



## ES60 Series Mono

High transmissivity glass of 91,5%+ to enhance high efficiency.

High efficiency cells to deliver superior electrical performance

High quality fast-cure EVA to ensure high performance and guaranteed life with superior UV and thermal properties.

ISOVOLTAIC<sup>®</sup> back sheet to provide good weather resistance for rugged environments, high dielectric performance, superior partial discharge and electrical insulation.

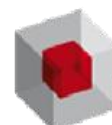
Sturdy anodized aluminum frame design with hollow profile and water drainage holes, corner-key locking and edge sealing ensures superior torsional resistance and longevity in adverse / coastal climatic conditions.

IP 65 rated LUMBERG<sup>®</sup> junction box prefitted with cables and plug and play connectors for quick and safe installation, which is IEC and UL approved.

"**made in centrotherm photovoltaics**" stands for the use of state of the art centrotherm technology and state of the art production environment in the manufacture of solar cells and modules

## Advantages

- Module classification range +5 Wp
- More than 18% cell efficiency
- 10 years of product guarantee\*
- 25 years of performance guarantee\*
- Best components German quality standards
- Certified according to IEC/EN 61215 (Ed. 2)
- Certified according to IEC/EN 61701 Salt Mist Test
- Certified according to IEC/EN 61730, protection class II



made in  
**centrotherm**  
photovoltaics

## Electrical Data (STC)

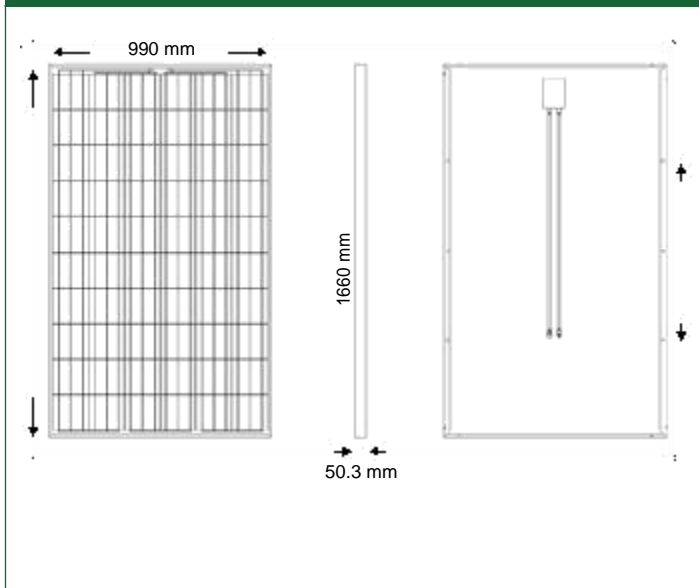
Module	3MSS60 245	3MSS60 250
Nominal Power P <sub>max</sub>	245 Wp	250 Wp
Nominal Voltage U <sub>mpp</sub>	30.59 V	30.16 V
Nominal Current I <sub>mpp</sub>	8.09 A	8.29 A
Open Circuit Voltage U <sub>OC</sub>	37.76 V	37.88 V
Short Circuit Current I <sub>SC</sub>	8.64 A	8.75 A
Module Efficiency(%)	15.0	15.2

STC: Standard Test Conditions: Irradiation strength 1.000 KW/m<sup>2</sup>, spectral distribution AM 1.5, temperature 25 ±2 °C, in accordance with EN 60904-3 Power Tolerances P<sub>max</sub> 0 ~ +3W

## Temperature Behaviour

Operating Temperature Range	-40 ... +85 °C
Temperature Coefficient of P <sub>N</sub>	-0.48 %/K
Temperature Coefficient of U <sub>OC</sub>	-2.3 mV/K
Temperature Coefficient of I <sub>SC</sub>	+1.1 mA/K
NOCT	48 °C
Application Class	Class A

## Dimensions



## Mechanical Data

Module Dimensions	1660 x 990 x 50.3 mm
Frame	Anodized Aluminium Frame
Front Material	Tempered Solar Glass 3.2 mm
Type of Cells	60 monocrystalline solar cells
Cell Dimensions	156 mm x 156 mm
Junction Box	IP65 with 3 Bypass diodes
Cables	1.00 m solar cable 4.00 mm <sup>2</sup> double isolated
Plug Connectors	MC4 compatible
Max System Voltage	1000 V DC
Weight	20 kg
Mechanical Ratings	Suction pressure of 2400 Pa, Load of 5400 Pa approved
Pcs/Box	20
Pcs/40 ft.	520

## Quality

PV Standards	IEC61215
VDE	IEC61730 IEC61701; SEVERITY 1
Quality System	ISO 9001:2008
Warranty*	10 year product warranty
Performance Guarantee*	12 years of 90 % power output 25 years of 80 % power output

## Contact

### ENERGY SYSTEMS

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