



## Portable I-V Checker

Photovoltaic Module & Array Tester

**Fast  
sweep  
time**

**Large  
capacity**

**Portable**

The number of Photovoltaic installations are rapidly increasing these days. During installation and maintenance the portable MP-11 I-V checker is the right tool to perform accurate power performance and integrity tests of PV modules or arrays on site. The all in one measurement solution makes PV module testing very easy, hence all required accessories like the radiation sensor, temperature sensors, cables and PC software for control and extended data analysis are included in one portable enclosure. For the engineer who is responsible for the electrical system, inspection, periodical maintenance and commissioning, the MP-11 I-V checker will make the job easier than ever before.



### Features

- Portable All in one PV performance checker
- High power range 1000V / 30A / 18kW
- High I-V measurement precision
- Fast sweep time and operating
- Voc, Isc, Mpp, STC conversion function by IEC 60891
- Simultaneous Irradiance and Module temperature measurements through data logger
- Continuous automatic measurement mode for repeatable measurements
- Easy Report and data export function

### Kit contents

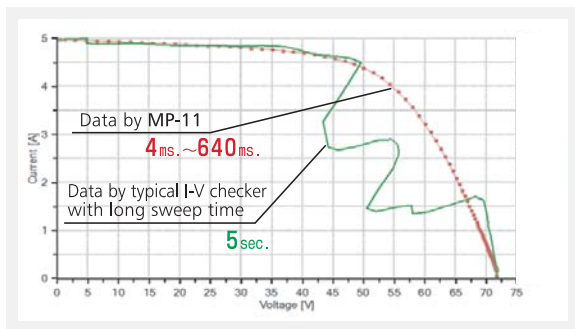
- I-V checker main unit
  - Sensor unit (Irradiance, T Module, T Ambient)
- (2x) Test leads (red, black), gator grips, wide range 12VDC adapter, Battery box, (8x) Ni-mH rechargeable batteries (AA size), Battery charger module, FG cable, (2x) 3m T-type thermocouples, Sensor unit cable, USB cable, Shoulder strap, Calibration Certificate, Operating software on CD-ROM

### Pyranometer calibration

Solar irradiance is the most dominant factor in the equation to determine the PV module performance for Standard Test conditions (STC). Therefore the integrated solar sensor is calibrated with absolute care and complies to the international solar radiometer calibration standard (ISO 9847) directly traceable to the World Radiometric Reference (WRR)

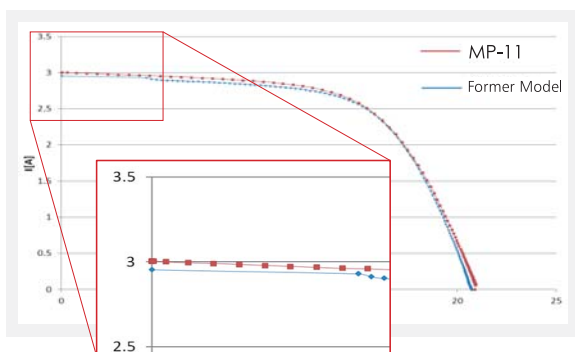


## High Reliability of the Measurement Data



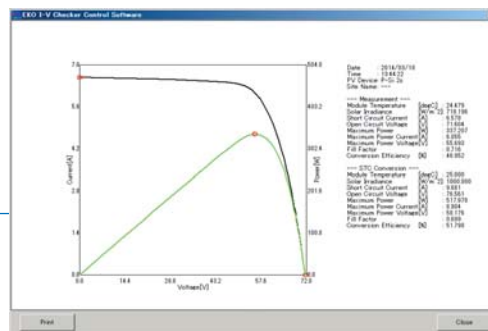
## Fast Sweep Time &amp; Easy Failure Diagnosis

The Solar irradiance and power generated by the PV module can change within a fraction of a second. If the sweep time takes too long, due to the abrupt change of the solar irradiance the PV module current won't be properly measured. The graph on the left shows a 5 sec sweep time measurement taken under variable atmospheric conditions. Obviously the change of solar irradiance has a large impact with respect to the I-V curve measured by the I-V checker with longer sweep time. The MP-11 perfectly measures the PV module performance due to fast sweep time.



## Reverse Bias

The MP-11 features the new "Reverse Bias" function which gives high precision in the low voltage measurement range. The blue line on the right graph shows data measured by EKO's previous I-V checker model. The red line, representing the measurement from the MP-11, shows that the data is obtained all the way down to the Isc point.



## Software Functions

Measurement settings and control, Data display, Data management and reporting.

## Specifications

Measurement range	Voltage: 100V / 600V / 1000V / Auto range (Measurable: 10V~1000V) Current: 2A / 10A / 30A / Auto range (Measurable: 100mA~30A) Power: 10W - 18kW
Data points	400 points / I-V curve
Data storage	300 I-V curves (Internal Memory)
Measurable PV panel	Silicon mono-crystalline / poly-crystalline / CIS
Sweep Time	4 ms ~ 640 ms
Accuracy	Voltage : Within +/-1.0% of Full Scale (each voltage range) Current : Within +/-1.0% of Full Scale (each current range)
Measurement parameters	I-V curve, Pm, Isc, Voc, FF, Ipm, Vpm, Solar irradiance, Temperature, STC conversion, Differential coefficient of I-V curve
Protection functions	Over-range (Voltage / Current), Internal temperature
Dimensions	Main unit: 230W x 320D x 180H (mm)    Sensor unit: 210W x 85D x 55H (mm)
Weight	Total weight 3.8 kg (Main unit 2.5kg, Sensor unit 500g, Battery box 500g, Cables 300g)
Power supply	Main unit : HR6 Ni-mH (AA) rechargeable battery (x 8) (battery time 8h) or AC adapter (DC12V 1.0A) Sensor unit : 006P type 9V battery (x 1)(battery time 8h) or Power supply from main unit when connected
PC OS (MP-11 operating and data management software)	Windows XP / Vista / 7 / 8 (32 bit / 64 bit)