# Photovoltaic: TÜV Rheinland certifies FuturaSun

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FuturaSun has completed as one of the first PV manufacturer in Europe the qualification for the new international standards IEC 61215:2016 and IEC 61730:2016 at TÜV Rheinland Cologne. TÜV Rheinland tests and certifies photovoltaic systems and components according to various international standards such as the standards for safety established by the International Electrotechnical Commission (IEC). The principal references for photovoltaic modules are the two standards IEC 61215 and 61730 updated in 2016 with many important changes compared to previous edition.

The revised IEC 61215 has changed the certification procedure to comply with the actual requirements of the industry. The new IEC 61730, the standard for Solar PV module safety, provides minimum design requirements to assure the safety of the product during its operation.

FuturaSun PV-Modules passed all 60 different Quality & Safety-Tests at the TÜV laboratory in Germany. With the new standard the manufacturer needs to test the modules for each possibile power of the whole product family – the lowest power as well as the highest power. That is only one

of the many updated aspects of the new certification:
• Pmax, Isc, Voc are confirmed by lab measurements
• NOCT becomes NMOT (Nominal Module Operating Temperature)
• Changed criteria for the 1500 V certification
• New impulse voltage test level at 16kV: to verify the capability of the module insulation to withstand atmospheric over-voltages
• Mechanical load with safety factor of 1.5x
• New Ignitability test
• Increased insulation requirements
• Thermal cycling with updated current flow
• Maximum reference temperatures for all module components
• Verification that the materials used in the module will not show creep or lose adhesion during high operational temperatures in the field
• Terminations can withstand stresses caused by assembly or handling operations
• Hot-spot endurance test

The new standards applies requirements according to state of the art PV module technologies and therefore give increased guarantees to the end customers and obligate the manufacturers to continually improve the performance, safety and reliability of their products. TÜV Rheinland have been active in the solar industry since its infancy and have built our reputation on ensuring quality, reliability and safety in the production and operation of PV modules. Prominent players in the solar sector trust TÜV Rheinland and their test mark, issued with a unique ID number and QR code that allows customers to check certification claims quickly and accurately.

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TÜV Rheinland is a global leader in independent inspection services, founded nearly 150 years ago. The group maintains a worldwide presence of more than 20,000 people; annual turnover is EUR 2 billion. The independent experts stand for quality and safety for people, technology and the environment in nearly all aspects of life. TÜV Rheinland inspects technical equipment, products and services, oversees projects, and helps to shape processes and information security for companies. Its experts train people in a wide range of careers and industries. To this end, TÜV Rheinland employs a global network of approved labs, testing and education centers. Since 2006, TÜV Rheinland has been a member of the United Nations Global Compact to promote sustainability and combat corruption.

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