

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: P392601

Luminaire Tested: **MWL-3-37-47-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392601
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-L930-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

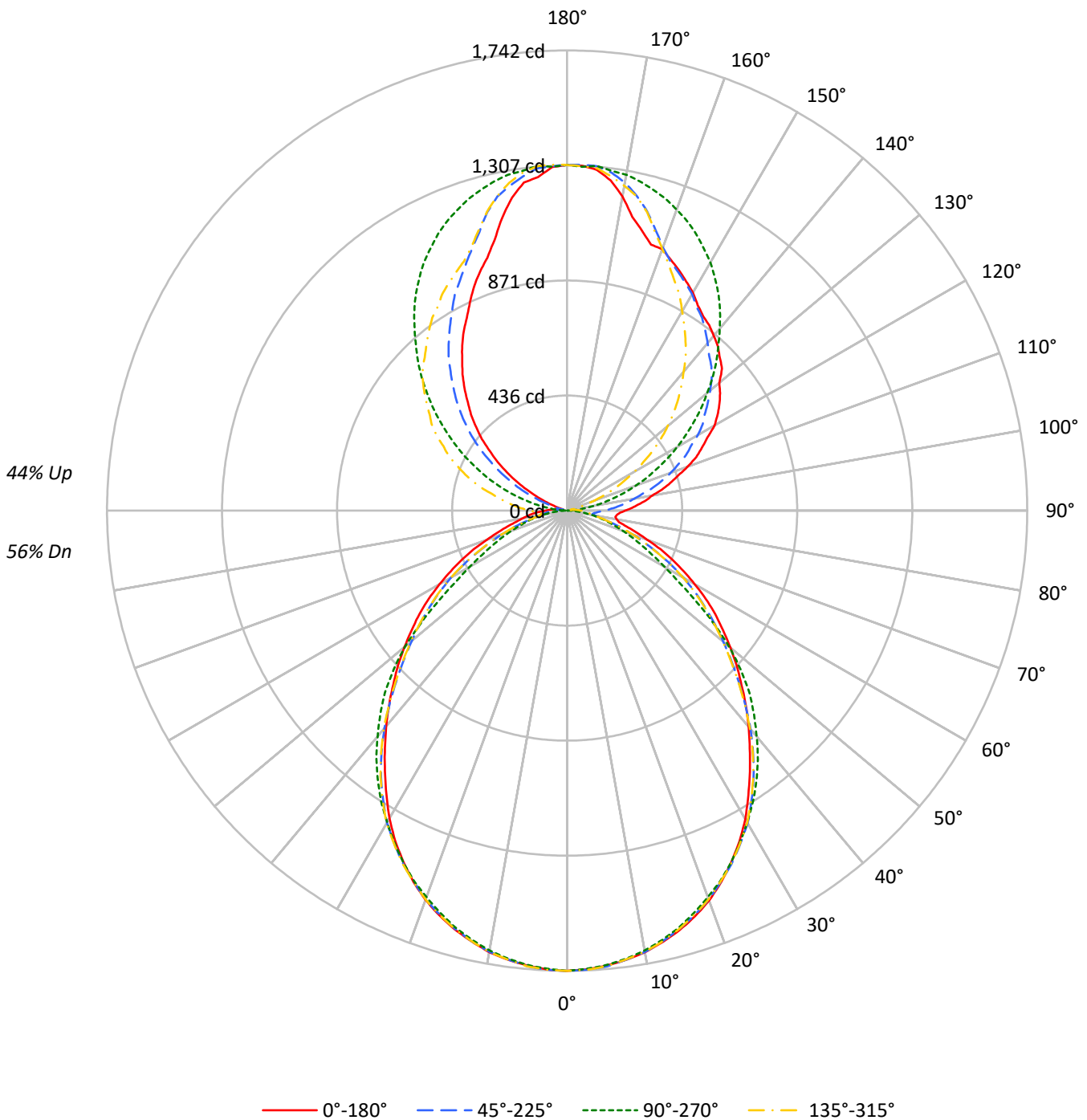
Lumens per Lamp: N/A
Luminaire Lumens: 7173.4 lumens
Efficiency: N/A
Efficacy: 78.6 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

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°	15004	15004	15004	15004
5°	14764	13723	14764	13723
10°	14490	12569	14490	12569
15°	14135	11490	14112	11490
20°	13704	10462	13680	10462
25°	13114	9515	13089	9515
30°	12415	8591	12382	8591
35°	11552	7721	11525	7721
40°	10760	6822	10724	6822
45°	9983	5942	9953	5942
50°	9273	4889	9242	4889
55°	8570	3649	8548	3649
60°	7748	2677	7737	2677
65°	6876	2022	6876	2022
70°	5857	1500	5873	1500
75°	5060	1082	5121	1082
80°	5262	685	4774	685
85°	7213	290	4926	290



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.0	2.3
10°-20°	461.8	6.4
20°-30°	676.6	9.4
30°-40°	767.0	10.7
40°-50°	721.4	10.1
50°-60°	572.8	8.0
60°-70°	372.9	5.2
70°-80°	190.6	2.7
80°-90°	104.2	1.5
90°-100°	119.1	1.7
100°-110°	205.0	2.9
110°-120°	348.3	4.9
120°-130°	472.9	6.6
130°-140°	539.2	7.5
140°-150°	537.7	7.5
150°-160°	468.1	6.5
160°-170°	329.3	4.6
170°-180°	122.6	1.7
0°-30°	1302.4	18.2
0°-40°	2069.4	28.8
0°-60°	3363.5	46.9
0°-90°	4031.3	56.2
90°-120°	672.4	9.4
90°-150°	2222.2	31.0
90°-180°	3142.0	43.8
0°-180°	7173.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1742	1742	1742	1742	1742	
5°	1729	1726	1729	1726	1729	164
15°	1645	1634	1642	1634	1645	463
25°	1470	1468	1467	1468	1470	676
35°	1206	1249	1203	1249	1206	755
45°	934	976	931	976	934	722
55°	684	590	682	590	684	611
65°	438	312	438	312	438	435
75°	231	154	234	154	231	254
85°	189	36	129	36	189	155
90°	219	2	81	2	219	121
95°	271	38	53	38	271	234
105°	404	184	16	184	404	427
115°	563	374	131	374	563	559
125°	704	586	321	586	704	629
135°	818	799	515	799	818	631
145°	898	999	692	999	898	566
155°	1003	1155	870	1155	1003	463
165°	1096	1258	1060	1258	1096	311
175°	1295	1309	1267	1309	1295	121
180°	1308	1308	1308	1308	1308	



TEST NUMBER: P392601

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1742.4	1742.4	1742.4	1742.4	1742.4	1742.4	1742.4	1742.4	1742.4	1742.4	1742.4
2.5°	1738.1	1740.7	1740.0	1737.6	1735.9	1736.6	1740.0	1740.7	1739.0	1740.7	1740.0
5°	1728.8	1731.5	1731.6	1728.2	1726.5	1728.2	1730.6	1731.5	1728.8	1731.5	1730.6
7.5°	1715.3	1718.8	1714.6	1713.8	1711.3	1712.8	1713.7	1717.9	1715.3	1717.9	1713.7
10°	1697.7	1699.4	1696.8	1692.6	1690.9	1691.7	1695.9	1697.6	1697.7	1697.6	1695.9
12.5°	1672.4	1672.3	1669.8	1666.4	1664.6	1666.4	1669.8	1670.6	1670.7	1670.6	1669.8
15°	1644.6	1641.9	1640.2	1637.6	1634.2	1636.8	1639.2	1640.1	1641.9	1640.1	1639.2
17.5°	1609.9	1608.1	1604.7	1602.1	1597.0	1602.1	1603.7	1607.3	1607.3	1607.3	1603.7
20°	1571.1	1568.4	1566.7	1562.4	1557.2	1561.4	1565.7	1566.7	1568.3	1566.7	1565.7
22.5°	1522.8	1522.8	1520.2	1519.2	1516.7	1518.3	1519.2	1521.0	1521.0	1521.0	1519.2
25°	1469.6	1471.2	1474.6	1472.7	1468.4	1471.8	1472.7	1468.5	1466.8	1468.5	1472.7
27.5°	1412.1	1414.6	1420.4	1423.9	1416.9	1422.9	1418.7	1411.9	1409.3	1411.9	1418.7
30°	1348.7	1352.9	1366.4	1371.4	1362.8	1369.6	1363.7	1350.2	1345.1	1350.2	1363.7
32.5°	1276.8	1283.6	1299.6	1311.4	1308.8	1309.7	1297.0	1280.0	1273.2	1280.0	1297.0
35°	1205.8	1211.7	1231.1	1249.7	1248.7	1247.0	1228.4	1208.9	1203.0	1208.9	1228.4
37.5°	1135.6	1136.5	1156.7	1182.1	1186.2	1179.4	1154.1	1133.7	1132.9	1133.7	1154.1
40°	1068.8	1066.3	1079.8	1109.4	1116.1	1107.6	1076.1	1062.7	1065.2	1062.7	1076.1
42.5°	1001.2	991.9	997.9	1034.1	1046.7	1032.3	995.1	988.3	997.6	988.3	995.1
45°	933.6	920.9	919.2	951.4	975.8	949.5	915.5	918.1	930.8	918.1	915.5
47.5°	871.1	855.0	843.2	866.8	891.2	865.8	839.5	852.2	868.3	852.2	839.5
50°	806.8	789.1	771.3	785.6	799.9	783.7	767.6	785.3	804.1	785.3	767.6
52.5°	743.4	729.1	702.8	701.9	695.9	700.1	700.0	725.4	740.7	725.4	700.0
55°	684.1	669.8	636.9	621.5	590.2	619.7	634.0	667.1	682.3	667.1	634.0
57.5°	622.5	611.5	573.5	536.2	497.2	534.4	570.7	608.7	620.7	608.7	570.7
60°	558.1	552.2	508.3	449.9	424.6	449.0	506.5	550.4	557.3	550.4	506.5
62.5°	497.3	492.2	442.4	379.8	363.6	378.8	440.5	490.4	496.4	490.4	440.5
65°	438.0	426.3	376.3	317.2	312.0	316.3	375.4	425.3	438.0	425.3	375.4
67.5°	382.3	367.1	315.5	265.6	265.6	265.6	314.6	366.1	382.3	366.1	314.6
70°	321.4	302.7	262.2	219.9	223.3	219.9	262.2	303.7	322.3	303.7	262.2
72.5°	274.9	244.4	213.2	178.5	185.2	177.6	213.2	245.4	276.7	245.4	213.2
75°	230.9	198.8	165.7	141.2	153.9	141.2	166.7	199.7	233.7	199.7	166.7
77.5°	201.1	164.5	127.7	110.8	123.4	110.8	128.6	161.7	197.4	161.7	128.6
80°	189.7	150.3	104.3	82.9	92.2	82.9	102.4	135.6	172.1	135.6	102.4
82.5°	184.0	148.6	96.8	60.1	66.0	60.1	85.7	115.4	148.9	115.4	85.7
85°	188.9	157.7	103.5	48.5	36.5	46.7	76.8	101.4	129.0	101.4	76.8
87.5°	199.3	179.2	118.5	52.1	11.0	39.3	65.9	90.6	104.3	90.6	65.9
90°	219.2	203.3	142.4	61.5	1.8	26.3	51.1	73.2	80.8	73.2	51.1
92.5°	247.2	231.9	168.1	79.9	15.7	16.2	41.6	61.2	66.4	61.2	41.6
95°	271.4	263.3	197.6	99.4	37.8	7.1	31.5	49.2	52.7	49.2	31.5
97.5°	302.6	295.6	225.6	130.9	66.4	12.8	21.7	41.7	44.3	41.7	21.7
100°	326.0	320.9	257.8	170.6	101.4	32.1	13.2	31.0	35.2	31.0	13.2
102.5°	367.7	352.4	291.4	208.4	139.3	58.9	16.4	20.0	24.2	20.0	16.4
105°	404.3	388.0	336.6	248.1	183.5	94.9	38.6	17.0	15.8	17.0	38.6
107.5°	439.7	428.9	377.3	288.7	229.6	136.4	69.9	37.5	26.3	37.5	69.9
110°	485.1	473.2	416.9	329.4	277.6	180.8	105.9	67.0	53.2	67.0	105.9



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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°	528.6	519.4	453.9	371.8	327.5	228.8	150.2	103.1	90.1	103.1	150.2
115°	562.7	557.3	496.3	411.5	373.7	283.3	199.2	146.5	130.8	146.5	199.2
117.5°	598.7	597.0	527.8	452.1	429.0	332.0	244.3	189.9	173.2	189.9	244.3
120°	644.0	636.5	571.1	492.7	481.6	383.8	294.2	240.6	223.0	240.6	294.2
122.5°	675.3	670.7	608.1	532.3	532.3	437.3	342.3	288.5	270.1	288.5	342.3
125°	703.9	702.1	635.6	571.1	585.9	486.1	395.7	341.2	320.9	341.2	395.7
127.5°	729.8	732.6	671.6	613.5	640.3	536.0	448.3	388.3	367.1	388.3	448.3
130°	751.9	761.1	706.7	652.4	692.0	590.5	496.2	435.3	421.5	435.3	496.2
132.5°	795.3	789.7	741.7	692.0	747.4	640.3	546.1	482.4	466.8	482.4	546.1
135°	817.5	819.2	772.2	726.1	799.1	690.2	593.2	530.3	514.7	530.3	593.2
137.5°	844.2	838.7	796.1	768.5	847.0	738.9	639.3	581.1	556.2	581.1	639.3
140°	863.6	862.7	827.6	805.5	898.7	786.0	686.3	627.3	604.2	627.3	686.3
142.5°	883.9	889.4	859.0	846.1	950.4	835.9	737.2	672.5	650.3	672.5	737.2
145°	897.8	909.7	890.4	896.9	999.4	891.2	781.4	715.8	691.9	715.8	781.4
147.5°	920.8	936.5	913.4	932.8	1041.8	940.2	825.7	761.1	739.9	761.1	825.7
150°	952.2	959.6	945.7	982.6	1085.1	994.6	871.0	804.5	783.3	804.5	871.0
152.5°	977.1	986.3	970.7	1037.1	1119.3	1044.5	920.8	847.0	822.0	847.0	920.8
155°	1003.0	1006.6	995.6	1089.7	1155.3	1093.4	960.4	894.1	870.0	894.1	960.4
157.5°	1026.9	1034.3	1021.4	1128.6	1186.7	1135.1	1005.7	941.2	919.9	941.2	1005.7
160°	1052.8	1052.8	1060.2	1175.6	1212.5	1172.8	1053.7	992.8	963.3	992.8	1053.7
162.5°	1055.5	1073.1	1112.8	1207.9	1238.3	1205.1	1105.5	1029.7	1003.9	1029.7	1105.5
165°	1096.1	1111.9	1171.9	1236.4	1257.6	1233.8	1169.0	1090.7	1060.2	1090.7	1169.0
167.5°	1138.7	1171.9	1219.8	1268.8	1276.2	1260.4	1218.0	1163.6	1135.8	1163.6	1218.0
170°	1207.0	1235.6	1260.4	1280.8	1291.0	1281.7	1248.5	1220.9	1203.3	1220.9	1248.5
172.5°	1260.6	1280.0	1290.0	1303.0	1296.4	1292.8	1276.2	1262.4	1252.3	1262.4	1276.2
175°	1294.8	1299.4	1308.4	1303.8	1309.4	1299.3	1300.1	1305.8	1267.1	1305.8	1300.1
177.5°	1306.8	1314.1	1310.3	1302.0	1303.0	1301.1	1304.7	1307.6	1301.3	1307.6	1304.7
180°	1308.4	1308.4	1308.4	1308.4	1308.4	1308.4	1308.4	1308.4	1308.4	1308.4	1308.4



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CATALOG NUMBER: MWL-3-37-47-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1742.4	1742.4	1742.4	1742.4	1742.4	1742.4
2.5°	1736.6	1735.9	1737.6	1740.0	1740.7	1738.1
5°	1728.2	1726.5	1728.2	1731.6	1731.5	1728.8
7.5°	1712.8	1711.3	1713.8	1714.6	1718.8	1715.3
10°	1691.7	1690.9	1692.6	1696.8	1699.4	1697.7
12.5°	1666.4	1664.6	1666.4	1669.8	1672.3	1672.4
15°	1636.8	1634.2	1637.6	1640.2	1641.9	1644.6
17.5°	1602.1	1597.0	1602.1	1604.7	1608.1	1609.9
20°	1561.4	1557.2	1562.4	1566.7	1568.4	1571.1
22.5°	1518.3	1516.7	1519.2	1520.2	1522.8	1522.8
25°	1471.8	1468.4	1472.7	1474.6	1471.2	1469.6
27.5°	1422.9	1416.9	1423.9	1420.4	1414.6	1412.1
30°	1369.6	1362.8	1371.4	1366.4	1352.9	1348.7
32.5°	1309.7	1308.8	1311.4	1299.6	1283.6	1276.8
35°	1247.0	1248.7	1249.7	1231.1	1211.7	1205.8
37.5°	1179.4	1186.2	1182.1	1156.7	1136.5	1135.6
40°	1107.6	1116.1	1109.4	1079.8	1066.3	1068.8
42.5°	1032.3	1046.7	1034.1	997.9	991.9	1001.2
45°	949.5	975.8	951.4	919.2	920.9	933.6
47.5°	865.8	891.2	866.8	843.2	855.0	871.1
50°	783.7	799.9	785.6	771.3	789.1	806.8
52.5°	700.1	695.9	701.9	702.8	729.1	743.4
55°	619.7	590.2	621.5	636.9	669.8	684.1
57.5°	534.4	497.2	536.2	573.5	611.5	622.5
60°	449.0	424.6	449.9	508.3	552.2	558.1
62.5°	378.8	363.6	379.8	442.4	492.2	497.3
65°	316.3	312.0	317.2	376.3	426.3	438.0
67.5°	265.6	265.6	265.6	315.5	367.1	382.3
70°	219.9	223.3	219.9	262.2	302.7	321.4
72.5°	177.6	185.2	178.5	213.2	244.4	274.9
75°	141.2	153.9	141.2	165.7	198.8	230.9
77.5°	110.8	123.4	110.8	127.7	164.5	201.1
80°	82.9	92.2	82.9	104.3	150.3	189.7
82.5°	60.1	66.0	60.1	96.8	148.6	184.0
85°	46.7	36.5	48.5	103.5	157.7	188.9
87.5°	39.3	11.0	52.1	118.5	179.2	199.3
90°	26.3	1.8	61.5	142.4	203.3	219.2
92.5°	16.2	15.7	79.9	168.1	231.9	247.2
95°	7.1	37.8	99.4	197.6	263.3	271.4
97.5°	12.8	66.4	130.9	225.6	295.6	302.6
100°	32.1	101.4	170.6	257.8	320.9	326.0
102.5°	58.9	139.3	208.4	291.4	352.4	367.7
105°	94.9	183.5	248.1	336.6	388.0	404.3
107.5°	136.4	229.6	288.7	377.3	428.9	439.7
110°	180.8	277.6	329.4	416.9	473.2	485.1



TEST NUMBER: P392601

CATALOG NUMBER: MWL-3-37-47-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	228.8	327.5	371.8	453.9	519.4	528.6
115°	283.3	373.7	411.5	496.3	557.3	562.7
117.5°	332.0	429.0	452.1	527.8	597.0	598.7
120°	383.8	481.6	492.7	571.1	636.5	644.0
122.5°	437.3	532.3	532.3	608.1	670.7	675.3
125°	486.1	585.9	571.1	635.6	702.1	703.9
127.5°	536.0	640.3	613.5	671.6	732.6	729.8
130°	590.5	692.0	652.4	706.7	761.1	751.9
132.5°	640.3	747.4	692.0	741.7	789.7	795.3
135°	690.2	799.1	726.1	772.2	819.2	817.5
137.5°	738.9	847.0	768.5	796.1	838.7	844.2
140°	786.0	898.7	805.5	827.6	862.7	863.6
142.5°	835.9	950.4	846.1	859.0	889.4	883.9
145°	891.2	999.4	896.9	890.4	909.7	897.8
147.5°	940.2	1041.8	932.8	913.4	936.5	920.8
150°	994.6	1085.1	982.6	945.7	959.6	952.2
152.5°	1044.5	1119.3	1037.1	970.7	986.3	977.1
155°	1093.4	1155.3	1089.7	995.6	1006.6	1003.0
157.5°	1135.1	1186.7	1128.6	1021.4	1034.3	1026.9
160°	1172.8	1212.5	1175.6	1060.2	1052.8	1052.8
162.5°	1205.1	1238.3	1207.9	1112.8	1073.1	1055.5
165°	1233.8	1257.6	1236.4	1171.9	1111.9	1096.1
167.5°	1260.4	1276.2	1268.8	1219.8	1171.9	1138.7
170°	1281.7	1291.0	1280.8	1260.4	1235.6	1207.0
172.5°	1292.8	1296.4	1303.0	1290.0	1280.0	1260.6
175°	1299.3	1309.4	1303.8	1308.4	1299.4	1294.8
177.5°	1301.1	1303.0	1302.0	1310.3	1314.1	1306.8
180°	1308.4	1308.4	1308.4	1308.4	1308.4	1308.4

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