K3000

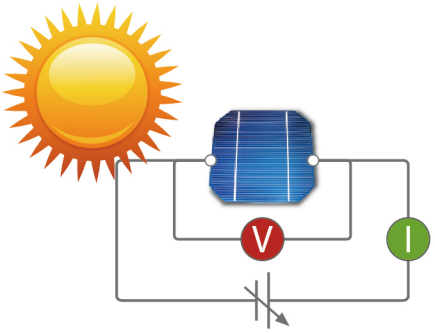
Solar Cell I-V Test System

Test Systems On Demands
www.mcscience.com

Standard Test Equipment for Solar Cell Conversion Efficiency Measurement

This system provides total package for standard measurement of solar conversion efficiency including solar simulator with various irradiation area, photovoltaic powermeter with various current range, test jig and measurement software.

Solar Simulator + **I-V Test** + **Solar Efficiency**



- Class AAA Solar Simulator
- High Speed I-V Test
- Solar Conversion Efficiency
- Maximum Power/Fill Factor
- Series/Shunt Resistance
- Standard/Custom Test Jig

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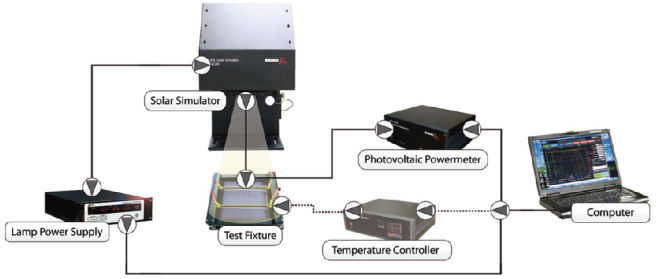
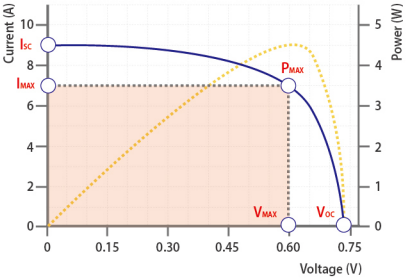
System Configuration





$$FF = \frac{P_{max}}{V_{oc} \cdot I_{sc}} \qquad \eta(\%) = \frac{P_{max}}{E_{in} \cdot A_{cell}}$$

[Measurement Parameter]

1) Short Circuit Current : Isc (mA or A)
2) Open Circuit Voltage : Voc (mV or V)
3) Maximum Power : Pmax (mW or W)
4) Maximum Voltage : Vmax (mV or V)
5) Maximum Current : Imax (mA or A)
6) Fill Factor : FF
7) Solar Cell Efficiency : η (%)
8) Series Resistance : Rs (ohm)
9) Shunt Resistance : Rsh (ohm)

System Components


<K201 Solar Simulator>


<K730 Solar Cell I-V Test Software>

Source Measure Unit


<K101 NEO PV PowerMeter>


<K101 MAX PV Powermeter>


<K101 PRO PV Powermeter>


<K101 Lab PV Powermeter>


<DeJIGn Test Jig>


<Temperature Controller>


<K801 Reference Cell>

System Specification

Model Name	K3000 Solar Cell I-V Test System
System Model	(3 Models According to Lamp Type) XE : Xenon Lamp / MH : Metal Halide Lamp / PLS : Plasma Lamp
System Configuration	Solar Simulator, Lamp Power Supply, Source Measure Unit or Powermeter, JIG, Refence Cell, Data Processing Unit
Illumination Area	25mm x 25mm, 55mm x55mm, 110mm x 110mm, 170mm x 170mm, 220mm x 220mm, 330mm x 330mm
Illumination Light Spectrum	0.75 ~ 1.25% (AM 1.5G)
Illumination Light Unifomity	<2%
Illumination Light Stability	<0.5 % (STI), <2% (LTI)
Voltage Range / Accuracy	-20V ~ 20V / 0.1% Accuracy
Current Range / Accuracy	±20A, ±2A/±200mA, ±20mA/±2mA, ±200uA / 0.1% Accuracy (Multi-Range)
One Step Measurement Time	0.1 usec ~ 1 sec
Maximum Measure Point	200 Points
Measurement Data	Voltage, Current, Temperature, Irradiance (Ref)
Analysis Item	Isc, Voc, Imax, Vmax, Pmax, FF, Efficiency, Rs, Rsh

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