

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: P392571

Luminaire Tested: **MWL-3-27-47-UNV-L830-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392571
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 3/12/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-27-47-UNV-L830-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7227.0 lumens
Efficiency: N/A
Efficacy: 91.2 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

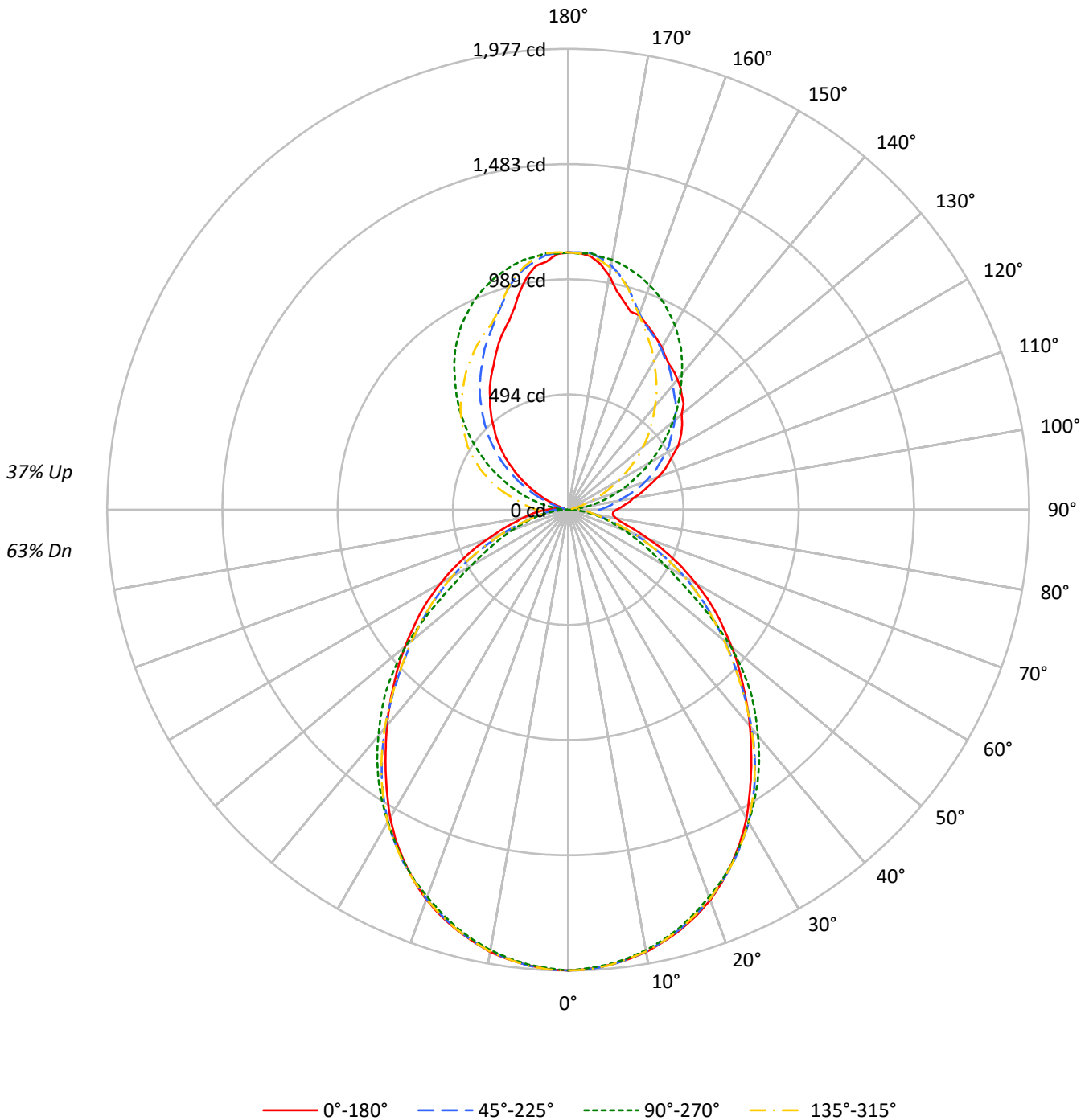
Input Watts (W): 79.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	91	91	91	79	79	79	68	68	68	63
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	59	58	54
2	92	85	79	74	86	80	75	70	71	66	63	62	59	56	54	52	50	46
3	85	75	68	62	79	71	64	59	63	58	53	55	51	48	48	45	43	39
4	78	67	59	53	73	63	56	51	56	50	46	49	45	42	43	40	37	34
5	71	60	52	46	67	57	49	44	50	44	40	45	40	36	39	36	33	30
6	66	54	46	40	62	51	44	38	46	40	35	41	36	32	36	32	29	26
7	61	49	41	35	57	46	39	34	42	36	31	37	32	29	33	29	26	24
8	57	45	37	31	53	42	35	30	38	32	28	34	29	26	30	26	23	21
9	53	41	33	28	50	39	32	27	35	29	25	31	27	23	28	24	21	19
10	50	38	30	25	47	36	29	25	32	27	23	29	24	21	26	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17024	17024	17024	17024
5°	16758	15568	16758	15568
10°	16442	14261	16442	14261
15°	16032	13040	16013	13040
20°	15542	11874	15522	11874
25°	14874	10799	14853	10799
30°	14080	9749	14051	9749
35°	13101	8761	13078	8761
40°	12202	7739	12171	7739
45°	11319	6739	11294	6739
50°	10514	5546	10486	5546
55°	9718	4139	9697	4139
60°	8784	3034	8774	3034
65°	7796	2293	7796	2293
70°	6641	1700	6653	1700
75°	5735	1227	5787	1227
80°	5775	776	5365	776
85°	7347	327	5418	327



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	186.1	2.6
10°-20°	524.0	7.2
20°-30°	767.7	10.6
30°-40°	870.1	12.0
40°-50°	818.3	11.3
50°-60°	649.6	9.0
60°-70°	422.8	5.9
70°-80°	215.7	3.0
80°-90°	111.0	1.5
90°-100°	109.1	1.5
100°-110°	174.3	2.4
110°-120°	294.2	4.1
120°-130°	399.3	5.5
130°-140°	455.1	6.3
140°-150°	453.7	6.3
150°-160°	394.9	5.5
160°-170°	277.8	3.8
170°-180°	103.4	1.4
0°-30°	1477.7	20.4
0°-40°	2347.9	32.5
0°-60°	3815.7	52.8
0°-90°	4565.2	63.2
90°-120°	577.6	8.0
90°-150°	1885.8	26.1
90°-180°	2662.0	36.8
0°-180°	7227.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1977	1977	1977	1977	1977	
5°	1962	1959	1962	1959	1962	186
15°	1865	1855	1863	1855	1865	525
25°	1667	1666	1664	1666	1667	766
35°	1368	1417	1365	1417	1368	856
45°	1059	1107	1056	1107	1059	819
55°	776	669	774	669	776	692
65°	497	354	497	354	497	493
75°	262	174	264	174	262	286
85°	192	41	142	41	192	160
90°	207	2	90	2	207	114
95°	243	32	59	32	243	208
105°	343	155	16	155	343	364
115°	475	315	111	315	475	472
125°	594	494	272	494	594	531
135°	690	674	435	674	690	532
145°	758	843	584	843	758	478
155°	846	974	734	974	846	390
165°	925	1061	894	1061	925	262
175°	1092	1104	1068	1104	1092	102
180°	1104	1104	1104	1104	1104	



TEST NUMBER: P392571

CATALOG NUMBER: MWL-3-27-47-UNV-L830-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1977.0	1977.0	1977.0	1977.0	1977.0	1977.0	1977.0	1977.0	1977.0	1977.0	1977.0
2.5°	1972.7	1975.3	1974.0	1970.9	1969.0	1970.1	1974.0	1975.3	1973.6	1975.3	1974.0
5°	1962.2	1964.8	1964.4	1960.5	1958.6	1960.5	1963.6	1964.8	1962.2	1964.8	1963.6
7.5°	1946.7	1950.2	1945.4	1944.2	1941.3	1943.4	1944.6	1949.4	1946.7	1949.4	1944.6
10°	1926.4	1928.1	1925.2	1920.4	1918.5	1919.6	1924.4	1926.6	1926.4	1926.6	1924.4
12.5°	1897.2	1897.4	1894.7	1890.8	1889.1	1890.8	1894.7	1895.8	1895.6	1895.8	1894.7
15°	1865.3	1862.8	1861.1	1858.2	1854.6	1857.4	1860.3	1861.3	1863.0	1861.3	1860.3
17.5°	1826.0	1824.4	1820.8	1818.1	1812.3	1818.1	1820.0	1823.7	1823.7	1823.7	1820.0
20°	1781.8	1779.1	1777.6	1773.0	1767.3	1772.1	1776.8	1777.6	1779.5	1777.6	1776.8
22.5°	1727.3	1727.3	1724.8	1724.0	1721.2	1723.2	1724.0	1725.7	1725.7	1725.7	1724.0
25°	1666.8	1668.7	1672.8	1671.2	1666.5	1670.4	1671.2	1666.4	1664.5	1666.4	1671.2
27.5°	1601.5	1604.4	1611.3	1615.4	1608.0	1614.6	1609.8	1602.1	1599.2	1602.1	1609.8
30°	1529.6	1534.4	1549.7	1555.7	1546.5	1554.1	1547.4	1532.0	1526.4	1532.0	1547.4
32.5°	1448.0	1455.6	1473.9	1487.5	1485.0	1486.0	1471.6	1452.5	1444.8	1452.5	1471.6
35°	1367.5	1374.2	1396.3	1417.4	1417.0	1415.0	1393.9	1371.8	1365.1	1371.8	1393.9
37.5°	1287.9	1288.8	1311.9	1340.6	1345.8	1338.2	1309.5	1286.4	1285.5	1286.4	1309.5
40°	1212.0	1209.1	1224.5	1258.3	1266.2	1256.7	1221.3	1206.0	1208.9	1206.0	1221.3
42.5°	1135.2	1124.7	1131.6	1172.9	1187.5	1171.2	1129.2	1121.5	1132.1	1121.5	1129.2
45°	1058.6	1044.2	1042.3	1078.8	1106.8	1077.2	1039.2	1041.8	1056.2	1041.8	1039.2
47.5°	987.6	969.4	955.9	983.0	1010.8	982.1	952.8	967.0	985.2	967.0	952.8
50°	914.7	894.5	874.3	890.9	907.3	889.2	871.2	891.3	912.3	891.3	871.2
52.5°	842.7	826.4	796.8	795.8	789.2	794.2	794.4	823.2	840.3	823.2	794.4
55°	775.7	759.4	721.9	704.7	669.4	703.2	719.5	757.0	774.0	757.0	719.5
57.5°	705.6	693.1	649.9	607.8	563.8	606.3	647.5	690.7	704.0	690.7	647.5
60°	632.7	626.0	576.1	510.1	481.3	509.3	574.6	624.5	632.0	624.5	574.6
62.5°	563.6	557.9	501.2	430.4	412.4	429.6	499.7	556.3	562.9	556.3	499.7
65°	496.6	483.2	426.6	359.4	353.8	358.6	425.8	482.4	496.6	482.4	425.8
67.5°	433.3	416.0	357.5	301.0	301.0	301.0	356.7	415.2	433.3	415.2	356.7
70°	364.4	343.2	297.2	249.2	253.0	249.2	297.2	344.0	365.1	344.0	297.2
72.5°	311.6	277.0	241.5	202.1	210.0	201.4	241.5	277.8	313.1	277.8	241.5
75°	261.7	225.2	187.9	160.1	174.5	160.1	188.7	226.0	264.1	226.0	188.7
77.5°	225.7	185.2	144.7	125.6	139.9	125.6	145.5	182.8	222.6	182.8	145.5
80°	208.2	165.3	117.3	93.9	104.4	93.9	115.8	152.8	193.4	152.8	115.8
82.5°	195.1	157.4	105.6	68.0	74.7	68.0	96.2	129.5	165.6	129.5	96.2
85°	192.4	159.6	107.3	53.9	41.1	52.4	84.8	112.2	141.9	112.2	84.8
87.5°	194.5	174.0	116.4	54.1	12.5	43.3	72.1	99.3	114.4	99.3	72.1
90°	206.6	191.1	133.9	58.9	1.7	29.4	56.8	81.5	89.9	81.5	56.8
92.5°	226.4	212.3	153.0	71.5	13.4	17.9	46.5	68.3	74.0	68.3	46.5
95°	243.3	235.7	175.0	84.8	32.1	6.9	34.9	55.3	58.9	55.3	34.9
97.5°	266.9	260.2	194.8	110.8	56.2	11.2	22.9	46.3	49.1	46.3	22.9
100°	282.9	277.3	219.2	144.3	85.7	27.5	13.2	33.1	37.9	33.1	13.2
102.5°	314.7	300.6	246.3	176.1	117.7	50.1	14.6	20.6	25.4	20.6	14.6
105°	343.4	328.8	284.4	209.6	155.1	80.4	33.2	16.0	16.0	16.0	33.2
107.5°	372.1	362.4	318.7	243.8	194.1	115.5	59.7	32.6	23.6	32.6	59.7
110°	410.1	399.8	352.1	278.1	234.5	152.8	90.0	57.5	46.0	57.5	90.0



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CATALOG NUMBER: MWL-3-27-47-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	446.4	438.5	383.3	313.8	276.4	193.2	127.4	87.6	77.0	87.6	127.4
115°	475.2	470.3	419.0	347.3	315.4	239.2	168.6	124.2	111.2	124.2	168.6
117.5°	505.6	503.8	445.5	381.5	362.1	280.4	206.7	160.8	147.0	160.8	206.7
120°	543.7	537.4	482.0	415.7	406.4	324.0	248.7	203.8	189.0	203.8	248.7
122.5°	570.1	566.2	513.1	449.3	449.3	369.3	289.1	244.2	228.6	244.2	289.1
125°	594.2	592.6	536.5	482.0	494.4	410.4	334.2	288.5	271.5	288.5	334.2
127.5°	615.9	618.3	566.8	517.8	540.3	452.5	378.6	328.2	310.3	328.2	378.6
130°	634.7	642.4	596.6	550.5	583.9	498.4	419.2	367.8	356.2	367.8	419.2
132.5°	671.2	666.5	626.1	583.9	630.5	540.3	461.2	407.6	394.3	407.6	461.2
135°	689.9	691.4	651.8	612.7	674.1	582.4	500.9	448.0	434.7	448.0	500.9
137.5°	712.4	707.8	672.0	648.7	714.6	623.7	539.7	490.8	469.8	490.8	539.7
140°	728.7	728.0	698.4	679.8	758.1	663.5	579.5	529.7	510.2	529.7	579.5
142.5°	745.9	750.5	724.9	714.0	801.7	705.4	622.2	567.8	549.0	567.8	622.2
145°	757.5	767.7	751.3	756.8	843.0	752.1	659.5	604.3	584.1	604.3	659.5
147.5°	777.0	790.3	770.8	787.1	878.7	793.3	696.9	642.4	624.5	642.4	696.9
150°	803.4	809.6	798.0	829.1	915.2	839.2	735.0	679.0	661.1	679.0	735.0
152.5°	824.4	832.2	819.0	875.0	944.0	881.3	777.0	714.7	693.8	714.7	777.0
155°	846.2	849.3	840.0	919.4	974.4	922.4	810.4	754.5	734.2	754.5	810.4
157.5°	866.5	872.6	861.8	951.8	1000.9	957.3	848.5	794.1	776.2	794.1	848.5
160°	888.3	888.3	894.4	991.6	1022.6	989.3	889.0	837.7	812.8	837.7	889.0
162.5°	890.6	905.3	938.8	1018.9	1044.5	1016.6	932.5	868.8	847.0	868.8	932.5
165°	924.7	938.0	988.6	1043.0	1060.8	1040.7	986.3	920.1	894.4	920.1	986.3
167.5°	960.5	988.6	1029.0	1070.3	1076.5	1063.2	1027.4	981.6	958.2	981.6	1027.4
170°	1017.9	1042.0	1063.2	1080.3	1088.9	1081.1	1053.1	1029.6	1014.8	1029.6	1053.1
172.5°	1062.9	1079.4	1088.1	1099.1	1093.6	1090.4	1076.5	1064.6	1055.9	1064.6	1076.5
175°	1091.7	1095.7	1103.7	1099.8	1104.4	1095.9	1096.7	1101.2	1068.3	1101.2	1096.7
177.5°	1101.7	1108.2	1105.2	1098.2	1099.1	1097.4	1100.6	1102.7	1097.1	1102.7	1100.6
180°	1103.7	1103.7	1103.7	1103.7	1103.7	1103.7	1103.7	1103.7	1103.7	1103.7	1103.7



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CATALOG NUMBER: MWL-3-27-47-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1977.0	1977.0	1977.0	1977.0	1977.0	1977.0
2.5°	1970.1	1969.0	1970.9	1974.0	1975.3	1972.7
5°	1960.5	1958.6	1960.5	1964.4	1964.8	1962.2
7.5°	1943.4	1941.3	1944.2	1945.4	1950.2	1946.7
10°	1919.6	1918.5	1920.4	1925.2	1928.1	1926.4
12.5°	1890.8	1889.1	1890.8	1894.7	1897.4	1897.2
15°	1857.4	1854.6	1858.2	1861.1	1862.8	1865.3
17.5°	1818.1	1812.3	1818.1	1820.8	1824.4	1826.0
20°	1772.1	1767.3	1773.0	1777.6	1779.1	1781.8
22.5°	1723.2	1721.2	1724.0	1724.8	1727.3	1727.3
25°	1670.4	1666.5	1671.2	1672.8	1668.7	1666.8
27.5°	1614.6	1608.0	1615.4	1611.3	1604.4	1601.5
30°	1554.1	1546.5	1555.7	1549.7	1534.4	1529.6
32.5°	1486.0	1485.0	1487.5	1473.9	1455.6	1448.0
35°	1415.0	1417.0	1417.4	1396.3	1374.2	1367.5
37.5°	1338.2	1345.8	1340.6	1311.9	1288.8	1287.9
40°	1256.7	1266.2	1258.3	1224.5	1209.1	1212.0
42.5°	1171.2	1187.5	1172.9	1131.6	1124.7	1135.2
45°	1077.2	1106.8	1078.8	1042.3	1044.2	1058.6
47.5°	982.1	1010.8	983.0	955.9	969.4	987.6
50°	889.2	907.3	890.9	874.3	894.5	914.7
52.5°	794.2	789.2	795.8	796.8	826.4	842.7
55°	703.2	669.4	704.7	721.9	759.4	775.7
57.5°	606.3	563.8	607.8	649.9	693.1	705.6
60°	509.3	481.3	510.1	576.1	626.0	632.7
62.5°	429.6	412.4	430.4	501.2	557.9	563.6
65°	358.6	353.8	359.4	426.6	483.2	496.6
67.5°	301.0	301.0	301.0	357.5	416.0	433.3
70°	249.2	253.0	249.2	297.2	343.2	364.4
72.5°	201.4	210.0	202.1	241.5	277.0	311.6
75°	160.1	174.5	160.1	187.9	225.2	261.7
77.5°	125.6	139.9	125.6	144.7	185.2	225.7
80°	93.9	104.4	93.9	117.3	165.3	208.2
82.5°	68.0	74.7	68.0	105.6	157.4	195.1
85°	52.4	41.1	53.9	107.3	159.6	192.4
87.5°	43.3	12.5	54.1	116.4	174.0	194.5
90°	29.4	1.7	58.9	133.9	191.1	206.6
92.5°	17.9	13.4	71.5	153.0	212.3	226.4
95°	6.9	32.1	84.8	175.0	235.7	243.3
97.5°	11.2	56.2	110.8	194.8	260.2	266.9
100°	27.5	85.7	144.3	219.2	277.3	282.9
102.5°	50.1	117.7	176.1	246.3	300.6	314.7
105°	80.4	155.1	209.6	284.4	328.8	343.4
107.5°	115.5	194.1	243.8	318.7	362.4	372.1
110°	152.8	234.5	278.1	352.1	399.8	410.1



TEST NUMBER: P392571

CATALOG NUMBER: MWL-3-27-47-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	193.2	276.4	313.8	383.3	438.5	446.4
115°	239.2	315.4	347.3	419.0	470.3	475.2
117.5°	280.4	362.1	381.5	445.5	503.8	505.6
120°	324.0	406.4	415.7	482.0	537.4	543.7
122.5°	369.3	449.3	449.3	513.1	566.2	570.1
125°	410.4	494.4	482.0	536.5	592.6	594.2
127.5°	452.5	540.3	517.8	566.8	618.3	615.9
130°	498.4	583.9	550.5	596.6	642.4	634.7
132.5°	540.3	630.5	583.9	626.1	666.5	671.2
135°	582.4	674.1	612.7	651.8	691.4	689.9
137.5°	623.7	714.6	648.7	672.0	707.8	712.4
140°	663.5	758.1	679.8	698.4	728.0	728.7
142.5°	705.4	801.7	714.0	724.9	750.5	745.9
145°	752.1	843.0	756.8	751.3	767.7	757.5
147.5°	793.3	878.7	787.1	770.8	790.3	777.0
150°	839.2	915.2	829.1	798.0	809.6	803.4
152.5°	881.3	944.0	875.0	819.0	832.2	824.4
155°	922.4	974.4	919.4	840.0	849.3	846.2
157.5°	957.3	1000.9	951.8	861.8	872.6	866.5
160°	989.3	1022.6	991.6	894.4	888.3	888.3
162.5°	1016.6	1044.5	1018.9	938.8	905.3	890.6
165°	1040.7	1060.8	1043.0	988.6	938.0	924.7
167.5°	1063.2	1076.5	1070.3	1029.0	988.6	960.5
170°	1081.1	1088.9	1080.3	1063.2	1042.0	1017.9
172.5°	1090.4	1093.6	1099.1	1088.1	1079.4	1062.9
175°	1095.9	1104.4	1099.8	1103.7	1095.7	1091.7
177.5°	1097.4	1099.1	1098.2	1105.2	1108.2	1101.7
180°	1103.7	1103.7	1103.7	1103.7	1103.7	1103.7

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