

PIRANHA[®] with picosecond fiber laser

Discover fascinating characteristics.

The new PIRANHA Multi with the latest generation of **ultra-short-pulse fiber lasers** offers completely new laser material processing capabilities. The **corrosion-resistant, reading-angle-independent black marking** of stainless steel and metals is only one of the highlights of the picosecond fiber laser. The **“cold” processing procedure** is made possible by the very short, high-intensity energy transfer below the material relaxation time – the material is vaporized almost instantaneously. The material has no time to conduct energy to the neighboring material in the form of heat. This represents the ideal conditions for **micro machining thin layers or metal, polymer, or glass films or foils**. The laser system fulfills ACSYS’s promise to always go a step further and do what can technically be done in an inimitable manner.



Key Features

- ▲ very compact, ultra-short-pulse fiber laser with pulse lengths of less than 3 ps
- ▲ Pulse energy of 25 µJ across the entire frequency range from 50 kHz to 2 MHz
- ▲ Average laser output of 50 watts
- ▲ very high efficiency and output stability
- ▲ Peak pulse output 10 MW



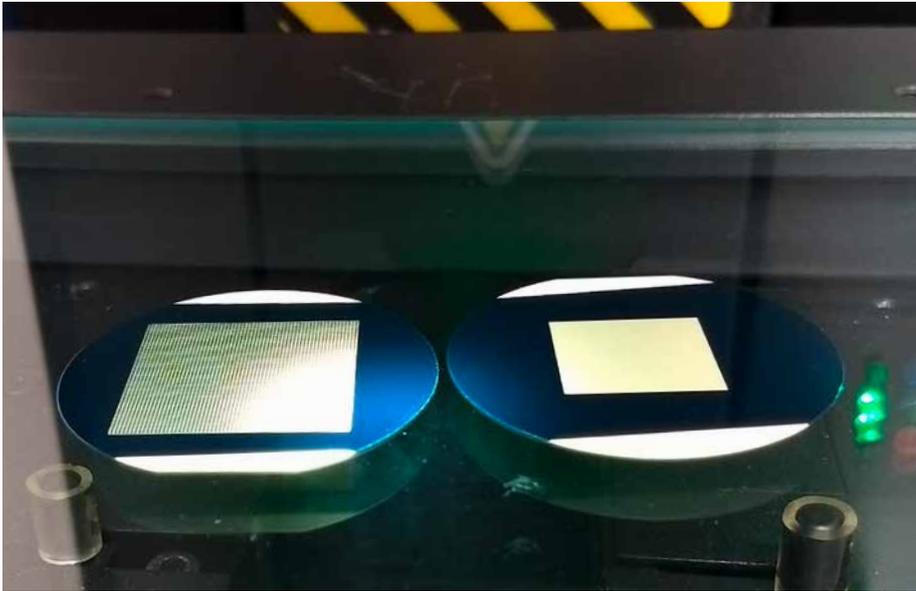
Applications

- ▲ corrosion-resistant, reading-angle-independent black marking
- ▲ Thin-layer processing for films, foils, and ceramics (solar/PV/FPD)
- ▲ high-precision glass, sapphire, and polymer processing
- ▲ Laser marking of sapphire LED wafers
- ▲ Laser fine-cutting of glass and sapphire

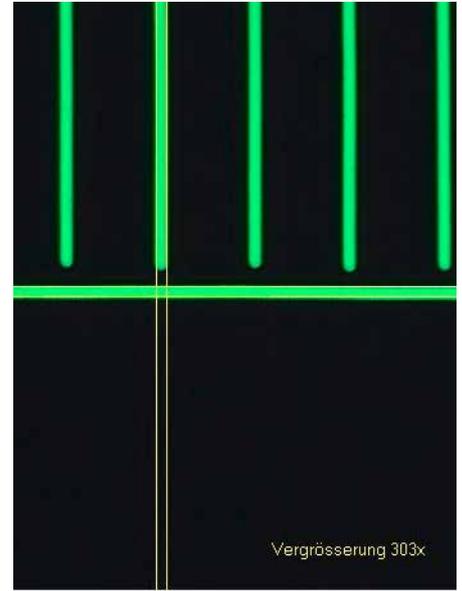


Universal

- ▲ ideal for:
 - medical technology
 - jewelry industry
 - watchmaking industry
 - measuring instruments industry
 - automotive industry
 - tool industry



High-precision removal of 80nm silicon from ceramics.



Laser removal of chrome on glass substrate.
Track width 10 µm.

Pico performance

The **corrosion-resistant, reading-angle-independent black marking** is a newly developed procedure that works only with a picosecond laser. The picosecond laser generates a functional microstructure entirely without melting burrs. Blackening is achieved not via formation of an oxide layer (annealing marking), but via optical effects from the microstructure created in the material. The black marking is not dependent on reading angle. Ideal for **UDI** markings on surgical or medical devices.

High-contrast, **“white” surface markings** that are very easy to read can be produced on glass or sapphire surfaces. The substrate integrity is not impaired by micro crack formation, which is minimal.

The picosecond fiber laser is also eminently suited to **fine-cutting ultra-thin films and foils** such as those used in the battery industry. Polymers and thermoplastic layers can also be cut, resulting in outstanding edge quality.

The picosecond fiber laser allows **high-precision removal** of thin, conductive oxide, anti-reflective/nitride, or metal layers used in thin-film or silicon solar cells. The **creation of microstructures** in these alloys is a further characteristic of the new picosecond fiber laser generation.

The new PIRANHA Multi with picosecond fiber laser – groundbreaking innovation!

PIRANHA III Multi	
Housing	Laser Class 1:
Dimensions W/H/D (mm)	870 x 1860 x 1720
Approximate dimensions (kg)	850
max. workpiece size W/H/D (mm)	430 x 390 x 375 mm
x/y axis accuracy at 300 mm (µm)	± 25



Black marking on the shaft of a hip prosthesis.



Highly precise, cold-marked, black surface structure on stainless steel



Precise glass processing

All information corresponds to the current definition at the time this flyer went to press. Please contact us for binding details at any time! The values indicated are maximum values and may deviate from configuration to configuration!

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