

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: P392620

Luminaire Tested: **MWL-3-53-28-UNV-L835-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392620
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-53-28-UNV-L835-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

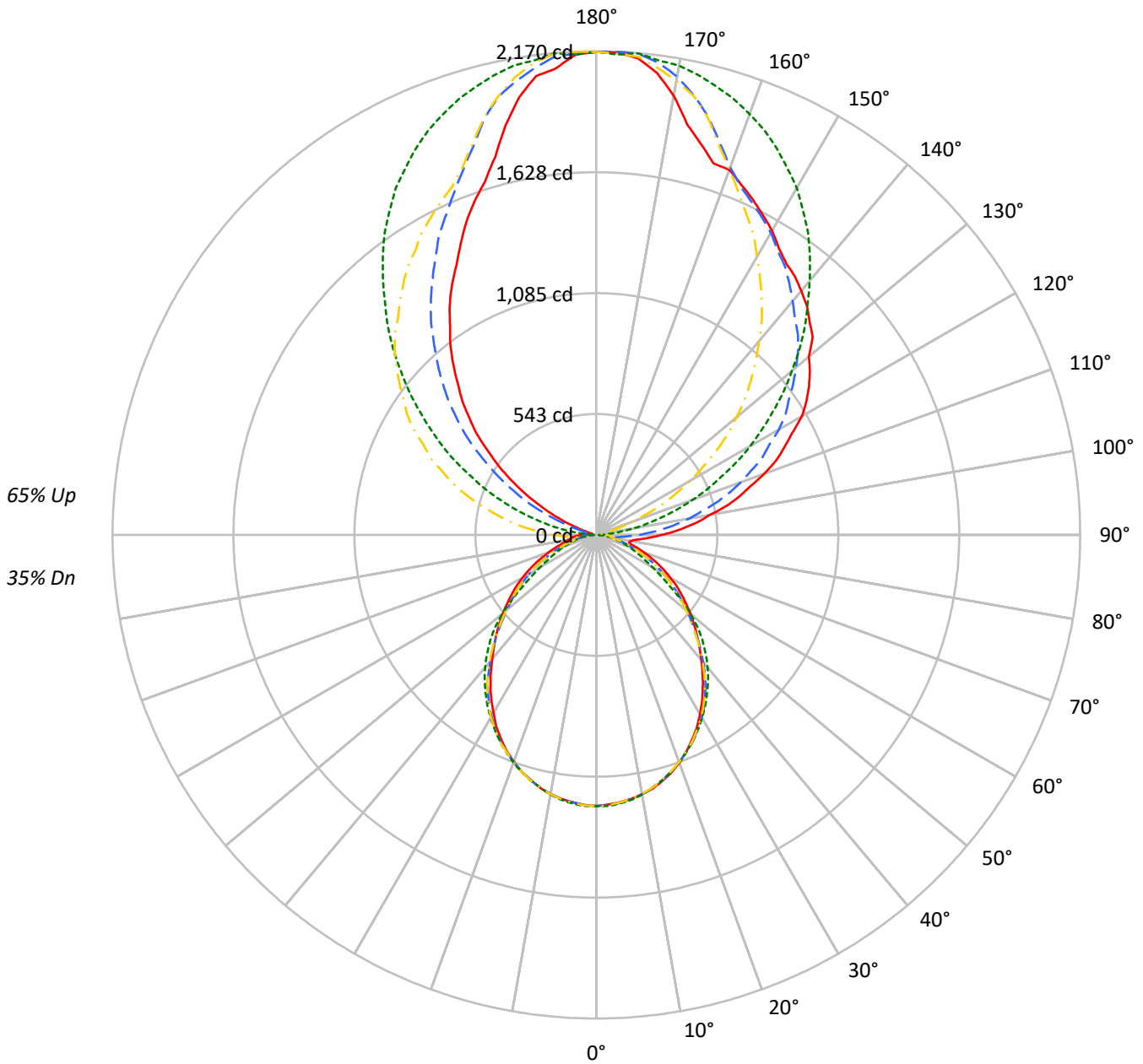
Lumens per Lamp: N/A
Luminaire Lumens: 7975.0 lumens
Efficiency: N/A
Efficacy: 82.0 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 97.3
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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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										
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	50	30	10	0														
RCR																																						
0	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	35																				
1	94	90	86	83	85	82	79	76	66	64	62	51	50	48	38	37	36	30																				
2	86	79	73	68	78	72	67	62	58	54	51	45	43	41	33	32	31	25																				
3	79	70	63	57	71	63	57	52	51	47	43	40	37	35	30	28	26	22																				
4	72	62	54	48	65	56	50	45	46	41	37	36	33	30	27	25	23	19																				
5	66	55	47	41	60	50	43	38	41	36	32	32	29	26	24	22	20	16																				
6	61	49	42	36	55	45	38	33	37	32	28	29	26	23	22	20	18	15																				
7	56	44	37	31	51	41	34	29	33	28	25	27	23	20	20	18	16	13																				
8	52	40	33	28	47	37	30	26	30	25	22	24	21	18	19	16	14	12																				
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	15	13	11																				
10	45	34	27	22	41	31	25	21	26	21	18	21	17	15	16	13	12	10																				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10475	10475	10475	10475
5°	10283	9619	10283	9619
10°	10076	8802	10076	8802
15°	9823	8014	9784	8014
20°	9490	7297	9449	7297
25°	9055	6624	9014	6624
30°	8544	5973	8487	5973
35°	7974	5354	7930	5354
40°	7370	4744	7309	4744
45°	6834	4104	6786	4104
50°	6329	3365	6277	3365
55°	5833	2489	5795	2489
60°	5296	1838	5275	1838
65°	4732	1389	4732	1389
70°	4086	1031	4113	1031
75°	3513	743	3613	743
80°	4338	494	3531	494
85°	7835	207	4032	207



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	114.4	1.4
10°-20°	321.2	4.0
20°-30°	468.7	5.9
30°-40°	529.9	6.6
40°-50°	495.5	6.2
50°-60°	391.2	4.9
60°-70°	256.2	3.2
70°-80°	134.7	1.7
80°-90°	96.9	1.2
90°-100°	169.3	2.1
100°-110°	334.8	4.2
110°-120°	575.3	7.2
120°-130°	781.8	9.8
130°-140°	891.9	11.2
140°-150°	889.8	11.2
150°-160°	775.0	9.7
160°-170°	545.2	6.8
170°-180°	203.1	2.5
0°-30°	904.4	11.3
0°-40°	1434.3	18.0
0°-60°	2321.0	29.1
0°-90°	2808.9	35.2
90°-120°	1079.5	13.5
90°-150°	3642.9	45.7
90°-180°	5166.0	64.8
0°-180°	7975.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1216	1216	1216	1216	1216	
5°	1204	1210	1204	1210	1204	114
15°	1143	1140	1138	1140	1143	322
25°	1015	1022	1010	1022	1015	467
35°	832	866	828	866	832	520
45°	639	674	635	674	639	494
55°	466	403	463	403	466	417
65°	301	214	301	214	301	299
75°	160	106	165	106	160	183
85°	205	26	106	26	205	158
90°	292	3	63	3	292	162
95°	404	62	41	62	404	354
105°	662	303	18	303	662	697
115°	930	618	213	618	930	923
125°	1164	969	529	969	1164	1040
135°	1352	1322	850	1322	1352	1044
145°	1486	1655	1144	1655	1486	937
155°	1660	1914	1440	1914	1660	766
165°	1815	2083	1755	2083	1815	515
175°	2146	2168	2100	2168	2146	200
180°	2167	2167	2167	2167	2167	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1216.5	1216.5	1216.5	1216.5	1216.5	1216.5	1216.5	1216.5	1216.5	1216.5	1216.5
2.5°	1210.9	1214.0	1214.2	1216.6	1217.6	1215.2	1214.2	1214.0	1212.5	1214.0	1214.2
5°	1204.1	1207.1	1207.3	1208.3	1210.2	1208.3	1205.7	1207.1	1204.1	1207.1	1205.7
7.5°	1194.8	1197.9	1195.9	1198.5	1199.4	1196.9	1194.3	1196.3	1194.8	1196.3	1194.3
10°	1180.6	1182.1	1181.2	1182.1	1184.1	1180.6	1179.6	1179.1	1180.6	1179.1	1179.6
12.5°	1166.0	1164.5	1161.9	1162.9	1161.4	1162.9	1161.9	1161.4	1162.9	1161.4	1161.9
15°	1142.9	1141.9	1140.3	1142.2	1139.8	1140.8	1138.8	1138.8	1138.3	1138.8	1138.8
17.5°	1118.4	1116.3	1113.7	1115.2	1115.2	1115.2	1112.3	1114.7	1113.7	1114.7	1112.3
20°	1087.9	1088.4	1086.2	1087.7	1086.1	1086.1	1084.8	1085.2	1083.3	1085.2	1084.8
22.5°	1053.0	1055.0	1053.8	1057.2	1054.7	1055.7	1052.3	1051.8	1049.9	1051.8	1052.3
25°	1014.7	1017.6	1022.9	1023.8	1022.3	1022.3	1019.9	1013.0	1010.1	1013.0	1019.9
27.5°	975.4	978.3	983.6	988.0	985.9	986.5	980.6	973.7	970.8	973.7	980.6
30°	928.2	934.1	945.9	951.2	947.6	948.2	941.3	929.5	922.0	929.5	941.3
32.5°	883.0	887.9	900.7	910.9	908.8	907.9	896.1	881.7	876.8	881.7	896.1
35°	832.3	835.2	851.9	866.7	866.0	862.1	847.3	830.6	827.7	830.6	847.3
37.5°	782.2	783.1	800.8	821.5	822.4	816.9	796.2	778.5	777.5	778.5	796.2
40°	732.0	730.1	745.8	769.8	776.2	766.7	739.7	724.0	726.0	724.0	739.7
42.5°	684.9	678.0	690.2	717.7	726.1	714.7	685.7	671.9	678.8	671.9	685.7
45°	639.1	627.3	634.2	658.7	674.0	655.7	628.1	622.8	634.6	622.8	628.1
47.5°	593.9	583.1	580.1	599.3	617.0	597.7	574.0	578.5	589.4	578.5	574.0
50°	550.6	538.8	530.0	541.3	550.5	538.2	523.9	532.7	546.1	532.7	523.9
52.5°	507.4	496.6	481.3	483.3	478.8	480.3	476.7	490.5	502.9	490.5	476.7
55°	465.6	455.8	436.1	425.7	402.6	422.7	431.5	451.2	462.6	451.2	431.5
57.5°	426.3	417.5	392.9	367.7	342.7	364.7	388.3	412.9	423.3	412.9	388.3
60°	381.5	376.6	348.1	310.3	291.6	308.7	345.0	373.5	380.0	373.5	345.0
62.5°	342.2	336.3	303.9	262.1	246.8	260.5	300.8	333.2	340.7	333.2	300.8
65°	301.4	292.6	259.1	218.9	214.3	217.3	257.6	291.0	301.4	291.0	257.6
67.5°	261.1	252.3	220.8	183.9	180.9	183.9	219.3	250.7	261.1	250.7	219.3
70°	224.2	210.4	182.9	151.4	153.4	151.4	182.9	212.0	225.7	212.0	182.9
72.5°	190.8	171.1	150.5	124.9	128.3	123.4	150.5	172.7	193.8	172.7	150.5
75°	160.3	138.7	116.6	99.8	105.7	99.8	118.0	140.2	164.9	140.2	118.0
77.5°	150.0	119.2	91.0	79.2	87.1	79.2	92.5	114.7	143.8	114.7	92.5
80°	156.4	121.1	75.9	60.5	66.4	60.5	72.8	96.5	127.3	96.5	72.8
82.5°	172.5	139.9	82.5	42.8	45.8	42.8	64.1	84.8	114.3	84.8	64.1
85°	205.2	174.1	106.3	37.5	26.1	34.5	61.9	80.7	105.6	80.7	61.9
87.5°	245.5	221.9	142.9	52.7	6.9	31.3	55.6	75.0	87.9	75.0	55.6
90°	292.5	272.2	190.2	77.9	2.6	19.8	38.5	56.3	62.8	56.3	38.5
92.5°	351.0	328.7	240.9	118.5	25.5	12.9	31.2	45.4	50.9	45.4	31.2
95°	403.8	392.7	299.8	162.2	62.2	9.0	24.3	37.4	41.0	37.4	24.3
97.5°	463.4	453.7	360.4	215.3	109.7	19.4	21.9	32.6	34.6	32.6	21.9
100°	516.1	511.7	421.4	281.2	167.9	51.5	15.6	31.0	33.9	31.0	15.6
102.5°	596.6	574.3	480.3	344.0	230.7	95.9	24.0	23.1	27.0	23.1	24.0
105°	662.2	636.8	555.3	409.8	302.6	155.7	60.7	21.3	17.6	21.3	60.7
107.5°	723.1	707.9	622.7	477.2	379.1	224.6	112.7	58.6	37.1	58.6	112.7
110°	799.7	781.3	688.5	544.5	458.8	298.1	172.5	107.6	83.1	107.6	172.5



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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°	873.2	859.4	749.7	615.0	541.5	377.7	246.0	168.8	145.9	168.8	246.0
115°	929.9	922.2	821.2	680.8	618.0	468.0	328.1	240.9	213.3	240.9	328.1
117.5°	989.5	988.1	873.2	748.2	709.9	549.2	403.1	312.8	283.7	312.8	403.1
120°	1064.6	1052.3	945.2	815.6	797.2	634.9	485.8	395.5	366.4	395.5	485.8
122.5°	1116.7	1109.0	1006.4	879.9	879.9	722.1	565.5	475.1	444.5	475.1	565.5
125°	1164.2	1161.0	1052.3	944.2	968.7	803.3	654.2	562.3	528.7	562.3	654.2
127.5°	1207.0	1211.6	1112.1	1014.6	1059.0	886.0	741.5	640.5	605.3	640.5	741.5
130°	1243.8	1259.1	1168.7	1079.0	1144.8	976.4	819.6	718.6	695.6	718.6	819.6
132.5°	1315.7	1306.6	1226.9	1144.8	1236.6	1059.0	902.3	796.6	770.6	796.6	902.3
135°	1352.5	1355.5	1277.5	1202.4	1322.4	1142.6	980.4	876.2	850.3	876.2	980.4
137.5°	1396.9	1387.6	1317.3	1271.3	1402.0	1222.3	1056.9	960.4	919.2	960.4	1056.9
140°	1429.0	1427.4	1369.3	1332.5	1487.8	1300.4	1135.1	1037.0	998.8	1037.0	1135.1
142.5°	1462.7	1471.9	1421.3	1399.9	1573.5	1383.1	1219.2	1112.1	1075.3	1112.1	1219.2
145°	1485.6	1505.6	1473.4	1484.1	1654.6	1474.9	1292.7	1184.0	1144.2	1184.0	1292.7
147.5°	1523.9	1550.0	1511.7	1543.9	1725.1	1556.1	1366.2	1259.1	1223.8	1259.1	1366.2
150°	1576.0	1588.2	1565.3	1626.5	1798.0	1646.4	1441.3	1331.0	1295.8	1331.0	1441.3
152.5°	1617.3	1632.6	1606.6	1716.9	1854.6	1729.1	1523.9	1401.5	1360.1	1401.5	1523.9
155°	1660.2	1666.3	1648.0	1804.1	1914.4	1810.3	1589.8	1479.5	1439.7	1479.5	1589.8
157.5°	1700.0	1712.2	1690.8	1870.0	1966.5	1880.7	1664.8	1557.6	1522.4	1557.6	1664.8
160°	1742.9	1742.9	1755.2	1946.5	2009.3	1941.9	1744.5	1643.3	1594.4	1643.3	1744.5
162.5°	1747.5	1776.6	1842.4	2000.2	2050.7	1995.6	1830.2	1704.7	1661.7	1704.7	1830.2
165°	1814.8	1840.9	1940.4	2047.6	2082.8	2043.0	1935.8	1805.7	1755.2	1805.7	1935.8
167.5°	1885.3	1940.4	2020.0	2101.2	2113.4	2087.4	2017.0	1926.7	1880.7	1926.7	2017.0
170°	2000.2	2047.6	2087.4	2121.1	2138.0	2122.6	2067.5	2023.1	1994.0	2023.1	2067.5
172.5°	2089.5	2121.1	2136.4	2157.8	2147.1	2141.0	2113.4	2092.0	2075.8	2092.0	2113.4
175°	2146.1	2153.3	2167.0	2159.4	2168.5	2151.7	2153.3	2164.0	2100.2	2164.0	2153.3
177.5°	2166.1	2177.8	2170.1	2156.3	2157.8	2154.8	2160.9	2167.0	2156.8	2167.0	2160.9
180°	2167.0	2167.0	2167.0	2167.0	2167.0	2167.0	2167.0	2167.0	2167.0	2167.0	2167.0



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CATALOG NUMBER: MWL-3-53-28-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1216.5	1216.5	1216.5	1216.5	1216.5	1216.5
2.5°	1215.2	1217.6	1216.6	1214.2	1214.0	1210.9
5°	1208.3	1210.2	1208.3	1207.3	1207.1	1204.1
7.5°	1196.9	1199.4	1198.5	1195.9	1197.9	1194.8
10°	1180.6	1184.1	1182.1	1181.2	1182.1	1180.6
12.5°	1162.9	1161.4	1162.9	1161.9	1164.5	1166.0
15°	1140.8	1139.8	1142.2	1140.3	1141.9	1142.9
17.5°	1115.2	1115.2	1115.2	1113.7	1116.3	1118.4
20°	1086.1	1086.1	1087.7	1086.2	1088.4	1087.9
22.5°	1055.7	1054.7	1057.2	1053.8	1055.0	1053.0
25°	1022.3	1022.3	1023.8	1022.9	1017.6	1014.7
27.5°	986.5	985.9	988.0	983.6	978.3	975.4
30°	948.2	947.6	951.2	945.9	934.1	928.2
32.5°	907.9	908.8	910.9	900.7	887.9	883.0
35°	862.1	866.0	866.7	851.9	835.2	832.3
37.5°	816.9	822.4	821.5	800.8	783.1	782.2
40°	766.7	776.2	769.8	745.8	730.1	732.0
42.5°	714.7	726.1	717.7	690.2	678.0	684.9
45°	655.7	674.0	658.7	634.2	627.3	639.1
47.5°	597.7	617.0	599.3	580.1	583.1	593.9
50°	538.2	550.5	541.3	530.0	538.8	550.6
52.5°	480.3	478.8	483.3	481.3	496.6	507.4
55°	422.7	402.6	425.7	436.1	455.8	465.6
57.5°	364.7	342.7	367.7	392.9	417.5	426.3
60°	308.7	291.6	310.3	348.1	376.6	381.5
62.5°	260.5	246.8	262.1	303.9	336.3	342.2
65°	217.3	214.3	218.9	259.1	292.6	301.4
67.5°	183.9	180.9	183.9	220.8	252.3	261.1
70°	151.4	153.4	151.4	182.9	210.4	224.2
72.5°	123.4	128.3	124.9	150.5	171.1	190.8
75°	99.8	105.7	99.8	116.6	138.7	160.3
77.5°	79.2	87.1	79.2	91.0	119.2	150.0
80°	60.5	66.4	60.5	75.9	121.1	156.4
82.5°	42.8	45.8	42.8	82.5	139.9	172.5
85°	34.5	26.1	37.5	106.3	174.1	205.2
87.5°	31.3	6.9	52.7	142.9	221.9	245.5
90°	19.8	2.6	77.9	190.2	272.2	292.5
92.5°	12.9	25.5	118.5	240.9	328.7	351.0
95°	9.0	62.2	162.2	299.8	392.7	403.8
97.5°	19.4	109.7	215.3	360.4	453.7	463.4
100°	51.5	167.9	281.2	421.4	511.7	516.1
102.5°	95.9	230.7	344.0	480.3	574.3	596.6
105°	155.7	302.6	409.8	555.3	636.8	662.2
107.5°	224.6	379.1	477.2	622.7	707.9	723.1
110°	298.1	458.8	544.5	688.5	781.3	799.7



TEST NUMBER: P392620

CATALOG NUMBER: MWL-3-53-28-UNV-L835-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	377.7	541.5	615.0	749.7	859.4	873.2
115°	468.0	618.0	680.8	821.2	922.2	929.9
117.5°	549.2	709.9	748.2	873.2	988.1	989.5
120°	634.9	797.2	815.6	945.2	1052.3	1064.6
122.5°	722.1	879.9	879.9	1006.4	1109.0	1116.7
125°	803.3	968.7	944.2	1052.3	1161.0	1164.2
127.5°	886.0	1059.0	1014.6	1112.1	1211.6	1207.0
130°	976.4	1144.8	1079.0	1168.7	1259.1	1243.8
132.5°	1059.0	1236.6	1144.8	1226.9	1306.6	1315.7
135°	1142.6	1322.4	1202.4	1277.5	1355.5	1352.5
137.5°	1222.3	1402.0	1271.3	1317.3	1387.6	1396.9
140°	1300.4	1487.8	1332.5	1369.3	1427.4	1429.0
142.5°	1383.1	1573.5	1399.9	1421.3	1471.9	1462.7
145°	1474.9	1654.6	1484.1	1473.4	1505.6	1485.6
147.5°	1556.1	1725.1	1543.9	1511.7	1550.0	1523.9
150°	1646.4	1798.0	1626.5	1565.3	1588.2	1576.0
152.5°	1729.1	1854.6	1716.9	1606.6	1632.6	1617.3
155°	1810.3	1914.4	1804.1	1648.0	1666.3	1660.2
157.5°	1880.7	1966.5	1870.0	1690.8	1712.2	1700.0
160°	1941.9	2009.3	1946.5	1755.2	1742.9	1742.9
162.5°	1995.6	2050.7	2000.2	1842.4	1776.6	1747.5
165°	2043.0	2082.8	2047.6	1940.4	1840.9	1814.8
167.5°	2087.4	2113.4	2101.2	2020.0	1940.4	1885.3
170°	2122.6	2138.0	2121.1	2087.4	2047.6	2000.2
172.5°	2141.0	2147.1	2157.8	2136.4	2121.1	2089.5
175°	2151.7	2168.5	2159.4	2167.0	2153.3	2146.1
177.5°	2154.8	2157.8	2156.3	2170.1	2177.8	2166.1
180°	2167.0	2167.0	2167.0	2167.0	2167.0	2167.0

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