

Clean Laser Edge Deletion

LPKF Magno™



Many Heads, One Aim: Effective Edge Deletion

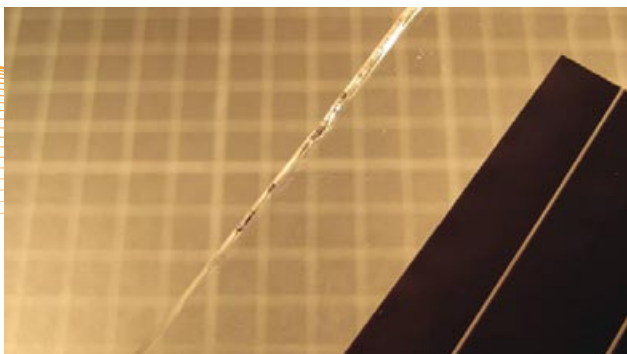
Economical thin-film PV module production demands efficient production steps. This efficiency is achieved by LPKF Magno™, a laser based edge deletion system. The use of up to 4 independent laser heads in one machine reduces the time for the coating removal – at the edges and in the center of large glass substrates.

The non-contact process benefits from a square beam spot allowing for optimal area utilization. For these reasons, LPKF Magno™ removes a thin-film coating at high speed with no mechanical stress to the substrate, attaining removal rates of up to 50 cm² per second.

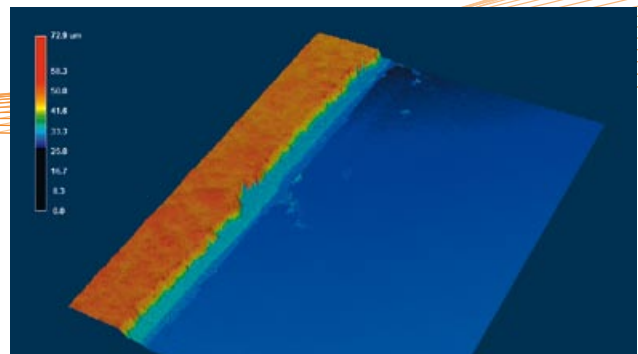
Laser edge deletion is a much more environmentally sound technique when compared to conventional sand blasting or grinding: The laser processing is carried out through the glass as one suction nozzle per laser head reliably removes the ablation products on the film-side, followed by effective particle filtration.

Laser edge deletion is fully automated: An optical recognition system determines the position of the substrate or pattern and adjusts the laser edge deletion accordingly. The laser process removes all common CIS, aSi, aSi/μSi and CdTe thin-films. The result is a clean glass surface without residues.

LPKF Magno™ edge deletion systems superbly integrate in PV production lines and ensure a technological and economical advantage to back-end processing of thin-film modules.



Clean surface, reliable process



Topography of the edge deletion

Technical Data: LPKF Magno™

| | |
|-------------------------------|---|
| Laser wavelength | near infrared |
| Ablation width | 1 mm – 20 mm (40 – 800 mil) |
| Processing | non-film side of glass |
| Laser focus | quadratic |
| Focus size | application-specific scalable |
| Substrate dimensions | 600 mm x 1200 mm (23,5" x 47") up to 2200 mm x 2600 mm (87" x 102") |
| Substrate thickness | 2 mm – 6 mm (78 – 240 mil) |
| Substrate material | Float glass |
| Suction | depending on customers requirements |
| Thin-film technologies | CdTe, aSi, aSi/μSi, CIGS |

LPKF SolarEquipment GmbH
Mittelbergstraße 17
D-98527 Suhl
Germany

Phone +49 (0) 36 81-89 24-0
Fax +49 (0) 36 81-89 24-44
solar@lpkf.de
www.lpkf-solarequipment.de



Made in Germany