

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: P392648

Luminaire Tested: **MWL-4-26-45-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392648
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-4-26-45-UNV-L840-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

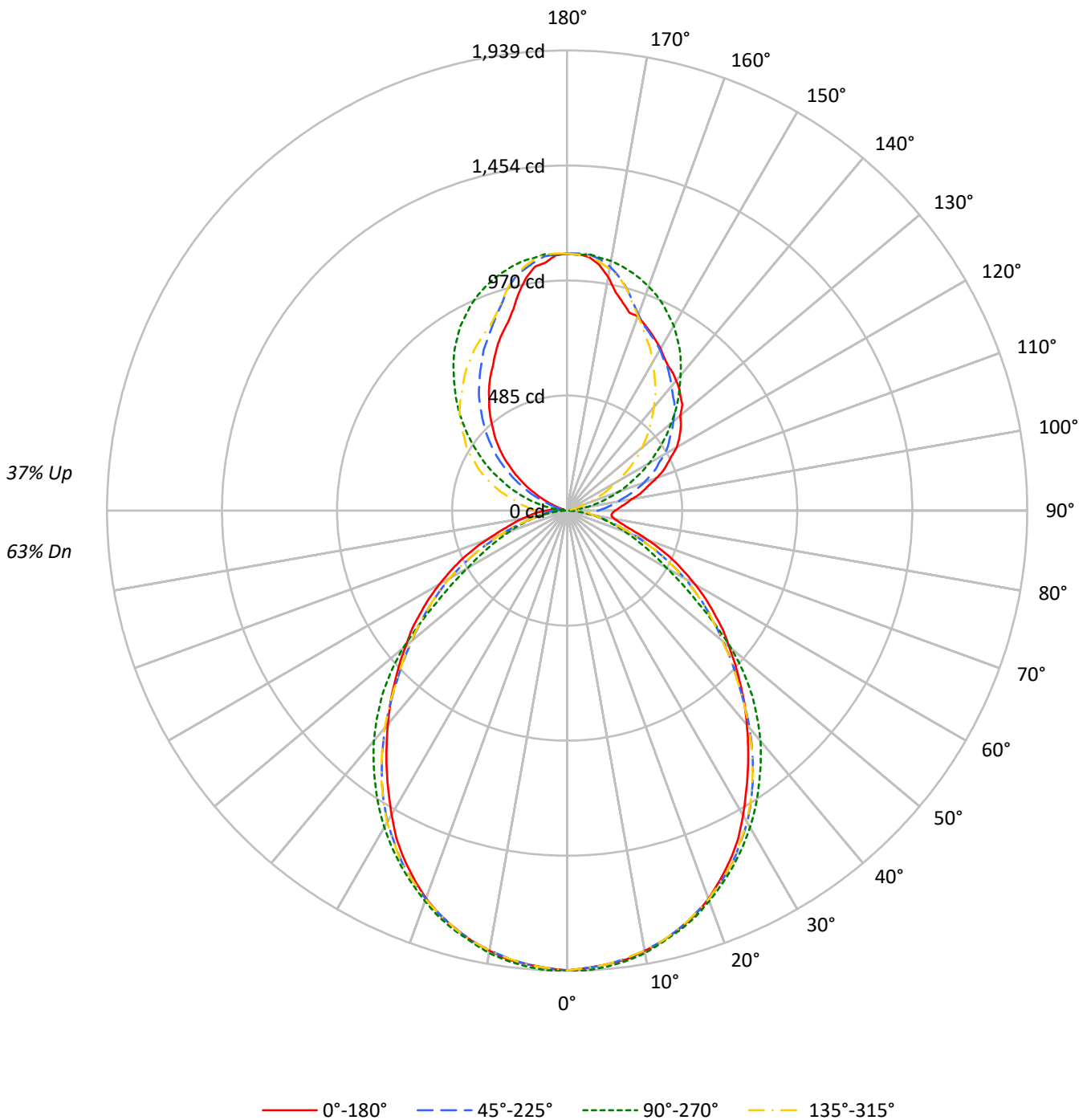
Lumens per Lamp: N/A
Luminaire Lumens: 7109.9 lumens
Efficiency: N/A
Efficacy: 103.3 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 68.8
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	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	50	56	50	46	49	45	41	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	41	36	31	37	32	29	33	29	26	23
8	57	44	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	24	32	27	23	29	24	21	26	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12512	12512	12512	12512
5°	12329	11500	12329	11500
10°	12130	10555	12130	10555
15°	11870	9659	11855	9659
20°	11528	8824	11513	8824
25°	11044	8039	11028	8039
30°	10426	7286	10405	7286
35°	9761	6534	9744	6534
40°	9135	5812	9112	5812
45°	8525	5036	8506	5036
50°	7951	4140	7931	4140
55°	7418	3094	7403	3094
60°	6807	2290	6799	2290
65°	6162	1742	6162	1742
70°	5293	1303	5304	1303
75°	4573	943	4614	943
80°	4737	601	4398	601
85°	6346	279	4668	279



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	2.6
10°-20°	514.7	7.2
20°-30°	754.5	10.6
30°-40°	854.0	12.0
40°-50°	804.4	11.3
50°-60°	642.3	9.0
60°-70°	422.2	5.9
70°-80°	215.8	3.0
80°-90°	109.9	1.5
90°-100°	105.9	1.5
100°-110°	170.8	2.4
110°-120°	288.5	4.1
120°-130°	391.6	5.5
130°-140°	446.3	6.3
140°-150°	445.0	6.3
150°-160°	387.4	5.4
160°-170°	272.5	3.8
170°-180°	101.5	1.4
0°-30°	1451.7	20.4
0°-40°	2305.7	32.4
0°-60°	3752.5	52.8
0°-90°	4500.4	63.3
90°-120°	565.3	8.0
90°-150°	1848.1	26.0
90°-180°	2609.0	36.7
0°-180°	7109.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1937	1937	1937	1937	1937	
5°	1919	1929	1919	1929	1919	182
15°	1825	1832	1823	1832	1825	514
25°	1625	1654	1623	1654	1625	746
35°	1328	1409	1326	1409	1328	831
45°	1031	1103	1028	1103	1031	797
55°	757	667	755	667	757	678
65°	493	358	493	358	493	486
75°	254	179	257	179	254	280
85°	188	47	138	47	188	157
90°	202	2	87	2	202	111
95°	233	32	52	32	233	200
105°	337	151	15	151	337	356
115°	466	310	108	310	466	462
125°	583	485	266	485	583	520
135°	676	661	426	661	676	522
145°	743	828	573	828	743	468
155°	830	957	720	957	830	383
165°	907	1041	877	1041	907	257
175°	1072	1084	1049	1084	1072	100
180°	1083	1083	1083	1083	1083	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1937.3	1937.3	1937.3	1937.3	1937.3	1937.3	1937.3	1937.3	1937.3	1937.3	1937.3
2.5°	1929.1	1934.6	1929.1	1939.9	1938.9	1939.1	1929.1	1934.6	1929.8	1934.6	1929.1
5°	1919.1	1924.6	1920.1	1928.1	1929.1	1928.1	1919.3	1924.6	1919.1	1924.6	1919.3
7.5°	1907.8	1908.3	1903.3	1914.1	1914.1	1913.3	1902.6	1907.6	1907.8	1907.6	1902.6
10°	1883.6	1887.3	1882.3	1893.3	1893.3	1892.6	1881.6	1885.8	1883.6	1885.8	1881.6
12.5°	1858.1	1859.3	1856.6	1865.6	1861.8	1865.6	1856.6	1857.8	1856.6	1857.8	1856.6
15°	1824.9	1824.3	1823.6	1833.6	1831.8	1832.8	1822.8	1822.8	1822.6	1822.8	1822.8
17.5°	1787.9	1787.3	1784.6	1794.8	1795.8	1794.8	1783.8	1786.6	1785.6	1786.6	1783.8
20°	1740.9	1740.1	1742.6	1750.8	1751.1	1750.1	1741.8	1738.6	1738.6	1738.6	1741.8
22.5°	1684.1	1690.1	1692.6	1704.8	1704.1	1704.1	1691.8	1688.6	1682.6	1688.6	1691.8
25°	1625.1	1632.1	1643.3	1653.8	1654.1	1653.1	1641.8	1629.8	1622.8	1629.8	1641.8
27.5°	1560.1	1568.1	1579.3	1600.6	1599.1	1599.8	1577.8	1565.8	1557.8	1565.8	1577.8
30°	1482.1	1494.1	1517.1	1539.3	1541.1	1537.8	1514.8	1491.8	1479.1	1491.8	1514.8
32.5°	1404.1	1416.1	1444.1	1473.3	1478.8	1471.8	1441.8	1413.1	1401.1	1413.1	1441.8
35°	1328.3	1336.3	1364.3	1405.3	1409.1	1403.1	1362.1	1334.1	1326.1	1334.1	1362.1
37.5°	1252.3	1254.3	1281.3	1330.3	1339.8	1328.1	1279.1	1252.1	1250.1	1252.1	1279.1
40°	1178.3	1173.3	1196.3	1246.6	1267.8	1245.1	1193.3	1170.3	1175.3	1170.3	1193.3
42.5°	1106.3	1095.3	1103.6	1163.6	1185.8	1162.1	1101.3	1092.3	1103.3	1092.3	1101.3
45°	1030.6	1017.6	1017.6	1071.6	1102.8	1070.1	1014.5	1015.3	1028.3	1015.3	1014.5
47.5°	960.6	944.6	937.6	982.8	1007.8	982.1	934.5	942.3	958.3	942.3	934.5
50°	889.6	876.6	856.6	883.8	903.1	882.3	853.5	873.5	887.3	873.5	853.5
52.5°	828.6	810.6	783.8	792.8	781.1	791.3	781.5	807.5	826.3	807.5	781.5
55°	756.8	746.8	712.8	703.1	667.3	701.5	710.5	744.5	755.3	744.5	710.5
57.5°	690.8	684.8	641.8	605.1	571.3	603.5	639.5	682.5	689.3	682.5	639.5
60°	622.1	619.1	573.1	517.3	484.3	516.5	571.5	617.5	621.3	617.5	571.5
62.5°	555.1	551.1	500.1	433.3	419.5	432.5	498.5	549.5	554.3	549.5	498.5
65°	493.3	482.3	429.3	361.3	358.5	360.5	428.5	481.5	493.3	481.5	428.5
67.5°	426.3	409.3	359.3	301.5	306.5	301.5	358.5	408.5	426.3	408.5	358.5
70°	360.5	338.5	298.5	250.5	258.5	250.5	298.5	339.3	361.3	339.3	298.5
72.5°	301.5	276.5	240.5	204.5	216.8	203.8	240.5	277.3	303.1	277.3	240.5
75°	254.5	225.5	188.8	162.8	178.8	162.8	189.5	226.3	256.8	226.3	189.5
77.5°	224.6	185.6	144.8	125.8	143.8	125.8	145.5	183.3	221.6	183.3	145.5
80°	202.6	165.3	117.1	93.8	107.8	93.8	115.5	153.1	188.1	153.1	115.5
82.5°	189.9	154.1	105.2	66.8	75.8	66.8	96.1	126.6	160.9	126.6	96.1
85°	187.6	159.0	107.0	54.1	46.8	52.5	84.9	112.4	138.0	112.4	84.9
87.5°	192.1	169.2	114.2	54.5	16.0	43.8	70.6	95.9	113.5	95.9	70.6
90°	201.9	185.2	130.6	58.5	1.8	29.5	55.1	77.6	87.3	77.6	55.1
92.5°	217.5	205.3	148.9	71.2	13.2	18.5	44.3	64.1	67.8	64.1	44.3
95°	233.3	229.7	170.7	85.4	31.5	9.1	33.3	52.5	52.3	52.5	33.3
97.5°	254.9	252.0	192.3	107.9	55.2	10.2	23.6	42.1	41.1	42.1	23.6
100°	274.6	272.9	216.7	140.7	84.2	26.2	14.3	33.1	34.1	33.1	14.3
102.5°	309.2	297.0	242.0	172.0	115.5	48.3	14.5	22.1	25.1	22.1	14.5
105°	336.8	323.1	278.4	204.9	151.4	78.1	31.8	16.2	15.3	16.2	31.8
107.5°	363.6	355.0	312.0	239.5	189.6	113.5	57.7	31.3	21.6	31.3	57.7
110°	400.8	391.7	344.9	273.1	230.3	150.1	87.5	55.7	43.5	55.7	87.5



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CATALOG NUMBER: MWL-4-26-45-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	437.5	430.6	375.4	308.2	271.5	189.8	124.2	86.2	74.8	86.2	124.2
115°	465.7	461.9	410.5	341.0	309.7	234.9	164.6	122.1	108.4	122.1	164.6
117.5°	495.5	494.8	436.5	374.6	355.5	275.4	202.1	158.0	143.5	158.0	202.1
120°	532.9	526.8	473.4	408.2	399.1	318.1	244.3	199.2	184.7	199.2	244.3
122.5°	558.9	555.1	503.9	440.3	440.3	361.6	284.0	238.9	223.7	238.9	284.0
125°	582.6	581.0	526.8	472.4	484.6	402.1	328.3	282.5	265.7	282.5	328.3
127.5°	603.9	606.2	556.6	508.5	529.6	444.4	371.8	321.4	303.9	321.4	371.8
130°	622.3	629.9	584.9	540.6	572.4	489.4	410.8	360.4	348.9	360.4	410.8
132.5°	658.2	653.6	613.9	573.4	618.2	530.6	452.0	399.3	386.3	399.3	452.0
135°	676.5	678.0	639.1	601.7	661.0	571.9	490.9	439.0	426.0	439.0	490.9
137.5°	698.6	694.0	658.9	636.0	700.7	611.6	529.1	481.0	460.4	481.0	529.1
140°	714.7	713.9	684.9	666.6	743.4	650.5	568.1	519.2	500.1	519.2	568.1
142.5°	731.5	736.0	710.8	700.2	786.2	691.8	610.1	556.6	538.3	556.6	610.1
145°	742.9	752.8	736.8	742.2	827.7	737.6	646.7	592.5	572.6	592.5	646.7
147.5°	762.0	775.0	755.9	771.9	861.8	778.0	683.4	629.9	612.3	629.9	683.4
150°	788.0	794.1	782.6	813.2	898.7	823.1	720.8	665.8	648.2	665.8	720.8
152.5°	808.6	816.2	803.2	858.2	926.9	864.3	762.0	700.9	680.3	700.9	762.0
155°	830.0	833.0	823.9	901.7	956.7	904.8	794.8	739.9	720.0	739.9	794.8
157.5°	849.8	855.9	845.2	934.6	982.7	939.9	832.3	778.8	761.2	778.8	832.3
160°	871.2	871.2	877.3	972.8	1004.1	970.5	872.0	821.6	797.1	821.6	872.0
162.5°	873.5	888.0	920.8	999.5	1024.7	997.2	914.7	852.1	830.7	852.1	914.7
165°	907.1	920.1	969.7	1023.2	1040.7	1020.9	967.4	902.5	877.3	902.5	967.4
167.5°	942.2	969.7	1009.4	1049.9	1056.0	1043.0	1007.9	962.8	939.9	962.8	1007.9
170°	998.5	1023.2	1043.0	1059.8	1068.2	1060.6	1033.1	1010.9	995.4	1010.9	1033.1
172.5°	1043.5	1059.8	1067.4	1078.1	1073.8	1069.7	1056.0	1045.3	1036.7	1045.3	1056.0
175°	1071.8	1075.8	1082.7	1078.9	1084.5	1075.1	1075.8	1081.2	1048.9	1081.2	1075.8
177.5°	1081.7	1088.1	1084.2	1077.4	1078.1	1076.6	1079.7	1082.7	1077.1	1082.7	1079.7
180°	1082.7	1082.7	1082.7	1082.7	1082.7	1082.7	1082.7	1082.7	1082.7	1082.7	1082.7



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1937.3	1937.3	1937.3	1937.3	1937.3	1937.3
2.5°	1939.1	1938.9	1939.9	1929.1	1934.6	1929.1
5°	1928.1	1929.1	1928.1	1920.1	1924.6	1919.1
7.5°	1913.3	1914.1	1914.1	1903.3	1908.3	1907.8
10°	1892.6	1893.3	1893.3	1882.3	1887.3	1883.6
12.5°	1865.6	1861.8	1865.6	1856.6	1859.3	1858.1
15°	1832.8	1831.8	1833.6	1823.6	1824.3	1824.9
17.5°	1794.8	1795.8	1794.8	1784.6	1787.3	1787.9
20°	1750.1	1751.1	1750.8	1742.6	1740.1	1740.9
22.5°	1704.1	1704.1	1704.8	1692.6	1690.1	1684.1
25°	1653.1	1654.1	1653.8	1643.3	1632.1	1625.1
27.5°	1599.8	1599.1	1600.6	1579.3	1568.1	1560.1
30°	1537.8	1541.1	1539.3	1517.1	1494.1	1482.1
32.5°	1471.8	1478.8	1473.3	1444.1	1416.1	1404.1
35°	1403.1	1409.1	1405.3	1364.3	1336.3	1328.3
37.5°	1328.1	1339.8	1330.3	1281.3	1254.3	1252.3
40°	1245.1	1267.8	1246.6	1196.3	1173.3	1178.3
42.5°	1162.1	1185.8	1163.6	1103.6	1095.3	1106.3
45°	1070.1	1102.8	1071.6	1017.6	1017.6	1030.6
47.5°	982.1	1007.8	982.8	937.6	944.6	960.6
50°	882.3	903.1	883.8	856.6	876.6	889.6
52.5°	791.3	781.1	792.8	783.8	810.6	828.6
55°	701.5	667.3	703.1	712.8	746.8	756.8
57.5°	603.5	571.3	605.1	641.8	684.8	690.8
60°	516.5	484.3	517.3	573.1	619.1	622.1
62.5°	432.5	419.5	433.3	500.1	551.1	555.1
65°	360.5	358.5	361.3	429.3	482.3	493.3
67.5°	301.5	306.5	301.5	359.3	409.3	426.3
70°	250.5	258.5	250.5	298.5	338.5	360.5
72.5°	203.8	216.8	204.5	240.5	276.5	301.5
75°	162.8	178.8	162.8	188.8	225.5	254.5
77.5°	125.8	143.8	125.8	144.8	185.6	224.6
80°	93.8	107.8	93.8	117.1	165.3	202.6
82.5°	66.8	75.8	66.8	105.2	154.1	189.9
85°	52.5	46.8	54.1	107.0	159.0	187.6
87.5°	43.8	16.0	54.5	114.2	169.2	192.1
90°	29.5	1.8	58.5	130.6	185.2	201.9
92.5°	18.5	13.2	71.2	148.9	205.3	217.5
95°	9.1	31.5	85.4	170.7	229.7	233.3
97.5°	10.2	55.2	107.9	192.3	252.0	254.9
100°	26.2	84.2	140.7	216.7	272.9	274.6
102.5°	48.3	115.5	172.0	242.0	297.0	309.2
105°	78.1	151.4	204.9	278.4	323.1	336.8
107.5°	113.5	189.6	239.5	312.0	355.0	363.6
110°	150.1	230.3	273.1	344.9	391.7	400.8



TEST NUMBER: P392648

CATALOG NUMBER: MWL-4-26-45-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	189.8	271.5	308.2	375.4	430.6	437.5
115°	234.9	309.7	341.0	410.5	461.9	465.7
117.5°	275.4	355.5	374.6	436.5	494.8	495.5
120°	318.1	399.1	408.2	473.4	526.8	532.9
122.5°	361.6	440.3	440.3	503.9	555.1	558.9
125°	402.1	484.6	472.4	526.8	581.0	582.6
127.5°	444.4	529.6	508.5	556.6	606.2	603.9
130°	489.4	572.4	540.6	584.9	629.9	622.3
132.5°	530.6	618.2	573.4	613.9	653.6	658.2
135°	571.9	661.0	601.7	639.1	678.0	676.5
137.5°	611.6	700.7	636.0	658.9	694.0	698.6
140°	650.5	743.4	666.6	684.9	713.9	714.7
142.5°	691.8	786.2	700.2	710.8	736.0	731.5
145°	737.6	827.7	742.2	736.8	752.8	742.9
147.5°	778.0	861.8	771.9	755.9	775.0	762.0
150°	823.1	898.7	813.2	782.6	794.1	788.0
152.5°	864.3	926.9	858.2	803.2	816.2	808.6
155°	904.8	956.7	901.7	823.9	833.0	830.0
157.5°	939.9	982.7	934.6	845.2	855.9	849.8
160°	970.5	1004.1	972.8	877.3	871.2	871.2
162.5°	997.2	1024.7	999.5	920.8	888.0	873.5
165°	1020.9	1040.7	1023.2	969.7	920.1	907.1
167.5°	1043.0	1056.0	1049.9	1009.4	969.7	942.2
170°	1060.6	1068.2	1059.8	1043.0	1023.2	998.5
172.5°	1069.7	1073.8	1078.1	1067.4	1059.8	1043.5
175°	1075.1	1084.5	1078.9	1082.7	1075.8	1071.8
177.5°	1076.6	1078.1	1077.4	1084.2	1088.1	1081.7
180°	1082.7	1082.7	1082.7	1082.7	1082.7	1082.7

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