

LED Solar Simulator

FYTRONIX LEDX-15



Overview

The **LED Solar Simulator** is a high-precision photovoltaic testing platform designed for **I–V (current-voltage)** and **P–V (power-voltage)** characterization of solar cells. The system is manufactured in compliance with **IEC 60904-9 (2007)** and **JIS C 891 standards**, and is configurable according to requested specifications.

Specifications

Feature	Specification
Class	AAA or ABA (IEC Standard)
Illumination Area	40 × 40 mm
Output Power	100 mW/cm ²
Output Adjustment	0.1 – 1.1 SUN (via distance control)
Data Collection Time (I–V)	1 ms
Measurement Delay Time	1 – 100 ms
Measurement Time	1 s
Run Time	10 ms
Wavelength Range	400 – 1100 nm
Temporal Stability	Class A (IEC 60904-9 2007, JIS 8904-9 2017)
Uniformity	Class A (IEC 60904-9, JIS 8904-9 2017)
Spectral Matching	Class A
USB Control	USB 2.0
Humidity	<85%
Compliance	CE, RoHS
Power Supply	220–240 V, 47–63 Hz, 2.8
Optical Breadboard	1 × 2 ft

Source Meter

Feature	Specification
Voltage Range	± 7 V
Current Range	1 nA – 30 mA
Wire Universal	Yes
Automatic Range	Yes

Software

The **Solar Simulator Software** provides **fully automated measurement and analysis of photovoltaic parameters** of solar cells, including:

- Open Circuit Voltage (**Voc**)
- Short Circuit Current (**Isc**)
- Fill Factor (**FF**)
- Voltage at Maximum Power (**Vmax**)
- Current at Maximum Power (**Imax**)
- Maximum Power Output (**Pmax**)
- Shunt Resistance (**Rsh**)
- Series Resistance (**Rs**)
- Characteristic Resistance of the Solar Cell (**Rch**)
- Photoresponse (**RR**)
- Solar Cell Efficiency (**η**)

The software ensures **computer-controlled, precise, and repeatable measurements**, making it suitable for **R&D, laboratory testing, and quality control**.

Reference Solar Cell

Overview

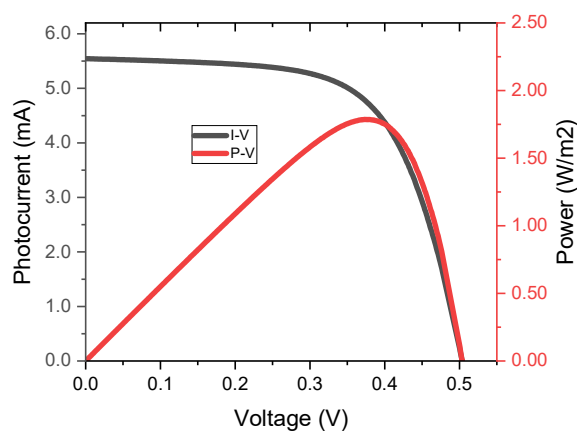
The **Reference Solar Cell** is a **precision-calibrated photovoltaic cell** designed for **calibration of solar simulators** and **performance assessment of photovoltaic devices**. It provides accurate measurement of irradiance and ensures reliable **I–V characterization** of solar cells under standardized conditions.

Specifications

	Feature	Specification
Cell	Photovolt	10 × 10 mm Monocrystalline Silicon
	Enclosur	100 × 100 mm
on	Filter	KG3 Optical Filter
	Calibrati	1000 W/m ² (1 Sun), AM1.5G, 25 °C
Accessories	Included	Certified connecting cables, Calibration certificate

Key Features

- Precision **irradiance calibration** for solar simulators
- Compatible with **all types of photovoltaic testing systems**
- Ensures **accurate and repeatable I-V characterization**
- **Certified calibration** with included documentation



Calibration Report

Photovoltaic parameters

I_{sc} (mA)	V_{oc} (V)
5.56	0.526

The certification is accredited by NIST to the ISO-17025 standard and is traceable both to the National Renewable Energy Laboratory (NREL), and to the International System of Units (SI).



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