microSHAPE™

Highly Productive Laser Processing System for Large Substrates

3D-Micromac's microSHAPE™ laser system is a modular platform designed for highly accurate and highly dynamic processing of large and flat substrates.

The highly versatile system allows to combine different laser processes as well as the processing with multiple working heads. The availability of several handling and inspection options enables the system to be a highly efficient production platform.

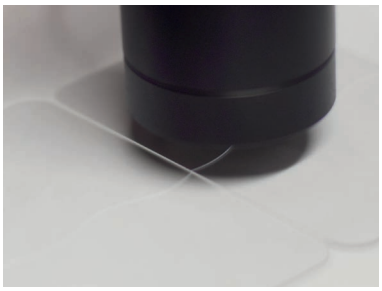
microSHAPE™ is an industry-proven solution for all kind of ablative and non ablative cutting or structuring processes. This includes filamentation, thermal laser separation, half cut or full cut, and engraving prozesses.

The microSHAPE™ is suitable for machining a variety of substrates, e.g. glass, metals, polymer, ceramics, display stacks and coated substrates.

3D MICROMAC

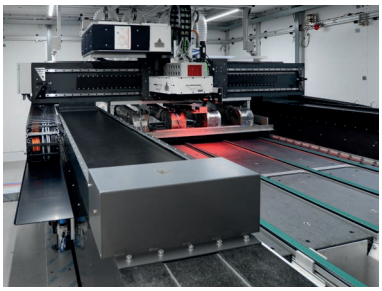
microSHAPE™ - System Overview

The platform is based on a gantry design which can easily be configured in dynamics, metrology, handling as well as laser and beam delivery components. The finally designed solution is a highly productive tool dedicated to its target application. Depending on configuration an axis accuracy of ± 2 µm, a process accuracy of ±10 µm and processing speeds of up to 1.5 m/sec are possible to realize.



Process example: free form cutting of display coverglass

Example of handling table, fully automated substrate transfer into machine



Process chamber

Typical Applications:	▪ OLED cutting (sheet to cell, shape cut) ▪ Glass cutting (Display,cover, technical, semi-finished, ultra-thin glass) ▪ Annealing
Substrate dimensions	▪ GEN 4 (680 x 880 mm²) – GEN 8.5 (2,200 x 2,500 mm²) ▪ 0.03 - 10 mm
Processes	▪ Separation (modification, cleaving) ▪ Structuring ▪ Half cut/full cut ▪ Peeling ▪ Engraving/marking
Materials	▪ Glass ▪ Metal ▪ Polymer ▪ Ceramics ▪ Display stacks ▪ Coated substrates
Automation	▪ Manual loading, robot loading ▪ Inline integration ▪ Stacking, cassette loading/unloading ▪ Waste handling
Metrology	▪ Fully automatic optical alignment including height compensation ▪ AOI (automatic optical inspection)
Software microMMI™	▪ Control and monitoring 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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