

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: P392690

Luminaire Tested: **MWL-4-55-33-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392690
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-4-55-33-UNV-L840-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

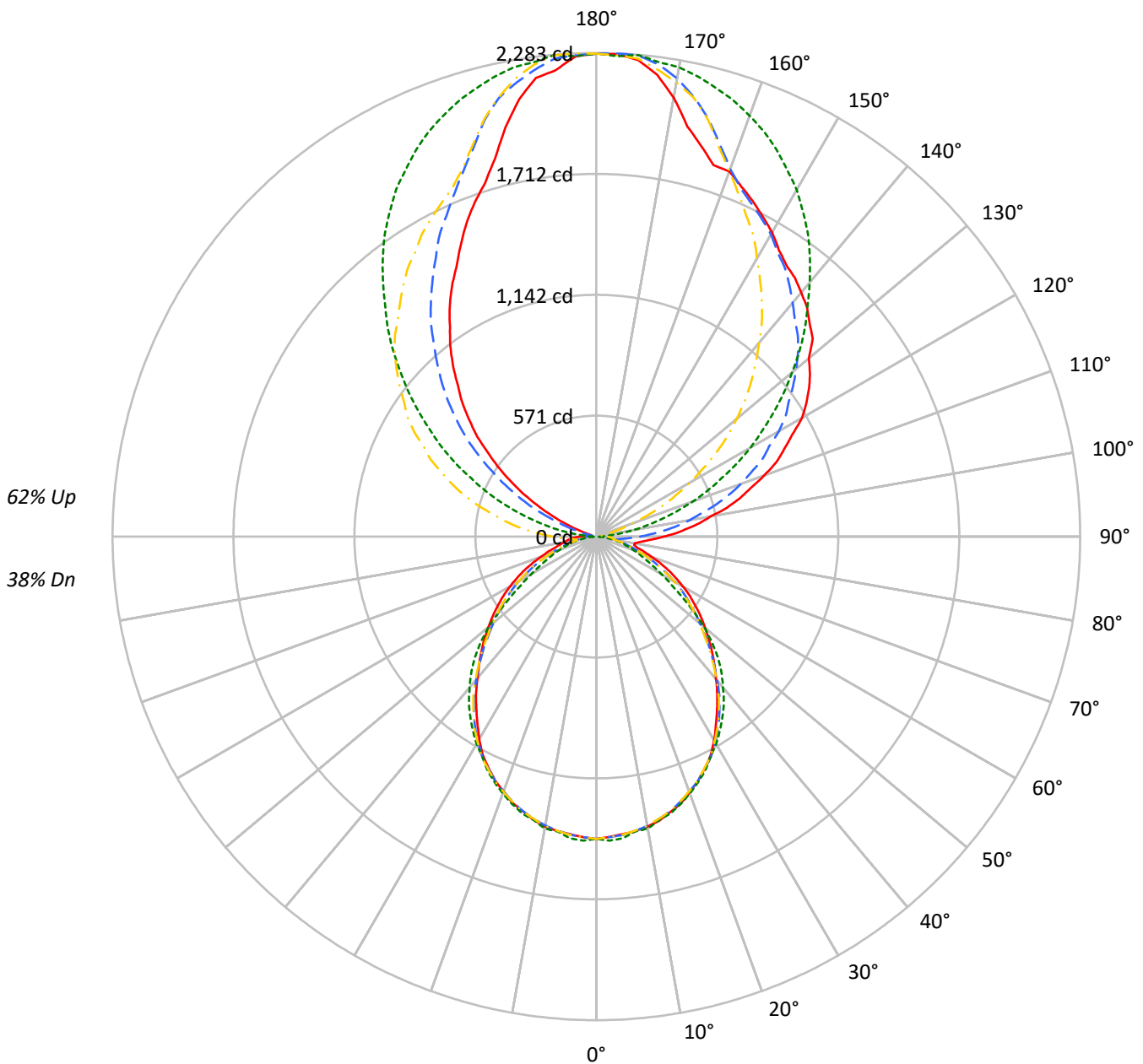
Lumens per Lamp: N/A
Luminaire Lumens: 8811.9 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 98.3
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



— 0°-180° - - 45°-225° ··· 90°-270° - · 135°-315°



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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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	95	91	87	84	86	83	79	76	67	65	63	53	52	50	40	39	38	32
2	87	80	74	69	79	72	67	63	59	56	52	47	44	42	35	34	33	27
3	79	70	63	57	72	64	58	53	52	48	44	42	39	36	32	30	28	23
4	73	62	55	49	66	57	50	45	47	42	38	37	34	31	28	26	24	20
5	67	55	48	42	60	51	44	39	42	37	33	33	30	27	26	23	21	18
6	61	50	42	36	56	46	39	34	38	32	29	30	27	24	23	21	19	16
7	57	45	37	32	51	41	34	30	34	29	25	28	24	21	21	19	17	14
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	20	17	15	13
9	49	37	30	25	45	34	28	23	29	24	20	23	19	17	18	16	14	11
10	46	34	27	22	42	31	25	21	26	21	18	21	18	15	17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9219	9219	9219	9219
5°	9062	8519	9062	8519
10°	8950	7802	8950	7802
15°	8759	7130	8728	7130
20°	8506	6503	8475	6503
25°	8216	5912	8184	5912
30°	7815	5344	7769	5344
35°	7292	4811	7256	4811
40°	6810	4264	6759	4264
45°	6392	3713	6351	3713
50°	5986	3037	5942	3037
55°	5598	2271	5565	2271
60°	5169	1682	5152	1682
65°	4669	1250	4669	1250
70°	4026	938	4049	938
75°	3543	689	3631	689
80°	4314	444	3598	444
85°	7780	206	4242	206



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.4	1.5
10°-20°	379.1	4.3
20°-30°	557.0	6.3
30°-40°	633.1	7.2
40°-50°	596.8	6.8
50°-60°	476.5	5.4
60°-70°	314.8	3.6
70°-80°	165.8	1.9
80°-90°	112.3	1.3
90°-100°	182.2	2.1
100°-110°	353.9	4.0
110°-120°	605.6	6.9
120°-130°	822.9	9.3
130°-140°	938.7	10.7
140°-150°	936.3	10.6
150°-160°	815.4	9.3
160°-170°	573.6	6.5
170°-180°	213.6	2.4
0°-30°	1070.5	12.1
0°-40°	1703.7	19.3
0°-60°	2776.9	31.5
0°-90°	3369.8	38.2
90°-120°	1141.7	13.0
90°-150°	3839.5	43.6
90°-180°	5442.0	61.8
0°-180°	8811.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1427	1427	1427	1427	1427	
5°	1410	1429	1410	1429	1410	134
15°	1347	1352	1342	1352	1347	380
25°	1209	1216	1204	1216	1209	556
35°	992	1037	987	1037	992	621
45°	773	813	768	813	773	597
55°	571	490	568	490	571	511
65°	374	257	374	257	374	370
75°	197	131	202	131	197	223
85°	230	35	125	35	230	179
90°	318	3	76	3	318	176
95°	428	65	47	65	428	376
105°	701	318	23	318	701	737
115°	979	651	225	651	979	971
125°	1225	1020	557	1020	1225	1094
135°	1423	1392	895	1392	1423	1099
145°	1563	1741	1204	1741	1563	986
155°	1747	2014	1515	2014	1747	806
165°	1909	2191	1847	2191	1909	542
175°	2258	2281	2210	2281	2258	210
180°	2280	2280	2280	2280	2280	



TEST NUMBER: P392690

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1427.4	1427.4	1427.4	1427.4	1427.4	1427.4	1427.4	1427.4	1427.4	1427.4	1427.4
2.5°	1418.5	1418.8	1420.0	1428.6	1436.6	1427.0	1420.0	1418.8	1420.2	1418.8	1420.0
5°	1410.5	1413.8	1414.0	1423.0	1429.0	1423.0	1412.4	1413.8	1410.5	1413.8	1412.4
7.5°	1402.2	1407.4	1401.4	1411.0	1404.0	1409.4	1399.8	1405.8	1402.2	1405.8	1399.8
10°	1389.8	1390.4	1386.4	1395.4	1399.4	1393.8	1384.8	1387.2	1389.8	1387.2	1384.8
12.5°	1373.0	1366.4	1364.8	1370.8	1370.2	1370.8	1364.8	1363.2	1369.8	1363.2	1364.8
15°	1346.6	1348.4	1342.8	1348.8	1352.2	1347.2	1341.2	1345.2	1341.8	1345.2	1341.2
17.5°	1322.6	1320.4	1313.8	1317.2	1323.2	1317.2	1312.2	1318.8	1317.8	1318.8	1312.2
20°	1284.6	1286.0	1281.8	1291.2	1290.5	1289.5	1280.2	1282.8	1279.8	1282.8	1280.2
22.5°	1250.0	1252.0	1249.8	1249.2	1255.5	1247.5	1248.2	1248.8	1246.8	1248.8	1248.2
25°	1209.0	1209.0	1209.4	1219.2	1216.5	1217.5	1206.2	1204.2	1204.2	1204.2	1206.2
27.5°	1165.9	1163.9	1171.4	1177.8	1168.4	1176.2	1168.1	1159.1	1161.1	1159.1	1168.1
30°	1110.9	1112.9	1120.9	1138.3	1130.4	1135.1	1116.1	1108.1	1104.4	1108.1	1116.1
32.5°	1050.9	1058.9	1069.9	1093.3	1085.1	1090.1	1065.1	1052.4	1044.4	1052.4	1065.1
35°	992.3	995.3	1012.3	1041.3	1037.4	1036.4	1007.4	990.4	987.4	990.4	1007.4
37.5°	937.3	932.3	953.3	984.3	988.1	979.4	948.4	927.4	932.4	927.4	948.4
40°	878.3	879.3	888.3	924.7	930.1	921.4	881.8	872.8	871.8	872.8	881.8
42.5°	825.3	815.3	822.7	860.7	874.1	857.4	817.8	808.8	818.8	808.8	817.8
45°	772.7	759.7	760.7	793.7	813.1	790.4	754.2	754.8	767.8	754.8	754.2
47.5°	721.7	705.7	697.7	723.1	740.1	721.4	691.2	700.8	716.8	700.8	691.2
50°	669.7	654.7	638.7	654.1	662.4	650.8	632.2	648.2	664.8	648.2	632.2
52.5°	621.7	604.7	584.1	586.1	575.4	582.8	579.2	598.2	616.8	598.2	579.2
55°	571.1	556.1	531.1	514.4	489.8	511.2	526.2	551.2	567.8	551.2	526.2
57.5°	523.1	512.1	480.1	447.4	414.8	444.2	475.2	507.2	519.8	507.2	475.2
60°	472.4	463.4	426.4	379.8	355.8	378.2	423.2	460.2	470.8	460.2	423.2
62.5°	422.4	415.4	372.4	318.8	299.2	317.2	369.2	412.2	420.8	412.2	369.2
65°	373.8	362.8	318.8	268.8	257.2	267.2	317.2	361.2	373.8	361.2	317.2
67.5°	324.8	311.8	269.8	223.2	221.2	223.2	268.2	310.2	324.8	310.2	268.2
70°	274.2	261.2	224.2	185.2	186.2	185.2	224.2	262.8	275.8	262.8	224.2
72.5°	236.2	214.2	184.2	153.2	156.6	151.6	184.2	215.8	239.4	215.8	184.2
75°	197.2	173.2	144.6	121.6	130.6	121.6	146.2	174.8	202.1	174.8	146.2
77.5°	182.1	148.7	112.6	97.6	103.6	97.6	114.2	143.8	175.7	143.8	114.2
80°	184.5	145.2	92.4	73.6	79.6	73.6	89.2	119.4	153.9	119.4	89.2
82.5°	201.1	162.6	96.8	52.6	55.6	52.6	77.4	104.7	139.9	104.7	77.4
85°	230.0	195.9	121.2	45.4	34.6	42.2	74.5	97.7	125.4	97.7	74.5
87.5°	270.0	242.5	156.9	60.6	9.0	38.1	65.1	87.9	104.2	87.9	65.1
90°	317.8	293.7	206.8	86.4	2.6	25.2	47.4	66.7	76.3	66.7	47.4
92.5°	376.6	353.3	257.4	127.3	26.8	16.2	36.8	55.4	61.1	55.4	36.8
95°	428.4	418.8	319.6	171.4	65.4	10.4	29.8	45.2	46.8	45.2	29.8
97.5°	492.3	483.2	382.5	226.4	115.3	20.3	26.7	40.4	41.4	40.4	26.7
100°	547.1	543.4	446.9	295.6	176.5	54.1	20.3	37.9	39.9	37.9	20.3
102.5°	630.8	608.5	507.0	361.7	242.5	100.8	27.2	28.9	31.9	28.9	27.2
105°	701.1	675.6	584.9	430.9	318.2	163.6	64.8	28.3	23.3	28.3	64.8
107.5°	764.4	745.3	655.7	501.7	398.7	236.1	119.5	62.6	43.0	62.6	119.5
110°	841.9	821.5	724.9	573.6	482.4	314.4	182.3	113.1	88.3	113.1	182.3



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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°	919.1	903.7	789.3	647.6	569.4	398.1	259.6	177.5	154.3	177.5	259.6
115°	978.7	969.7	863.4	716.9	650.9	493.1	344.9	253.2	225.2	253.2	344.9
117.5°	1041.5	1039.9	918.1	787.7	747.5	578.4	423.8	329.8	299.3	329.8	423.8
120°	1120.4	1107.5	993.8	858.6	839.2	668.6	510.8	416.8	386.2	416.8	510.8
122.5°	1175.2	1167.1	1059.2	926.2	926.2	760.4	595.5	500.5	468.3	500.5	595.5
125°	1225.2	1221.9	1107.5	993.8	1019.6	845.7	688.9	592.3	556.9	592.3	688.9
127.5°	1270.2	1275.1	1170.4	1067.9	1114.6	932.6	780.7	674.4	637.4	674.4	780.7
130°	1308.9	1325.0	1230.0	1135.5	1204.8	1027.6	862.8	756.5	732.4	756.5	862.8
132.5°	1384.6	1374.9	1291.2	1205.8	1301.4	1115.6	949.7	838.6	811.3	838.6	949.7
135°	1423.2	1426.4	1344.3	1265.4	1391.6	1202.6	1031.8	922.4	895.0	922.4	1031.8
137.5°	1469.9	1460.2	1386.2	1337.9	1475.3	1286.3	1112.4	1010.9	967.4	1010.9	1112.4
140°	1503.7	1502.1	1440.9	1402.3	1565.5	1368.5	1194.6	1091.4	1051.2	1091.4	1194.6
142.5°	1539.1	1548.8	1495.7	1473.1	1655.7	1455.4	1283.1	1170.4	1131.7	1170.4	1283.1
145°	1563.3	1584.2	1550.4	1561.7	1741.0	1552.0	1360.4	1246.1	1204.2	1246.1	1360.4
147.5°	1603.5	1630.9	1590.7	1624.5	1815.1	1637.3	1437.7	1325.0	1288.0	1325.0	1437.7
150°	1658.3	1671.2	1647.0	1711.4	1890.7	1732.3	1516.6	1400.7	1363.6	1400.7	1516.6
152.5°	1701.7	1717.8	1690.5	1806.4	1950.3	1819.3	1603.5	1474.7	1431.3	1474.7	1603.5
155°	1746.8	1753.3	1733.9	1898.2	2014.1	1904.6	1672.8	1556.8	1515.0	1556.8	1672.8
157.5°	1788.7	1801.6	1779.0	1967.4	2068.8	1978.7	1751.7	1639.0	1601.9	1639.0	1751.7
160°	1833.8	1833.8	1846.7	2047.9	2113.9	2043.1	1835.4	1729.1	1677.6	1729.1	1835.4
162.5°	1838.6	1869.2	1938.4	2104.3	2157.4	2099.4	1925.5	1793.5	1748.4	1793.5	1925.5
165°	1909.4	1936.8	2041.5	2154.2	2191.2	2149.4	2036.6	1899.8	1846.7	1899.8	2036.6
167.5°	1983.5	2041.5	2125.2	2210.5	2223.4	2196.0	2122.0	2027.0	1978.7	2027.0	2122.0
170°	2103.3	2153.2	2196.0	2231.5	2249.2	2233.1	2175.1	2127.4	2096.8	2127.4	2175.1
172.5°	2198.3	2231.5	2247.6	2270.1	2258.8	2252.4	2223.4	2200.9	2183.8	2200.9	2223.4
175°	2257.8	2265.3	2279.8	2271.7	2281.4	2263.7	2265.3	2276.5	2209.5	2276.5	2265.3
177.5°	2278.8	2291.0	2283.0	2268.5	2270.1	2266.9	2273.3	2279.8	2269.1	2279.8	2273.3
180°	2279.8	2279.8	2279.8	2279.8	2279.8	2279.8	2279.8	2279.8	2279.8	2279.8	2279.8



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CATALOG NUMBER: MWL-4-55-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1427.4	1427.4	1427.4	1427.4	1427.4	1427.4
2.5°	1427.0	1436.6	1428.6	1420.0	1418.8	1418.5
5°	1423.0	1429.0	1423.0	1414.0	1413.8	1410.5
7.5°	1409.4	1404.0	1411.0	1401.4	1407.4	1402.2
10°	1393.8	1399.4	1395.4	1386.4	1390.4	1389.8
12.5°	1370.8	1370.2	1370.8	1364.8	1366.4	1373.0
15°	1347.2	1352.2	1348.8	1342.8	1348.4	1346.6
17.5°	1317.2	1323.2	1317.2	1313.8	1320.4	1322.6
20°	1289.5	1290.5	1291.2	1281.8	1286.0	1284.6
22.5°	1247.5	1255.5	1249.2	1249.8	1252.0	1250.0
25°	1217.5	1216.5	1219.2	1209.4	1209.0	1209.0
27.5°	1176.2	1168.4	1177.8	1171.4	1163.9	1165.9
30°	1135.1	1130.4	1138.3	1120.9	1112.9	1110.9
32.5°	1090.1	1085.1	1093.3	1069.9	1058.9	1050.9
35°	1036.4	1037.4	1041.3	1012.3	995.3	992.3
37.5°	979.4	988.1	984.3	953.3	932.3	937.3
40°	921.4	930.1	924.7	888.3	879.3	878.3
42.5°	857.4	874.1	860.7	822.7	815.3	825.3
45°	790.4	813.1	793.7	760.7	759.7	772.7
47.5°	721.4	740.1	723.1	697.7	705.7	721.7
50°	650.8	662.4	654.1	638.7	654.7	669.7
52.5°	582.8	575.4	586.1	584.1	604.7	621.7
55°	511.2	489.8	514.4	531.1	556.1	571.1
57.5°	444.2	414.8	447.4	480.1	512.1	523.1
60°	378.2	355.8	379.8	426.4	463.4	472.4
62.5°	317.2	299.2	318.8	372.4	415.4	422.4
65°	267.2	257.2	268.8	318.8	362.8	373.8
67.5°	223.2	221.2	223.2	269.8	311.8	324.8
70°	185.2	186.2	185.2	224.2	261.2	274.2
72.5°	151.6	156.6	153.2	184.2	214.2	236.2
75°	121.6	130.6	121.6	144.6	173.2	197.2
77.5°	97.6	103.6	97.6	112.6	148.7	182.1
80°	73.6	79.6	73.6	92.4	145.2	184.5
82.5°	52.6	55.6	52.6	96.8	162.6	201.1
85°	42.2	34.6	45.4	121.2	195.9	230.0
87.5°	38.1	9.0	60.6	156.9	242.5	270.0
90°	25.2	2.6	86.4	206.8	293.7	317.8
92.5°	16.2	26.8	127.3	257.4	353.3	376.6
95°	10.4	65.4	171.4	319.6	418.8	428.4
97.5°	20.3	115.3	226.4	382.5	483.2	492.3
100°	54.1	176.5	295.6	446.9	543.4	547.1
102.5°	100.8	242.5	361.7	507.0	608.5	630.8
105°	163.6	318.2	430.9	584.9	675.6	701.1
107.5°	236.1	398.7	501.7	655.7	745.3	764.4
110°	314.4	482.4	573.6	724.9	821.5	841.9



TEST NUMBER: P392690

CATALOG NUMBER: MWL-4-55-33-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	398.1	569.4	647.6	789.3	903.7	919.1
115°	493.1	650.9	716.9	863.4	969.7	978.7
117.5°	578.4	747.5	787.7	918.1	1039.9	1041.5
120°	668.6	839.2	858.6	993.8	1107.5	1120.4
122.5°	760.4	926.2	926.2	1059.2	1167.1	1175.2
125°	845.7	1019.6	993.8	1107.5	1221.9	1225.2
127.5°	932.6	1114.6	1067.9	1170.4	1275.1	1270.2
130°	1027.6	1204.8	1135.5	1230.0	1325.0	1308.9
132.5°	1115.6	1301.4	1205.8	1291.2	1374.9	1384.6
135°	1202.6	1391.6	1265.4	1344.3	1426.4	1423.2
137.5°	1286.3	1475.3	1337.9	1386.2	1460.2	1469.9
140°	1368.5	1565.5	1402.3	1440.9	1502.1	1503.7
142.5°	1455.4	1655.7	1473.1	1495.7	1548.8	1539.1
145°	1552.0	1741.0	1561.7	1550.4	1584.2	1563.3
147.5°	1637.3	1815.1	1624.5	1590.7	1630.9	1603.5
150°	1732.3	1890.7	1711.4	1647.0	1671.2	1658.3
152.5°	1819.3	1950.3	1806.4	1690.5	1717.8	1701.7
155°	1904.6	2014.1	1898.2	1733.9	1753.3	1746.8
157.5°	1978.7	2068.8	1967.4	1779.0	1801.6	1788.7
160°	2043.1	2113.9	2047.9	1846.7	1833.8	1833.8
162.5°	2099.4	2157.4	2104.3	1938.4	1869.2	1838.6
165°	2149.4	2191.2	2154.2	2041.5	1936.8	1909.4
167.5°	2196.0	2223.4	2210.5	2125.2	2041.5	1983.5
170°	2233.1	2249.2	2231.5	2196.0	2153.2	2103.3
172.5°	2252.4	2258.8	2270.1	2247.6	2231.5	2198.3
175°	2263.7	2281.4	2271.7	2279.8	2265.3	2257.8
177.5°	2266.9	2270.1	2268.5	2283.0	2291.0	2278.8
180°	2279.8	2279.8	2279.8	2279.8	2279.8	2279.8

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