



## Direct Write Laser



### Direct writing for microprocessing and mask making

This laser system is a high-precision, optical lithography tool for direct patterning without the use of masks. A precise control on the alignment is achieved by an interferometer that controls the stage movement at the same time that the scan travels.

It allows:

- Direct patterning of microstructures
- Mask making with more than a million of dpi in resolution

### Technical specifications

- Diode laser: 405 nm wavelength, 50 mW maximum power
- Optical autofocus using 4 mm write head
- Exposition size: up to 8" wafers
- Back to front side alignment (alignment accuracy: 250 nm)
- Acousto-optical modulator with a rise time of less than 10 ns, used for beam splitting, for beam on/off-switching and also for the intensity correction
- Minimum feature size: 1.0  $\mu\text{m}$  (200 nm pixel size, 5.7  $\text{mm}^2/\text{min}$  writing speed)
- Stability of the system ensured by a climate chamber that provides constant temperature ( $\pm 0.1^\circ\text{C}$ )
- Interferometric stage for maximum alignment accuracy
- The conversion software accepts standard CAD formats: CIF, DXF and GDSII

### Material Available\*

- Soda lime Cr masks (Custom-made Cr masks under demand on [microfab@ibecbarcelona.eu](mailto:microfab@ibecbarcelona.eu))
- Photoresist: AZ5214

\*Possibility to implement new materials under demand.