

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: P392587

Luminaire Tested: **MWL-3-30-47-UNV-L835-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392587  
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-3-30-47-UNV-L835-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

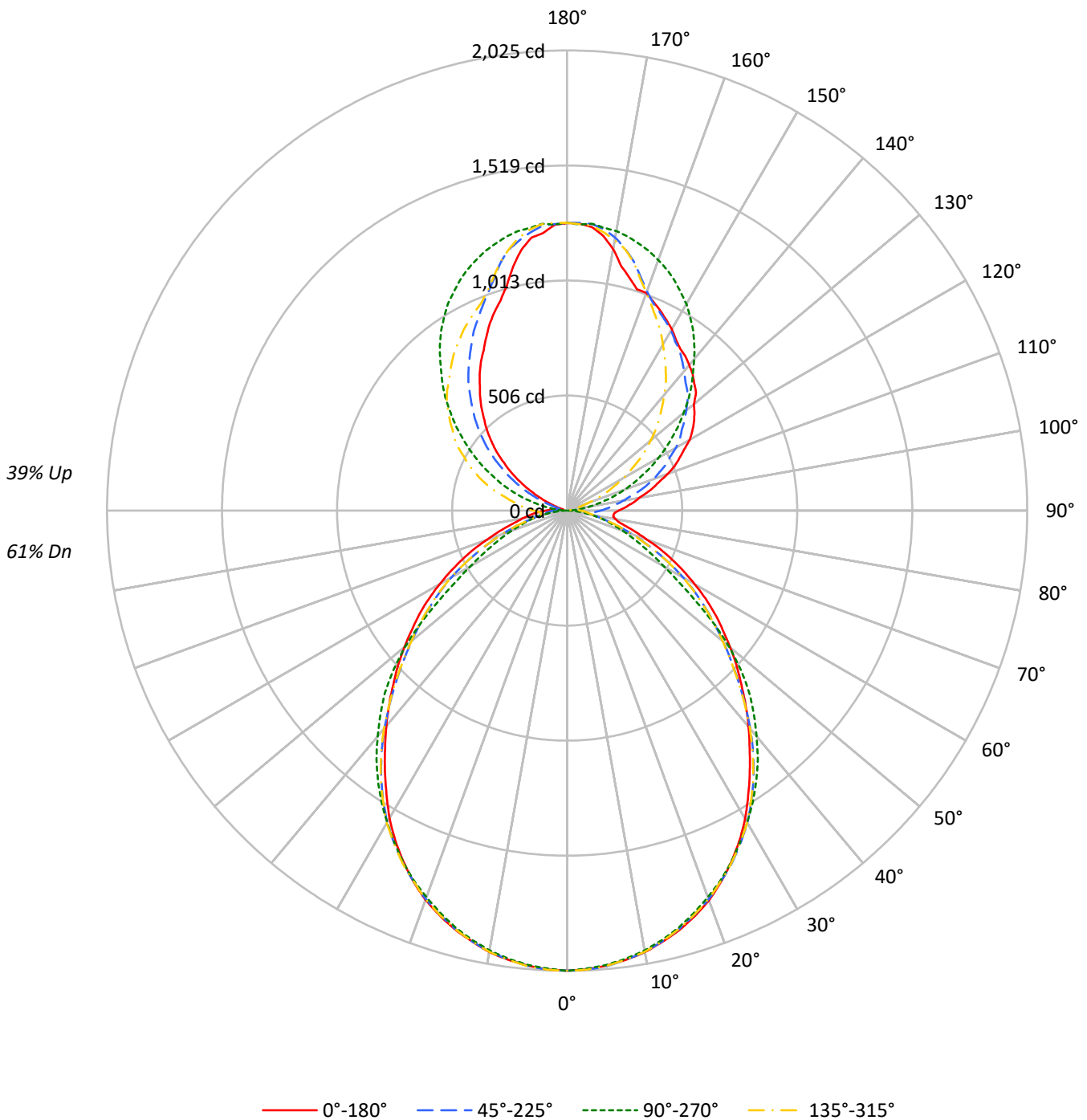
Lumens per Lamp: N/A  
Luminaire Lumens: 7726.0 lumens  
Efficiency: N/A  
Efficacy: 93.3 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 82.8  
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





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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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	100	96	92	89	94	90	87	84	79	76	74	68	66	65	59	57	56	51
2	92	84	78	73	86	79	74	69	69	65	62	60	57	55	52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	52	54	50	47	46	44	41	38
4	77	66	58	52	72	62	55	50	55	50	45	48	44	40	42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39	43	39	35	38	34	32	29
6	66	53	45	40	61	50	43	38	45	39	34	39	35	31	35	31	28	25
7	61	48	40	35	57	46	39	33	41	35	31	36	31	28	32	28	25	23
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	23	20
9	53	40	33	28	49	38	31	27	34	29	25	31	26	22	27	23	20	18
10	49	37	30	25	46	35	29	24	32	26	22	28	24	20	25	21	19	17

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

	0°	90°	180°	270°
0°	17438	17438	17438	17438
5°	17162	15946	17162	15946
10°	16839	14606	16839	14606
15°	16423	13354	16399	13354
20°	15922	12160	15897	12160
25°	15236	11060	15212	11060
30°	14424	9985	14390	9985
35°	13421	8973	13395	8973
40°	12501	7926	12465	7926
45°	11595	6903	11568	6903
50°	10770	5681	10740	5681
55°	9955	4240	9932	4240
60°	9000	3108	8988	3108
65°	7988	2349	7988	2349
70°	6803	1742	6819	1742
75°	5875	1257	5934	1257
80°	5983	795	5515	795
85°	7824	335	5605	335



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	190.6	2.5
10°-20°	536.6	6.9
20°-30°	786.3	10.2
30°-40°	891.3	11.5
40°-50°	838.1	10.8
50°-60°	665.4	8.6
60°-70°	433.2	5.6
70°-80°	221.1	2.9
80°-90°	116.3	1.5
90°-100°	121.0	1.6
100°-110°	199.2	2.6
110°-120°	337.2	4.4
120°-130°	457.7	5.9
130°-140°	521.8	6.8
140°-150°	520.3	6.7
150°-160°	452.9	5.9
160°-170°	318.5	4.1
170°-180°	118.6	1.5
0°-30°	1513.5	19.6
0°-40°	2404.8	31.1
0°-60°	3908.3	50.6
0°-90°	4678.8	60.6
90°-120°	657.4	8.5
90°-150°	2157.2	27.9
90°-180°	3047.0	39.4
0°-180°	7726.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2025	2025	2025	2025	2025	
5°	2010	2006	2010	2006	2010	191
15°	1911	1899	1908	1899	1911	538
25°	1707	1707	1705	1707	1707	785
35°	1401	1451	1398	1451	1401	877
45°	1084	1134	1082	1134	1084	839
55°	795	686	793	686	795	709
65°	509	362	509	362	509	505
75°	268	179	271	179	268	294
85°	205	42	147	42	205	170
90°	226	2	93	2	226	125
95°	272	37	61	37	272	234
105°	393	178	17	178	393	415
115°	545	362	127	362	545	541
125°	681	567	311	567	681	608
135°	791	773	498	773	791	611
145°	869	967	670	967	869	548
155°	970	1118	842	1118	970	448
165°	1060	1217	1026	1217	1060	301
175°	1252	1267	1225	1267	1252	117
180°	1266	1266	1266	1266	1266	



TEST NUMBER: P392587

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2025.0	2025.0	2025.0	2025.0	2025.0	2025.0	2025.0	2025.0	2025.0	2025.0	2025.0
2.5°	2020.3	2023.0	2022.0	2018.9	2016.9	2018.0	2022.0	2023.0	2021.2	2023.0	2022.0
5°	2009.5	2012.2	2012.1	2008.2	2006.2	2008.2	2011.2	2012.2	2009.5	2012.2	2011.2
7.5°	1993.6	1997.5	1992.6	1991.5	1988.5	1990.6	1991.6	1996.5	1993.6	1996.5	1991.6
10°	1972.9	1974.9	1971.9	1967.0	1965.0	1966.0	1970.9	1973.0	1972.9	1973.0	1970.9
12.5°	1943.3	1943.4	1940.5	1936.5	1934.7	1936.5	1940.5	1941.6	1941.5	1941.6	1940.5
15°	1910.8	1908.0	1906.1	1903.1	1899.3	1902.2	1905.2	1906.2	1908.0	1906.2	1905.2
17.5°	1870.5	1868.7	1864.8	1861.9	1856.1	1861.9	1863.9	1867.7	1867.7	1867.7	1863.9
20°	1825.3	1822.4	1820.6	1815.8	1810.0	1814.9	1819.7	1820.6	1822.5	1820.6	1819.7
22.5°	1769.4	1769.4	1766.5	1765.6	1762.8	1764.7	1765.6	1767.5	1767.5	1767.5	1765.6
25°	1707.4	1709.4	1713.4	1711.6	1706.8	1710.7	1711.6	1706.7	1704.7	1706.7	1711.6
27.5°	1640.6	1643.6	1650.5	1654.5	1646.8	1653.6	1648.7	1640.8	1637.9	1640.8	1648.7
30°	1566.9	1571.8	1587.5	1593.5	1583.9	1591.7	1584.8	1569.1	1563.3	1569.1	1584.8
32.5°	1483.4	1491.2	1509.9	1523.8	1520.9	1521.9	1507.2	1487.6	1479.7	1487.6	1507.2
35°	1400.9	1407.8	1430.4	1452.0	1451.2	1449.3	1427.6	1405.0	1398.2	1405.0	1427.6
37.5°	1319.3	1320.3	1343.9	1373.4	1378.4	1370.6	1341.2	1317.6	1316.6	1317.6	1341.2
40°	1241.7	1238.7	1254.5	1288.9	1296.8	1287.1	1250.8	1235.1	1238.1	1235.1	1250.8
42.5°	1163.1	1152.3	1159.1	1201.4	1216.2	1199.6	1156.5	1148.6	1159.4	1148.6	1156.5
45°	1084.4	1069.7	1067.7	1105.1	1133.7	1103.3	1064.2	1067.0	1081.8	1067.0	1064.2
47.5°	1011.7	993.0	979.3	1006.9	1035.4	1006.0	975.7	990.4	1009.1	990.4	975.7
50°	937.0	916.4	895.7	912.5	929.4	910.8	892.2	912.8	934.4	912.8	892.2
52.5°	863.3	846.6	816.2	815.2	808.5	813.5	813.6	843.1	860.7	843.1	813.6
55°	794.6	777.9	739.6	722.0	685.7	720.2	736.9	775.2	792.8	775.2	736.9
57.5°	722.9	710.1	665.9	622.7	577.6	620.9	663.2	707.4	721.1	707.4	663.2
60°	648.3	641.4	590.3	522.6	493.1	521.7	588.5	639.6	647.4	639.6	588.5
62.5°	577.5	571.6	513.6	441.0	422.4	440.1	511.9	569.8	576.6	569.8	511.9
65°	508.8	495.0	437.1	368.3	362.5	367.4	436.2	494.2	508.8	494.2	436.2
67.5°	443.9	426.2	366.3	308.4	308.4	308.4	365.4	425.4	443.9	425.4	365.4
70°	373.3	351.7	304.5	255.3	259.3	255.3	304.5	352.5	374.2	352.5	304.5
72.5°	319.2	283.8	247.5	207.2	215.1	206.3	247.5	284.7	321.0	284.7	247.5
75°	268.1	230.8	192.5	164.0	178.8	164.0	193.4	231.7	270.8	231.7	193.4
77.5°	232.0	190.1	148.3	128.7	143.4	128.7	149.2	187.4	228.4	187.4	149.2
80°	215.7	171.2	120.5	96.2	107.0	96.2	118.7	156.9	198.8	156.9	118.7
82.5°	204.7	165.2	109.6	69.7	76.6	69.7	98.9	133.1	170.8	133.1	98.9
85°	204.9	170.4	113.5	55.6	42.2	53.9	87.7	116.0	146.8	116.0	87.7
87.5°	210.4	188.7	125.6	57.3	12.8	44.7	74.8	103.0	118.5	103.0	74.8
90°	226.5	209.8	146.9	64.2	1.9	30.3	58.6	83.9	92.8	83.9	58.6
92.5°	251.1	235.5	170.1	80.1	15.2	18.5	47.9	70.4	76.2	70.4	47.9
95°	272.1	263.9	196.8	96.7	36.7	7.5	36.1	56.8	60.6	56.8	36.1
97.5°	300.6	293.2	221.2	126.9	64.4	12.7	24.0	47.8	50.7	47.8	24.0
100°	320.7	314.9	250.6	165.3	98.3	31.5	14.2	34.7	39.6	34.7	14.2
102.5°	358.7	343.1	282.3	201.9	134.8	57.3	16.3	21.9	26.8	21.9	16.3
105°	392.7	376.3	326.0	240.2	177.8	92.1	37.7	17.6	17.1	17.6	37.7
107.5°	426.1	415.3	365.2	279.5	222.4	132.3	68.1	37.0	26.4	37.0	68.1
110°	469.8	458.1	403.6	318.7	268.8	175.0	102.9	65.5	52.2	65.5	102.9



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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°	511.7	502.7	439.3	359.8	317.0	221.5	145.8	100.2	87.8	100.2	145.8
115°	544.7	539.3	480.4	398.1	361.6	274.1	193.0	142.1	127.1	142.1	193.0
117.5°	579.5	577.6	510.7	437.5	415.1	321.4	236.8	184.1	168.2	184.1	236.8
120°	623.2	616.1	552.6	476.7	466.0	371.4	284.9	233.2	216.3	233.2	284.9
122.5°	653.6	649.2	588.3	515.2	515.2	423.2	331.3	279.7	261.8	279.7	331.3
125°	681.2	679.4	615.1	552.6	566.9	470.6	383.1	330.5	310.9	330.5	383.1
127.5°	706.3	708.9	649.9	593.7	619.6	518.7	433.9	376.0	355.5	376.0	433.9
130°	727.7	736.5	683.9	631.2	669.5	571.4	480.4	421.5	408.2	421.5	480.4
132.5°	769.5	764.2	717.8	669.5	723.1	619.6	528.7	467.0	451.9	467.0	528.7
135°	791.0	792.7	747.2	702.5	773.1	667.7	574.2	513.4	498.3	513.4	574.2
137.5°	816.8	811.5	770.4	743.7	819.5	715.1	618.8	562.6	538.5	562.6	618.8
140°	835.6	834.7	800.8	779.4	869.4	760.6	664.3	607.2	584.9	607.2	664.3
142.5°	855.2	860.6	831.2	818.7	919.4	808.9	713.3	650.9	629.5	650.9	713.3
145°	868.6	880.2	861.4	867.7	966.7	862.4	756.2	692.8	669.6	692.8	756.2
147.5°	890.9	906.1	883.7	902.5	1007.8	909.7	799.0	736.5	716.0	736.5	799.0
150°	921.3	928.4	915.0	950.7	1049.6	962.3	842.8	778.5	757.9	778.5	842.8
152.5°	945.4	954.3	939.1	1003.4	1082.7	1010.5	890.9	819.6	795.5	819.6	890.9
155°	970.3	973.9	963.3	1054.3	1117.5	1057.8	929.3	865.1	841.9	865.1	929.3
157.5°	993.5	1000.7	988.2	1091.6	1147.8	1097.9	973.0	910.6	890.0	910.6	973.0
160°	1018.5	1018.5	1025.7	1137.2	1172.8	1134.6	1019.5	960.5	932.0	960.5	1019.5
162.5°	1021.2	1038.2	1076.6	1168.5	1197.9	1165.8	1069.4	996.2	971.2	996.2	1069.4
165°	1060.5	1075.7	1133.7	1196.1	1216.6	1193.4	1130.9	1055.2	1025.7	1055.2	1130.9
167.5°	1101.5	1133.7	1180.1	1227.3	1234.5	1219.3	1178.3	1125.6	1098.9	1125.6	1178.3
170°	1167.5	1195.1	1219.3	1238.9	1248.8	1239.8	1207.7	1180.9	1163.9	1180.9	1207.7
172.5°	1219.2	1238.0	1247.9	1260.4	1254.1	1250.5	1234.5	1221.1	1211.1	1221.1	1234.5
175°	1252.1	1256.7	1265.7	1261.2	1266.7	1256.8	1257.7	1262.9	1225.4	1262.9	1257.7
177.5°	1263.7	1271.0	1267.5	1259.5	1260.4	1258.6	1262.1	1264.7	1258.4	1264.7	1262.1
180°	1265.7	1265.7	1265.7	1265.7	1265.7	1265.7	1265.7	1265.7	1265.7	1265.7	1265.7



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2025.0	2025.0	2025.0	2025.0	2025.0	2025.0
2.5°	2018.0	2016.9	2018.9	2022.0	2023.0	2020.3
5°	2008.2	2006.2	2008.2	2012.1	2012.2	2009.5
7.5°	1990.6	1988.5	1991.5	1992.6	1997.5	1993.6
10°	1966.0	1965.0	1967.0	1971.9	1974.9	1972.9
12.5°	1936.5	1934.7	1936.5	1940.5	1943.4	1943.3
15°	1902.2	1899.3	1903.1	1906.1	1908.0	1910.8
17.5°	1861.9	1856.1	1861.9	1864.8	1868.7	1870.5
20°	1814.9	1810.0	1815.8	1820.6	1822.4	1825.3
22.5°	1764.7	1762.8	1765.6	1766.5	1769.4	1769.4
25°	1710.7	1706.8	1711.6	1713.4	1709.4	1707.4
27.5°	1653.6	1646.8	1654.5	1650.5	1643.6	1640.6
30°	1591.7	1583.9	1593.5	1587.5	1571.8	1566.9
32.5°	1521.9	1520.9	1523.8	1509.9	1491.2	1483.4
35°	1449.3	1451.2	1452.0	1430.4	1407.8	1400.9
37.5°	1370.6	1378.4	1373.4	1343.9	1320.3	1319.3
40°	1287.1	1296.8	1288.9	1254.5	1238.7	1241.7
42.5°	1199.6	1216.2	1201.4	1159.1	1152.3	1163.1
45°	1103.3	1133.7	1105.1	1067.7	1069.7	1084.4
47.5°	1006.0	1035.4	1006.9	979.3	993.0	1011.7
50°	910.8	929.4	912.5	895.7	916.4	937.0
52.5°	813.5	808.5	815.2	816.2	846.6	863.3
55°	720.2	685.7	722.0	739.6	777.9	794.6
57.5°	620.9	577.6	622.7	665.9	710.1	722.9
60°	521.7	493.1	522.6	590.3	641.4	648.3
62.5°	440.1	422.4	441.0	513.6	571.6	577.5
65°	367.4	362.5	368.3	437.1	495.0	508.8
67.5°	308.4	308.4	308.4	366.3	426.2	443.9
70°	255.3	259.3	255.3	304.5	351.7	373.3
72.5°	206.3	215.1	207.2	247.5	283.8	319.2
75°	164.0	178.8	164.0	192.5	230.8	268.1
77.5°	128.7	143.4	128.7	148.3	190.1	232.0
80°	96.2	107.0	96.2	120.5	171.2	215.7
82.5°	69.7	76.6	69.7	109.6	165.2	204.7
85°	53.9	42.2	55.6	113.5	170.4	204.9
87.5°	44.7	12.8	57.3	125.6	188.7	210.4
90°	30.3	1.9	64.2	146.9	209.8	226.5
92.5°	18.5	15.2	80.1	170.1	235.5	251.1
95°	7.5	36.7	96.7	196.8	263.9	272.1
97.5°	12.7	64.4	126.9	221.2	293.2	300.6
100°	31.5	98.3	165.3	250.6	314.9	320.7
102.5°	57.3	134.8	201.9	282.3	343.1	358.7
105°	92.1	177.8	240.2	326.0	376.3	392.7
107.5°	132.3	222.4	279.5	365.2	415.3	426.1
110°	175.0	268.8	318.7	403.6	458.1	469.8





TEST NUMBER: P392587

CATALOG NUMBER: MWL-3-30-47-UNV-L835-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	221.5	317.0	359.8	439.3	502.7	511.7
115°	274.1	361.6	398.1	480.4	539.3	544.7
117.5°	321.4	415.1	437.5	510.7	577.6	579.5
120°	371.4	466.0	476.7	552.6	616.1	623.2
122.5°	423.2	515.2	515.2	588.3	649.2	653.6
125°	470.6	566.9	552.6	615.1	679.4	681.2
127.5°	518.7	619.6	593.7	649.9	708.9	706.3
130°	571.4	669.5	631.2	683.9	736.5	727.7
132.5°	619.6	723.1	669.5	717.8	764.2	769.5
135°	667.7	773.1	702.5	747.2	792.7	791.0
137.5°	715.1	819.5	743.7	770.4	811.5	816.8
140°	760.6	869.4	779.4	800.8	834.7	835.6
142.5°	808.9	919.4	818.7	831.2	860.6	855.2
145°	862.4	966.7	867.7	861.4	880.2	868.6
147.5°	909.7	1007.8	902.5	883.7	906.1	890.9
150°	962.3	1049.6	950.7	915.0	928.4	921.3
152.5°	1010.5	1082.7	1003.4	939.1	954.3	945.4
155°	1057.8	1117.5	1054.3	963.3	973.9	970.3
157.5°	1097.9	1147.8	1091.6	988.2	1000.7	993.5
160°	1134.6	1172.8	1137.2	1025.7	1018.5	1018.5
162.5°	1165.8	1197.9	1168.5	1076.6	1038.2	1021.2
165°	1193.4	1216.6	1196.1	1133.7	1075.7	1060.5
167.5°	1219.3	1234.5	1227.3	1180.1	1133.7	1101.5
170°	1239.8	1248.8	1238.9	1219.3	1195.1	1167.5
172.5°	1250.5	1254.1	1260.4	1247.9	1238.0	1219.2
175°	1256.8	1266.7	1261.2	1265.7	1256.7	1252.1
177.5°	1258.6	1260.4	1259.5	1267.5	1271.0	1263.7
180°	1265.7	1265.7	1265.7	1265.7	1265.7	1265.7

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