

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: P392683

Luminaire Tested: **MWL-4-42-73-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392683  
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-4-42-73-UNV-L935-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

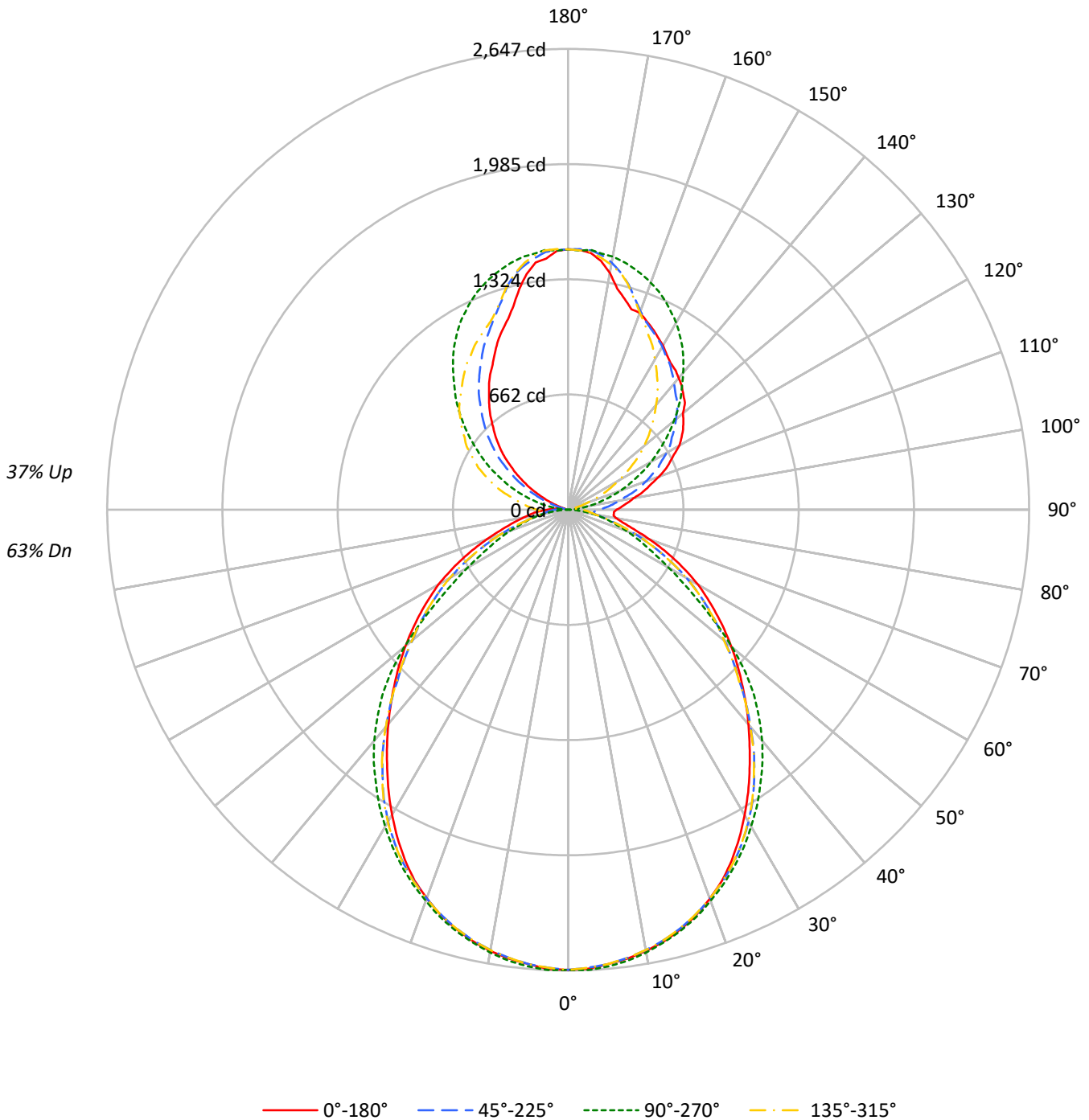
Lumens per Lamp: N/A  
Luminaire Lumens: 9762.0 lumens  
Efficiency: N/A  
Efficacy: 75.4 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 129.482  
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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### Luminous Intensity Polar Plot





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**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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	63
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	59	58	54
2	92	85	79	74	86	80	74	70	70	66	63	62	59	56	54	52	49	46
3	84	75	68	62	79	71	64	59	63	57	53	55	51	48	48	45	43	39
4	78	67	59	53	72	63	56	50	56	50	46	49	45	41	43	40	37	34
5	71	60	52	46	67	56	49	44	50	44	40	45	40	36	39	35	33	30
6	66	54	46	40	62	51	44	38	45	39	35	40	36	32	36	32	29	26
7	61	49	41	35	57	46	39	34	41	35	31	37	32	28	33	29	26	23
8	57	44	37	31	53	42	35	30	38	32	28	34	29	25	30	26	23	21
9	53	41	33	28	50	39	32	27	35	29	25	31	26	23	28	24	21	19
10	50	37	30	25	47	36	29	24	32	27	23	29	24	21	26	22	19	17

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

	0°	90°	180°	270°
0°	17070	17070	17070	17070
5°	16835	15702	16835	15702
10°	16573	14400	16573	14400
15°	16225	13194	16204	13194
20°	15742	12047	15721	12047
25°	15100	10984	15078	10984
30°	14251	9936	14222	9936
35°	13341	8923	13317	8923
40°	12485	7939	12451	7939
45°	11670	6894	11643	6894
50°	10927	5634	10898	5634
55°	10168	4238	10147	4238
60°	9428	3154	9417	3154
65°	8387	2376	8387	2376
70°	7289	1788	7304	1788
75°	6361	1280	6418	1280
80°	6535	823	6065	823
85°	8893	370	6572	370



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	249.2	2.6
10°-20°	702.9	7.2
20°-30°	1030.8	10.6
30°-40°	1166.9	12.0
40°-50°	1099.5	11.3
50°-60°	879.9	9.0
60°-70°	579.5	5.9
70°-80°	296.5	3.0
80°-90°	152.0	1.6
90°-100°	146.3	1.5
100°-110°	236.0	2.4
110°-120°	398.5	4.1
120°-130°	540.8	5.5
130°-140°	616.6	6.3
140°-150°	614.8	6.3
150°-160°	535.2	5.5
160°-170°	376.4	3.9
170°-180°	140.2	1.4
0°-30°	1982.9	20.3
0°-40°	3149.8	32.3
0°-60°	5129.2	52.5
0°-90°	6157.2	63.1
90°-120°	780.8	8.0
90°-150°	2553.0	26.2
90°-180°	3605.0	36.9
0°-180°	9762.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2643	2643	2643	2643	2643	
5°	2620	2634	2620	2634	2620	249
15°	2494	2502	2491	2502	2494	702
25°	2222	2260	2219	2260	2222	1020
35°	1816	1924	1812	1924	1816	1136
45°	1411	1510	1408	1510	1411	1091
55°	1037	914	1035	914	1037	929
65°	671	489	671	489	671	667
75°	354	243	357	243	354	388
85°	263	62	194	62	263	217
90°	278	2	119	2	278	154
95°	324	44	74	44	324	277
105°	465	210	21	210	465	492
115°	644	428	150	428	644	639
125°	805	669	367	669	805	719
135°	935	914	589	914	935	721
145°	1026	1142	791	1142	1026	647
155°	1147	1322	995	1322	1147	529
165°	1253	1438	1212	1438	1253	355
175°	1480	1498	1449	1498	1480	138
180°	1496	1496	1496	1496	1496	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2643.1	2643.1	2643.1	2643.1	2643.1	2643.1	2643.1	2643.1	2643.1	2643.1	2643.1
2.5°	2639.2	2639.6	2633.1	2647.8	2647.0	2646.8	2633.1	2639.6	2640.2	2639.6	2633.1
5°	2620.5	2626.1	2620.5	2634.9	2634.0	2634.9	2619.4	2626.1	2620.5	2626.1	2619.4
7.5°	2601.2	2608.4	2597.4	2614.5	2612.9	2613.5	2596.4	2607.4	2601.2	2607.4	2596.4
10°	2573.5	2576.2	2568.6	2583.8	2583.0	2582.8	2567.6	2574.0	2573.5	2574.0	2567.6
12.5°	2539.9	2538.9	2532.8	2546.3	2544.3	2546.3	2532.8	2536.8	2537.9	2536.8	2532.8
15°	2494.4	2493.1	2488.7	2502.2	2502.0	2501.1	2487.6	2490.9	2491.2	2490.9	2487.6
17.5°	2442.6	2440.5	2437.8	2451.9	2451.9	2451.9	2436.7	2439.5	2439.5	2439.5	2436.7
20°	2377.3	2379.6	2377.5	2391.7	2390.8	2390.8	2376.4	2377.5	2374.2	2377.5	2376.4
22.5°	2307.5	2310.1	2314.0	2332.3	2328.8	2331.4	2312.8	2308.0	2305.5	2308.0	2312.8
25°	2221.9	2227.0	2242.1	2261.1	2260.1	2260.1	2239.9	2223.8	2218.7	2223.8	2239.9
27.5°	2126.9	2140.4	2160.6	2185.0	2184.6	2183.9	2158.5	2137.3	2123.8	2137.3	2158.5
30°	2025.9	2040.4	2070.9	2105.5	2101.5	2103.4	2067.8	2037.2	2021.8	2037.2	2067.8
32.5°	1923.3	1937.7	1972.5	2013.9	2016.9	2011.8	1969.4	1933.6	1919.2	1933.6	1969.4
35°	1815.5	1822.3	1862.1	1924.9	1924.3	1921.8	1858.9	1819.1	1812.3	1819.1	1858.9
37.5°	1711.1	1712.9	1752.7	1818.8	1832.9	1815.7	1749.5	1709.8	1708.0	1709.8	1749.5
40°	1610.3	1601.7	1629.8	1703.4	1731.9	1701.2	1625.5	1597.5	1606.0	1597.5	1625.5
42.5°	1510.2	1500.0	1511.7	1584.6	1622.5	1582.5	1508.4	1495.8	1505.9	1495.8	1508.4
45°	1410.8	1392.1	1389.5	1462.5	1509.7	1460.4	1385.3	1388.9	1407.6	1388.9	1385.3
47.5°	1316.6	1294.6	1281.8	1337.6	1379.9	1336.5	1277.6	1291.3	1313.4	1291.3	1277.6
50°	1222.5	1201.3	1171.6	1210.4	1228.9	1208.2	1167.3	1197.0	1219.3	1197.0	1167.3
52.5°	1129.2	1113.1	1074.7	1088.2	1066.9	1086.1	1071.5	1108.8	1126.0	1108.8	1071.5
55°	1037.4	1023.0	976.3	958.3	914.0	956.2	973.2	1019.8	1035.2	1019.8	973.2
57.5°	947.5	939.0	881.3	828.6	780.8	826.5	878.2	935.8	945.3	935.8	878.2
60°	861.6	852.3	785.3	703.6	667.2	702.7	783.2	850.2	860.6	850.2	783.2
62.5°	765.0	760.7	685.2	593.4	569.5	592.4	683.2	758.6	763.8	758.6	683.2
65°	671.4	658.7	588.3	498.4	488.9	497.4	587.3	657.7	671.4	657.7	587.3
67.5°	581.5	562.9	497.5	416.0	418.5	416.0	496.5	561.8	581.5	561.8	496.5
70°	496.5	467.7	409.2	343.9	354.9	343.9	409.2	468.7	497.5	468.7	409.2
72.5°	417.6	382.1	328.6	280.3	293.6	279.1	328.6	383.0	419.8	383.0	328.6
75°	354.0	309.1	255.4	223.2	242.7	223.2	256.5	310.1	357.2	310.1	256.5
77.5°	310.7	258.3	199.5	172.3	196.1	172.3	200.5	255.0	306.6	255.0	200.5
80°	279.5	228.1	161.1	127.4	147.7	127.4	159.0	211.2	259.4	211.2	159.0
82.5°	263.3	216.4	146.6	91.7	103.6	91.7	134.0	178.5	223.2	178.5	134.0
85°	262.9	220.9	147.8	74.6	62.0	72.5	117.2	156.6	194.3	156.6	117.2
87.5°	263.6	233.8	158.0	75.2	22.9	60.4	97.9	132.5	155.0	132.5	97.9
90°	277.6	255.1	179.9	81.2	1.9	41.2	75.5	106.4	119.3	106.4	75.5
92.5°	301.9	284.2	205.3	97.8	18.6	25.0	60.8	89.1	95.2	89.1	60.8
95°	323.5	315.5	236.3	117.3	43.8	11.9	46.4	70.8	73.5	70.8	46.4
97.5°	353.8	348.5	265.7	149.4	76.5	14.3	32.6	58.5	58.5	58.5	32.6
100°	380.5	377.0	299.6	194.8	116.7	36.5	20.1	45.7	48.2	45.7	20.1
102.5°	426.3	410.2	334.4	238.0	160.0	67.0	20.1	30.5	33.8	30.5	20.1
105°	465.0	446.0	384.3	283.4	209.5	108.2	43.7	22.0	21.0	22.0	43.7
107.5°	502.7	490.6	430.8	330.6	262.2	156.5	79.6	43.2	30.2	43.2	79.6
110°	553.8	541.1	476.1	377.0	318.0	207.2	120.7	77.0	60.1	77.0	120.7



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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°	604.5	594.9	518.3	425.5	374.8	262.1	171.3	119.3	103.4	119.3	171.3
115°	643.5	637.3	567.7	470.9	427.6	324.2	228.1	167.9	149.8	167.9	228.1
117.5°	684.5	682.7	603.6	517.2	490.9	380.2	279.8	217.5	198.3	217.5	279.8
120°	736.3	727.0	653.1	563.7	551.0	439.2	336.7	274.4	255.2	274.4	336.7
122.5°	772.1	766.9	695.3	608.9	608.0	500.2	391.6	330.1	309.0	330.1	391.6
125°	804.8	802.7	727.0	653.1	669.1	556.1	452.7	390.3	367.1	390.3	452.7
127.5°	834.3	837.4	768.9	701.7	732.3	613.1	513.7	444.0	419.8	444.0	513.7
130°	859.7	870.2	807.9	746.0	791.4	675.3	567.5	497.9	482.0	497.9	567.5
132.5°	909.2	902.9	848.1	791.4	854.6	732.3	624.4	551.7	533.8	551.7	624.4
135°	934.6	936.7	882.8	830.4	913.6	789.2	678.2	606.5	588.6	606.5	678.2
137.5°	965.1	958.9	910.4	878.7	968.5	845.0	731.0	664.5	636.0	664.5	731.0
140°	987.3	986.2	946.2	920.8	1027.6	898.7	784.8	717.3	690.9	717.3	784.8
142.5°	1011.3	1017.7	982.0	967.2	1086.6	955.6	842.8	769.8	744.5	769.8	842.8
145°	1026.3	1040.8	1017.9	1025.2	1142.5	1019.0	893.4	819.4	791.1	819.4	893.4
147.5°	1053.6	1070.6	1044.2	1066.4	1191.1	1074.8	944.1	870.2	846.8	870.2	944.1
150°	1088.5	1097.0	1081.2	1123.3	1240.7	1137.1	995.7	919.9	895.6	919.9	995.7
152.5°	1117.0	1127.6	1109.6	1185.6	1279.7	1194.0	1052.7	968.3	939.9	968.3	1052.7
155°	1146.6	1150.8	1138.1	1245.8	1321.6	1249.9	1098.0	1022.1	994.7	1022.1	1098.0
157.5°	1174.0	1182.4	1167.6	1291.1	1357.5	1298.5	1149.7	1075.9	1051.6	1075.9	1149.7
160°	1203.5	1203.5	1211.9	1343.8	1387.0	1340.6	1204.6	1135.0	1101.2	1135.0	1204.6
162.5°	1206.7	1226.7	1272.1	1380.7	1415.5	1377.5	1263.6	1177.1	1147.6	1177.1	1263.6
165°	1253.1	1271.0	1339.7	1413.4	1438.5	1410.2	1336.4	1246.7	1211.9	1246.7	1336.4
167.5°	1300.7	1338.8	1394.4	1451.2	1459.6	1441.7	1392.4	1329.3	1297.6	1329.3	1392.4
170°	1379.1	1413.4	1440.9	1464.9	1476.5	1466.0	1427.2	1396.5	1374.8	1396.5	1427.2
172.5°	1441.3	1464.0	1474.6	1490.2	1482.9	1478.6	1458.7	1444.0	1431.8	1444.0	1458.7
175°	1480.3	1486.2	1495.7	1491.3	1497.6	1486.0	1486.2	1493.6	1448.6	1493.6	1486.2
177.5°	1493.9	1503.0	1497.8	1489.1	1490.2	1488.1	1491.5	1495.7	1487.7	1495.7	1491.5
180°	1495.7	1495.7	1495.7	1495.7	1495.7	1495.7	1495.7	1495.7	1495.7	1495.7	1495.7



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2643.1	2643.1	2643.1	2643.1	2643.1	2643.1
2.5°	2646.8	2647.0	2647.8	2633.1	2639.6	2639.2
5°	2634.9	2634.0	2634.9	2620.5	2626.1	2620.5
7.5°	2613.5	2612.9	2614.5	2597.4	2608.4	2601.2
10°	2582.8	2583.0	2583.8	2568.6	2576.2	2573.5
12.5°	2546.3	2544.3	2546.3	2532.8	2538.9	2539.9
15°	2501.1	2502.0	2502.2	2488.7	2493.1	2494.4
17.5°	2451.9	2451.9	2451.9	2437.8	2440.5	2442.6
20°	2390.8	2390.8	2391.7	2377.5	2379.6	2377.3
22.5°	2331.4	2328.8	2332.3	2314.0	2310.1	2307.5
25°	2260.1	2260.1	2261.1	2242.1	2227.0	2221.9
27.5°	2183.9	2184.6	2185.0	2160.6	2140.4	2126.9
30°	2103.4	2101.5	2105.5	2070.9	2040.4	2025.9
32.5°	2011.8	2016.9	2013.9	1972.5	1937.7	1923.3
35°	1921.8	1924.3	1924.9	1862.1	1822.3	1815.5
37.5°	1815.7	1832.9	1818.8	1752.7	1712.9	1711.1
40°	1701.2	1731.9	1703.4	1629.8	1601.7	1610.3
42.5°	1582.5	1622.5	1584.6	1511.7	1500.0	1510.2
45°	1460.4	1509.7	1462.5	1389.5	1392.1	1410.8
47.5°	1336.5	1379.9	1337.6	1281.8	1294.6	1316.6
50°	1208.2	1228.9	1210.4	1171.6	1201.3	1222.5
52.5°	1086.1	1066.9	1088.2	1074.7	1113.1	1129.2
55°	956.2	914.0	958.3	976.3	1023.0	1037.4
57.5°	826.5	780.8	828.6	881.3	939.0	947.5
60°	702.7	667.2	703.6	785.3	852.3	861.6
62.5°	592.4	569.5	593.4	685.2	760.7	765.0
65°	497.4	488.9	498.4	588.3	658.7	671.4
67.5°	416.0	418.5	416.0	497.5	562.9	581.5
70°	343.9	354.9	343.9	409.2	467.7	496.5
72.5°	279.1	293.6	280.3	328.6	382.1	417.6
75°	223.2	242.7	223.2	255.4	309.1	354.0
77.5°	172.3	196.1	172.3	199.5	258.3	310.7
80°	127.4	147.7	127.4	161.1	228.1	279.5
82.5°	91.7	103.6	91.7	146.6	216.4	263.3
85°	72.5	62.0	74.6	147.8	220.9	262.9
87.5°	60.4	22.9	75.2	158.0	233.8	263.6
90°	41.2	1.9	81.2	179.9	255.1	277.6
92.5°	25.0	18.6	97.8	205.3	284.2	301.9
95°	11.9	43.8	117.3	236.3	315.5	323.5
97.5°	14.3	76.5	149.4	265.7	348.5	353.8
100°	36.5	116.7	194.8	299.6	377.0	380.5
102.5°	67.0	160.0	238.0	334.4	410.2	426.3
105°	108.2	209.5	283.4	384.3	446.0	465.0
107.5°	156.5	262.2	330.6	430.8	490.6	502.7
110°	207.2	318.0	377.0	476.1	541.1	553.8





TEST NUMBER: P392683

CATALOG NUMBER: MWL-4-42-73-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	262.1	374.8	425.5	518.3	594.9	604.5
115°	324.2	427.6	470.9	567.7	637.3	643.5
117.5°	380.2	490.9	517.2	603.6	682.7	684.5
120°	439.2	551.0	563.7	653.1	727.0	736.3
122.5°	500.2	608.0	608.9	695.3	766.9	772.1
125°	556.1	669.1	653.1	727.0	802.7	804.8
127.5°	613.1	732.3	701.7	768.9	837.4	834.3
130°	675.3	791.4	746.0	807.9	870.2	859.7
132.5°	732.3	854.6	791.4	848.1	902.9	909.2
135°	789.2	913.6	830.4	882.8	936.7	934.6
137.5°	845.0	968.5	878.7	910.4	958.9	965.1
140°	898.7	1027.6	920.8	946.2	986.2	987.3
142.5°	955.6	1086.6	967.2	982.0	1017.7	1011.3
145°	1019.0	1142.5	1025.2	1017.9	1040.8	1026.3
147.5°	1074.8	1191.1	1066.4	1044.2	1070.6	1053.6
150°	1137.1	1240.7	1123.3	1081.2	1097.0	1088.5
152.5°	1194.0	1279.7	1185.6	1109.6	1127.6	1117.0
155°	1249.9	1321.6	1245.8	1138.1	1150.8	1146.6
157.5°	1298.5	1357.5	1291.1	1167.6	1182.4	1174.0
160°	1340.6	1387.0	1343.8	1211.9	1203.5	1203.5
162.5°	1377.5	1415.5	1380.7	1272.1	1226.7	1206.7
165°	1410.2	1438.5	1413.4	1339.7	1271.0	1253.1
167.5°	1441.7	1459.6	1451.2	1394.4	1338.8	1300.7
170°	1466.0	1476.5	1464.9	1440.9	1413.4	1379.1
172.5°	1478.6	1482.9	1490.2	1474.6	1464.0	1441.3
175°	1486.0	1497.6	1491.3	1495.7	1486.2	1480.3
177.5°	1488.1	1490.2	1489.1	1497.8	1503.0	1493.9
180°	1495.7	1495.7	1495.7	1495.7	1495.7	1495.7

(END OF REPORT)