

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: P392602

Luminaire Tested: **MWL-3-37-47-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392602
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-3-37-47-UNV-L935-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

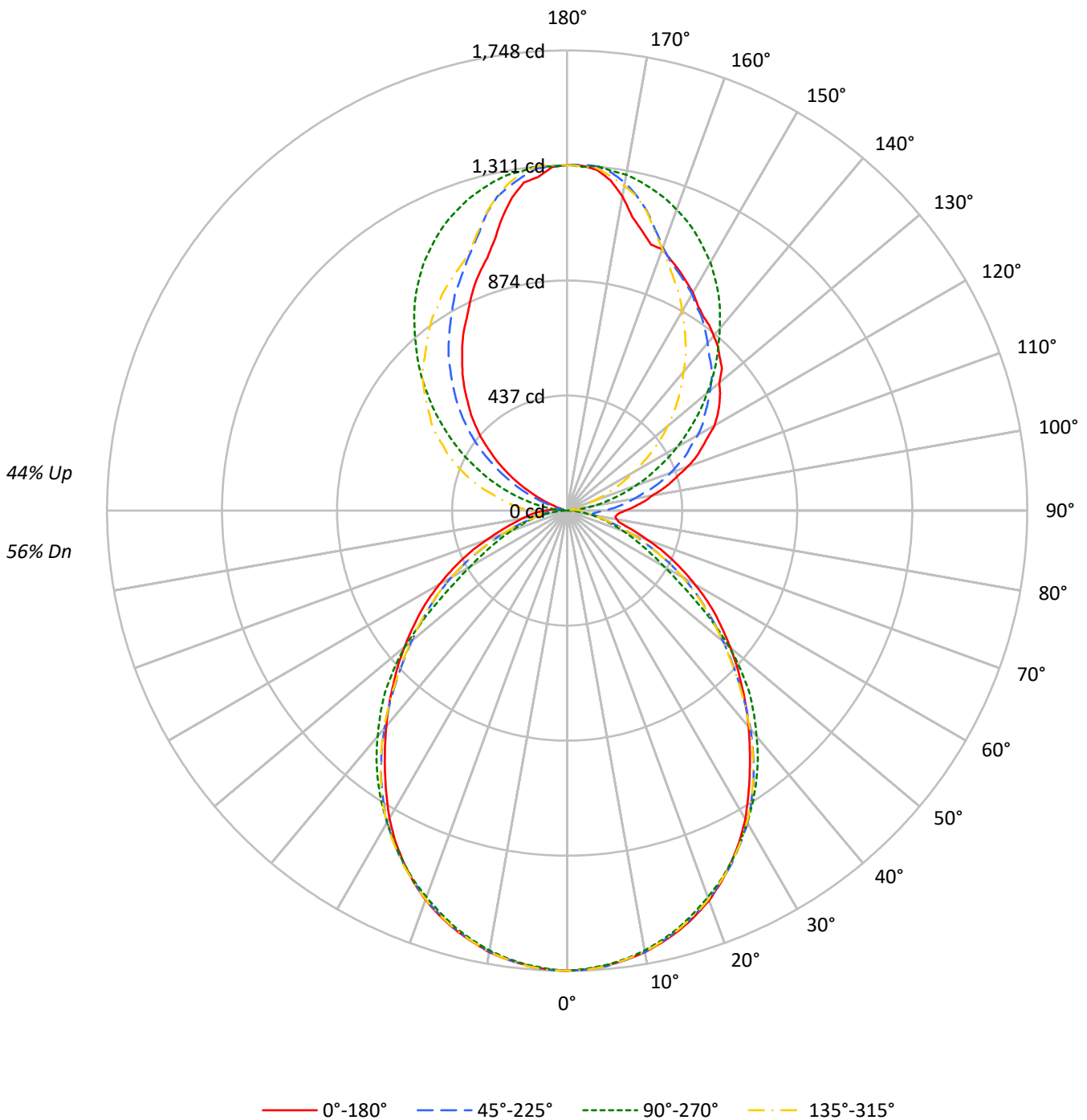
Lumens per Lamp: N/A
Luminaire Lumens: 7197.5 lumens
Efficiency: N/A
Efficacy: 78.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 91.304
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	62	62	62	56
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	55	54	53	48
2	91	83	77	72	84	78	73	68	67	63	60	58	55	52	49	47	45	41
3	83	74	66	61	77	69	63	57	60	55	51	51	48	45	44	41	39	35
4	76	66	58	52	71	61	54	49	53	48	44	46	42	39	39	36	34	30
5	70	59	51	45	65	55	48	42	48	42	38	42	37	34	36	32	30	26
6	65	53	45	39	60	50	42	37	43	38	33	38	33	30	32	29	26	23
7	60	48	40	34	56	45	38	33	39	34	30	34	30	26	30	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	32	27	24	27	24	21	19
9	52	40	32	27	48	38	31	26	33	28	24	29	25	21	25	22	19	17
10	49	37	29	25	45	35	28	24	31	25	21	27	23	19	23	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	15055	15055	15055	15055
5°	14813	13769	14813	13769
10°	14538	12611	14538	12611
15°	14183	11529	14159	11529
20°	13750	10497	13726	10497
25°	13157	9547	13133	9547
30°	12456	8620	12423	8620
35°	11591	7746	11565	7746
40°	10797	6844	10760	6844
45°	10017	5961	9986	5961
50°	9304	4906	9272	4906
55°	8599	3662	8577	3662
60°	7774	2685	7762	2685
65°	6902	2029	6902	2029
70°	5875	1505	5892	1505
75°	5077	1086	5136	1086
80°	5282	688	4793	688
85°	7236	291	4941	291



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.6	2.3
10°-20°	463.3	6.4
20°-30°	678.9	9.4
30°-40°	769.6	10.7
40°-50°	723.8	10.1
50°-60°	574.7	8.0
60°-70°	374.2	5.2
70°-80°	191.2	2.7
80°-90°	104.6	1.5
90°-100°	119.5	1.7
100°-110°	205.6	2.9
110°-120°	349.4	4.9
120°-130°	474.5	6.6
130°-140°	541.0	7.5
140°-150°	539.5	7.5
150°-160°	469.7	6.5
160°-170°	330.4	4.6
170°-180°	123.0	1.7
0°-30°	1306.7	18.2
0°-40°	2076.3	28.8
0°-60°	3374.8	46.9
0°-90°	4044.8	56.2
90°-120°	674.6	9.4
90°-150°	2229.6	31.0
90°-180°	3153.0	43.8
0°-180°	7197.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1748	1748	1748	1748	1748	
5°	1734	1732	1734	1732	1734	165
15°	1650	1640	1647	1640	1650	465
25°	1474	1473	1472	1473	1474	678
35°	1210	1253	1207	1253	1210	757
45°	937	979	934	979	937	724
55°	686	592	685	592	686	613
65°	440	313	440	313	440	436
75°	232	154	234	154	232	255
85°	190	37	129	37	190	155
90°	220	2	81	2	220	122
95°	272	38	53	38	272	235
105°	406	184	16	184	406	429
115°	565	375	131	375	565	560
125°	706	588	322	588	706	631
135°	820	802	516	802	820	633
145°	901	1003	694	1003	901	568
155°	1006	1159	873	1159	1006	464
165°	1100	1262	1064	1262	1100	312
175°	1299	1314	1271	1314	1299	121
180°	1313	1313	1313	1313	1313	



TEST NUMBER: P392602

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1748.3	1748.3	1748.3	1748.3	1748.3	1748.3	1748.3	1748.3	1748.3	1748.3	1748.3
2.5°	1743.9	1746.6	1745.8	1743.4	1741.7	1742.5	1745.8	1746.6	1744.8	1746.6	1745.8
5°	1734.5	1737.3	1737.4	1734.0	1732.3	1734.0	1736.4	1737.3	1734.5	1737.3	1736.4
7.5°	1721.1	1724.5	1720.3	1719.6	1717.0	1718.6	1719.5	1723.7	1721.1	1723.7	1719.5
10°	1703.4	1705.0	1702.5	1698.3	1696.5	1697.4	1701.6	1703.3	1703.4	1703.3	1701.6
12.5°	1678.0	1677.9	1675.3	1672.0	1670.2	1672.0	1675.3	1676.1	1676.2	1676.1	1675.3
15°	1650.1	1647.4	1645.7	1643.1	1639.7	1642.2	1644.8	1645.6	1647.4	1645.6	1644.8
17.5°	1615.3	1613.5	1610.1	1607.4	1602.3	1607.4	1609.1	1612.6	1612.6	1612.6	1609.1
20°	1576.3	1573.7	1571.9	1567.5	1562.4	1566.7	1571.0	1571.9	1573.6	1571.9	1571.0
22.5°	1527.9	1527.9	1525.3	1524.3	1521.7	1523.4	1524.3	1526.1	1526.1	1526.1	1524.3
25°	1474.4	1476.2	1479.4	1477.7	1473.4	1476.8	1477.7	1473.5	1471.8	1473.5	1477.7
27.5°	1416.8	1419.4	1425.2	1428.6	1421.6	1427.7	1423.4	1416.6	1414.1	1416.6	1423.4
30°	1353.2	1357.4	1371.0	1376.0	1367.4	1374.3	1368.3	1354.8	1349.6	1354.8	1368.3
32.5°	1281.1	1287.9	1304.0	1315.8	1313.2	1314.0	1301.3	1284.3	1277.4	1284.3	1301.3
35°	1209.8	1215.7	1235.2	1253.9	1252.8	1251.2	1232.5	1213.0	1207.1	1213.0	1232.5
37.5°	1139.4	1140.2	1160.6	1186.1	1190.2	1183.3	1157.9	1137.6	1136.7	1137.6	1157.9
40°	1072.4	1069.9	1083.5	1113.1	1119.8	1111.2	1079.8	1066.2	1068.8	1066.2	1079.8
42.5°	1004.6	995.3	1001.2	1037.6	1050.3	1035.7	998.4	991.6	1001.0	991.6	998.4
45°	936.8	924.0	922.4	954.5	979.0	952.6	918.6	921.2	933.9	921.2	918.6
47.5°	873.9	857.9	846.0	869.6	894.2	868.7	842.3	855.0	871.2	855.0	842.3
50°	809.5	791.7	773.9	788.3	802.6	786.4	770.1	788.0	806.7	788.0	770.1
52.5°	745.9	731.5	705.2	704.3	698.3	702.4	702.3	727.8	743.1	727.8	702.3
55°	686.4	672.0	639.0	623.6	592.2	621.8	636.2	669.3	684.6	669.3	636.2
57.5°	624.6	613.5	575.4	538.0	498.9	536.1	572.6	610.8	622.7	610.8	572.6
60°	560.0	554.1	510.0	451.4	425.9	450.4	508.2	552.3	559.1	552.3	508.2
62.5°	499.0	493.9	443.9	381.1	364.8	380.1	442.0	492.0	498.1	492.0	442.0
65°	439.6	427.7	377.6	318.2	313.1	317.4	376.7	426.7	439.6	426.7	376.7
67.5°	383.6	368.3	316.6	266.5	266.5	266.5	315.6	367.3	383.6	367.3	315.6
70°	322.4	303.7	263.1	220.6	224.0	220.6	263.1	304.7	323.3	304.7	263.1
72.5°	275.8	245.2	213.9	179.1	185.8	178.2	213.9	246.2	277.7	246.2	213.9
75°	231.7	199.4	166.3	141.7	154.5	141.7	167.2	200.4	234.4	200.4	167.2
77.5°	201.7	165.0	128.1	111.1	123.9	111.1	129.1	162.2	198.1	162.2	129.1
80°	190.4	150.7	104.7	83.2	92.5	83.2	102.8	136.0	172.8	136.0	102.8
82.5°	184.6	149.2	97.1	60.3	66.3	60.3	86.0	115.8	149.5	115.8	86.0
85°	189.5	158.3	103.9	48.7	36.6	46.8	77.0	101.7	129.4	101.7	77.0
87.5°	200.0	179.7	118.9	52.3	11.0	39.4	66.1	90.9	104.7	90.9	66.1
90°	220.0	204.0	142.9	61.6	1.8	26.5	51.3	73.4	81.1	73.4	51.3
92.5°	248.1	232.7	168.7	80.2	15.7	16.3	41.9	61.4	66.5	61.4	41.9
95°	272.3	264.1	198.3	99.8	37.9	7.2	31.7	49.4	52.8	49.4	31.7
97.5°	303.7	296.6	226.3	131.3	66.5	12.8	21.7	41.9	44.4	41.9	21.7
100°	327.1	321.9	258.6	171.1	101.7	32.2	13.2	31.2	35.4	31.2	13.2
102.5°	368.9	353.5	292.4	209.1	139.8	59.1	16.5	20.1	24.3	20.1	16.5
105°	405.7	389.3	337.7	248.9	184.1	95.3	38.7	17.1	15.8	17.1	38.7
107.5°	441.2	430.3	378.6	289.7	230.4	136.9	70.2	37.6	26.4	37.6	70.2
110°	486.7	474.8	418.3	330.5	278.5	181.4	106.2	67.2	53.3	67.2	106.2



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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°	530.3	521.1	455.4	373.0	328.6	229.4	150.7	103.5	90.4	103.5	150.7
115°	564.6	559.1	498.0	412.9	374.9	284.2	199.8	147.0	131.2	147.0	199.8
117.5°	600.8	598.9	529.5	453.6	430.5	333.2	245.1	190.5	173.8	190.5	245.1
120°	646.1	638.6	573.1	494.4	483.2	385.1	295.2	241.4	223.8	241.4	295.2
122.5°	677.5	672.9	610.1	534.0	534.0	438.7	343.3	289.5	271.0	289.5	343.3
125°	706.2	704.5	637.8	573.1	587.9	487.8	397.0	342.3	322.0	342.3	397.0
127.5°	732.2	735.0	673.9	615.6	642.4	537.8	449.8	389.6	368.3	389.6	449.8
130°	754.4	763.7	709.0	654.5	694.3	592.5	497.9	436.8	422.9	436.8	497.9
132.5°	797.9	792.4	744.3	694.3	749.9	642.4	547.9	484.1	468.3	484.1	547.9
135°	820.2	822.0	774.8	728.5	801.7	692.5	595.1	532.2	516.4	532.2	595.1
137.5°	847.0	841.5	798.9	771.1	849.9	741.4	641.5	583.1	558.1	583.1	641.5
140°	866.5	865.6	830.4	808.2	901.7	788.7	688.7	629.4	606.3	629.4	688.7
142.5°	886.9	892.4	861.9	848.8	953.6	838.7	739.7	674.8	652.5	674.8	739.7
145°	900.8	912.8	893.3	899.8	1002.7	894.2	784.1	718.3	694.2	718.3	784.1
147.5°	923.9	939.6	916.5	936.0	1045.3	943.3	828.6	763.7	742.4	763.7	828.6
150°	955.4	962.7	948.8	985.9	1088.8	997.9	873.9	807.2	785.9	807.2	873.9
152.5°	980.4	989.7	973.9	1040.6	1123.1	1048.0	923.9	849.8	824.8	849.8	923.9
155°	1006.3	1010.0	998.9	1093.4	1159.1	1097.1	963.7	897.1	873.0	897.1	963.7
157.5°	1030.4	1037.8	1024.9	1132.4	1190.7	1138.9	1009.1	944.3	923.0	944.3	1009.1
160°	1056.3	1056.3	1063.8	1179.5	1216.6	1176.7	1057.2	996.1	966.5	996.1	1057.2
162.5°	1059.1	1076.6	1116.5	1211.9	1242.4	1209.1	1109.2	1033.2	1007.2	1033.2	1109.2
165°	1099.8	1115.6	1175.8	1240.6	1261.9	1237.8	1173.0	1094.3	1063.8	1094.3	1173.0
167.5°	1142.5	1175.8	1223.9	1273.0	1280.5	1264.7	1222.1	1167.5	1139.6	1167.5	1222.1
170°	1211.1	1239.7	1264.7	1285.1	1295.3	1286.0	1252.6	1225.0	1207.4	1225.0	1252.6
172.5°	1264.8	1284.3	1294.4	1307.3	1300.8	1297.0	1280.5	1266.7	1256.6	1266.7	1280.5
175°	1299.1	1303.7	1312.8	1308.2	1313.8	1303.6	1304.5	1310.1	1271.4	1310.1	1304.5
177.5°	1311.2	1318.5	1314.7	1306.3	1307.3	1305.5	1309.1	1312.0	1305.7	1312.0	1309.1
180°	1312.8	1312.8	1312.8	1312.8	1312.8	1312.8	1312.8	1312.8	1312.8	1312.8	1312.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1748.3	1748.3	1748.3	1748.3	1748.3	1748.3
2.5°	1742.5	1741.7	1743.4	1745.8	1746.6	1743.9
5°	1734.0	1732.3	1734.0	1737.4	1737.3	1734.5
7.5°	1718.6	1717.0	1719.6	1720.3	1724.5	1721.1
10°	1697.4	1696.5	1698.3	1702.5	1705.0	1703.4
12.5°	1672.0	1670.2	1672.0	1675.3	1677.9	1678.0
15°	1642.2	1639.7	1643.1	1645.7	1647.4	1650.1
17.5°	1607.4	1602.3	1607.4	1610.1	1613.5	1615.3
20°	1566.7	1562.4	1567.5	1571.9	1573.7	1576.3
22.5°	1523.4	1521.7	1524.3	1525.3	1527.9	1527.9
25°	1476.8	1473.4	1477.7	1479.4	1476.2	1474.4
27.5°	1427.7	1421.6	1428.6	1425.2	1419.4	1416.8
30°	1374.3	1367.4	1376.0	1371.0	1357.4	1353.2
32.5°	1314.0	1313.2	1315.8	1304.0	1287.9	1281.1
35°	1251.2	1252.8	1253.9	1235.2	1215.7	1209.8
37.5°	1183.3	1190.2	1186.1	1160.6	1140.2	1139.4
40°	1111.2	1119.8	1113.1	1083.5	1069.9	1072.4
42.5°	1035.7	1050.3	1037.6	1001.2	995.3	1004.6
45°	952.6	979.0	954.5	922.4	924.0	936.8
47.5°	868.7	894.2	869.6	846.0	857.9	873.9
50°	786.4	802.6	788.3	773.9	791.7	809.5
52.5°	702.4	698.3	704.3	705.2	731.5	745.9
55°	621.8	592.2	623.6	639.0	672.0	686.4
57.5°	536.1	498.9	538.0	575.4	613.5	624.6
60°	450.4	425.9	451.4	510.0	554.1	560.0
62.5°	380.1	364.8	381.1	443.9	493.9	499.0
65°	317.4	313.1	318.2	377.6	427.7	439.6
67.5°	266.5	266.5	266.5	316.6	368.3	383.6
70°	220.6	224.0	220.6	263.1	303.7	322.4
72.5°	178.2	185.8	179.1	213.9	245.2	275.8
75°	141.7	154.5	141.7	166.3	199.4	231.7
77.5°	111.1	123.9	111.1	128.1	165.0	201.7
80°	83.2	92.5	83.2	104.7	150.7	190.4
82.5°	60.3	66.3	60.3	97.1	149.2	184.6
85°	46.8	36.6	48.7	103.9	158.3	189.5
87.5°	39.4	11.0	52.3	118.9	179.7	200.0
90°	26.5	1.8	61.6	142.9	204.0	220.0
92.5°	16.3	15.7	80.2	168.7	232.7	248.1
95°	7.2	37.9	99.8	198.3	264.1	272.3
97.5°	12.8	66.5	131.3	226.3	296.6	303.7
100°	32.2	101.7	171.1	258.6	321.9	327.1
102.5°	59.1	139.8	209.1	292.4	353.5	368.9
105°	95.3	184.1	248.9	337.7	389.3	405.7
107.5°	136.9	230.4	289.7	378.6	430.3	441.2
110°	181.4	278.5	330.5	418.3	474.8	486.7



TEST NUMBER: P392602

CATALOG NUMBER: MWL-3-37-47-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	229.4	328.6	373.0	455.4	521.1	530.3
115°	284.2	374.9	412.9	498.0	559.1	564.6
117.5°	333.2	430.5	453.6	529.5	598.9	600.8
120°	385.1	483.2	494.4	573.1	638.6	646.1
122.5°	438.7	534.0	534.0	610.1	672.9	677.5
125°	487.8	587.9	573.1	637.8	704.5	706.2
127.5°	537.8	642.4	615.6	673.9	735.0	732.2
130°	592.5	694.3	654.5	709.0	763.7	754.4
132.5°	642.4	749.9	694.3	744.3	792.4	797.9
135°	692.5	801.7	728.5	774.8	822.0	820.2
137.5°	741.4	849.9	771.1	798.9	841.5	847.0
140°	788.7	901.7	808.2	830.4	865.6	866.5
142.5°	838.7	953.6	848.8	861.9	892.4	886.9
145°	894.2	1002.7	899.8	893.3	912.8	900.8
147.5°	943.3	1045.3	936.0	916.5	939.6	923.9
150°	997.9	1088.8	985.9	948.8	962.7	955.4
152.5°	1048.0	1123.1	1040.6	973.9	989.7	980.4
155°	1097.1	1159.1	1093.4	998.9	1010.0	1006.3
157.5°	1138.9	1190.7	1132.4	1024.9	1037.8	1030.4
160°	1176.7	1216.6	1179.5	1063.8	1056.3	1056.3
162.5°	1209.1	1242.4	1211.9	1116.5	1076.6	1059.1
165°	1237.8	1261.9	1240.6	1175.8	1115.6	1099.8
167.5°	1264.7	1280.5	1273.0	1223.9	1175.8	1142.5
170°	1286.0	1295.3	1285.1	1264.7	1239.7	1211.1
172.5°	1297.0	1300.8	1307.3	1294.4	1284.3	1264.8
175°	1303.6	1313.8	1308.2	1312.8	1303.7	1299.1
177.5°	1305.5	1307.3	1306.3	1314.7	1318.5	1311.2
180°	1312.8	1312.8	1312.8	1312.8	1312.8	1312.8

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