

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: P392542

Luminaire Tested: **MWL-2-35-31-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392542  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-25 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-2-35-31-UNV-L935-EDD  
Description: MWL 2FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5568.3 lumens  
Efficiency: N/A  
Efficacy: 73.5 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')  
CIE Type: General Diffuse

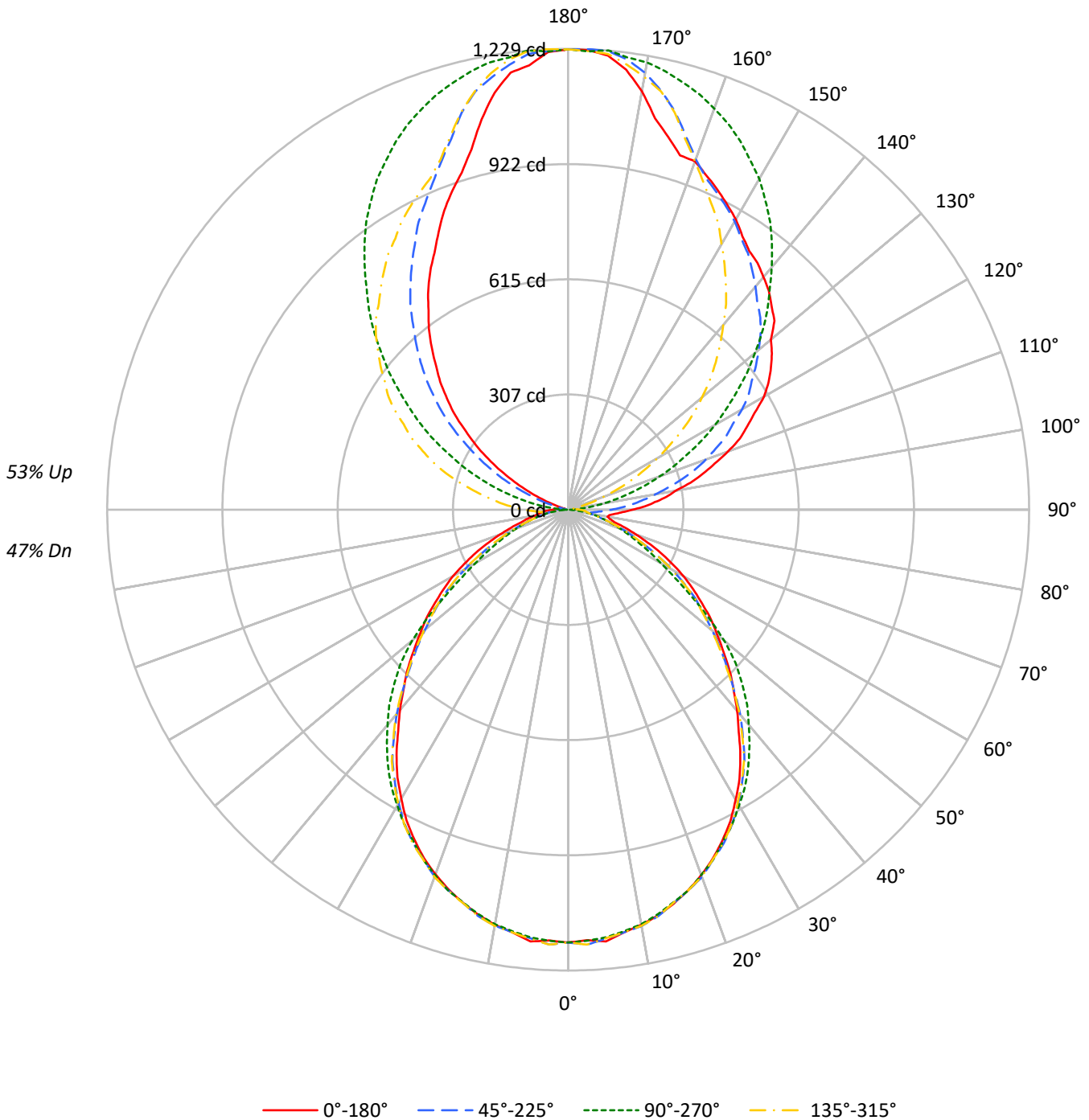
Input Watts (W): 75.75  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: MWL-2-35-31-UNV-L935-EDD

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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	50	30	10	0														
RCR																																						
0	107	107	107	107	98	98	98	98	82	82	82	67	67	67	54	54	54	47																				
1	97	93	89	86	89	86	83	80	72	70	68	59	58	56	48	47	46	40																				
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	34																				
3	81	72	65	59	75	67	61	56	56	52	48	47	44	41	38	36	34	30																				
4	75	64	56	51	68	59	53	47	50	45	41	42	38	35	34	32	29	26																				
5	69	57	49	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23																				
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20																				
7	59	47	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18																				
8	54	42	35	30	50	39	33	28	34	29	25	29	25	22	24	21	18	16																				
9	51	39	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	15																				
10	47	36	28	24	44	33	27	22	29	24	20	24	20	18	20	17	15	13																				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	14907	14907	14907	14907
5°	14717	13651	14717	13651
10°	14220	12515	14220	12515
15°	13771	11431	13739	11431
20°	13253	10453	13220	10453
25°	12641	9489	12607	9489
30°	11888	8616	11844	8616
35°	11013	7763	10978	7763
40°	10063	6870	10012	6870
45°	9210	5983	9170	5983
50°	8344	4974	8302	4974
55°	7546	3692	7517	3692
60°	6750	2699	6733	2699
65°	5748	2003	5748	2003
70°	4611	1488	4631	1488
75°	3563	1039	3636	1039
80°	3614	660	3052	660
85°	5492	279	3024	279



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.8	2.0
10°-20°	306.2	5.5
20°-30°	449.0	8.1
30°-40°	509.5	9.2
40°-50°	475.4	8.5
50°-60°	373.1	6.7
60°-70°	233.0	4.2
70°-80°	113.3	2.0
80°-90°	68.3	1.2
90°-100°	98.9	1.8
100°-110°	189.2	3.4
110°-120°	326.3	5.9
120°-130°	443.5	8.0
130°-140°	505.9	9.1
140°-150°	504.6	9.1
150°-160°	439.4	7.9
160°-170°	309.0	5.5
170°-180°	115.1	2.1
0°-30°	864.1	15.5
0°-40°	1373.6	24.7
0°-60°	2222.1	39.9
0°-90°	2636.7	47.4
90°-120°	614.4	11.0
90°-150°	2068.2	37.1
90°-180°	2932.0	52.7
0°-180°	5568.3	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1154	1154	1154	1154	1154	
5°	1156	1145	1156	1145	1156	109
15°	1087	1084	1085	1084	1087	306
25°	973	976	970	976	973	447
35°	800	837	798	837	800	499
45°	609	655	607	655	609	469
55°	435	398	433	398	435	390
65°	272	206	272	206	272	269
75°	127	98	130	98	127	144
85°	125	23	69	23	125	99
90°	171	2	41	2	171	95
95°	232	36	27	36	232	203
105°	372	172	8	172	372	393
115°	527	351	121	351	527	523
125°	660	549	300	549	660	589
135°	767	750	482	750	767	592
145°	842	938	649	938	842	531
155°	942	1085	817	1085	942	434
165°	1029	1180	995	1180	1029	292
175°	1216	1229	1190	1229	1216	113
180°	1228	1228	1228	1228	1228	



TEST NUMBER: P392542

CATALOG NUMBER: MWL-2-35-31-UNV-L935-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1154.1	1154.1	1154.1	1154.1	1154.1	1154.1	1154.1	1154.1	1154.1	1154.1	1154.1
2.5°	1149.0	1156.5	1160.8	1149.9	1150.8	1149.1	1160.8	1156.5	1149.8	1156.5	1160.8
5°	1155.7	1148.2	1148.3	1147.4	1144.9	1147.4	1147.4	1148.2	1155.7	1148.2	1147.4
7.5°	1137.3	1143.3	1137.4	1136.6	1134.1	1135.7	1136.5	1142.3	1137.3	1142.3	1136.5
10°	1124.0	1128.2	1127.4	1121.6	1122.4	1120.6	1126.5	1126.5	1124.0	1126.5	1126.5
12.5°	1108.2	1110.7	1109.8	1103.1	1104.8	1103.1	1109.8	1109.0	1106.5	1109.0	1109.8
15°	1087.3	1086.5	1085.6	1083.1	1083.9	1082.2	1084.8	1084.8	1084.8	1084.8	1084.8
17.5°	1064.0	1065.7	1064.7	1064.7	1064.7	1064.7	1063.9	1064.7	1061.4	1064.7	1063.9
20°	1037.3	1041.4	1042.2	1037.2	1037.2	1036.3	1041.3	1039.7	1034.7	1039.7	1041.3
22.5°	1007.3	1008.1	1009.7	1003.0	1009.7	1002.2	1008.8	1006.3	1005.5	1006.3	1008.8
25°	973.1	973.9	981.4	977.1	976.3	976.3	979.7	971.3	970.5	971.3	979.7
27.5°	936.3	936.3	946.3	942.9	946.3	942.1	944.6	933.7	933.7	933.7	944.6
30°	892.9	900.4	906.3	918.0	911.2	916.2	903.7	897.8	889.6	897.8	903.7
32.5°	850.4	854.6	862.9	871.3	877.1	869.5	860.3	851.2	847.0	851.2	860.3
35°	800.3	800.3	819.5	835.4	837.0	832.8	817.0	797.8	797.8	797.8	817.0
37.5°	746.9	748.7	765.3	789.5	793.6	786.9	762.7	746.1	744.3	746.1	762.7
40°	701.1	697.7	713.6	744.3	749.3	742.7	710.1	694.2	697.6	694.2	710.1
42.5°	652.7	647.7	655.1	693.5	706.0	691.8	652.5	644.2	649.2	644.2	652.5
45°	609.2	599.2	600.8	636.7	655.1	635.1	597.5	596.6	606.6	596.6	597.5
47.5°	561.7	558.3	551.7	575.0	605.1	574.2	548.2	555.7	559.1	555.7	548.2
50°	518.3	511.6	501.6	520.8	542.5	519.0	498.2	508.2	515.7	508.2	498.2
52.5°	479.9	474.1	454.8	466.6	470.7	464.8	452.2	470.6	477.3	470.6	452.2
55°	434.8	434.0	414.8	409.0	398.1	407.2	412.2	431.4	433.1	431.4	412.2
57.5°	394.8	393.1	365.6	355.6	335.5	353.8	363.0	390.5	393.1	390.5	363.0
60°	355.6	349.7	319.7	295.5	285.4	294.6	318.0	348.0	354.7	348.0	318.0
62.5°	312.2	308.8	272.2	246.2	243.7	245.4	270.4	307.1	311.2	307.1	270.4
65°	272.1	259.6	228.7	205.3	206.1	204.5	227.9	258.7	272.1	258.7	227.9
67.5°	229.5	217.0	190.3	168.6	175.3	168.6	189.5	216.2	229.5	216.2	189.5
70°	192.0	175.3	155.2	137.7	147.7	137.7	155.2	176.1	192.8	176.1	155.2
72.5°	157.7	140.2	125.2	112.7	121.0	111.8	125.2	141.1	159.6	141.1	125.2
75°	126.9	111.1	96.8	90.1	98.5	90.1	97.7	111.9	129.5	111.9	97.7
77.5°	113.8	93.6	73.4	70.1	80.1	70.1	74.3	91.0	110.3	91.0	74.3
80°	106.0	90.8	59.4	52.6	59.2	52.6	57.6	76.9	89.5	76.9	57.6
82.5°	111.0	99.0	60.6	37.5	40.9	37.5	50.2	67.7	78.0	67.7	50.2
85°	125.3	115.8	71.4	31.1	23.4	29.3	46.2	62.9	69.0	62.9	46.2
87.5°	145.6	140.3	90.6	37.3	6.6	25.2	41.2	57.1	56.4	57.1	41.2
90°	171.0	166.6	116.0	48.8	1.6	16.0	30.2	44.4	41.2	44.4	30.2
92.5°	204.2	196.3	143.0	68.2	14.7	8.5	24.2	36.1	34.3	36.1	24.2
95°	232.1	226.9	173.5	90.9	35.5	4.3	17.6	26.0	26.7	26.0	17.6
97.5°	264.4	258.4	202.5	122.1	62.3	11.3	11.0	20.2	21.8	20.2	11.0
100°	290.7	287.3	236.5	159.4	95.3	29.4	6.9	15.3	17.8	15.3	6.9
102.5°	334.2	321.3	272.1	194.9	130.8	54.5	13.8	9.4	11.9	9.4	13.8
105°	372.5	360.3	314.4	232.2	171.5	88.4	34.6	12.1	7.8	12.1	34.6
107.5°	409.7	401.1	353.4	270.3	214.9	127.3	64.9	33.7	21.6	33.7	64.9
110°	453.1	442.7	390.7	308.4	259.9	169.0	98.7	61.5	47.5	61.5	98.7



TEST NUMBER: P392542

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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°	494.7	486.9	425.3	349.0	306.7	214.9	140.3	96.1	83.1	96.1	140.3
115°	526.7	522.4	465.2	386.4	350.9	265.9	186.2	136.9	121.2	136.9	186.2
117.5°	560.5	559.7	494.7	424.5	402.8	311.9	228.7	177.5	161.1	177.5	228.7
120°	603.0	596.0	535.3	462.6	452.2	360.3	275.5	224.4	207.9	224.4	275.5
122.5°	633.2	628.1	570.1	499.0	499.0	409.7	320.6	269.4	252.9	269.4	320.6
125°	660.1	658.4	596.9	535.3	549.2	455.7	371.6	319.6	300.5	319.6	371.6
127.5°	684.4	687.0	630.7	576.1	601.2	503.3	421.0	363.8	343.9	363.8	421.0
130°	705.2	713.8	662.7	612.5	649.8	554.4	465.2	408.0	394.9	408.0	465.2
132.5°	745.9	740.7	695.7	649.8	701.7	601.2	512.0	452.2	437.4	452.2	512.0
135°	766.7	768.4	724.2	681.8	750.2	648.0	556.1	497.3	482.4	497.3	556.1
137.5°	791.8	786.6	746.8	720.8	795.2	693.1	599.5	544.9	521.5	544.9	599.5
140°	810.0	809.1	776.3	755.5	843.8	737.3	643.6	588.2	566.6	588.2	643.6
142.5°	829.1	834.3	805.7	793.6	892.3	784.0	691.3	630.7	609.9	630.7	691.3
145°	842.1	854.2	835.1	841.2	938.2	836.0	732.9	672.2	648.8	672.2	732.9
147.5°	864.6	879.3	857.6	875.0	978.2	882.0	775.3	714.7	694.7	714.7	775.3
150°	894.1	901.0	887.9	921.8	1018.8	933.1	817.8	755.4	735.4	755.4	817.8
152.5°	917.4	926.1	911.4	972.9	1050.9	979.8	864.6	795.2	771.9	795.2	864.6
155°	941.7	945.2	934.8	1022.3	1084.7	1025.8	901.8	839.5	817.0	839.5	901.8
157.5°	964.2	971.1	958.2	1059.6	1114.1	1065.6	943.4	883.6	863.7	883.6	943.4
160°	988.5	988.5	994.6	1102.9	1138.4	1100.3	988.5	932.2	904.4	932.2	988.5
162.5°	991.0	1007.5	1043.9	1133.2	1161.8	1130.6	1037.0	966.8	942.5	966.8	1037.0
165°	1029.2	1043.1	1099.3	1160.0	1179.9	1157.4	1096.7	1023.2	995.4	1023.2	1096.7
167.5°	1069.0	1099.3	1144.4	1190.4	1197.3	1182.5	1142.7	1091.6	1066.4	1091.6	1142.7
170°	1133.2	1160.0	1182.5	1201.7	1211.2	1202.5	1171.3	1146.2	1129.7	1146.2	1171.3
172.5°	1183.5	1201.7	1210.3	1222.4	1216.3	1212.9	1197.3	1185.2	1175.7	1185.2	1197.3
175°	1215.5	1219.9	1227.6	1224.2	1229.4	1219.9	1219.9	1225.9	1189.6	1225.9	1219.9
177.5°	1226.8	1232.8	1229.4	1222.4	1223.2	1221.5	1224.2	1226.8	1221.6	1226.8	1224.2
180°	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6



TEST NUMBER: P392542

CATALOG NUMBER: MWL-2-35-31-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1154.1	1154.1	1154.1	1154.1	1154.1	1154.1
2.5°	1149.1	1150.8	1149.9	1160.8	1156.5	1149.0
5°	1147.4	1144.9	1147.4	1148.3	1148.2	1155.7
7.5°	1135.7	1134.1	1136.6	1137.4	1143.3	1137.3
10°	1120.6	1122.4	1121.6	1127.4	1128.2	1124.0
12.5°	1103.1	1104.8	1103.1	1109.8	1110.7	1108.2
15°	1082.2	1083.9	1083.1	1085.6	1086.5	1087.3
17.5°	1064.7	1064.7	1064.7	1064.7	1065.7	1064.0
20°	1036.3	1037.2	1037.2	1042.2	1041.4	1037.3
22.5°	1002.2	1009.7	1003.0	1009.7	1008.1	1007.3
25°	976.3	976.3	977.1	981.4	973.9	973.1
27.5°	942.1	946.3	942.9	946.3	936.3	936.3
30°	916.2	911.2	918.0	906.3	900.4	892.9
32.5°	869.5	877.1	871.3	862.9	854.6	850.4
35°	832.8	837.0	835.4	819.5	800.3	800.3
37.5°	786.9	793.6	789.5	765.3	748.7	746.9
40°	742.7	749.3	744.3	713.6	697.7	701.1
42.5°	691.8	706.0	693.5	655.1	647.7	652.7
45°	635.1	655.1	636.7	600.8	599.2	609.2
47.5°	574.2	605.1	575.0	551.7	558.3	561.7
50°	519.0	542.5	520.8	501.6	511.6	518.3
52.5°	464.8	470.7	466.6	454.8	474.1	479.9
55°	407.2	398.1	409.0	414.8	434.0	434.8
57.5°	353.8	335.5	355.6	365.6	393.1	394.8
60°	294.6	285.4	295.5	319.7	349.7	355.6
62.5°	245.4	243.7	246.2	272.2	308.8	312.2
65°	204.5	206.1	205.3	228.7	259.6	272.1
67.5°	168.6	175.3	168.6	190.3	217.0	229.5
70°	137.7	147.7	137.7	155.2	175.3	192.0
72.5°	111.8	121.0	112.7	125.2	140.2	157.7
75°	90.1	98.5	90.1	96.8	111.1	126.9
77.5°	70.1	80.1	70.1	73.4	93.6	113.8
80°	52.6	59.2	52.6	59.4	90.8	106.0
82.5°	37.5	40.9	37.5	60.6	99.0	111.0
85°	29.3	23.4	31.1	71.4	115.8	125.3
87.5°	25.2	6.6	37.3	90.6	140.3	145.6
90°	16.0	1.6	48.8	116.0	166.6	171.0
92.5°	8.5	14.7	68.2	143.0	196.3	204.2
95°	4.3	35.5	90.9	173.5	226.9	232.1
97.5°	11.3	62.3	122.1	202.5	258.4	264.4
100°	29.4	95.3	159.4	236.5	287.3	290.7
102.5°	54.5	130.8	194.9	272.1	321.3	334.2
105°	88.4	171.5	232.2	314.4	360.3	372.5
107.5°	127.3	214.9	270.3	353.4	401.1	409.7
110°	169.0	259.9	308.4	390.7	442.7	453.1





TEST NUMBER: P392542

CATALOG NUMBER: MWL-2-35-31-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	214.9	306.7	349.0	425.3	486.9	494.7
115°	265.9	350.9	386.4	465.2	522.4	526.7
117.5°	311.9	402.8	424.5	494.7	559.7	560.5
120°	360.3	452.2	462.6	535.3	596.0	603.0
122.5°	409.7	499.0	499.0	570.1	628.1	633.2
125°	455.7	549.2	535.3	596.9	658.4	660.1
127.5°	503.3	601.2	576.1	630.7	687.0	684.4
130°	554.4	649.8	612.5	662.7	713.8	705.2
132.5°	601.2	701.7	649.8	695.7	740.7	745.9
135°	648.0	750.2	681.8	724.2	768.4	766.7
137.5°	693.1	795.2	720.8	746.8	786.6	791.8
140°	737.3	843.8	755.5	776.3	809.1	810.0
142.5°	784.0	892.3	793.6	805.7	834.3	829.1
145°	836.0	938.2	841.2	835.1	854.2	842.1
147.5°	882.0	978.2	875.0	857.6	879.3	864.6
150°	933.1	1018.8	921.8	887.9	901.0	894.1
152.5°	979.8	1050.9	972.9	911.4	926.1	917.4
155°	1025.8	1084.7	1022.3	934.8	945.2	941.7
157.5°	1065.6	1114.1	1059.6	958.2	971.1	964.2
160°	1100.3	1138.4	1102.9	994.6	988.5	988.5
162.5°	1130.6	1161.8	1133.2	1043.9	1007.5	991.0
165°	1157.4	1179.9	1160.0	1099.3	1043.1	1029.2
167.5°	1182.5	1197.3	1190.4	1144.4	1099.3	1069.0
170°	1202.5	1211.2	1201.7	1182.5	1160.0	1133.2
172.5°	1212.9	1216.3	1222.4	1210.3	1201.7	1183.5
175°	1219.9	1229.4	1224.2	1227.6	1219.9	1215.5
177.5°	1221.5	1223.2	1222.4	1229.4	1232.8	1226.8
180°	1227.6	1227.6	1227.6	1227.6	1227.6	1227.6

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