

MSV 500

Advanced Laser Processing tool



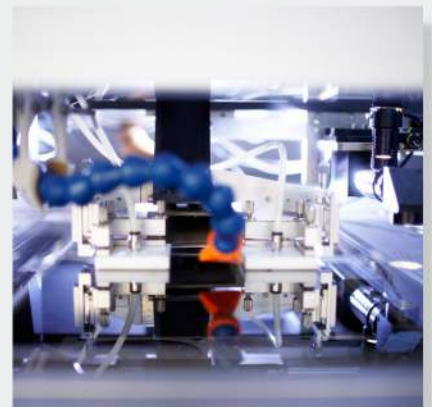
Overview

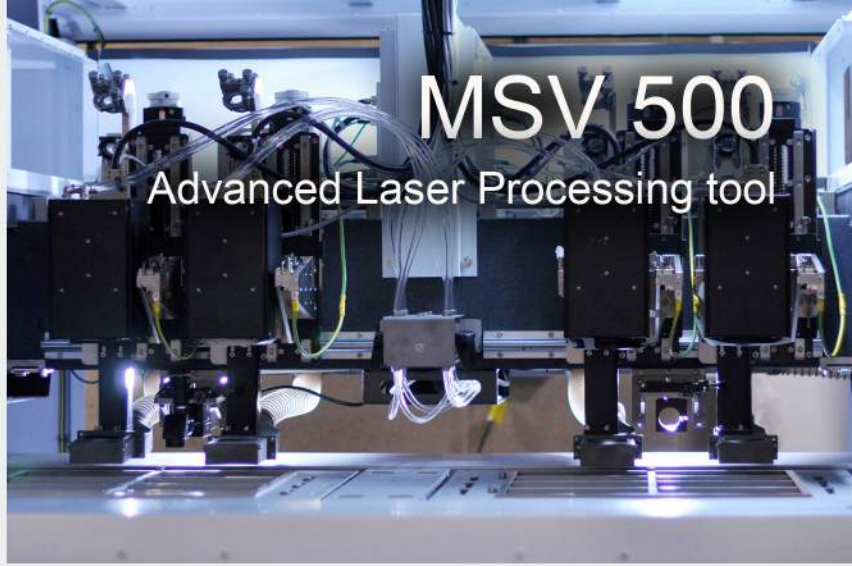


The MSV-500 is designed as a production platform for advanced laser processing of thin films on sheet based substrate materials, such as glass or PET. The platform has the ability to support multiple process heads, fed from multiple lasers through complex beam conditioning optics, and a wide range of options and ancillaries are available (including auto-loaders). The machine architecture allows process head configurations that address the substrate from both above and below simultaneously for 2-sided processing.

The tool is based on a granite slab with a granite bridge above, mounted on vibration isolators and a steel frame. The granite structure ensures thermal and mechanical stability of the system and excellent damping of external vibrations from the environment. The chuck area supports a total substrate area of 610mm x 510mm, with total stage travel of 320mmx650mm.

The tool includes two large optical breadboards for mounting lasers and optics, and the system has a wide range of possible configurations. For example: multiple picosecond pulsed IR lasers, UV nanosecond lasers, fibre lasers, serving up to 8 process heads.





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APPLICATIONS

- Large Area Electronics
- Flexible Displays
- Touch Panels

PROCESS

- Thin film ablation/patterning
- Direct Write patterning
- Step & Repeat

CAPABILITIES/FEATURES

- High throughput
- Dual panel processing
- Simultaneous dual sided and dual pattern processing
- Automated robotic board loading
- Dynamic laser power control
- Class 1 laser safe enclosure
- Touch panel operation
- Ultra stable granite construction
- Vibration isolated machine core

LASER/OPTICS

- Lasers: wide range of DPSS and fibre lasers available for integration
- One or more lasers can be integrated
- Beam conditioning options:
 - auto or manual adjustable beam expander
 - beam shaping optics
- Aperture imaging (multiple apertures on changer stage)
- Scanners: Galvanometer scan heads, up to aperture 20mm
- Up to 8 scanners possible
- Range of optics available to give laser spot sizes down to $<10\mu\text{m}$ and scan areas up to 150mm x 150mm (specification depends on combination of wavelength, spot size, field size)
- Optical Z axis

CONTROL

- Laser firing synchronised to stage or scanner movements
- Camera + machine vision for alignment and/or inspection
- Integrated software

STAGES

Stages: *X-Y Axis (CNC)

- Drive: Precision linear rails + linear motor + linear encoder
- Travel: 320mm x 650mm
- Speed: 500mm/s
- Repeatability: $\pm 2\mu\text{m}$
- Accuracy: $\pm 2\mu\text{m}$
- Resolution: $1.0\mu\text{m}$

Stages: **Z Axis (Manual) Focus control

- Drive: Precision linear rails + ball screw manually adjusted and locked.
- Travel: 200mm

* Standard specification. Alternative specifications and additional axis available to suit customer requirements upon request. ** CNC option available upon request

MACHINE ARCHITECTURE

- Ultra stable granite structure
- Vibration isolated machine core
- Class 1 laser safe, interlocked enclosure
- Enclosed electronics within tool footprint
- Dimensions: 2.0m(H) x 2.9m(W) x 2.1m(D)
- Weight: 6000kg

In addition to the standard configuration, many options are available, please contact us to find out more.



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