

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: P392699

Luminaire Tested: **MWL-4-55-73-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392699
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-4-55-73-UNV-L840-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

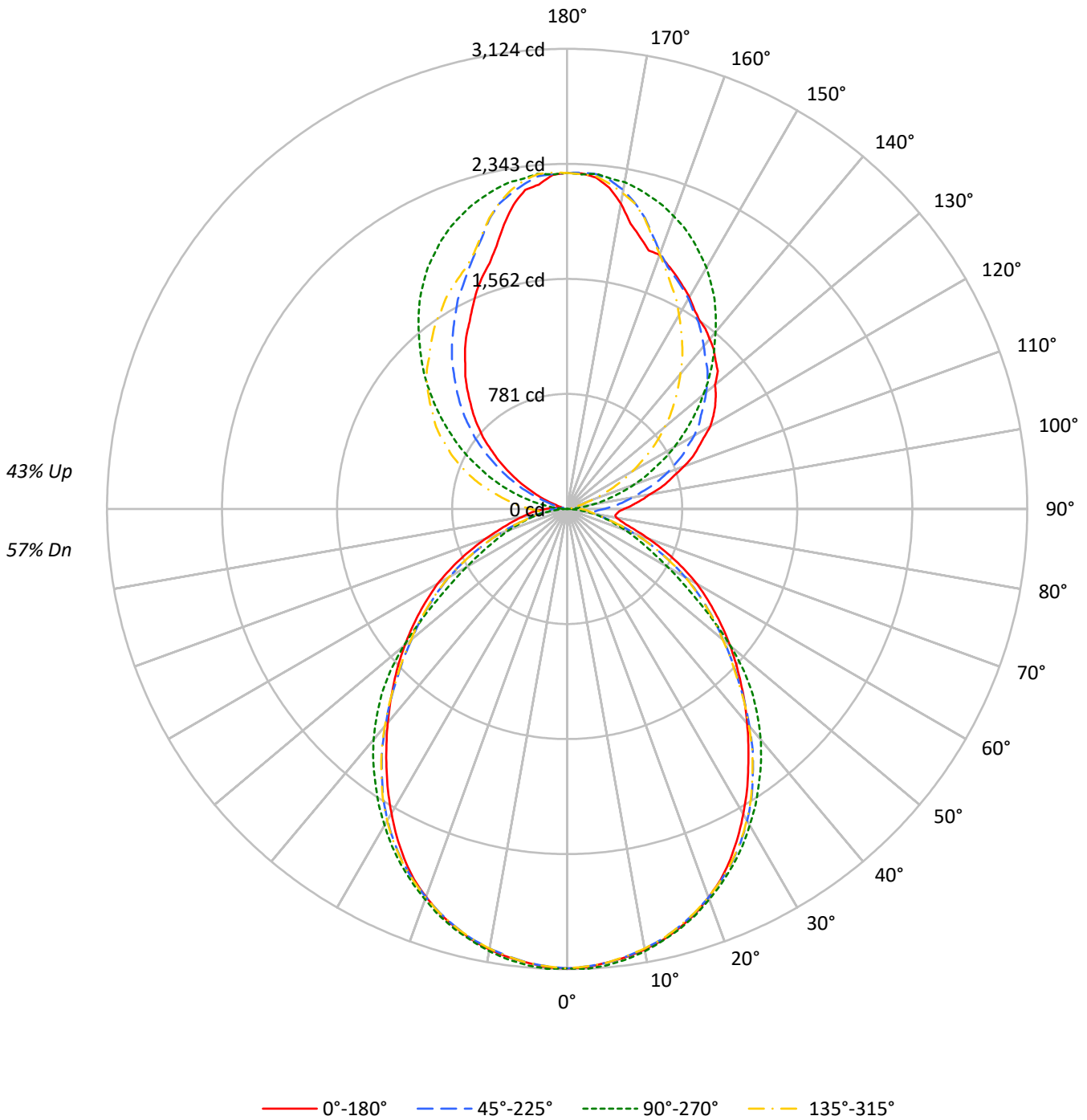
Lumens per Lamp: N/A
Luminaire Lumens: 12756.8 lumens
Efficiency: N/A
Efficacy: 85.4 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 149.4
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63	57
1	100	95	91	88	93	89	85	82	77	74	72	66	64	62	56	54	53	48
2	91	84	77	72	84	78	73	68	68	64	60	58	55	53	49	47	45	41
3	83	74	67	61	77	69	63	57	60	55	51	52	48	45	44	41	39	35
4	76	66	58	52	71	61	54	49	54	48	44	46	42	39	40	37	34	31
5	70	59	51	45	65	55	48	42	48	43	38	42	37	34	36	33	30	27
6	65	53	45	39	60	50	42	37	44	38	33	38	33	30	33	29	26	24
7	60	48	40	34	56	45	38	33	40	34	30	35	30	27	30	26	24	21
8	56	44	36	30	52	41	34	29	36	31	26	32	27	24	28	24	21	19
9	52	40	32	27	48	38	31	26	33	28	24	29	25	22	26	22	19	17
10	49	37	29	25	45	35	28	24	31	25	22	27	23	20	24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	20146	20146	20146	20146
5°	19861	18534	19861	18534
10°	19555	16994	19555	16994
15°	19153	15567	19122	15567
20°	18584	14212	18552	14212
25°	17825	12958	17792	12958
30°	16826	11722	16780	11722
35°	15749	10528	15713	10528
40°	14741	9371	14691	9371
45°	13778	8138	13738	8138
50°	12904	6649	12860	6649
55°	12008	5003	11976	5003
60°	11133	3725	11115	3725
65°	9903	2805	9903	2805
70°	8606	2112	8630	2112
75°	7514	1511	7602	1511
80°	7938	973	7222	973
85°	11501	439	7963	439



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	294.1	2.3
10°-20°	829.4	6.5
20°-30°	1216.5	9.5
30°-40°	1377.2	10.8
40°-50°	1297.8	10.2
50°-60°	1038.7	8.1
60°-70°	684.2	5.4
70°-80°	350.7	2.7
80°-90°	189.3	1.5
90°-100°	208.0	1.6
100°-110°	357.5	2.8
110°-120°	607.1	4.8
120°-130°	824.4	6.5
130°-140°	940.1	7.4
140°-150°	937.6	7.3
150°-160°	816.3	6.4
160°-170°	574.2	4.5
170°-180°	213.8	1.7
0°-30°	2339.9	18.3
0°-40°	3717.1	29.1
0°-60°	6053.7	47.5
0°-90°	7277.8	57.1
90°-120°	1172.6	9.2
90°-150°	3874.7	30.4
90°-180°	5479.0	42.9
0°-180°	12756.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3119	3119	3119	3119	3119	
5°	3091	3109	3091	3109	3091	293
15°	2944	2952	2940	2952	2944	829
25°	2623	2666	2618	2666	2623	1204
35°	2143	2270	2138	2270	2143	1342
45°	1666	1782	1661	1782	1666	1288
55°	1225	1079	1222	1079	1225	1097
65°	793	577	793	577	793	788
75°	418	287	423	287	418	460
85°	340	74	235	74	340	277
90°	385	3	143	3	385	213
95°	469	66	88	66	469	405
105°	705	319	27	319	705	744
115°	981	652	227	652	981	973
125°	1227	1021	559	1021	1227	1096
135°	1425	1394	897	1394	1425	1100
145°	1565	1743	1206	1743	1565	987
155°	1749	2016	1517	2016	1749	807
165°	1911	2194	1849	2194	1911	542
175°	2259	2284	2210	2284	2259	211
180°	2282	2282	2282	2282	2282	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3119.3	3119.3	3119.3	3119.3	3119.3	3119.3	3119.3	3119.3	3119.3	3119.3	3119.3
2.5°	3113.4	3114.7	3107.9	3125.5	3124.5	3123.9	3107.9	3114.7	3115.1	3114.7	3107.9
5°	3091.4	3098.7	3092.9	3109.9	3108.9	3109.9	3091.3	3098.7	3091.4	3098.7	3091.3
7.5°	3069.1	3078.3	3065.3	3085.9	3083.9	3084.3	3063.7	3076.7	3069.1	3076.7	3063.7
10°	3036.7	3040.3	3031.3	3049.3	3048.3	3047.7	3029.7	3037.1	3036.7	3037.1	3029.7
12.5°	2997.9	2996.3	2988.7	3004.7	3002.1	3004.7	2988.7	2993.1	2994.7	2993.1	2988.7
15°	2944.5	2942.3	2936.7	2952.7	2952.1	2951.1	2935.1	2939.1	2939.7	2939.1	2935.1
17.5°	2883.5	2880.3	2876.7	2893.1	2893.1	2893.1	2875.1	2878.7	2878.7	2878.7	2875.1
20°	2806.5	2808.9	2805.7	2822.1	2820.4	2820.4	2804.1	2805.7	2801.7	2805.7	2804.1
22.5°	2723.9	2726.9	2730.7	2752.1	2747.4	2750.4	2729.1	2723.7	2720.7	2723.7	2729.1
25°	2622.9	2628.9	2646.3	2668.1	2666.4	2666.4	2643.1	2624.1	2618.1	2624.1	2643.1
27.5°	2510.9	2526.9	2550.3	2578.7	2577.4	2577.1	2547.1	2522.1	2506.1	2522.1	2547.1
30°	2391.9	2408.9	2444.9	2485.3	2479.4	2482.1	2440.1	2404.1	2385.4	2404.1	2440.1
32.5°	2270.9	2287.9	2328.9	2377.3	2380.1	2374.1	2324.1	2281.4	2264.4	2281.4	2324.1
35°	2143.3	2151.3	2198.3	2272.3	2270.4	2267.4	2193.4	2146.4	2138.4	2146.4	2193.4
37.5°	2020.3	2022.3	2069.3	2147.3	2163.1	2142.4	2064.4	2017.4	2015.4	2017.4	2064.4
40°	1901.3	1891.3	1924.3	2010.7	2044.1	2007.4	1917.8	1884.8	1894.8	1884.8	1917.8
42.5°	1783.3	1771.3	1784.7	1870.7	1915.1	1867.4	1779.8	1764.8	1776.8	1764.8	1779.8
45°	1665.7	1643.7	1640.7	1726.7	1782.1	1723.4	1634.2	1638.8	1660.8	1638.8	1634.2
47.5°	1554.7	1528.7	1513.7	1579.1	1629.1	1577.4	1507.2	1523.8	1549.8	1523.8	1507.2
50°	1443.7	1418.7	1383.7	1429.1	1450.4	1425.8	1377.2	1412.2	1438.8	1412.2	1377.2
52.5°	1333.7	1314.7	1269.1	1285.1	1259.4	1281.8	1264.2	1308.2	1328.8	1308.2	1264.2
55°	1225.1	1208.1	1153.1	1131.4	1078.8	1128.2	1148.2	1203.2	1221.8	1203.2	1148.2
57.5°	1119.1	1109.1	1041.1	978.4	921.8	975.2	1036.2	1104.2	1115.8	1104.2	1036.2
60°	1017.4	1006.4	927.4	830.8	787.8	829.2	924.2	1003.2	1015.8	1003.2	924.2
62.5°	903.4	898.4	809.4	700.8	672.2	699.2	806.2	895.2	901.8	895.2	806.2
65°	792.8	777.8	694.8	588.8	577.2	587.2	693.2	776.2	792.8	776.2	693.2
67.5°	686.8	664.8	587.8	491.2	494.2	491.2	586.2	663.2	686.8	663.2	586.2
70°	586.2	552.2	483.2	406.2	419.2	406.2	483.2	553.8	587.8	553.8	483.2
72.5°	493.2	451.2	388.2	331.2	346.6	329.6	388.2	452.8	496.4	452.8	388.2
75°	418.2	365.2	301.6	263.6	286.6	263.6	303.2	366.8	423.1	366.8	303.2
77.5°	370.1	306.7	235.6	203.6	231.6	203.6	237.2	301.8	363.7	301.8	237.2
80°	339.5	276.2	191.4	150.6	174.6	150.6	188.2	250.4	308.9	250.4	188.2
82.5°	329.1	270.6	178.8	108.6	122.6	108.6	159.4	212.7	267.9	212.7	159.4
85°	340.0	286.9	188.2	89.4	73.6	86.2	141.5	188.7	235.4	188.7	141.5
87.5°	354.0	315.5	210.9	95.6	27.0	73.1	119.1	160.9	188.2	160.9	119.1
90°	384.8	354.7	249.8	110.4	2.6	49.2	90.4	127.7	143.3	127.7	90.4
92.5°	429.6	404.3	293.4	141.3	27.8	30.2	72.8	106.4	114.1	106.4	72.8
95°	469.4	457.8	345.6	176.4	66.4	15.4	55.8	84.2	87.8	84.2	55.8
97.5°	521.3	513.2	396.5	227.4	116.3	21.3	40.7	70.4	70.4	70.4	40.7
100°	567.1	562.4	452.9	296.6	177.5	55.1	26.3	56.9	59.9	56.9	26.3
102.5°	641.8	618.5	509.0	362.7	243.5	101.8	29.2	38.9	42.9	38.9	29.2
105°	705.1	677.6	585.9	431.9	319.2	164.6	65.8	30.3	27.3	30.3	65.8
107.5°	765.4	747.3	656.7	503.7	399.7	238.1	120.5	64.6	44.0	64.6	120.5
110°	843.9	824.5	725.9	574.6	484.4	315.4	183.3	116.1	90.3	116.1	183.3



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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°	921.1	906.7	790.3	648.6	571.4	399.1	260.6	180.5	156.3	180.5	260.6
115°	980.7	971.7	865.4	717.9	651.9	494.1	346.9	255.2	227.2	255.2	346.9
117.5°	1043.5	1040.9	920.1	788.7	748.5	579.4	425.8	330.8	301.3	330.8	425.8
120°	1122.4	1108.5	995.8	859.6	840.2	669.6	512.8	417.8	388.2	417.8	512.8
122.5°	1177.1	1169.1	1060.2	928.2	927.2	762.4	596.5	502.5	470.3	502.5	596.5
125°	1227.1	1223.8	1108.5	995.8	1020.6	847.7	689.9	594.3	558.9	594.3	689.9
127.5°	1272.1	1277.0	1172.3	1069.9	1116.6	934.6	782.7	676.4	639.4	676.4	782.7
130°	1310.8	1326.9	1231.9	1137.5	1206.7	1029.6	864.8	758.5	734.4	758.5	864.8
132.5°	1386.5	1376.8	1293.1	1206.7	1303.3	1116.6	951.7	840.6	813.3	840.6	951.7
135°	1425.1	1428.3	1346.2	1266.3	1393.5	1203.5	1033.8	924.4	897.0	924.4	1033.8
137.5°	1471.8	1462.1	1388.1	1339.8	1477.2	1288.2	1114.4	1012.9	969.4	1012.9	1114.4
140°	1505.6	1504.0	1442.8	1404.2	1567.4	1370.4	1196.5	1093.4	1053.2	1093.4	1196.5
142.5°	1542.0	1551.7	1497.6	1475.0	1657.6	1457.3	1285.0	1173.3	1134.7	1173.3	1285.0
145°	1565.2	1587.1	1552.3	1563.6	1742.9	1553.9	1362.3	1249.0	1206.1	1249.0	1362.3
147.5°	1606.4	1632.8	1592.6	1626.4	1817.0	1639.2	1439.6	1326.9	1290.9	1326.9	1439.6
150°	1660.2	1673.1	1648.9	1713.3	1892.6	1734.2	1518.5	1402.6	1365.5	1402.6	1518.5
152.5°	1703.6	1719.7	1692.4	1808.3	1952.2	1821.2	1605.4	1476.6	1433.2	1476.6	1605.4
155°	1748.7	1755.2	1735.8	1900.1	2016.0	1906.5	1674.7	1558.7	1516.9	1558.7	1674.7
157.5°	1790.6	1803.5	1780.9	1969.3	2070.7	1980.6	1753.6	1640.9	1603.8	1640.9	1753.6
160°	1835.7	1835.7	1848.6	2049.8	2115.8	2045.0	1837.3	1731.0	1679.5	1731.0	1837.3
162.5°	1840.5	1871.1	1940.3	2106.2	2159.3	2101.3	1927.4	1795.4	1750.3	1795.4	1927.4
165°	1911.3	1938.7	2043.4	2156.1	2194.1	2151.3	2038.5	1901.7	1848.6	1901.7	2038.5
167.5°	1984.4	2042.4	2127.1	2213.4	2226.3	2198.9	2123.9	2027.9	1979.6	2027.9	2123.9
170°	2104.2	2156.1	2197.9	2234.4	2252.1	2236.0	2177.0	2130.3	2097.7	2130.3	2177.0
172.5°	2199.2	2233.4	2249.5	2273.0	2261.7	2255.3	2225.3	2202.8	2184.7	2202.8	2225.3
175°	2258.7	2267.2	2281.7	2274.6	2284.3	2266.6	2267.2	2278.4	2210.4	2278.4	2267.2
177.5°	2279.7	2292.9	2284.9	2271.4	2273.0	2269.8	2275.2	2281.7	2270.0	2281.7	2275.2
180°	2281.7	2281.7	2281.7	2281.7	2281.7	2281.7	2281.7	2281.7	2281.7	2281.7	2281.7



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3119.3	3119.3	3119.3	3119.3	3119.3	3119.3
2.5°	3123.9	3124.5	3125.5	3107.9	3114.7	3113.4
5°	3109.9	3108.9	3109.9	3092.9	3098.7	3091.4
7.5°	3084.3	3083.9	3085.9	3065.3	3078.3	3069.1
10°	3047.7	3048.3	3049.3	3031.3	3040.3	3036.7
12.5°	3004.7	3002.1	3004.7	2988.7	2996.3	2997.9
15°	2951.1	2952.1	2952.7	2936.7	2942.3	2944.5
17.5°	2893.1	2893.1	2893.1	2876.7	2880.3	2883.5
20°	2820.4	2820.4	2822.1	2805.7	2808.9	2806.5
22.5°	2750.4	2747.4	2752.1	2730.7	2726.9	2723.9
25°	2666.4	2666.4	2668.1	2646.3	2628.9	2622.9
27.5°	2577.1	2577.4	2578.7	2550.3	2526.9	2510.9
30°	2482.1	2479.4	2485.3	2444.9	2408.9	2391.9
32.5°	2374.1	2380.1	2377.3	2328.9	2287.9	2270.9
35°	2267.4	2270.4	2272.3	2198.3	2151.3	2143.3
37.5°	2142.4	2163.1	2147.3	2069.3	2022.3	2020.3
40°	2007.4	2044.1	2010.7	1924.3	1891.3	1901.3
42.5°	1867.4	1915.1	1870.7	1784.7	1771.3	1783.3
45°	1723.4	1782.1	1726.7	1640.7	1643.7	1665.7
47.5°	1577.4	1629.1	1579.1	1513.7	1528.7	1554.7
50°	1425.8	1450.4	1429.1	1383.7	1418.7	1443.7
52.5°	1281.8	1259.4	1285.1	1269.1	1314.7	1333.7
55°	1128.2	1078.8	1131.4	1153.1	1208.1	1225.1
57.5°	975.2	921.8	978.4	1041.1	1109.1	1119.1
60°	829.2	787.8	830.8	927.4	1006.4	1017.4
62.5°	699.2	672.2	700.8	809.4	898.4	903.4
65°	587.2	577.2	588.8	694.8	777.8	792.8
67.5°	491.2	494.2	491.2	587.8	664.8	686.8
70°	406.2	419.2	406.2	483.2	552.2	586.2
72.5°	329.6	346.6	331.2	388.2	451.2	493.2
75°	263.6	286.6	263.6	301.6	365.2	418.2
77.5°	203.6	231.6	203.6	235.6	306.7	370.1
80°	150.6	174.6	150.6	191.4	276.2	339.5
82.5°	108.6	122.6	108.6	178.8	270.6	329.1
85°	86.2	73.6	89.4	188.2	286.9	340.0
87.5°	73.1	27.0	95.6	210.9	315.5	354.0
90°	49.2	2.6	110.4	249.8	354.7	384.8
92.5°	30.2	27.8	141.3	293.4	404.3	429.6
95°	15.4	66.4	176.4	345.6	457.8	469.4
97.5°	21.3	116.3	227.4	396.5	513.2	521.3
100°	55.1	177.5	296.6	452.9	562.4	567.1
102.5°	101.8	243.5	362.7	509.0	618.5	641.8
105°	164.6	319.2	431.9	585.9	677.6	705.1
107.5°	238.1	399.7	503.7	656.7	747.3	765.4
110°	315.4	484.4	574.6	725.9	824.5	843.9



TEST NUMBER: P392699

CATALOG NUMBER: MWL-4-55-73-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	399.1	571.4	648.6	790.3	906.7	921.1
115°	494.1	651.9	717.9	865.4	971.7	980.7
117.5°	579.4	748.5	788.7	920.1	1040.9	1043.5
120°	669.6	840.2	859.6	995.8	1108.5	1122.4
122.5°	762.4	927.2	928.2	1060.2	1169.1	1177.1
125°	847.7	1020.6	995.8	1108.5	1223.8	1227.1
127.5°	934.6	1116.6	1069.9	1172.3	1277.0	1272.1
130°	1029.6	1206.7	1137.5	1231.9	1326.9	1310.8
132.5°	1116.6	1303.3	1206.7	1293.1	1376.8	1386.5
135°	1203.5	1393.5	1266.3	1346.2	1428.3	1425.1
137.5°	1288.2	1477.2	1339.8	1388.1	1462.1	1471.8
140°	1370.4	1567.4	1404.2	1442.8	1504.0	1505.6
142.5°	1457.3	1657.6	1475.0	1497.6	1551.7	1542.0
145°	1553.9	1742.9	1563.6	1552.3	1587.1	1565.2
147.5°	1639.2	1817.0	1626.4	1592.6	1632.8	1606.4
150°	1734.2	1892.6	1713.3	1648.9	1673.1	1660.2
152.5°	1821.2	1952.2	1808.3	1692.4	1719.7	1703.6
155°	1906.5	2016.0	1900.1	1735.8	1755.2	1748.7
157.5°	1980.6	2070.7	1969.3	1780.9	1803.5	1790.6
160°	2045.0	2115.8	2049.8	1848.6	1835.7	1835.7
162.5°	2101.3	2159.3	2106.2	1940.3	1871.1	1840.5
165°	2151.3	2194.1	2156.1	2043.4	1938.7	1911.3
167.5°	2198.9	2226.3	2213.4	2127.1	2042.4	1984.4
170°	2236.0	2252.1	2234.4	2197.9	2156.1	2104.2
172.5°	2255.3	2261.7	2273.0	2249.5	2233.4	2199.2
175°	2266.6	2284.3	2274.6	2281.7	2267.2	2258.7
177.5°	2269.8	2273.0	2271.4	2284.9	2292.9	2279.7
180°	2281.7	2281.7	2281.7	2281.7	2281.7	2281.7

(END OF REPORT)