

microCETI™

MANUFACTURING SYSTEM FOR COST-EFFECTIVE MLED TRANSFER

3D-Micromac's brand new microCETI™ uses the most innovative LIFT (Laser-Induced Forward Transfer) laser process, which is an essential factor in the process chain for manufacturing microLED displays. The fully integrated laser system is characterised by its compact footprint and high variability.

The microCETI™ enables the transfer of hundreds of millions of microLEDs without the use of mechanical forces, thereby ensuring that microLEDs of almost any shape and size can be transferred.

HIGHLIGHTS

- Most cost-effective production of microLED displays
- Unique LIFT module
- Highest transfer rate; ten-times faster than competing technologies
- Flexible software for integration into production lines
- Handling options for wafers (up to 8") and sheets (up to Gen. 2)





microCETI™ - SYSTEM OVERVIEW

Suitable for	<ul style="list-style-type: none"> • microLED • miniLED • LED
Substrate size	<ul style="list-style-type: none"> • Donor wafer min. 2" (50 mm) max. 8" (200 mm) • Substrate size 370 mm x 470 mm, others on request
Laser source and beam path	<ul style="list-style-type: none"> • Excimer laser source - different versions of Coherent COMPEX or LEAP available • Square beam dimensions at sample surface: on request, e.g. 8 mm x 1 mm or 3 mm x 3 mm
Positioning system	<ul style="list-style-type: none"> • High precision, direct driven X-, Y-, Z-axis system (the following values are valid for donor and substrate stage) • XY stages: position accuracy < 2 μm after 2D-calibration • Stage velocity (process speed) up to 100 mm/sec – depending on laser source • Repeatability at nanometer-scale • Theta stages travel range: ± 2° • Accuracies of mask stage and Z-stage on request
Alignment	<ul style="list-style-type: none"> • Manual, semi-automated, or fully-automated workpiece alignment with optical quality inspection on request • Optical measurement system • Automatic Z positioning and surface mapping
Software microMMI™	<ul style="list-style-type: none"> • Control and supervision of all hardware components and machining parameters • Different user levels (administrator, supervisor, operator) • Data input file types: DXF, CSV, Gerber, CLI, others on request
Options	<ul style="list-style-type: none"> • Beam analysis and power measurement • Automatic handling system • Other auxiliary modules available on request
Standards	<ul style="list-style-type: none"> • Laser class 1 housing with integrated control panel • Certified laser window or overview camera (webcam) • Cleanroom class specification: ISO 3 for handling and frontside ISO 5 for lift-off process and laser beam system • Active exhaust system available as an option
System dimensions	<ul style="list-style-type: none"> • 2,100 mm x 1,350 mm x 4,050 mm (L x W x H) incl. Compex laser source, excl. service and operator area