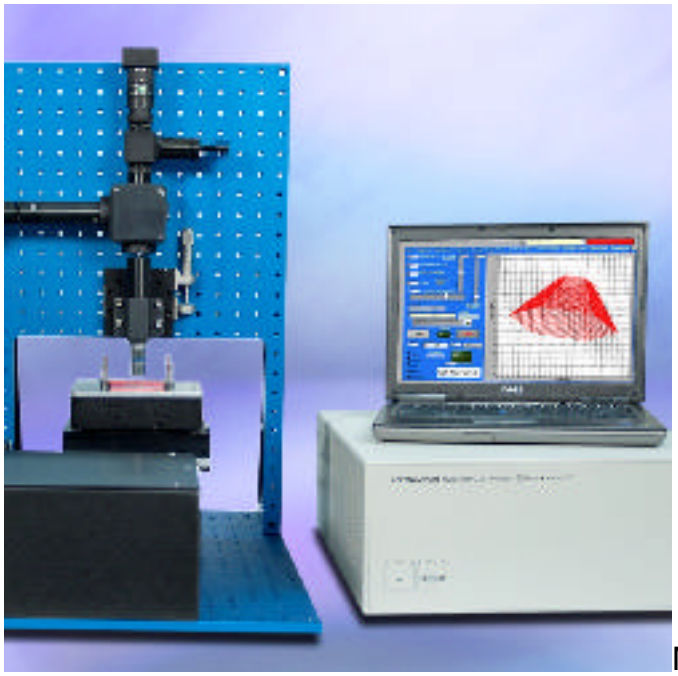
Tabletop Laser Microfabrication Workstation



Newport Corporation, a worldwide leader in lasers and photonics solutions that Make, Manage and Measure Light, introduces the Laser µFAB, a tabletop laser microfabrication workstation optimized for research applications. The Laser µFAB is designed for use in both additive and subtractive processes, including 3D microfabrication by two-photon polymerization (TPP), laser ablation and surface structuring of various materials, volumetric writing of waveguides and microfluidics, nanosurgery, microdissection, and others. Specific research applications using TPP in custom or commercial photoresists, include photonics, microelectronics, and MEMS. Relevant industrial materials that can be used in ablation and surface structuring applications include metals, polymers, semiconductors, glasses, ceramics, and biological targets. Waveguides and microfluidics can be volumetrically written in glasses and polymers. Nanosurgery and microdissection can be done in vivo for sub-cellular investigations of model organisms.
The Laser µFAB can be configured for use with femtosecond laser oscillators, amplifiers, OPAs, and other types of lasers in the visible to near-infrared (VIS-NIR) range. Sub-micron spot sizes are achieved at the sample with high numerical aperture (N.A.) objectives. Simple lenses can be used in less critical applications, for example, where 10-20 micron spot sizes are acceptable. Computer-controlled variable attenuation is integrated with the workstation to prevent over or under exposure at the sample.

The standard Laser µFAB includes high precision stages covering 100 mm X and Y and 4.8 mm Z, with a resolution of 50 nm. This allows for continuous large area patterning without the need for stitching. The top plate includes a holder with features for slides, cover slips, wafers, or large samples.

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