

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: P392600

Luminaire Tested: **MWL-3-37-33-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392600
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-3-37-33-UNV-L940-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

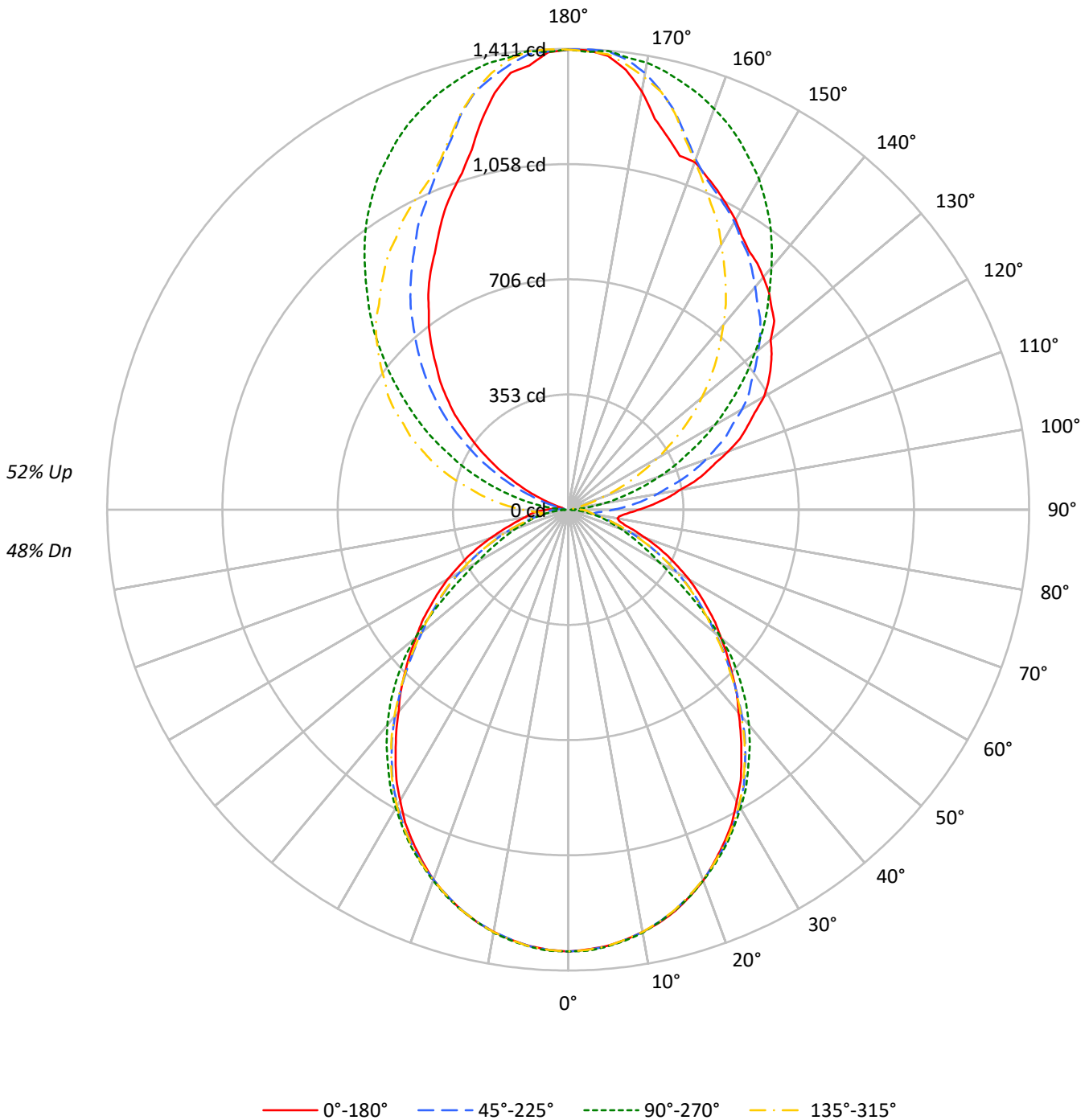
Lumens per Lamp: N/A
Luminaire Lumens: 6473.5 lumens
Efficiency: N/A
Efficacy: 89.5 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 72.316
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										
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	50	30	10	0														
RCR																																						
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48	48	48	48	48	48	48														
1	97	93	89	86	89	86	83	80	72	70	68	60	58	56	48	47	46	41	41	41	41	41	41	41														
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	35	35	35	35	35	35	35														
3	81	72	65	59	75	67	60	55	56	52	48	47	44	41	38	36	34	30	30	30	30	30	30	30														
4	75	64	56	50	68	59	53	47	50	45	41	42	38	35	34	32	29	26	26	26	26	26	26	26														
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	31	28	26	23	23	23	23	23	23	23														
6	63	51	43	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20	20	20	20	20	20	20														
7	59	46	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18	18	18	18	18	18	18														
8	54	42	35	29	50	39	33	28	34	28	25	29	25	21	24	21	18	16	16	16	16	16	16	16														
9	51	39	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	15	15	15	15	15	15	15														
10	47	35	28	24	44	33	27	22	29	24	20	24	20	18	21	17	15	13	13	13	13	13	13	13														

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	11647	11647	11647	11647
5°	11457	10680	11457	10680
10°	11202	9777	11202	9777
15°	10923	8920	10898	8920
20°	10544	8119	10519	8119
25°	10055	7376	10028	7376
30°	9500	6653	9464	6653
35°	8848	5940	8820	5940
40°	8169	5265	8130	5265
45°	7586	4541	7553	4541
50°	7013	3739	6978	3739
55°	6477	2796	6452	2796
60°	5925	2029	5911	2029
65°	5283	1524	5283	1524
70°	4552	1152	4570	1152
75°	3896	833	3964	833
80°	4258	536	3734	536
85°	6522	232	4055	232



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.2	2.0
10°-20°	357.1	5.5
20°-30°	521.1	8.1
30°-40°	589.1	9.1
40°-50°	550.9	8.5
50°-60°	435.0	6.7
60°-70°	284.5	4.4
70°-80°	148.6	2.3
80°-90°	88.8	1.4
90°-100°	119.9	1.9
100°-110°	219.5	3.4
110°-120°	374.4	5.8
120°-130°	508.6	7.9
130°-140°	580.1	9.0
140°-150°	578.5	8.9
150°-160°	503.8	7.8
160°-170°	354.4	5.5
170°-180°	132.0	2.0
0°-30°	1005.5	15.5
0°-40°	1594.5	24.6
0°-60°	2580.4	39.9
0°-90°	3102.2	47.9
90°-120°	713.8	11.0
90°-150°	2381.0	36.8
90°-180°	3371.0	52.1
0°-180°	6473.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1353	1353	1353	1353	1353	
5°	1342	1344	1342	1344	1342	127
15°	1271	1269	1268	1269	1271	358
25°	1127	1138	1124	1138	1127	518
35°	924	961	921	961	924	578
45°	709	746	706	746	709	549
55°	517	452	515	452	517	464
65°	336	235	336	235	336	333
75°	178	118	181	118	178	199
85°	171	29	106	29	171	136
90°	215	2	66	2	215	119
95°	279	41	43	41	279	243
105°	434	197	15	197	434	458
115°	606	402	140	402	606	601
125°	757	631	344	631	757	676
135°	879	860	553	860	879	679
145°	966	1076	744	1076	966	609
155°	1079	1244	936	1244	1079	498
165°	1180	1354	1141	1354	1180	335
175°	1395	1410	1365	1410	1395	130
180°	1409	1409	1409	1409	1409	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1352.6	1352.6	1352.6	1352.6	1352.6	1352.6	1352.6	1352.6	1352.6	1352.6	1352.6
2.5°	1347.9	1350.8	1349.1	1350.1	1351.9	1349.1	1349.1	1350.8	1348.9	1350.8	1349.1
5°	1341.5	1343.5	1342.7	1342.7	1343.6	1342.7	1341.7	1343.5	1341.5	1343.5	1341.7
7.5°	1328.8	1331.7	1328.9	1330.8	1330.8	1329.8	1328.0	1330.8	1328.8	1330.8	1328.0
10°	1312.5	1315.3	1313.4	1313.4	1315.3	1312.5	1312.5	1313.4	1312.5	1313.4	1312.5
12.5°	1294.4	1294.3	1291.6	1293.4	1292.4	1293.4	1291.6	1292.4	1292.5	1292.4	1291.6
15°	1270.8	1268.8	1267.9	1268.8	1268.7	1267.8	1266.9	1266.9	1267.9	1266.9	1266.9
17.5°	1240.7	1241.5	1237.8	1240.5	1240.5	1240.5	1236.8	1240.6	1237.8	1240.6	1236.8
20°	1208.8	1207.8	1206.8	1208.6	1208.5	1207.6	1205.8	1205.9	1205.9	1205.9	1205.8
22.5°	1167.8	1170.5	1171.3	1174.9	1173.9	1173.9	1170.3	1168.6	1165.8	1168.6	1170.3
25°	1126.8	1131.3	1134.0	1139.3	1138.3	1138.3	1132.0	1128.4	1123.8	1128.4	1132.0
27.5°	1083.9	1084.8	1093.0	1101.2	1097.3	1100.2	1091.0	1081.9	1081.0	1081.9	1091.0
30°	1032.0	1036.6	1048.4	1057.4	1055.4	1055.5	1045.5	1033.6	1028.1	1033.6	1045.5
32.5°	982.8	984.6	1000.1	1011.0	1011.8	1009.0	997.2	980.7	978.9	980.7	997.2
35°	923.5	928.0	944.4	963.6	960.7	960.7	941.5	925.1	920.6	925.1	941.5
37.5°	867.9	870.6	888.9	912.6	912.5	909.6	886.0	867.7	865.0	867.7	886.0
40°	811.4	810.5	827.8	854.2	861.4	852.2	823.9	806.6	807.5	806.6	823.9
42.5°	764.0	753.1	765.0	794.1	805.9	792.1	762.0	749.2	760.1	749.2	762.0
45°	709.4	698.4	704.8	732.2	745.7	730.2	700.8	695.4	706.4	695.4	700.8
47.5°	660.2	646.5	645.6	665.6	684.7	664.6	641.6	643.5	657.2	643.5	641.6
50°	610.1	597.3	588.2	601.8	611.7	599.8	584.2	593.3	607.1	593.3	584.2
52.5°	567.3	549.9	534.4	538.0	530.6	536.0	531.4	545.9	564.2	545.9	531.4
55°	517.0	506.1	484.2	472.3	452.2	470.3	481.2	503.1	515.0	503.1	481.2
57.5°	472.4	462.4	436.0	407.6	379.3	405.6	433.0	459.4	470.4	459.4	433.0
60°	426.8	416.7	384.8	343.8	321.9	342.8	382.8	414.7	425.8	414.7	382.8
62.5°	379.4	373.0	336.6	290.0	277.2	289.0	334.6	371.0	378.4	371.0	334.6
65°	336.5	325.5	288.2	243.5	235.2	242.5	287.2	324.5	336.5	324.5	287.2
67.5°	292.7	279.1	243.5	202.4	201.5	202.4	242.5	278.1	292.7	278.1	242.5
70°	249.8	234.3	201.5	167.8	171.5	167.8	201.5	235.3	250.8	235.3	201.5
72.5°	212.5	191.5	165.1	137.8	141.3	136.8	165.1	192.5	214.5	192.5	165.1
75°	177.8	154.2	131.3	110.3	118.5	110.3	132.3	155.2	180.9	155.2	132.3
77.5°	160.3	129.9	101.2	86.6	94.8	86.6	102.2	126.9	156.3	126.9	102.2
80°	153.5	121.9	82.4	66.6	72.1	66.6	80.4	106.1	134.6	106.1	80.4
82.5°	157.3	126.6	79.7	47.5	51.1	47.5	67.8	90.7	119.5	90.7	67.8
85°	170.8	143.6	90.7	38.6	29.2	36.6	61.8	82.9	106.2	82.9	61.8
87.5°	190.3	169.5	111.3	45.3	8.2	31.4	54.6	74.0	87.8	74.0	54.6
90°	215.4	198.2	138.9	58.9	1.9	21.1	40.5	57.9	66.1	57.9	40.5
92.5°	247.4	231.8	169.4	81.5	16.9	12.9	33.1	47.7	52.4	47.7	33.1
95°	278.9	271.1	204.8	106.2	40.7	6.7	25.8	40.3	43.1	40.3	25.8
97.5°	315.3	307.7	239.5	140.2	71.5	12.8	19.7	34.1	36.8	34.1	19.7
100°	345.9	341.3	277.0	182.9	109.3	33.7	13.3	28.9	32.5	28.9	13.3
102.5°	394.5	378.9	313.2	223.8	150.1	62.6	16.8	20.7	24.3	20.7	16.8
105°	434.0	415.6	362.0	266.6	196.9	101.4	40.6	15.6	15.1	15.6	40.6
107.5°	471.3	460.5	405.8	310.3	246.6	146.1	74.4	38.6	25.6	38.6	74.4
110°	521.1	508.2	448.5	354.1	298.4	194.0	113.2	70.4	55.5	70.4	113.2



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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°	568.9	559.0	488.3	399.9	352.1	245.6	161.0	110.2	96.2	110.2	161.0
115°	605.7	599.8	534.1	442.7	401.9	304.4	213.7	157.1	140.0	157.1	213.7
117.5°	643.6	642.6	568.0	486.4	461.6	357.1	262.5	203.8	184.9	203.8	262.5
120°	692.3	684.3	614.7	530.3	518.2	412.8	316.2	257.5	238.6	257.5	316.2
122.5°	726.1	721.1	654.5	572.9	572.9	470.4	368.0	309.2	289.4	309.2	368.0
125°	756.9	755.0	684.3	614.7	630.7	523.2	425.7	366.0	344.1	366.0	425.7
127.5°	784.8	787.8	723.1	660.5	689.3	576.9	482.3	416.7	393.9	416.7	482.3
130°	808.7	818.6	759.9	702.3	745.0	635.6	533.1	467.5	452.5	467.5	533.1
132.5°	855.4	849.5	797.8	745.0	804.8	689.3	586.8	518.2	501.3	518.2	586.8
135°	879.4	881.3	830.6	781.8	860.4	743.1	637.6	569.9	553.0	569.9	637.6
137.5°	908.2	902.3	856.4	826.6	912.2	794.8	687.3	624.7	597.8	624.7	687.3
140°	929.1	928.1	890.3	866.5	967.9	845.5	738.1	674.4	649.5	674.4	738.1
142.5°	951.0	956.9	924.1	910.2	1023.6	899.3	792.8	723.1	699.3	723.1	792.8
145°	965.9	978.9	957.9	964.9	1076.4	958.9	840.6	769.9	744.0	769.9	840.6
147.5°	990.8	1007.7	982.8	1003.8	1122.1	1011.7	888.3	818.6	795.8	818.6	888.3
150°	1024.6	1032.5	1017.6	1057.4	1168.9	1070.4	937.1	865.5	842.6	865.5	937.1
152.5°	1051.5	1061.4	1044.5	1116.2	1205.7	1124.1	990.8	911.2	884.3	911.2	990.8
155°	1079.4	1083.3	1071.4	1172.9	1244.5	1176.9	1033.6	961.9	936.1	961.9	1033.6
157.5°	1105.2	1113.2	1099.2	1215.7	1278.4	1222.6	1082.3	1012.7	989.8	1012.7	1082.3
160°	1133.0	1133.0	1141.1	1265.4	1306.2	1262.4	1134.0	1068.4	1036.6	1068.4	1134.0
162.5°	1136.1	1154.9	1197.7	1300.2	1333.0	1297.2	1189.8	1108.2	1080.3	1108.2	1189.8
165°	1179.8	1196.7	1261.4	1331.0	1353.9	1328.1	1258.4	1173.9	1141.1	1173.9	1258.4
167.5°	1225.6	1261.4	1313.2	1365.9	1373.8	1356.9	1311.2	1252.5	1222.6	1252.5	1311.2
170°	1300.2	1331.0	1356.9	1378.9	1389.8	1379.8	1344.0	1315.2	1296.2	1315.2	1344.0
172.5°	1358.0	1378.9	1388.8	1402.7	1395.7	1391.7	1373.8	1359.9	1349.1	1359.9	1373.8
175°	1394.8	1399.7	1408.7	1403.7	1409.7	1398.7	1399.7	1406.6	1365.0	1406.6	1399.7
177.5°	1407.7	1415.7	1410.7	1401.7	1402.7	1400.7	1404.6	1408.7	1401.8	1408.7	1404.6
180°	1408.7	1408.7	1408.7	1408.7	1408.7	1408.7	1408.7	1408.7	1408.7	1408.7	1408.7



TEST NUMBER: P392600

CATALOG NUMBER: MWL-3-37-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1352.6	1352.6	1352.6	1352.6	1352.6	1352.6
2.5°	1349.1	1351.9	1350.1	1349.1	1350.8	1347.9
5°	1342.7	1343.6	1342.7	1342.7	1343.5	1341.5
7.5°	1329.8	1330.8	1330.8	1328.9	1331.7	1328.8
10°	1312.5	1315.3	1313.4	1313.4	1315.3	1312.5
12.5°	1293.4	1292.4	1293.4	1291.6	1294.3	1294.4
15°	1267.8	1268.7	1268.8	1267.9	1268.8	1270.8
17.5°	1240.5	1240.5	1240.5	1237.8	1241.5	1240.7
20°	1207.6	1208.5	1208.6	1206.8	1207.8	1208.8
22.5°	1173.9	1173.9	1174.9	1171.3	1170.5	1167.8
25°	1138.3	1138.3	1139.3	1134.0	1131.3	1126.8
27.5°	1100.2	1097.3	1101.2	1093.0	1084.8	1083.9
30°	1055.5	1055.4	1057.4	1048.4	1036.6	1032.0
32.5°	1009.0	1011.8	1011.0	1000.1	984.6	982.8
35°	960.7	960.7	963.6	944.4	928.0	923.5
37.5°	909.6	912.5	912.6	888.9	870.6	867.9
40°	852.2	861.4	854.2	827.8	810.5	811.4
42.5°	792.1	805.9	794.1	765.0	753.1	764.0
45°	730.2	745.7	732.2	704.8	698.4	709.4
47.5°	664.6	684.7	665.6	645.6	646.5	660.2
50°	599.8	611.7	601.8	588.2	597.3	610.1
52.5°	536.0	530.6	538.0	534.4	549.9	567.3
55°	470.3	452.2	472.3	484.2	506.1	517.0
57.5°	405.6	379.3	407.6	436.0	462.4	472.4
60°	342.8	321.9	343.8	384.8	416.7	426.8
62.5°	289.0	277.2	290.0	336.6	373.0	379.4
65°	242.5	235.2	243.5	288.2	325.5	336.5
67.5°	202.4	201.5	202.4	243.5	279.1	292.7
70°	167.8	171.5	167.8	201.5	234.3	249.8
72.5°	136.8	141.3	137.8	165.1	191.5	212.5
75°	110.3	118.5	110.3	131.3	154.2	177.8
77.5°	86.6	94.8	86.6	101.2	129.9	160.3
80°	66.6	72.1	66.6	82.4	121.9	153.5
82.5°	47.5	51.1	47.5	79.7	126.6	157.3
85°	36.6	29.2	38.6	90.7	143.6	170.8
87.5°	31.4	8.2	45.3	111.3	169.5	190.3
90°	21.1	1.9	58.9	138.9	198.2	215.4
92.5°	12.9	16.9	81.5	169.4	231.8	247.4
95°	6.7	40.7	106.2	204.8	271.1	278.9
97.5°	12.8	71.5	140.2	239.5	307.7	315.3
100°	33.7	109.3	182.9	277.0	341.3	345.9
102.5°	62.6	150.1	223.8	313.2	378.9	394.5
105°	101.4	196.9	266.6	362.0	415.6	434.0
107.5°	146.1	246.6	310.3	405.8	460.5	471.3
110°	194.0	298.4	354.1	448.5	508.2	521.1



TEST NUMBER: P392600

CATALOG NUMBER: MWL-3-37-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	245.6	352.1	399.9	488.3	559.0	568.9
115°	304.4	401.9	442.7	534.1	599.8	605.7
117.5°	357.1	461.6	486.4	568.0	642.6	643.6
120°	412.8	518.2	530.3	614.7	684.3	692.3
122.5°	470.4	572.9	572.9	654.5	721.1	726.1
125°	523.2	630.7	614.7	684.3	755.0	756.9
127.5°	576.9	689.3	660.5	723.1	787.8	784.8
130°	635.6	745.0	702.3	759.9	818.6	808.7
132.5°	689.3	804.8	745.0	797.8	849.5	855.4
135°	743.1	860.4	781.8	830.6	881.3	879.4
137.5°	794.8	912.2	826.6	856.4	902.3	908.2
140°	845.5	967.9	866.5	890.3	928.1	929.1
142.5°	899.3	1023.6	910.2	924.1	956.9	951.0
145°	958.9	1076.4	964.9	957.9	978.9	965.9
147.5°	1011.7	1122.1	1003.8	982.8	1007.7	990.8
150°	1070.4	1168.9	1057.4	1017.6	1032.5	1024.6
152.5°	1124.1	1205.7	1116.2	1044.5	1061.4	1051.5
155°	1176.9	1244.5	1172.9	1071.4	1083.3	1079.4
157.5°	1222.6	1278.4	1215.7	1099.2	1113.2	1105.2
160°	1262.4	1306.2	1265.4	1141.1	1133.0	1133.0
162.5°	1297.2	1333.0	1300.2	1197.7	1154.9	1136.1
165°	1328.1	1353.9	1331.0	1261.4	1196.7	1179.8
167.5°	1356.9	1373.8	1365.9	1313.2	1261.4	1225.6
170°	1379.8	1389.8	1378.9	1356.9	1331.0	1300.2
172.5°	1391.7	1395.7	1402.7	1388.8	1378.9	1358.0
175°	1398.7	1409.7	1403.7	1408.7	1399.7	1394.8
177.5°	1400.7	1402.7	1401.7	1410.7	1415.7	1407.7
180°	1408.7	1408.7	1408.7	1408.7	1408.7	1408.7

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