

# Oriel® Reference Solar Cell & Meter

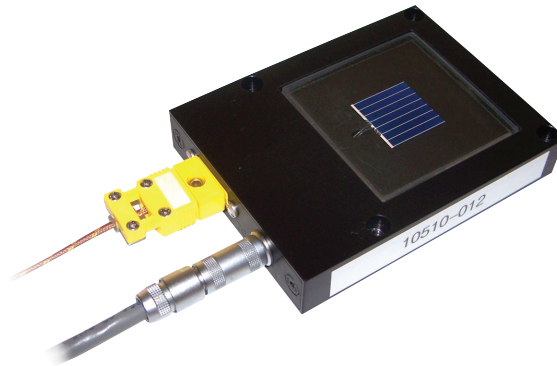


Oriel Reference Cell and Meter

## Key Features

- Solar Cell and Meter
- Reads calibrated sun irradiance and temperature
- Easily integrated with Oriel I-V Test Station

The Oriel® Reference Cell, which is an integral part of solar simulator calibration and solar cell I-V characterization, consists of a readout device and a 2 x 2 cm calibrated solar cell made of monocrystalline silicon. The cell is also equipped with a thermocouple assembled in accordance with IEC 60904-2. 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). It reads solar simulator irradiance in "sun" units; one sun is equal to 1000 W/m<sup>2</sup> at 25 °C and Airmass 1.5 Global Reference. This tool's primary use is the testing of photovoltaic cells under standard conditions. The Readout Meter includes two BNC connectors for analog outputs for the sun irradiance and the temperature.



The reference cell sits on the I-V Test Station cell holder assembly.

# Oriel® Reference Solar Cell & Meter

## Specifications

### General

Dimensions (Cell)	2.8 W x 0.6 H x 3.5 D inches (92 x 70 x 16 mm)
Dimensions (Meter)	5.9 W x 3.8 H x 7.0 D inches (151 x 95 x 178 mm)
Weight	4 lb. (1.8 kg)
Operating Temperature	10 °C - 40 °C
Operating Humidity	0 – 90% RH Non-Condensing

### Irradiance Readout

Range	0 – 3.500 Sun
Accuracy	±0.1% @ 1.0000 Sun @ 23 °C ±0.2% +2 Counts @ 0.1000 – 1.9500 Sun (Low Display Range) @ 23 °C ±0.2% +2 Counts @ 1.900 – 3.500 Sun (High Display Range) @ 23 °C
Resolution	0.0001 Sun @ 0 – 1.9500 Sun (Low Display Range) 0.001 Sun @ 1.900 – 3.500 Sun (High Display Range)
Temperature Coefficient	±150 ppm / °C Max
Settling Time	<1 sec. for <0.25% (= 6τ)
Sampling Rate	3 Readings / second
Autoranging	Switches to higher display range above 1.950 Sun, lower range below 1.900 Sun

### Temperature Readout

Range	0 – 199.9 °C
Accuracy	±0.5 °C Typical, ±1.0 °C Max @ 24 – 26 °C ±0.7 °C Typical, ±1.2 °C Max @ 10 – 40 °C
Resolution	0.01 °C
Temperature Coefficient	±0.02 °C / °C
Settling Time	<1 sec. for <0.25% (= 6τ)
Sampling rate	3 Readings / second

### Analog Outputs

Sun Irradiance	1 volts/sun
Temperature	10 mV / 1°C

## Ordering Information

Model	Description
91150V	Reference Solar Cell and Meter, 2 x 2 cm Calibrated

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