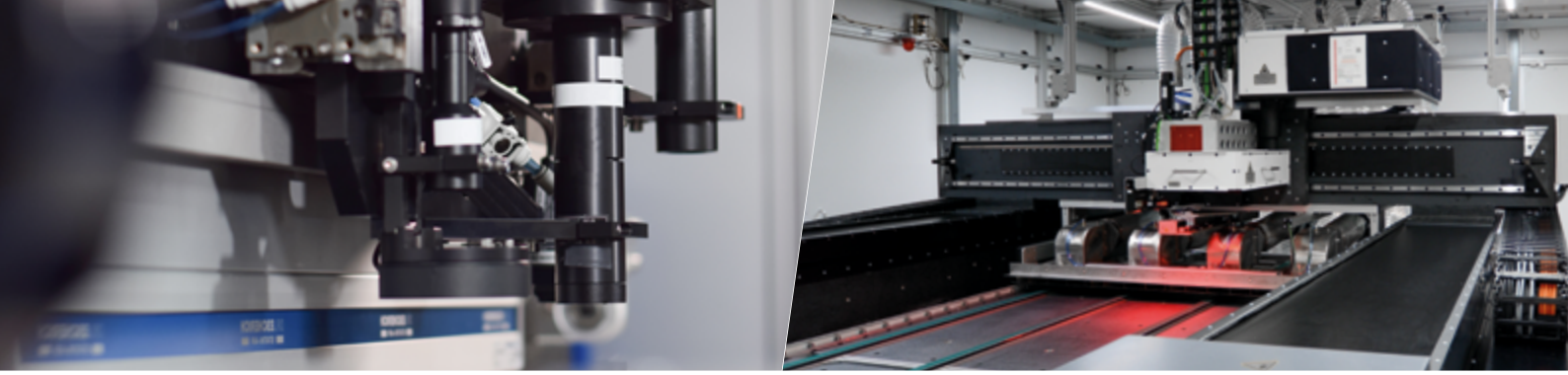
microSHAPE™

HIGHLY PRODUCTIVE LASER PROCESSING SYSTEM FOR LARGE SUBSTRATES

3D-Micromac's microSHAPE™ laser system is designed for the processing of large and flat substrates with high accuracy.
The highly versatile system allows the combination of different laser processes in a single machine. In addition, it is capable of processing with multiple working heads - this parallel processing makes higher throughputs achievable.

microSHAPE™ is an industry-proven solution for all kinds of ablative and non-ablative processes. These include cutting, selective removal of thin films, and structuring processes like engraving and marking. The microSHAPE™ system is suitable for machining a variety of materials, e.g. glass, metals, polymer, ceramics, display stacks, and coated substrates.

3D MICROMAC



microSHAPE™ - SYSTEM OVERVIEW

microSHAPE™ can be equipped with a semi-automatic breaking table for glass

The microSHAPE™ platform is based on a gantry design that can easily be configured in dynamics, metrology, handling as well as laser and beam delivery components. The system can be scaled in size and accuracy according to the process' requirements.

This results in a highly productive laser system dedicated to its target applications which include ablative processes like engraving and marking as well as cutting, and selective removal of thin films.

The availability of several handling and inspection options enables the system to be put to use as a highly efficient production platform. It can be easily integrated into production lines. Robotic or manual loading and unloading options are available as well.

Typical applications	• Glass cutting (display, cover, semi-finished, ultra-thin glass) • Thin-film ablation (e.g. for thin-film photovoltaics) • Cutting of flexible substrates (e.g. for sensor production) • Surface structuring of metals (e.g. for gravure printing, decor, and security)
Substrate dimensions	• GEN 4 (680 mm x 880 mm) – GEN 8.5 (2,200 mm x 2,500 mm) • Thickness 0.03 - 10 mm
Processes	• Glass filamentation and cleaving • Volume ablation • Selective thin-film removal • Marking
Materials	• Glass, metal, polymer, ceramics, material-stacks
Laser sources	• Up to three laser sources (ns/fiber/fs/ps/CO_2) • Up to two laser sources can be operated simultaneously
Beam delivery unit	• Up to three beam paths for different wavelengths • 2D- and 3D-galvo scanner models or fixed optics available • Power measurement at workpiece level
Metrology	• Automatic alignment
Automation	• Manual loading and unloading • Line integration • Robot loading and unloading • Glass breaking table (semi-automatic)
Software microMMI™	• Control and supervise of all hardware components and machining parameters • Different user levels (administrator, supervisor, operator) • Data input file types: DXF, CSV, Gerber, CLI, others on request
Safety	• Laser class 1 housing with integrated control panel • Certified laser window or overview camera (webcam) • Active exhaust system optional

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