

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: P392668

Luminaire Tested: **MWL-4-34-73-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392668
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-4-34-73-UNV-L935-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

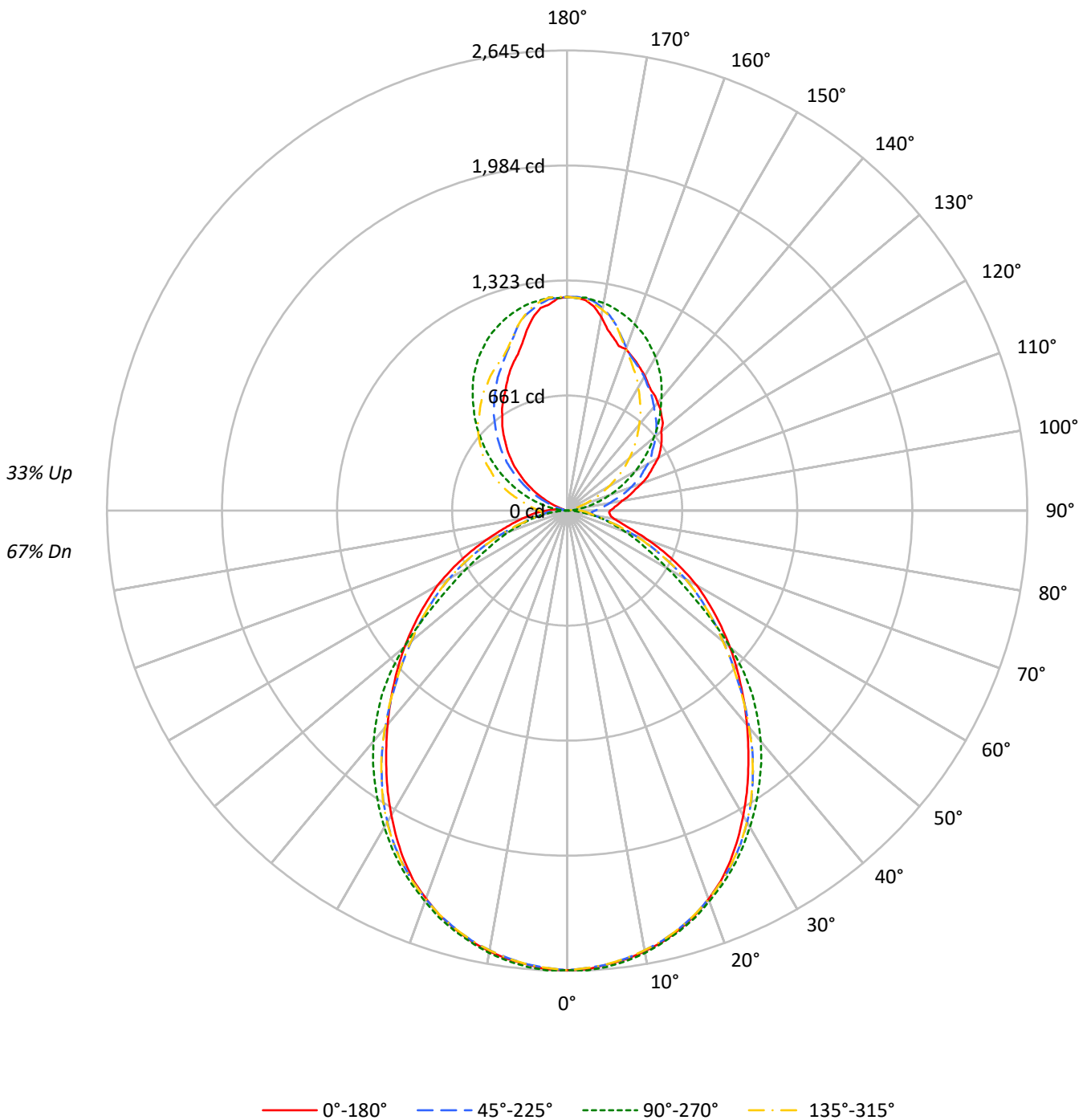
Lumens per Lamp: N/A
Luminaire Lumens: 9116.5 lumens
Efficiency: N/A
Efficacy: 76.0 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 119.887
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: P392668
CATALOG NUMBER: MWL-4-34-73-UNV-L935-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P392668

CATALOG NUMBER: MWL-4-34-73-UNV-L935-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	105	105	105	105	93	93	93	82	82	82	72	72	72	67
1	102	98	94	90	96	92	89	86	82	79	77	73	71	69	64	63	61	57
2	93	86	80	74	88	81	76	71	72	68	65	64	61	58	57	55	52	49
3	85	76	68	63	80	72	65	60	64	59	55	57	53	50	51	48	45	42
4	78	67	60	53	74	64	57	51	58	52	47	51	47	43	46	42	39	36
5	72	60	52	46	68	57	50	44	52	46	41	46	42	38	42	38	35	32
6	67	54	46	40	63	52	44	39	47	41	36	42	37	33	38	34	31	28
7	62	49	41	36	58	47	40	35	43	37	32	39	33	30	35	31	27	25
8	58	45	37	32	54	43	36	31	39	33	29	35	30	27	32	28	25	22
9	54	41	34	29	51	39	32	28	36	30	26	33	28	24	30	25	22	20
10	50	38	31	26	48	36	30	25	33	27	23	30	25	22	27	23	20	19

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17062	17062	17062	17062
5°	16831	15694	16831	15694
10°	16565	14392	16565	14392
15°	16214	13188	16196	13188
20°	15731	12042	15713	12042
25°	15090	10980	15071	10980
30°	14241	9932	14217	9932
35°	13330	8920	13312	8920
40°	12474	7935	12448	7935
45°	11659	6890	11638	6890
50°	10916	5630	10893	5630
55°	10158	4236	10142	4236
60°	9419	3152	9412	3152
65°	8380	2374	8380	2374
70°	7283	1786	7297	1786
75°	6353	1279	6402	1279
80°	6413	823	6032	823
85°	8365	369	6461	369



TEST NUMBER: P392668

CATALOG NUMBER: MWL-4-34-73-UNV-L935-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	249.1	2.7
10°-20°	702.6	7.7
20°-30°	1030.3	11.3
30°-40°	1166.2	12.8
40°-50°	1098.8	12.1
50°-60°	879.3	9.6
60°-70°	579.0	6.4
70°-80°	295.9	3.2
80°-90°	146.9	1.6
90°-100°	128.0	1.4
100°-110°	194.9	2.1
110°-120°	327.3	3.6
120°-130°	444.1	4.9
130°-140°	506.2	5.6
140°-150°	504.7	5.5
150°-160°	439.2	4.8
160°-170°	308.9	3.4
170°-180°	115.0	1.3
0°-30°	1981.9	21.7
0°-40°	3148.1	34.5
0°-60°	5126.3	56.2
0°-90°	6148.1	67.4
90°-120°	650.3	7.1
90°-150°	2105.2	23.1
90°-180°	2968.0	32.6
0°-180°	9116.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2642	2642	2642	2642	2642	
5°	2620	2632	2620	2632	2620	249
15°	2493	2501	2490	2501	2493	702
25°	2220	2259	2218	2259	2220	1019
35°	1814	1924	1812	1924	1814	1135
45°	1410	1509	1407	1509	1410	1090
55°	1036	914	1035	914	1036	928
65°	671	488	671	488	671	666
75°	354	243	356	243	354	387
85°	247	62	191	62	247	207
90°	248	2	118	2	248	137
95°	278	36	73	36	278	237
105°	384	172	20	172	384	406
115°	528	351	124	351	528	524
125°	661	549	302	549	661	590
135°	767	750	484	750	767	592
145°	842	938	650	938	842	531
155°	941	1085	816	1085	941	434
165°	1028	1181	995	1181	1028	292
175°	1214	1229	1188	1229	1214	113
180°	1227	1227	1227	1227	1227	



TEST NUMBER: P392668

CATALOG NUMBER: MWL-4-34-73-UNV-L935-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2641.8	2641.8	2641.8	2641.8	2641.8	2641.8	2641.8	2641.8	2641.8	2641.8	2641.8
2.5°	2638.4	2638.4	2631.7	2646.2	2645.3	2645.3	2631.7	2638.4	2639.3	2638.4	2631.7
5°	2619.8	2624.9	2619.0	2633.4	2632.5	2633.4	2618.0	2624.9	2619.8	2624.9	2618.0
7.5°	2600.3	2607.0	2596.0	2613.0	2611.4	2612.1	2595.2	2606.2	2600.3	2606.2	2595.2
10°	2572.3	2574.8	2567.2	2582.4	2581.6	2581.6	2566.4	2573.1	2572.3	2573.1	2566.4
12.5°	2538.4	2537.5	2531.6	2545.1	2543.4	2545.1	2531.6	2535.8	2536.7	2535.8	2531.6
15°	2492.7	2491.7	2487.5	2501.0	2501.0	2500.2	2486.6	2490.0	2490.0	2490.0	2486.6
17.5°	2440.9	2439.2	2436.6	2451.0	2451.0	2451.0	2435.7	2438.3	2438.3	2438.3	2435.7
20°	2375.6	2378.2	2376.3	2390.8	2389.9	2389.9	2375.5	2376.3	2373.0	2376.3	2375.5
22.5°	2306.0	2308.6	2312.7	2331.4	2328.0	2330.6	2311.9	2306.8	2304.3	2306.8	2311.9
25°	2220.4	2225.5	2240.7	2260.2	2259.3	2259.3	2239.0	2222.8	2217.7	2222.8	2239.0
27.5°	2125.4	2139.0	2159.2	2183.8	2183.8	2183.0	2157.6	2136.4	2122.8	2136.4	2157.6
30°	2024.5	2038.9	2069.4	2104.1	2100.7	2102.5	2066.8	2036.3	2021.0	2036.3	2066.8
32.5°	1921.9	1936.3	1971.0	2012.5	2015.9	2010.8	1968.4	1932.8	1918.4	1932.8	1968.4
35°	1814.1	1820.9	1860.8	1923.5	1923.5	1921.0	1858.2	1818.3	1811.6	1818.3	1858.2
37.5°	1709.8	1711.5	1751.3	1817.5	1831.9	1814.9	1748.8	1709.0	1707.2	1709.0	1748.8
40°	1608.9	1600.4	1628.4	1702.2	1731.0	1700.4	1625.0	1597.0	1605.5	1597.0	1625.0
42.5°	1508.8	1498.6	1510.5	1583.4	1621.6	1581.7	1507.9	1495.2	1505.4	1495.2	1507.9
45°	1409.5	1390.9	1388.4	1461.3	1508.8	1459.6	1384.9	1388.4	1407.0	1388.4	1384.9
47.5°	1315.4	1293.4	1280.6	1336.6	1379.0	1335.8	1277.2	1290.8	1312.9	1290.8	1277.2
50°	1221.3	1200.1	1170.4	1209.4	1228.1	1207.7	1166.9	1196.6	1218.8	1196.6	1166.9
52.5°	1128.0	1111.9	1073.7	1087.3	1066.1	1085.6	1071.1	1108.4	1125.5	1108.4	1071.1
55°	1036.4	1022.0	975.3	957.6	913.5	955.7	972.7	1019.3	1034.7	1019.3	972.7
57.5°	946.5	938.1	880.4	827.8	780.3	826.1	877.7	935.4	944.8	935.4	877.7
60°	860.8	851.5	784.5	703.1	666.7	702.2	782.7	849.8	860.1	849.8	782.7
62.5°	764.2	760.0	684.5	592.9	569.1	591.9	682.7	758.1	763.3	758.1	682.7
65°	670.9	658.2	587.8	497.9	488.5	496.9	586.9	657.3	670.9	657.3	586.9
67.5°	581.0	562.4	497.0	415.6	418.1	415.6	496.1	561.4	581.0	561.4	496.1
70°	496.1	467.3	408.8	343.4	354.5	343.4	408.8	468.2	497.0	468.2	408.8
72.5°	417.2	381.7	328.2	279.8	293.5	279.0	328.2	382.5	419.0	382.5	328.2
75°	353.6	308.7	255.2	223.1	242.6	223.1	256.1	309.6	356.3	309.6	256.1
77.5°	308.8	257.1	199.3	172.1	195.9	172.1	200.1	254.5	305.4	254.5	200.1
80°	274.3	224.3	160.3	127.2	147.6	127.2	158.6	210.4	258.0	210.4	158.6
82.5°	253.6	208.5	143.6	91.6	103.5	91.6	133.2	177.3	220.7	177.3	133.2
85°	247.3	207.3	140.6	73.9	61.9	72.1	115.5	154.5	191.0	154.5	115.5
87.5°	241.2	213.1	145.3	71.5	22.9	59.5	96.0	130.0	152.0	130.0	96.0
90°	247.7	227.2	160.3	73.6	1.7	40.7	74.7	105.3	118.0	105.3	74.7
92.5°	263.8	248.3	178.8	84.3	15.5	24.6	60.3	88.3	94.2	88.3	60.3
95°	278.0	271.1	201.6	97.6	36.3	11.1	45.9	70.4	73.0	70.4	45.9
97.5°	299.9	295.6	222.6	122.8	63.1	12.1	31.5	57.7	57.7	57.7	31.5
100°	319.3	315.8	248.0	160.1	96.0	30.3	18.7	44.3	46.9	44.3	18.7
102.5°	354.1	340.4	275.0	195.4	131.4	55.3	17.3	29.0	32.4	29.0	17.3
105°	383.8	367.5	315.6	232.6	172.1	89.1	36.3	19.7	19.6	19.7	36.3
107.5°	413.3	403.0	353.7	271.6	215.3	128.8	65.8	36.2	25.9	36.2	65.8
110°	454.9	444.6	391.0	309.6	261.2	170.3	99.4	63.9	50.1	63.9	99.4



TEST NUMBER: P392668

CATALOG NUMBER: MWL-4-34-73-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	496.4	488.7	425.6	349.4	308.0	215.3	140.9	98.5	85.6	98.5	140.9
115°	528.4	523.3	466.1	386.7	351.2	266.4	187.7	138.3	123.7	138.3	187.7
117.5°	562.2	560.5	495.6	424.6	403.1	312.3	230.0	179.1	163.4	179.1	230.0
120°	604.5	596.8	536.2	462.7	452.3	360.7	276.7	225.6	210.1	225.6	276.7
122.5°	633.9	629.6	570.8	500.0	499.1	410.8	321.8	271.6	254.2	271.6	321.8
125°	660.8	659.0	596.8	536.2	549.2	456.6	371.9	320.8	301.8	320.8	371.9
127.5°	685.0	687.6	631.4	576.0	601.1	503.3	422.0	364.9	345.1	364.9	422.0
130°	705.8	714.4	663.4	612.4	649.5	554.4	466.1	409.1	396.2	409.1	466.1
132.5°	746.4	741.2	696.3	649.5	701.5	601.1	512.8	453.2	438.4	453.2	512.8
135°	767.1	768.9	724.7	681.6	749.9	647.9	557.0	498.2	483.5	498.2	557.0
137.5°	792.2	787.1	747.3	721.4	794.9	693.6	600.2	545.7	522.4	545.7	600.2
140°	810.4	809.6	776.7	756.0	843.3	737.7	644.3	589.0	567.4	589.0	644.3
142.5°	830.4	835.5	806.1	794.0	891.7	784.5	692.0	632.2	611.5	632.2	692.0
145°	842.4	854.5	835.5	841.5	937.6	836.3	733.4	672.9	649.5	672.9	733.4
147.5°	865.0	878.8	857.1	875.3	977.4	882.2	775.0	714.4	695.3	714.4	775.0
150°	893.4	900.3	887.4	922.0	1018.0	933.3	817.3	755.0	735.2	755.0	817.3
152.5°	916.8	925.5	910.7	973.1	1050.1	979.9	864.1	794.9	771.5	794.9	864.1
155°	941.0	944.5	934.2	1022.4	1084.7	1025.8	901.2	839.0	816.5	839.0	901.2
157.5°	963.6	970.4	958.3	1059.6	1114.0	1065.6	943.7	883.1	863.2	883.1	943.7
160°	987.8	987.8	994.7	1102.8	1138.3	1100.2	988.6	931.5	903.9	931.5	988.6
162.5°	990.4	1006.8	1043.9	1133.1	1161.6	1130.5	1037.1	966.1	941.9	966.1	1037.1
165°	1028.4	1043.2	1099.3	1159.9	1180.7	1157.2	1096.7	1023.2	994.7	1023.2	1096.7
167.5°	1067.4	1098.5	1144.3	1191.1	1198.0	1183.2	1142.6	1090.7	1064.7	1090.7	1142.6
170°	1131.4	1159.9	1182.3	1202.3	1211.8	1203.1	1171.2	1146.1	1127.9	1146.1	1171.2
172.5°	1182.4	1201.4	1210.1	1223.0	1216.9	1213.5	1197.1	1185.0	1174.7	1185.0	1197.1
175°	1214.4	1219.6	1227.4	1223.9	1229.1	1219.6	1219.6	1225.7	1188.5	1225.7	1219.6
177.5°	1225.7	1233.4	1229.1	1222.1	1223.0	1221.3	1223.9	1227.4	1220.5	1227.4	1223.9
180°	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4



TEST NUMBER: P392668

CATALOG NUMBER: MWL-4-34-73-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2641.8	2641.8	2641.8	2641.8	2641.8	2641.8
2.5°	2645.3	2645.3	2646.2	2631.7	2638.4	2638.4
5°	2633.4	2632.5	2633.4	2619.0	2624.9	2619.8
7.5°	2612.1	2611.4	2613.0	2596.0	2607.0	2600.3
10°	2581.6	2581.6	2582.4	2567.2	2574.8	2572.3
12.5°	2545.1	2543.4	2545.1	2531.6	2537.5	2538.4
15°	2500.2	2501.0	2501.0	2487.5	2491.7	2492.7
17.5°	2451.0	2451.0	2451.0	2436.6	2439.2	2440.9
20°	2389.9	2389.9	2390.8	2376.3	2378.2	2375.6
22.5°	2330.6	2328.0	2331.4	2312.7	2308.6	2306.0
25°	2259.3	2259.3	2260.2	2240.7	2225.5	2220.4
27.5°	2183.0	2183.8	2183.8	2159.2	2139.0	2125.4
30°	2102.5	2100.7	2104.1	2069.4	2038.9	2024.5
32.5°	2010.8	2015.9	2012.5	1971.0	1936.3	1921.9
35°	1921.0	1923.5	1923.5	1860.8	1820.9	1814.1
37.5°	1814.9	1831.9	1817.5	1751.3	1711.5	1709.8
40°	1700.4	1731.0	1702.2	1628.4	1600.4	1608.9
42.5°	1581.7	1621.6	1583.4	1510.5	1498.6	1508.8
45°	1459.6	1508.8	1461.3	1388.4	1390.9	1409.5
47.5°	1335.8	1379.0	1336.6	1280.6	1293.4	1315.4
50°	1207.7	1228.1	1209.4	1170.4	1200.1	1221.3
52.5°	1085.6	1066.1	1087.3	1073.7	1111.9	1128.0
55°	955.7	913.5	957.6	975.3	1022.0	1036.4
57.5°	826.1	780.3	827.8	880.4	938.1	946.5
60°	702.2	666.7	703.1	784.5	851.5	860.8
62.5°	591.9	569.1	592.9	684.5	760.0	764.2
65°	496.9	488.5	497.9	587.8	658.2	670.9
67.5°	415.6	418.1	415.6	497.0	562.4	581.0
70°	343.4	354.5	343.4	408.8	467.3	496.1
72.5°	279.0	293.5	279.8	328.2	381.7	417.2
75°	223.1	242.6	223.1	255.2	308.7	353.6
77.5°	172.1	195.9	172.1	199.3	257.1	308.8
80°	127.2	147.6	127.2	160.3	224.3	274.3
82.5°	91.6	103.5	91.6	143.6	208.5	253.6
85°	72.1	61.9	73.9	140.6	207.3	247.3
87.5°	59.5	22.9	71.5	145.3	213.1	241.2
90°	40.7	1.7	73.6	160.3	227.2	247.7
92.5°	24.6	15.5	84.3	178.8	248.3	263.8
95°	11.1	36.3	97.6	201.6	271.1	278.0
97.5°	12.1	63.1	122.8	222.6	295.6	299.9
100°	30.3	96.0	160.1	248.0	315.8	319.3
102.5°	55.3	131.4	195.4	275.0	340.4	354.1
105°	89.1	172.1	232.6	315.6	367.5	383.8
107.5°	128.8	215.3	271.6	353.7	403.0	413.3
110°	170.3	261.2	309.6	391.0	444.6	454.9



TEST NUMBER: P392668

CATALOG NUMBER: MWL-4-34-73-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	215.3	308.0	349.4	425.6	488.7	496.4
115°	266.4	351.2	386.7	466.1	523.3	528.4
117.5°	312.3	403.1	424.6	495.6	560.5	562.2
120°	360.7	452.3	462.7	536.2	596.8	604.5
122.5°	410.8	499.1	500.0	570.8	629.6	633.9
125°	456.6	549.2	536.2	596.8	659.0	660.8
127.5°	503.3	601.1	576.0	631.4	687.6	685.0
130°	554.4	649.5	612.4	663.4	714.4	705.8
132.5°	601.1	701.5	649.5	696.3	741.2	746.4
135°	647.9	749.9	681.6	724.7	768.9	767.1
137.5°	693.6	794.9	721.4	747.3	787.1	792.2
140°	737.7	843.3	756.0	776.7	809.6	810.4
142.5°	784.5	891.7	794.0	806.1	835.5	830.4
145°	836.3	937.6	841.5	835.5	854.5	842.4
147.5°	882.2	977.4	875.3	857.1	878.8	865.0
150°	933.3	1018.0	922.0	887.4	900.3	893.4
152.5°	979.9	1050.1	973.1	910.7	925.5	916.8
155°	1025.8	1084.7	1022.4	934.2	944.5	941.0
157.5°	1065.6	1114.0	1059.6	958.3	970.4	963.6
160°	1100.2	1138.3	1102.8	994.7	987.8	987.8
162.5°	1130.5	1161.6	1133.1	1043.9	1006.8	990.4
165°	1157.2	1180.7	1159.9	1099.3	1043.2	1028.4
167.5°	1183.2	1198.0	1191.1	1144.3	1098.5	1067.4
170°	1203.1	1211.8	1202.3	1182.3	1159.9	1131.4
172.5°	1213.5	1216.9	1223.0	1210.1	1201.4	1182.4
175°	1219.6	1229.1	1223.9	1227.4	1219.6	1214.4
177.5°	1221.3	1223.0	1222.1	1229.1	1233.4	1225.7
180°	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4

(END OF REPORT)