

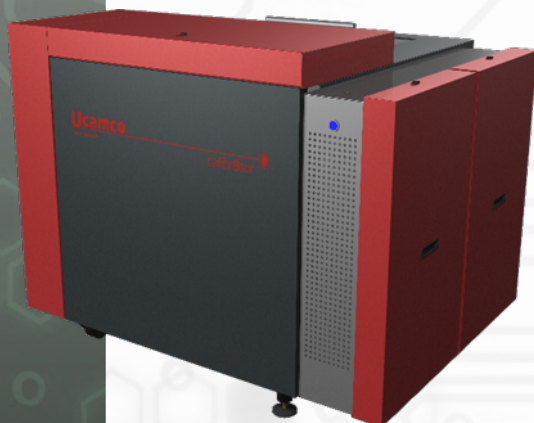
SOFTWARE

LASER PHOTO PLOTTERS

DIRECT IMAGERS

Calibr8tor 6000 & 6500

A Photo plotter family with "Glass Master" accuracy



- Makes glass master obsolete
- Resolutions up to 40,640 ppi
- Line widths down to 7 microns
- Unsurpassed accuracy
- Load up to 3 film magazines
- 100% automatic operation
- Highest plot speed in class
- Unrivalled uptime record

MARKETS

Rigid PCB Mfr ✓
 Flex PCB Mfr ✓
 Flex-Rigid PCB Mfr ✓
 HDI PCB Mfr ✓
 PCB Masslam Mfr ✓
 PCB Equipment Mfr
 PCB Traders
 PCB Designers
 PCB Test Centers
 IC Packaging ✓
 Chemical Milling ✓
 High Resolution Graphic Arts ✓
 Flat Panel Display ✓

PRODUCT FAMILIES

CAM
 PreCAM and Engineering
 Electrical Test
 Equipment Front Ends
 Format Converters & RIP's
 OEM Software

Laser Photo Plotters ✓
 Direct Imagers

"Glass master" accuracy

Imaging BGA and chip-scale PCBs and micro-miniaturized lead-frames needs "glass-master" accuracy – but not at the cost of reduced film throughput. The new Calibr8tor 6000 series combines fastest-in-class plot throughput with ultra-precise image quality at resolutions up to 40,640 ppi on line-widths down to 7 microns.

Line widths down to 7µm

Two unique imaging technologies, synthetic modulation and pixel placement at 200,000 ppi, provide the accuracy needed for very fine line imaging, eliminating the pixel jump ("micro-banding") errors found on conventional plotters and holding line-width accuracy under 1µm. Using high-resolution film the Calibr8tor 6000 series images 5µm lines at all angles.

Minimized non-linear distortion

Ultra-precise fine-line imaging needs the highest geometric accuracy and minimal non-linear distortion. The Calibr8tor 6000's dynamic beam positioning accurate to 0.25µm and the uncompromising designing-out of every source of mechanical variation ensures accurate and repeatable pixel placement. The horizontal load/unload mechanism, the drum vacuum system, and internal thermal management eliminates film stress and minimizes non-linear distortion.

Productivity and reliability

The Calibr8tor 6000 series uses new optics, electronics and FlashRip software to deliver the highest throughput in the market for extreme fine-line plots. The new GCS system compensates any process distortions. For maximum flexibility and cost control load the Calibr8tor 6000 with 450 sheets of film up to 3 different sizes. The drive system delivers unparalleled levels of uptime and long-term reliability as well as allowing a 30% smaller footprint.

Compatible and upgradeable

With its small footprint and ability to accept plot instructions directly in Gerber, DPF, ODB++, Image 5000 (Expert) or MDA formats, the calibr8tor 6000 is a "no hassle" wheel-in replacement for any conventional plotter. Install a new machine or field-upgrade a SilverWriter 8000 or Phoenix: either way the calibr8tor 6000 opens up new fine-line manufacturing technologies for PCB manufacturers, photo-fabricators and plot service bureaus alike.

Calibr8tor 6000 & 6500

Technical Data

SOFTWARE

AutoCAM
FaultStation 4
FixGenius
FlashRip
Format Converters
Geometric Correction System
Integr8tor
Mult Job Panelizer
OEM Software
SmartAOI
SmartPlate
SmartTest
Ucam CAD Review
Ucam CAM++
Ucam Chemical Milling
Ucam ET+
Ucam SmartView
Ucam uFlex
UcamX

For more information on any of our products or services please contact us:
By e-mail: info@ucamco.com
On the Web: www.ucamco.com

Resolutions

Imperial	8,000 up to 40,000 ppi
Metric	3.2 up to 0.6 μ m
Minimum line width	0.27 mil 7 μ m

Productivity for an 18" x 24" plot	Model 6000	Model 6500
8,000 ppi (in films / hour)	21.5	21.5
16,000 ppi (in films / hour)	13.1	13.1
20,000 ppi (in films / hour)	10	11
25,000 ppi (in films / hour)	6.8	9.1
32,000 ppi (in films / hour)	4.4	7.4
40,000 ppi (in films / hour)	2.7	6

Film Requirements	Imperial	Metrical
Film format along the drum	18" – 32" in ½" steps	457 – 813 mm
Film format around the drum	24" – 29" in 1" steps	610 – 736 mm
Max. image format along the drum	0.2" (5 mm) less than film format	
Max. image format around the drum	0.9" (23 mm) less than film format	
Sheet tolerance	± 0.02" ± 0.5 mm	

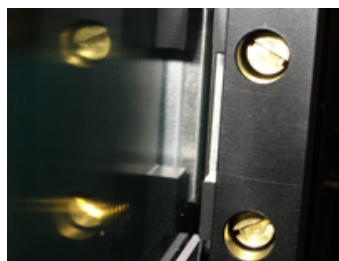
Accuracy	Imperial	Metrical
Geometric plotter accuracy	< 0.16 mil	< 4 μ m
Geometric plotter repeatability	< 0.08 mil	< 2 μ m
Global positioning accuracy	0.01 mil	0.25 μ m
Geometric accuracy on film	< 0.5 mil	< 12.5 μ m
Geometric repeatability on film	< 0.5 mil	< 12.5 μ m
Line width variation	< 0.04 mil	< 1 μ m
Scaling adjustments	In steps of 0.127 μ m	
Scaling adjustment range	± 5%	

Machine Characteristics	Imperial	Metrical
Loading capacity	Up to 3 magazines. 150 sheets of film in each	
Light source	Red HeNe laser, 632.8 nm, 5 mW	
Dimensions (W x D)	72.8" x 61"	1850 x 1550 mm
Height	54.3"	1380 mm
Weight	3300 lbs	1500 kg
Room temperature during operation	70° F ± 2°	21° C ± 1°
Relative humidity during operation	50% ± 2%, no condensation	
Relative humidity rate of change	Max 6% per hour	
Electrical Power Supply	2 x 230 VAC, 2000 VA	
Heat dissipation	2,000 W (1,725 kcal/h)	
Compressed air supply	87 – 145 PSI	6 – 10 bar
Compressed air quality	Free of oil and water	0.01 mg/m ³
Compressed air volume	88 ft ³ /hour	2500 l/hour

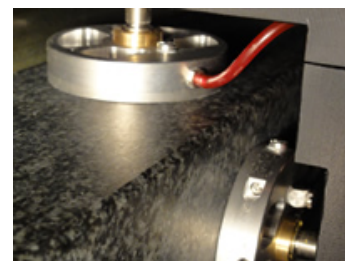
(*) Assuming nominal plotting using factory settings



Linear scale



Linear motor



Air bearings

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