Sinton instruments

PRODUCT NOTE

FCT-750: In-Line Light I-V Testing for Solar Cells

The FCT-750 Flash Engine is mounted in-line and is used alongside the rack mount electronic load, flash power supply, and computer for seamless I-V and Suns-Voc measurements.

In-line, light I-V and Suns-Voc measurements in a single flash at 4800 units per hour. Capability to accurately measure high-efficiency conventional or backside-contact solar cells.

Product Overview

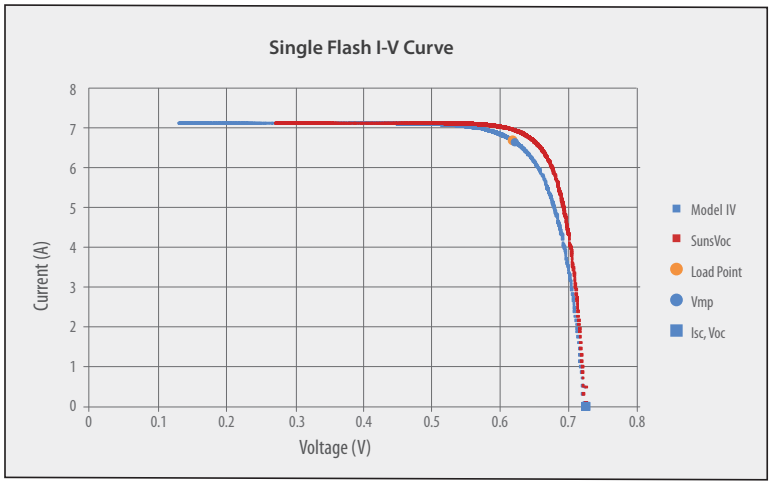
The FCT-750 has been designed to have the highest possible accuracy for measuring solar cells, namely high-efficiency cells. This is done using a patented voltage modulation to neutralize capacitive effects in the I-V measurement.

The FCT-750 provides standard cell outputs which are supplemented with a Suns-Voc analysis and a substrate doping determination. All of these parameters are available in a single flash pulse.

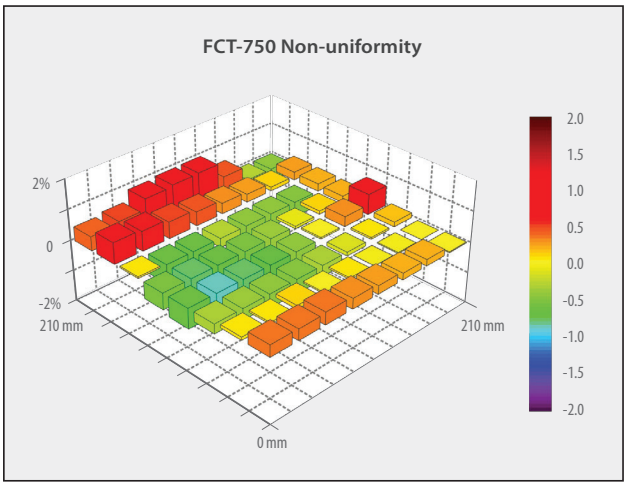
System Capabilities

Single flash measurement to obtain:

- Standard cell results:
  Isc, Voc, power, Vmp, Imp, FF, efficiency, Rs, Rsh
- Advanced results:
  Suns-Voc, bulk lifetime, lifetime at max power, J_0, substrate doping, pseudo I-V parameters
- Power loss analysis



The instrument interface displays both I-V and Suns-Voc data. This permits quick identification of shunt and series resistance effects.



The non-uniformity of the FCT-750 is Class A (±2%) over 210 mm x 210 mm.

FCT-750 Specifications

Instrument Specifications

Available measurements
- Voc, Isc, power, Vmp, Imp, FF, Rs, Rsh
- Suns-Voc parameters
- J_0, bulk lifetime, lifetime at max power
- Substrate doping

Measurement mode
- Single flash full I-V

Current
- 15 A

Voltage
- 10 V

Available intensity range
- 0.2–1.2 suns

Non-uniformity
- ±2% 210 x 210 mm

Simulator class
- Class A non-uniformity over 210 x 210 mm
- Class A temporal stability
- Class A spectrum

Warranty
- One-year limited warranty on all parts and software

CE

Facility Requirements

Ambient operating temperature
- 20–30°C

Power requirements
- Instrument: 80 W
- Computer with monitor: 200 W
- Light source: 60 W

Dimensions (L x W x H)
- Flash engine: 38 x 38 x 68 cm
- Industrial rack: 55 x 95 x 110 cm
  - Flash power supply: 49 x 49 x 13 cm
  - Electronic load box: 49 x 49 x 13 cm
  - Computer: 48 x 54 x 5 cm

Universal mains voltage
- 100–240 VAC 50/60 Hz

Special facilities requirements
- Vacuum: 20 in Hg
- Compressed air

FCT Components

- Electronic load and current, voltage interconnections
- Programmable flashlamp and supply
- Windows PC with installed, configured software and monitor
- Sinton Instruments data acquisition and analysis software package
- High-resolution, high-speed data acquisition with simultaneous I-V-illumination sampling

Purchasing Information

For a quote, please contact quotes@sintoninstruments.com

We are happy to accommodate custom requirements. Please inquire about a quote for your specific needs.

Quotes are valid for 60 days.

For our full product line, visit our website at: www.sintoninstruments.com

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