Advanced Laser Micromachining Systems for Exceptional Work

We empower scientific and production breakthroughts from nearly 50 years of micromachining process knowlege to deliver cutting-edge performance from our ultra-high precision systems.

A Series - Versatile in a Compact Footprint

Delivering an impressive spectrum of capabilities in our most compact platform

Highlights

- Ultra-high precision micromachining for R&D and pilot production in a compact footprint
- Versatile system capable of processing any material
- Extensive range of applications as standard - cutting, drilling, milling, scribing, thin-film patterning, and texturing
- Fully integrated real-time control of all system elements with Cimita™ sofware including user access controls, CADCAM / post processor packages and pre-programmed functions for standard operations
- Wide range of laser sources, optics and accessories available to suit any material and process.

We Make it Easier for You - Training & Support

Comprehensive training is provided at installation to ensure that individuals of all experience levels can quickly and easily become confident users. An optimised set of laser parameters will be provided for your primary application and a variety of training, support and warranty packages are available for you to benefit from our extensive laser processing knowledge, and to maximise the return on your investiment over the full lifetime of your system.

A Series - Technical Specifications

Optimsed standard workstations to accelerate your project and contain costs; Fully customisable to meet your needs.

	Green Femtosecond **3 W (10 W & 20 W optional), 515 nm**	**IR Femtosecond** **5 W (20 W & 40 W optional), 1030 nm**	**Green Nanosecond** **10 W, 532 nm**
Standard Laser Configurations	• This is the highest precision we offer in the A Series • Particularly suitable for the smallest and most delicate features, highest selectivity, and materials that do not readily absorb • The laser can process virtually any material and is best suited for environments where small volume, high precision, and flexibility are paramount • Minimal thermal effects • Suited for thin-film patterning	• Maintains a very high level of precision, cleanliness, and flexibility, with a focus on improved throughput • The IR allows for utilisation of higher power to remove larger and deeper volumes across a wide range of materials and shapes with minimal unwanted effects • Minimal thermal effects • Suited for thin-film patterning	• A more economical and all around system capable of producing high precision micro features as well as larger macro features in a time effective manner. • For thicker and larger designs where throughput is key, while still maintaining the level of precision required
Material Processing Capabilities	Micromilling, drilling, cutting, scribing, etching, surface texturing, thin-film patterning*. Optional microwelding.		
Beam Delivery	• Dual axis high-speed galvo scanner with telecentric lens for larger field of view • Range of fixed optics • Optional microscope objective for ultimate precision* • Power measurement at the workpiece • Motorised attenuation (5%-100%)		
Workspace Stability	Substantial granite load frame mounted on steel chassis wtih anti-vibration feet for ultimate thermal and mechanical stability		
Positioning System	• 400 mm x 300 mm XY servo motor stages, 0.005 µm resolution, +/- 0.5 µm repeatability • 150 mm Z-axis servo motor stage and brake, 1 µm resolution, +/- 1 µm repeatability • Optional rotary axis for cylindrical micromachining		
Workpiece Holding	• General purpose clamping jig suitable for a range of materials and sizes • Optional vacuum jig • Custom / application-specific fixtures available on request		
Alignment Systems	Manual or fully automated workpiece alignment via: • AutoAlign: vision-based integrated software system to align to local or global fiducials • AutoFocus: Contact-free surface detection system with options for matte or highly reflective materials • Automatic Z height positioning		
Machine Vision	• In-line camera (1.6 MP) provides direct, real-time visibility of laser operation and workpiece alignment. Visualisation resolution dependent on choice of machining optics • High-resolution inspection camera (12 MP) for post-process imaging, enabling feature verification, dimensional measurement, high-precision alignment, and quality control (1 µm resolution femtosecond systems, 3 µm nanosecond system) • System enclosure camera for gross process monitoring, overall system overview, and enhanced operator situational awareness		
Software	• Fully integrated real-time control of all system elements via Cimita™ software • User access controls to define operator permission levels • CADCAM / post processor packages optimised for laser micromachining, accepts all common CAD file formats • Pre-programmed functions for standard / repeat operations		
Environment and Safety	• Laser Class 1 enclosure, fully interlocked with remote fume extraction • Air-cooled laser sources (3 W femtosecond, 5 W femtosecond and 10 W nanosecond systems). All other laser options water cooled. • CE marked		
Dimensions	System (depending on options): 1470 mm W x 1500 mm D x 2150 mm H (includes safety lights) Extractor: 300 mm W x 300 mm D x 460 mm H		
Weight	Approx. 1600 kg (dependent upon options)		
Power	230 VAC +/- 10%, <3 KW		

* Femtosecond laser versions only

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