

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: P392591

Luminaire Tested: **MWL-3-30-57-UNV-L840-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392591  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-3-30-57-UNV-L840-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

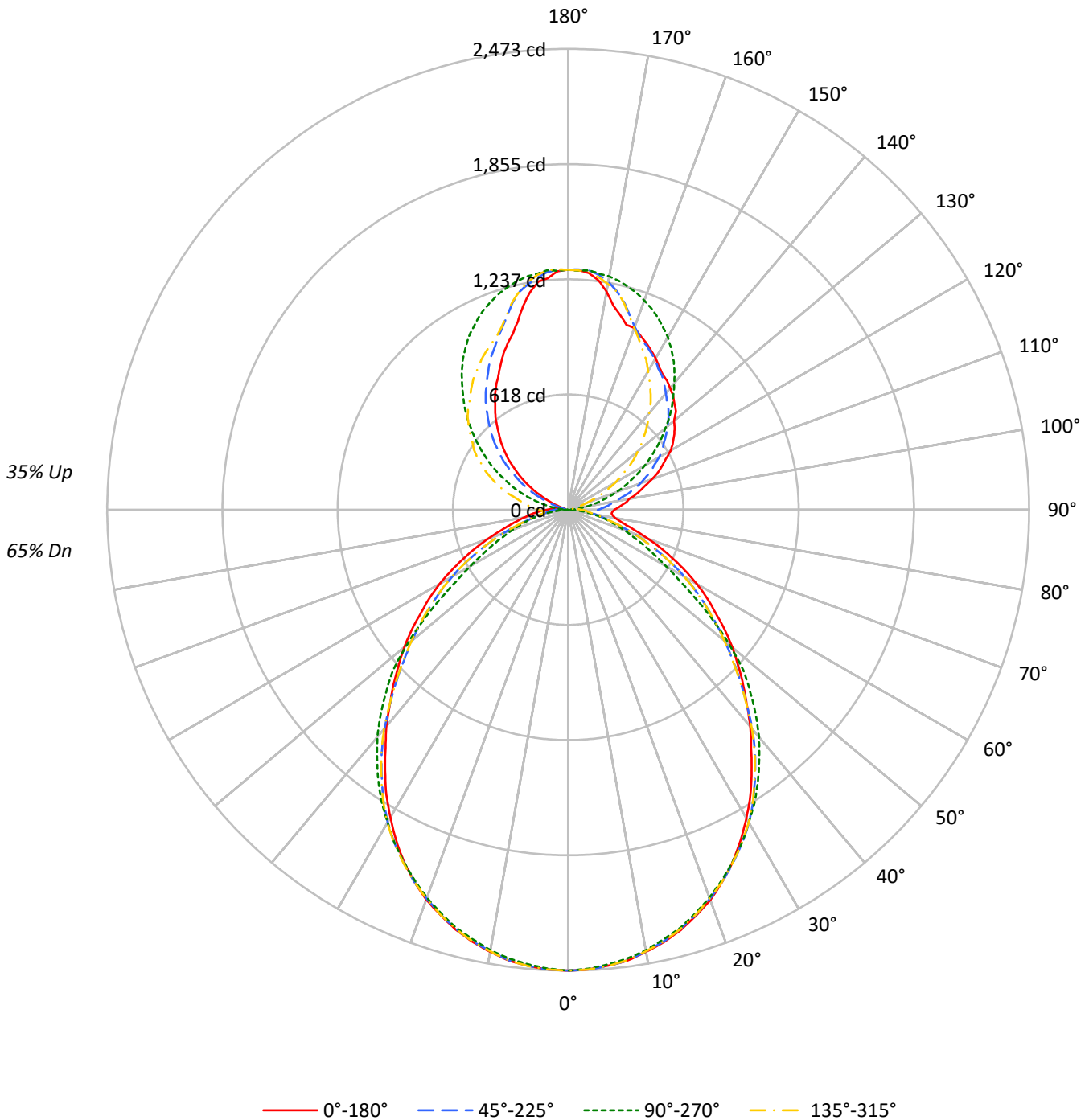
Lumens per Lamp: N/A  
Luminaire Lumens: 8823.1 lumens  
Efficiency: N/A  
Efficacy: 90.4 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 97.6  
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: P392591  
CATALOG NUMBER: MWL-3-30-57-UNV-L840-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P392591

CATALOG NUMBER: MWL-3-30-57-UNV-L840-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	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70	65
1	101	97	93	90	95	91	88	85	81	78	76	71	69	67	62	61	59	55
2	93	85	79	74	87	80	75	70	71	67	64	63	60	57	55	53	51	47
3	85	75	68	62	80	71	65	59	63	58	54	56	52	49	49	46	44	40
4	78	67	59	53	73	63	56	51	57	51	46	50	46	42	44	41	38	35
5	72	60	52	46	67	57	50	44	51	45	40	45	41	37	40	36	33	31
6	66	54	46	40	62	51	44	39	46	40	36	41	36	33	37	33	30	27
7	61	49	41	35	58	47	39	34	42	36	32	38	33	29	34	30	27	24
8	57	45	37	32	54	43	35	30	38	32	28	35	30	26	31	27	24	22
9	53	41	33	28	50	39	32	27	35	30	25	32	27	24	29	25	22	20
10	50	38	30	26	47	36	29	25	33	27	23	30	25	21	27	23	20	18

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

	0°	90°	180°	270°
0°	21298	21298	21298	21298
5°	20979	19468	20979	19468
10°	20563	17842	20563	17842
15°	20070	16329	20046	16329
20°	19444	14885	19420	14885
25°	18625	13514	18600	13514
30°	17593	12214	17559	12214
35°	16433	10978	16407	10978
40°	15306	9733	15269	9733
45°	14193	8405	14164	8405
50°	13223	6917	13192	6917
55°	12083	5192	12061	5192
60°	11059	3812	11046	3812
65°	9698	2869	9698	2869
70°	8324	2149	8341	2149
75°	7095	1546	7154	1546
80°	7087	988	6610	988
85°	8916	405	6659	405



TEST NUMBER: P392591

CATALOG NUMBER: MWL-3-30-57-UNV-L840-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	232.9	2.6
10°-20°	655.6	7.4
20°-30°	960.9	10.9
30°-40°	1089.7	12.4
40°-50°	1024.5	11.6
50°-60°	813.2	9.2
60°-70°	528.9	6.0
70°-80°	269.8	3.1
80°-90°	136.9	1.6
90°-100°	129.8	1.5
100°-110°	203.7	2.3
110°-120°	343.7	3.9
120°-130°	466.2	5.3
130°-140°	531.4	6.0
140°-150°	529.8	6.0
150°-160°	461.0	5.2
160°-170°	324.2	3.7
170°-180°	120.7	1.4
0°-30°	1849.4	21.0
0°-40°	2939.1	33.3
0°-60°	4776.9	54.1
0°-90°	5712.5	64.7
90°-120°	677.3	7.7
90°-150°	2204.7	25.0
90°-180°	3111.0	35.3
0°-180°	8823.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2473	2473	2473	2473	2473	
5°	2456	2449	2456	2449	2456	233
15°	2335	2322	2332	2322	2335	657
25°	2087	2086	2084	2086	2087	959
35°	1715	1776	1712	1776	1715	1073
45°	1327	1380	1325	1380	1327	1025
55°	964	840	963	840	964	867
65°	618	443	618	443	618	615
75°	324	220	326	220	324	355
85°	234	51	174	51	234	197
90°	248	2	112	2	248	138
95°	289	37	74	37	289	246
105°	402	181	19	181	402	425
115°	555	368	130	368	555	551
125°	694	577	317	577	694	620
135°	806	788	508	788	806	622
145°	885	985	682	985	885	558
155°	988	1138	858	1138	988	456
165°	1080	1239	1045	1239	1080	306
175°	1275	1290	1248	1290	1275	119
180°	1288	1288	1288	1288	1288	



TEST NUMBER: P392591

CATALOG NUMBER: MWL-3-30-57-UNV-L840-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3
2.5°	2469.5	2470.3	2470.2	2467.1	2465.1	2466.2	2470.2	2470.3	2470.4	2470.3	2470.2
5°	2456.5	2459.3	2458.2	2453.2	2449.2	2453.2	2457.3	2459.3	2456.5	2459.3	2457.3
7.5°	2440.4	2439.3	2439.3	2432.2	2429.2	2431.3	2438.3	2438.3	2440.4	2438.3	2438.3
10°	2409.3	2410.3	2406.3	2403.3	2400.3	2402.3	2405.3	2408.4	2409.3	2408.4	2405.3
12.5°	2376.2	2374.3	2372.3	2367.3	2361.4	2367.3	2372.3	2372.4	2374.3	2372.4	2372.3
15°	2335.1	2328.3	2329.3	2326.3	2322.4	2325.4	2328.4	2326.4	2332.3	2326.4	2328.4
17.5°	2283.1	2280.3	2278.3	2276.4	2270.4	2276.4	2277.4	2279.3	2280.3	2279.3	2277.4
20°	2229.1	2225.2	2221.3	2221.4	2215.5	2220.5	2220.4	2223.3	2226.3	2223.3	2220.4
22.5°	2161.2	2161.2	2160.3	2158.4	2152.5	2157.5	2159.4	2159.3	2159.3	2159.3	2159.4
25°	2087.2	2088.2	2091.3	2092.4	2085.5	2091.5	2089.4	2085.4	2084.4	2085.4	2089.4
27.5°	2002.2	2009.2	2019.3	2021.3	2017.5	2020.4	2017.4	2006.4	1999.4	2006.4	2017.4
30°	1911.2	1917.2	1939.2	1949.3	1937.5	1947.4	1936.4	1914.4	1907.5	1914.4	1936.4
32.5°	1819.2	1821.2	1848.2	1863.3	1861.4	1861.4	1845.4	1817.5	1815.5	1817.5	1845.4
35°	1715.3	1717.3	1747.3	1775.3	1775.5	1772.5	1744.5	1714.5	1712.5	1714.5	1744.5
37.5°	1612.3	1614.3	1646.3	1677.3	1683.4	1674.5	1643.5	1611.5	1609.5	1611.5	1643.5
40°	1520.3	1509.3	1536.3	1573.3	1592.4	1571.5	1532.6	1505.6	1516.6	1505.6	1532.6
42.5°	1418.3	1404.3	1417.3	1465.3	1488.4	1463.5	1414.6	1400.6	1414.6	1400.6	1414.6
45°	1327.3	1303.3	1307.3	1350.3	1380.4	1348.5	1303.7	1300.6	1324.6	1300.6	1303.7
47.5°	1235.3	1210.3	1198.3	1236.4	1274.4	1235.5	1194.7	1207.6	1232.6	1207.6	1194.7
50°	1150.4	1120.4	1096.4	1112.5	1131.6	1110.7	1092.8	1116.8	1147.7	1116.8	1092.8
52.5°	1059.4	1034.4	998.5	1000.5	986.6	998.7	995.8	1030.8	1056.7	1030.8	995.8
55°	964.5	949.5	903.5	879.6	839.7	877.8	900.8	946.8	962.7	946.8	900.8
57.5°	883.5	866.5	811.5	759.6	708.7	757.8	808.8	863.8	881.7	863.8	808.8
60°	796.6	782.6	720.6	640.7	604.7	639.8	718.8	780.8	795.7	780.8	718.8
62.5°	706.6	696.6	628.6	537.7	517.8	536.8	626.8	694.8	705.7	694.8	626.8
65°	617.7	604.7	533.7	450.7	442.8	449.8	532.8	603.8	617.7	603.8	532.8
67.5°	536.7	516.7	450.7	375.8	374.8	375.8	449.8	515.8	536.7	515.8	449.8
70°	456.8	428.8	368.8	312.8	319.8	312.8	368.8	429.7	457.7	429.7	368.8
72.5°	383.8	350.8	297.8	254.8	263.9	253.9	297.8	351.7	385.6	351.7	297.8
75°	323.8	278.8	234.9	203.9	219.9	203.9	235.8	279.7	326.5	279.7	235.8
77.5°	283.1	232.4	181.9	156.9	175.9	156.9	182.8	229.7	279.4	229.7	182.8
80°	255.5	204.2	146.6	118.9	132.9	118.9	144.8	189.6	238.3	189.6	144.8
82.5°	242.3	192.1	130.5	85.9	91.9	85.9	119.6	159.4	207.8	159.4	119.6
85°	233.5	196.4	131.5	66.6	50.9	64.8	105.2	141.0	174.4	141.0	105.2
87.5°	238.1	210.0	141.8	66.3	15.0	53.5	90.1	122.8	144.6	122.8	90.1
90°	248.5	228.5	160.5	71.3	1.9	36.8	70.6	100.4	112.4	100.4	70.6
92.5°	268.5	252.6	182.1	84.5	15.5	21.8	57.7	84.6	90.5	84.6	57.7
95°	288.9	279.5	207.2	99.4	37.3	8.6	43.7	68.8	73.7	68.8	43.7
97.5°	314.9	306.3	229.1	129.1	65.5	12.9	28.4	56.6	60.6	56.6	28.4
100°	332.3	324.4	257.0	168.2	101.0	32.0	16.4	39.3	46.3	39.3	16.4
102.5°	369.0	353.1	287.2	205.4	138.2	58.3	16.6	26.3	31.3	26.3	16.6
105°	401.6	383.9	331.7	244.4	180.9	93.7	38.4	18.9	19.4	18.9	38.4
107.5°	434.6	423.6	371.6	284.4	226.3	134.6	69.3	38.6	27.9	38.6	69.3
110°	479.0	466.1	410.7	324.3	273.5	178.1	104.7	66.6	54.1	66.6	104.7



TEST NUMBER: P392591

CATALOG NUMBER: MWL-3-30-57-UNV-L840-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	521.6	512.5	447.0	366.1	322.5	225.4	148.3	103.0	90.3	103.0	148.3
115°	555.2	549.7	489.8	406.1	367.9	279.9	197.4	145.6	130.3	145.6	197.4
117.5°	590.6	588.7	520.6	446.1	423.4	328.0	241.9	188.3	172.1	188.3	241.9
120°	635.1	626.9	563.3	486.0	475.1	378.9	290.9	237.3	221.1	237.3	290.9
122.5°	666.0	660.5	599.6	524.2	524.2	430.6	338.1	284.6	267.4	284.6	338.1
125°	694.1	691.3	626.9	562.3	576.8	478.8	390.8	336.3	317.3	336.3	390.8
127.5°	719.6	722.3	662.3	604.1	630.4	527.8	442.5	383.6	362.7	383.6	442.5
130°	741.4	750.4	695.9	643.2	681.2	582.4	488.8	429.9	416.3	429.9	488.8
132.5°	784.0	778.6	730.4	682.2	736.7	631.4	537.9	476.2	460.8	476.2	537.9
135°	805.8	807.6	760.3	715.8	787.6	680.4	584.2	523.4	508.0	523.4	584.2
137.5°	832.1	826.7	783.9	756.7	834.8	727.6	629.6	573.4	548.9	573.4	629.6
140°	851.2	850.3	814.8	793.0	885.6	773.9	675.9	618.8	596.1	618.8	675.9
142.5°	871.2	876.6	846.7	833.0	936.5	823.0	726.8	663.3	641.5	663.3	726.8
145°	884.8	896.6	877.5	882.9	984.6	877.5	770.4	705.9	682.3	705.9	770.4
147.5°	907.5	922.9	899.2	918.3	1026.4	925.6	813.0	750.4	729.5	750.4	813.0
150°	938.4	945.6	931.0	968.3	1069.0	980.1	857.5	793.1	772.2	793.1	857.5
152.5°	962.9	972.0	955.5	1020.9	1102.6	1028.2	906.5	834.9	810.4	834.9	906.5
155°	988.3	991.9	980.1	1072.7	1138.0	1076.3	945.5	881.2	857.6	881.2	945.5
157.5°	1011.9	1019.2	1005.5	1111.7	1168.8	1118.1	990.0	927.5	906.6	927.5	990.0
160°	1037.3	1036.3	1043.6	1157.1	1194.2	1154.4	1037.3	977.3	949.3	977.3	1037.3
162.5°	1040.1	1056.3	1095.4	1189.8	1219.7	1187.1	1088.1	1013.6	989.2	1013.6	1088.1
165°	1080.0	1094.5	1154.5	1217.9	1238.8	1215.2	1151.7	1073.6	1044.6	1073.6	1151.7
167.5°	1120.8	1153.5	1201.6	1249.7	1257.0	1241.5	1199.8	1145.3	1118.1	1145.3	1199.8
170°	1187.8	1216.9	1241.5	1261.5	1271.5	1262.4	1229.7	1202.4	1184.1	1202.4	1229.7
172.5°	1241.4	1260.5	1270.6	1283.3	1276.9	1273.3	1257.0	1243.3	1233.2	1243.3	1257.0
175°	1274.9	1279.6	1288.7	1284.2	1289.7	1279.7	1280.6	1285.9	1247.7	1285.9	1280.6
177.5°	1286.7	1294.1	1290.6	1282.4	1283.3	1281.5	1285.1	1287.7	1281.3	1287.7	1285.1
180°	1287.7	1287.7	1287.7	1287.7	1287.7	1287.7	1287.7	1287.7	1287.7	1287.7	1287.7



TEST NUMBER: P392591

CATALOG NUMBER: MWL-3-30-57-UNV-L840-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2473.3	2473.3	2473.3	2473.3	2473.3	2473.3
2.5°	2466.2	2465.1	2467.1	2470.2	2470.3	2469.5
5°	2453.2	2449.2	2453.2	2458.2	2459.3	2456.5
7.5°	2431.3	2429.2	2432.2	2439.3	2439.3	2440.4
10°	2402.3	2400.3	2403.3	2406.3	2410.3	2409.3
12.5°	2367.3	2361.4	2367.3	2372.3	2374.3	2376.2
15°	2325.4	2322.4	2326.3	2329.3	2328.3	2335.1
17.5°	2276.4	2270.4	2276.4	2278.3	2280.3	2283.1
20°	2220.5	2215.5	2221.4	2221.3	2225.2	2229.1
22.5°	2157.5	2152.5	2158.4	2160.3	2161.2	2161.2
25°	2091.5	2085.5	2092.4	2091.3	2088.2	2087.2
27.5°	2020.4	2017.5	2021.3	2019.3	2009.2	2002.2
30°	1947.4	1937.5	1949.3	1939.2	1917.2	1911.2
32.5°	1861.4	1861.4	1863.3	1848.2	1821.2	1819.2
35°	1772.5	1775.5	1775.3	1747.3	1717.3	1715.3
37.5°	1674.5	1683.4	1677.3	1646.3	1614.3	1612.3
40°	1571.5	1592.4	1573.3	1536.3	1509.3	1520.3
42.5°	1463.5	1488.4	1465.3	1417.3	1404.3	1418.3
45°	1348.5	1380.4	1350.3	1307.3	1303.3	1327.3
47.5°	1235.5	1274.4	1236.4	1198.3	1210.3	1235.3
50°	1110.7	1131.6	1112.5	1096.4	1120.4	1150.4
52.5°	998.7	986.6	1000.5	998.5	1034.4	1059.4
55°	877.8	839.7	879.6	903.5	949.5	964.5
57.5°	757.8	708.7	759.6	811.5	866.5	883.5
60°	639.8	604.7	640.7	720.6	782.6	796.6
62.5°	536.8	517.8	537.7	628.6	696.6	706.6
65°	449.8	442.8	450.7	533.7	604.7	617.7
67.5°	375.8	374.8	375.8	450.7	516.7	536.7
70°	312.8	319.8	312.8	368.8	428.8	456.8
72.5°	253.9	263.9	254.8	297.8	350.8	383.8
75°	203.9	219.9	203.9	234.9	278.8	323.8
77.5°	156.9	175.9	156.9	181.9	232.4	283.1
80°	118.9	132.9	118.9	146.6	204.2	255.5
82.5°	85.9	91.9	85.9	130.5	192.1	242.3
85°	64.8	50.9	66.6	131.5	196.4	233.5
87.5°	53.5	15.0	66.3	141.8	210.0	238.1
90°	36.8	1.9	71.3	160.5	228.5	248.5
92.5°	21.8	15.5	84.5	182.1	252.6	268.5
95°	8.6	37.3	99.4	207.2	279.5	288.9
97.5°	12.9	65.5	129.1	229.1	306.3	314.9
100°	32.0	101.0	168.2	257.0	324.4	332.3
102.5°	58.3	138.2	205.4	287.2	353.1	369.0
105°	93.7	180.9	244.4	331.7	383.9	401.6
107.5°	134.6	226.3	284.4	371.6	423.6	434.6
110°	178.1	273.5	324.3	410.7	466.1	479.0





TEST NUMBER: P392591

CATALOG NUMBER: MWL-3-30-57-UNV-L840-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	225.4	322.5	366.1	447.0	512.5	521.6
115°	279.9	367.9	406.1	489.8	549.7	555.2
117.5°	328.0	423.4	446.1	520.6	588.7	590.6
120°	378.9	475.1	486.0	563.3	626.9	635.1
122.5°	430.6	524.2	524.2	599.6	660.5	666.0
125°	478.8	576.8	562.3	626.9	691.3	694.1
127.5°	527.8	630.4	604.1	662.3	722.3	719.6
130°	582.4	681.2	643.2	695.9	750.4	741.4
132.5°	631.4	736.7	682.2	730.4	778.6	784.0
135°	680.4	787.6	715.8	760.3	807.6	805.8
137.5°	727.6	834.8	756.7	783.9	826.7	832.1
140°	773.9	885.6	793.0	814.8	850.3	851.2
142.5°	823.0	936.5	833.0	846.7	876.6	871.2
145°	877.5	984.6	882.9	877.5	896.6	884.8
147.5°	925.6	1026.4	918.3	899.2	922.9	907.5
150°	980.1	1069.0	968.3	931.0	945.6	938.4
152.5°	1028.2	1102.6	1020.9	955.5	972.0	962.9
155°	1076.3	1138.0	1072.7	980.1	991.9	988.3
157.5°	1118.1	1168.8	1111.7	1005.5	1019.2	1011.9
160°	1154.4	1194.2	1157.1	1043.6	1036.3	1037.3
162.5°	1187.1	1219.7	1189.8	1095.4	1056.3	1040.1
165°	1215.2	1238.8	1217.9	1154.5	1094.5	1080.0
167.5°	1241.5	1257.0	1249.7	1201.6	1153.5	1120.8
170°	1262.4	1271.5	1261.5	1241.5	1216.9	1187.8
172.5°	1273.3	1276.9	1283.3	1270.6	1260.5	1241.4
175°	1279.7	1289.7	1284.2	1288.7	1279.6	1274.9
177.5°	1281.5	1283.3	1282.4	1290.6	1294.1	1286.7
180°	1287.7	1287.7	1287.7	1287.7	1287.7	1287.7

(END OF REPORT)