

microMIRA™

High Throughput Laser Lift-Off (LLO) System

3D-Micromac's brand-new laser LLO system provides highly uniform, force-free lift-off of flexible layers on wafers and large surface areas (up to GEN 6) and at high processing speeds. The system is built on a highly customizable platform that can incorporate different laser sources, wavelengths and beam paths to meet each customer's unique requirements.

The laser system can be used for a variety of applications, such as device lift-off from glass and sapphire substrates in semiconductor manufacturing as well as OLED and microLED

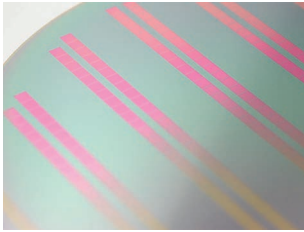
display manufacturing. Additional applications include laser annealing and crystallization for surface modification.

microMIRA™ offers:

- Force-free and extremely selective laser processing
- No damage due to thermo-mechanical effects
- Low production costs
- Elimination of costly and polluting wet chemical processes
- Integration of adjacent manufacturing steps for greater fab productivity



microMIRA™ - System Configuration



microMIRA wafer

Suitable for:

- LED
- Vertical LED
- Micro LED
- OLED

Configuration packages:

microMIRA wafer

- LLO of Si or Sapphire wafers
- Auxiliary processes available

microMIRA panel

- LLO of OLED panels or other large substrates
- Annealing functionality on request

Options:

- Process modules for spin coating
- Debonding module
- Quality inspection
- Automatic handling for panels and wafers
- Cleaning module
- Other auxiliary modules available on request

Substrate size	<ul style="list-style-type: none"> ▪ Wafer up to 8" (200 mm) ▪ Panel up to GEN 6 (1500 mm x 1800 mm)
Laser source	<ul style="list-style-type: none"> ▪ Excimer laser source ▪ UV ps laser
Beam delivery unit	<ul style="list-style-type: none"> ▪ Line beam up to 750 mm ▪ Square beam system
Positioning system	<ul style="list-style-type: none"> ▪ High precision, direct driven X, Y & Z (with optional theta-stage)
Alignment	<ul style="list-style-type: none"> ▪ Manual, semi-automated or fully-automated work piece alignment with X, Y system and optical measurement system ▪ Automatic Z positioning and surface mapping
Software microMMI™	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ Laser class 1 housing with integrated control panel ▪ Certified laser window or overview camera (webcam) ▪ Active exhaust system available as option
Dimensions	<ul style="list-style-type: none"> ▪ microMIRA panel: <ul style="list-style-type: none"> ▪ 10,4 x 7,7 m² including surrounding service area ▪ 8,8 x 7,7 m² including basic service area ▪ microMIRA wafer: <ul style="list-style-type: none"> ▪ 6 x 3 m²

Changes in accordance to technical progress are reserved.