

TABLETOP MASKLESS LITHOGRAPHY SYSTEM

The DaLI is a **universal table-top system for maskless laser lithography with all standard photoresists**. From microelectrodes, new materials research, quantum devices and nanotechnology applications to photomask fabrication, microfluidics and biophysics, the system produces structures down to sub-micrometer dimensions on both flat and irregular substrates.

The shape, size and surface characteristics do not make a difference to the DaLI. Even objects **smaller than 1 mm can be aligned, focused**, and processed just like wafers and substrates of standard shapes and sizes.

Software-selectable beam spot size, sub-nanometer resolution of acousto-optic deflectors, adaptable raster spacing and advanced field-stitching algorithms are seamlessly combined into a single process for producing patterns with high details and edge smoothness limited only by photoresist resolution.

Full PC control and intuitive all-in-one design and lithography software drastically shorten prototyping time and lower the costs, while maximizing flexibility that is required for **in-house prototyping, research and development environments**.

Sophisticated software algorithms and ability to structure with variations on the nanometer scale makes DaLI a powerful tool for grayscale lithography and precision structuring required in integrated waveguides. Straight-forward multilayer alignment using anchoring points and scaling is accurate and simple with the integrated color microscope.

The DaLI package includes a **dedicated chiller for temperature stabilization**, which guarantees precision and superior reliability for your micro structuring needs.

Key Advantages

- Very compact, table-top design
- True sub-nanometer writing resolution
- User-friendly PC control with intuitive all-in-one CAD and lithography software
- Multilayer alignment and anchoring
- Thermally stabilized for ultimate precision



Applications

- Microelectronics, photomask prototyping
- Materials science
- Quantum devices
- MEMS and sensors
- Lab-on-a-chip, microfluidics

Specifications

General	Substrate size, mm from sub-millimeter to 100 x 100 x 10	Supported photoresists all common photoresists
Optical Characteristics	Laser wavelength, nm 375 or 405	Beam spot size, μm 1 and 3 (software-selectable)
Performance	Structure aspect ratio more than 1:20 Writing speed (spots per second), Hz 100,000 Structure aspect ratio more than 1:20 (up to 1:40)	Writing resolution (beam positioning) true sub-nanometer Minimum structure size, μm <1 Multilayer alignment accuracy, μm 0.5
User Interface	Data input formats DXF, BMP Intuitive CAD software for design, alignment, advanced anchoring and exposure control	Integrated optical monochrome or color microscope for inspection and alignment
Technical Data	Operating temperature, $^{\circ}\text{C}$ 21.5 ± 1.5 System dimensions (W x D x H), mm 650 x 626 x 522 Electrical supply voltage 110-230 VACA, 50/60 Hz Chiller data 133 x 483 x 559 mm ³ (19" rack, 3U), 15 kg, 250 W cooling capacity	Operating relative humidity, % <80, non-condensing System weight, kg 77 Power consumption, VA <120 Hardware/software requirements Windows 10 / 8.1 / 8, 64 bit, 3 GHz processor with SSE2 or higher, 4 GB of RAM and 16 GB available hard disk space
All inclusive	The DaLI system is shipped with the chiller, all connecting cables, coolant hoses and the proprietary DaLI software.	