

MSV 400

Advanced Laser Processing and Inkjet R&D tool



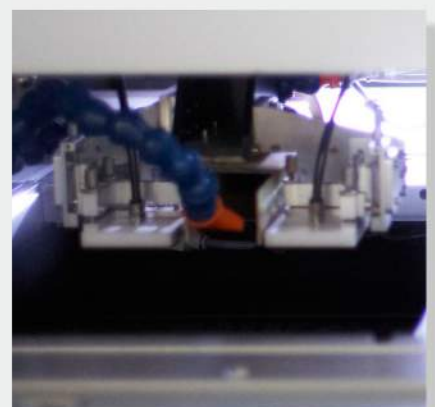
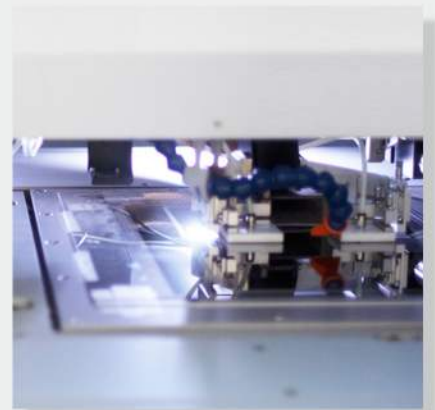
Overview



The MSV-400 is designed for advanced laser processing and Inkjet deposition research and development, the tool also lends itself well to production capable laser processing. The platform has the ability to combine multiple process heads, fed from multiple lasers through complex beam conditioning optics, and a wide range of options and ancillaries can also be included.

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. Substrates of 610mm x 510mm can be processed and x,y stages of up to 1000mm x 1000mm can be used.

The tool includes a large optical breadboard area above the work piece stages, so the system has a wide range of possible configurations. For example: a picosecond pulsed laser with IR and green outputs, plus a nanosecond-pulsed IR fibre laser could feed 2x scanners (one for each wavelength), the lasers can then be selected and directed to the appropriate scanner via the appropriate beam-conditioning optics, by software-controlled moveable optics.





APPLICATIONS

- Thin film photovoltaics
- OLED
- Printed electronics
- Combined inkjet and laser
- Advanced R&D
- Production

PROCESS

- Multi laser/multi wavelength processing
- Inkjet metal
- Laser sintering
- OSI R&D
- Multi-layer processing

CAPABILITIES/FEATURES

- High throughput
- Dual board processing
- Simultaneous dual sided and dual pattern processing
- Automated robotic board loading
- As thin as 10 μ m trench width
- Scan field up to 50mm x 100mm⁷⁴Dual UV 355nm lasers
- Dynamic focus compensation
- Dynamic focal spot size control
- Dynamic laser power control
- Class 1 laser safe enclosure
- Touch panel operation
- Ultra stable granite construction
- Vibration isolated machine core

LASER/OPTICS

- Laser: wide range of DPSS and fibre lasers can be integrated
 - Two (or more) lasers possible
- Beam conditioning options:
 - Auto or manual adjustable beam expander
 - Beam shaping optics
 - Aperture imaging (multiple apertures on changer stage)
- Scanner: Galvanometer scan heads, up to aperture 20mm
 - 2 scanners possible
- Range of optics available to give laser spot size down to ~ 1 μ m or scan area up to ~ 150mm x 150mm

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: 260mm x 620mm (1000mm x 1000mm option available)
- Speed: 500mm/s
- Repeatability: $\pm 2\mu$ m
- Accuracy: $\pm 2\mu$ m
- Resolution: 1.0 μ 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: 1.7m(H) x 2.0m(W) x 2.0m(D)
- Weight: 4000kg

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

