

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: P392609

Luminaire Tested: **MWL-3-44-25-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392609
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-44-25-UNV-L840-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6931.1 lumens
Efficiency: N/A
Efficacy: 87.8 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Indirect

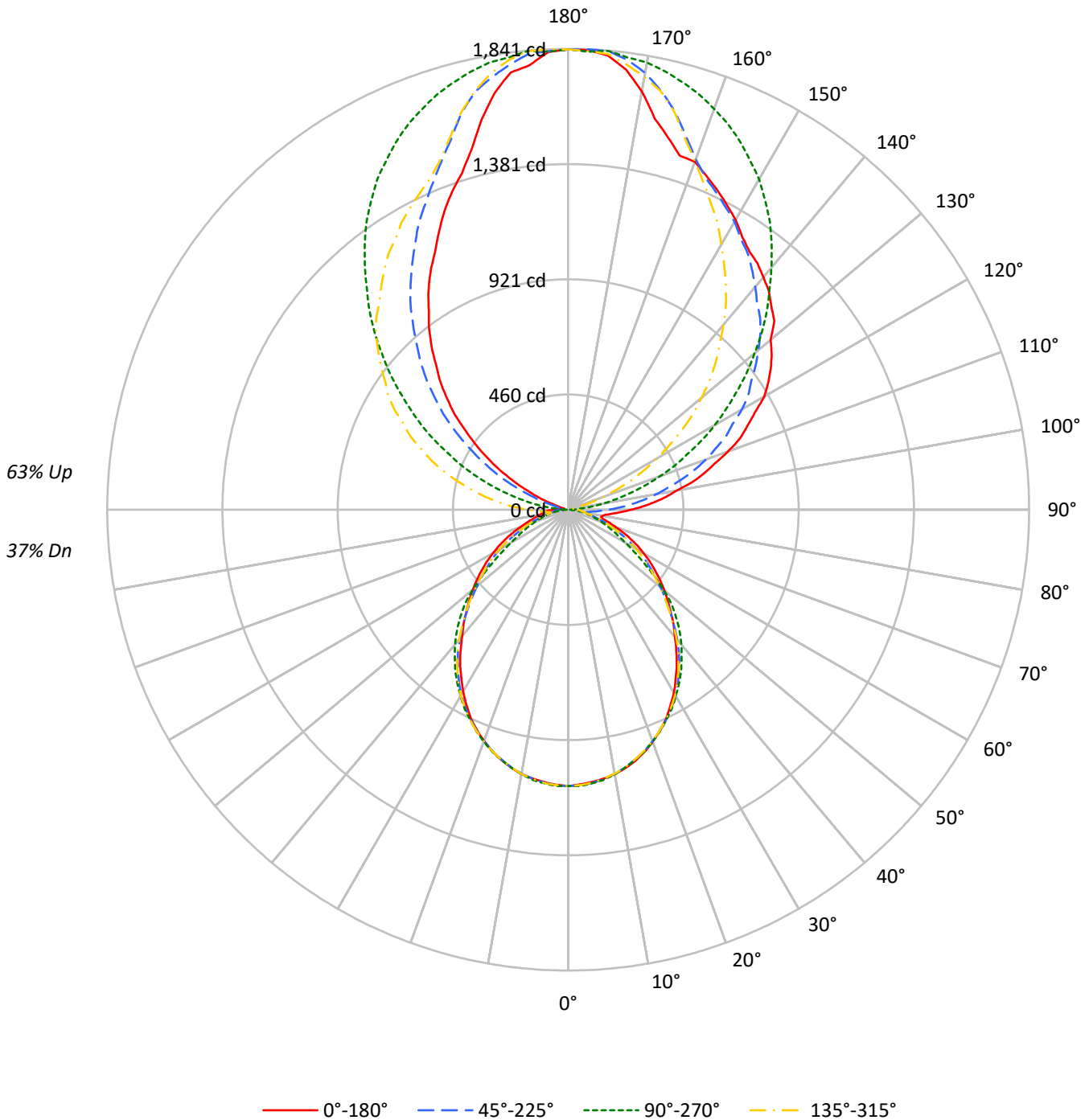
Input Watts (W): 78.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: MWL-3-44-25-UNV-L840-EDD

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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44	37
1	95	91	87	83	86	82	79	76	67	64	62	52	51	49	39	38	37	31
2	87	79	73	68	78	72	67	63	59	55	52	46	44	42	34	33	32	26
3	79	70	63	57	71	64	58	53	52	47	44	41	38	35	31	29	27	23
4	72	62	54	49	65	57	50	45	46	41	38	37	33	30	28	25	24	20
5	66	55	47	42	60	50	44	39	41	36	32	33	29	27	25	23	21	17
6	61	50	42	36	55	45	38	34	37	32	28	30	26	23	23	20	18	15
7	57	45	37	32	51	41	34	29	34	29	25	27	23	21	21	18	16	14
8	52	41	33	28	48	37	31	26	31	26	22	25	21	18	19	17	15	12
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13	11
10	46	34	27	22	41	31	25	21	26	21	18	21	17	15	16	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9507	9507	9507	9507
5°	9327	8722	9327	8722
10°	9155	7976	9155	7976
15°	8927	7273	8893	7273
20°	8606	6625	8572	6625
25°	8239	6001	8204	6001
30°	7772	5416	7724	5416
35°	7244	4861	7206	4861
40°	6676	4300	6624	4300
45°	6189	3717	6147	3717
50°	5756	3045	5711	3045
55°	5306	2269	5273	2269
60°	4820	1664	4802	1664
65°	4284	1261	4284	1261
70°	3656	931	3679	931
75°	3190	677	3276	677
80°	3859	441	3173	441
85°	6816	193	3593	193



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.8	1.5
10°-20°	291.4	4.2
20°-30°	425.4	6.1
30°-40°	480.7	6.9
40°-50°	450.0	6.5
50°-60°	355.4	5.1
60°-70°	232.6	3.4
70°-80°	122.0	1.8
80°-90°	85.4	1.2
90°-100°	144.8	2.1
100°-110°	284.4	4.1
110°-120°	488.2	7.0
120°-130°	663.2	9.6
130°-140°	756.7	10.9
140°-150°	754.9	10.9
150°-160°	657.4	9.5
160°-170°	462.5	6.7
170°-180°	172.3	2.5
0°-30°	820.6	11.8
0°-40°	1301.4	18.8
0°-60°	2106.7	30.4
0°-90°	2546.6	36.7
90°-120°	917.4	13.2
90°-150°	3092.2	44.6
90°-180°	4384.0	63.3
0°-180°	6931.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1104	1104	1104	1104	1104	
5°	1092	1097	1092	1097	1092	104
15°	1039	1034	1035	1034	1039	292
25°	923	926	919	926	923	424
35°	756	786	752	786	756	472
45°	579	610	575	610	579	448
55°	424	367	421	367	424	379
65°	273	195	273	195	273	271
75°	146	96	150	96	146	164
85°	178	24	94	24	178	138
90°	251	1	56	1	251	139
95°	345	53	37	53	345	302
105°	562	257	15	257	562	592
115°	789	524	181	524	789	783
125°	988	822	449	822	988	882
135°	1148	1122	722	1122	1148	886
145°	1261	1404	971	1404	1261	795
155°	1409	1623	1222	1623	1409	650
165°	1540	1767	1489	1767	1540	437
175°	1821	1840	1782	1840	1821	170
180°	1839	1839	1839	1839	1839	



TEST NUMBER: P392609

CATALOG NUMBER: MWL-3-44-25-UNV-L840-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1104.0	1104.0	1104.0	1104.0	1104.0	1104.0	1104.0	1104.0	1104.0	1104.0	1104.0
2.5°	1098.1	1102.7	1101.3	1103.6	1104.6	1102.3	1101.3	1102.7	1099.4	1102.7	1101.3
5°	1092.1	1096.7	1096.3	1096.3	1097.3	1096.3	1095.0	1096.7	1092.1	1096.7	1095.0
7.5°	1083.4	1087.0	1085.0	1087.3	1088.3	1086.0	1083.7	1085.7	1083.4	1085.7	1083.7
10°	1072.7	1073.0	1072.0	1073.0	1073.0	1071.7	1070.7	1070.4	1072.7	1070.4	1070.7
12.5°	1057.3	1055.0	1053.7	1055.7	1054.4	1055.7	1053.7	1052.4	1054.7	1052.4	1053.7
15°	1038.6	1036.0	1033.7	1035.7	1034.4	1034.4	1032.4	1033.4	1034.7	1033.4	1032.4
17.5°	1014.6	1012.0	1010.7	1012.4	1012.4	1012.4	1009.4	1010.7	1010.7	1010.7	1009.4
20°	986.6	987.3	984.7	987.4	986.1	986.1	983.4	984.7	982.7	984.7	983.4
22.5°	955.3	957.3	956.7	958.4	958.1	957.1	955.4	954.7	952.7	954.7	955.4
25°	923.3	922.3	926.0	929.4	926.1	928.1	923.4	918.4	919.4	918.4	923.4
27.5°	883.3	889.3	893.0	897.7	896.1	896.4	890.4	885.4	879.4	885.4	890.4
30°	844.3	847.3	857.3	863.0	859.1	860.4	853.4	843.4	839.1	843.4	853.4
32.5°	799.4	805.4	816.4	826.0	823.4	823.4	812.5	800.2	794.2	800.2	812.5
35°	756.1	758.1	772.1	786.1	786.2	782.2	768.2	754.2	752.2	754.2	768.2
37.5°	709.1	711.1	727.1	744.1	743.5	740.2	723.2	707.2	705.2	707.2	723.2
40°	663.1	664.1	677.1	698.8	703.5	696.2	671.9	658.9	657.9	658.9	671.9
42.5°	623.1	616.1	624.8	650.8	658.5	648.2	620.9	610.9	617.9	610.9	620.9
45°	578.8	570.8	575.8	599.8	610.5	597.2	570.6	566.9	574.9	566.9	570.6
47.5°	538.8	528.8	527.8	544.5	560.5	543.2	522.6	524.9	534.9	524.9	522.6
50°	500.8	488.8	479.8	491.5	498.2	488.9	474.6	483.6	496.9	483.6	474.6
52.5°	462.8	450.8	436.5	439.5	431.2	436.9	432.6	445.6	458.9	445.6	432.6
55°	423.5	413.5	396.5	386.2	366.9	383.6	392.6	409.6	420.9	409.6	392.6
57.5°	386.5	378.5	357.5	335.2	311.9	332.6	353.6	374.6	383.9	374.6	353.6
60°	347.2	343.2	315.2	282.9	263.9	281.6	312.6	340.6	345.9	340.6	312.6
62.5°	312.2	305.2	275.2	237.9	224.6	236.6	272.6	302.6	310.9	302.6	272.6
65°	272.9	267.9	233.9	200.9	194.6	199.6	232.6	266.6	272.9	266.6	232.6
67.5°	237.9	227.9	199.9	164.6	164.6	164.6	198.6	226.6	237.9	226.6	198.6
70°	200.6	190.6	164.6	137.6	138.6	137.6	164.6	191.9	201.9	191.9	164.6
72.5°	171.6	156.6	134.6	112.6	115.3	111.3	134.6	157.9	174.2	157.9	134.6
75°	145.6	127.6	106.3	91.3	96.3	91.3	107.6	128.9	149.5	128.9	107.6
77.5°	134.0	107.8	83.3	71.3	77.3	71.3	84.6	103.9	128.8	103.9	84.6
80°	139.1	108.0	69.2	54.3	59.3	54.3	66.6	87.2	114.4	87.2	66.6
82.5°	151.2	123.6	72.8	39.3	41.3	39.3	57.2	76.8	101.9	76.8	57.2
85°	178.5	151.5	92.4	33.2	24.3	30.6	54.7	72.3	94.1	72.3	54.7
87.5°	212.3	191.6	123.0	46.7	7.0	28.5	49.0	66.9	78.5	66.9	49.0
90°	250.9	234.0	163.8	67.0	1.3	17.6	35.2	50.8	56.1	50.8	35.2
92.5°	299.1	281.5	205.9	101.2	21.8	11.6	27.9	41.2	44.5	41.2	27.9
95°	344.8	335.0	255.7	137.1	53.0	7.2	21.9	33.6	36.9	33.6	21.9
97.5°	394.9	386.4	305.9	182.9	93.2	16.6	18.8	29.2	31.2	29.2	18.8
100°	438.6	435.3	358.3	238.7	142.6	43.9	14.1	27.4	29.4	27.4	14.1
102.5°	506.6	488.0	407.6	292.0	195.9	81.5	20.5	20.4	23.4	20.4	20.5
105°	562.0	540.8	471.2	347.8	256.9	132.2	51.7	18.6	15.1	18.6	51.7
107.5°	613.8	600.8	528.4	405.0	321.9	190.7	95.8	50.1	31.9	50.1	95.8
110°	678.8	663.2	584.3	462.1	389.4	253.0	146.5	91.6	70.8	91.6	146.5



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CATALOG NUMBER: MWL-3-44-25-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	741.1	729.4	636.2	521.9	459.6	320.6	208.8	143.6	124.1	143.6	208.8
115°	789.2	782.7	696.0	577.8	524.5	397.2	277.7	204.6	181.3	204.6	277.7
117.5°	839.8	838.5	740.1	634.9	602.4	466.0	341.3	265.7	241.0	265.7	341.3
120°	903.4	893.0	801.2	692.1	676.5	538.8	411.5	335.8	311.2	335.8	411.5
122.5°	947.6	941.1	853.1	746.6	746.6	612.8	479.0	403.4	377.4	403.4	479.0
125°	987.8	985.3	892.0	801.2	821.9	681.7	554.4	477.4	448.9	477.4	554.4
127.5°	1024.2	1028.1	942.7	860.8	898.5	751.8	628.4	543.7	513.8	543.7	628.4
130°	1055.4	1068.4	990.7	915.4	971.3	828.4	694.7	609.9	590.5	609.9	694.7
132.5°	1116.5	1108.7	1041.1	971.3	1049.2	898.5	765.8	676.2	654.1	676.2	765.8
135°	1147.6	1150.2	1084.0	1019.3	1121.9	968.7	832.0	743.7	721.7	743.7	832.0
137.5°	1185.3	1177.5	1116.8	1077.8	1189.5	1036.2	895.9	815.2	780.1	815.2	895.9
140°	1212.6	1211.3	1161.9	1130.7	1262.2	1103.5	963.2	880.0	847.6	880.0	963.2
142.5°	1241.2	1249.0	1206.1	1186.9	1335.0	1172.6	1034.6	943.7	912.5	943.7	1034.6
145°	1260.6	1277.5	1250.2	1259.3	1403.8	1251.5	1097.0	1004.7	971.0	1004.7	1097.0
147.5°	1293.1	1315.2	1282.7	1310.0	1463.6	1320.4	1159.3	1068.4	1038.5	1068.4	1159.3
150°	1337.3	1347.7	1328.2	1380.2	1524.6	1397.0	1223.0	1129.4	1099.6	1129.4	1223.0
152.5°	1372.4	1385.3	1362.3	1455.8	1572.7	1466.2	1292.1	1189.2	1154.1	1189.2	1292.1
155°	1408.7	1413.9	1398.3	1529.8	1623.4	1535.0	1349.0	1255.4	1221.7	1255.4	1349.0
157.5°	1442.5	1452.9	1434.7	1585.7	1667.5	1594.8	1412.6	1321.7	1291.8	1321.7	1412.6
160°	1478.9	1478.9	1489.3	1651.6	1703.9	1647.7	1480.2	1394.4	1352.9	1394.4	1480.2
162.5°	1482.8	1506.5	1563.3	1697.1	1740.0	1693.2	1552.9	1445.4	1410.0	1445.4	1552.9
165°	1539.9	1561.0	1646.4	1737.4	1767.3	1733.5	1642.6	1531.1	1489.3	1531.1	1642.6
167.5°	1599.7	1645.4	1714.0	1782.8	1793.2	1771.2	1711.4	1633.8	1595.8	1633.8	1711.4
170°	1696.1	1736.4	1771.2	1799.7	1814.0	1801.0	1754.3	1715.6	1690.9	1715.6	1754.3
172.5°	1772.8	1798.7	1812.7	1830.9	1821.8	1816.6	1793.2	1774.0	1761.1	1774.0	1793.2
175°	1820.8	1826.0	1838.7	1832.2	1840.0	1825.7	1827.0	1835.1	1781.8	1835.1	1827.0
177.5°	1837.7	1846.8	1841.3	1829.6	1830.9	1828.3	1833.5	1837.7	1829.9	1837.7	1833.5
180°	1838.7	1838.7	1838.7	1838.7	1838.7	1838.7	1838.7	1838.7	1838.7	1838.7	1838.7



TEST NUMBER: P392609

CATALOG NUMBER: MWL-3-44-25-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1104.0	1104.0	1104.0	1104.0	1104.0	1104.0
2.5°	1102.3	1104.6	1103.6	1101.3	1102.7	1098.1
5°	1096.3	1097.3	1096.3	1096.3	1096.7	1092.1
7.5°	1086.0	1088.3	1087.3	1085.0	1087.0	1083.4
10°	1071.7	1073.0	1073.0	1072.0	1073.0	1072.7
12.5°	1055.7	1054.4	1055.7	1053.7	1055.0	1057.3
15°	1034.4	1034.4	1035.7	1033.7	1036.0	1038.6
17.5°	1012.4	1012.4	1012.4	1010.7	1012.0	1014.6
20°	986.1	986.1	987.4	984.7	987.3	986.6
22.5°	957.1	958.1	958.4	956.7	957.3	955.3
25°	928.1	926.1	929.4	926.0	922.3	923.3
27.5°	896.4	896.1	897.7	893.0	889.3	883.3
30°	860.4	859.1	863.0	857.3	847.3	844.3
32.5°	823.4	823.4	826.0	816.4	805.4	799.4
35°	782.2	786.2	786.1	772.1	758.1	756.1
37.5°	740.2	743.5	744.1	727.1	711.1	709.1
40°	696.2	703.5	698.8	677.1	664.1	663.1
42.5°	648.2	658.5	650.8	624.8	616.1	623.1
45°	597.2	610.5	599.8	575.8	570.8	578.8
47.5°	543.2	560.5	544.5	527.8	528.8	538.8
50°	488.9	498.2	491.5	479.8	488.8	500.8
52.5°	436.9	431.2	439.5	436.5	450.8	462.8
55°	383.6	366.9	386.2	396.5	413.5	423.5
57.5°	332.6	311.9	335.2	357.5	378.5	386.5
60°	281.6	263.9	282.9	315.2	343.2	347.2
62.5°	236.6	224.6	237.9	275.2	305.2	312.2
65°	199.6	194.6	200.9	233.9	267.9	272.9
67.5°	164.6	164.6	164.6	199.9	227.9	237.9
70°	137.6	138.6	137.6	164.6	190.6	200.6
72.5°	111.3	115.3	112.6	134.6	156.6	171.6
75°	91.3	96.3	91.3	106.3	127.6	145.6
77.5°	71.3	77.3	71.3	83.3	107.8	134.0
80°	54.3	59.3	54.3	69.2	108.0	139.1
82.5°	39.3	41.3	39.3	72.8	123.6	151.2
85°	30.6	24.3	33.2	92.4	151.5	178.5
87.5°	28.5	7.0	46.7	123.0	191.6	212.3
90°	17.6	1.3	67.0	163.8	234.0	250.9
92.5°	11.6	21.8	101.2	205.9	281.5	299.1
95°	7.2	53.0	137.1	255.7	335.0	344.8
97.5°	16.6	93.2	182.9	305.9	386.4	394.9
100°	43.9	142.6	238.7	358.3	435.3	438.6
102.5°	81.5	195.9	292.0	407.6	488.0	506.6
105°	132.2	256.9	347.8	471.2	540.8	562.0
107.5°	190.7	321.9	405.0	528.4	600.8	613.8
110°	253.0	389.4	462.1	584.3	663.2	678.8



TEST NUMBER: P392609

CATALOG NUMBER: MWL-3-44-25-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	320.6	459.6	521.9	636.2	729.4	741.1
115°	397.2	524.5	577.8	696.0	782.7	789.2
117.5°	466.0	602.4	634.9	740.1	838.5	839.8
120°	538.8	676.5	692.1	801.2	893.0	903.4
122.5°	612.8	746.6	746.6	853.1	941.1	947.6
125°	681.7	821.9	801.2	892.0	985.3	987.8
127.5°	751.8	898.5	860.8	942.7	1028.1	1024.2
130°	828.4	971.3	915.4	990.7	1068.4	1055.4
132.5°	898.5	1049.2	971.3	1041.1	1108.7	1116.5
135°	968.7	1121.9	1019.3	1084.0	1150.2	1147.6
137.5°	1036.2	1189.5	1077.8	1116.8	1177.5	1185.3
140°	1103.5	1262.2	1130.7	1161.9	1211.3	1212.6
142.5°	1172.6	1335.0	1186.9	1206.1	1249.0	1241.2
145°	1251.5	1403.8	1259.3	1250.2	1277.5	1260.6
147.5°	1320.4	1463.6	1310.0	1282.7	1315.2	1293.1
150°	1397.0	1524.6	1380.2	1328.2	1347.7	1337.3
152.5°	1466.2	1572.7	1455.8	1362.3	1385.3	1372.4
155°	1535.0	1623.4	1529.8	1398.3	1413.9	1408.7
157.5°	1594.8	1667.5	1585.7	1434.7	1452.9	1442.5
160°	1647.7	1703.9	1651.6	1489.3	1478.9	1478.9
162.5°	1693.2	1740.0	1697.1	1563.3	1506.5	1482.8
165°	1733.5	1767.3	1737.4	1646.4	1561.0	1539.9
167.5°	1771.2	1793.2	1782.8	1714.0	1645.4	1599.7
170°	1801.0	1814.0	1799.7	1771.2	1736.4	1696.1
172.5°	1816.6	1821.8	1830.9	1812.7	1798.7	1772.8
175°	1825.7	1840.0	1832.2	1838.7	1826.0	1820.8
177.5°	1828.3	1830.9	1829.6	1841.3	1846.8	1837.7
180°	1838.7	1838.7	1838.7	1838.7	1838.7	1838.7

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