

Mapping of carrier lifetime, photoconductivity, resistivity



- for PV mono- and multi-Si bricks
- non-contact, non-destructive electrical semiconductor characterisation
- two dimensional ingot mapping system for solar grade multi silicon
- measurement time: 2 minutes for two surfaces at a time
- one ingot four sides with handling 5 – 6 minutes
- resolution 1 mm

Lifetime Scanner

LL 156/300

LOG-O-MATIC®

Specifications

- operator mode: quick standard measurement options
- ingot maps and linescans
- parameter autosetting
- r&d mode: highly flexible measurement parameter setting
- measurement time depending on sample: for instance, 1 mm resolution 156 x 156 mm², 300 mm long: approx. 5 – 6 min
- tool dimensions: 1,000 x 720 x 1,500 mm
- weight: 200 kg
- power: 110 – 230 V, 50 – 60 Hz, 6 A max.

PC requirements

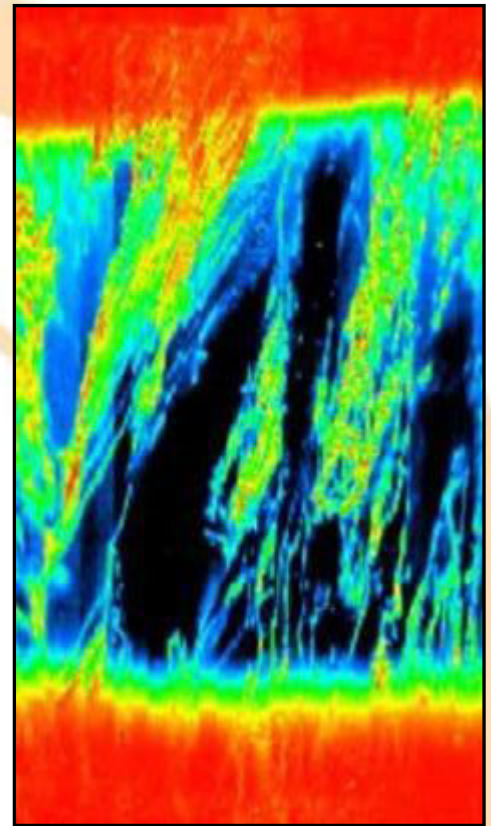
- dual core > 2 GHz, >2 GB DDR2, Windows XP 32 or Vista 32
- data transfer, tool to PC via USB2

Software: MDP – Mapsoft 09

- parameter auto setting, access to raw data, automatic saw criteria output

Samples

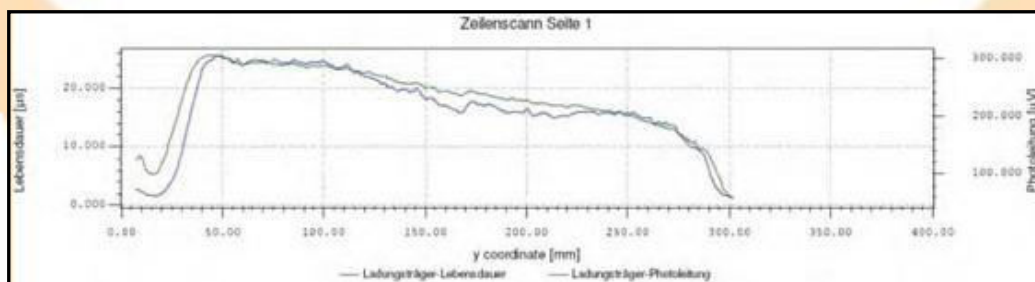
- sample: ingot
- sample size: between 125 x 125 to 210 x 210 mm²
maximum length 500 mm
- resistivity: 0.1 – 10³ Ωcm
- conduction type: p, n
- material: multi- or mono-crystalline silicon
- properties measurable: lifetime (steady state or non equilibrium (μ-PCD))
- lifetime range: 0.1 μs -> 100 ms
- excitation power: 200 mW default, 980 nm default
- measurement spot 0.5 mm default (lifetime)



Examples: lifetime map multi-crystalline silicon ingot

Options

- resistivity map 1 cm² resolution
- p/n equal map 1 mm² resolution
- barcode scanner
- iron mapping capability



Examples: linescan photoconductivity and lifetime

Further tools:

- MDP INLINE: production integrated high speed wafer mapping, suitable for single wafer investigation, complete two dimensional wafer map at one wafer a second
- MDP MAP: multipurpose offline tool for flexible non-contact electrical material characterisation, lifetime etc.
- MDP INLINE INGOT: two dimensional ingot mapping system for solar grade silicon up to 1 mm resolution, measurement time: one ingot in 2 minutes, two surfaces at a time