

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: P392690

Luminaire Tested: **MWL-4-55-33-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392690
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-L940-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

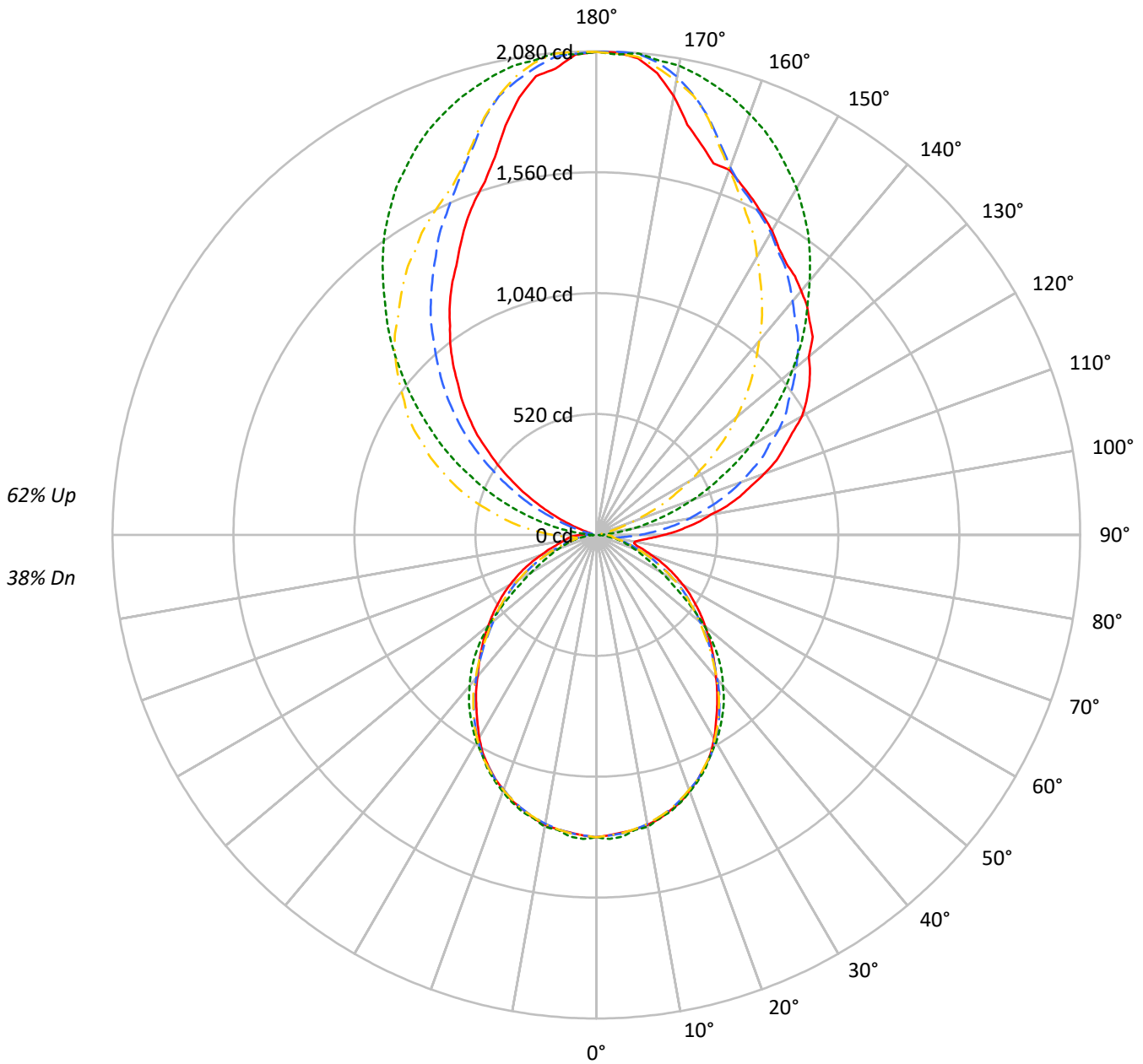
Lumens per Lamp: N/A
Luminaire Lumens: 8028.5 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Indirect

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



TEST NUMBER: P392690
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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				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	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°	8399	8399	8399	8399
5°	8256	7762	8256	7762
10°	8154	7108	8154	7108
15°	7981	6497	7952	6497
20°	7750	5925	7721	5925
25°	7486	5387	7456	5387
30°	7120	4869	7078	4869
35°	6644	4383	6610	4383
40°	6204	3885	6158	3885
45°	5823	3383	5786	3383
50°	5454	2767	5414	2767
55°	5100	2070	5070	2070
60°	4710	1533	4693	1533
65°	4255	1139	4255	1139
70°	3667	855	3689	855
75°	3229	628	3308	628
80°	3930	404	3278	404
85°	7090	188	3866	188



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.5	1.5
10°-20°	345.4	4.3
20°-30°	507.5	6.3
30°-40°	576.8	7.2
40°-50°	543.7	6.8
50°-60°	434.1	5.4
60°-70°	286.8	3.6
70°-80°	151.1	1.9
80°-90°	102.3	1.3
90°-100°	166.0	2.1
100°-110°	322.5	4.0
110°-120°	551.7	6.9
120°-130°	749.7	9.3
130°-140°	855.2	10.7
140°-150°	853.0	10.6
150°-160°	742.9	9.3
160°-170°	522.6	6.5
170°-180°	194.6	2.4
0°-30°	975.3	12.1
0°-40°	1552.2	19.3
0°-60°	2530.0	31.5
0°-90°	3070.2	38.2
90°-120°	1040.2	13.0
90°-150°	3498.2	43.6
90°-180°	4958.0	61.8
0°-180°	8028.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1300	1300	1300	1300	1300	
5°	1285	1302	1285	1302	1285	122
15°	1227	1232	1222	1232	1227	346
25°	1102	1108	1097	1108	1102	506
35°	904	945	900	945	904	566
45°	704	741	700	741	704	544
55°	520	446	517	446	520	466
65°	341	234	341	234	341	337
75°	180	119	184	119	180	203
85°	210	32	114	32	210	163
90°	290	2	70	2	290	160
95°	390	60	43	60	390	343
105°	639	290	21	290	639	671
115°	892	593	205	593	892	885
125°	1116	929	507	929	1116	997
135°	1297	1268	815	1268	1297	1001
145°	1424	1586	1097	1586	1424	898
155°	1592	1835	1380	1835	1592	734
165°	1740	1996	1682	1996	1740	494
175°	2057	2079	2013	2079	2057	192
180°	2077	2077	2077	2077	2077	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
2.5°	1292.4	1292.7	1293.8	1301.6	1308.9	1300.1	1293.8	1292.7	1293.9	1292.7	1293.8
5°	1285.1	1288.1	1288.3	1296.5	1302.0	1296.5	1286.8	1288.1	1285.1	1288.1	1286.8
7.5°	1277.5	1282.3	1276.8	1285.6	1279.2	1284.1	1275.4	1280.8	1277.5	1280.8	1275.4
10°	1266.2	1266.8	1263.1	1271.3	1275.0	1269.9	1261.7	1263.9	1266.2	1263.9	1261.7
12.5°	1250.9	1244.9	1243.5	1248.9	1248.4	1248.9	1243.5	1242.0	1248.0	1242.0	1243.5
15°	1226.9	1228.5	1223.4	1228.9	1232.0	1227.4	1222.0	1225.6	1222.5	1225.6	1222.0
17.5°	1205.0	1203.0	1197.0	1200.1	1205.6	1200.1	1195.5	1201.6	1200.6	1201.6	1195.5
20°	1170.4	1171.7	1167.8	1176.4	1175.8	1174.9	1166.4	1168.8	1166.0	1168.8	1166.4
22.5°	1138.9	1140.7	1138.7	1138.1	1143.9	1136.6	1137.2	1137.8	1136.0	1137.8	1137.2
25°	1101.5	1101.5	1101.9	1110.8	1108.4	1109.3	1099.0	1097.1	1097.1	1097.1	1099.0
27.5°	1062.3	1060.4	1067.3	1073.1	1064.5	1071.6	1064.3	1056.1	1057.9	1056.1	1064.3
30°	1012.1	1014.0	1021.3	1037.1	1029.9	1034.2	1016.9	1009.6	1006.2	1009.6	1016.9
32.5°	957.5	964.8	974.8	996.1	988.6	993.2	970.4	958.8	951.6	958.8	970.4
35°	904.1	906.8	922.3	948.7	945.2	944.3	917.8	902.4	899.6	902.4	917.8
37.5°	854.0	849.4	868.6	896.8	900.3	892.3	864.1	845.0	849.5	845.0	864.1
40°	800.2	801.1	809.3	842.5	847.4	839.5	803.4	795.2	794.3	795.2	803.4
42.5°	751.9	742.8	749.6	784.2	796.4	781.2	745.1	736.9	746.0	736.9	745.1
45°	704.0	692.2	693.1	723.1	740.8	720.1	687.2	687.7	699.5	687.7	687.2
47.5°	657.5	643.0	635.7	658.8	674.3	657.3	629.8	638.5	653.1	638.5	629.8
50°	610.2	596.5	581.9	596.0	603.5	592.9	576.0	590.6	605.7	590.6	576.0
52.5°	566.4	550.9	532.2	534.0	524.2	531.0	527.7	545.0	562.0	545.0	527.7
55°	520.3	506.7	483.9	468.7	446.3	465.8	479.4	502.2	517.3	502.2	479.4
57.5°	476.6	466.6	437.4	407.6	377.9	404.7	433.0	462.1	473.6	462.1	433.0
60°	430.4	422.2	388.5	346.0	324.2	344.6	385.6	419.3	428.9	419.3	385.6
62.5°	384.8	378.5	339.3	290.5	272.6	289.0	336.4	375.6	383.4	375.6	336.4
65°	340.6	330.5	290.5	244.9	234.3	243.4	289.0	329.1	340.6	329.1	289.0
67.5°	295.9	284.1	245.8	203.4	201.5	203.4	244.4	282.6	295.9	282.6	244.4
70°	249.8	238.0	204.3	168.7	169.6	168.7	204.3	239.4	251.3	239.4	204.3
72.5°	215.2	195.2	167.8	139.6	142.7	138.1	167.8	196.6	218.1	196.6	167.8
75°	179.7	157.8	131.7	110.8	119.0	110.8	133.2	159.3	184.1	159.3	133.2
77.5°	165.9	135.5	102.6	88.9	94.4	88.9	104.0	131.0	160.1	131.0	104.0
80°	168.1	132.3	84.2	67.1	72.5	67.1	81.3	108.8	140.2	108.8	81.3
82.5°	183.2	148.1	88.2	47.9	50.7	47.9	70.5	95.4	127.5	95.4	70.5
85°	209.6	178.5	110.4	41.4	31.5	38.4	67.9	89.0	114.3	89.0	67.9
87.5°	246.0	220.9	143.0	55.2	8.2	34.7	59.3	80.1	94.9	80.1	59.3
90°	289.5	267.6	188.4	78.7	2.4	23.0	43.2	60.8	69.5	60.8	43.2
92.5°	343.1	321.9	234.5	116.0	24.4	14.8	33.5	50.5	55.7	50.5	33.5
95°	390.3	381.6	291.2	156.2	59.6	9.5	27.2	41.2	42.6	41.2	27.2
97.5°	448.5	440.2	348.5	206.3	105.0	18.5	24.3	36.8	37.7	36.8	24.3
100°	498.5	495.1	407.2	269.3	160.8	49.3	18.5	34.5	36.4	34.5	18.5
102.5°	574.7	554.4	461.9	329.5	220.9	91.8	24.8	26.3	29.1	26.3	24.8
105°	638.8	615.5	532.9	392.6	289.9	149.1	59.0	25.8	21.2	25.8	59.0
107.5°	696.4	679.0	597.4	457.1	363.3	215.1	108.9	57.0	39.2	57.0	108.9
110°	767.1	748.5	660.5	522.6	439.5	286.4	166.1	103.0	80.5	103.0	166.1



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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°	837.4	823.4	719.1	590.0	518.8	362.7	236.5	161.7	140.6	161.7	236.5
115°	891.7	883.5	786.6	653.2	593.0	449.3	314.2	230.7	205.2	230.7	314.2
117.5°	948.9	947.5	836.5	717.7	681.0	527.0	386.1	300.5	272.7	300.5	386.1
120°	1020.8	1009.0	905.5	782.3	764.6	609.2	465.4	379.7	351.9	379.7	465.4
122.5°	1070.7	1063.3	965.0	843.9	843.9	692.8	542.6	456.0	426.7	456.0	542.6
125°	1116.3	1113.3	1009.0	905.5	929.0	770.5	627.7	539.6	507.4	539.6	627.7
127.5°	1157.3	1161.7	1066.4	973.0	1015.5	849.7	711.3	614.4	580.7	614.4	711.3
130°	1192.5	1207.2	1120.7	1034.6	1097.7	936.2	786.1	689.2	667.3	689.2	786.1
132.5°	1261.5	1252.7	1176.4	1098.6	1185.7	1016.4	865.3	764.0	739.2	764.0	865.3
135°	1296.7	1299.6	1224.8	1152.9	1267.9	1095.7	940.1	840.4	815.4	840.4	940.1
137.5°	1339.2	1330.4	1263.0	1219.0	1344.1	1171.9	1013.5	921.0	881.4	921.0	1013.5
140°	1370.0	1368.6	1312.8	1277.6	1426.3	1246.8	1088.4	994.4	957.7	994.4	1088.4
142.5°	1402.3	1411.1	1362.7	1342.1	1508.5	1326.0	1169.0	1066.4	1031.1	1066.4	1169.0
145°	1424.3	1443.4	1412.6	1422.9	1586.2	1414.0	1239.5	1135.3	1097.1	1135.3	1239.5
147.5°	1460.9	1485.9	1449.3	1480.1	1653.7	1491.7	1309.9	1207.2	1173.5	1207.2	1309.9
150°	1510.9	1522.6	1500.6	1559.3	1722.6	1578.3	1381.8	1276.2	1242.4	1276.2	1381.8
152.5°	1550.4	1565.1	1540.2	1645.8	1776.9	1657.6	1460.9	1343.6	1304.1	1343.6	1460.9
155°	1591.5	1597.4	1579.8	1729.5	1835.0	1735.3	1524.1	1418.4	1380.3	1418.4	1524.1
157.5°	1629.7	1641.4	1620.8	1792.5	1884.9	1802.8	1596.0	1493.3	1459.5	1493.3	1596.0
160°	1670.8	1670.8	1682.5	1865.8	1926.0	1861.5	1672.2	1575.4	1528.5	1575.4	1672.2
162.5°	1675.1	1703.0	1766.1	1917.2	1965.6	1912.8	1754.3	1634.1	1593.0	1634.1	1754.3
165°	1739.7	1764.6	1860.0	1962.7	1996.4	1958.3	1855.5	1730.9	1682.5	1730.9	1855.5
167.5°	1807.2	1860.0	1936.3	2014.0	2025.7	2000.8	1933.4	1846.8	1802.8	1846.8	1933.4
170°	1916.3	1961.8	2000.8	2033.1	2049.2	2034.6	1981.7	1938.3	1910.4	1938.3	1981.7
172.5°	2002.9	2033.1	2047.8	2068.3	2058.0	2052.2	2025.7	2005.2	1989.7	2005.2	2025.7
175°	2057.1	2063.9	2077.1	2069.7	2078.6	2062.5	2063.9	2074.1	2013.1	2074.1	2063.9
177.5°	2076.2	2087.3	2080.0	2066.8	2068.3	2065.4	2071.2	2077.1	2067.4	2077.1	2071.2
180°	2077.1	2077.1	2077.1	2077.1	2077.1	2077.1	2077.1	2077.1	2077.1	2077.1	2077.1



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CATALOG NUMBER: MWL-4-55-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
2.5°	1300.1	1308.9	1301.6	1293.8	1292.7	1292.4
5°	1296.5	1302.0	1296.5	1288.3	1288.1	1285.1
7.5°	1284.1	1279.2	1285.6	1276.8	1282.3	1277.5
10°	1269.9	1275.0	1271.3	1263.1	1266.8	1266.2
12.5°	1248.9	1248.4	1248.9	1243.5	1244.9	1250.9
15°	1227.4	1232.0	1228.9	1223.4	1228.5	1226.9
17.5°	1200.1	1205.6	1200.1	1197.0	1203.0	1205.0
20°	1174.9	1175.8	1176.4	1167.8	1171.7	1170.4
22.5°	1136.6	1143.9	1138.1	1138.7	1140.7	1138.9
25°	1109.3	1108.4	1110.8	1101.9	1101.5	1101.5
27.5°	1071.6	1064.5	1073.1	1067.3	1060.4	1062.3
30°	1034.2	1029.9	1037.1	1021.3	1014.0	1012.1
32.5°	993.2	988.6	996.1	974.8	964.8	957.5
35°	944.3	945.2	948.7	922.3	906.8	904.1
37.5°	892.3	900.3	896.8	868.6	849.4	854.0
40°	839.5	847.4	842.5	809.3	801.1	800.2
42.5°	781.2	796.4	784.2	749.6	742.8	751.9
45°	720.1	740.8	723.1	693.1	692.2	704.0
47.5°	657.3	674.3	658.8	635.7	643.0	657.5
50°	592.9	603.5	596.0	581.9	596.5	610.2
52.5°	531.0	524.2	534.0	532.2	550.9	566.4
55°	465.8	446.3	468.7	483.9	506.7	520.3
57.5°	404.7	377.9	407.6	437.4	466.6	476.6
60°	344.6	324.2	346.0	388.5	422.2	430.4
62.5°	289.0	272.6	290.5	339.3	378.5	384.8
65°	243.4	234.3	244.9	290.5	330.5	340.6
67.5°	203.4	201.5	203.4	245.8	284.1	295.9
70°	168.7	169.6	168.7	204.3	238.0	249.8
72.5°	138.1	142.7	139.6	167.8	195.2	215.2
75°	110.8	119.0	110.8	131.7	157.8	179.7
77.5°	88.9	94.4	88.9	102.6	135.5	165.9
80°	67.1	72.5	67.1	84.2	132.3	168.1
82.5°	47.9	50.7	47.9	88.2	148.1	183.2
85°	38.4	31.5	41.4	110.4	178.5	209.6
87.5°	34.7	8.2	55.2	143.0	220.9	246.0
90°	23.0	2.4	78.7	188.4	267.6	289.5
92.5°	14.8	24.4	116.0	234.5	321.9	343.1
95°	9.5	59.6	156.2	291.2	381.6	390.3
97.5°	18.5	105.0	206.3	348.5	440.2	448.5
100°	49.3	160.8	269.3	407.2	495.1	498.5
102.5°	91.8	220.9	329.5	461.9	554.4	574.7
105°	149.1	289.9	392.6	532.9	615.5	638.8
107.5°	215.1	363.3	457.1	597.4	679.0	696.4
110°	286.4	439.5	522.6	660.5	748.5	767.1



TEST NUMBER: P392690

CATALOG NUMBER: MWL-4-55-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	362.7	518.8	590.0	719.1	823.4	837.4
115°	449.3	593.0	653.2	786.6	883.5	891.7
117.5°	527.0	681.0	717.7	836.5	947.5	948.9
120°	609.2	764.6	782.3	905.5	1009.0	1020.8
122.5°	692.8	843.9	843.9	965.0	1063.3	1070.7
125°	770.5	929.0	905.5	1009.0	1113.3	1116.3
127.5°	849.7	1015.5	973.0	1066.4	1161.7	1157.3
130°	936.2	1097.7	1034.6	1120.7	1207.2	1192.5
132.5°	1016.4	1185.7	1098.6	1176.4	1252.7	1261.5
135°	1095.7	1267.9	1152.9	1224.8	1299.6	1296.7
137.5°	1171.9	1344.1	1219.0	1263.0	1330.4	1339.2
140°	1246.8	1426.3	1277.6	1312.8	1368.6	1370.0
142.5°	1326.0	1508.5	1342.1	1362.7	1411.1	1402.3
145°	1414.0	1586.2	1422.9	1412.6	1443.4	1424.3
147.5°	1491.7	1653.7	1480.1	1449.3	1485.9	1460.9
150°	1578.3	1722.6	1559.3	1500.6	1522.6	1510.9
152.5°	1657.6	1776.9	1645.8	1540.2	1565.1	1550.4
155°	1735.3	1835.0	1729.5	1579.8	1597.4	1591.5
157.5°	1802.8	1884.9	1792.5	1620.8	1641.4	1629.7
160°	1861.5	1926.0	1865.8	1682.5	1670.8	1670.8
162.5°	1912.8	1965.6	1917.2	1766.1	1703.0	1675.1
165°	1958.3	1996.4	1962.7	1860.0	1764.6	1739.7
167.5°	2000.8	2025.7	2014.0	1936.3	1860.0	1807.2
170°	2034.6	2049.2	2033.1	2000.8	1961.8	1916.3
172.5°	2052.2	2058.0	2068.3	2047.8	2033.1	2002.9
175°	2062.5	2078.6	2069.7	2077.1	2063.9	2057.1
177.5°	2065.4	2068.3	2066.8	2080.0	2087.3	2076.2
180°	2077.1	2077.1	2077.1	2077.1	2077.1	2077.1

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