

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: P392605

Luminaire Tested: **MWL-3-37-57-UNV-L835-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392605
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-3-37-57-UNV-L835-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

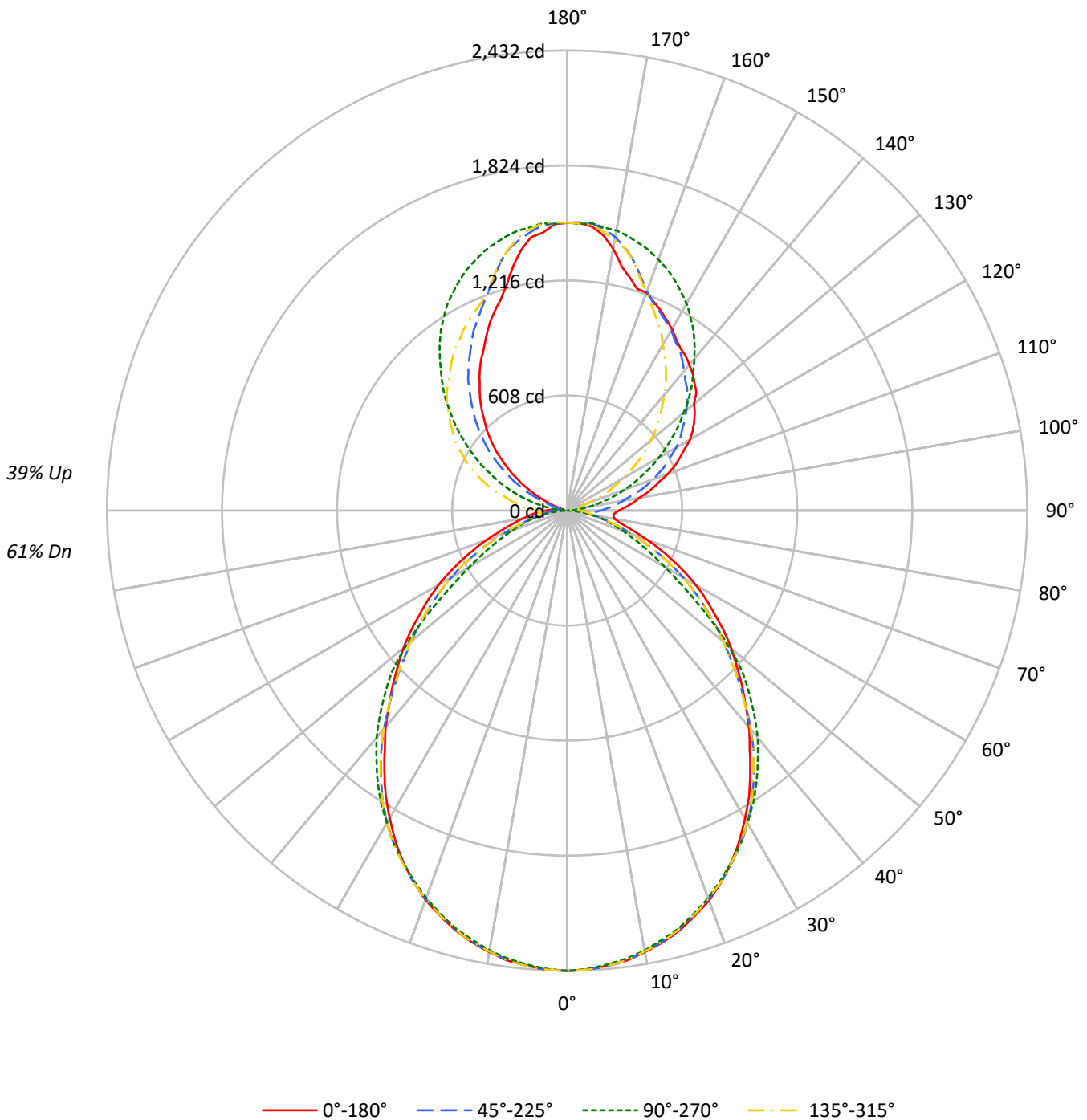
Lumens per Lamp: N/A
Luminaire Lumens: 9288.0 lumens
Efficiency: N/A
Efficacy: 88.3 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 105.2
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



TEST NUMBER: P392605
CATALOG NUMBER: MWL-3-37-57-UNV-L835-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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	100	96	92	89	94	90	87	84	79	76	74	68	66	65	59	57	56	51
2	92	84	78	73	86	79	74	69	69	65	62	60	57	55	52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	52	54	50	47	46	44	41	38
4	77	66	58	52	72	62	55	50	55	50	45	48	44	40	42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39	43	39	35	38	34	32	29
6	66	53	45	40	61	50	43	38	45	39	34	39	35	31	35	31	28	25
7	61	48	40	35	57	46	39	33	41	35	31	36	31	28	32	28	25	23
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	23	20
9	53	40	33	28	49	38	31	27	34	29	25	31	26	22	27	23	20	18
10	49	37	30	25	46	35	29	24	32	26	22	28	24	20	25	21	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	20945	20945	20945	20945
5°	20628	19147	20628	19147
10°	20223	17546	20223	17546
15°	19741	16057	19714	16057
20°	19127	14636	19099	14636
25°	18320	13288	18291	13288
30°	17306	12011	17267	12011
35°	16164	10795	16135	10795
40°	15057	9574	15015	9574
45°	13964	8268	13929	8268
50°	13010	6803	12973	6803
55°	11889	5106	11862	5106
60°	10881	3750	10866	3750
65°	9541	2823	9541	2823
70°	8190	2114	8210	2114
75°	6984	1521	7054	1521
80°	7101	972	6535	972
85°	9328	399	6667	399



TEST NUMBER: P392605

CATALOG NUMBER: MWL-3-37-57-UNV-L835-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	229.0	2.5
10°-20°	644.8	6.9
20°-30°	945.0	10.2
30°-40°	1071.8	11.5
40°-50°	1007.7	10.8
50°-60°	799.9	8.6
60°-70°	520.3	5.6
70°-80°	265.7	2.9
80°-90°	139.5	1.5
90°-100°	145.1	1.6
100°-110°	239.3	2.6
110°-120°	405.7	4.4
120°-130°	550.4	5.9
130°-140°	627.6	6.8
140°-150°	625.7	6.7
150°-160°	544.6	5.9
160°-170°	383.1	4.1
170°-180°	142.7	1.5
0°-30°	1818.8	19.6
0°-40°	2890.6	31.1
0°-60°	4698.3	50.6
0°-90°	5623.9	60.5
90°-120°	790.1	8.5
90°-150°	2593.8	27.9
90°-180°	3664.0	39.4
0°-180°	9288.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2432	2432	2432	2432	2432	
5°	2415	2409	2415	2409	2415	229
15°	2297	2284	2294	2284	2297	647
25°	2053	2051	2050	2051	2053	943
35°	1687	1746	1684	1746	1687	1055
45°	1306	1358	1303	1358	1306	1009
55°	949	826	947	826	949	854
65°	608	436	608	436	608	605
75°	319	216	322	216	319	351
85°	244	50	175	50	244	204
90°	273	2	112	2	273	151
95°	327	44	73	44	327	281
105°	472	213	20	213	472	499
115°	655	434	153	434	655	651
125°	820	681	374	681	820	732
135°	952	930	600	930	952	735
145°	1045	1163	806	1163	1045	659
155°	1167	1344	1013	1344	1167	538
165°	1276	1464	1234	1464	1276	362
175°	1507	1524	1474	1524	1507	140
180°	1522	1522	1522	1522	1522	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2432.3	2432.3	2432.3	2432.3	2432.3	2432.3	2432.3	2432.3	2432.3	2432.3	2432.3
2.5°	2428.2	2429.3	2429.4	2426.6	2424.6	2425.5	2429.4	2429.3	2429.2	2429.3	2429.4
5°	2415.4	2418.5	2417.6	2412.7	2408.8	2412.7	2416.6	2418.5	2415.4	2418.5	2416.6
7.5°	2399.7	2398.9	2398.9	2392.1	2389.1	2391.0	2397.9	2397.9	2399.7	2397.9	2397.9
10°	2369.4	2370.4	2366.4	2363.5	2360.5	2362.5	2365.4	2368.3	2369.4	2368.3	2365.4
12.5°	2337.0	2335.0	2333.0	2328.1	2322.1	2328.1	2333.0	2332.9	2335.0	2332.9	2333.0
15°	2296.8	2289.8	2290.7	2287.8	2283.8	2286.7	2289.7	2287.7	2293.7	2287.7	2289.7
17.5°	2245.7	2242.6	2240.6	2238.6	2232.7	2238.6	2239.5	2241.6	2242.6	2241.6	2239.5
20°	2192.7	2188.6	2184.6	2184.5	2178.5	2183.4	2183.5	2186.6	2189.5	2186.6	2183.5
22.5°	2125.7	2125.7	2124.6	2122.6	2116.6	2121.5	2123.6	2123.7	2123.7	2123.7	2123.6
25°	2053.0	2054.0	2056.8	2057.7	2050.7	2056.6	2054.8	2050.8	2049.8	2050.8	2054.8
27.5°	1969.4	1976.3	1986.0	1988.0	1983.9	1986.9	1984.0	1973.2	1966.3	1973.2	1984.0
30°	1880.0	1885.9	1907.5	1917.2	1905.3	1915.2	1904.4	1882.7	1875.8	1882.7	1904.4
32.5°	1789.6	1791.5	1818.1	1832.7	1830.7	1830.7	1814.9	1787.3	1785.3	1787.3	1814.9
35°	1687.2	1689.2	1718.7	1746.2	1746.0	1743.1	1715.6	1686.1	1684.1	1686.1	1715.6
37.5°	1586.0	1588.0	1619.4	1649.9	1655.7	1646.7	1616.3	1584.8	1582.9	1584.8	1616.3
40°	1495.6	1484.8	1511.3	1547.7	1566.3	1545.5	1507.1	1480.5	1491.4	1480.5	1507.1
42.5°	1395.3	1381.6	1394.3	1441.5	1464.0	1439.4	1391.1	1377.3	1391.1	1377.3	1391.1
45°	1305.9	1282.3	1286.2	1328.5	1357.9	1326.3	1281.9	1279.0	1302.6	1279.0	1281.9
47.5°	1215.5	1190.9	1179.1	1216.3	1253.7	1215.3	1174.8	1187.6	1212.2	1187.6	1174.8
50°	1131.9	1102.4	1078.8	1094.5	1113.0	1092.3	1074.5	1098.1	1128.7	1098.1	1074.5
52.5°	1042.5	1017.9	982.4	984.4	970.5	982.2	979.2	1013.6	1039.2	1013.6	979.2
55°	949.0	934.2	889.0	865.3	825.9	863.2	885.8	931.0	946.8	931.0	885.8
57.5°	869.4	852.7	798.6	747.4	697.2	745.2	795.4	849.4	867.2	849.4	795.4
60°	783.8	770.0	709.1	630.3	594.9	629.3	706.9	767.8	782.7	767.8	706.9
62.5°	695.3	685.5	618.6	529.1	509.3	528.0	616.5	683.3	694.2	683.3	616.5
65°	607.7	594.9	525.2	443.6	435.6	442.5	524.1	593.9	607.7	593.9	524.1
67.5°	528.1	508.5	443.6	369.8	368.8	369.8	442.5	507.4	528.1	507.4	442.5
70°	449.4	421.9	362.9	307.8	314.7	307.8	362.9	422.9	450.5	422.9	362.9
72.5°	377.6	345.2	293.1	250.8	259.6	249.8	293.1	346.3	379.8	346.3	293.1
75°	318.7	274.4	231.1	200.6	216.3	200.6	232.2	275.5	321.9	275.5	232.2
77.5°	280.0	229.6	179.0	154.4	173.1	154.4	180.1	226.4	275.8	226.4	180.1
80°	256.0	204.2	144.9	117.1	130.8	117.1	142.7	187.1	235.6	187.1	142.7
82.5°	247.4	196.5	131.2	84.6	90.5	84.6	118.3	157.9	206.6	157.9	118.3
85°	244.3	206.0	136.1	66.2	50.2	64.1	105.0	140.6	174.6	140.6	105.0
87.5°	255.5	226.1	151.6	68.5	14.7	53.6	90.3	123.1	144.9	123.1	90.3
90°	272.7	251.1	176.4	77.4	2.1	36.6	70.2	99.9	111.7	99.9	70.2
92.5°	300.3	282.5	204.3	95.8	18.2	21.8	57.3	83.9	89.9	83.9	57.3
95°	327.4	317.0	236.7	116.6	43.9	9.2	43.5	68.0	73.0	68.0	43.5
97.5°	360.8	351.6	266.3	152.3	77.2	14.8	29.1	56.4	60.4	56.4	29.1
100°	385.0	377.0	301.8	198.3	118.9	37.4	17.3	40.0	46.9	40.0	17.3
102.5°	431.5	413.7	338.9	242.4	163.0	68.5	19.1	27.2	32.1	27.2	19.1
105°	472.2	452.2	391.5	288.6	213.4	110.4	44.8	20.7	20.2	20.7	44.8
107.5°	512.4	499.7	438.8	335.8	267.1	158.6	81.3	44.6	31.6	44.6	81.3
110°	565.1	550.2	484.9	383.0	322.9	210.2	123.2	77.9	62.8	77.9	123.2



TEST NUMBER: P392605

CATALOG NUMBER: MWL-3-37-57-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	615.7	605.0	527.8	432.4	380.9	266.0	174.7	120.9	105.8	120.9	174.7
115°	655.4	649.0	578.1	479.6	434.5	330.4	232.6	171.4	153.0	171.4	232.6
117.5°	697.3	695.2	614.7	526.7	499.9	387.2	285.1	221.8	202.4	221.8	285.1
120°	749.9	740.2	665.1	574.0	561.0	447.3	343.1	279.7	260.4	279.7	343.1
122.5°	786.3	779.9	708.1	619.0	619.0	508.5	399.0	335.6	315.1	335.6	399.0
125°	819.5	816.5	740.2	664.1	681.3	565.4	461.2	396.8	374.2	396.8	461.2
127.5°	849.6	852.9	782.1	713.5	744.6	623.4	522.3	452.5	427.9	452.5	522.3
130°	875.4	886.1	821.8	759.6	804.7	687.6	577.1	507.3	491.2	507.3	577.1
132.5°	925.8	919.4	862.6	805.7	870.2	745.6	635.1	562.0	543.7	562.0	635.1
135°	951.6	953.7	898.0	845.4	930.2	803.6	689.8	617.8	599.6	617.8	689.8
137.5°	982.7	976.3	925.9	893.8	986.0	859.3	743.5	676.8	647.8	676.8	743.5
140°	1005.3	1004.2	962.5	936.7	1046.1	914.1	798.2	730.5	703.7	730.5	798.2
142.5°	1028.9	1035.3	999.9	983.9	1106.3	972.1	858.3	783.1	757.3	783.1	858.3
145°	1045.0	1059.0	1036.4	1043.0	1163.2	1036.5	909.8	833.5	805.6	833.5	909.8
147.5°	1071.9	1090.0	1062.2	1084.8	1212.5	1093.4	960.3	886.1	861.4	886.1	960.3
150°	1108.3	1116.9	1099.8	1143.7	1262.9	1157.7	1012.9	936.6	911.9	936.6	1012.9
152.5°	1137.3	1148.0	1128.8	1206.1	1302.6	1214.7	1070.9	985.9	957.0	985.9	1070.9
155°	1167.4	1171.6	1157.8	1267.3	1344.5	1271.6	1117.0	1040.7	1012.8	1040.7	1117.0
157.5°	1195.2	1203.9	1187.8	1313.4	1381.1	1320.9	1169.6	1095.4	1070.8	1095.4	1169.6
160°	1225.3	1224.3	1232.9	1367.1	1411.1	1363.9	1225.4	1154.5	1121.2	1154.5	1225.4
162.5°	1228.5	1247.9	1294.1	1405.6	1441.0	1402.4	1285.5	1197.5	1168.4	1197.5	1285.5
165°	1275.7	1293.0	1363.8	1438.9	1463.5	1435.7	1360.5	1268.3	1233.9	1268.3	1360.5
167.5°	1324.2	1362.8	1419.6	1476.5	1485.1	1466.8	1417.4	1353.2	1320.9	1353.2	1417.4
170°	1403.7	1437.9	1466.8	1490.5	1502.3	1491.5	1452.8	1420.8	1399.4	1420.8	1452.8
172.5°	1467.0	1489.5	1501.2	1516.2	1508.7	1504.3	1485.1	1469.0	1457.3	1469.0	1485.1
175°	1506.7	1512.0	1522.6	1517.3	1523.7	1511.9	1513.0	1519.5	1474.5	1519.5	1513.0
177.5°	1520.6	1529.2	1524.8	1515.1	1516.2	1514.1	1518.3	1521.6	1514.3	1521.6	1518.3
180°	1521.6	1521.6	1521.6	1521.6	1521.6	1521.6	1521.6	1521.6	1521.6	1521.6	1521.6



TEST NUMBER: P392605

CATALOG NUMBER: MWL-3-37-57-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2432.3	2432.3	2432.3	2432.3	2432.3	2432.3
2.5°	2425.5	2424.6	2426.6	2429.4	2429.3	2428.2
5°	2412.7	2408.8	2412.7	2417.6	2418.5	2415.4
7.5°	2391.0	2389.1	2392.1	2398.9	2398.9	2399.7
10°	2362.5	2360.5	2363.5	2366.4	2370.4	2369.4
12.5°	2328.1	2322.1	2328.1	2333.0	2335.0	2337.0
15°	2286.7	2283.8	2287.8	2290.7	2289.8	2296.8
17.5°	2238.6	2232.7	2238.6	2240.6	2242.6	2245.7
20°	2183.4	2178.5	2184.5	2184.6	2188.6	2192.7
22.5°	2121.5	2116.6	2122.6	2124.6	2125.7	2125.7
25°	2056.6	2050.7	2057.7	2056.8	2054.0	2053.0
27.5°	1986.9	1983.9	1988.0	1986.0	1976.3	1969.4
30°	1915.2	1905.3	1917.2	1907.5	1885.9	1880.0
32.5°	1830.7	1830.7	1832.7	1818.1	1791.5	1789.6
35°	1743.1	1746.0	1746.2	1718.7	1689.2	1687.2
37.5°	1646.7	1655.7	1649.9	1619.4	1588.0	1586.0
40°	1545.5	1566.3	1547.7	1511.3	1484.8	1495.6
42.5°	1439.4	1464.0	1441.5	1394.3	1381.6	1395.3
45°	1326.3	1357.9	1328.5	1286.2	1282.3	1305.9
47.5°	1215.3	1253.7	1216.3	1179.1	1190.9	1215.5
50°	1092.3	1113.0	1094.5	1078.8	1102.4	1131.9
52.5°	982.2	970.5	984.4	982.4	1017.9	1042.5
55°	863.2	825.9	865.3	889.0	934.2	949.0
57.5°	745.2	697.2	747.4	798.6	852.7	869.4
60°	629.3	594.9	630.3	709.1	770.0	783.8
62.5°	528.0	509.3	529.1	618.6	685.5	695.3
65°	442.5	435.6	443.6	525.2	594.9	607.7
67.5°	369.8	368.8	369.8	443.6	508.5	528.1
70°	307.8	314.7	307.8	362.9	421.9	449.4
72.5°	249.8	259.6	250.8	293.1	345.2	377.6
75°	200.6	216.3	200.6	231.1	274.4	318.7
77.5°	154.4	173.1	154.4	179.0	229.6	280.0
80°	117.1	130.8	117.1	144.9	204.2	256.0
82.5°	84.6	90.5	84.6	131.2	196.5	247.4
85°	64.1	50.2	66.2	136.1	206.0	244.3
87.5°	53.6	14.7	68.5	151.6	226.1	255.5
90°	36.6	2.1	77.4	176.4	251.1	272.7
92.5°	21.8	18.2	95.8	204.3	282.5	300.3
95°	9.2	43.9	116.6	236.7	317.0	327.4
97.5°	14.8	77.2	152.3	266.3	351.6	360.8
100°	37.4	118.9	198.3	301.8	377.0	385.0
102.5°	68.5	163.0	242.4	338.9	413.7	431.5
105°	110.4	213.4	288.6	391.5	452.2	472.2
107.5°	158.6	267.1	335.8	438.8	499.7	512.4
110°	210.2	322.9	383.0	484.9	550.2	565.1



TEST NUMBER: P392605

CATALOG NUMBER: MWL-3-37-57-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	266.0	380.9	432.4	527.8	605.0	615.7
115°	330.4	434.5	479.6	578.1	649.0	655.4
117.5°	387.2	499.9	526.7	614.7	695.2	697.3
120°	447.3	561.0	574.0	665.1	740.2	749.9
122.5°	508.5	619.0	619.0	708.1	779.9	786.3
125°	565.4	681.3	664.1	740.2	816.5	819.5
127.5°	623.4	744.6	713.5	782.1	852.9	849.6
130°	687.6	804.7	759.6	821.8	886.1	875.4
132.5°	745.6	870.2	805.7	862.6	919.4	925.8
135°	803.6	930.2	845.4	898.0	953.7	951.6
137.5°	859.3	986.0	893.8	925.9	976.3	982.7
140°	914.1	1046.1	936.7	962.5	1004.2	1005.3
142.5°	972.1	1106.3	983.9	999.9	1035.3	1028.9
145°	1036.5	1163.2	1043.0	1036.4	1059.0	1045.0
147.5°	1093.4	1212.5	1084.8	1062.2	1090.0	1071.9
150°	1157.7	1262.9	1143.7	1099.8	1116.9	1108.3
152.5°	1214.7	1302.6	1206.1	1128.8	1148.0	1137.3
155°	1271.6	1344.5	1267.3	1157.8	1171.6	1167.4
157.5°	1320.9	1381.1	1313.4	1187.8	1203.9	1195.2
160°	1363.9	1411.1	1367.1	1232.9	1224.3	1225.3
162.5°	1402.4	1441.0	1405.6	1294.1	1247.9	1228.5
165°	1435.7	1463.5	1438.9	1363.8	1293.0	1275.7
167.5°	1466.8	1485.1	1476.5	1419.6	1362.8	1324.2
170°	1491.5	1502.3	1490.5	1466.8	1437.9	1403.7
172.5°	1504.3	1508.7	1516.2	1501.2	1489.5	1467.0
175°	1511.9	1523.7	1517.3	1522.6	1512.0	1506.7
177.5°	1514.1	1516.2	1515.1	1524.8	1529.2	1520.6
180°	1521.6	1521.6	1521.6	1521.6	1521.6	1521.6

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