

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: P392694

Luminaire Tested: **MWL-4-55-60-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392694
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-4-55-60-UNV-L930-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9702.2 lumens
Efficiency: N/A
Efficacy: 74.4 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

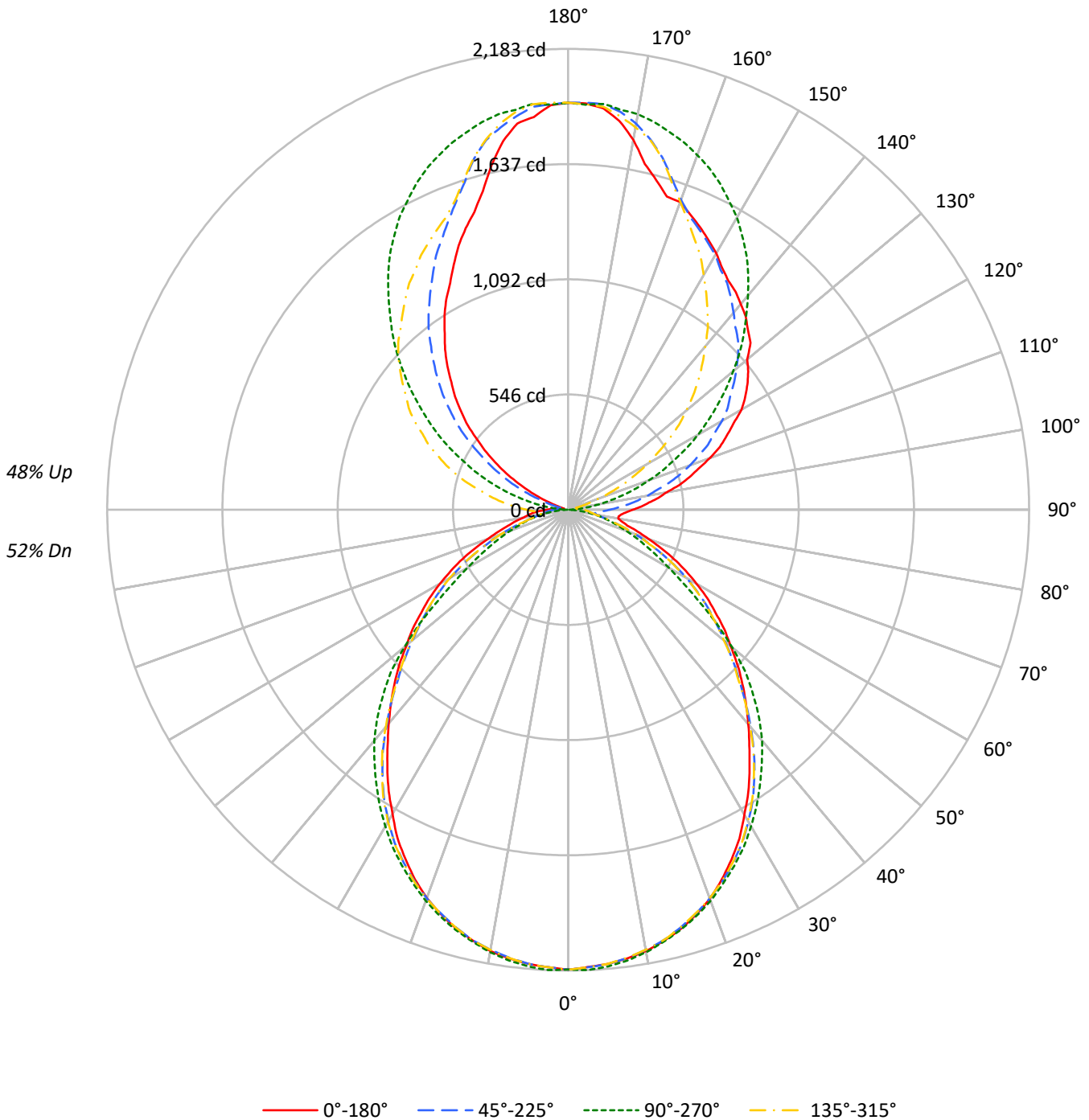
Input Watts (W): 130.492
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: MWL-4-55-60-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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	44
2	90	83	77	71	83	77	71	67	66	62	58	55	53	50	46	44	42	38
3	82	73	66	60	76	68	61	56	58	53	49	49	46	43	41	38	36	32
4	75	65	57	51	70	60	53	48	52	47	42	44	40	37	37	34	32	28
5	69	58	50	44	64	54	47	42	47	41	37	40	36	32	33	30	28	25
6	64	52	44	38	59	49	41	36	42	36	32	36	32	28	30	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	19
8	55	43	35	30	51	40	33	28	35	29	25	30	26	23	26	22	20	17
9	51	39	32	27	48	37	30	25	32	27	23	28	23	20	24	20	18	16
10	48	36	29	24	44	34	27	23	30	24	21	26	21	18	22	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	14069	14069	14069	14069
5°	13876	12944	13876	12944
10°	13671	11866	13671	11866
15°	13379	10867	13353	10867
20°	12987	9934	12961	9934
25°	12430	9043	12402	9043
30°	11736	8185	11698	8185
35°	11001	7347	10971	7347
40°	10291	6549	10247	6549
45°	9653	5659	9619	5659
50°	8966	4639	8927	4639
55°	8352	3496	8324	3496
60°	7679	2597	7665	2597
65°	6903	1968	6903	1968
70°	5933	1457	5955	1457
75°	5211	1059	5288	1059
80°	5623	686	5017	686
85°	8548	310	5558	310



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.4	2.1
10°-20°	579.0	6.0
20°-30°	849.1	8.8
30°-40°	961.6	9.9
40°-50°	906.0	9.3
50°-60°	724.6	7.5
60°-70°	476.1	4.9
70°-80°	244.2	2.5
80°-90°	137.6	1.4
90°-100°	167.8	1.7
100°-110°	300.8	3.1
110°-120°	512.5	5.3
120°-130°	696.2	7.2
130°-140°	794.0	8.2
140°-150°	792.0	8.2
150°-160°	689.5	7.1
160°-170°	485.1	5.0
170°-180°	180.7	1.9
0°-30°	1633.5	16.8
0°-40°	2595.1	26.7
0°-60°	4225.7	43.6
0°-90°	5083.7	52.4
90°-120°	981.1	10.1
90°-150°	3263.3	33.6
90°-180°	4619.0	47.6
0°-180°	9702.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2178	2178	2178	2178	2178	
5°	2160	2171	2160	2171	2160	205
15°	2057	2061	2053	2061	2057	579
25°	1829	1861	1825	1861	1829	841
35°	1497	1584	1493	1584	1497	937
45°	1167	1239	1163	1239	1167	900
55°	852	754	849	754	852	764
65°	553	405	553	405	553	546
75°	290	201	294	201	290	321
85°	253	52	164	52	253	205
90°	306	2	102	2	306	169
95°	384	55	62	55	384	333
105°	594	270	20	270	594	626
115°	828	550	191	550	828	822
125°	1036	863	472	863	1036	925
135°	1204	1177	757	1177	1204	929
145°	1323	1472	1019	1472	1323	834
155°	1477	1703	1281	1703	1477	681
165°	1615	1853	1562	1853	1615	458
175°	1908	1930	1868	1930	1908	178
180°	1928	1928	1928	1928	1928	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2178.4	2178.4	2178.4	2178.4	2178.4	2178.4	2178.4	2178.4	2178.4	2178.4	2178.4
2.5°	2168.3	2175.4	2169.6	2182.0	2182.8	2180.6	2169.6	2175.4	2169.7	2175.4	2169.6
5°	2159.9	2166.0	2160.3	2170.4	2171.3	2170.4	2159.0	2166.0	2159.9	2166.0	2159.0
7.5°	2143.6	2149.7	2141.2	2154.4	2153.5	2153.0	2139.9	2148.3	2143.6	2148.3	2139.9
10°	2123.0	2122.6	2117.5	2128.5	2128.5	2127.2	2116.2	2119.9	2123.0	2119.9	2116.2
12.5°	2092.7	2093.0	2089.2	2097.6	2095.4	2097.6	2089.2	2090.3	2090.0	2090.3	2089.2
15°	2056.8	2053.3	2050.2	2062.0	2060.7	2060.7	2048.9	2050.6	2052.8	2050.6	2048.9
17.5°	2012.0	2011.1	2007.2	2017.7	2018.5	2017.7	2005.8	2009.7	2008.0	2009.7	2005.8
20°	1961.3	1960.8	1959.8	1971.2	1971.4	1969.7	1958.5	1958.1	1957.3	1958.1	1958.5
22.5°	1898.3	1905.0	1905.8	1919.6	1917.3	1918.2	1904.3	1902.3	1895.5	1902.3	1904.3
25°	1829.0	1834.9	1846.2	1862.1	1860.7	1860.7	1843.5	1830.8	1824.9	1830.8	1843.5
27.5°	1756.2	1764.7	1782.0	1802.6	1800.6	1801.2	1779.3	1760.6	1752.2	1760.6	1779.3
30°	1668.4	1679.4	1706.4	1733.8	1731.3	1731.1	1702.4	1675.3	1662.9	1675.3	1702.4
32.5°	1587.3	1595.7	1627.0	1662.8	1661.0	1660.1	1622.9	1590.2	1581.7	1590.2	1622.9
35°	1497.1	1505.6	1537.7	1583.3	1584.3	1579.2	1533.6	1501.4	1493.0	1501.4	1533.6
37.5°	1408.4	1413.5	1445.6	1499.7	1506.3	1495.5	1441.5	1409.3	1404.2	1409.3	1441.5
40°	1327.3	1322.2	1344.2	1406.2	1428.5	1403.4	1338.6	1316.7	1321.7	1316.7	1338.6
42.5°	1246.1	1236.0	1245.6	1309.0	1337.2	1306.2	1241.4	1230.5	1240.6	1230.5	1241.4
45°	1167.0	1145.0	1145.9	1205.8	1239.2	1203.1	1140.3	1140.9	1162.9	1140.9	1140.3
47.5°	1087.5	1066.4	1057.9	1102.2	1139.5	1100.8	1052.5	1062.2	1083.4	1062.2	1052.5
50°	1003.1	989.5	967.5	997.4	1012.0	994.6	962.0	984.0	998.8	984.0	962.0
52.5°	932.9	916.0	883.3	895.2	887.0	892.4	879.2	910.4	928.8	910.4	879.2
55°	852.1	842.7	806.4	788.0	753.8	785.4	802.3	838.6	849.2	838.6	802.3
57.5°	781.1	773.4	726.9	686.6	642.2	684.0	722.8	769.3	778.3	769.3	722.8
60°	701.8	701.8	646.1	582.2	549.3	580.9	643.4	699.2	700.5	699.2	643.4
62.5°	626.7	624.1	564.9	489.2	474.3	487.9	562.2	621.4	625.3	621.4	562.2
65°	552.6	540.8	483.3	409.8	405.0	408.4	482.0	539.4	552.6	539.4	482.0
67.5°	476.5	462.2	405.6	340.0	347.5	340.0	404.1	460.9	476.5	460.9	404.1
70°	404.1	383.9	337.4	280.8	289.2	280.8	337.4	385.2	405.6	385.2	337.4
72.5°	345.0	312.0	271.5	230.1	242.2	228.8	271.5	313.4	347.7	313.4	271.5
75°	290.0	252.9	210.1	183.9	200.8	183.9	211.5	254.2	294.3	254.2	211.5
77.5°	260.5	212.7	164.5	142.5	161.1	142.5	165.8	208.6	255.0	208.6	165.8
80°	240.5	194.6	134.7	106.2	123.1	106.2	132.0	172.8	214.6	172.8	132.0
82.5°	241.0	196.6	126.6	76.6	85.1	76.6	110.2	147.7	189.2	147.7	110.2
85°	252.7	214.6	139.6	62.9	52.0	60.1	100.2	131.6	164.3	131.6	100.2
87.5°	274.7	246.4	162.2	71.5	16.9	52.5	84.6	115.7	134.5	115.7	84.6
90°	305.8	282.0	198.5	86.6	2.2	34.8	63.7	90.2	101.7	90.2	63.7
92.5°	346.2	325.7	237.8	114.4	22.6	20.4	51.4	73.9	79.5	73.9	51.4
95°	384.1	376.0	283.7	147.4	55.3	11.4	38.7	60.1	61.5	60.1	38.7
97.5°	430.5	423.6	330.9	192.2	97.5	18.0	30.2	49.4	49.4	49.4	30.2
100°	471.7	468.6	380.3	250.7	150.0	46.6	19.7	41.3	43.1	41.3	19.7
102.5°	537.4	518.5	429.3	306.6	205.8	86.0	23.9	28.6	31.2	28.6	23.9
105°	593.5	571.0	495.2	365.1	269.8	139.1	55.6	23.9	20.5	23.9	55.6
107.5°	646.1	630.8	555.1	424.9	337.8	200.4	101.9	53.8	36.4	53.8	101.9
110°	712.4	696.0	613.5	484.8	408.6	265.7	155.0	97.3	75.5	97.3	155.0



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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°	777.7	765.5	667.9	547.4	482.1	336.4	220.3	151.7	131.3	151.7	220.3
115°	828.0	820.4	730.6	606.0	550.1	416.7	292.3	214.8	191.2	214.8	292.3
117.5°	881.1	878.9	776.9	666.6	632.6	489.7	359.1	278.8	253.8	278.8	359.1
120°	947.9	936.9	840.8	726.6	710.1	566.0	432.6	353.2	327.3	353.2	432.6
122.5°	994.1	987.3	895.3	783.6	783.6	643.6	503.3	423.9	396.7	423.9	503.3
125°	1036.3	1033.5	936.9	840.8	862.6	715.7	583.2	501.4	471.5	501.4	583.2
127.5°	1074.4	1078.5	990.0	903.5	942.9	789.1	660.7	570.8	539.6	570.8	660.7
130°	1107.1	1120.7	1040.4	960.6	1019.1	869.4	730.1	640.2	619.9	640.2	730.1
132.5°	1171.1	1162.9	1092.1	1020.0	1100.7	943.8	803.5	709.7	686.6	709.7	803.5
135°	1203.6	1206.4	1137.0	1070.3	1177.0	1017.2	872.9	780.5	757.3	780.5	872.9
137.5°	1243.2	1235.0	1172.4	1131.6	1247.8	1087.9	941.1	855.3	818.5	855.3	941.1
140°	1271.7	1270.4	1218.6	1186.0	1323.9	1157.4	1010.5	923.3	889.3	923.3	1010.5
142.5°	1301.6	1310.7	1264.9	1245.8	1400.2	1230.9	1085.3	990.8	957.4	990.8	1085.3
145°	1323.0	1340.6	1311.2	1320.8	1472.3	1312.6	1150.6	1054.8	1019.4	1054.8	1150.6
147.5°	1356.9	1380.1	1345.2	1373.8	1534.9	1384.7	1216.0	1121.5	1090.2	1121.5	1216.0
150°	1402.4	1413.3	1392.9	1447.3	1598.8	1465.0	1282.6	1184.6	1153.3	1184.6	1282.6
152.5°	1439.1	1452.6	1429.6	1527.6	1649.2	1538.5	1356.1	1247.2	1210.5	1247.2	1356.1
155°	1477.2	1482.7	1466.3	1605.2	1703.2	1610.6	1414.6	1316.6	1281.3	1316.6	1414.6
157.5°	1512.6	1523.5	1504.4	1663.6	1749.4	1673.2	1481.4	1386.1	1354.7	1386.1	1481.4
160°	1550.7	1550.7	1561.7	1731.7	1787.5	1727.6	1552.1	1462.2	1418.7	1462.2	1552.1
162.5°	1554.8	1580.7	1639.1	1779.4	1824.2	1775.2	1628.2	1516.7	1478.5	1516.7	1628.2
165°	1614.7	1637.8	1726.3	1821.6	1852.8	1817.4	1722.2	1606.5	1561.7	1606.5	1722.2
167.5°	1677.3	1726.3	1797.0	1870.0	1880.8	1857.7	1794.3	1714.0	1673.2	1714.0	1794.3
170°	1778.5	1821.6	1856.9	1886.9	1902.7	1888.2	1839.2	1799.7	1773.1	1799.7	1839.2
172.5°	1857.9	1886.9	1900.5	1920.4	1910.8	1905.4	1880.0	1861.0	1845.7	1861.0	1880.0
175°	1908.2	1915.4	1927.7	1921.7	1929.9	1914.9	1915.4	1924.9	1867.5	1924.9	1915.4
177.5°	1926.0	1937.2	1930.4	1919.0	1920.4	1917.6	1922.2	1927.7	1917.8	1927.7	1922.2
180°	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2178.4	2178.4	2178.4	2178.4	2178.4	2178.4
2.5°	2180.6	2182.8	2182.0	2169.6	2175.4	2168.3
5°	2170.4	2171.3	2170.4	2160.3	2166.0	2159.9
7.5°	2153.0	2153.5	2154.4	2141.2	2149.7	2143.6
10°	2127.2	2128.5	2128.5	2117.5	2122.6	2123.0
12.5°	2097.6	2095.4	2097.6	2089.2	2093.0	2092.7
15°	2060.7	2060.7	2062.0	2050.2	2053.3	2056.8
17.5°	2017.7	2018.5	2017.7	2007.2	2011.1	2012.0
20°	1969.7	1971.4	1971.2	1959.8	1960.8	1961.3
22.5°	1918.2	1917.3	1919.6	1905.8	1905.0	1898.3
25°	1860.7	1860.7	1862.1	1846.2	1834.9	1829.0
27.5°	1801.2	1800.6	1802.6	1782.0	1764.7	1756.2
30°	1731.1	1731.3	1733.8	1706.4	1679.4	1668.4
32.5°	1660.1	1661.0	1662.8	1627.0	1595.7	1587.3
35°	1579.2	1584.3	1583.3	1537.7	1505.6	1497.1
37.5°	1495.5	1506.3	1499.7	1445.6	1413.5	1408.4
40°	1403.4	1428.5	1406.2	1344.2	1322.2	1327.3
42.5°	1306.2	1337.2	1309.0	1245.6	1236.0	1246.1
45°	1203.1	1239.2	1205.8	1145.9	1145.0	1167.0
47.5°	1100.8	1139.5	1102.2	1057.9	1066.4	1087.5
50°	994.6	1012.0	997.4	967.5	989.5	1003.1
52.5°	892.4	887.0	895.2	883.3	916.0	932.9
55°	785.4	753.8	788.0	806.4	842.7	852.1
57.5°	684.0	642.2	686.6	726.9	773.4	781.1
60°	580.9	549.3	582.2	646.1	701.8	701.8
62.5°	487.9	474.3	489.2	564.9	624.1	626.7
65°	408.4	405.0	409.8	483.3	540.8	552.6
67.5°	340.0	347.5	340.0	405.6	462.2	476.5
70°	280.8	289.2	280.8	337.4	383.9	404.1
72.5°	228.8	242.2	230.1	271.5	312.0	345.0
75°	183.9	200.8	183.9	210.1	252.9	290.0
77.5°	142.5	161.1	142.5	164.5	212.7	260.5
80°	106.2	123.1	106.2	134.7	194.6	240.5
82.5°	76.6	85.1	76.6	126.6	196.6	241.0
85°	60.1	52.0	62.9	139.6	214.6	252.7
87.5°	52.5	16.9	71.5	162.2	246.4	274.7
90°	34.8	2.2	86.6	198.5	282.0	305.8
92.5°	20.4	22.6	114.4	237.8	325.7	346.2
95°	11.4	55.3	147.4	283.7	376.0	384.1
97.5°	18.0	97.5	192.2	330.9	423.6	430.5
100°	46.6	150.0	250.7	380.3	468.6	471.7
102.5°	86.0	205.8	306.6	429.3	518.5	537.4
105°	139.1	269.8	365.1	495.2	571.0	593.5
107.5°	200.4	337.8	424.9	555.1	630.8	646.1
110°	265.7	408.6	484.8	613.5	696.0	712.4



TEST NUMBER: P392694

CATALOG NUMBER: MWL-4-55-60-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	336.4	482.1	547.4	667.9	765.5	777.7
115°	416.7	550.1	606.0	730.6	820.4	828.0
117.5°	489.7	632.6	666.6	776.9	878.9	881.1
120°	566.0	710.1	726.6	840.8	936.9	947.9
122.5°	643.6	783.6	783.6	895.3	987.3	994.1
125°	715.7	862.6	840.8	936.9	1033.5	1036.3
127.5°	789.1	942.9	903.5	990.0	1078.5	1074.4
130°	869.4	1019.1	960.6	1040.4	1120.7	1107.1
132.5°	943.8	1100.7	1020.0	1092.1	1162.9	1171.1
135°	1017.2	1177.0	1070.3	1137.0	1206.4	1203.6
137.5°	1087.9	1247.8	1131.6	1172.4	1235.0	1243.2
140°	1157.4	1323.9	1186.0	1218.6	1270.4	1271.7
142.5°	1230.9	1400.2	1245.8	1264.9	1310.7	1301.6
145°	1312.6	1472.3	1320.8	1311.2	1340.6	1323.0
147.5°	1384.7	1534.9	1373.8	1345.2	1380.1	1356.9
150°	1465.0	1598.8	1447.3	1392.9	1413.3	1402.4
152.5°	1538.5	1649.2	1527.6	1429.6	1452.6	1439.1
155°	1610.6	1703.2	1605.2	1466.3	1482.7	1477.2
157.5°	1673.2	1749.4	1663.6	1504.4	1523.5	1512.6
160°	1727.6	1787.5	1731.7	1561.7	1550.7	1550.7
162.5°	1775.2	1824.2	1779.4	1639.1	1580.7	1554.8
165°	1817.4	1852.8	1821.6	1726.3	1637.8	1614.7
167.5°	1857.7	1880.8	1870.0	1797.0	1726.3	1677.3
170°	1888.2	1902.7	1886.9	1856.9	1821.6	1778.5
172.5°	1905.4	1910.8	1920.4	1900.5	1886.9	1857.9
175°	1914.9	1929.9	1921.7	1927.7	1915.4	1908.2
177.5°	1917.6	1920.4	1919.0	1930.4	1937.2	1926.0
180°	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7

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