

Organismo accreditato
Accredited body

**EUROPEAN COMMISSION
DG JRC - Joint Research Centre
Dir. C - Energy, Transport and Climate
Energy Efficiency and Renewables Unit
ESTI - European Solar Test Installation**

Via E. Fermi, 2749, TP450
21027 ISPRA (VA) – Italia

<https://ec.europa.eu/jrc/en/research-facility/european-solar-test-installation>



DT0225T/003

Riferimento
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Tabella allegata al Certificato di
Accreditamento
Annex to the Accreditation Certificate

225T Rev. 03

UNI CEI EN ISO/IEC 17025:2018

Requisiti generali per la competenza dei laboratori di prova e di taratura

Attività oggetto di accreditamento
Accredited activities

Misure ottiche / Optical measurements

- ***Irradiazione solare / Solar irradiance (SOT-12)***

Scopo fisso

Fixed scope

Via E. Fermi, 2749

21027 ISPRA (VA)

Italia

A

Misure ottiche / Optical measurements

- ***Irradiazione solare / Solar irradiance (SOT-12)***

Scopo flessibile

Flexible scope

L'incertezza di misura riportata nelle seguenti tabelle è da intendersi come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95%. Eventuali deviazioni sono puntualmente indicate.

ACCREDIA

Dipartimento
Laboratori di taratura

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Settore / Calibration field		(SOT-12) Irradiamento solare / Solar irradiance				
Strumento <i>Instrument</i>	Misurando <i>Measurand</i>	Condizioni <i>Additional parameters</i>	Campo di misura <i>Measurement range</i>	Incertezza ⁽¹⁾ <i>Uncertainty</i>	Metodo/Procedura <i>Method / Procedure</i>	Sede <i>Location</i>
Photovoltaic device	Linearity of Current vs Irradiance	n.a.	up to ±100%	0,16% <i>(abs)</i>	IEC 60904-10:2020	A
Bifacial photovoltaic device	Bifaciality coefficient	n.a.	up to 100%	0,88% <i>(rel)</i>	IEC TS 60904-1-2:2019	
			up to 100%	0,14% <i>(rel)</i>		
			up to 100%	1,36% <i>(rel)</i>		
			up to ±1%/(W·m ⁻²)	0,0066%/(W·m ⁻²) <i>(abs)</i>		
			up to 1200 W	1,15%		
			up to 1200 W	1,66%		

¹ In case of a relative measurement range (i.e. expressed as %), the uncertainty has to be intended either as a relative value (marked as 'rel') of the actual value of the measurand (itself expressed as %) or as an absolute value (marked as 'abs') over the entire measurement range.

Campo di accreditamento flessibile ⁽²⁾ Flexible accreditation scope						
Strumento Instrument	Misurando Measurand	Condizioni Additional parameters	Campo di misura Measurement range	Incertezza ⁽³⁾ Uncertainty	Metodo/Procedura Method / Procedure	Sede Location
Primary photovoltaic reference cell	Current	n.a.	up to 1 A	0,52%	IEC 60904-4	A
Photovoltaic device	Current	n.a.	up to 40 A	0,48%	IEC 60904-1 IEC 60904-1-1 IEC TS 60904-1-2 IEC 60904-2 IEC 60904-3 IEC 61853-1 IEC 60891	
	Voltage		up to 400 V	0,08%		
	Power		up to 1200 W	0,85%		
	Efficiency		up to 100%	0,85% (rel)		
	Spectral responsivity	n.a.	up to 2 A/W	2,50%	IEC 60904-8 IEC 60904-8-1 IEC 60904-7 IEC 60904-3	
	Spectral mismatch factor		up to 1,5	0,40%		

(continua)

² The laboratory has flexibility to perform calibration including the methods listed in the table and to adopt new revisions and amendments of them, without varying measurand, measurement range and uncertainty. The laboratory (under its own responsibility) maintains a list of methods adopted under this flexible scope for consultation on website: <https://ec.europa.eu/jrc/en/research-facility/european-solar-test-installation>.

³ In case of a relative measurement range (i.e. expressed as %), the uncertainty has to be intended either as a relative value (marked as 'rel') of the actual value of the measurand (itself expressed as %) or as an absolute value (marked as 'abs') over the entire measurement range.

Campo di accreditamento flessibile ⁽⁴⁾ Flexible accreditation scope						
Strumento Instrument	Misurando Measurand	Condizioni Additional parameters	Campo di misura Measurement range	Incertezza ⁽⁵⁾ Uncertainty	Metodo/Procedura Method / Procedure	Sede Location
(continua)						
Photovoltaic device	Temperature coefficient of:	Current	up to $\pm 5\%/^{\circ}\text{C}$	0,0049%/ $^{\circ}\text{C}$ (abs)	IEC 60891	A
		Voltage	up to $\pm 5\%/^{\circ}\text{C}$	0,0049%/ $^{\circ}\text{C}$ (abs)		
		Power	up to $\pm 5\%/^{\circ}\text{C}$	0,0080%/ $^{\circ}\text{C}$ (abs)		

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⁴ The laboratory has flexibility to perform calibration including the methods listed in the table and to adopt new revisions and amendments of them, without varying measurand, measurement range and uncertainty. The laboratory (under its own responsibility) maintains a list of methods adopted under this flexible scope for consultation on website: <https://ec.europa.eu/jrc/en/research-facility/european-solar-test-installation>.

⁵ In case of a relative measurement range (i.e. expressed as %), the uncertainty has to be intended either as a relative value (marked as 'rel') of the actual value of the measurand (itself expressed as %) or as an absolute value (marked as 'abs') over the entire measurement range.