

Clean Laser Edge Deletion

LPKF Magno™



Many Heads, One Aim: Effective Edge Deletion

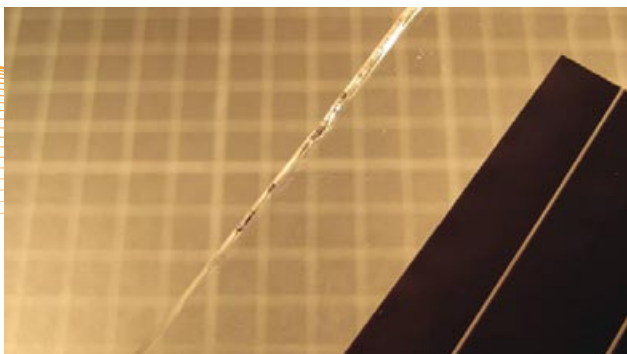
Economical thin-film PV module production demands efficient production steps. This efficiency is achieved by LPKF Magno™, a laser based edge deletion system. The use of up to 4 independent laser heads in one machine reduces the time for the coating removal – at the edges and in the center of large glass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

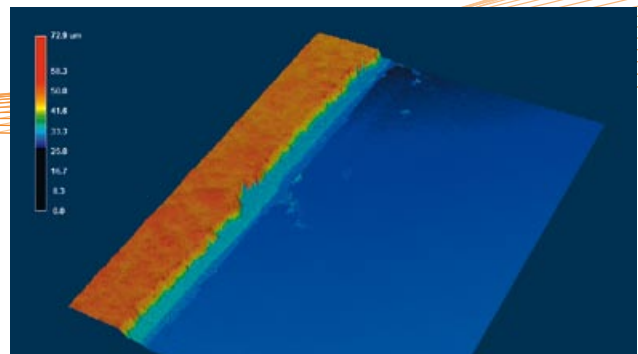
Laser edge deletion is a much more environmentally sound technique when compared to conventional sand blasting or grinding: The laser processing is carried out through the glass as one suction nozzle per laser head reliably removes the ablation products on the film-side, followed by effective particle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

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