microFLEX™ PV

ROLL-TO-ROLL LASER PROCESSING FOR FLEXIBLE THIN-FILM PHOTOVOLTAICS

3D-Micromac's microFLEX™ PV is the high precision solution for laser treatment of flexible thin-film PV on wide webs - especially for P1, P2, P3, P4/PT isolation cuts. The highly versatile roll-to-roll production system can handle various substrates, material thicknesses, and technologies such as CIS, CIGS, Perovskite, and others. Due to its modular concept, various customized solutions are available, seamlessly covering the whole bandwidth from applied research and pilot lines to 24/7 industrial mass production.

HIGHLIGHTS

- Highly versatile roll-to-roll laser micromachining system
- High-precision laser processing with ultrashort-pulsed lasers
- High throughput and efficiency on web widths up to 1.4 m

3D MICROMAC

microFLEX™ PV - SYSTEM CONFIGURATION

In flexible photovoltaics, 3D-Micromac's microFLEX™ PV systems are the perfect solution for laser structuring processes such as isolation cutting and ablation on front- or backside of thin-film substrates. The highly versatile systems can be completely customized to the individual process requirements. 3D-Micromac's expertise in the development of roll-to-roll machining solutions guarantees:

- High precision laser processing
- Superior - even contactless - web handling of all flexible substrates
- Dynamic process adjustment and quality control
- Easy-to-use and easy-to-service hardware and software components
- High throughput and efficiency on web widths up to 1.4 m

Suitable for	Flexible thin-film technologies: • Organic PV (OPV) • a-Si • CIS • CIGS • Perovskite • Functional surfaces
Substrate material	• PET • PI • Metal foils • Others on request
Web width	• 50 to 1,400 mm standard • Customized configuration for other web widths
Cell layout	• Customized configuration, e.g. P1, P2, P3, P4/PT • According to throughput requirements
Scribing line width	• Depending on wavelength and optical configuration
Available laser sources	• ps, fs, fiber lasers
Laser optics	• Fixed optics • Scanner processing
Available laser processing	• Frontside and backside ablation
MES interface	• OPC client • SECS/GEM
Processing mode	• Available as stand-alone or inline integrated system

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