

microCELL™ MCS

HIGH-THROUGHPUT LASER SYSTEM 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 that range from half to shingled without compromising throughput or yield.

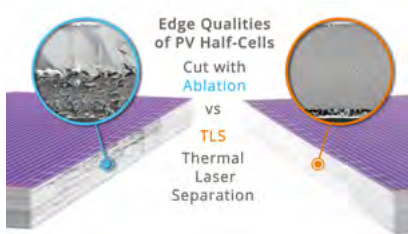
Based on the proven TLS-Technology™, which enables for unmatched edge quality in solar cell cutting, the future-proof microCELL™ MCS fits into an intelligent, scalable production system with minimized efforts on upgrading by adding functionalities.

HIGHLIGHTS

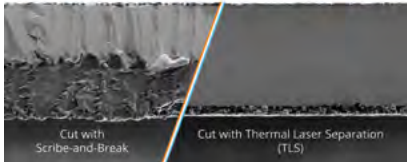
- Unsurpassed flexibility on number of cell cuts
- Superior productivity
- One-pass contactless dicing process
- Outstanding upgradeability
- Future proof by accommodating wafer sizes of up to M12/G12
- Low cost of ownership and CAPEX



BENEFITS OF THE TLS-TECHNOLOGY™



Comparison: Edge-Qualities of PV Half-Cells



The TLS-Technology™ 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 less module power degradation. Our innovative water-cooling process enables a faster temperature take-out than any other process thus leading to best results on silicon layers and further temperature sensitive coatings or depositions, e.g. on HJT cells. 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 size: M2 - M12/G12 • Material: mono-/poly crystalline silicon (e.g. PERC, TOPCon, HJT, IBC) • Thickness: 0.12 to 0.25 mm
Throughput	<ul style="list-style-type: none"> • > 6,000 wph (full cells)
Cleavage pattern	<ul style="list-style-type: none"> • Half-cells • Shingled cells (third to sixth-cut cells) • Other patterns on request
Laser sources	<ul style="list-style-type: none"> • Long lifetime, low maintenance fiber laser sources
Laser processing	<ul style="list-style-type: none"> • On-the-fly contactless cleaving process, non-destructive particle-free cutting
Beam delivery unit	<ul style="list-style-type: none"> • Processing heads for initial scribing and TLS cleaving
Active alignment	<ul style="list-style-type: none"> • Wafer recognition via camera vision system
Loading/unloading	<ul style="list-style-type: none"> • Handling system for high-, mid-, and low- throughput via pick-and-place
Options	<ul style="list-style-type: none"> • Shingled cell cutting • Feature recognition • Breakage control/NIO discharge • RFID reader • Data matrix reader (DMC) • Quality control by inspection camera • Wafer buffer system • MES interface
Dimensions	<ul style="list-style-type: none"> • 4,580 x 2,100 x 2,400 mm³ (W x D x H) incl. warning signal height and monitor operating range • Approx. 3.8 t
Standards	<ul style="list-style-type: none"> • Laser safety class 1