Energy Yield Rating Label.

Ensure optimal PV module performance in diverse climates with our independent testing services and globally recognized energy yield rating certification.

TÜVRheinland®
Precisely Right.

ENERGY YIELD RATING LABEL FOR PV MODULES

The energy yield rating label designates quality PV modules which have been tested and certified according to recognized international standards to ensure maximum performance and protect lucrative investments. We conduct comprehensive assessment services enabling you to achieve an energy yield rating certification and receive the corresponding test mark for your products. In addition to laboratory testing, the real performance of PV modules is assessed at any of our (four) outdoor test sites available around the world. We provide PV module manufacturers as well as power plant investors and operators the confidence they need to succeed in competitive global markets.

OUR SERVICE

Our comprehensive services for PV modules include:
- Indoor testing in state-of-the-art laboratories
- Outdoor tests in various open-air climates at four locations around the world
- Independent, third-party performance evaluation of your PV modules
- Recognized energy yield rating label certification according to internationally accepted standards

In order to realistically test your PV modules in varying environments, we carry out on-site testing at the following locations:
- Cologne, Germany – Moderate
- Tempe, USA – Desert arid
- Thuwal, Saudi Arabia – Coastal desert, sandstorm impact

Our outdoor fields operate with identical measurement technology at equal data acquisition intervals to ensure comparative results.

We provide PV energy yield measurement in the following categories:
Energy yield measurements
Energy rating of PV modules
Long-term degradation studies

We prepare in-depth analysis according to the parameters relevant to your selected energy yield rating label program.

THE CERTIFICATION

As a preliminary requirement, modules must comply with the international quality and safety certificates, i.e. IEC 61215 and IEC 61730, of the tested PV type. The energy yield rating is determined after a combined laboratory and outdoor exposure analysis according to in-house developed methodology and international standards such as IEC 61853 in particular. Our energy yield rating label certifies the performance of monofacial and bifacial PV modules against benchmark operational efficiency.

Modules are classified with a performance letter grade based on established module performance ratio (MPR) intervals:

A+++	> 8%
A++	> 3%
A+	> 1%
A	-1% to 1%
B	< -1%
C	< -3%
D	< -5%

Each label displays the module type, the climate in which it was tested, the type and duration of testing, the obtained performance class and operating efficiency as well as a certification ID number corresponding to the Certipedia online database listing. Our online Certipedia database provides both your business partners and consumers easy access to your certification history.

YOUR BENEFITS

Our energy yield rating label certification helps you reduce the risk of non-performance losses while strengthening the trust of buyers and investors. We provide you clear and reliable assessment as well as transparent confirmation of PV module suitability in varying environments and climates. Our experts support you with comprehensive services from a single source to ensure optimal solar module performance and competitive advantage in dynamic global markets.

ENERGY YIELD RATING LABEL CERTIFICATION PROGRAMS

Our services have been packaged into four certification programs relevant to your needs in attaining the energy yield rating label. Simply choose the program right for you and receive your globally recognized Energy Yield Rating Label after successful completion.

ENERGY YIELD RATING LABEL PROGRAMS

SCIENTIFIC	SCIENTIFIC[PLUS]	EXPRESS	EXPRESS[PLUS]
MEASUREMENTS	**MEASUREMENTS**	**MEASUREMENTS**	**MEASUREMENTS**
▪ Initial measurements	▪ Initial measurements	▪ Initial measurements	▪ Initial measurements
▪ ~~Light soaking~~	▪ Light soaking	▪ Light soaking	▪ Light soaking
▪ ~~Temperature coefficients indoor~~	▪ Temperature coefficients indoor	▪ Temperature coefficients indoor	▪ Temperature coefficients indoor
▪ ~~G-T matrix IEC 61853-1~~	▪ G-T matrix IEC 61853-1	▪ G-T matrix IEC 61853-1	▪ G-T matrix IEC 61853-1
▪ EY outdoor PV performance	▪ EY outdoor PV performance	▪ EY outdoor PV performance	▪ EY outdoor PV performance
▪ Meteorological data	▪ Meteorological data	▪ Meteorological data	▪ Meteorological data
▪ Final measurements	▪ Final measurements	▪ ~~Final measurements~~	▪ ~~Final measurements~~
ANALYSIS	**ANALYSIS**	**ANALYSIS**	**ANALYSIS**
▪ Monthly outdoor performance	▪ Monthly outdoor performance	▪ Monthly outdoor performance	▪ Monthly outdoor performance
▪ Monthly irradiance and ambient temperature	▪ Monthly irradiance and ambient temperature	▪ Monthly irradiance and ambient temperature	▪ Monthly irradiance and ambient temperature
▪ Temperature coefficients outdoor	▪ Temperature coefficients outdoor	▪ ~~Temperature coefficients outdoor~~	▪ ~~Temperature coefficients outdoor~~
▪ Long-term outdoor stability of parameters	▪ Long-term outdoor stability of parameters	▪ Long-term outdoor stability of parameters	▪ Long-term outdoor stability of parameters
▪ Linear performance loss	▪ Linear performance loss	▪ Linear performance loss	▪ Linear performance loss
MARKETING	**MARKETING**	**MARKETING**	**MARKETING**
▪ Benchmark charts and ranking	▪ Benchmark charts and ranking	▪ Benchmark charts and ranking	▪ Benchmark charts and ranking
▪ EY label (Certipedia)	▪ EY label (Certipedia)	▪ EY label (Certipedia)	▪ EY label (Certipedia)
▪ TÜV Rheinland certified pan file	▪ TÜV Rheinland certified pan file	▪ ~~TÜV Rheinland certified pan file~~	▪ TÜV Rheinland certified pan file
Duration 1 year	**Duration 1 year**	**Duration 3 months**	**Duration 3 months**

Certify the quality and capability of your PV modules to ensure integrity and performance! Speak with an expert today!

ONLINE CONTACT

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