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bgLAB

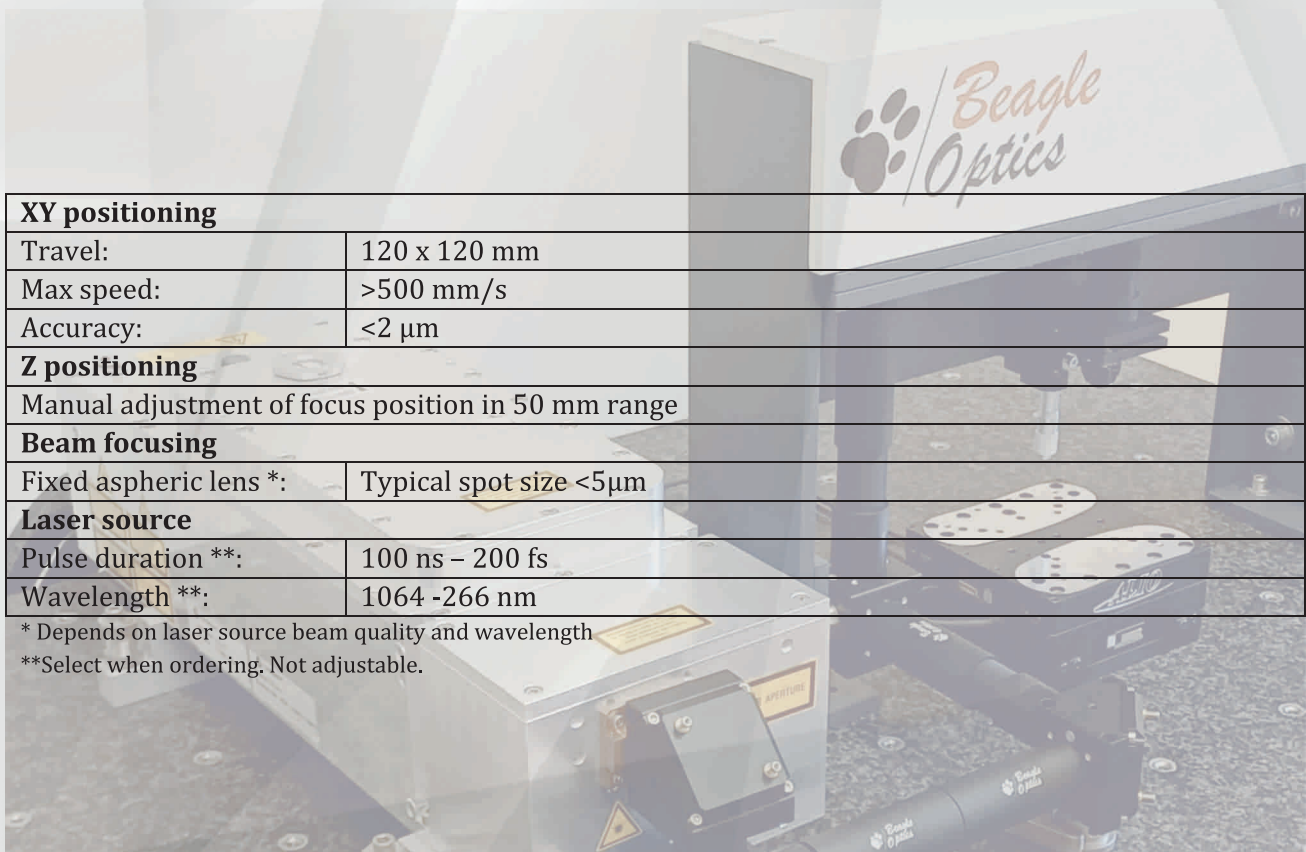
Standalone laser micromachining workstation



This easy to use standalone laser workstation is manufactured using the highest quality components. Furthermore, this platform meets the most exacting standards, but is small footprint and affordable. This was achieved by using just two automated positioning axes, the others being manually adjustable, which is adequate for many surface-based applications. However, this direct drive stage-based system still allows manufacturing of sub 10 micron features. It can be combined with almost any DPSS laser source and run with pulse durations from ns to fs range as well as with wavelengths from IR to UV depending on your laser application. System control is achieved using industry popular software solutions.

The result is that even non laser experts can operate the system.

bgLAB is a perfect tool for university and high school laboratories as well as for small job shops and startups who are just beginning their journey into the fascinating World of laser manufacturing technology.



XY positioning

Travel:	120 x 120 mm
Max speed:	>500 mm/s
Accuracy:	<2 μ m

Z positioning

Manual adjustment of focus position in 50 mm range

Beam focusing

Fixed aspheric lens *:	Typical spot size <5 μ m
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Laser source

Pulse duration **::	100 ns – 200 fs
Wavelength **::	1064 -266 nm

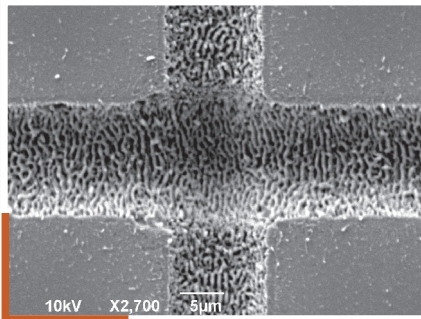
* Depends on laser source beam quality and wavelength

**Select when ordering. Not adjustable.

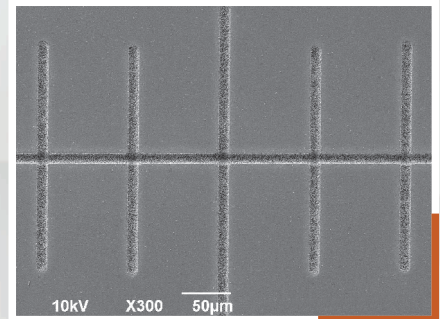
Application notes

Precision engraving of transparent materials

Precision glass, fused silica and sapphire engraving with ultra-fast lasers allows manufacturing features less than 5 micron in size with chipping on the edges less than 0.5 micron. Such technology can be used for precision optical reticle manufacturing. Laser technology lets digitalize the process and allows quick manufacturing small batches of custom reticles and reduce manufacturing cost. Different optical reticle

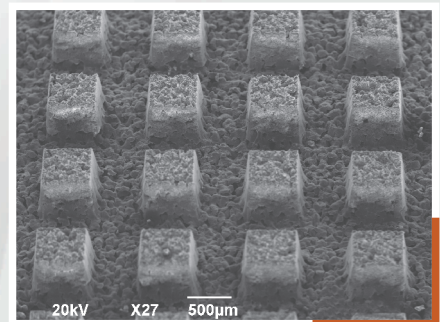
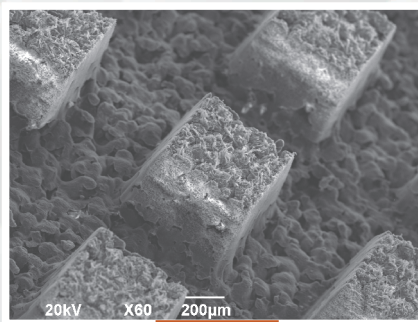
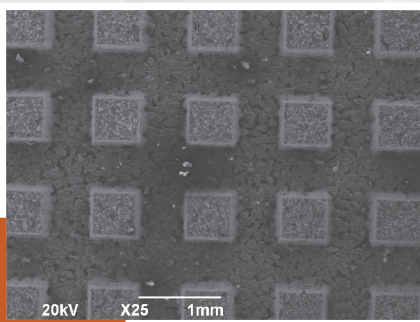


types can be used in microscopes, theodolites, optical sights, astronomic telescopes, oscilloscopes and many other. Manufacturing of custom reticles is available from Beagle Optics. Or we can discuss building complete workstation for your own laboratory if needed.

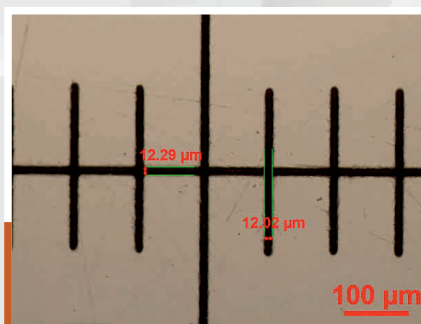


Polymer ablation

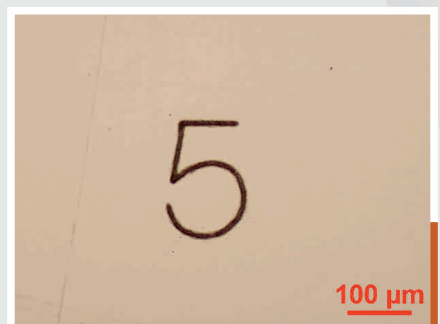
Ablation of light diffusing structures from porous PTFE



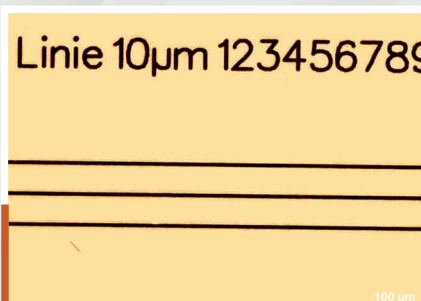
Polycarbonate reticle marking



Polycarbonate reticles. 12 micron minimum width achievable. High contrast black lines right after laser marking and no additional dye needed. Affordable cost.



Optical coating patterning



Metal, ITO, metal oxide, reflective, conductive or any other coatings on transparent materials like glass, quartz and sapphire or ceramics can be patterned to form inverted reticles, microfluidic chips, conductive circuits, antennas or whatever is needed to be directly patterned.