

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: P392692

Luminaire Tested: **MWL-4-55-45-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392692  
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-4-55-45-UNV-L935-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8471.1 lumens  
Efficiency: N/A  
Efficacy: 76.2 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

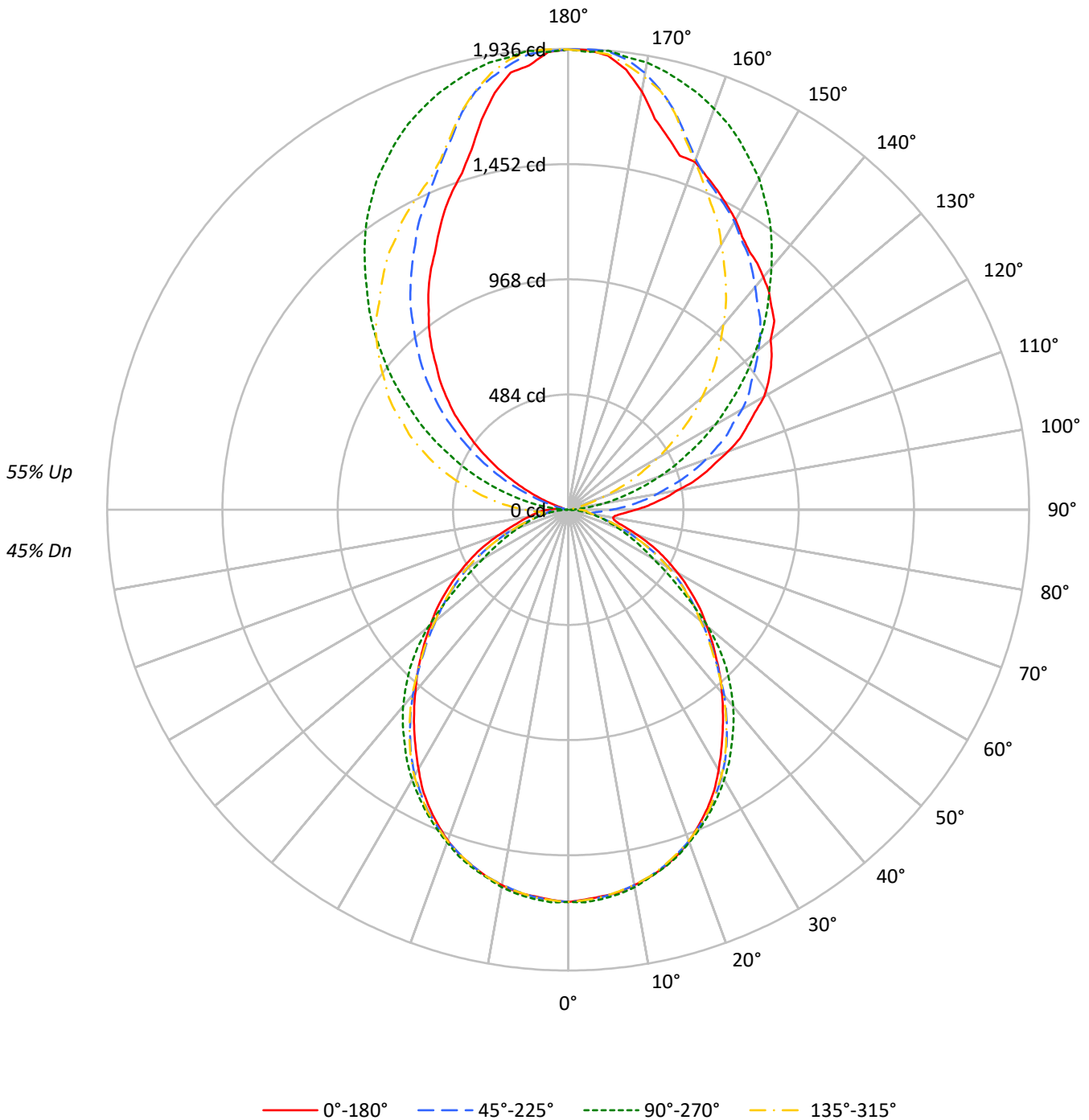
Input Watts (W): 111.201  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: MWL-4-55-45-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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45				
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44	38				
2	88	81	75	70	81	75	69	65	62	59	55	51	49	46	41	39	37	33				
3	81	72	64	59	74	66	60	55	55	51	47	46	42	39	36	34	32	28				
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	33	30	28	24				
5	68	57	49	43	62	52	45	40	44	39	35	37	33	30	30	27	25	21				
6	63	51	43	37	57	47	40	35	40	35	31	33	29	26	27	24	22	19				
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	25	22	19	17				
8	54	42	34	29	49	39	32	27	33	28	24	28	24	21	23	20	17	15				
9	50	38	31	26	46	36	29	24	30	25	22	26	22	19	21	18	16	14				
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	14	12				

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

	0°	90°	180°	270°
0°	10644	10644	10644	10644
5°	10474	9788	10474	9788
10°	10314	8980	10314	8980
15°	10109	8211	10082	8211
20°	9819	7497	9792	7497
25°	9405	6831	9378	6831
30°	8882	6192	8844	6192
35°	8315	5554	8284	5554
40°	7786	4945	7744	4945
45°	7265	4288	7231	4288
50°	6781	3524	6744	3524
55°	6326	2634	6300	2634
60°	5803	1952	5789	1952
65°	5253	1485	5253	1485
70°	4510	1112	4529	1112
75°	3904	803	3978	803
80°	4470	513	3862	513
85°	7374	241	4374	241



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	155.3	1.8
10°-20°	437.7	5.2
20°-30°	641.8	7.6
30°-40°	726.7	8.6
40°-50°	684.7	8.1
50°-60°	547.0	6.5
60°-70°	359.8	4.2
70°-80°	185.1	2.2
80°-90°	112.8	1.3
90°-100°	159.4	1.9
100°-110°	300.1	3.5
110°-120°	513.7	6.1
120°-130°	697.9	8.2
130°-140°	796.0	9.4
140°-150°	794.0	9.4
150°-160°	691.5	8.2
160°-170°	486.4	5.7
170°-180°	181.2	2.1
0°-30°	1234.7	14.6
0°-40°	1961.5	23.2
0°-60°	3193.2	37.7
0°-90°	3850.9	45.5
90°-120°	973.2	11.5
90°-150°	3261.1	38.5
90°-180°	4620.0	54.5
0°-180°	8471.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1648	1648	1648	1648	1648	
5°	1630	1642	1630	1642	1630	155
15°	1554	1557	1550	1557	1554	438
25°	1384	1406	1380	1406	1384	636
35°	1132	1198	1127	1198	1132	708
45°	878	939	874	939	878	679
55°	645	568	643	568	645	578
65°	420	306	420	306	420	415
75°	217	152	221	152	217	243
85°	218	40	129	40	218	173
90°	284	2	79	2	284	157
95°	370	56	46	56	370	323
105°	593	270	18	270	593	624
115°	830	552	191	552	830	824
125°	1039	865	472	865	1039	928
135°	1207	1180	759	1180	1207	932
145°	1326	1477	1021	1477	1326	836
155°	1481	1708	1285	1708	1481	683
165°	1619	1858	1566	1858	1619	459
175°	1915	1936	1874	1936	1915	178
180°	1933	1933	1933	1933	1933	



TEST NUMBER: P392692

CATALOG NUMBER: MWL-4-55-45-UNV-L935-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1648.1	1648.1	1648.1	1648.1	1648.1	1648.1	1648.1	1648.1	1648.1	1648.1	1648.1
2.5°	1638.8	1644.9	1641.8	1651.6	1650.7	1650.2	1641.8	1644.9	1640.2	1644.9	1641.8
5°	1630.3	1636.5	1634.1	1640.9	1641.8	1640.9	1632.8	1636.5	1630.3	1636.5	1632.8
7.5°	1621.6	1623.5	1619.2	1629.1	1629.1	1627.7	1617.9	1622.1	1621.6	1622.1	1617.9
10°	1601.7	1605.6	1601.4	1610.7	1610.7	1609.3	1600.0	1602.9	1601.7	1602.9	1600.0
12.5°	1581.5	1581.9	1578.8	1586.4	1582.6	1586.4	1578.8	1579.2	1578.8	1579.2	1578.8
15°	1554.1	1552.2	1550.8	1559.3	1557.1	1558.0	1549.5	1549.5	1550.0	1549.5	1549.5
17.5°	1522.7	1520.8	1517.8	1525.7	1526.6	1525.7	1516.4	1519.5	1518.6	1519.5	1516.4
20°	1482.8	1481.4	1482.1	1488.4	1487.8	1486.9	1480.8	1478.8	1478.8	1478.8	1480.8
22.5°	1434.0	1439.1	1439.7	1449.4	1447.9	1447.9	1438.4	1436.4	1431.3	1436.4	1438.4
25°	1383.9	1389.9	1398.7	1406.2	1405.6	1404.7	1396.0	1385.8	1379.9	1385.8	1396.0
27.5°	1328.8	1335.6	1344.4	1361.7	1358.9	1360.4	1341.7	1331.5	1324.7	1331.5	1341.7
30°	1262.7	1272.9	1292.4	1310.5	1309.7	1307.8	1288.3	1268.8	1257.2	1268.8	1288.3
32.5°	1196.5	1206.7	1230.4	1254.5	1257.8	1251.8	1226.4	1201.2	1191.0	1201.2	1226.4
35°	1131.5	1138.3	1162.1	1196.8	1197.8	1192.7	1157.9	1134.2	1127.4	1134.2	1157.9
37.5°	1067.1	1068.8	1091.7	1133.2	1139.9	1129.1	1087.5	1064.6	1062.9	1064.6	1087.5
40°	1004.3	1000.1	1019.6	1061.5	1078.8	1058.7	1014.1	994.6	998.8	994.6	1014.1
42.5°	943.3	934.0	940.2	991.1	1009.2	988.3	936.1	928.5	937.8	928.5	936.1
45°	878.3	867.3	867.3	913.1	938.9	910.3	861.8	863.2	874.2	863.2	861.8
47.5°	819.0	805.4	799.5	837.1	858.3	835.6	794.0	801.2	814.8	801.2	794.0
50°	758.7	747.7	730.8	753.1	768.7	750.4	725.3	742.2	754.6	742.2	725.3
52.5°	707.1	691.8	668.3	676.0	665.2	673.1	664.2	686.3	702.8	686.3	664.2
55°	645.4	637.0	608.2	599.0	568.0	596.4	603.9	632.9	642.7	632.9	603.9
57.5°	589.4	584.4	547.9	515.9	486.6	513.3	543.8	580.2	586.7	580.2	543.8
60°	530.3	527.8	488.8	440.9	412.8	439.5	486.1	525.1	529.0	525.1	486.1
62.5°	473.6	470.2	426.9	369.6	357.2	368.2	424.2	467.4	472.2	467.4	424.2
65°	420.5	411.2	366.2	308.5	305.5	307.2	364.8	409.8	420.5	409.8	364.8
67.5°	363.6	349.2	306.8	257.1	261.4	257.1	305.5	347.8	363.6	347.8	305.5
70°	307.2	288.5	254.6	213.9	220.6	213.9	254.6	289.8	308.5	289.8	254.6
72.5°	257.1	235.9	205.4	174.9	184.6	173.5	205.4	237.3	259.8	237.3	205.4
75°	217.3	192.7	160.8	138.8	152.3	138.8	162.1	194.1	221.4	194.1	162.1
77.5°	197.7	161.7	123.5	107.3	122.6	107.3	124.9	157.6	192.3	157.6	124.9
80°	191.2	154.5	102.1	80.2	92.1	80.2	99.4	132.6	165.2	132.6	99.4
82.5°	197.7	160.8	100.8	57.3	65.0	57.3	84.3	111.7	145.7	111.7	84.3
85°	218.0	186.5	118.0	48.7	40.4	46.0	78.4	103.2	129.3	103.2	78.4
87.5°	247.7	221.8	145.0	59.9	13.5	40.8	67.0	90.7	107.0	90.7	67.0
90°	283.9	262.7	184.7	78.4	2.2	26.5	49.5	70.2	79.1	70.2	49.5
92.5°	328.7	309.8	226.8	111.3	22.7	17.2	39.7	57.1	61.2	57.1	39.7
95°	370.1	362.8	276.1	147.0	55.5	10.5	30.4	46.0	46.5	46.0	30.4
97.5°	420.1	414.0	326.1	192.0	97.8	17.3	24.3	38.5	37.6	38.5	24.3
100°	464.8	462.5	379.0	250.7	149.7	45.9	17.3	33.8	34.7	33.8	17.3
102.5°	534.9	516.0	430.0	306.8	205.6	85.5	23.0	24.5	27.1	24.5	23.0
105°	592.9	571.2	496.0	365.4	269.8	138.8	55.0	22.3	18.0	22.3	55.0
107.5°	646.6	632.1	556.1	426.4	338.1	201.1	101.3	53.1	34.8	53.1	101.3
110°	714.0	697.5	614.7	486.4	410.0	266.6	154.6	96.7	74.9	96.7	154.6



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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°	779.5	767.2	669.4	549.2	483.7	337.7	220.1	151.4	130.8	151.4	220.1
115°	830.0	823.2	732.2	608.0	552.0	418.2	292.5	215.6	191.0	215.6	292.5
117.5°	883.3	881.9	778.6	668.0	633.9	490.5	359.4	279.7	253.9	279.7	359.4
120°	950.1	939.2	843.7	728.1	711.7	567.0	434.0	353.4	327.6	353.4	434.0
122.5°	996.6	989.7	898.3	785.5	785.5	644.8	505.1	424.5	397.1	424.5	505.1
125°	1038.9	1036.2	939.2	842.8	864.7	717.2	584.2	502.3	472.3	502.3	584.2
127.5°	1077.1	1081.3	992.5	906.5	945.2	791.7	662.1	571.9	540.5	571.9	662.1
130°	1109.9	1123.6	1043.0	963.8	1021.7	872.3	731.7	641.6	621.1	641.6	731.7
132.5°	1174.1	1165.9	1094.9	1022.5	1103.6	946.1	805.4	711.2	688.0	711.2	805.4
135°	1206.9	1209.6	1140.0	1073.0	1180.1	1019.8	875.0	782.2	759.0	782.2	875.0
137.5°	1246.5	1238.3	1175.5	1134.5	1251.0	1090.8	943.4	857.3	820.4	857.3	943.4
140°	1275.1	1273.8	1221.9	1189.2	1327.6	1160.5	1013.0	925.5	891.5	925.5	1013.0
142.5°	1305.1	1313.4	1268.4	1249.2	1404.0	1234.2	1088.0	992.5	959.7	992.5	1088.0
145°	1325.7	1343.4	1314.7	1324.3	1477.2	1316.1	1153.6	1056.7	1021.2	1056.7	1153.6
147.5°	1359.8	1383.0	1348.9	1377.6	1539.2	1388.4	1219.2	1123.6	1092.2	1123.6	1219.2
150°	1406.3	1417.1	1396.7	1451.3	1604.2	1469.0	1286.1	1187.8	1156.3	1187.8	1286.1
152.5°	1443.0	1456.7	1433.5	1531.8	1654.7	1542.8	1359.8	1250.5	1213.8	1250.5	1359.8
155°	1481.3	1486.8	1470.4	1609.7	1707.9	1615.1	1418.5	1320.2	1284.7	1320.2	1418.5
157.5°	1516.8	1527.8	1508.6	1668.4	1754.4	1678.0	1485.5	1389.9	1358.4	1389.9	1485.5
160°	1555.1	1555.1	1566.0	1736.7	1792.6	1732.6	1556.4	1466.3	1422.6	1466.3	1556.4
162.5°	1559.2	1585.1	1643.8	1784.5	1829.5	1780.3	1632.9	1520.9	1482.6	1520.9	1632.9
165°	1619.2	1642.4	1731.2	1826.8	1858.2	1822.7	1727.1	1611.0	1566.0	1611.0	1727.1
167.5°	1682.1	1731.2	1802.2	1874.6	1885.4	1862.2	1799.5	1718.9	1678.0	1718.9	1799.5
170°	1783.6	1826.8	1862.2	1892.3	1907.4	1893.7	1844.5	1804.9	1778.1	1804.9	1844.5
172.5°	1864.2	1892.3	1906.0	1925.0	1916.3	1910.0	1885.4	1866.4	1851.9	1866.4	1885.4
175°	1914.7	1921.0	1933.3	1926.4	1935.5	1919.7	1921.0	1930.5	1873.7	1930.5	1921.0
177.5°	1932.5	1942.8	1936.0	1923.7	1925.0	1922.4	1927.8	1933.3	1924.3	1933.3	1927.8
180°	1933.3	1933.3	1933.3	1933.3	1933.3	1933.3	1933.3	1933.3	1933.3	1933.3	1933.3



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CATALOG NUMBER: MWL-4-55-45-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1648.1	1648.1	1648.1	1648.1	1648.1	1648.1
2.5°	1650.2	1650.7	1651.6	1641.8	1644.9	1638.8
5°	1640.9	1641.8	1640.9	1634.1	1636.5	1630.3
7.5°	1627.7	1629.1	1629.1	1619.2	1623.5	1621.6
10°	1609.3	1610.7	1610.7	1601.4	1605.6	1601.7
12.5°	1586.4	1582.6	1586.4	1578.8	1581.9	1581.5
15°	1558.0	1557.1	1559.3	1550.8	1552.2	1554.1
17.5°	1525.7	1526.6	1525.7	1517.8	1520.8	1522.7
20°	1486.9	1487.8	1488.4	1482.1	1481.4	1482.8
22.5°	1447.9	1447.9	1449.4	1439.7	1439.1	1434.0
25°	1404.7	1405.6	1406.2	1398.7	1389.9	1383.9
27.5°	1360.4	1358.9	1361.7	1344.4	1335.6	1328.8
30°	1307.8	1309.7	1310.5	1292.4	1272.9	1262.7
32.5°	1251.8	1257.8	1254.5	1230.4	1206.7	1196.5
35°	1192.7	1197.8	1196.8	1162.1	1138.3	1131.5
37.5°	1129.1	1139.9	1133.2	1091.7	1068.8	1067.1
40°	1058.7	1078.8	1061.5	1019.6	1000.1	1004.3
42.5°	988.3	1009.2	991.1	940.2	934.0	943.3
45°	910.3	938.9	913.1	867.3	867.3	878.3
47.5°	835.6	858.3	837.1	799.5	805.4	819.0
50°	750.4	768.7	753.1	730.8	747.7	758.7
52.5°	673.1	665.2	676.0	668.3	691.8	707.1
55°	596.4	568.0	599.0	608.2	637.0	645.4
57.5°	513.3	486.6	515.9	547.9	584.4	589.4
60°	439.5	412.8	440.9	488.8	527.8	530.3
62.5°	368.2	357.2	369.6	426.9	470.2	473.6
65°	307.2	305.5	308.5	366.2	411.2	420.5
67.5°	257.1	261.4	257.1	306.8	349.2	363.6
70°	213.9	220.6	213.9	254.6	288.5	307.2
72.5°	173.5	184.6	174.9	205.4	235.9	257.1
75°	138.8	152.3	138.8	160.8	192.7	217.3
77.5°	107.3	122.6	107.3	123.5	161.7	197.7
80°	80.2	92.1	80.2	102.1	154.5	191.2
82.5°	57.3	65.0	57.3	100.8	160.8	197.7
85°	46.0	40.4	48.7	118.0	186.5	218.0
87.5°	40.8	13.5	59.9	145.0	221.8	247.7
90°	26.5	2.2	78.4	184.7	262.7	283.9
92.5°	17.2	22.7	111.3	226.8	309.8	328.7
95°	10.5	55.5	147.0	276.1	362.8	370.1
97.5°	17.3	97.8	192.0	326.1	414.0	420.1
100°	45.9	149.7	250.7	379.0	462.5	464.8
102.5°	85.5	205.6	306.8	430.0	516.0	534.9
105°	138.8	269.8	365.4	496.0	571.2	592.9
107.5°	201.1	338.1	426.4	556.1	632.1	646.6
110°	266.6	410.0	486.4	614.7	697.5	714.0





TEST NUMBER: P392692

CATALOG NUMBER: MWL-4-55-45-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	337.7	483.7	549.2	669.4	767.2	779.5
115°	418.2	552.0	608.0	732.2	823.2	830.0
117.5°	490.5	633.9	668.0	778.6	881.9	883.3
120°	567.0	711.7	728.1	843.7	939.2	950.1
122.5°	644.8	785.5	785.5	898.3	989.7	996.6
125°	717.2	864.7	842.8	939.2	1036.2	1038.9
127.5°	791.7	945.2	906.5	992.5	1081.3	1077.1
130°	872.3	1021.7	963.8	1043.0	1123.6	1109.9
132.5°	946.1	1103.6	1022.5	1094.9	1165.9	1174.1
135°	1019.8	1180.1	1073.0	1140.0	1209.6	1206.9
137.5°	1090.8	1251.0	1134.5	1175.5	1238.3	1246.5
140°	1160.5	1327.6	1189.2	1221.9	1273.8	1275.1
142.5°	1234.2	1404.0	1249.2	1268.4	1313.4	1305.1
145°	1316.1	1477.2	1324.3	1314.7	1343.4	1325.7
147.5°	1388.4	1539.2	1377.6	1348.9	1383.0	1359.8
150°	1469.0	1604.2	1451.3	1396.7	1417.1	1406.3
152.5°	1542.8	1654.7	1531.8	1433.5	1456.7	1443.0
155°	1615.1	1707.9	1609.7	1470.4	1486.8	1481.3
157.5°	1678.0	1754.4	1668.4	1508.6	1527.8	1516.8
160°	1732.6	1792.6	1736.7	1566.0	1555.1	1555.1
162.5°	1780.3	1829.5	1784.5	1643.8	1585.1	1559.2
165°	1822.7	1858.2	1826.8	1731.2	1642.4	1619.2
167.5°	1862.2	1885.4	1874.6	1802.2	1731.2	1682.1
170°	1893.7	1907.4	1892.3	1862.2	1826.8	1783.6
172.5°	1910.0	1916.3	1925.0	1906.0	1892.3	1864.2
175°	1919.7	1935.5	1926.4	1933.3	1921.0	1914.7
177.5°	1922.4	1925.0	1923.7	1936.0	1942.8	1932.5
180°	1933.3	1933.3	1933.3	1933.3	1933.3	1933.3

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