

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: P392688

Luminaire Tested: **MWL-4-55-33-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392688
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-4-55-33-UNV-L930-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7448.1 lumens
Efficiency: N/A
Efficacy: 75.0 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Indirect

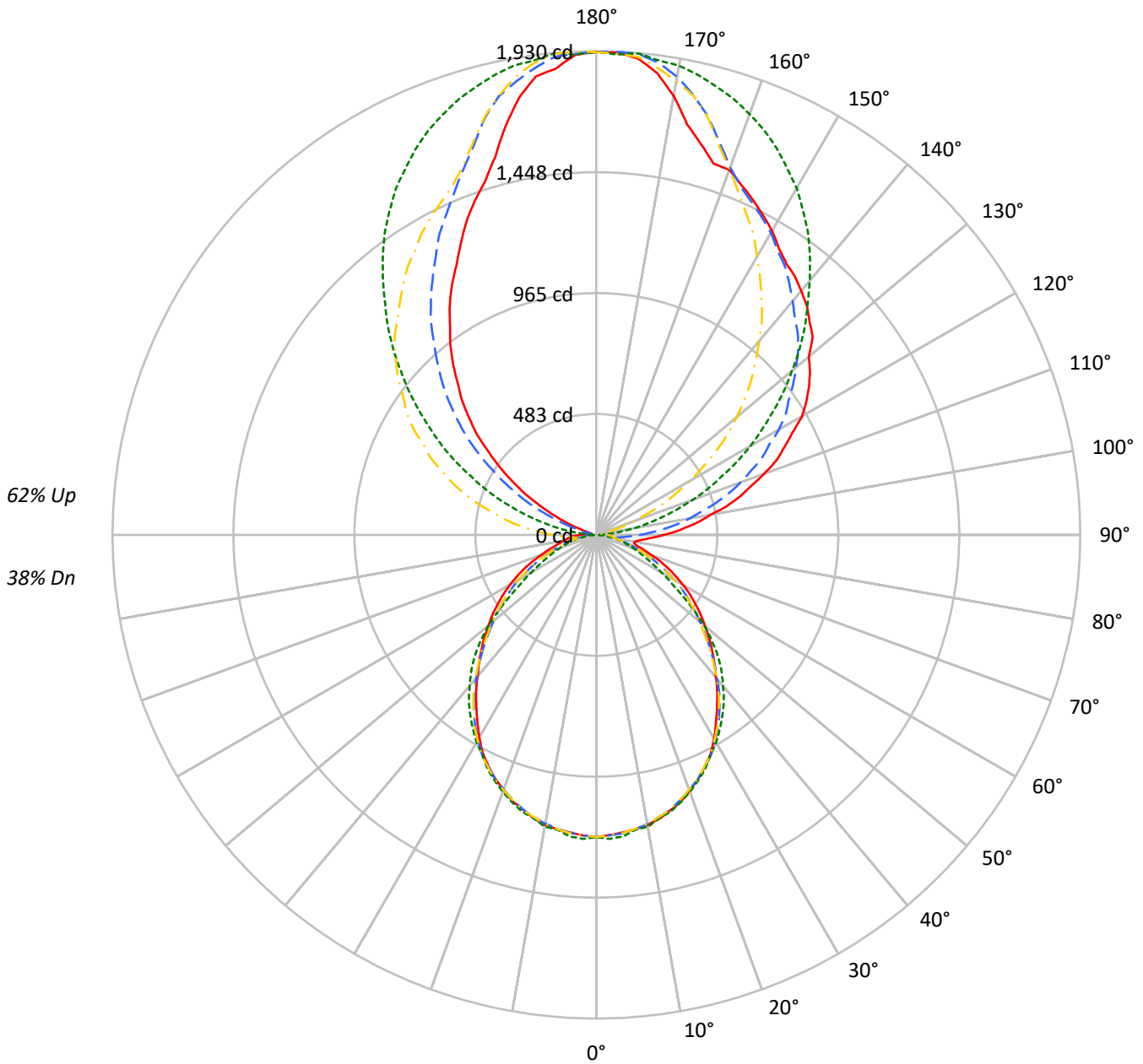
Input Watts (W): 99.283
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270° - - - 135°-315°



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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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38																				
1	95	91	87	84	86	83	79	76	67	65	63	53	52	50	40	39	38	32																				
2	87	80	74	69	79	72	67	63	59	56	52	47	44	42	35	34	33	27																				
3	79	70	63	57	72	64	58	53	52	48	44	42	39	36	32	30	28	23																				
4	73	62	55	49	66	57	50	45	47	42	38	37	34	31	28	26	24	20																				
5	67	55	48	42	60	51	44	39	42	37	33	33	30	27	26	23	21	18																				
6	61	50	42	36	56	46	39	34	38	32	29	30	27	24	23	21	19	16																				
7	57	45	37	32	51	41	34	30	34	29	25	28	24	21	21	19	17	14																				
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	20	17	15	13																				
9	49	37	30	25	45	34	28	23	29	24	20	23	19	17	18	16	14	11																				
10	46	34	27	22	42	31	25	21	26	21	18	21	18	15	17	14	12	10																				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	7792	7792	7792	7792
5°	7659	7200	7659	7200
10°	7565	6594	7565	6594
15°	7403	6027	7377	6027
20°	7189	5496	7163	5496
25°	6944	4997	6917	4997
30°	6605	4517	6567	4517
35°	6164	4066	6133	4066
40°	5756	3604	5713	3604
45°	5403	3139	5368	3139
50°	5060	2567	5022	2567
55°	4731	1920	4705	1920
60°	4369	1422	4355	1422
65°	3946	1057	3946	1057
70°	3402	793	3424	793
75°	2995	582	3069	582
80°	3645	375	3039	375
85°	6576	174	3586	174



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.6	1.5
10°-20°	320.4	4.3
20°-30°	470.8	6.3
30°-40°	535.2	7.2
40°-50°	504.4	6.8
50°-60°	402.7	5.4
60°-70°	266.0	3.6
70°-80°	140.1	1.9
80°-90°	94.9	1.3
90°-100°	154.0	2.1
100°-110°	299.2	4.0
110°-120°	511.9	6.9
120°-130°	695.5	9.3
130°-140°	793.4	10.7
140°-150°	791.4	10.6
150°-160°	689.2	9.3
160°-170°	484.8	6.5
170°-180°	180.6	2.4
0°-30°	904.8	12.1
0°-40°	1440.0	19.3
0°-60°	2347.1	31.5
0°-90°	2848.2	38.2
90°-120°	965.0	13.0
90°-150°	3245.3	43.6
90°-180°	4600.0	61.8
0°-180°	7448.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1206	1206	1206	1206	1206	
5°	1192	1208	1192	1208	1192	113
15°	1138	1143	1134	1143	1138	321
25°	1022	1028	1018	1028	1022	470
35°	839	877	835	877	839	525
45°	653	687	649	687	653	504
55°	483	414	480	414	483	432
65°	316	217	316	217	316	312
75°	167	110	171	110	167	189
85°	194	29	106	29	194	152
90°	269	2	64	2	269	149
95°	362	55	40	55	362	318
105°	593	269	20	269	593	623
115°	827	550	190	550	827	821
125°	1036	862	471	862	1036	925
135°	1203	1176	756	1176	1203	928
145°	1321	1472	1018	1472	1321	833
155°	1476	1702	1280	1702	1476	681
165°	1614	1852	1561	1852	1614	458
175°	1908	1928	1868	1928	1908	178
180°	1927	1927	1927	1927	1927	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1206.5	1206.5	1206.5	1206.5	1206.5	1206.5	1206.5	1206.5	1206.5	1206.5	1206.5
2.5°	1198.9	1199.2	1200.2	1207.4	1214.2	1206.1	1200.2	1199.2	1200.4	1199.2	1200.2
5°	1192.2	1194.9	1195.1	1202.8	1207.8	1202.8	1193.8	1194.9	1192.2	1194.9	1193.8
7.5°	1185.2	1189.6	1184.4	1192.5	1186.6	1191.2	1183.1	1188.1	1185.2	1188.1	1183.1
10°	1174.7	1175.2	1171.8	1179.4	1182.8	1178.0	1170.4	1172.5	1174.7	1172.5	1170.4
12.5°	1160.5	1154.9	1153.5	1158.6	1158.1	1158.6	1153.5	1152.2	1157.8	1152.2	1153.5
15°	1138.1	1139.6	1135.0	1140.0	1142.9	1138.7	1133.6	1137.0	1134.1	1137.0	1133.6
17.5°	1117.9	1116.0	1110.4	1113.3	1118.4	1113.3	1109.1	1114.6	1113.8	1114.6	1109.1
20°	1085.7	1086.9	1083.4	1091.3	1090.8	1089.9	1082.0	1084.2	1081.7	1084.2	1082.0
22.5°	1056.5	1058.2	1056.3	1055.8	1061.2	1054.4	1055.0	1055.5	1053.8	1055.5	1055.0
25°	1021.8	1021.8	1022.2	1030.4	1028.2	1029.0	1019.4	1017.8	1017.8	1017.8	1019.4
27.5°	985.5	983.8	990.0	995.5	987.6	994.1	987.4	979.7	981.4	979.7	987.4
30°	939.0	940.7	947.4	962.1	955.5	959.5	943.4	936.7	933.5	936.7	943.4
32.5°	888.2	895.0	904.4	924.1	917.2	921.4	900.3	889.6	882.8	889.6	900.3
35°	838.8	841.3	855.7	880.1	876.9	876.0	851.5	837.2	834.6	837.2	851.5
37.5°	792.3	788.0	805.8	832.0	835.2	827.8	801.6	783.9	788.1	783.9	801.6
40°	742.4	743.2	750.9	781.6	786.2	778.8	745.3	737.8	736.9	737.8	745.3
42.5°	697.6	689.2	695.4	727.6	738.8	724.7	691.3	683.6	692.1	683.6	691.3
45°	653.2	642.1	643.0	670.9	687.3	668.1	637.5	638.0	649.0	638.0	637.5
47.5°	610.0	596.5	589.8	611.2	625.6	609.7	584.2	592.4	605.9	592.4	584.2
50°	566.1	553.4	539.8	552.9	559.9	550.1	534.4	547.9	561.9	547.9	534.4
52.5°	525.5	511.1	493.7	495.4	486.4	492.6	489.6	505.7	521.3	505.7	489.6
55°	482.7	470.0	448.9	434.8	414.0	432.1	444.7	465.9	480.0	465.9	444.7
57.5°	442.2	432.9	405.8	378.2	350.6	375.4	401.7	428.7	439.4	428.7	401.7
60°	399.3	391.7	360.4	321.0	300.8	319.7	357.7	389.0	398.0	389.0	357.7
62.5°	357.0	351.1	314.8	269.4	252.9	268.1	312.0	348.4	355.7	348.4	312.0
65°	315.9	306.7	269.4	227.2	217.4	225.8	268.1	305.3	315.9	305.3	268.1
67.5°	274.5	263.5	228.0	188.7	186.9	188.7	226.7	262.2	274.5	262.2	226.7
70°	231.7	220.7	189.5	156.6	157.3	156.6	189.5	222.2	233.2	222.2	189.5
72.5°	199.6	181.0	155.7	129.5	132.3	128.1	155.7	182.4	202.3	182.4	155.7
75°	166.7	146.4	122.2	102.8	110.4	102.8	123.5	147.7	170.8	147.7	123.5
77.5°	153.9	125.6	95.2	82.5	87.6	82.5	96.5	121.5	148.5	121.5	96.5
80°	155.9	122.7	78.1	62.3	67.3	62.3	75.4	100.9	130.0	100.9	75.4
82.5°	170.0	137.4	81.8	44.5	47.0	44.5	65.4	88.5	118.3	88.5	65.4
85°	194.4	165.6	102.4	38.4	29.2	35.7	63.0	82.6	106.0	82.6	63.0
87.5°	228.2	205.0	132.6	51.2	7.6	32.2	55.0	74.3	88.0	74.3	55.0
90°	268.6	248.2	174.8	73.0	2.2	21.3	40.1	56.4	64.5	56.4	40.1
92.5°	318.3	298.7	217.6	107.6	22.6	13.7	31.1	46.8	51.7	46.8	31.1
95°	362.1	354.0	270.1	144.8	55.3	8.8	25.2	38.2	39.5	38.2	25.2
97.5°	416.1	408.5	323.3	191.3	97.5	17.2	22.5	34.2	35.0	34.2	22.5
100°	462.4	459.4	377.7	249.9	149.2	45.7	17.2	32.1	33.7	32.1	17.2
102.5°	533.2	514.3	428.5	305.7	205.0	85.2	23.0	24.4	26.9	24.4	23.0
105°	592.6	571.1	494.4	364.3	269.0	138.3	54.8	23.9	19.7	23.9	54.8
107.5°	646.1	630.0	554.3	424.0	337.0	199.6	101.0	52.9	36.4	52.9	101.0
110°	711.6	694.4	612.7	484.8	407.8	265.7	154.1	95.6	74.7	95.6	154.1



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CATALOG NUMBER: MWL-4-55-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	776.9	763.8	667.2	547.4	481.3	336.5	219.4	150.0	130.4	150.0	219.4
115°	827.2	819.7	729.8	606.0	550.2	416.8	291.5	214.0	190.4	214.0	291.5
117.5°	880.3	879.0	776.1	665.8	631.8	488.9	358.2	278.8	253.0	278.8	358.2
120°	947.1	936.1	840.0	725.7	709.3	565.1	431.8	352.3	326.4	352.3	431.8
122.5°	993.3	986.5	895.3	782.9	782.9	642.8	503.4	423.1	395.9	423.1	503.4
125°	1035.6	1032.7	936.1	840.0	861.8	714.9	582.3	500.7	470.7	500.7	582.3
127.5°	1073.6	1077.7	989.2	902.7	942.1	788.3	659.9	570.0	538.8	570.0	659.9
130°	1106.3	1119.9	1039.6	959.8	1018.3	868.6	729.3	639.4	619.1	639.4	729.3
132.5°	1170.3	1162.1	1091.3	1019.2	1099.9	943.0	802.8	708.8	685.7	708.8	802.8
135°	1202.9	1205.6	1136.2	1069.5	1176.2	1016.4	872.1	779.7	756.5	779.7	872.1
137.5°	1242.4	1234.2	1171.6	1130.8	1247.0	1087.2	940.3	854.4	817.7	854.4	940.3
140°	1270.9	1269.6	1217.8	1185.2	1323.2	1156.6	1009.7	922.5	888.5	922.5	1009.7
142.5°	1300.9	1309.0	1264.1	1245.1	1399.4	1230.1	1084.5	989.2	956.6	989.2	1084.5
145°	1321.3	1339.0	1310.4	1320.0	1471.5	1311.8	1149.8	1053.2	1017.8	1053.2	1149.8
147.5°	1355.3	1378.4	1344.4	1373.1	1534.2	1383.9	1215.2	1119.9	1088.7	1119.9	1215.2
150°	1401.6	1412.5	1392.1	1446.5	1598.0	1464.2	1281.8	1183.9	1152.5	1183.9	1281.8
152.5°	1438.3	1451.9	1428.9	1526.8	1648.5	1537.7	1355.3	1246.4	1209.7	1246.4	1355.3
155°	1476.4	1481.9	1465.5	1604.4	1702.4	1609.8	1413.9	1315.8	1280.5	1315.8	1413.9
157.5°	1511.8	1522.7	1503.6	1662.9	1748.6	1672.4	1480.6	1385.3	1353.9	1385.3	1480.6
160°	1549.9	1549.9	1560.9	1731.0	1786.7	1726.8	1551.4	1461.5	1418.0	1461.5	1551.4
162.5°	1554.0	1579.9	1638.3	1778.6	1823.5	1774.5	1627.4	1515.9	1477.7	1515.9	1627.4
165°	1613.9	1637.0	1725.5	1820.8	1852.0	1816.7	1721.4	1605.8	1560.9	1605.8	1721.4
167.5°	1676.5	1725.5	1796.3	1868.3	1879.3	1856.1	1793.6	1713.3	1672.4	1713.3	1793.6
170°	1777.7	1819.9	1856.1	1886.1	1901.1	1887.4	1838.5	1798.2	1772.3	1798.2	1838.5
172.5°	1858.0	1886.1	1899.8	1918.8	1909.2	1903.8	1879.3	1860.2	1845.8	1860.2	1879.3
175°	1908.4	1914.7	1927.0	1920.1	1928.3	1913.3	1914.7	1924.2	1867.5	1924.2	1914.7
177.5°	1926.1	1936.4	1929.6	1917.4	1918.8	1916.1	1921.4	1927.0	1917.9	1927.0	1921.4
180°	1927.0	1927.0	1927.0	1927.0	1927.0	1927.0	1927.0	1927.0	1927.0	1927.0	1927.0



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CATALOG NUMBER: MWL-4-55-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1206.5	1206.5	1206.5	1206.5	1206.5	1206.5
2.5°	1206.1	1214.2	1207.4	1200.2	1199.2	1198.9
5°	1202.8	1207.8	1202.8	1195.1	1194.9	1192.2
7.5°	1191.2	1186.6	1192.5	1184.4	1189.6	1185.2
10°	1178.0	1182.8	1179.4	1171.8	1175.2	1174.7
12.5°	1158.6	1158.1	1158.6	1153.5	1154.9	1160.5
15°	1138.7	1142.9	1140.0	1135.0	1139.6	1138.1
17.5°	1113.3	1118.4	1113.3	1110.4	1116.0	1117.9
20°	1089.9	1090.8	1091.3	1083.4	1086.9	1085.7
22.5°	1054.4	1061.2	1055.8	1056.3	1058.2	1056.5
25°	1029.0	1028.2	1030.4	1022.2	1021.8	1021.8
27.5°	994.1	987.6	995.5	990.0	983.8	985.5
30°	959.5	955.5	962.1	947.4	940.7	939.0
32.5°	921.4	917.2	924.1	904.4	895.0	888.2
35°	876.0	876.9	880.1	855.7	841.3	838.8
37.5°	827.8	835.2	832.0	805.8	788.0	792.3
40°	778.8	786.2	781.6	750.9	743.2	742.4
42.5°	724.7	738.8	727.6	695.4	689.2	697.6
45°	668.1	687.3	670.9	643.0	642.1	653.2
47.5°	609.7	625.6	611.2	589.8	596.5	610.0
50°	550.1	559.9	552.9	539.8	553.4	566.1
52.5°	492.6	486.4	495.4	493.7	511.1	525.5
55°	432.1	414.0	434.8	448.9	470.0	482.7
57.5°	375.4	350.6	378.2	405.8	432.9	442.2
60°	319.7	300.8	321.0	360.4	391.7	399.3
62.5°	268.1	252.9	269.4	314.8	351.1	357.0
65°	225.8	217.4	227.2	269.4	306.7	315.9
67.5°	188.7	186.9	188.7	228.0	263.5	274.5
70°	156.6	157.3	156.6	189.5	220.7	231.7
72.5°	128.1	132.3	129.5	155.7	181.0	199.6
75°	102.8	110.4	102.8	122.2	146.4	166.7
77.5°	82.5	87.6	82.5	95.2	125.6	153.9
80°	62.3	67.3	62.3	78.1	122.7	155.9
82.5°	44.5	47.0	44.5	81.8	137.4	170.0
85°	35.7	29.2	38.4	102.4	165.6	194.4
87.5°	32.2	7.6	51.2	132.6	205.0	228.2
90°	21.3	2.2	73.0	174.8	248.2	268.6
92.5°	13.7	22.6	107.6	217.6	298.7	318.3
95°	8.8	55.3	144.8	270.1	354.0	362.1
97.5°	17.2	97.5	191.3	323.3	408.5	416.1
100°	45.7	149.2	249.9	377.7	459.4	462.4
102.5°	85.2	205.0	305.7	428.5	514.3	533.2
105°	138.3	269.0	364.3	494.4	571.1	592.6
107.5°	199.6	337.0	424.0	554.3	630.0	646.1
110°	265.7	407.8	484.8	612.7	694.4	711.6



TEST NUMBER: P392688

CATALOG NUMBER: MWL-4-55-33-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	336.5	481.3	547.4	667.2	763.8	776.9
115°	416.8	550.2	606.0	729.8	819.7	827.2
117.5°	488.9	631.8	665.8	776.1	879.0	880.3
120°	565.1	709.3	725.7	840.0	936.1	947.1
122.5°	642.8	782.9	782.9	895.3	986.5	993.3
125°	714.9	861.8	840.0	936.1	1032.7	1035.6
127.5°	788.3	942.1	902.7	989.2	1077.7	1073.6
130°	868.6	1018.3	959.8	1039.6	1119.9	1106.3
132.5°	943.0	1099.9	1019.2	1091.3	1162.1	1170.3
135°	1016.4	1176.2	1069.5	1136.2	1205.6	1202.9
137.5°	1087.2	1247.0	1130.8	1171.6	1234.2	1242.4
140°	1156.6	1323.2	1185.2	1217.8	1269.6	1270.9
142.5°	1230.1	1399.4	1245.1	1264.1	1309.0	1300.9
145°	1311.8	1471.5	1320.0	1310.4	1339.0	1321.3
147.5°	1383.9	1534.2	1373.1	1344.4	1378.4	1355.3
150°	1464.2	1598.0	1446.5	1392.1	1412.5	1401.6
152.5°	1537.7	1648.5	1526.8	1428.9	1451.9	1438.3
155°	1609.8	1702.4	1604.4	1465.5	1481.9	1476.4
157.5°	1672.4	1748.6	1662.9	1503.6	1522.7	1511.8
160°	1726.8	1786.7	1731.0	1560.9	1549.9	1549.9
162.5°	1774.5	1823.5	1778.6	1638.3	1579.9	1554.0
165°	1816.7	1852.0	1820.8	1725.5	1637.0	1613.9
167.5°	1856.1	1879.3	1868.3	1796.3	1725.5	1676.5
170°	1887.4	1901.1	1886.1	1856.1	1819.9	1777.7
172.5°	1903.8	1909.2	1918.8	1899.8	1886.1	1858.0
175°	1913.3	1928.3	1920.1	1927.0	1914.7	1908.4
177.5°	1916.1	1918.8	1917.4	1929.6	1936.4	1926.1
180°	1927.0	1927.0	1927.0	1927.0	1927.0	1927.0

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