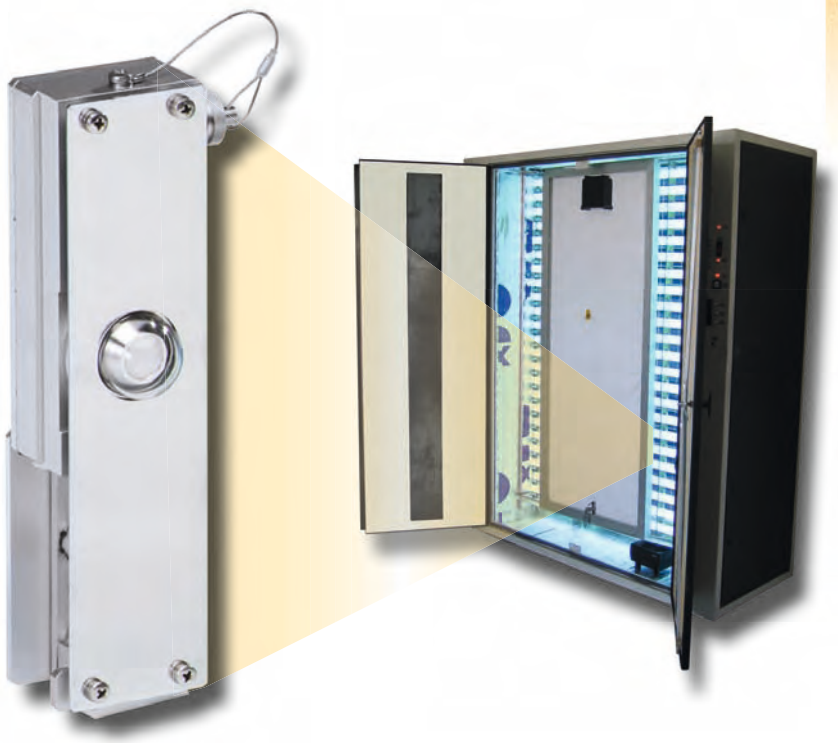
XenoCal® Solar

Precision is Crucial…

Precision is crucial for all testing equipment, especially for instruments testing photovoltaic products. Stable light output, temperature and relative humidity control and performance measurement of PV modules are all critical factors. It is equally important to ensure the irradiance from the light source used for the UV pre-conditioning test is within the specification, and that the specified radiant exposure is not exceeded. Atlas® has developed the XenoCal Solar sensor to provide user-friendly, precise measurement and calibration exclusively for this application.



Measurement and Calibration

The XenoCal Solar sensor measures irradiance (W/m²) or radiant exposure (kWh/m²). Depending on which IEC standard is selected from the menu, values in two wavelength bands are displayed:

IEC 61215:	IEC 61646:
280 – 320 nm	280 – 320 nm
280 – 385 nm	280 – 400 nm

The sensor is capable of operating in harsh environments such as ambient temperatures up to 70 °C; it is water-tight. Individual polynomial T compensation guarantees correct response over the whole operating temperature range.

IEC UV Preconditioning Requirements

The qualification standards IEC 61215 and IEC 61646 both require a UV pre-conditioning test that must comply with the following criteria:

IEC 61215:2005

- Total UV radiation of 15 kWh/m² (280 – 385 nm)
- At least 5 kWh/m² UV radiation between 280 and 320 nm

IEC 61646:2008

- Total UV radiation of 15 kWh/m² (280 – 400 nm)
- 3% to 10% UV radiation between 280 and 320 nm
- Irradiance in UV range not to exceed 250 W/m²

Easy to Use

The sensor comes in a protective case with a lithium battery, a connecting cable, and an RS 232 C interface for exporting data to a computer.

The data is displayed and processed with XENOSOFT®. This software, as well as updates, may be downloaded for free from www.atlas-mts.com. The data may also be exported to common data processing programs such as MS Excel.

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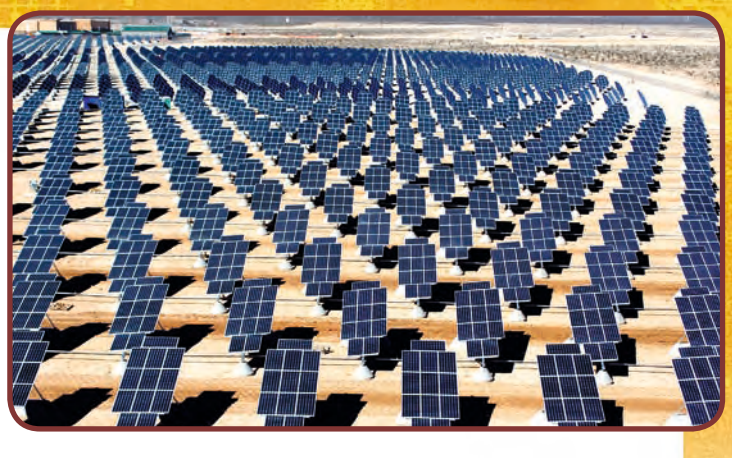


Use With Any Light Source

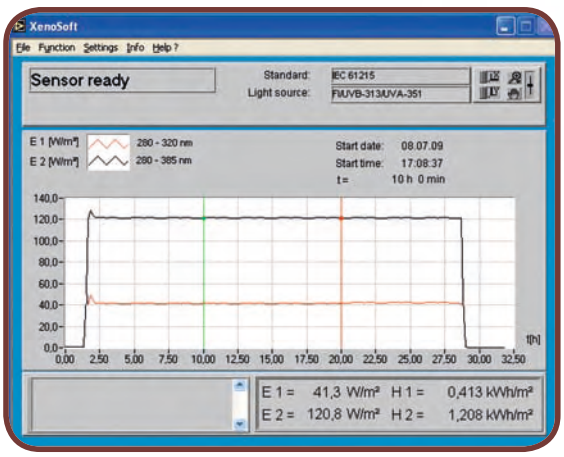
The XenoCal Solar sensor may be used to measure any light source used for UV pre-conditioning according to IEC 61215 or IEC 61646 (e.g. it measures fluorescent/UV, metal halide, xenon, gas discharge lamps, or even outdoor light).

For optimal results and precision, a spectral correction factor can be programmed for each specific light source. Four commonly used light sources are factory pre-programmed:

- Fluorescent/UVB313/UVA351 combination
- Fluorescent/UVA340
- Metal halide 1000 W
- Xenon lamp with daylight filter

It is possible to program up to 10 additional spectral correction factors, according to one of the following methods:

- Atlas® may measure your light source and determine the spectral correction factor
- Atlas may calculate the factor from your measured spectral power distribution
- You may calculate and program the spectral correction factor by yourself



Fully Traceable Calibration

The XenoCal Solar sensor may be calibrated at one of Atlas' ISO 17025 accredited laboratories, fully traceable to internationally accepted standards, e.g. NPL and PTB. Calibration gives you the assurance of always measuring with the highest possible reliability.

The XenoCal Solar sensor fully complies with international standard ISO 9370 on radiometry sensors.

Technical Data	XenoCal Solar Radiation Sensor
Spectral Range [nm]	280 – 320 280 – 385 280 – 400
Measurement Range E [W/m²]	0 – 350
E-Resolution [W/m²]	0,1
Cosinus Response, 0° – 60° [%]	± 4
Operating Range Ambient Air Temperature [°C]	0 – 70
Operating Range Relative Humidity [%]	0 – 100
Response Time [ms]	500
Memory Frequency	1/min
Max. Offline Measurement Time [h]	100

General Dimensions & Specifications	
L x W x H [cm]:	16 x 4 x 4
Weight [g]:	390
Housing:	Anodized aluminum
Power supply:	Lithium battery
Interface:	RS 232 C

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