

# PSL HE-EL

Load and Measuring Device for **HIGH EFFICIENCY** cells



PC controlled load simulation and IV curve measurement for high efficiency solar cells includes 1000 W/m<sup>2</sup>, 500 W/m<sup>2</sup>, Dark Reverse and Dark Forward test. Optimized for higher and longer current flow for high class EL-Imaging-Systems

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# PSL HE-EL

## Load and Measuring Device for **HIGH EFFICIENCY** cells

The PSL HE-EL is optimized for fully automated production lines. It records four complete IV curves at 1000 W/m<sup>2</sup>, 500 W/m<sup>2</sup>, Dark Reverse and Dark Forward in one measurement cycle. Using an external power source up to 15 A at 15 V can be supplied for high class EI-Imaging-Systems with automatic evaluation on mono and poly crystalline cells (current flow up to 500 ms). In combination with the PSS 10 HE and the software package HE hysteresis effects during measurements of high efficiency cells are eliminated. Options are available to further enhance functionality for production. A customized "Plug&Play" manual test station is also offered.

### Product Specification

- › Full passive load simulation
- › Fully integrated current source for optional thermal imaging systems
- › Fully integrated dark forward and dark reverse measurement
- › Fully integrated external current source for electroluminescence imaging systems
- › Eliminates hysteresis effects in slow reacting cells (e.g. high efficiency cells)
- › Serial resistance measurement via two-step irradiance
- › 3 synchronously triggered data acquisition channels with precision A/D converters for I, V and Ref.
- › Data acquisition time 20 to 500 ms
- › Can be easily integrated into a manufacturing environment
- › Password protected setup and calibration
- › Connection via a fiber optic converter to a RS232 COM port
- › Software package includes classification, binning and handling interface
- › Database and data tracking systems according to customer requirements



### Technical Data

#### Mechanical Data

**Weight:** approximately 4.5 kg

**Dimensions:** 120 x 260 x 330 (H x W x L in mm)

#### Electrical Data

**Voltage:** 12 V DC

(external mains adaptor 100–240 V, 50/60 Hz)

**Power:** 18 W

#### Measurement

**Measurement range V:** 1 V\*

**Measurement range I:** 12 A\*

**Measurement range Ref.:** 80 mV\*

**A/D Converters:** 3 x 12 Bit unipolar

**Max. number of measuring points:** 512

**Accuracy per range:** < 0.1 %

**Reverse range V:** 15 V

**Reverse range I:** 12 A

\* measuring range can be adjusted to customer request

#### Communication

Fiber optic cable (PFO)

115200 baud, 1 stop bit, no parity

#### Options

IR-Imager and analyzing software

EL-Imaging and analyzing software

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