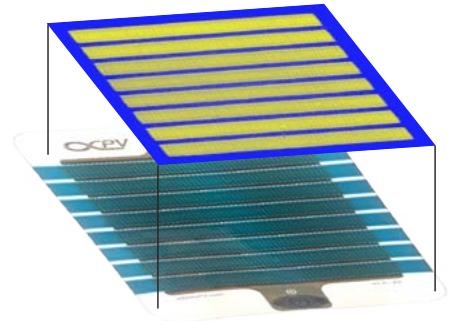


# LBIC

Laser Beam Induced Current Mapping

infinityPV laser beam induced current (LBIC) systems enable fast high resolution mapping of the photovoltaic response of solar cells over very large areas from single cells to modules. It is the ideal tool for the measurement of photovoltaic active areas, identification of defects, shunts, inactive regions and coating errors. Ultrafast laser scanning enables device testing in seconds over large area, compared to hours in ordinary XY-stage system. The low-noise system is immune to external light input and available in single wavelength or multiwavelength configurations for testing different photovoltaic responses. Roll-to-roll (R2R) compatibility and a contactless electrode configuration is optional and allows inline process control.

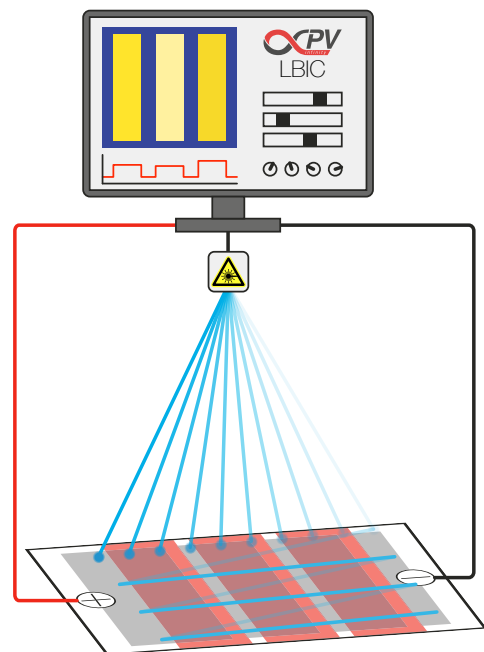


## Features:

- Laser based solar PV response mapping
  - 3<sup>rd</sup> gen solar cells (organic, polymer, perovskite, DSSC)
  - Flexible solar cells (concave, convex surfaces)
  - Silicon solar cells, CdTe, CIGS
- Ideal for quality control & identification of
  - Defects and shunts
  - Active area (e.g. for efficiency calculation)
  - Poor or inactive regions
- Large area PV mapping in seconds
- High resolution scan (enhanced details)
- 410 nm laser standard configuration
- Mapping resolution <100  $\mu\text{m}$  (40  $\mu\text{m}$  spot)
- 30 x 30  $\text{cm}^2$  testing area
- Immunity to external light (scan at daylight)
- User friendly software (auto calibration, area selection, scan speed, color maps, area calculation, real-time preview, grid raster, etc.)
- Option on request (Industrial version):
  - Multi-wavelength (2-4)
  - Light bias
  - Electrical bias
  - Roll-to-roll (R2R) compatibility

## Specifications:

	LBIC Economy
Standard wavelength (nm)	410
Wavelength range (nm), on request	400 - 1100
Mapping resolution ( $\mu\text{m}$ )	< 100
Laser spot size ( $\mu\text{m}$ )	~ 40
Mapping area ( $\text{cm}^2$ )	30 x 30
Mapping time	seconds to minutes (depending on scan area and resolution)
Size (W x D x H, cm)	51 x 51 x 94
Warrenty	2 years
Included	Cabinet Power supply Leads Optics system Electronics Field modulators Preamplifiers Laptop (Windows) with interface LBIC software

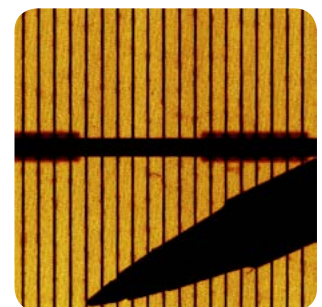
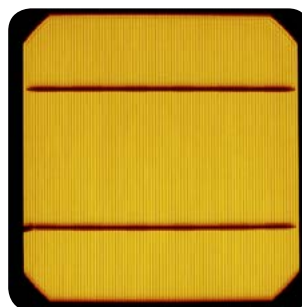
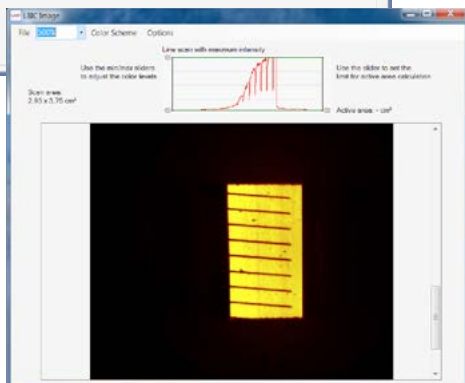
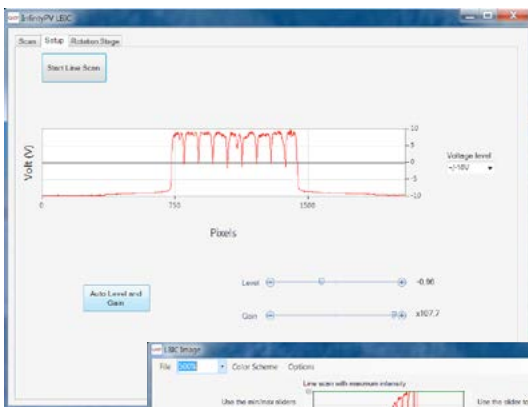
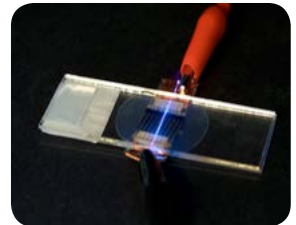
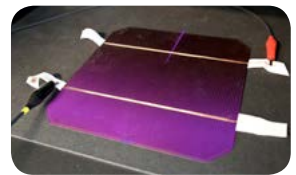


# LBIC Economy

Laser Beam Induced Current Mapping

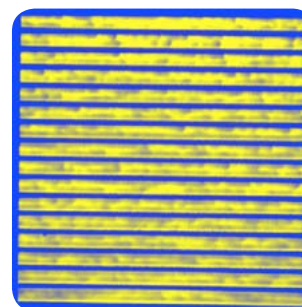


- Fastest system on the market
- Compact table-top system for R&D and quality control of PV devices
- Easy set-up and installation
- Reflection reduced dark chamber
- Large working area
- Ergonomic sliding door
- Shielded electronics for interference-free measurements
- Fully software controlled with auto calibration and simple scanning area selection
- No moving parts in measurement chamber
- Contact-free ultra fast laser scanning
- Suitable for all PV technologies (Silicon, OPV, DSSC, Perovskite, CdTe, CIGS)
- Single cell and module characterization



Fast large-area mapping of silicon solar cells (156 x 156 mm<sup>2</sup>) in less than 1 min. High resolution scan reveals features of backside electrode. Ball pen for size comparison.

Intuitive LBIC control and characterization software for PV device analysis (visualization of active area, shunts, defects). The software features one-click auto calibration and active area calculation.



Large area mapping of flexible thinfilm OPV modules (16-cell OPV module with inhomogeneous coating vs. 8-cell defect-free OPV module). Fast visualization and calculation of active area (yellow).