

SOFTWARE

LASER PHOTO PLOTTERS

DIRECT IMAGERS

## Hawk 2000, 3000 & 3500

Top Notch Medium-Resolution Large Format Laser Photo Plotters



- Resolutions up to 25,400 ppi
- Highest local and geometric accuracy
- Improved registration
- Utmost handling capabilities
- Unrivalled 24/7/52 reliability

### Improved registration

The Hawk series use the patented technology of frequency variation for the "photographic" scaling of inner layers. Together with their new contactless high resolution linear scale and rotary encoder this eliminates micro banding resulting from adding/dropping a pixel.

### Utmost handling capabilities

The film loading/unloading system is fully automated and on-line connected to the film processor. The film handling mechanism is simple, reliable and very accurate providing stress-free film loading and unloading.

### Unrivalled 24/7/52 reliability

The Hawk series is engineered for round the clock, long-term reliability. The ultra-stable granite bed, maintenance-free linear motor, air-bearings and the direct-drive drum deliver unparalleled long-term uptime - your guarantee of on-time deliveries, low whole life costs and an optimum return on your

### Medium resolution

With a maximum resolution of 25,400 ppi, the Hawk 2000, Hawk 3000 and Hawk 3500 series deliver excellent line quality. Two unique imaging functions, syntectic modulation and sub-micron pixel-placement, eliminate the rounding errors found on conventional plots and hold line-width accuracy down to <math><2 \mu\text{m}</math>.

### Compatibility and choices

Hawk series accept plot instructions directly in Ucam(X)'s DPF, ODB++, Gerber, OI5000 (Expert) or MDA formats, making it a "wheel-in" replacement for conventional plotters. With up to 16 plot resolutions they deliver the optimum setting for every image down to 12.7  $\mu\text{m}$  features. The Hawk 2000 handles from 1.3 to 7.4 films per hour. The Hawk 3500 with its increased speed handles 2.5 to 9.4 films/hour.

### Get more out of your photo plotter investment with FlashRip software

- FlashRip provides optimized ripping and plotting of line images in resolutions up to 50,800 ppi.
- FlashRip features automatic counter-scaling of all designated features on the plotter without the need to go back to the CAM department.
- FlashRip automatically inserts plot stamps (e.g. plot date) into the plotted image.
- FlashRip supports Geometric Correction System (GCS).  
GCS allows the user to compensate on the photo tool for the linear and non-linear distortions generated on the PCB during various production steps.  
The result is a much improved layer registration, lower scrap and higher yields.
- FlashRip is scalable for multiple processors to convert several jobs simultaneously (optional).

Depending on plotter model and job complexity FlashRip increases throughput with up to 100% and more. For more info please contact your local Ucamco distributor or mail us at [info@ucamco.com](mailto:info@ucamco.com).

### 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

# Technical Data

## Hawk 2000, 3000 & 3500

Resolutions			
Imperial	4,000 up to 25,400ppi		
Metric	6.35 µm up to 1 µm		
Min. line width	0.5 mil / 12.7 µm		
Productivity for an 46" x 62" panel			
	2000	3000	3500
4,000 ppi (in films / hour)	7.4	8.5	9.4
5,000 ppi (in films / hour)	6.4	7.4	8.3
8,000 ppi (in films / hour)	4.5	5.4	6.1
10,000 ppi (in films / hour)	3.8	4.5	5.2
16,000 ppi (in films / hour)	2.6	3.1	3.6
20,000 ppi (in films / hour)	1.9	2.4	3.0
25,000 ppi (in films / hour)	1.3	1.6	2.5
Film Requirements			
	Imperial	Metrical	
Film format along the drum (*)	30" – 47.2" in ½" steps	762 – 1200 mm	
Film format around the drum	63.5"	1612 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 µm	
Geometric plotter repeatability	< 0.08 mil	< 2 µm	
Global positioning accuracy	0.01 mil	0.25 µm	
Geometric accuracy on film	< 1 mil	< 25.4 µm	
Line-width accuracy down to	< 0.08 mil	< 2 µm	
Scaling adjustments in steps of	0.0005 mil	0.127 µm	
Scaling adjustment range	± 5%		
Machine Characteristics			
	Imperial	Metrical	
Loading capacity	25 sheets of film		
Light source	Red HeNe laser, 632.8 nm, 5 mW		
Dimensions (W x D)	100.4" x 64.2"	2550 x 1630 mm	
Height	72.0"	1830 mm	
Weight	4200 lbs	1900 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, 3,000 VA		
Heat dissipation	1,800 W (1,550 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	106 ft <sup>3</sup> /hour	3000 l/hour	

(\*) We support max film format and one smaller

### SOFTWARE

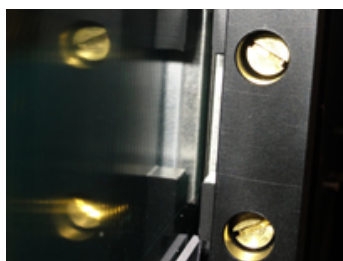
AutoCAM  
 FaultStation 4  
 FixGenius  
 FlashRip  
 Format Converters  
 Geometric Correction System  
 Integr8tor  
 Mult Job Panelizer  
 OEM Software  
 SmartAOI  
 SmartPlate  
 SmartTest  
 Ucam CAD Review  
 Ucam CAM++  
 Ucam Chemical Milling  
 Ucam ET+  
 Ucam SmartView  
 Ucam uFlex  
 UcamX

For more information on any of our products or services please contact us:

By e-mail: [info@ucamco.com](mailto:info@ucamco.com)  
 On the Web: [www.ucamco.com](http://www.ucamco.com)



High resolution linear scale



Linear motor



Air bearings

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