

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: P392654

Luminaire Tested: **MWL-4-26-73-UNV-L840-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392654  
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-4-26-73-UNV-L840-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

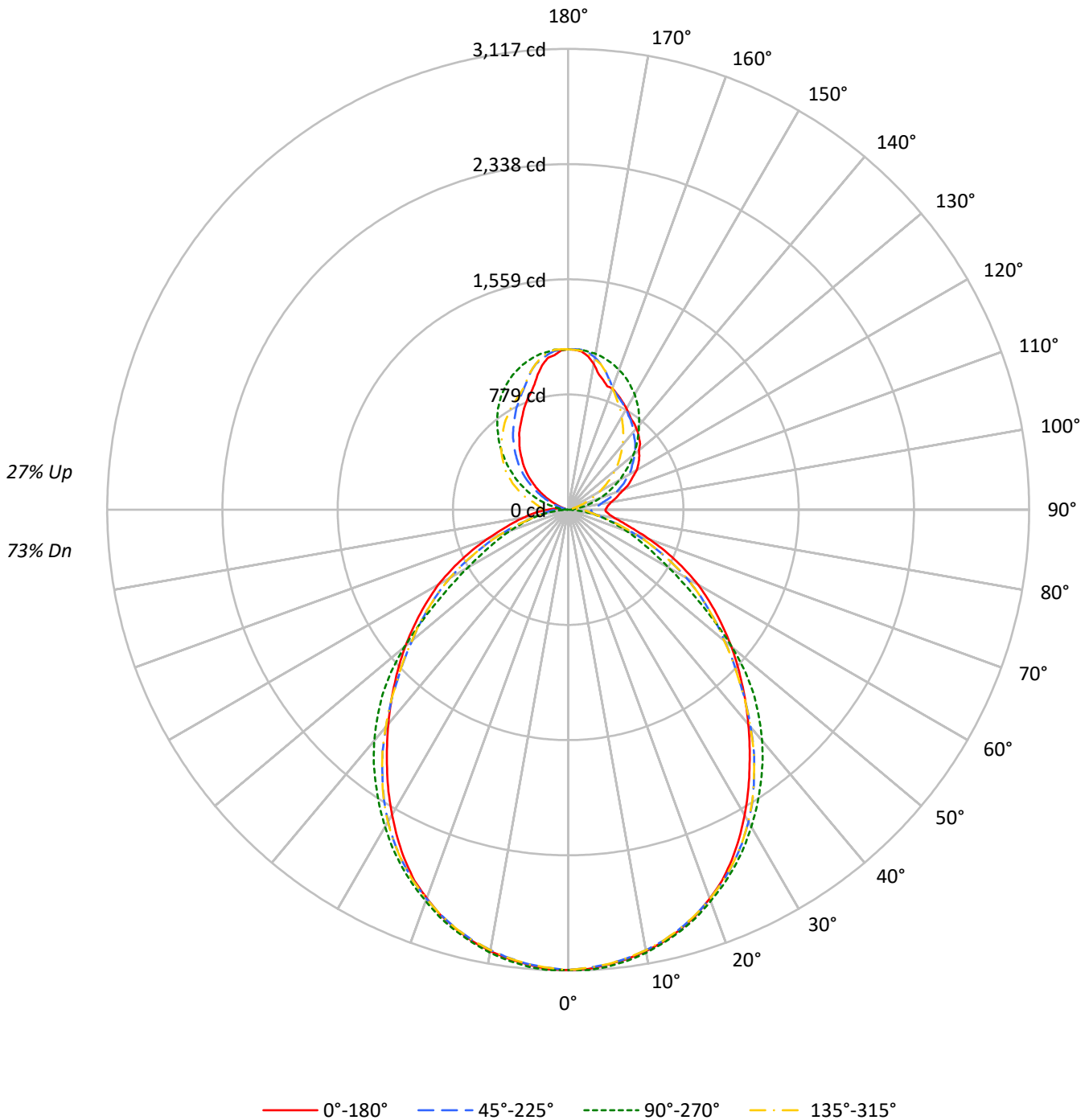
Lumens per Lamp: N/A  
Luminaire Lumens: 9877.8 lumens  
Efficiency: N/A  
Efficacy: 91.4 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 108.1  
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	50	30	10	0	
RCR																						
0	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	77	77	77	73	
1	103	99	95	91	98	94	91	87	85	82	80	77	75	73	69	67	66	66	66	66	62	
2	94	87	81	76	89	83	77	73	75	71	67	68	65	62	61	59	56	56	56	56	53	
3	87	77	70	64	82	73	67	61	67	61	57	61	56	53	55	51	49	49	49	49	45	
4	79	69	61	54	75	65	58	53	60	54	49	54	50	46	49	45	42	42	42	42	39	
5	73	61	53	47	69	59	51	46	54	48	43	49	44	40	45	41	37	37	37	37	34	
6	68	55	47	41	64	53	46	40	49	42	38	45	39	35	41	36	33	33	33	33	31	
7	63	50	42	37	60	48	41	35	44	38	33	41	35	31	37	33	29	29	29	29	27	
8	59	46	38	33	56	44	37	32	41	34	30	37	32	28	34	30	27	27	27	27	24	
9	55	42	34	29	52	41	33	29	37	31	27	35	29	26	32	27	24	24	24	24	22	
10	51	39	31	27	49	37	31	26	35	29	25	32	27	23	30	25	22	22	22	22	20	

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

	0°	90°	180°	270°
0°	20107	20107	20107	20107
5°	19840	18494	19840	18494
10°	19523	16961	19523	16961
15°	19103	15544	19088	15544
20°	18534	14195	18518	14195
25°	17779	12942	17763	12942
30°	16778	11707	16757	11707
35°	15705	10513	15689	10513
40°	14694	9351	14671	9351
45°	13736	8119	13717	8119
50°	12858	6634	12837	6634
55°	11966	4991	11951	4991
60°	11097	3713	11088	3713
65°	9872	2797	9872	2797
70°	8581	2104	8593	2104
75°	7484	1507	7525	1507
80°	7402	969	7063	969
85°	9153	434	7476	434



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	293.5	3.0
10°-20°	828.0	8.4
20°-30°	1214.2	12.3
30°-40°	1374.2	13.9
40°-50°	1294.8	13.1
50°-60°	1036.0	10.5
60°-70°	682.1	6.9
70°-80°	348.2	3.5
80°-90°	166.2	1.7
90°-100°	126.0	1.3
100°-110°	174.4	1.8
110°-120°	289.9	2.9
120°-130°	393.0	4.0
130°-140°	447.8	4.5
140°-150°	446.3	4.5
150°-160°	388.3	3.9
160°-170°	273.0	2.8
170°-180°	101.7	1.0
0°-30°	2335.7	23.6
0°-40°	3710.0	37.6
0°-60°	6040.8	61.2
0°-90°	7237.4	73.3
90°-120°	590.3	6.0
90°-150°	1877.4	19.0
90°-180°	2640.0	26.7
0°-180°	9877.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	3113	3113	3113	3113	3113	
5°	3088	3102	3088	3102	3088	293
15°	2937	2948	2935	2948	2937	827
25°	2616	2663	2614	2663	2616	1201
35°	2137	2267	2135	2267	2137	1338
45°	1661	1778	1658	1778	1661	1284
55°	1221	1076	1219	1076	1221	1093
65°	790	576	790	576	790	785
75°	416	286	419	286	416	454
85°	271	73	221	73	271	229
90°	252	2	137	2	252	139
95°	266	32	85	32	266	224
105°	343	152	21	152	343	364
115°	468	311	110	311	468	464
125°	585	486	268	486	585	522
135°	678	663	428	663	678	524
145°	745	829	575	829	745	470
155°	832	959	722	959	832	384
165°	909	1044	879	1044	909	258
175°	1073	1086	1050	1086	1073	100
180°	1085	1085	1085	1085	1085	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3113.4	3113.4	3113.4	3113.4	3113.4	3113.4	3113.4	3113.4	3113.4	3113.4	3113.4
2.5°	3110.2	3109.7	3101.2	3118.0	3117.0	3117.2	3101.2	3109.7	3110.9	3109.7	3101.2
5°	3088.2	3093.7	3086.2	3103.2	3102.2	3103.2	3085.4	3093.7	3088.2	3093.7	3085.4
7.5°	3064.9	3072.4	3059.4	3079.2	3077.2	3078.4	3058.7	3071.7	3064.9	3071.7	3058.7
10°	3031.7	3034.4	3025.4	3043.4	3042.4	3042.7	3024.7	3032.9	3031.7	3032.9	3024.7
12.5°	2991.1	2990.3	2983.6	2999.6	2997.8	2999.6	2983.6	2988.8	2989.6	2988.8	2983.6
15°	2936.9	2936.3	2931.6	2947.6	2947.8	2946.8	2930.8	2934.8	2934.6	2934.8	2930.8
17.5°	2875.9	2874.3	2871.6	2888.8	2888.8	2888.8	2870.8	2873.6	2873.6	2873.6	2870.8
20°	2798.9	2802.1	2800.6	2817.8	2817.1	2817.1	2799.8	2800.6	2796.6	2800.6	2799.8
22.5°	2717.1	2720.1	2725.6	2747.8	2744.1	2747.1	2724.8	2718.6	2715.6	2718.6	2724.8
25°	2616.1	2622.1	2640.3	2663.8	2663.1	2663.1	2638.8	2619.8	2613.8	2619.8	2638.8
27.5°	2504.1	2520.1	2544.3	2573.6	2574.1	2572.8	2542.8	2517.8	2501.8	2517.8	2542.8
30°	2385.1	2402.1	2438.1	2479.3	2476.1	2477.8	2435.8	2399.8	2382.1	2399.8	2435.8
32.5°	2264.1	2281.1	2322.1	2371.3	2375.8	2369.8	2319.8	2278.1	2261.1	2278.1	2319.8
35°	2137.3	2145.3	2192.3	2266.3	2267.1	2264.1	2190.1	2143.1	2135.1	2143.1	2190.1
37.5°	2014.3	2016.3	2063.3	2141.3	2158.8	2139.1	2061.1	2014.1	2012.1	2014.1	2061.1
40°	1895.3	1885.3	1918.3	2005.6	2039.8	2004.1	1915.3	1882.3	1892.3	1882.3	1915.3
42.5°	1777.3	1765.3	1779.6	1865.6	1910.8	1864.1	1777.3	1762.3	1774.3	1762.3	1777.3
45°	1660.6	1638.6	1635.6	1721.6	1777.8	1720.1	1632.5	1636.3	1658.3	1636.3	1632.5
47.5°	1549.6	1523.6	1508.6	1574.8	1624.8	1574.1	1505.5	1521.3	1547.3	1521.3	1505.5
50°	1438.6	1413.6	1378.6	1424.8	1447.1	1423.3	1375.5	1410.5	1436.3	1410.5	1375.5
52.5°	1328.6	1309.6	1264.8	1280.8	1256.1	1279.3	1262.5	1306.5	1326.3	1306.5	1262.5
55°	1220.8	1203.8	1148.8	1128.1	1076.3	1126.5	1146.5	1201.5	1219.3	1201.5	1146.5
57.5°	1114.8	1104.8	1036.8	975.1	919.3	973.5	1034.5	1102.5	1113.3	1102.5	1034.5
60°	1014.1	1003.1	924.1	828.3	785.3	827.5	922.5	1001.5	1013.3	1001.5	922.5
62.5°	900.1	895.1	806.1	698.3	670.5	697.5	804.5	893.5	899.3	893.5	804.5
65°	790.3	775.3	692.3	586.3	575.5	585.5	691.5	774.5	790.3	774.5	691.5
67.5°	684.3	662.3	585.3	489.5	492.5	489.5	584.5	661.5	684.3	661.5	584.5
70°	584.5	550.5	481.5	404.5	417.5	404.5	481.5	551.3	585.3	551.3	481.5
72.5°	491.5	449.5	386.5	329.5	345.8	328.8	386.5	450.3	493.1	450.3	386.5
75°	416.5	363.5	300.8	262.8	285.8	262.8	301.5	364.3	418.8	364.3	301.5
77.5°	361.6	301.6	234.8	202.8	230.8	202.8	235.5	299.3	358.6	299.3	235.5
80°	316.6	259.3	188.1	149.8	173.8	149.8	186.5	247.1	302.1	247.1	186.5
82.5°	285.9	235.1	165.2	107.8	121.8	107.8	156.1	207.6	256.9	207.6	156.1
85°	270.6	226.0	156.0	86.1	72.8	84.5	133.9	179.4	221.0	179.4	133.9
87.5°	254.1	223.2	154.2	79.5	27.0	68.8	110.6	149.9	175.5	149.9	110.6
90°	251.9	230.2	162.6	76.5	1.8	47.5	87.1	122.6	137.3	122.6	87.1
92.5°	259.5	244.3	174.9	81.2	14.2	28.5	70.3	103.1	109.8	103.1	70.3
95°	266.3	259.7	190.7	88.4	32.5	12.1	53.3	82.5	85.3	82.5	53.3
97.5°	280.9	277.0	204.3	108.9	56.2	11.2	35.6	67.1	67.1	67.1	35.6
100°	293.6	289.9	222.7	141.7	85.2	27.2	20.3	50.1	53.1	50.1	20.3
102.5°	320.2	307.0	244.0	173.0	116.5	49.3	16.5	32.1	36.1	32.1	16.5
105°	342.8	327.1	279.4	205.9	152.4	79.1	32.8	20.2	21.3	20.2	32.8
107.5°	366.6	357.0	313.0	240.5	190.6	114.5	58.7	33.3	24.6	33.3	58.7
110°	402.8	393.7	345.9	274.1	231.3	151.1	88.5	57.7	45.5	57.7	88.5



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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°	439.5	432.6	376.4	309.2	272.5	190.8	125.2	88.2	76.8	88.2	125.2
115°	467.7	462.9	412.5	342.0	310.7	235.9	166.6	123.1	110.4	123.1	166.6
117.5°	497.5	495.8	438.5	375.6	356.5	276.4	204.1	159.0	145.5	159.0	204.1
120°	534.9	527.8	474.4	409.2	400.1	319.1	245.3	200.2	186.7	200.2	245.3
122.5°	560.9	557.1	504.9	442.3	441.3	363.6	285.0	240.9	225.7	240.9	285.0
125°	584.6	583.0	527.8	474.4	485.6	404.1	329.3	284.5	267.7	284.5	329.3
127.5°	605.9	608.2	558.6	509.5	531.6	445.4	373.8	323.4	305.9	323.4	373.8
130°	624.3	631.9	586.9	541.6	574.4	490.4	412.8	362.4	350.9	362.4	412.8
132.5°	660.2	655.6	615.9	574.4	620.2	531.6	454.0	401.3	388.3	401.3	454.0
135°	678.5	680.0	641.1	602.7	663.0	572.9	492.9	441.0	428.0	441.0	492.9
137.5°	700.6	696.0	660.9	638.0	702.7	613.6	531.1	483.0	462.4	483.0	531.1
140°	716.7	715.9	686.9	668.6	745.4	652.5	570.1	521.2	502.1	521.2	570.1
142.5°	734.5	739.0	712.8	702.2	788.2	693.8	612.1	559.6	541.3	559.6	612.1
145°	744.9	755.8	738.8	744.2	828.7	739.6	648.7	595.5	574.6	595.5	648.7
147.5°	765.0	777.0	757.9	773.9	863.8	780.0	685.4	631.9	615.3	631.9	685.4
150°	790.0	796.1	784.6	815.2	899.7	825.1	722.8	667.8	650.2	667.8	722.8
152.5°	810.6	818.2	805.2	860.2	927.9	866.3	764.0	702.9	682.3	702.9	764.0
155°	832.0	835.0	825.9	903.7	958.7	906.8	796.8	741.9	722.0	741.9	796.8
157.5°	851.8	857.9	847.2	936.6	984.7	941.9	834.3	780.8	763.2	780.8	834.3
160°	873.2	873.2	879.3	974.8	1006.1	972.5	874.0	823.6	799.1	823.6	874.0
162.5°	875.5	890.0	922.8	1001.5	1026.7	999.2	916.7	854.1	832.7	854.1	916.7
165°	909.1	922.1	971.7	1025.2	1043.7	1022.9	969.4	904.5	879.3	904.5	969.4
167.5°	943.2	970.7	1011.4	1052.9	1059.0	1046.0	1009.9	963.8	940.9	963.8	1009.9
170°	999.5	1025.2	1045.0	1062.8	1071.2	1063.6	1035.1	1012.9	996.4	1012.9	1035.1
172.5°	1044.5	1061.8	1069.4	1081.1	1075.8	1072.7	1058.0	1047.3	1037.7	1047.3	1058.0
175°	1072.8	1077.8	1084.7	1081.9	1086.5	1078.1	1077.8	1083.2	1049.9	1083.2	1077.8
177.5°	1082.7	1090.1	1086.2	1080.4	1081.1	1079.6	1081.7	1084.7	1078.1	1084.7	1081.7
180°	1084.7	1084.7	1084.7	1084.7	1084.7	1084.7	1084.7	1084.7	1084.7	1084.7	1084.7



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3113.4	3113.4	3113.4	3113.4	3113.4	3113.4
2.5°	3117.2	3117.0	3118.0	3101.2	3109.7	3110.2
5°	3103.2	3102.2	3103.2	3086.2	3093.7	3088.2
7.5°	3078.4	3077.2	3079.2	3059.4	3072.4	3064.9
10°	3042.7	3042.4	3043.4	3025.4	3034.4	3031.7
12.5°	2999.6	2997.8	2999.6	2983.6	2990.3	2991.1
15°	2946.8	2947.8	2947.6	2931.6	2936.3	2936.9
17.5°	2888.8	2888.8	2888.8	2871.6	2874.3	2875.9
20°	2817.1	2817.1	2817.8	2800.6	2802.1	2798.9
22.5°	2747.1	2744.1	2747.8	2725.6	2720.1	2717.1
25°	2663.1	2663.1	2663.8	2640.3	2622.1	2616.1
27.5°	2572.8	2574.1	2573.6	2544.3	2520.1	2504.1
30°	2477.8	2476.1	2479.3	2438.1	2402.1	2385.1
32.5°	2369.8	2375.8	2371.3	2322.1	2281.1	2264.1
35°	2264.1	2267.1	2266.3	2192.3	2145.3	2137.3
37.5°	2139.1	2158.8	2141.3	2063.3	2016.3	2014.3
40°	2004.1	2039.8	2005.6	1918.3	1885.3	1895.3
42.5°	1864.1	1910.8	1865.6	1779.6	1765.3	1777.3
45°	1720.1	1777.8	1721.6	1635.6	1638.6	1660.6
47.5°	1574.1	1624.8	1574.8	1508.6	1523.6	1549.6
50°	1423.3	1447.1	1424.8	1378.6	1413.6	1438.6
52.5°	1279.3	1256.1	1280.8	1264.8	1309.6	1328.6
55°	1126.5	1076.3	1128.1	1148.8	1203.8	1220.8
57.5°	973.5	919.3	975.1	1036.8	1104.8	1114.8
60°	827.5	785.3	828.3	924.1	1003.1	1014.1
62.5°	697.5	670.5	698.3	806.1	895.1	900.1
65°	585.5	575.5	586.3	692.3	775.3	790.3
67.5°	489.5	492.5	489.5	585.3	662.3	684.3
70°	404.5	417.5	404.5	481.5	550.5	584.5
72.5°	328.8	345.8	329.5	386.5	449.5	491.5
75°	262.8	285.8	262.8	300.8	363.5	416.5
77.5°	202.8	230.8	202.8	234.8	301.6	361.6
80°	149.8	173.8	149.8	188.1	259.3	316.6
82.5°	107.8	121.8	107.8	165.2	235.1	285.9
85°	84.5	72.8	86.1	156.0	226.0	270.6
87.5°	68.8	27.0	79.5	154.2	223.2	254.1
90°	47.5	1.8	76.5	162.6	230.2	251.9
92.5°	28.5	14.2	81.2	174.9	244.3	259.5
95°	12.1	32.5	88.4	190.7	259.7	266.3
97.5°	11.2	56.2	108.9	204.3	277.0	280.9
100°	27.2	85.2	141.7	222.7	289.9	293.6
102.5°	49.3	116.5	173.0	244.0	307.0	320.2
105°	79.1	152.4	205.9	279.4	327.1	342.8
107.5°	114.5	190.6	240.5	313.0	357.0	366.6
110°	151.1	231.3	274.1	345.9	393.7	402.8





TEST NUMBER: P392654

CATALOG NUMBER: MWL-4-26-73-UNV-L840-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	190.8	272.5	309.2	376.4	432.6	439.5
115°	235.9	310.7	342.0	412.5	462.9	467.7
117.5°	276.4	356.5	375.6	438.5	495.8	497.5
120°	319.1	400.1	409.2	474.4	527.8	534.9
122.5°	363.6	441.3	442.3	504.9	557.1	560.9
125°	404.1	485.6	474.4	527.8	583.0	584.6
127.5°	445.4	531.6	509.5	558.6	608.2	605.9
130°	490.4	574.4	541.6	586.9	631.9	624.3
132.5°	531.6	620.2	574.4	615.9	655.6	660.2
135°	572.9	663.0	602.7	641.1	680.0	678.5
137.5°	613.6	702.7	638.0	660.9	696.0	700.6
140°	652.5	745.4	668.6	686.9	715.9	716.7
142.5°	693.8	788.2	702.2	712.8	739.0	734.5
145°	739.6	828.7	744.2	738.8	755.8	744.9
147.5°	780.0	863.8	773.9	757.9	777.0	765.0
150°	825.1	899.7	815.2	784.6	796.1	790.0
152.5°	866.3	927.9	860.2	805.2	818.2	810.6
155°	906.8	958.7	903.7	825.9	835.0	832.0
157.5°	941.9	984.7	936.6	847.2	857.9	851.8
160°	972.5	1006.1	974.8	879.3	873.2	873.2
162.5°	999.2	1026.7	1001.5	922.8	890.0	875.5
165°	1022.9	1043.7	1025.2	971.7	922.1	909.1
167.5°	1046.0	1059.0	1052.9	1011.4	970.7	943.2
170°	1063.6	1071.2	1062.8	1045.0	1025.2	999.5
172.5°	1072.7	1075.8	1081.1	1069.4	1061.8	1044.5
175°	1078.1	1086.5	1081.9	1084.7	1077.8	1072.8
177.5°	1079.6	1081.1	1080.4	1086.2	1090.1	1082.7
180°	1084.7	1084.7	1084.7	1084.7	1084.7	1084.7

(END OF REPORT)