.7	1177.7
175°	1213.0	1222.5	1217.3	1221.6	1213.9	1209.5
177.5°	1214.6	1216.3	1215.5	1223.3	1227.6	1220.7
180°	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6

(END OF REPORT)