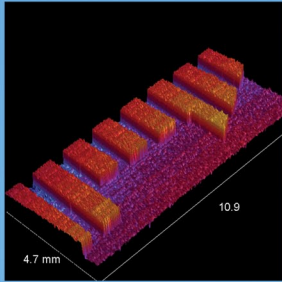

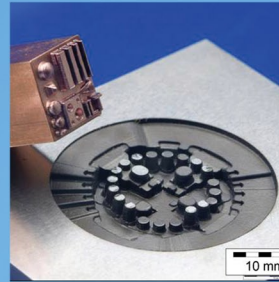


# Application Examples of INNOSLAB Lasers



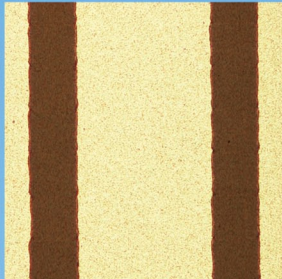
## Structuring of Si-Wafer

Wave length: 532nm  
 Beam profile:   
 Pulse energy: 1mJ  
 Rep rate: 50kHz  
 Energy density: 7J/cm<sup>2</sup>  
 Area rate: 7,2cm<sup>2</sup>/sec



## Rapid Tooling

Wave length: 1064nm  
 Beam profile:   
 Pulse length: nsec or psec  
 Rep rate: 100kHz to 1MHz  
 Volume rate: 1mm<sup>3</sup>/sec




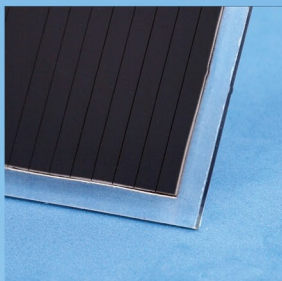
## Scribing of Thin Film Solar

Wave length: 532nm  
 Beam profile:   
 Pulse energy: 10μJ  
 Rep rate: 50kHz  
 Energy density: 0,28J/cm<sup>2</sup>  
 Linear speed: 2,6m/sec




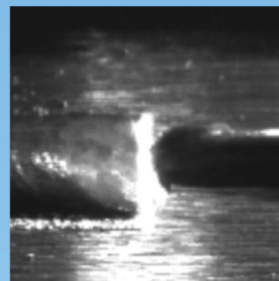
## Subsurface Marking

Wave length: 532nm  
 Beam profile:   
 Pulse length: 6nsec  
 Pulse energy: 0,5mJ  
 Point per sec: 20.000

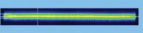


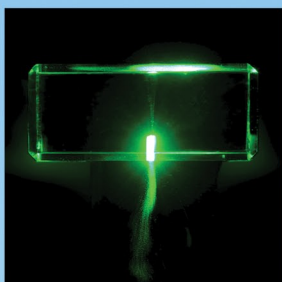
## Edge Deletion of Thin Film Solar

Wave length: 1064nm  
 Beam profile:   
 Pulse energy: 7mJ  
 Rep rate: 50kHz  
 Energy density: 7J/cm<sup>2</sup>  
 Area: 50cm<sup>2</sup>/sec




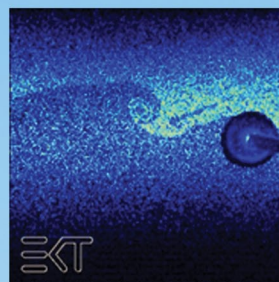
## Flux Free Soldering

Wave length: 1064nm  
 Beam profile:   
 Pulse length: 8nsec  
 Pulse energy: 4mJ  
 Rep rate: 5kHz  
 Linear speed: 1m/min




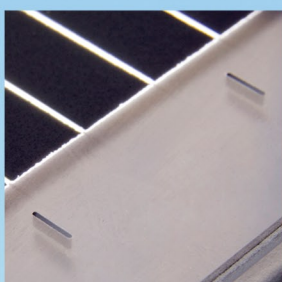
## Drilling of Glass

Wave length: 532nm  
 Beam profile:   
 Pulse energy: 0,4mJ  
 Rep rate: 100kHz  
 Pulse length: 9ns  
 Volume rate: 2mm<sup>3</sup>/sec



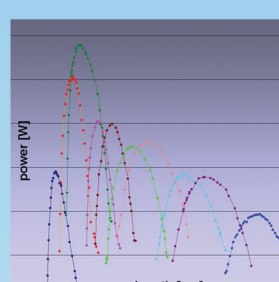
## Particle Imaging Velocimetry

Configuration: dual oscillator  
 Wave length: 532nm  
 Beam profile:   
 Aerosol seeding  
 Frame rate: 2 x 10.000fps




## Electrode Slots in Glass

Wave length: 532nm  
 Beam profile:   
 Pulse energy: 0,4mJ  
 Rep rate: 50kHz  
 Slot size: 2mm x 4mm  
 Cycle time (2 slots): 10sec




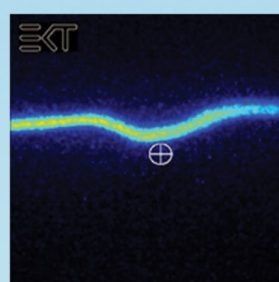
## Pumping Dye Lasers

Wave length: 532nm or 355nm  
 Beam profile:   
 Pulse energy: 8mJ  
 Pulse length: 7ns  
 Rep rate: 10kHz  
 Tuning range: 539 – 767nm



## Cutting of Glass

Wave length: 532nm  
 Beam profile:   
 Pulse energy: 0,4mJ  
 Rep rate: 100kHz  
 Thickness of glass: 1mm  
 Cutting speed: 8mm/sec



## High Speed OH-LIF

Excitation: 283nm  
 Emission: 308nm  
 UV pulse energy: 22μJ  
 Rep rate: 5kHz  
 Frames speed: 5.000fps