

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	<p>Substrate size, mm from sub-millimeter to 100 x 100 x 10</p>	<p>Supported photoresists all common photoresists</p>
Optical Characteristics	<p>Laser wavelength, nm 405</p>	<p>Beam spot size, μm 1 and 3 (software-selectable)</p>
Performance	<p>Structure aspect ratio more than 1:20</p> <p>Writing speed (spots per second), Hz 100,000</p> <p>Structure aspect ratio more than 1:20 (up to 1:40)</p>	<p>Writing resolution (beam positioning) true sub-nanometer</p> <p>Minimum structure size, μm <1</p> <p>Multilayer alignment accuracy, μm 0.5</p>
User Interface	<p>Data input formats DXF, BMP</p> <p>Intuitive CAD software for design, alignment, advanced anchoring and exposure control</p>	<p>Integrated optical monochrome or color microscope for inspection and alignment</p>
Technical Data	<p>Operating temperature, $^{\circ}\text{C}$ 21.5 \pm 1.5</p> <p>System dimensions (W x D x H), mm 650 x 626 x 522</p> <p>Electrical supply voltage 110-230 VACA, 50/60 Hz</p> <p>Chiller data 133 x 483 x 559 mm³ (19" rack, 3U), 15 kg, 250 W cooling capacity</p>	<p>Operating relative humidity, % <80, non-condensing</p> <p>System weight, kg 77</p> <p>Power consumption, VA <120</p> <p>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</p>
All inclusive	<p>The DaLI system is shipped with the chiller, all connecting cables, coolant hoses and the proprietary DaLI software.</p>	