LASER WORKSTATION FOR GLASS MICROPROCESSING

FEATURES

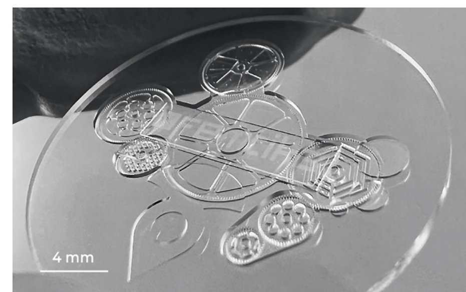
- 3D structures from glass µm to cm scale
- User friendly, wizard-guided software for model preparation and system operation
- Full solution, including laser processing and controlled postprocessing
- Dual laser head option for higher throughput
- Automatic laser beam self-alignment
- Multiple processes: selective laser etching, welding, volume modification, ablation, etc.

INDUSTRIES

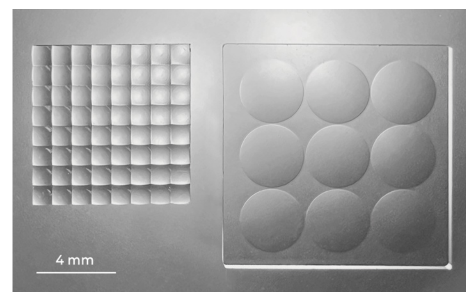
- Microrobotics
- Watch & Jewelry
- Photonics
- Industrial R&D
- Biotechnologies and Life science
- Medical
- Quantum computing

APPLICATIONS

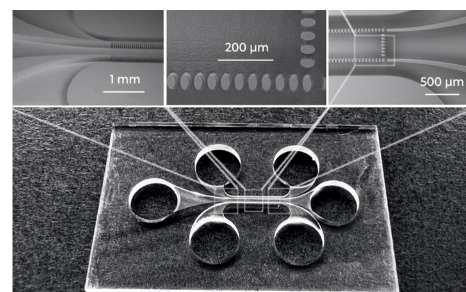
- Micromechanical parts and assemblies from glass
- Microoptics, microlens arrays
- Micro-fluidics, LAB-ON-CHIP



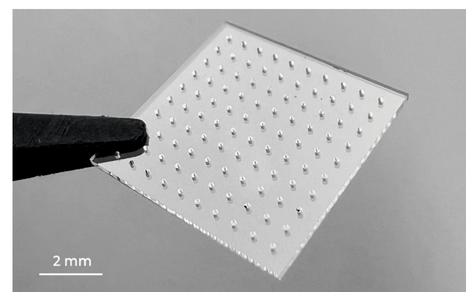
Glass micromechanics



Microoptics, microlenses



Microfluidics



Quantum computing / TGV

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TECHNICAL SPECIFICATIONS

Parameter	Specifications	
Femtosecond laser source	Fundamental wavelength	1030 nm
	Repetition rate	up to 10 MHz
	Pulse duration (tunable)	300 fs – 10 ps
	Average power	3 – 10 W
	Long-term power stability	Std. deviation < 0.5%
	Pulse energy	> 3 μJ
Positioning: linear stages	Travel (XYZ)	120 mm x 120 mm x 30* mm
	Bi-direct. repeatability	± 0.15 μm
	Maximum speed (XY)	350 mm/s
Real-time monitoring	The fabrication process is monitored by an integrated machine vision system	
Autofocus system	Automatic air/glass interface optical detection	
Sample holder	Universal vacuum sample holder with computer-controlled, position synchronized illumination for transparent samples. Sample holder with porous ceramics for glass wafers	
Beam delivery & control	Motorized polarization rotators are integrated in the laser system. Integrated power meter enables real-time power monitoring	
Software	Convenient control of all necessary process parameters and machine settings	
Laser safety	Ergonomic housing to ensure laser safety class 1 and environment stability conditions for laser microfabrication process	

* Customizable

PROCESS SPECIFICATIONS

Technology	Selective laser etching, ablation, welding, refractive index modification
Materials	Fused silica, borosilicate
Smallest feature size	> 1 μm
Minimum surface roughness	50* – 200 nm
Maximum object height	10 mm
Aspect ratio	> 1 : 200
Minimum micro hole diameter	5 μm
Writing speed	50 mm/s

* Applying additional polishing