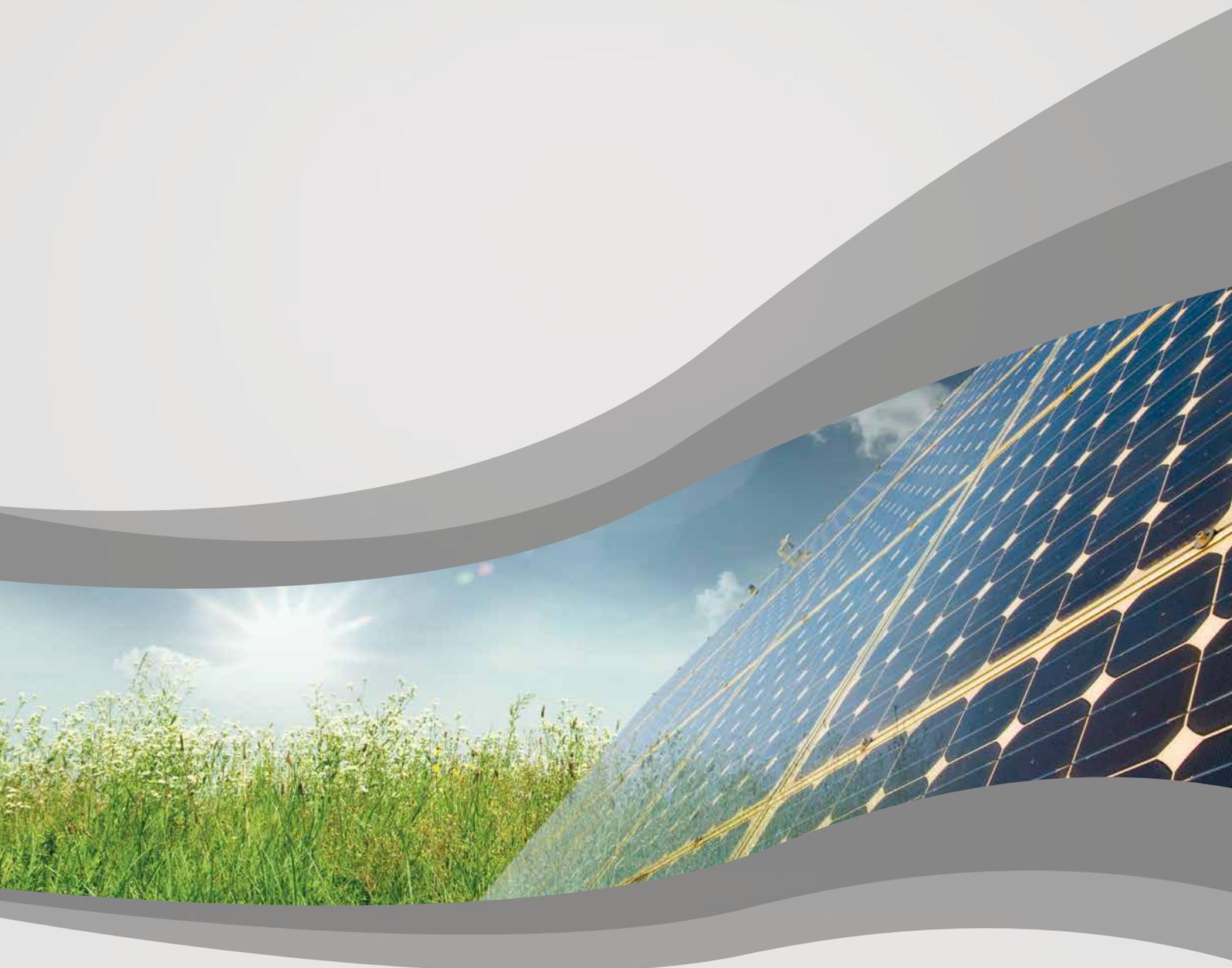




# TRENERG

REENERGY TECHNOLOGY & INNOVATION



## GLOBAL OPERATIONS

TRENERG REENERGY SYSTEM has business operations in United Kingdom, Hungary, Germany, Austria, Slovakia, Bulgaria, Spain and USA. REENERGY is able to combine the advanced technology and management experience with the low manufacturing cost and fast products delivery.

## PRODUCTION

TRENERG REENERGY SYSTEM solar modules are manufactured at our own automatic manufacturing plant in compliance with the most stringent quality standards.

Our modules (standard line from 160 Wp, 230 Wp to 300 Wp) are made to the highest manufacturing standards with full quality control, using state of the art machinery imported from Japan and the USA.

During our manufacturing process, every module inspected and tested compliance with electrical, mechanical and visual criteria. The models maintain the highest level of efficiency, reliability and stability, as accords with use of the highest quality polycrystalline cells, EVA, backsheet, connectors, etc.

## BIPV TECHNOLOGY

TRENERG Solar Panels also prove to be very effective when used as parts of buildings' roof structures or shades. Huge surfaces are covered and shaded with the help of various techniques which are combined with the use and energy production of Solar Technology that conserves much solar energy from these surfaces.



## ENERGY FROM THE SUN

The Earth receives ~200 petawatts (PW) of incoming solar radiation (insolation) at the upper atmosphere. Approximately 30% is reflected back to space while the rest is absorbed by clouds, oceans and land masses. The spectrum of solar light at the Earth's surface is mostly spread across the visible and near-infrared ranges with a small part in the near-ultraviolet.



## INDUSTRIAL SOLUTION

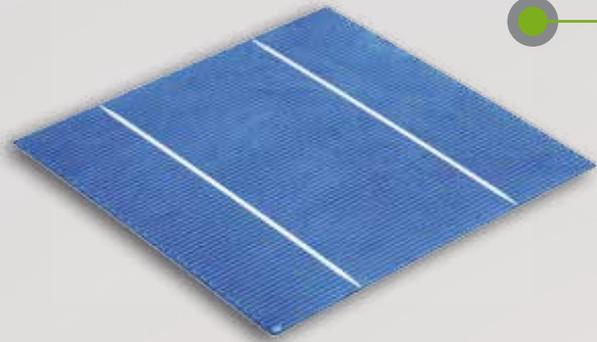
- LARGE SCALE ON GRID APPLICATIONS
- OFF-GRID APPLICATIONS
- STANDARD MODULES
- BIPV MODULES
- BIPV-LED COMBINED SOLAR MODULES
- SPECIAL PRODUCTS AND APPLICATIONS

## INTEGRATED LED SOLAR TECHNOLOGY



## MANUFACTURING LINE

### SOLAR CELLS



### AUTOMATIC SOLDERING



The Soldering machine is an automated production machine that interconnects solar cells by soldering flat metal leads, or tabs, to cell contacts. Solar cells are processed at a throughput of up to 600 cells per hour with high yield.

### SOLAR MODULE



The machines unloads solar cells from stacks and aligns their edges. Tab material is fed from spools, coated with flux, cut to length, and provided with a stress-relief bend.

Tabs and cells are aligned for soldering. High-intensity lamps in the solder head assembly provide radiant thermal energy to the cells and tabs. Both front and back cell contacts are soldered in a single step, thereby reducing thermal stress on cells. This is particularly important for high yield processing on thin solar cells.

The number of cells per string, cell spacing, the ribbon length, the stress bend location, and the soldering parameters are software programmable. Each completed string is automatically placed in a tray.

### SOLAR MODULE PERFORMANCE TEST



The Sun photovoltaic module testing systems feature light sources that closely match the solar spectrum while avoiding the excessive solar cell heating caused by continuous sources.

The simulators can test either crystalline or thin film modules and integrated into fully automated module production line.

## AUTOMATIC LAY-OUT



The Layup Station automatically aligns and places completed solar cell strings in position for module assembly. The Layup Station includes a string unloader robot for string transport, a string aligner, and a ball table for module layup.

When the soldering machine completes a cell string, a conveyor belt positions the string for pick-up by the string unloader. The unloader transports the string to either the stack table for visual inspection or placement in a stack, or to the string aligner for alignment prior to layup.

Strings are automatically aligned in X and Y directions. After alignment, the unloader picks up the string and transports it over a ball table with retractable pads to the appropriate string position for module lay-up placement. When required, the unloader automatically rotates 180° to reverse the string polarity.

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## CONTACT

TRENERG Holding  
ENGLAND - HUNGARY  
SWITZERLAND - USA

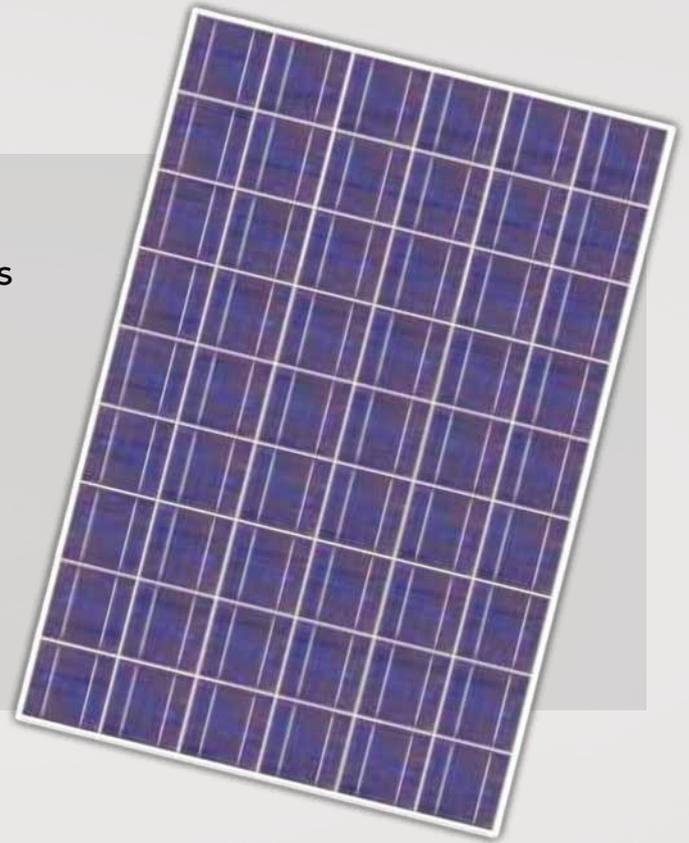
**E-mail:** [info@trenergholding.com](mailto:info@trenergholding.com)

**Web:** [www.trenergholding.com](http://www.trenergholding.com)

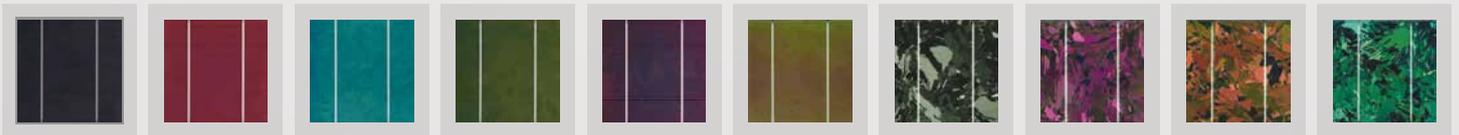
**Phone:** +44 7440 198635

### FEATURES

- High Quality Polycrystalline Silicon Solar Cells
- Positive Power Tolerance
- 5 (12, 25) Years Guarantee (90-80%)
- Highest Quality Standards
- Module Efficiency up to 18%
- Reliable and Robust Design
- High Quality Materials



### COLORS

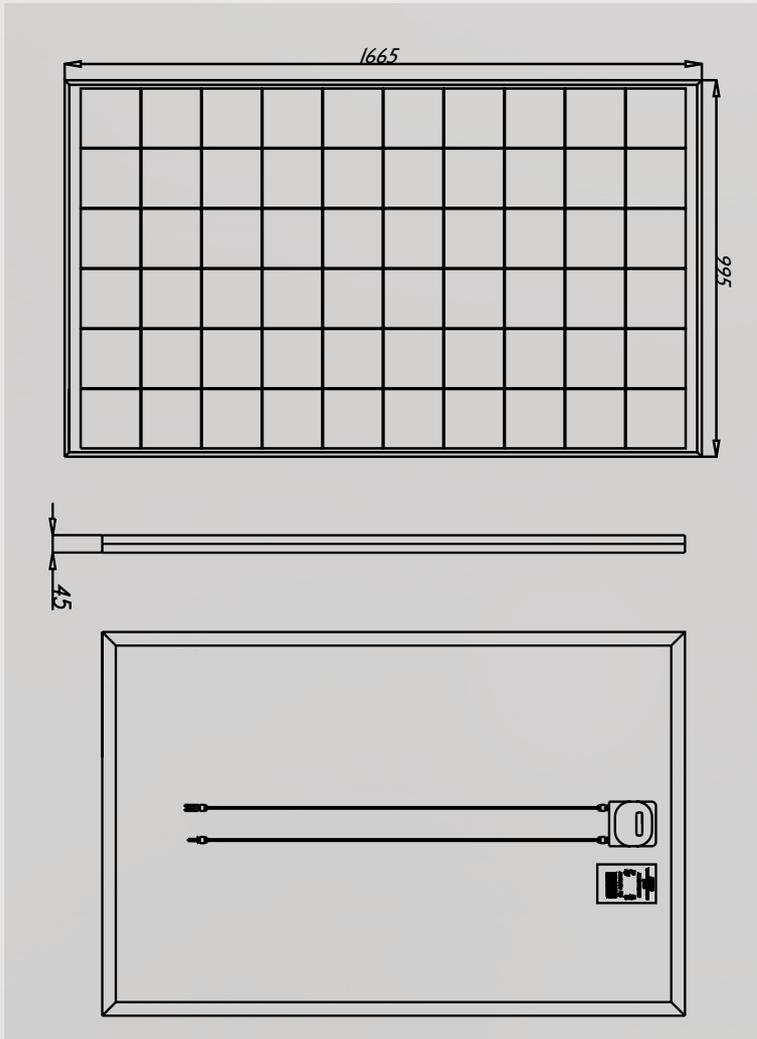


### ELECTRICAL DATA

Model	FSDS6230	FSDS6240	FSDS6250
Maximum power (Pmax)	230 Wp	240 Wp	250 Wp
MPP Voltage (V)	30,24	30,46	31,00
MPP Current (A)	7,78	8,02	8,29
Open-circuit voltage (V)	37,32	37,62	37,80
Short-circuit current (A)	8,34	8,72	8,88
Maximum system voltage (V)	1000	1000	1000
Module power tolerance (%)	+2 % / -0 %	+2 % / -0 %	+2 % / -0 %

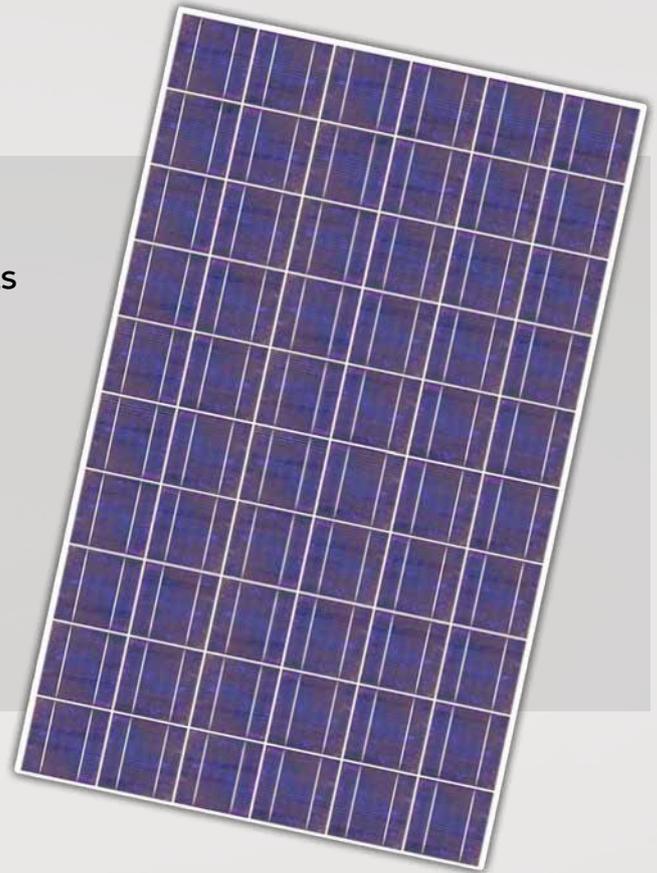
### OTHER PARAMETERTURES

- Cells 60 pieces polycrystalline silicon solar cells
- Cell dimension 6" – 156 mm x 156 mm (Square)
- Front 4 mm thick tempered solar glass, highly transparent
- Encapsulation EVA – cell – EVA
- Back Multilayered backsheet Tedlar or tempered solar glass
- Frame Anodised aluminium or none
- Connection TYCO ELECTRONICS IP65 with built-in bypass diode
- Weight 23 kg
- Temperature Range -40 °C to +90 °C
- Max Load 5400 Pa
- Impact Resistance Steel ball – 1040 g dropped from 1m high



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### COLORS



### ELECTRICAL DATA

Model	FSDS6280	FSDS6290	FSDS6300
Maximum power (Pmax)	280 Wp	290 Wp	300 Wp
MPP Voltage (V)	36,94	37,26	37,68
MPP Current (A)	7,76	7,98	8,24
Open-circuit voltage (V)	45,00	45,61	46,21
Short-circuit current (A)	8,39	8,65	8,88
Maximum system voltage (V)	1000	1000	1000
Module power tolerance (%)	+2 % / -0 %	+2 % / -0 %	+2 % / -0 %

### OTHER PARAMETERTURES

• Cells	72 pieces polycrystalline silicon solar cells
• Cell dimension	6" – 156 mm × 156 mm (Square)
• Front	4 mm thick tempered solar glass, highly transparent
• Encapsulation	EVA – cell – EVA
• Back	Multilayered backsheet Tedlar or tempered solar glass
• Frame	Anodised aluminium or none
• Connection	TYCO ELECTRONICS IP65 with built-in bypass diode
• Weight	27 kg
• Temperature Range	-40 °C to +90 °C
• Max Load	5400 Pa
• Impact Resistance	Steel ball – 1040 g dropped from 1m high

