

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: P392589

Luminaire Tested: **MWL-3-30-57-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392589
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-3-30-57-UNV-L830-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

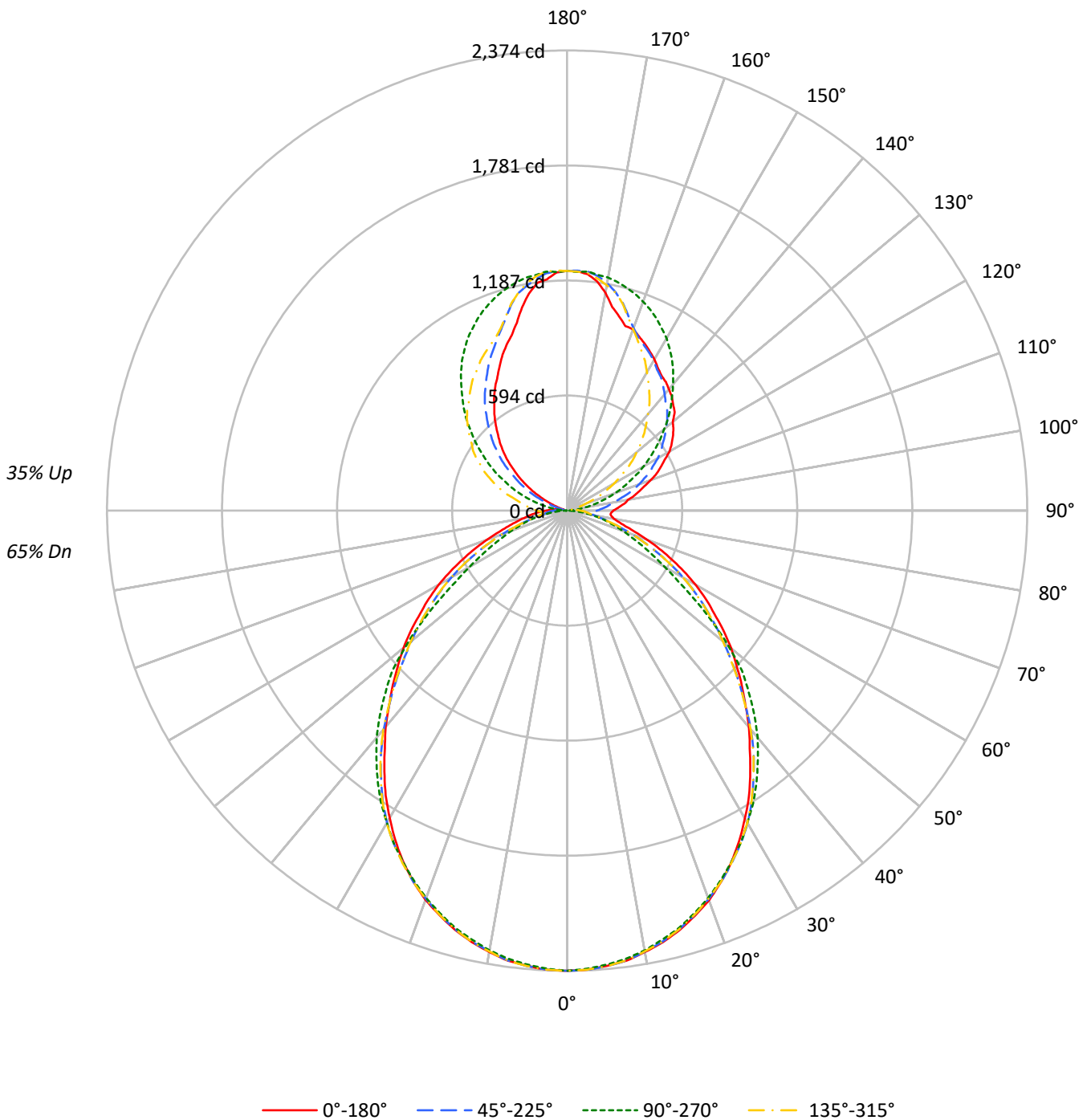
Lumens per Lamp: N/A
Luminaire Lumens: 8469.0 lumens
Efficiency: N/A
Efficacy: 86.8 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 97.6
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	50	30	10	0	
RCR																						
0	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70	70	70	70	65	
1	101	97	93	90	95	91	88	85	81	78	76	71	69	67	62	61	59	59	59	59	55	
2	93	85	79	74	87	80	75	70	71	67	64	63	60	57	55	53	51	51	51	51	47	
3	85	75	68	62	80	71	65	59	63	58	54	56	52	49	49	46	44	44	44	44	40	
4	78	67	59	53	73	63	56	51	57	51	46	50	46	42	44	41	38	38	38	38	35	
5	72	60	52	46	67	57	50	44	51	45	40	45	41	37	40	36	33	33	33	33	31	
6	66	54	46	40	62	51	44	39	46	40	36	41	36	33	37	33	30	30	30	30	27	
7	61	49	41	35	58	47	39	34	42	36	32	38	33	29	34	30	27	27	27	27	24	
8	57	45	37	32	54	43	35	30	38	32	28	35	30	26	31	27	24	24	24	24	22	
9	53	41	33	28	50	39	32	27	35	30	25	32	27	24	29	25	22	22	22	22	20	
10	50	38	30	26	47	36	29	25	33	27	23	30	25	21	27	23	20	20	20	20	18	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	20444	20444	20444	20444
5°	20137	18686	20137	18686
10°	19738	17126	19738	17126
15°	19265	15673	19242	15673
20°	18664	14287	18641	14287
25°	17878	12971	17854	12971
30°	16887	11724	16855	11724
35°	15774	10538	15748	10538
40°	14692	9343	14657	9343
45°	13624	8069	13596	8069
50°	12692	6639	12662	6639
55°	11598	4983	11576	4983
60°	10615	3659	10602	3659
65°	9308	2754	9308	2754
70°	7991	2063	8006	2063
75°	6810	1484	6867	1484
80°	6802	948	6344	948
85°	8557	389	6392	389



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	223.5	2.6
10°-20°	629.3	7.4
20°-30°	922.4	10.9
30°-40°	1046.0	12.4
40°-50°	983.4	11.6
50°-60°	780.6	9.2
60°-70°	507.6	6.0
70°-80°	259.0	3.1
80°-90°	131.4	1.6
90°-100°	124.6	1.5
100°-110°	195.5	2.3
110°-120°	329.9	3.9
120°-130°	447.5	5.3
130°-140°	510.1	6.0
140°-150°	508.5	6.0
150°-160°	442.5	5.2
160°-170°	311.2	3.7
170°-180°	115.9	1.4
0°-30°	1775.2	21.0
0°-40°	2821.2	33.3
0°-60°	4585.2	54.1
0°-90°	5483.2	64.7
90°-120°	650.1	7.7
90°-150°	2116.1	25.0
90°-180°	2986.0	35.3
0°-180°	8469.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2374	2374	2374	2374	2374	
5°	2358	2351	2358	2351	2358	224
15°	2241	2229	2239	2229	2241	631
25°	2004	2002	2001	2002	2004	920
35°	1646	1704	1644	1704	1646	1030
45°	1274	1325	1272	1325	1274	984
55°	926	806	924	806	926	833
65°	593	425	593	425	593	590
75°	311	211	313	211	311	341
85°	224	49	167	49	224	189
90°	238	2	108	2	238	132
95°	277	36	71	36	277	236
105°	386	174	19	174	386	408
115°	533	353	125	353	533	529
125°	666	554	305	554	666	595
135°	773	756	488	756	773	597
145°	849	945	655	945	849	535
155°	949	1092	823	1092	949	438
165°	1037	1189	1003	1189	1037	294
175°	1224	1238	1198	1238	1224	114
180°	1236	1236	1236	1236	1236	



TEST NUMBER: P392589

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2374.1	2374.1	2374.1	2374.1	2374.1	2374.1	2374.1	2374.1	2374.1	2374.1	2374.1
2.5°	2370.4	2371.2	2371.1	2368.1	2366.2	2367.2	2371.1	2371.2	2371.3	2371.2	2371.1
5°	2357.9	2360.6	2359.6	2354.8	2350.9	2354.8	2358.7	2360.6	2357.9	2360.6	2358.7
7.5°	2342.5	2341.4	2341.4	2334.6	2331.7	2333.7	2340.5	2340.5	2342.5	2340.5	2340.5
10°	2312.6	2313.6	2309.8	2306.9	2304.0	2305.9	2308.8	2311.8	2312.6	2311.8	2308.8
12.5°	2280.9	2279.0	2277.1	2272.3	2266.7	2272.3	2277.1	2277.2	2279.0	2277.2	2277.1
15°	2241.4	2234.9	2235.8	2233.0	2229.2	2232.1	2235.0	2233.1	2238.7	2233.1	2235.0
17.5°	2191.5	2188.8	2186.9	2185.1	2179.3	2185.1	2186.0	2187.9	2188.8	2187.9	2186.0
20°	2139.7	2135.9	2132.2	2132.3	2126.6	2131.4	2131.3	2134.1	2137.0	2134.1	2131.3
22.5°	2074.5	2074.5	2073.6	2071.8	2066.1	2070.9	2072.8	2072.7	2072.7	2072.7	2072.8
25°	2003.5	2004.4	2007.4	2008.5	2001.8	2007.6	2005.6	2001.7	2000.8	2001.7	2005.6
27.5°	1921.9	1928.6	1938.3	1940.2	1936.6	1939.3	1936.5	1925.9	1919.2	1925.9	1936.5
30°	1834.5	1840.3	1861.4	1871.1	1859.8	1869.3	1858.7	1837.6	1831.0	1837.6	1858.7
32.5°	1746.2	1748.2	1774.1	1788.6	1786.7	1786.7	1771.4	1744.6	1742.7	1744.6	1771.4
35°	1646.5	1648.4	1677.2	1704.1	1704.3	1701.4	1674.5	1645.7	1643.8	1645.7	1674.5
37.5°	1547.6	1549.6	1580.3	1610.0	1615.9	1607.3	1577.6	1546.9	1545.0	1546.9	1577.6
40°	1459.3	1448.8	1474.7	1510.2	1528.5	1508.5	1471.1	1445.2	1455.8	1445.2	1471.1
42.5°	1361.4	1348.0	1360.5	1406.5	1428.7	1404.8	1357.9	1344.4	1357.9	1344.4	1357.9
45°	1274.1	1251.1	1254.9	1296.2	1325.1	1294.4	1251.4	1248.5	1271.5	1248.5	1251.4
47.5°	1185.8	1161.8	1150.3	1186.8	1223.3	1186.0	1146.8	1159.2	1183.2	1159.2	1146.8
50°	1104.2	1075.4	1052.4	1067.8	1086.2	1066.1	1048.9	1071.9	1101.6	1071.9	1048.9
52.5°	1016.9	992.9	958.4	960.3	947.0	958.6	955.8	989.4	1014.3	989.4	955.8
55°	925.8	911.4	867.2	844.3	806.0	842.5	864.6	908.8	924.0	908.8	864.6
57.5°	848.0	831.7	778.9	729.1	680.2	727.4	776.3	829.1	846.3	829.1	776.3
60°	764.6	751.2	691.7	615.0	580.4	614.1	689.9	749.4	763.7	749.4	689.9
62.5°	678.2	668.6	603.4	516.1	497.0	515.2	601.6	666.9	677.4	666.9	601.6
65°	592.9	580.4	512.3	432.6	425.0	431.7	511.4	579.5	592.9	579.5	511.4
67.5°	515.1	495.9	432.6	360.7	359.7	360.7	431.7	495.1	515.1	495.1	431.7
70°	438.5	411.6	354.0	300.2	307.0	300.2	354.0	412.4	439.3	412.4	354.0
72.5°	368.4	336.7	285.8	244.6	253.3	243.7	285.8	337.6	370.1	337.6	285.8
75°	310.8	267.6	225.5	195.7	211.1	195.7	226.3	268.5	313.4	268.5	226.3
77.5°	271.7	223.1	174.6	150.6	168.8	150.6	175.5	220.5	268.2	220.5	175.5
80°	245.2	196.0	140.7	114.1	127.6	114.1	139.0	182.0	228.7	182.0	139.0
82.5°	232.6	184.4	125.3	82.4	88.2	82.4	114.8	153.0	199.5	153.0	114.8
85°	224.1	188.5	126.2	63.9	48.9	62.2	101.0	135.3	167.4	135.3	101.0
87.5°	228.5	201.6	136.1	63.6	14.4	51.4	86.5	117.9	138.8	117.9	86.5
90°	238.5	219.3	154.1	68.4	1.8	35.3	67.8	96.4	107.9	96.4	67.8
92.5°	257.7	242.5	174.8	81.1	14.9	20.9	55.4	81.2	86.9	81.2	55.4
95°	277.3	268.3	198.9	95.4	35.8	8.3	41.9	66.0	70.7	66.0	41.9
97.5°	302.3	294.0	219.9	123.9	62.9	12.4	27.3	54.3	58.2	54.3	27.3
100°	319.0	311.4	246.7	161.4	96.9	30.7	15.7	37.7	44.4	37.7	15.7
102.5°	354.2	338.9	275.7	197.2	132.6	56.0	15.9	25.2	30.0	25.2	15.9
105°	385.5	368.5	318.4	234.6	173.6	89.9	36.9	18.1	18.6	18.1	36.9
107.5°	417.1	406.6	356.7	273.0	217.2	129.2	66.5	37.0	26.8	37.0	66.5
110°	459.8	447.4	394.2	311.3	262.5	170.9	100.5	63.9	51.9	63.9	100.5



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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°	500.7	491.9	429.0	351.4	309.5	216.3	142.3	98.9	86.7	98.9	142.3
115°	532.9	527.6	470.1	389.8	353.1	268.7	189.5	139.8	125.1	139.8	189.5
117.5°	566.9	565.1	499.7	428.2	406.4	314.8	232.2	180.7	165.2	180.7	232.2
120°	609.6	601.7	540.7	466.5	456.0	363.7	279.2	227.8	212.2	227.8	279.2
122.5°	639.3	634.0	575.5	503.1	503.1	413.3	324.5	273.2	256.7	273.2	324.5
125°	666.2	663.5	601.7	539.7	553.6	459.6	375.1	322.8	304.6	322.8	375.1
127.5°	690.7	693.3	635.7	579.8	605.1	506.6	424.7	368.2	348.1	368.2	424.7
130°	711.6	720.3	668.0	617.4	653.8	559.0	469.2	412.6	399.6	412.6	469.2
132.5°	752.5	747.3	701.1	654.8	707.1	606.0	516.3	457.1	442.3	457.1	516.3
135°	773.4	775.2	729.8	687.1	756.0	653.1	560.7	502.4	487.6	502.4	560.7
137.5°	798.7	793.5	752.4	726.3	801.3	698.4	604.3	550.4	526.9	550.4	604.3
140°	817.0	816.1	782.1	761.2	850.0	742.8	648.8	593.9	572.2	593.9	648.8
142.5°	836.2	841.4	812.7	799.5	898.9	789.9	697.6	636.7	615.7	636.7	697.6
145°	849.3	860.6	842.3	847.4	945.1	842.3	739.5	677.5	654.9	677.5	739.5
147.5°	871.1	885.8	863.1	881.4	985.2	888.4	780.3	720.3	700.2	720.3	780.3
150°	900.7	907.6	893.6	929.4	1026.1	940.7	823.1	761.2	741.2	761.2	823.1
152.5°	924.2	933.0	917.1	979.9	1058.3	986.9	870.1	801.4	777.9	801.4	870.1
155°	948.6	952.1	940.7	1029.6	1092.3	1033.1	907.5	845.8	823.2	845.8	907.5
157.5°	971.3	978.3	965.1	1067.1	1122.0	1073.2	950.2	890.2	870.2	890.2	950.2
160°	995.6	994.7	1001.7	1110.6	1146.3	1108.0	995.6	938.0	911.2	938.0	995.6
162.5°	998.3	1013.9	1051.4	1142.1	1170.8	1139.5	1044.4	972.9	949.5	972.9	1044.4
165°	1036.6	1050.5	1108.1	1169.1	1189.1	1166.5	1105.4	1030.5	1002.6	1030.5	1105.4
167.5°	1075.8	1107.2	1153.4	1199.6	1206.6	1191.7	1151.7	1099.3	1073.2	1099.3	1151.7
170°	1140.2	1168.1	1191.7	1210.9	1220.5	1211.8	1180.4	1154.2	1136.6	1154.2	1180.4
172.5°	1191.6	1210.0	1219.7	1231.9	1225.7	1222.3	1206.6	1193.5	1183.8	1193.5	1206.6
175°	1223.8	1228.3	1237.0	1232.7	1238.0	1228.4	1229.3	1234.3	1197.7	1234.3	1229.3
177.5°	1235.1	1242.2	1238.9	1231.0	1231.9	1230.1	1233.6	1236.1	1229.9	1236.1	1233.6
180°	1236.1	1236.1	1236.1	1236.1	1236.1	1236.1	1236.1	1236.1	1236.1	1236.1	1236.1



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2374.1	2374.1	2374.1	2374.1	2374.1	2374.1
2.5°	2367.2	2366.2	2368.1	2371.1	2371.2	2370.4
5°	2354.8	2350.9	2354.8	2359.6	2360.6	2357.9
7.5°	2333.7	2331.7	2334.6	2341.4	2341.4	2342.5
10°	2305.9	2304.0	2306.9	2309.8	2313.6	2312.6
12.5°	2272.3	2266.7	2272.3	2277.1	2279.0	2280.9
15°	2232.1	2229.2	2233.0	2235.8	2234.9	2241.4
17.5°	2185.1	2179.3	2185.1	2186.9	2188.8	2191.5
20°	2131.4	2126.6	2132.3	2132.2	2135.9	2139.7
22.5°	2070.9	2066.1	2071.8	2073.6	2074.5	2074.5
25°	2007.6	2001.8	2008.5	2007.4	2004.4	2003.5
27.5°	1939.3	1936.6	1940.2	1938.3	1928.6	1921.9
30°	1869.3	1859.8	1871.1	1861.4	1840.3	1834.5
32.5°	1786.7	1786.7	1788.6	1774.1	1748.2	1746.2
35°	1701.4	1704.3	1704.1	1677.2	1648.4	1646.5
37.5°	1607.3	1615.9	1610.0	1580.3	1549.6	1547.6
40°	1508.5	1528.5	1510.2	1474.7	1448.8	1459.3
42.5°	1404.8	1428.7	1406.5	1360.5	1348.0	1361.4
45°	1294.4	1325.1	1296.2	1254.9	1251.1	1274.1
47.5°	1186.0	1223.3	1186.8	1150.3	1161.8	1185.8
50°	1066.1	1086.2	1067.8	1052.4	1075.4	1104.2
52.5°	958.6	947.0	960.3	958.4	992.9	1016.9
55°	842.5	806.0	844.3	867.2	911.4	925.8
57.5°	727.4	680.2	729.1	778.9	831.7	848.0
60°	614.1	580.4	615.0	691.7	751.2	764.6
62.5°	515.2	497.0	516.1	603.4	668.6	678.2
65°	431.7	425.0	432.6	512.3	580.4	592.9
67.5°	360.7	359.7	360.7	432.6	495.9	515.1
70°	300.2	307.0	300.2	354.0	411.6	438.5
72.5°	243.7	253.3	244.6	285.8	336.7	368.4
75°	195.7	211.1	195.7	225.5	267.6	310.8
77.5°	150.6	168.8	150.6	174.6	223.1	271.7
80°	114.1	127.6	114.1	140.7	196.0	245.2
82.5°	82.4	88.2	82.4	125.3	184.4	232.6
85°	62.2	48.9	63.9	126.2	188.5	224.1
87.5°	51.4	14.4	63.6	136.1	201.6	228.5
90°	35.3	1.8	68.4	154.1	219.3	238.5
92.5°	20.9	14.9	81.1	174.8	242.5	257.7
95°	8.3	35.8	95.4	198.9	268.3	277.3
97.5°	12.4	62.9	123.9	219.9	294.0	302.3
100°	30.7	96.9	161.4	246.7	311.4	319.0
102.5°	56.0	132.6	197.2	275.7	338.9	354.2
105°	89.9	173.6	234.6	318.4	368.5	385.5
107.5°	129.2	217.2	273.0	356.7	406.6	417.1
110°	170.9	262.5	311.3	394.2	447.4	459.8



TEST NUMBER: P392589

CATALOG NUMBER: MWL-3-30-57-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	216.3	309.5	351.4	429.0	491.9	500.7
115°	268.7	353.1	389.8	470.1	527.6	532.9
117.5°	314.8	406.4	428.2	499.7	565.1	566.9
120°	363.7	456.0	466.5	540.7	601.7	609.6
122.5°	413.3	503.1	503.1	575.5	634.0	639.3
125°	459.6	553.6	539.7	601.7	663.5	666.2
127.5°	506.6	605.1	579.8	635.7	693.3	690.7
130°	559.0	653.8	617.4	668.0	720.3	711.6
132.5°	606.0	707.1	654.8	701.1	747.3	752.5
135°	653.1	756.0	687.1	729.8	775.2	773.4
137.5°	698.4	801.3	726.3	752.4	793.5	798.7
140°	742.8	850.0	761.2	782.1	816.1	817.0
142.5°	789.9	898.9	799.5	812.7	841.4	836.2
145°	842.3	945.1	847.4	842.3	860.6	849.3
147.5°	888.4	985.2	881.4	863.1	885.8	871.1
150°	940.7	1026.1	929.4	893.6	907.6	900.7
152.5°	986.9	1058.3	979.9	917.1	933.0	924.2
155°	1033.1	1092.3	1029.6	940.7	952.1	948.6
157.5°	1073.2	1122.0	1067.1	965.1	978.3	971.3
160°	1108.0	1146.3	1110.6	1001.7	994.7	995.6
162.5°	1139.5	1170.8	1142.1	1051.4	1013.9	998.3
165°	1166.5	1189.1	1169.1	1108.1	1050.5	1036.6
167.5°	1191.7	1206.6	1199.6	1153.4	1107.2	1075.8
170°	1211.8	1220.5	1210.9	1191.7	1168.1	1140.2
172.5°	1222.3	1225.7	1231.9	1219.7	1210.0	1191.6
175°	1228.4	1238.0	1232.7	1237.0	1228.3	1223.8
177.5°	1230.1	1231.9	1231.0	1238.9	1242.2	1235.1
180°	1236.1	1236.1	1236.1	1236.1	1236.1	1236.1

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