



PV module qualification

PV module qualification	Benchmarking	Components
PV module certifications	BIPV	PV plants
Performance characterisation	Mounting systems	Certification of installation firms
Stress tests	Calibration	Solar thermal systems
Quality assurance	R&D and consulting	Other product tests

In order that your PV modules access all international markets, we support you with a wide range of services from development to qualification and certification and beyond.

Type approval of photovoltaic modules

High-quality photovoltaic modules meet numerous requirements: they reliably yield the assured rated output while at the same time withstanding the greatest variety of environmental effects. Electrical as well as mechanical safety and longevity are put to the test, so as to ensure a permanently high yield of the PV system. The result is a high level of competitiveness as well as recognition by banks and insurance companies. To document that your PV modules meet high quality requirements as well as the necessary market access prerequisites, they should be certified according to the applicable international and national standards. In our test laboratories we conduct the necessary qualification tests for you and on completion of successful

testing issue the certificates – all from a single source. We consult, qualify and certify your PV products.

Your advantage – you receive all from a single source.

You can rely on our 30 years of experience in solarenergy. We from TÜV Rheinland will support you in the quality assurance of PV modules and PV components, as well as complete PV systems. We maintain seven laboratories in Asia, America and Europe, equipped with the latest testing and simulation facilities. Our employees are highly esteemed contacts in the PV industry. The certificates from TÜV Rheinland offer high global market acceptance.

Accreditation

The PV laboratory from TÜV Rheinland in Cologne is, like all other international TÜV Rheinland PV labs as well, accredited according to DIN EN ISO/IEC 17025 and is listed by the worldwide certification system of the IECEE in the category of photovoltaic as a CBTL – Certification Body Testing Laboratory – along with TÜV Rheinland LGA Products GmbH as an NCB – National Certification Body. We actively participate in international standardisation committees and work groups on the interpretation and coordination of standardisation content and procedures.

Service portfolio

Our range of services for testing and certification for the type approval of photovoltaic modules basically comprises the following areas:

Testing and certification of crystalline silicon modules according to DIN EN IEC 61215	Testing and certification of thin-film modules according to DIN EN IEC 61646
Safety testing and certification according to DIN EN IEC 61730	Safety testing and certification according to ANSI/UL 1703
Testing and certification of CPV modules according to DIN EN IEC 62108	Safety testing and certification of CPV modules according to IEC 62688
Factory inspection	

As a module manufacturer you'll profit from short testing times. New module type families or extensions to new 'second source' materials can be quickly qualified for putting them on the market as certified products as fast as possible. Since the TÜV Rheinland laboratories are located in different climate zones and are globally networked, outdoor weathering tests and measurements can be performed all year round. These different locations are necessary for certain test sequences or module-specific technologies. The TÜV Rheinland laboratories are equipped to test PV modules up to 7.5 m² in size and even to perform non-destructive spectral sensitivity measurements on entire modules. In our accredited laboratories we spot-check product's compliance with the corresponding standards on the basis of test samples. These test criteria are documented next to the test mark and are therefore accessible to the end customer at all times.

Experienced PV experts will advise you in detail before the start of a qualification project. They will clarify your requirements and the time frame, check whether all preconditions for qualification are met, and determine the necessary and optimised testing cost. A project manager will accompany you from advising through certification.

Quality assurance

Besides lab testing, the structure of the certification of PV modules includes inspections of the production sites. Our experts periodically conduct repeated quality and product checks at your production sites. In this way we ensure that the produced PV modules will be manufactured with the same materials and processes and with the same quality as the test samples tested in the lab.

Always a good sign.



This mark stands for all the information about products, services and systems that are tested, certified or inspected by TÜV Rheinland.

Transparent, available anytime worldwide – powerful and unique. The TÜV Rheinland test mark.



TÜV Rheinland
Energie und Umwelt GmbH
Am Grauen Stein
51105 Köln
+49 221 806-5200
solarenergy@de.tuv.com
www.tuv.com/solarenergy