

microCELL™ MCS

HIGH-THROUGHPUT LASER SYSTEM WITH TLS™-TECHNOLOGY FOR HALF- AND SHINGLED CELL CUTTING

3D-Micromac's microCELL™ MCS is an advanced cell cutting system that provides free choice of cell cutting layouts. These range from half to shingle cut cells without compromising throughput or yield.

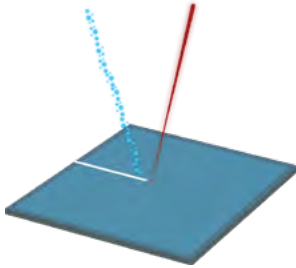
Based on the proven TLS™-Technology, which enables for unmatched edge quality in solar cell cutting, the future-proof microCELL™ MCS fits into an intelligent, scalable production line with minimized efforts on upgrading by adding functionalities.

HIGHLIGHTS

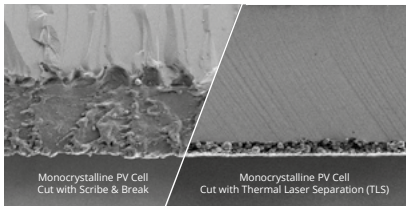
- Unsurpassed flexibility on the number of cell cuts
- > 6,000 wafer per hour throughput
- One-pass contactless dicing process
- Outstanding upgradeability
- Future proof by accommodating wafer sizes of up to M12/G12
- Dedicated automated handling solutions
- Low cost of ownership and CAPEX



BENEFITS OF THE TLS™-TECHNOLOGY



TLS™ is a cleaving process that relies on laser-based heating and subsequent cooling



Comparison of edge quality of scribe-and-break-approaches (left) and TLS™ (right)

3D-Micromac is taking advantage of the Thermal Laser Separation™ (TLS) technology, especially for use cases within the photovoltaic production. The patented process has gained importance in contrast to conventional separation techniques due to smooth and defect-free cutting edges. This leads to a significantly higher module power gain and reduced module power degradation. The innovative water-cooling process enables a faster temperature take-out than any other processes. Thus, leading to the best results on silicon layers and further temperature-sensitive coatings or depositions, e.g. on HJT cells.

The main benefits of using TLS™ for your cell/module production are:

- Additional module power output
- Exceptional mechanical strength of cut cells
- Avoidance of microcracks
- Reduced module power degradation
- Ability to passivate cutting edge
- Low cost of ownership

microCELL™ MCS - SYSTEM CONFIGURATION

Suitable for wafers with	<ul style="list-style-type: none"> • Wafer sizes: M2 - M12/G12 (up to 220 mm x 220 mm) • Wafer thickness: 0.12 to 0.25 mm • Wafer material: silicon • Cell technology: all common technologies, e.g. PERC, TOPCon, HJT, IBC & tandem cells
Throughput	<ul style="list-style-type: none"> • > 6,000 wph
Cleavage pattern	<ul style="list-style-type: none"> • Half-cells • Shingled cells (1/3 to 1/6) • Other patterns on request
Laser processing	<ul style="list-style-type: none"> • TLS™-Technology (Thermal Laser Separation) • On-the-fly contactless cleaving process • Non-destructive particle-free cutting
Active alignment	<ul style="list-style-type: none"> • Wafer recognition via camera vision system
Loading/unloading	<ul style="list-style-type: none"> • Available as stand-alone or inline integrated system



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