

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: P392679

Luminaire Tested: **MWL-4-42-60-UNV-L930-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392679  
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-L930-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

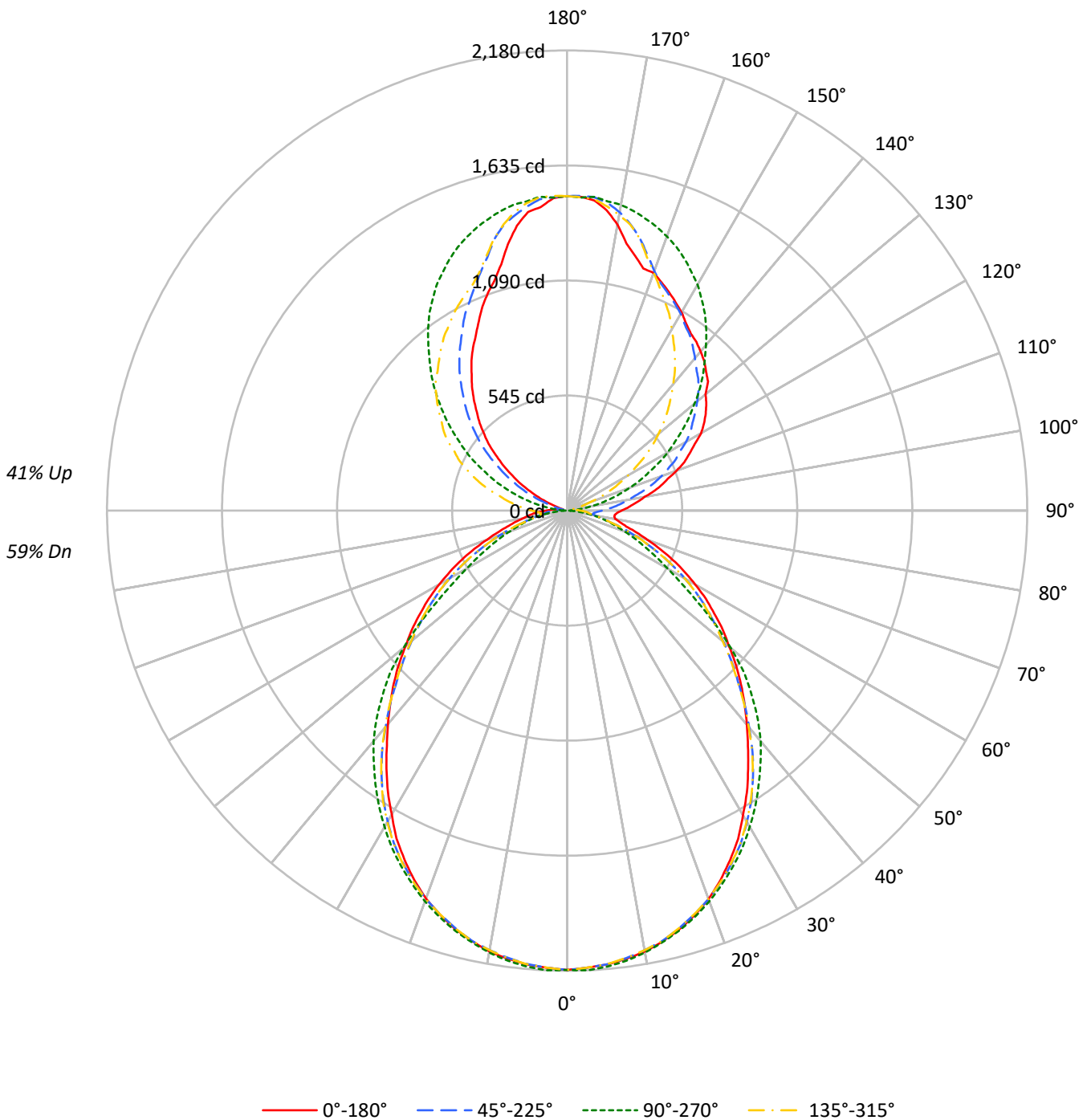
Lumens per Lamp: N/A  
Luminaire Lumens: 8649.2 lumens  
Efficiency: N/A  
Efficacy: 79.3 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: General Diffuse

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-L930-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°	14055	14055	14055	14055
5°	13868	12929	13868	12929
10°	13659	11854	13659	11854
15°	13360	10858	13340	10858
20°	12969	9928	12948	9928
25°	12412	9037	12391	9037
30°	11718	8180	11689	8180
35°	10985	7341	10962	7341
40°	10274	6541	10240	6541
45°	9638	5651	9611	5651
50°	8949	4634	8920	4634
55°	8336	3491	8316	3491
60°	7667	2592	7655	2592
65°	6891	1965	6891	1965
70°	5925	1454	5940	1454
75°	5202	1057	5257	1057
80°	5427	684	4957	684
85°	7689	308	5378	308



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	205.1	2.4
10°-20°	578.5	6.7
20°-30°	848.3	9.8
30°-40°	960.5	11.1
40°-50°	904.9	10.5
50°-60°	723.7	8.4
60°-70°	475.3	5.5
70°-80°	243.3	2.8
80°-90°	129.2	1.5
90°-100°	137.8	1.6
100°-110°	233.8	2.7
110°-120°	396.5	4.6
120°-130°	538.4	6.2
130°-140°	613.9	7.1
140°-150°	612.3	7.1
150°-160°	533.0	6.2
160°-170°	374.9	4.3
170°-180°	139.6	1.6
0°-30°	1632.0	18.9
0°-40°	2592.5	30.0
0°-60°	4221.1	48.8
0°-90°	5068.9	58.6
90°-120°	768.1	8.9
90°-150°	2532.7	29.3
90°-180°	3580.0	41.4
0°-180°	8649.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2176	2176	2176	2176	2176	
5°	2159	2169	2159	2169	2159	205
15°	2054	2059	2051	2059	2054	578
25°	1826	1860	1823	1860	1826	839
35°	1495	1583	1492	1583	1495	935
45°	1165	1238	1162	1238	1165	898
55°	850	753	848	753	850	763
65°	552	404	552	404	552	545
75°	290	200	293	200	290	319
85°	227	52	159	52	227	187
90°	257	2	100	2	257	142
95°	310	43	61	43	310	267
105°	461	209	18	209	461	487
115°	640	425	148	425	640	636
125°	801	667	365	667	801	716
135°	931	910	586	910	931	718
145°	1023	1138	788	1138	1023	645
155°	1142	1316	991	1316	1142	527
165°	1248	1432	1207	1432	1248	354
175°	1474	1492	1443	1492	1474	137
180°	1490	1490	1490	1490	1490	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2176.2	2176.2	2176.2	2176.2	2176.2	2176.2	2176.2	2176.2	2176.2	2176.2	2176.2
2.5°	2167.2	2173.5	2167.1	2179.1	2180.0	2178.1	2167.1	2173.5	2168.1	2173.5	2167.1
5°	2158.7	2164.2	2157.8	2168.0	2168.8	2168.0	2156.8	2164.2	2158.7	2164.2	2156.8
7.5°	2142.0	2147.5	2139.0	2151.9	2151.1	2150.9	2138.0	2146.5	2142.0	2146.5	2138.0
10°	2121.1	2120.4	2115.3	2126.3	2126.3	2125.4	2114.3	2118.3	2121.1	2118.3	2114.3
12.5°	2090.1	2090.8	2087.3	2095.8	2093.8	2095.8	2087.3	2088.7	2088.1	2088.7	2087.3
15°	2054.0	2051.1	2048.4	2060.3	2059.1	2059.1	2047.3	2049.0	2050.9	2049.0	2047.3
17.5°	2009.3	2008.9	2005.3	2016.1	2016.9	2016.1	2004.2	2007.8	2006.1	2007.8	2004.2
20°	1958.6	1958.3	1958.0	1969.6	1970.2	1968.5	1956.9	1956.3	1955.4	1956.3	1956.9
22.5°	1895.8	1902.5	1903.9	1918.0	1916.1	1916.9	1902.8	1900.5	1893.7	1900.5	1902.8
25°	1826.4	1832.4	1844.0	1860.5	1859.5	1859.5	1841.9	1829.2	1823.3	1829.2	1841.9
27.5°	1753.8	1762.2	1779.8	1800.8	1799.5	1799.7	1777.6	1759.1	1750.6	1759.1	1777.6
30°	1665.8	1676.8	1703.9	1731.6	1730.2	1729.5	1700.8	1673.7	1661.7	1673.7	1700.8
32.5°	1584.7	1593.2	1624.4	1660.6	1659.4	1658.5	1621.4	1589.0	1580.6	1589.0	1621.4
35°	1494.9	1503.4	1535.5	1581.2	1583.1	1578.0	1532.4	1500.3	1491.8	1500.3	1532.4
37.5°	1406.2	1411.3	1443.4	1497.5	1504.7	1494.4	1440.2	1408.2	1403.1	1408.2	1440.2
40°	1325.1	1320.0	1342.0	1404.3	1426.9	1402.2	1337.7	1315.7	1320.8	1315.7	1337.7
42.5°	1243.9	1233.8	1243.8	1307.1	1335.6	1305.0	1240.5	1229.5	1239.7	1229.5	1240.5
45°	1165.2	1143.2	1144.0	1204.0	1237.5	1201.9	1139.8	1140.0	1161.9	1140.0	1139.8
47.5°	1085.7	1064.5	1056.1	1100.6	1137.9	1099.7	1051.8	1061.4	1082.5	1061.4	1051.8
50°	1001.2	987.7	965.6	995.8	1010.9	993.7	961.4	983.4	998.0	983.4	961.4
52.5°	931.0	914.1	881.7	893.5	885.8	891.4	878.7	909.9	927.8	909.9	878.7
55°	850.5	841.1	804.9	786.9	752.8	784.8	801.7	838.1	848.4	838.1	801.7
57.5°	779.5	771.8	725.4	685.5	641.3	683.4	722.3	768.8	777.4	768.8	722.3
60°	700.7	700.7	644.9	581.3	548.3	580.2	642.8	698.6	699.6	698.6	642.8
62.5°	625.5	623.0	563.8	488.3	473.7	487.3	561.7	620.8	624.4	620.8	561.7
65°	551.7	539.8	482.3	408.8	404.4	407.8	481.4	538.9	551.7	538.9	481.4
67.5°	475.6	461.2	404.6	339.3	347.0	339.3	403.6	460.2	475.6	460.2	403.6
70°	403.6	383.3	336.8	280.2	288.6	280.2	336.8	384.3	404.6	384.3	336.8
72.5°	344.5	311.4	270.9	229.5	241.9	228.4	270.9	312.5	346.6	312.5	270.9
75°	289.5	252.3	209.8	183.6	200.5	183.6	210.9	253.3	292.6	253.3	210.9
77.5°	257.3	210.9	164.1	142.2	160.8	142.2	165.3	207.7	253.1	207.7	165.3
80°	232.1	188.4	133.6	105.8	122.7	105.8	131.5	171.6	212.0	171.6	131.5
82.5°	225.1	183.6	121.6	76.3	84.7	76.3	109.0	145.8	185.3	145.8	109.0
85°	227.3	192.3	127.8	61.7	51.7	59.6	97.4	128.2	159.0	128.2	97.4
87.5°	238.2	212.6	141.4	65.6	16.9	50.9	81.4	111.7	129.9	111.7	81.4
90°	257.2	236.5	166.6	74.1	1.8	34.3	62.5	88.3	99.5	88.3	62.5
92.5°	284.0	267.1	194.5	92.4	17.7	19.9	50.5	72.7	77.9	72.7	50.5
95°	309.8	303.4	227.0	115.2	42.9	10.1	37.8	59.6	60.6	59.6	37.8
97.5°	342.5	337.2	260.5	148.8	75.5	14.3	28.4	48.2	48.2	48.2	28.4
100°	371.7	368.9	296.1	194.1	116.3	36.4	17.5	38.8	40.5	38.8	17.5
102.5°	419.7	404.6	332.4	237.2	159.4	66.8	19.2	26.2	28.6	26.2	19.2
105°	460.9	442.8	383.0	282.4	208.8	107.9	43.5	20.2	18.3	20.2	43.5
107.5°	500.2	488.1	429.4	328.6	261.3	155.1	79.2	42.3	29.2	42.3	79.2
110°	551.1	538.5	474.5	374.8	316.0	205.7	120.3	75.9	59.1	75.9	120.3



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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°	601.6	592.0	516.6	423.2	372.7	260.4	170.7	118.0	102.2	118.0	170.7
115°	640.4	634.3	564.9	468.4	425.3	322.3	226.5	166.5	148.5	166.5	226.5
117.5°	681.4	679.6	600.7	515.5	489.2	378.9	278.0	216.0	196.8	216.0	278.0
120°	733.0	724.6	650.1	561.8	549.2	437.8	334.7	273.5	253.6	273.5	334.7
122.5°	768.7	763.4	692.2	606.0	606.0	497.7	389.4	328.2	307.1	328.2	389.4
125°	801.3	799.1	724.6	650.1	666.9	553.4	451.2	388.1	365.0	388.1	451.2
127.5°	830.7	833.8	765.5	698.5	729.0	610.2	511.1	441.7	417.5	441.7	511.1
130°	855.9	866.4	804.4	742.6	787.9	672.2	564.8	495.4	479.6	495.4	564.8
132.5°	905.3	899.1	844.4	788.7	850.9	729.8	621.5	549.0	531.1	549.0	621.5
135°	930.6	932.7	879.0	827.6	909.7	786.6	675.1	603.7	585.7	603.7	675.1
137.5°	961.1	954.7	906.4	874.9	964.4	841.2	727.6	661.4	633.1	661.4	727.6
140°	983.2	982.1	942.1	916.9	1023.3	894.9	781.4	714.1	687.8	714.1	781.4
142.5°	1006.2	1013.5	977.9	963.2	1082.1	951.6	839.1	766.4	740.3	766.4	839.1
145°	1022.9	1036.5	1013.6	1020.9	1137.9	1014.7	889.6	815.8	788.4	815.8	889.6
147.5°	1049.2	1067.0	1039.9	1062.0	1186.2	1070.4	940.0	867.3	843.1	867.3	940.0
150°	1084.1	1092.4	1076.8	1118.8	1235.6	1132.4	991.5	915.9	891.7	915.9	991.5
152.5°	1112.4	1123.0	1105.0	1180.8	1274.5	1189.1	1048.3	964.2	935.8	964.2	1048.3
155°	1141.9	1146.1	1133.5	1240.7	1316.3	1244.9	1093.6	1017.9	990.6	1017.9	1093.6
157.5°	1169.2	1177.7	1162.9	1286.0	1352.1	1293.3	1145.0	1071.4	1047.3	1071.4	1145.0
160°	1198.6	1198.6	1207.1	1338.4	1381.5	1335.3	1199.7	1130.3	1096.7	1130.3	1199.7
162.5°	1201.8	1221.8	1267.0	1375.3	1409.9	1372.1	1258.6	1172.3	1142.9	1172.3	1258.6
165°	1248.0	1265.9	1334.3	1407.8	1432.0	1404.7	1331.1	1241.7	1207.1	1241.7	1331.1
167.5°	1296.4	1334.3	1388.9	1445.5	1453.9	1436.0	1386.9	1324.8	1293.3	1324.8	1386.9
170°	1374.5	1407.8	1435.2	1458.3	1470.7	1459.3	1421.5	1391.0	1370.2	1391.0	1421.5
172.5°	1435.7	1458.3	1468.9	1484.3	1477.0	1472.8	1453.0	1438.3	1426.1	1438.3	1453.0
175°	1474.5	1480.3	1489.8	1485.4	1491.7	1480.1	1480.3	1487.8	1443.0	1487.8	1480.3
177.5°	1488.1	1497.1	1491.9	1483.3	1484.3	1482.2	1485.7	1489.8	1481.9	1489.8	1485.7
180°	1489.8	1489.8	1489.8	1489.8	1489.8	1489.8	1489.8	1489.8	1489.8	1489.8	1489.8



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2176.2	2176.2	2176.2	2176.2	2176.2	2176.2
2.5°	2178.1	2180.0	2179.1	2167.1	2173.5	2167.2
5°	2168.0	2168.8	2168.0	2157.8	2164.2	2158.7
7.5°	2150.9	2151.1	2151.9	2139.0	2147.5	2142.0
10°	2125.4	2126.3	2126.3	2115.3	2120.4	2121.1
12.5°	2095.8	2093.8	2095.8	2087.3	2090.8	2090.1
15°	2059.1	2059.1	2060.3	2048.4	2051.1	2054.0
17.5°	2016.1	2016.9	2016.1	2005.3	2008.9	2009.3
20°	1968.5	1970.2	1969.6	1958.0	1958.3	1958.6
22.5°	1916.9	1916.1	1918.0	1903.9	1902.5	1895.8
25°	1859.5	1859.5	1860.5	1844.0	1832.4	1826.4
27.5°	1799.7	1799.5	1800.8	1779.8	1762.2	1753.8
30°	1729.5	1730.2	1731.6	1703.9	1676.8	1665.8
32.5°	1658.5	1659.4	1660.6	1624.4	1593.2	1584.7
35°	1578.0	1583.1	1581.2	1535.5	1503.4	1494.9
37.5°	1494.4	1504.7	1497.5	1443.4	1411.3	1406.2
40°	1402.2	1426.9	1404.3	1342.0	1320.0	1325.1
42.5°	1305.0	1335.6	1307.1	1243.8	1233.8	1243.9
45°	1201.9	1237.5	1204.0	1144.0	1143.2	1165.2
47.5°	1099.7	1137.9	1100.6	1056.1	1064.5	1085.7
50°	993.7	1010.9	995.8	965.6	987.7	1001.2
52.5°	891.4	885.8	893.5	881.7	914.1	931.0
55°	784.8	752.8	786.9	804.9	841.1	850.5
57.5°	683.4	641.3	685.5	725.4	771.8	779.5
60°	580.2	548.3	581.3	644.9	700.7	700.7
62.5°	487.3	473.7	488.3	563.8	623.0	625.5
65°	407.8	404.4	408.8	482.3	539.8	551.7
67.5°	339.3	347.0	339.3	404.6	461.2	475.6
70°	280.2	288.6	280.2	336.8	383.3	403.6
72.5°	228.4	241.9	229.5	270.9	311.4	344.5
75°	183.6	200.5	183.6	209.8	252.3	289.5
77.5°	142.2	160.8	142.2	164.1	210.9	257.3
80°	105.8	122.7	105.8	133.6	188.4	232.1
82.5°	76.3	84.7	76.3	121.6	183.6	225.1
85°	59.6	51.7	61.7	127.8	192.3	227.3
87.5°	50.9	16.9	65.6	141.4	212.6	238.2
90°	34.3	1.8	74.1	166.6	236.5	257.2
92.5°	19.9	17.7	92.4	194.5	267.1	284.0
95°	10.1	42.9	115.2	227.0	303.4	309.8
97.5°	14.3	75.5	148.8	260.5	337.2	342.5
100°	36.4	116.3	194.1	296.1	368.9	371.7
102.5°	66.8	159.4	237.2	332.4	404.6	419.7
105°	107.9	208.8	282.4	383.0	442.8	460.9
107.5°	155.1	261.3	328.6	429.4	488.1	500.2
110°	205.7	316.0	374.8	474.5	538.5	551.1





TEST NUMBER: P392679

CATALOG NUMBER: MWL-4-42-60-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	260.4	372.7	423.2	516.6	592.0	601.6
115°	322.3	425.3	468.4	564.9	634.3	640.4
117.5°	378.9	489.2	515.5	600.7	679.6	681.4
120°	437.8	549.2	561.8	650.1	724.6	733.0
122.5°	497.7	606.0	606.0	692.2	763.4	768.7
125°	553.4	666.9	650.1	724.6	799.1	801.3
127.5°	610.2	729.0	698.5	765.5	833.8	830.7
130°	672.2	787.9	742.6	804.4	866.4	855.9
132.5°	729.8	850.9	788.7	844.4	899.1	905.3
135°	786.6	909.7	827.6	879.0	932.7	930.6
137.5°	841.2	964.4	874.9	906.4	954.7	961.1
140°	894.9	1023.3	916.9	942.1	982.1	983.2
142.5°	951.6	1082.1	963.2	977.9	1013.5	1006.2
145°	1014.7	1137.9	1020.9	1013.6	1036.5	1022.9
147.5°	1070.4	1186.2	1062.0	1039.9	1067.0	1049.2
150°	1132.4	1235.6	1118.8	1076.8	1092.4	1084.1
152.5°	1189.1	1274.5	1180.8	1105.0	1123.0	1112.4
155°	1244.9	1316.3	1240.7	1133.5	1146.1	1141.9
157.5°	1293.3	1352.1	1286.0	1162.9	1177.7	1169.2
160°	1335.3	1381.5	1338.4	1207.1	1198.6	1198.6
162.5°	1372.1	1409.9	1375.3	1267.0	1221.8	1201.8
165°	1404.7	1432.0	1407.8	1334.3	1265.9	1248.0
167.5°	1436.0	1453.9	1445.5	1388.9	1334.3	1296.4
170°	1459.3	1470.7	1458.3	1435.2	1407.8	1374.5
172.5°	1472.8	1477.0	1484.3	1468.9	1458.3	1435.7
175°	1480.1	1491.7	1485.4	1489.8	1480.3	1474.5
177.5°	1482.2	1484.3	1483.3	1491.9	1497.1	1488.1
180°	1489.8	1489.8	1489.8	1489.8	1489.8	1489.8

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