

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: P392588

Luminaire Tested: **MWL-3-30-47-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392588
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-L940-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

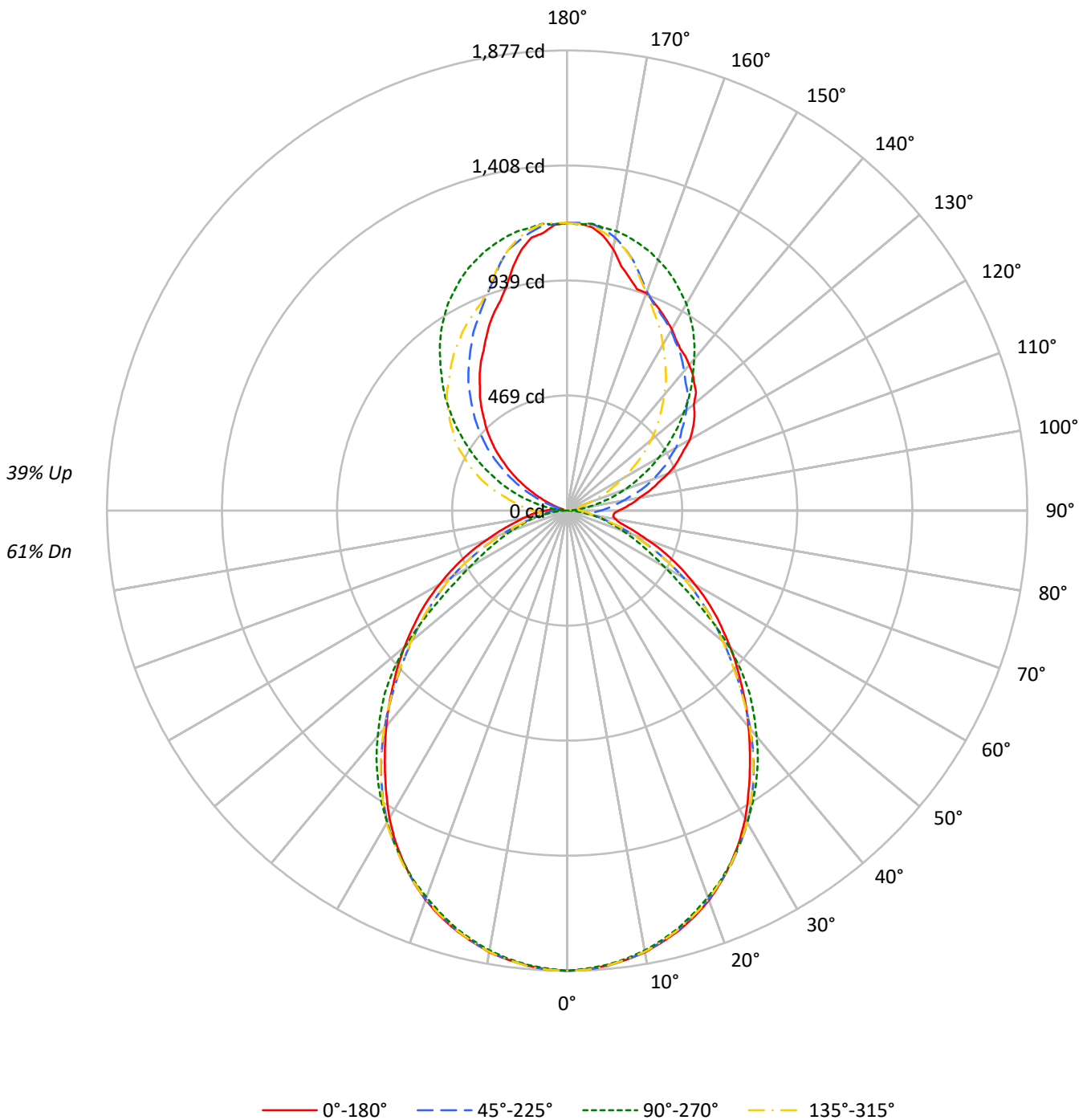
Lumens per Lamp: N/A
Luminaire Lumens: 7162.2 lumens
Efficiency: N/A
Efficacy: 85.6 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 83.628
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°	16165	16165	16165	16165
5°	15909	14783	15909	14783
10°	15610	13541	15610	13541
15°	15225	12379	15203	12379
20°	14760	11273	14737	11273
25°	14125	10252	14102	10252
30°	13371	9256	13340	9256
35°	12442	8318	12417	8318
40°	11589	7348	11555	7348
45°	10750	6400	10723	6400
50°	9984	5266	9956	5266
55°	9228	3930	9208	3930
60°	8343	2881	8331	2881
65°	7405	2177	7405	2177
70°	6305	1614	6322	1614
75°	5445	1165	5500	1165
80°	5548	737	5112	737
85°	7255	311	5197	311



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.7	2.5
10°-20°	497.5	6.9
20°-30°	728.9	10.2
30°-40°	826.2	11.5
40°-50°	777.0	10.8
50°-60°	616.8	8.6
60°-70°	401.6	5.6
70°-80°	205.0	2.9
80°-90°	107.8	1.5
90°-100°	112.2	1.6
100°-110°	184.7	2.6
110°-120°	312.6	4.4
120°-130°	424.3	5.9
130°-140°	483.7	6.8
140°-150°	482.3	6.7
150°-160°	419.8	5.9
160°-170°	295.3	4.1
170°-180°	109.9	1.5
0°-30°	1403.1	19.6
0°-40°	2229.3	31.1
0°-60°	3623.1	50.6
0°-90°	4337.4	60.6
90°-120°	609.4	8.5
90°-150°	1999.8	27.9
90°-180°	2825.0	39.4
0°-180°	7162.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1877	1877	1877	1877	1877	
5°	1863	1860	1863	1860	1863	177
15°	1771	1761	1769	1761	1771	499
25°	1583	1582	1580	1582	1583	728
35°	1299	1345	1296	1345	1299	813
45°	1005	1051	1003	1051	1005	778
55°	737	636	735	636	737	658
65°	472	336	472	336	472	468
75°	248	166	251	166	248	272
85°	190	39	136	39	190	157
90°	210	2	86	2	210	116
95°	252	34	56	34	252	217
105°	364	165	16	165	364	385
115°	505	335	118	335	505	501
125°	632	526	288	526	632	564
135°	733	717	462	717	733	566
145°	805	896	621	896	805	508
155°	900	1036	780	1036	900	415
165°	983	1128	951	1128	983	279
175°	1161	1174	1136	1174	1161	108
180°	1173	1173	1173	1173	1173	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1877.2	1877.2	1877.2	1877.2	1877.2	1877.2	1877.2	1877.2	1877.2	1877.2	1877.2
2.5°	1872.9	1875.4	1874.4	1871.6	1869.8	1870.8	1874.4	1875.4	1873.7	1875.4	1874.4
5°	1862.8	1865.4	1865.3	1861.7	1859.8	1861.7	1864.5	1865.4	1862.8	1865.4	1864.5
7.5°	1848.2	1851.7	1847.2	1846.2	1843.4	1845.3	1846.3	1850.8	1848.2	1850.8	1846.3
10°	1828.9	1830.8	1828.0	1823.5	1821.7	1822.6	1827.1	1829.0	1828.9	1829.0	1827.1
12.5°	1801.5	1801.6	1798.9	1795.2	1793.5	1795.2	1798.9	1799.9	1799.8	1799.9	1798.9
15°	1771.4	1768.8	1767.0	1764.3	1760.7	1763.4	1766.2	1767.1	1768.8	1767.1	1766.2
17.5°	1734.0	1732.4	1728.7	1726.1	1720.6	1726.1	1727.9	1731.5	1731.5	1731.5	1727.9
20°	1692.1	1689.5	1687.7	1683.3	1677.9	1682.4	1686.9	1687.7	1689.5	1687.7	1686.9
22.5°	1640.3	1640.3	1637.6	1636.8	1634.1	1636.0	1636.8	1638.5	1638.5	1638.5	1636.8
25°	1582.9	1584.7	1588.4	1586.7	1582.2	1585.9	1586.7	1582.1	1580.3	1582.1	1586.7
27.5°	1520.9	1523.6	1530.1	1533.7	1526.6	1532.9	1528.4	1521.1	1518.3	1521.1	1528.4
30°	1452.6	1457.1	1471.7	1477.3	1468.3	1475.5	1469.1	1454.6	1449.2	1454.6	1469.1
32.5°	1375.1	1382.4	1399.7	1412.6	1409.9	1410.8	1397.2	1379.0	1371.8	1379.0	1397.2
35°	1298.7	1305.1	1326.0	1346.1	1345.3	1343.5	1323.5	1302.5	1296.1	1302.5	1323.5
37.5°	1223.1	1224.0	1245.8	1273.2	1277.8	1270.6	1243.3	1221.4	1220.5	1221.4	1243.3
40°	1151.1	1148.4	1162.9	1194.8	1202.2	1193.2	1159.6	1145.0	1147.7	1145.0	1159.6
42.5°	1078.2	1068.2	1074.6	1113.7	1127.5	1112.1	1072.1	1064.8	1074.8	1064.8	1072.1
45°	1005.3	991.6	989.8	1024.4	1051.0	1022.8	986.5	989.2	1002.8	989.2	986.5
47.5°	937.9	920.6	907.8	933.4	959.8	932.6	904.5	918.1	935.4	918.1	904.5
50°	868.6	849.5	830.4	846.0	861.5	844.3	827.1	846.2	866.2	846.2	827.1
52.5°	800.3	784.8	756.7	755.8	749.5	754.1	754.2	781.5	797.9	781.5	754.2
55°	736.6	721.1	685.6	669.3	635.7	667.7	683.1	718.7	735.0	718.7	683.1
57.5°	670.1	658.3	617.3	577.3	535.5	575.6	614.8	655.8	668.5	655.8	614.8
60°	601.0	594.6	547.2	484.4	457.1	483.6	545.6	592.9	600.1	592.9	545.6
62.5°	535.4	529.9	476.1	408.8	391.6	408.0	474.5	528.3	534.5	528.3	474.5
65°	471.7	458.9	405.2	341.4	336.0	340.6	404.3	458.1	471.7	458.1	404.3
67.5°	411.5	395.1	339.6	285.9	285.9	285.9	338.7	394.3	411.5	394.3	338.7
70°	346.0	326.0	282.3	236.7	240.3	236.7	282.3	326.8	346.9	326.8	282.3
72.5°	295.9	263.1	229.4	192.1	199.4	191.2	229.4	263.9	297.6	263.9	229.4
75°	248.5	213.9	178.5	152.1	165.7	152.1	179.3	214.7	251.0	214.7	179.3
77.5°	215.1	176.2	137.5	119.3	132.9	119.3	138.3	173.7	211.7	173.7	138.3
80°	200.0	158.7	111.7	89.2	99.2	89.2	110.1	145.4	184.3	145.4	110.1
82.5°	189.8	153.2	101.6	64.6	71.0	64.6	91.7	123.4	158.3	123.4	91.7
85°	190.0	158.0	105.2	51.6	39.1	49.9	81.3	107.5	136.1	107.5	81.3
87.5°	195.1	174.9	116.4	53.1	11.8	41.5	69.3	95.5	109.9	95.5	69.3
90°	210.0	194.5	136.2	59.5	1.7	28.1	54.3	77.8	86.0	77.8	54.3
92.5°	232.8	218.3	157.7	74.3	14.1	17.1	44.4	65.2	70.6	65.2	44.4
95°	252.3	244.6	182.4	89.7	34.0	6.9	33.4	52.7	56.2	52.7	33.4
97.5°	278.7	271.8	205.1	117.6	59.7	11.8	22.2	44.3	47.0	44.3	22.2
100°	297.3	291.9	232.3	153.2	91.1	29.2	13.1	32.2	36.7	32.2	13.1
102.5°	332.6	318.1	261.7	187.1	125.0	53.1	15.1	20.3	24.9	20.3	15.1
105°	364.1	348.9	302.2	222.7	164.8	85.4	35.0	16.3	15.9	16.3	35.0
107.5°	395.1	385.0	338.6	259.1	206.2	122.6	63.1	34.3	24.5	34.3	63.1
110°	435.5	424.7	374.2	295.5	249.2	162.3	95.4	60.7	48.4	60.7	95.4



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CATALOG NUMBER: MWL-3-30-47-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	474.3	466.0	407.3	333.6	293.8	205.4	135.1	92.9	81.4	92.9	135.1
115°	504.9	499.9	445.3	369.1	335.2	254.1	178.9	131.7	117.8	131.7	178.9
117.5°	537.2	535.5	473.4	405.5	384.8	297.9	219.5	170.6	155.9	170.6	219.5
120°	577.7	571.2	512.3	441.9	432.0	344.3	264.1	216.2	200.5	216.2	264.1
122.5°	605.9	601.8	545.4	477.6	477.6	392.3	307.1	259.3	242.7	259.3	307.1
125°	631.5	629.8	570.3	512.3	525.5	436.2	355.1	306.4	288.2	306.4	355.1
127.5°	654.7	657.2	602.5	550.4	574.4	480.9	402.3	348.6	329.5	348.6	402.3
130°	674.6	682.8	634.0	585.1	620.6	529.7	445.3	390.8	378.4	390.8	445.3
132.5°	713.4	708.5	665.5	620.6	670.3	574.4	490.1	433.0	418.9	433.0	490.1
135°	733.3	734.9	692.7	651.3	716.7	619.0	532.3	476.0	461.9	476.0	532.3
137.5°	757.2	752.3	714.2	689.4	759.7	662.9	573.6	521.5	499.2	521.5	573.6
140°	774.6	773.8	742.4	722.5	806.0	705.1	615.8	562.9	542.2	562.9	615.8
142.5°	792.8	797.8	770.5	758.9	852.3	749.8	661.3	603.4	583.6	603.4	661.3
145°	805.2	816.0	798.6	804.4	896.2	799.5	701.0	642.2	620.7	642.2	701.0
147.5°	825.9	839.9	819.3	836.7	934.2	843.3	740.7	682.8	663.7	682.8	740.7
150°	854.1	860.6	848.2	881.3	973.1	892.1	781.3	721.7	702.6	721.7	781.3
152.5°	876.4	884.7	870.6	930.1	1003.7	936.8	825.9	759.8	737.4	759.8	825.9
155°	899.5	902.8	893.0	977.3	1035.9	980.6	861.4	802.0	780.4	802.0	861.4
157.5°	921.0	927.7	916.1	1012.0	1064.1	1017.8	902.0	844.1	825.1	844.1	902.0
160°	944.2	944.2	950.8	1054.2	1087.2	1051.8	945.1	890.4	864.0	890.4	945.1
162.5°	946.7	962.4	998.0	1083.2	1110.4	1080.7	991.4	923.5	900.3	923.5	991.4
165°	983.1	997.2	1051.0	1108.8	1127.9	1106.3	1048.4	978.2	950.8	978.2	1048.4
167.5°	1021.2	1051.0	1094.0	1137.8	1144.4	1130.3	1092.3	1043.5	1018.7	1043.5	1092.3
170°	1082.3	1107.9	1130.3	1148.5	1157.6	1149.4	1119.6	1094.7	1078.9	1094.7	1119.6
172.5°	1130.2	1147.6	1156.8	1168.4	1162.6	1159.3	1144.4	1132.0	1122.7	1132.0	1144.4
175°	1160.7	1165.0	1173.3	1169.2	1174.2	1165.1	1165.9	1170.8	1136.0	1170.8	1165.9
177.5°	1171.5	1178.2	1175.0	1167.6	1168.4	1166.8	1170.0	1172.4	1166.6	1172.4	1170.0
180°	1173.3	1173.3	1173.3	1173.3	1173.3	1173.3	1173.3	1173.3	1173.3	1173.3	1173.3



TEST NUMBER: P392588

CATALOG NUMBER: MWL-3-30-47-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1877.2	1877.2	1877.2	1877.2	1877.2	1877.2
2.5°	1870.8	1869.8	1871.6	1874.4	1875.4	1872.9
5°	1861.7	1859.8	1861.7	1865.3	1865.4	1862.8
7.5°	1845.3	1843.4	1846.2	1847.2	1851.7	1848.2
10°	1822.6	1821.7	1823.5	1828.0	1830.8	1828.9
12.5°	1795.2	1793.5	1795.2	1798.9	1801.6	1801.5
15°	1763.4	1760.7	1764.3	1767.0	1768.8	1771.4
17.5°	1726.1	1720.6	1726.1	1728.7	1732.4	1734.0
20°	1682.4	1677.9	1683.3	1687.7	1689.5	1692.1
22.5°	1636.0	1634.1	1636.8	1637.6	1640.3	1640.3
25°	1585.9	1582.2	1586.7	1588.4	1584.7	1582.9
27.5°	1532.9	1526.6	1533.7	1530.1	1523.6	1520.9
30°	1475.5	1468.3	1477.3	1471.7	1457.1	1452.6
32.5°	1410.8	1409.9	1412.6	1399.7	1382.4	1375.1
35°	1343.5	1345.3	1346.1	1326.0	1305.1	1298.7
37.5°	1270.6	1277.8	1273.2	1245.8	1224.0	1223.1
40°	1193.2	1202.2	1194.8	1162.9	1148.4	1151.1
42.5°	1112.1	1127.5	1113.7	1074.6	1068.2	1078.2
45°	1022.8	1051.0	1024.4	989.8	991.6	1005.3
47.5°	932.6	959.8	933.4	907.8	920.6	937.9
50°	844.3	861.5	846.0	830.4	849.5	868.6
52.5°	754.1	749.5	755.8	756.7	784.8	800.3
55°	667.7	635.7	669.3	685.6	721.1	736.6
57.5°	575.6	535.5	577.3	617.3	658.3	670.1
60°	483.6	457.1	484.4	547.2	594.6	601.0
62.5°	408.0	391.6	408.8	476.1	529.9	535.4
65°	340.6	336.0	341.4	405.2	458.9	471.7
67.5°	285.9	285.9	285.9	339.6	395.1	411.5
70°	236.7	240.3	236.7	282.3	326.0	346.0
72.5°	191.2	199.4	192.1	229.4	263.1	295.9
75°	152.1	165.7	152.1	178.5	213.9	248.5
77.5°	119.3	132.9	119.3	137.5	176.2	215.1
80°	89.2	99.2	89.2	111.7	158.7	200.0
82.5°	64.6	71.0	64.6	101.6	153.2	189.8
85°	49.9	39.1	51.6	105.2	158.0	190.0
87.5°	41.5	11.8	53.1	116.4	174.9	195.1
90°	28.1	1.7	59.5	136.2	194.5	210.0
92.5°	17.1	14.1	74.3	157.7	218.3	232.8
95°	6.9	34.0	89.7	182.4	244.6	252.3
97.5°	11.8	59.7	117.6	205.1	271.8	278.7
100°	29.2	91.1	153.2	232.3	291.9	297.3
102.5°	53.1	125.0	187.1	261.7	318.1	332.6
105°	85.4	164.8	222.7	302.2	348.9	364.1
107.5°	122.6	206.2	259.1	338.6	385.0	395.1
110°	162.3	249.2	295.5	374.2	424.7	435.5



TEST NUMBER: P392588

CATALOG NUMBER: MWL-3-30-47-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	205.4	293.8	333.6	407.3	466.0	474.3
115°	254.1	335.2	369.1	445.3	499.9	504.9
117.5°	297.9	384.8	405.5	473.4	535.5	537.2
120°	344.3	432.0	441.9	512.3	571.2	577.7
122.5°	392.3	477.6	477.6	545.4	601.8	605.9
125°	436.2	525.5	512.3	570.3	629.8	631.5
127.5°	480.9	574.4	550.4	602.5	657.2	654.7
130°	529.7	620.6	585.1	634.0	682.8	674.6
132.5°	574.4	670.3	620.6	665.5	708.5	713.4
135°	619.0	716.7	651.3	692.7	734.9	733.3
137.5°	662.9	759.7	689.4	714.2	752.3	757.2
140°	705.1	806.0	722.5	742.4	773.8	774.6
142.5°	749.8	852.3	758.9	770.5	797.8	792.8
145°	799.5	896.2	804.4	798.6	816.0	805.2
147.5°	843.3	934.2	836.7	819.3	839.9	825.9
150°	892.1	973.1	881.3	848.2	860.6	854.1
152.5°	936.8	1003.7	930.1	870.6	884.7	876.4
155°	980.6	1035.9	977.3	893.0	902.8	899.5
157.5°	1017.8	1064.1	1012.0	916.1	927.7	921.0
160°	1051.8	1087.2	1054.2	950.8	944.2	944.2
162.5°	1080.7	1110.4	1083.2	998.0	962.4	946.7
165°	1106.3	1127.9	1108.8	1051.0	997.2	983.1
167.5°	1130.3	1144.4	1137.8	1094.0	1051.0	1021.2
170°	1149.4	1157.6	1148.5	1130.3	1107.9	1082.3
172.5°	1159.3	1162.6	1168.4	1156.8	1147.6	1130.2
175°	1165.1	1174.2	1169.2	1173.3	1165.0	1160.7
177.5°	1166.8	1168.4	1167.6	1175.0	1178.2	1171.5
180°	1173.3	1173.3	1173.3	1173.3	1173.3	1173.3

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