Sinton instruments

PRODUCT NOTE

FCT-400 Series: Light I-V Testing for Solar Cells

The removable chuck plate allows for multiple backside contact chucks to be rapidly interchanged with the front contact chuck.

Advanced analysis of solar cells including light I-V and Suns-Voc data. Capability to accurately measure high-efficiency conventional or backside-contact solar cells.

Product Overview

The FCT-400 has been designed to have the highest possible accuracy for measuring high-efficiency solar cells. This is done using proprietary Voltage Modulation to neutralize the capacitive effects in I-V measurements.

The Sinton analysis package includes standard cell test outputs. It is supplemented with the Suns-Voc analysis that precisely indicates the source of power loss with accurate shunt and series resistance measurements.

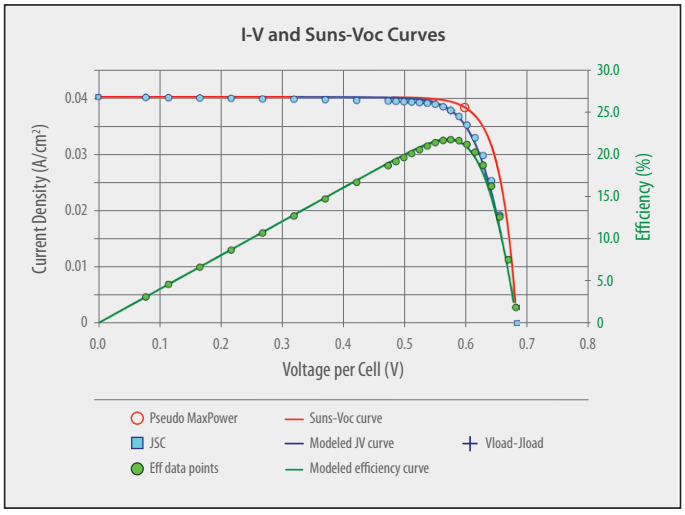
System Capabilities

Primary application:

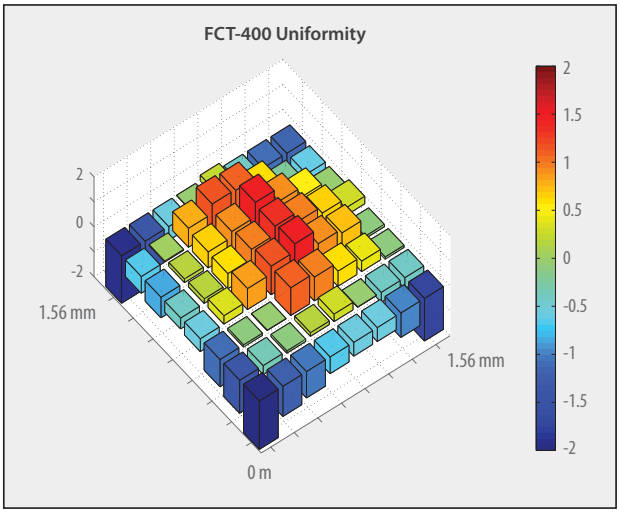
- One-sun cell flash testing

Analysis techniques:

- Suns-Voc curve
- 3-point production testing utilizing Suns-Voc, Jsc, Vload
- I-V curves at multiple intensities (MultiSuns Analysis)
- Efficiency versus intensity characteristic



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



The uniformity of the FCT-400 is Class A (±2%) over 156 mm x 156 mm.

Specifications

Instrument Specifications

Available measurements
- Voc, Isc, Vmp, Imp, FF, Rs, Rsh
- Suns-Voc parameters

Measurement modes
- Full I-V
- 3-point measurement (Voc, Isc, Vload)
- Hunt for Vmp (optimized sequence to take data at Vmp)

Current
- 15 A

Voltage
- 10 V

Available intensity range
- 0.2–1.2 suns

Uniformity
- ±2% 156 x 156 mm

Simulator class
- Class A uniformity over 156 x 156 mm
- Class A temporal stability
- Class A spectrum

Warranty
- One-year limited warranty on all parts and software
- Service agreement also available

CE

Facility Requirements

Ambient operating temperature
- 20°C–25°C (using active heating)

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

Dimensions (cm)
- Instrument: 42 x 45 x 150 cm (L x W x H)
- Flash power supply: 43 x 51 x 12 cm (L x W x H)

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

Special facilities requirements
- Vacuum: 20 in Hg

High throughput 400J Industrial Flash Power Supply.

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
- Temperature-controlled chuck (active heating only)

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. Please allow 10 weeks for delivery from date of purchase order.

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

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