

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: P392573

Luminaire Tested: **MWL-3-27-47-UNV-L840-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392573
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-L840-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

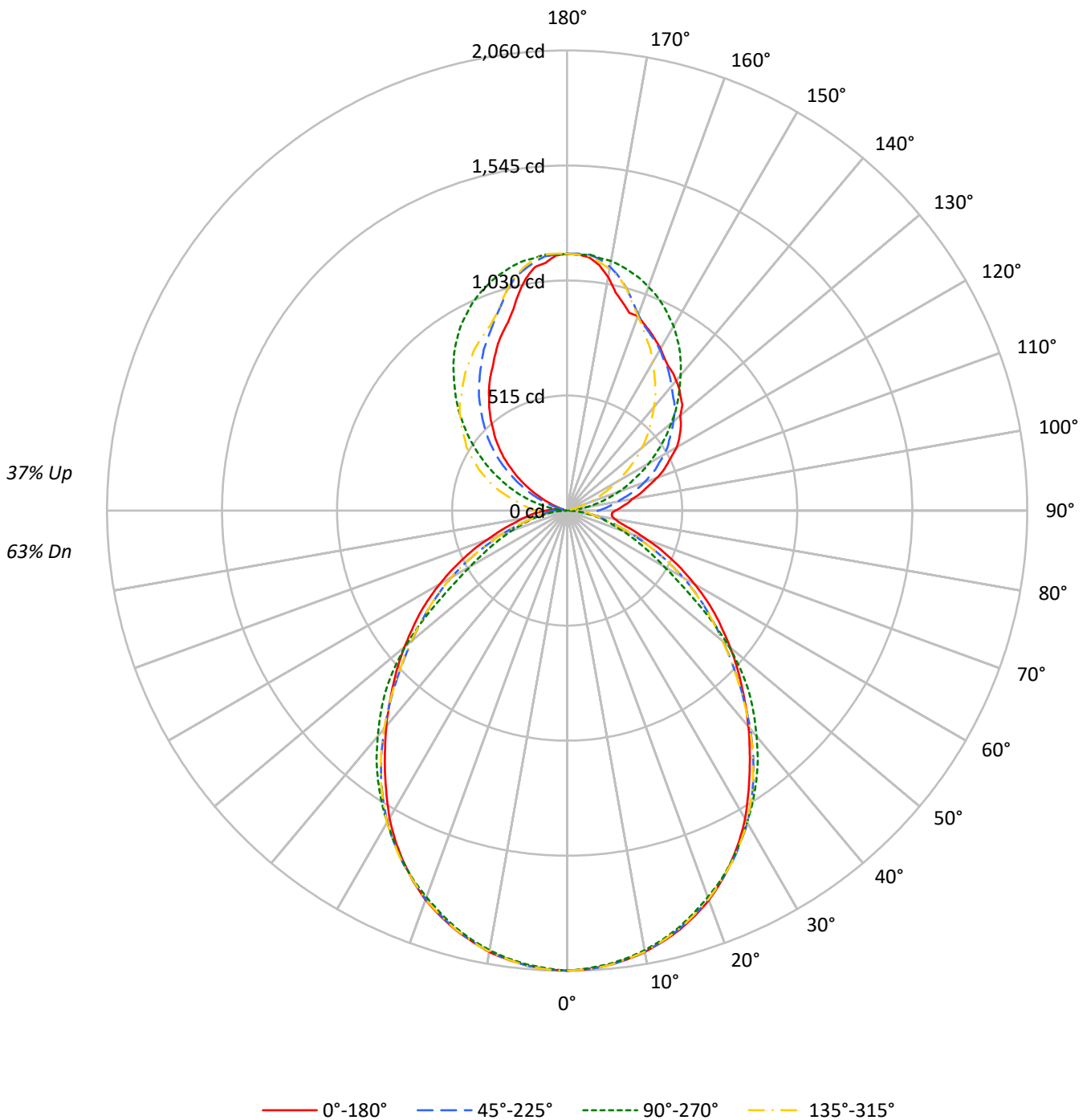
Lumens per Lamp: N/A
Luminaire Lumens: 7529.2 lumens
Efficiency: N/A
Efficacy: 95.1 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Direct

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										
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	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°	17736	17736	17736	17736
5°	17458	16219	17458	16219
10°	17129	14857	17129	14857
15°	16703	13585	16682	13585
20°	16192	12370	16171	12370
25°	15495	11250	15474	11250
30°	14668	10157	14638	10157
35°	13649	9127	13625	9127
40°	12713	8063	12679	8063
45°	11793	7021	11766	7021
50°	10953	5777	10924	5777
55°	10124	4312	10103	4312
60°	9151	3161	9140	3161
65°	8123	2388	8123	2388
70°	6918	1771	6932	1771
75°	5973	1278	6028	1278
80°	6017	809	5590	809
85°	7652	340	5644	340



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.9	2.6
10°-20°	545.9	7.2
20°-30°	799.8	10.6
30°-40°	906.5	12.0
40°-50°	852.5	11.3
50°-60°	676.7	9.0
60°-70°	440.5	5.9
70°-80°	224.7	3.0
80°-90°	115.6	1.5
90°-100°	113.6	1.5
100°-110°	181.6	2.4
110°-120°	306.5	4.1
120°-130°	416.0	5.5
130°-140°	474.2	6.3
140°-150°	472.7	6.3
150°-160°	411.4	5.5
160°-170°	289.4	3.8
170°-180°	107.7	1.4
0°-30°	1539.5	20.4
0°-40°	2446.0	32.5
0°-60°	3975.3	52.8
0°-90°	4756.1	63.2
90°-120°	601.7	8.0
90°-150°	1964.6	26.1
90°-180°	2773.0	36.8
0°-180°	7529.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2060	2060	2060	2060	2060	
5°	2044	2040	2044	2040	2044	194
15°	1943	1932	1941	1932	1943	547
25°	1736	1736	1734	1736	1736	798
35°	1425	1476	1422	1476	1425	892
45°	1103	1153	1100	1153	1103	853
55°	808	697	806	697	808	721
65°	517	369	517	369	517	513
75°	273	182	275	182	273	298
85°	200	43	148	43	200	167
90°	215	2	94	2	215	119
95°	254	33	61	33	254	217
105°	358	162	17	162	358	379
115°	495	329	116	329	495	491
125°	619	515	283	515	619	553
135°	719	702	453	702	719	555
145°	789	878	608	878	789	498
155°	882	1015	765	1015	882	407
165°	963	1105	932	1105	963	273
175°	1137	1151	1113	1151	1137	106
180°	1150	1150	1150	1150	1150	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2059.7	2059.7	2059.7	2059.7	2059.7	2059.7	2059.7	2059.7	2059.7	2059.7	2059.7
2.5°	2055.2	2057.9	2056.5	2053.3	2051.3	2052.5	2056.5	2057.9	2056.1	2057.9	2056.5
5°	2044.2	2046.9	2046.5	2042.5	2040.5	2042.5	2045.7	2046.9	2044.2	2046.9	2045.7
7.5°	2028.1	2031.7	2026.7	2025.5	2022.5	2024.7	2025.9	2030.9	2028.1	2030.9	2025.9
10°	2006.9	2008.7	2005.7	2000.7	1998.7	1999.9	2004.9	2007.1	2006.9	2007.1	2004.9
12.5°	1976.5	1976.7	1973.9	1969.9	1968.1	1969.9	1973.9	1975.1	1974.9	1975.1	1973.9
15°	1943.3	1940.7	1938.9	1935.9	1932.1	1935.1	1938.1	1939.1	1940.9	1939.1	1938.1
17.5°	1902.3	1900.7	1896.9	1894.1	1888.1	1894.1	1896.1	1899.9	1899.9	1899.9	1896.1
20°	1856.3	1853.5	1851.9	1847.1	1841.2	1846.2	1851.1	1851.9	1853.9	1851.9	1851.1
22.5°	1799.5	1799.5	1796.9	1796.1	1793.2	1795.2	1796.1	1797.9	1797.9	1797.9	1796.1
25°	1736.5	1738.5	1742.7	1741.1	1736.2	1740.2	1741.1	1736.1	1734.1	1736.1	1741.1
27.5°	1668.5	1671.5	1678.7	1682.9	1675.2	1682.1	1677.1	1669.1	1666.1	1669.1	1677.1
30°	1593.5	1598.5	1614.5	1620.7	1611.2	1619.1	1612.1	1596.1	1590.2	1596.1	1612.1
32.5°	1508.5	1516.5	1535.5	1549.7	1547.1	1548.1	1533.1	1513.2	1505.2	1513.2	1533.1
35°	1424.7	1431.7	1454.7	1476.7	1476.2	1474.2	1452.2	1429.2	1422.2	1429.2	1452.2
37.5°	1341.7	1342.7	1366.7	1396.7	1402.1	1394.2	1364.2	1340.2	1339.2	1340.2	1364.2
40°	1262.7	1259.7	1275.7	1310.9	1319.1	1309.2	1272.4	1256.4	1259.4	1256.4	1272.4
42.5°	1182.7	1171.7	1178.9	1221.9	1237.1	1220.2	1176.4	1168.4	1179.4	1168.4	1176.4
45°	1102.9	1087.9	1085.9	1123.9	1153.1	1122.2	1082.6	1085.4	1100.4	1085.4	1082.6
47.5°	1028.9	1009.9	995.9	1024.1	1053.1	1023.2	992.6	1007.4	1026.4	1007.4	992.6
50°	952.9	931.9	910.9	928.1	945.2	926.4	907.6	928.6	950.4	928.6	907.6
52.5°	877.9	860.9	830.1	829.1	822.2	827.4	827.6	857.6	875.4	857.6	827.6
55°	808.1	791.1	752.1	734.2	697.4	732.6	749.6	788.6	806.4	788.6	749.6
57.5°	735.1	722.1	677.1	633.2	587.4	631.6	674.6	719.6	733.4	719.6	674.6
60°	659.2	652.2	600.2	531.4	501.4	530.6	598.6	650.6	658.4	650.6	598.6
62.5°	587.2	581.2	522.2	448.4	429.6	447.6	520.6	579.6	586.4	579.6	520.6
65°	517.4	503.4	444.4	374.4	368.6	373.6	443.6	502.6	517.4	502.6	443.6
67.5°	451.4	433.4	372.4	313.6	313.6	313.6	371.6	432.6	451.4	432.6	371.6
70°	379.6	357.6	309.6	259.6	263.6	259.6	309.6	358.4	380.4	358.4	309.6
72.5°	324.6	288.6	251.6	210.6	218.8	209.8	251.6	289.4	326.2	289.4	251.6
75°	272.6	234.6	195.8	166.8	181.8	166.8	196.6	235.4	275.1	235.4	196.6
77.5°	235.1	192.9	150.8	130.8	145.8	130.8	151.6	190.4	231.9	190.4	151.6
80°	216.9	172.2	122.2	97.8	108.8	97.8	120.6	159.2	201.5	159.2	120.6
82.5°	203.3	164.0	110.0	70.8	77.8	70.8	100.2	134.9	172.5	134.9	100.2
85°	200.4	166.3	111.8	56.2	42.8	54.6	88.3	116.9	147.8	116.9	88.3
87.5°	202.6	181.3	121.3	56.4	13.0	45.1	75.1	103.5	119.2	103.5	75.1
90°	215.2	199.1	139.5	61.4	1.8	30.6	59.2	84.9	93.7	84.9	59.2
92.5°	235.9	221.2	159.4	74.5	14.0	18.6	48.4	71.2	77.1	71.2	48.4
95°	253.5	245.6	182.3	88.3	33.4	7.2	36.4	57.6	61.4	57.6	36.4
97.5°	278.1	271.1	202.9	115.4	58.5	11.7	23.9	48.2	51.2	48.2	23.9
100°	294.7	288.9	228.4	150.3	89.3	28.7	13.7	34.5	39.5	34.5	13.7
102.5°	327.9	313.2	256.6	183.5	122.6	52.2	15.2	21.5	26.5	21.5	15.2
105°	357.8	342.5	296.3	218.4	161.6	83.8	34.6	16.7	16.7	16.7	34.6
107.5°	387.7	377.6	332.0	254.0	202.2	120.3	62.2	34.0	24.6	34.0	62.2
110°	427.2	416.5	366.8	289.7	244.3	159.2	93.8	59.9	47.9	59.9	93.8



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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°	465.1	456.8	399.3	326.9	288.0	201.3	132.7	91.3	80.2	91.3	132.7
115°	495.1	490.0	436.5	361.8	328.6	249.2	175.6	129.4	115.8	129.4	175.6
117.5°	526.7	524.9	464.1	397.4	377.2	292.1	215.3	167.5	153.1	167.5	215.3
120°	566.4	559.9	502.2	433.1	423.4	337.5	259.1	212.3	196.9	212.3	259.1
122.5°	593.9	589.9	534.6	468.1	468.1	384.7	301.2	254.4	238.2	254.4	301.2
125°	619.0	617.4	558.9	502.2	515.1	427.6	348.2	300.6	282.8	300.6	348.2
127.5°	641.7	644.2	590.5	539.4	562.9	471.4	394.4	341.9	323.3	341.9	394.4
130°	661.2	669.3	621.5	573.5	608.3	519.2	436.7	383.2	371.1	383.2	436.7
132.5°	699.3	694.4	652.3	608.3	656.9	562.9	480.5	424.6	410.8	424.6	480.5
135°	718.7	720.3	679.0	638.3	702.3	606.7	521.8	466.7	452.9	466.7	521.8
137.5°	742.2	737.4	700.1	675.8	744.5	649.8	562.3	511.3	489.4	511.3	562.3
140°	759.2	758.4	727.6	708.2	789.8	691.2	603.7	551.8	531.5	551.8	603.7
142.5°	777.1	781.9	755.2	743.8	835.2	734.9	648.2	591.5	572.0	591.5	648.2
145°	789.2	799.8	782.7	788.4	878.2	783.5	687.1	629.6	608.5	629.6	687.1
147.5°	809.5	823.3	803.0	820.0	915.4	826.5	726.0	669.3	650.6	669.3	726.0
150°	837.0	843.5	831.4	863.8	953.5	874.3	765.7	707.4	688.7	707.4	765.7
152.5°	858.9	867.0	853.2	911.6	983.5	918.1	809.5	744.6	722.8	744.6	809.5
155°	881.6	884.8	875.1	957.8	1015.1	961.0	844.3	786.0	764.9	786.0	844.3
157.5°	902.7	909.1	897.8	991.6	1042.7	997.3	884.0	827.3	808.7	827.3	884.0
160°	925.4	925.4	931.8	1033.1	1065.4	1030.7	926.2	872.7	846.8	872.7	926.2
162.5°	927.8	943.2	978.0	1061.5	1088.2	1059.1	971.5	905.1	882.4	905.1	971.5
165°	963.4	977.2	1029.9	1086.6	1105.2	1084.2	1027.5	958.6	931.8	958.6	1027.5
167.5°	1000.7	1029.9	1072.0	1115.0	1121.5	1107.7	1070.4	1022.6	998.3	1022.6	1070.4
170°	1060.5	1085.6	1107.7	1125.5	1134.4	1126.3	1097.1	1072.6	1057.2	1072.6	1097.1
172.5°	1107.3	1124.5	1133.6	1145.0	1139.3	1136.0	1121.5	1109.1	1100.0	1109.1	1121.5
175°	1137.3	1141.5	1149.8	1145.8	1150.6	1141.7	1142.5	1147.2	1113.0	1147.2	1142.5
177.5°	1147.8	1154.5	1151.4	1144.1	1145.0	1143.3	1146.6	1148.8	1143.0	1148.8	1146.6
180°	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2059.7	2059.7	2059.7	2059.7	2059.7	2059.7
2.5°	2052.5	2051.3	2053.3	2056.5	2057.9	2055.2
5°	2042.5	2040.5	2042.5	2046.5	2046.9	2044.2
7.5°	2024.7	2022.5	2025.5	2026.7	2031.7	2028.1
10°	1999.9	1998.7	2000.7	2005.7	2008.7	2006.9
12.5°	1969.9	1968.1	1969.9	1973.9	1976.7	1976.5
15°	1935.1	1932.1	1935.9	1938.9	1940.7	1943.3
17.5°	1894.1	1888.1	1894.1	1896.9	1900.7	1902.3
20°	1846.2	1841.2	1847.1	1851.9	1853.5	1856.3
22.5°	1795.2	1793.2	1796.1	1796.9	1799.5	1799.5
25°	1740.2	1736.2	1741.1	1742.7	1738.5	1736.5
27.5°	1682.1	1675.2	1682.9	1678.7	1671.5	1668.5
30°	1619.1	1611.2	1620.7	1614.5	1598.5	1593.5
32.5°	1548.1	1547.1	1549.7	1535.5	1516.5	1508.5
35°	1474.2	1476.2	1476.7	1454.7	1431.7	1424.7
37.5°	1394.2	1402.1	1396.7	1366.7	1342.7	1341.7
40°	1309.2	1319.1	1310.9	1275.7	1259.7	1262.7
42.5°	1220.2	1237.1	1221.9	1178.9	1171.7	1182.7
45°	1122.2	1153.1	1123.9	1085.9	1087.9	1102.9
47.5°	1023.2	1053.1	1024.1	995.9	1009.9	1028.9
50°	926.4	945.2	928.1	910.9	931.9	952.9
52.5°	827.4	822.2	829.1	830.1	860.9	877.9
55°	732.6	697.4	734.2	752.1	791.1	808.1
57.5°	631.6	587.4	633.2	677.1	722.1	735.1
60°	530.6	501.4	531.4	600.2	652.2	659.2
62.5°	447.6	429.6	448.4	522.2	581.2	587.2
65°	373.6	368.6	374.4	444.4	503.4	517.4
67.5°	313.6	313.6	313.6	372.4	433.4	451.4
70°	259.6	263.6	259.6	309.6	357.6	379.6
72.5°	209.8	218.8	210.6	251.6	288.6	324.6
75°	166.8	181.8	166.8	195.8	234.6	272.6
77.5°	130.8	145.8	130.8	150.8	192.9	235.1
80°	97.8	108.8	97.8	122.2	172.2	216.9
82.5°	70.8	77.8	70.8	110.0	164.0	203.3
85°	54.6	42.8	56.2	111.8	166.3	200.4
87.5°	45.1	13.0	56.4	121.3	181.3	202.6
90°	30.6	1.8	61.4	139.5	199.1	215.2
92.5°	18.6	14.0	74.5	159.4	221.2	235.9
95°	7.2	33.4	88.3	182.3	245.6	253.5
97.5°	11.7	58.5	115.4	202.9	271.1	278.1
100°	28.7	89.3	150.3	228.4	288.9	294.7
102.5°	52.2	122.6	183.5	256.6	313.2	327.9
105°	83.8	161.6	218.4	296.3	342.5	357.8
107.5°	120.3	202.2	254.0	332.0	377.6	387.7
110°	159.2	244.3	289.7	366.8	416.5	427.2



TEST NUMBER: P392573

CATALOG NUMBER: MWL-3-27-47-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	201.3	288.0	326.9	399.3	456.8	465.1
115°	249.2	328.6	361.8	436.5	490.0	495.1
117.5°	292.1	377.2	397.4	464.1	524.9	526.7
120°	337.5	423.4	433.1	502.2	559.9	566.4
122.5°	384.7	468.1	468.1	534.6	589.9	593.9
125°	427.6	515.1	502.2	558.9	617.4	619.0
127.5°	471.4	562.9	539.4	590.5	644.2	641.7
130°	519.2	608.3	573.5	621.5	669.3	661.2
132.5°	562.9	656.9	608.3	652.3	694.4	699.3
135°	606.7	702.3	638.3	679.0	720.3	718.7
137.5°	649.8	744.5	675.8	700.1	737.4	742.2
140°	691.2	789.8	708.2	727.6	758.4	759.2
142.5°	734.9	835.2	743.8	755.2	781.9	777.1
145°	783.5	878.2	788.4	782.7	799.8	789.2
147.5°	826.5	915.4	820.0	803.0	823.3	809.5
150°	874.3	953.5	863.8	831.4	843.5	837.0
152.5°	918.1	983.5	911.6	853.2	867.0	858.9
155°	961.0	1015.1	957.8	875.1	884.8	881.6
157.5°	997.3	1042.7	991.6	897.8	909.1	902.7
160°	1030.7	1065.4	1033.1	931.8	925.4	925.4
162.5°	1059.1	1088.2	1061.5	978.0	943.2	927.8
165°	1084.2	1105.2	1086.6	1029.9	977.2	963.4
167.5°	1107.7	1121.5	1115.0	1072.0	1029.9	1000.7
170°	1126.3	1134.4	1125.5	1107.7	1085.6	1060.5
172.5°	1136.0	1139.3	1145.0	1133.6	1124.5	1107.3
175°	1141.7	1150.6	1145.8	1149.8	1141.5	1137.3
177.5°	1143.3	1145.0	1144.1	1151.4	1154.5	1147.8
180°	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8

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