

SOFTWARE

LASER PHOTO PLOTTERS

DIRECT IMAGERS

## Calibr8tor 7000

A photo plotters family targeted at your precise requirements



- Makes glass master obsolete
- Resolutions up to 50,800 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

### Covers all plotting needs from HDI PCBs to CSP substrates

The Calibr8tor 7000 delivers the highest plot speeds in class at resolutions from 8000 ppi to 50800 ppi to cover all your plotting needs from HDI PCBs to CSP substrates. New imaging technology gives unrivalled accuracy on features down to 7 microns. Calibr8tor 7000 includes Ucamco's new Geometric Correction System to increase production yields.

### Highest plot speed in class

One of the key elements of the Calibr8tor 7000 is Ucamco's new scalable FlashRip making use of multi-core processing and RAID technology. FlashRip has been specially developed and optimized to process the massive data streams required for high-speed plotting of high-resolution images. The result is up to 60% more plots per hour.

### Increased production yields

The Calibr8tor 7000 includes as standard Ucamco's new Geometric Correction System (GCS). Compensate directly on the plotter for non-linear as well as linear process distortions detected during PCB production. Enter the distortion measurements into the plotter software and the film will be precisely compensated to an accuracy of 0.127  $\mu\text{m}$ .

### "Glass-master" image accuracy

The Dynamic beam control accurate to 0.1 micron and advanced pixel placement algorithms operating at 200,000 ppi deliver feature sizes accurate down to 1  $\mu\text{m}$ . Syntectic modulation eliminates the pixel-jump errors found on conventional plotters and allows the Calibr8tor 7000 to plot ultra-precise lines and spaces at all angles down to 6 $\mu\text{m}$ . These advanced imaging technologies are complemented by Calibr8tor 7000's patented internal film-handling system which eliminates all distortion of the film during plotting.

### Lower whole-life costs

Calibr8tor 7000 has been designed to minimise imaging costs even at the highest resolution. Its compact footprint and data input in all standard plot formats make Calibr8tor 7000 a "wheel-in" replacement for any existing plotter. Automated direct drive from all industry-standard CAM systems and 3 film magazines each holding 150 sheets allow unattended operation, reducing labour and environmental costs. Calibr8tor 7000's robust wear-free construction based on more than 25 years design experience is field-proven to deliver unrivalled uptime and operational life. Calibr8tor 7000 is backed by Ucamco's global support network and continuous development policy.

#### 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

# Calibr8tor 7000

## Technical Data

Resolutions			
Imperial	8,000 up to 50,000 ppi		
Metric	3.125 up to 0.5 $\mu\text{m}$		
Minimum line width	0.27 mil	7 $\mu\text{m}$	
Productivity for an 18" x 24" exposed panel (*)			
8,000 ppi (in films / hour)	21.7	2.5 $\mu\text{m}$ - 10,160 ppi (in films / hour)	19.1
16,000 ppi (in films / hour)	13.2	2.0 $\mu\text{m}$ - 12,700 ppi (in films / hour)	16.7
32,000 ppi (in films / hour)	5.3	1 $\mu\text{m}$ - 25,400 ppi (in films / hour)	7.8
40,000 ppi (in films / hour)	3.3	0.5 $\mu\text{m}$ - 50,800 ppi (in films / hour)	2.2
Film Requirements		Imperial	Metrical
Film format along the drum	18" - 32" in 1/2" 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	$\pm 0.02$ "	$\pm 0.5$ mm	
Accuracy		Imperial	Metrical
Geometric plotter accuracy	< 0.16 mil	< 4 $\mu\text{m}$	
Geometric plotter repeatability	< 0.08 mil	< 2 $\mu\text{m}$	
Global positioning accuracy	0.01 mil	0.25 $\mu\text{m}$	
Geometric film accuracy - 3 $\sigma$ , FTF radial	< 0.4 mil	< 10 $\mu\text{m}$	
Geometric film repeatability	< 0.4 mil	< 10 $\mu\text{m}$	
Line width variation	< 0.04 mil	< 1 $\mu\text{m}$	
Scaling adjustments in steps of	0.005 mil	0.127 $\mu\text{m}$	
Scaling adjustment range	$\pm 5\%$		
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 x H)	72.8" x 61" x 54.3"	1850 x 1550 x 1380 mm	
Weight	3300 lbs	1500 kg	
Room temperature during operation	70° F $\pm$ 2°	21° C $\pm$ 1°	
Relative humidity during operation	50% $\pm$ 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 <sup>3</sup>	
Compressed air volume	88 ft <sup>3</sup> /hour	2500 l/hour	

(\*) Assuming nominal plotting using factory settings

### 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 at [info@ucamco.com](mailto:info@ucamco.com)

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High resolution linear scale



Linear motor



Granite & Air bearings

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