

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: P392680

Luminaire Tested: **MWL-4-42-60-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392680  
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-4-42-60-UNV-L935-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

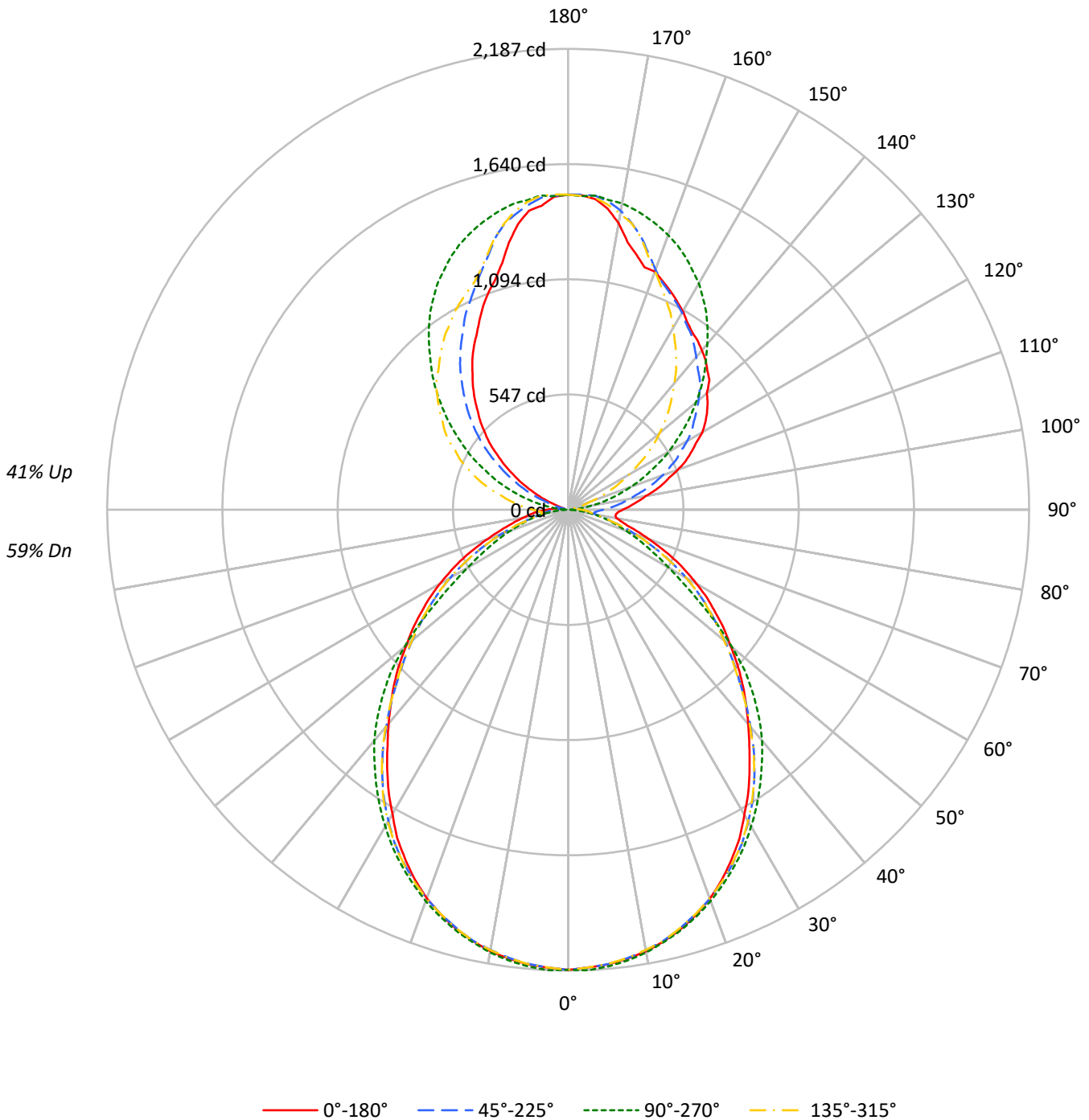
Lumens per Lamp: N/A  
Luminaire Lumens: 8678.2 lumens  
Efficiency: N/A  
Efficacy: 79.6 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 109.08  
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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CATALOG NUMBER: MWL-4-42-60-UNV-L935-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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59
1	100	96	92	88	93	89	86	83	78	75	73	67	65	63	57	56	54	50
2	91	84	78	73	85	79	73	69	68	64	61	59	56	54	51	48	46	42
3	84	74	67	61	78	69	63	58	61	56	52	53	49	46	45	42	40	36
4	77	66	58	52	71	62	55	49	54	49	44	47	43	40	41	37	35	31
5	71	59	51	45	66	55	48	43	49	43	39	43	38	35	37	33	31	28
6	65	53	45	39	61	50	43	37	44	38	34	39	34	30	33	30	27	24
7	60	48	40	35	56	45	38	33	40	34	30	35	31	27	31	27	24	22
8	56	44	36	31	52	41	34	29	37	31	27	32	28	24	28	25	22	20
9	52	40	33	28	49	38	31	26	34	28	24	30	25	22	26	22	20	18
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	24	21	18	16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	14102	14102	14102	14102
5°	13915	12973	13915	12973
10°	13706	11894	13706	11894
15°	13406	10894	13385	10894
20°	13013	9961	12992	9961
25°	12454	9067	12432	9067
30°	11757	8208	11728	8208
35°	11022	7366	11000	7366
40°	10308	6563	10274	6563
45°	9671	5671	9644	5671
50°	8978	4650	8949	4650
55°	8364	3503	8343	3503
60°	7693	2601	7682	2601
65°	6915	1972	6915	1972
70°	5946	1459	5961	1459
75°	5220	1060	5275	1060
80°	5445	686	4975	686
85°	7719	309	5399	309



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	205.8	2.4
10°-20°	580.5	6.7
20°-30°	851.2	9.8
30°-40°	963.7	11.1
40°-50°	907.9	10.5
50°-60°	726.1	8.4
60°-70°	476.9	5.5
70°-80°	244.1	2.8
80°-90°	129.6	1.5
90°-100°	138.3	1.6
100°-110°	234.6	2.7
110°-120°	397.8	4.6
120°-130°	540.2	6.2
130°-140°	616.0	7.1
140°-150°	614.3	7.1
150°-160°	534.8	6.2
160°-170°	376.2	4.3
170°-180°	140.1	1.6
0°-30°	1637.5	18.9
0°-40°	2601.2	30.0
0°-60°	4235.2	48.8
0°-90°	5085.9	58.6
90°-120°	770.7	8.9
90°-150°	2541.2	29.3
90°-180°	3592.0	41.4
0°-180°	8678.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2184	2184	2184	2184	2184	
5°	2166	2176	2166	2176	2166	206
15°	2061	2066	2058	2066	2061	580
25°	1833	1866	1829	1866	1833	842
35°	1500	1588	1497	1588	1500	938
45°	1169	1242	1166	1242	1169	901
55°	853	755	851	755	853	765
65°	554	406	554	406	554	547
75°	290	201	294	201	290	320
85°	228	52	160	52	228	188
90°	258	2	100	2	258	143
95°	311	43	61	43	311	268
105°	462	210	18	210	462	488
115°	643	427	149	427	643	638
125°	804	669	366	669	804	718
135°	934	913	588	913	934	721
145°	1026	1142	791	1142	1026	647
155°	1146	1321	994	1321	1146	528
165°	1252	1437	1211	1437	1252	355
175°	1479	1497	1448	1497	1479	138
180°	1495	1495	1495	1495	1495	



TEST NUMBER: P392680

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2183.5	2183.5	2183.5	2183.5	2183.5	2183.5	2183.5	2183.5	2183.5	2183.5	2183.5
2.5°	2174.4	2180.8	2174.3	2186.5	2187.4	2185.4	2174.3	2180.8	2175.5	2180.8	2174.3
5°	2166.0	2171.5	2165.0	2175.2	2176.1	2175.2	2164.0	2171.5	2166.0	2171.5	2164.0
7.5°	2149.1	2154.7	2146.2	2159.1	2158.2	2158.1	2145.2	2153.6	2149.1	2153.6	2145.2
10°	2128.3	2127.6	2122.5	2133.5	2133.5	2132.5	2121.4	2125.4	2128.3	2125.4	2121.4
12.5°	2097.2	2097.9	2094.3	2102.8	2100.8	2102.8	2094.3	2095.7	2095.1	2095.7	2094.3
15°	2061.0	2058.0	2055.3	2067.2	2066.0	2066.0	2054.2	2055.9	2057.8	2055.9	2054.2
17.5°	2016.0	2015.6	2012.0	2022.8	2023.7	2022.8	2010.9	2014.6	2012.9	2014.6	2010.9
20°	1965.2	1964.9	1964.6	1976.1	1976.8	1975.2	1963.4	1962.8	1962.0	1962.8	1963.4
22.5°	1902.1	1908.9	1910.3	1924.4	1922.5	1923.4	1909.2	1906.8	1900.1	1906.8	1909.2
25°	1832.6	1838.5	1850.2	1866.8	1865.8	1865.8	1848.1	1835.4	1829.4	1835.4	1848.1
27.5°	1759.6	1768.2	1785.8	1806.8	1805.5	1805.7	1783.6	1765.0	1756.5	1765.0	1783.6
30°	1671.4	1682.5	1709.6	1737.4	1736.0	1735.3	1706.5	1679.4	1667.3	1679.4	1706.5
32.5°	1590.1	1598.5	1629.9	1666.2	1664.9	1664.1	1626.7	1594.4	1585.9	1594.4	1626.7
35°	1500.0	1508.4	1540.7	1586.4	1588.4	1583.3	1537.5	1505.3	1496.9	1505.3	1537.5
37.5°	1410.9	1416.0	1448.2	1502.5	1509.7	1499.4	1445.1	1412.9	1407.8	1412.9	1445.1
40°	1329.5	1324.5	1346.5	1409.0	1431.7	1407.0	1342.2	1320.2	1325.2	1320.2	1342.2
42.5°	1248.1	1237.9	1247.9	1311.5	1340.1	1309.5	1244.7	1233.7	1243.9	1233.7	1244.7
45°	1169.1	1147.0	1147.8	1208.1	1241.7	1206.0	1143.6	1143.8	1165.9	1143.8	1143.6
47.5°	1089.3	1068.1	1059.6	1104.3	1141.7	1103.3	1055.4	1064.9	1086.1	1064.9	1055.4
50°	1004.5	991.0	969.0	999.2	1014.3	997.1	964.6	986.7	1001.3	986.7	964.6
52.5°	934.2	917.2	884.7	896.6	888.8	894.5	881.5	912.9	930.9	912.9	881.5
55°	853.3	844.0	807.5	789.6	755.4	787.4	804.4	840.9	851.2	840.9	804.4
57.5°	782.0	774.5	727.8	687.8	643.5	685.7	724.7	771.3	780.0	771.3	724.7
60°	703.0	703.0	647.1	583.2	550.1	582.2	644.9	700.9	702.0	700.9	644.9
62.5°	627.6	625.0	565.6	490.0	475.4	488.9	563.6	622.9	626.5	622.9	563.6
65°	553.6	541.6	484.0	410.2	405.8	409.2	483.0	540.6	553.6	540.6	483.0
67.5°	477.2	462.8	406.0	340.5	348.1	340.5	405.0	461.7	477.2	461.7	405.0
70°	405.0	384.6	337.9	281.1	289.6	281.1	337.9	385.6	406.0	385.6	337.9
72.5°	345.6	312.5	271.8	230.2	242.7	229.2	271.8	313.5	347.7	313.5	271.8
75°	290.5	253.2	210.5	184.2	201.1	184.2	211.6	254.1	293.6	254.1	211.6
77.5°	258.2	211.6	164.7	142.6	161.3	142.6	165.8	208.4	254.0	208.4	165.8
80°	232.9	189.1	134.0	106.1	123.1	106.1	131.9	172.1	212.8	172.1	131.9
82.5°	225.9	184.2	122.0	76.5	85.0	76.5	109.4	146.3	185.9	146.3	109.4
85°	228.2	192.9	128.3	61.9	51.9	59.8	97.7	128.7	159.6	128.7	97.7
87.5°	239.0	213.4	141.9	65.8	17.0	51.1	81.7	112.1	130.4	112.1	81.7
90°	258.1	237.3	167.1	74.4	1.9	34.3	62.7	88.6	99.8	88.6	62.7
92.5°	284.9	268.1	195.1	92.7	17.7	19.9	50.7	72.9	78.2	72.9	50.7
95°	310.8	304.4	227.8	115.6	43.0	10.2	37.9	59.8	60.8	59.8	37.9
97.5°	343.6	338.3	261.5	149.4	75.8	14.3	28.4	48.3	48.3	48.3	28.4
100°	372.9	370.2	297.1	194.8	116.7	36.5	17.5	38.9	40.6	38.9	17.5
102.5°	421.2	406.0	333.5	238.0	160.0	67.0	19.2	26.2	28.7	26.2	19.2
105°	462.4	444.3	384.3	283.4	209.5	108.2	43.7	20.3	18.4	20.3	43.7
107.5°	501.9	489.7	430.8	329.7	262.2	155.7	79.6	42.4	29.3	42.4	79.6
110°	552.9	540.3	476.1	376.1	317.1	206.3	120.7	76.2	59.3	76.2	120.7



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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°	603.6	594.1	518.3	424.6	374.0	261.2	171.3	118.4	102.5	118.4	171.3
115°	642.6	636.5	566.8	470.0	426.7	323.3	227.2	167.1	148.9	167.1	227.2
117.5°	683.7	681.9	602.7	517.2	490.8	380.2	278.9	216.7	197.4	216.7	278.9
120°	735.4	727.0	652.3	563.7	551.0	439.2	335.8	274.4	254.4	274.4	335.8
122.5°	771.3	766.0	694.5	608.0	608.0	499.4	390.7	329.3	308.2	329.3	390.7
125°	804.0	801.8	727.0	652.3	669.1	555.2	452.7	389.4	366.2	389.4	452.7
127.5°	833.5	836.6	768.1	700.8	731.4	612.2	512.8	443.2	418.9	443.2	512.8
130°	858.8	869.4	807.1	745.1	790.5	674.4	566.7	497.0	481.2	497.0	566.7
132.5°	908.4	902.1	847.2	791.4	853.8	732.3	623.6	550.8	532.9	550.8	623.6
135°	933.7	935.8	882.0	830.4	912.8	789.2	677.4	605.7	587.7	605.7	677.4
137.5°	964.3	958.0	909.5	877.8	967.7	844.1	730.1	663.7	635.2	663.7	730.1
140°	986.5	985.3	945.3	920.0	1026.8	897.8	783.9	716.5	690.1	716.5	783.9
142.5°	1009.6	1016.8	981.1	966.4	1085.8	954.7	841.9	768.9	742.8	768.9	841.9
145°	1026.3	1040.0	1017.0	1024.3	1141.7	1018.1	892.6	818.5	791.1	818.5	892.6
147.5°	1052.7	1070.6	1043.3	1065.5	1190.2	1074.0	943.2	870.2	846.0	870.2	943.2
150°	1087.7	1096.1	1080.4	1122.5	1239.8	1136.3	994.8	919.0	894.7	919.0	994.8
152.5°	1116.2	1126.8	1108.7	1184.8	1278.8	1193.1	1051.9	967.5	939.0	967.5	1051.9
155°	1145.8	1149.9	1137.2	1244.9	1320.8	1249.0	1097.3	1021.2	993.9	1021.2	1097.3
157.5°	1173.1	1181.6	1166.7	1290.2	1356.7	1297.6	1148.9	1075.0	1050.8	1075.0	1148.9
160°	1202.6	1202.6	1211.1	1342.9	1386.2	1339.7	1203.7	1134.1	1100.4	1134.1	1203.7
162.5°	1205.9	1225.8	1271.2	1379.9	1414.6	1376.7	1262.8	1176.3	1146.8	1176.3	1262.8
165°	1252.2	1270.2	1338.8	1412.6	1436.8	1409.4	1335.5	1245.9	1211.1	1245.9	1335.5
167.5°	1300.7	1338.8	1393.6	1450.4	1458.7	1440.9	1391.5	1329.3	1297.6	1329.3	1391.5
170°	1379.0	1412.6	1440.0	1463.1	1475.6	1464.3	1426.3	1395.7	1374.8	1395.7	1426.3
172.5°	1440.4	1463.1	1473.7	1489.4	1482.0	1477.7	1457.9	1443.1	1430.9	1443.1	1457.9
175°	1479.4	1485.3	1494.8	1490.4	1496.8	1485.1	1485.3	1492.7	1447.9	1492.7	1485.3
177.5°	1493.1	1502.1	1497.0	1488.2	1489.4	1487.3	1490.7	1494.8	1486.9	1494.8	1490.7
180°	1494.8	1494.8	1494.8	1494.8	1494.8	1494.8	1494.8	1494.8	1494.8	1494.8	1494.8



TEST NUMBER: P392680

CATALOG NUMBER: MWL-4-42-60-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2183.5	2183.5	2183.5	2183.5	2183.5	2183.5
2.5°	2185.4	2187.4	2186.5	2174.3	2180.8	2174.4
5°	2175.2	2176.1	2175.2	2165.0	2171.5	2166.0
7.5°	2158.1	2158.2	2159.1	2146.2	2154.7	2149.1
10°	2132.5	2133.5	2133.5	2122.5	2127.6	2128.3
12.5°	2102.8	2100.8	2102.8	2094.3	2097.9	2097.2
15°	2066.0	2066.0	2067.2	2055.3	2058.0	2061.0
17.5°	2022.8	2023.7	2022.8	2012.0	2015.6	2016.0
20°	1975.2	1976.8	1976.1	1964.6	1964.9	1965.2
22.5°	1923.4	1922.5	1924.4	1910.3	1908.9	1902.1
25°	1865.8	1865.8	1866.8	1850.2	1838.5	1832.6
27.5°	1805.7	1805.5	1806.8	1785.8	1768.2	1759.6
30°	1735.3	1736.0	1737.4	1709.6	1682.5	1671.4
32.5°	1664.1	1664.9	1666.2	1629.9	1598.5	1590.1
35°	1583.3	1588.4	1586.4	1540.7	1508.4	1500.0
37.5°	1499.4	1509.7	1502.5	1448.2	1416.0	1410.9
40°	1407.0	1431.7	1409.0	1346.5	1324.5	1329.5
42.5°	1309.5	1340.1	1311.5	1247.9	1237.9	1248.1
45°	1206.0	1241.7	1208.1	1147.8	1147.0	1169.1
47.5°	1103.3	1141.7	1104.3	1059.6	1068.1	1089.3
50°	997.1	1014.3	999.2	969.0	991.0	1004.5
52.5°	894.5	888.8	896.6	884.7	917.2	934.2
55°	787.4	755.4	789.6	807.5	844.0	853.3
57.5°	685.7	643.5	687.8	727.8	774.5	782.0
60°	582.2	550.1	583.2	647.1	703.0	703.0
62.5°	488.9	475.4	490.0	565.6	625.0	627.6
65°	409.2	405.8	410.2	484.0	541.6	553.6
67.5°	340.5	348.1	340.5	406.0	462.8	477.2
70°	281.1	289.6	281.1	337.9	384.6	405.0
72.5°	229.2	242.7	230.2	271.8	312.5	345.6
75°	184.2	201.1	184.2	210.5	253.2	290.5
77.5°	142.6	161.3	142.6	164.7	211.6	258.2
80°	106.1	123.1	106.1	134.0	189.1	232.9
82.5°	76.5	85.0	76.5	122.0	184.2	225.9
85°	59.8	51.9	61.9	128.3	192.9	228.2
87.5°	51.1	17.0	65.8	141.9	213.4	239.0
90°	34.3	1.9	74.4	167.1	237.3	258.1
92.5°	19.9	17.7	92.7	195.1	268.1	284.9
95°	10.2	43.0	115.6	227.8	304.4	310.8
97.5°	14.3	75.8	149.4	261.5	338.3	343.6
100°	36.5	116.7	194.8	297.1	370.2	372.9
102.5°	67.0	160.0	238.0	333.5	406.0	421.2
105°	108.2	209.5	283.4	384.3	444.3	462.4
107.5°	155.7	262.2	329.7	430.8	489.7	501.9
110°	206.3	317.1	376.1	476.1	540.3	552.9





TEST NUMBER: P392680

CATALOG NUMBER: MWL-4-42-60-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	261.2	374.0	424.6	518.3	594.1	603.6
115°	323.3	426.7	470.0	566.8	636.5	642.6
117.5°	380.2	490.8	517.2	602.7	681.9	683.7
120°	439.2	551.0	563.7	652.3	727.0	735.4
122.5°	499.4	608.0	608.0	694.5	766.0	771.3
125°	555.2	669.1	652.3	727.0	801.8	804.0
127.5°	612.2	731.4	700.8	768.1	836.6	833.5
130°	674.4	790.5	745.1	807.1	869.4	858.8
132.5°	732.3	853.8	791.4	847.2	902.1	908.4
135°	789.2	912.8	830.4	882.0	935.8	933.7
137.5°	844.1	967.7	877.8	909.5	958.0	964.3
140°	897.8	1026.8	920.0	945.3	985.3	986.5
142.5°	954.7	1085.8	966.4	981.1	1016.8	1009.6
145°	1018.1	1141.7	1024.3	1017.0	1040.0	1026.3
147.5°	1074.0	1190.2	1065.5	1043.3	1070.6	1052.7
150°	1136.3	1239.8	1122.5	1080.4	1096.1	1087.7
152.5°	1193.1	1278.8	1184.8	1108.7	1126.8	1116.2
155°	1249.0	1320.8	1244.9	1137.2	1149.9	1145.8
157.5°	1297.6	1356.7	1290.2	1166.7	1181.6	1173.1
160°	1339.7	1386.2	1342.9	1211.1	1202.6	1202.6
162.5°	1376.7	1414.6	1379.9	1271.2	1225.8	1205.9
165°	1409.4	1436.8	1412.6	1338.8	1270.2	1252.2
167.5°	1440.9	1458.7	1450.4	1393.6	1338.8	1300.7
170°	1464.3	1475.6	1463.1	1440.0	1412.6	1379.0
172.5°	1477.7	1482.0	1489.4	1473.7	1463.1	1440.4
175°	1485.1	1496.8	1490.4	1494.8	1485.3	1479.4
177.5°	1487.3	1489.4	1488.2	1497.0	1502.1	1493.1
180°	1494.8	1494.8	1494.8	1494.8	1494.8	1494.8

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