

# microSHAPE™

## Highly Productive Laser Processing System for Large Substrates

3D-Micromac's microSHAPE™ laser system is a modular platform designed for high accurate and high 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 processes.

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



# 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. This results in a highly productive laser system dedicated to its target application. Depending on the final configuration, an axis accuracy of  $\pm 2 \mu\text{m}$ , a process accuracy of  $\pm 10 \mu\text{m}$ , and processing speeds of up to 1.5 m/sec are possible to realize.



Process example: free form cutting of display coverglasses



Example of handling table, fully automated substrate transfer into machine



Machining area

|                       |   |
|-----------------------|---|
| Typical Applications: | <ul style="list-style-type: none"> <li>• OLED cutting (sheet to cell, shape cut)</li> <li>• Glass cutting (display, cover, technical, semi-finished, ultra-thin glass)</li> <li>• Annealing</li> </ul>  |
| Substrate dimensions  | <ul style="list-style-type: none"> <li>• GEN 4 (680 x 880 mm<sup>2</sup>) – GEN 8.5 (2,200 x 2,500 mm<sup>2</sup>)</li> <li>• Thickness: 0.03 - 10 mm</li> </ul>  |
| Processes             | <ul style="list-style-type: none"> <li>• Separation (modification, cleaving)</li> <li>• Structuring</li> <li>• Half cut/full cut</li> <li>• Peeling</li> <li>• Engraving/marking</li> </ul>   |
| Materials             | <ul style="list-style-type: none"> <li>• Glass</li> <li>• Metal</li> <li>• Polymer</li> <li>• Ceramics</li> <li>• Display stacks</li> <li>• Coated substrates</li> </ul>  |
| Automation            | <ul style="list-style-type: none"> <li>• Manual loading, robot loading</li> <li>• Inline integration</li> <li>• Stacking, cassette loading/unloading</li> <li>• Waste handling</li> </ul>   |
| Metrology             | <ul style="list-style-type: none"> <li>• Fully automatic optical alignment including height compensation</li> <li>• AOI (automatic optical inspection)</li> </ul>   |
| Software microMMI™    | <ul style="list-style-type: none"> <li>• Control and supervise of all hardware components and machining parameters</li> <li>• Different user levels (administrator, supervisor, operator)</li> <li>• Data input file types: DXF, CSV, Gerber, CLI, others on request</li> </ul> |
| Safety                | <ul style="list-style-type: none"> <li>• Laser class 1 housing with integrated control panel</li> <li>• Certified laser window or overview camera (webcam)</li> <li>• Active exhaust system optional</li> </ul>   |

Changes in accordance to technical progress are reserved.