tsmc solar | New Power. New Thinking.

TS PREMIUM SERIES
HIGH-EFFICIENCY POLYCRYSTALLINE SOLAR MODULE

230 W / 235 W / 240 W

Features

- Positive power classification: 0 to +4.99 W_p
- Award-winning anti-reflective glass for high yields even in diffuse or low light conditions
- High-quality junction box with three bypass diodes
- Lockable plug connectors
- Laminated, unchangeable serial numbers for full traceability of each module
- Free module recycling

Quality and Safety

- Certified according to EN IEC 61215 Ed. II
- Certified according to EN IEC 61730-1 and EN IEC 61730-2, protection class II
- Manufactured in Germany at Sonnenstromfabrik Wismar, an EN ISO 9001:2008 as well as EN ISO 14001:2009 certified facility
- Rated for high snow loads up to 5,400 Pa
- Suitable for continuous use in coastal areas: passed salt-spray test according to EN ISO 9227-NSS

Guarantee*

- Product guarantee*: 10 years for material and workmanship
- Power output guarantee*: 10 years at 90% and 26 years at 80% of minimum rated power output

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- Qualified, IEC 61215
- Safety tested, IEC 61730
- Periodic Inspection

IEC

APPROVED PRODUCT MCS BBA

Salt-spray test according to DIN EN ISO 9227-NSS

VDE Certified Management System 5005898/QM/12.08 DIN EN ISO 9001:2008

VDE Certified Management System 5005895/UM/01.11 DIN EN ISO 14001:2009

* This datasheet is for informational purposes only and applies only to products sold and installed in Europe.
For detailed guarantee information, please consult the Guarantee by TSMC Solar Europe GmbH which is available on request.

Technical data

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Electrical Characteristics

Output under STC*

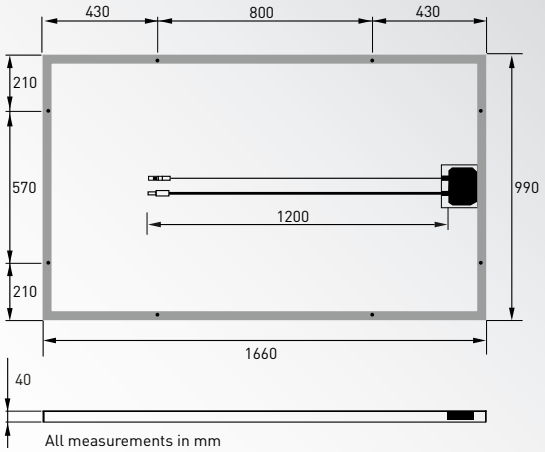
Module	TS-230 P60 Premium	TS-235 P60 Premium	TS-240 P60 Premium	
Rated power (P_{mpp})	230	235	240	W_p
Open-circuit voltage (V_{oc})	36.39	36.46	36.53	V
Short-circuit current (I_{sc})	8.48	8.59	8.70	A
Rated voltage (V_{mpp})	28.65	28.70	28.75	V
Rated current (I_{mpp})	8.03	8.19	8.35	A
Module efficiency (η)	14.0	14.3	14.6	%

* Under standard testing conditions STC (1000 W/m², spectrum AM 1.5, cell temperature 25°C)

Output at 800 W/m², NOCT, AM 1.5

Module	TS-230 P60 Premium	TS-235 P60 Premium	TS-240 P60 Premium	
Rated power (P_{mpp})	166	169	173	W_p
Open-circuit voltage (V_{oc})	32.98	33.05	33.11	V
Short-circuit current (I_{sc})	6.81	6.89	6.98	A
Rated voltage (V_{mpp})	25.33	25.37	25.42	V
Rated current (I_{mpp})	6.54	6.67	6.80	A

Physical Dimensions



All measurements in mm

Other Product Specifications

Thermal properties

TK P_{mpp}	-0.43	%/K
TK V_{oc}	-0.35	%/K
TK I_{sc}	0.03	%/K
NOCT	46	°C

Materials used

Cells	60 pcs., 156 x 156 mm
Front	hardened AR glass
Junction box	Spelsberg (IP65)
Connector	Tecplug (MC4 pluggable)

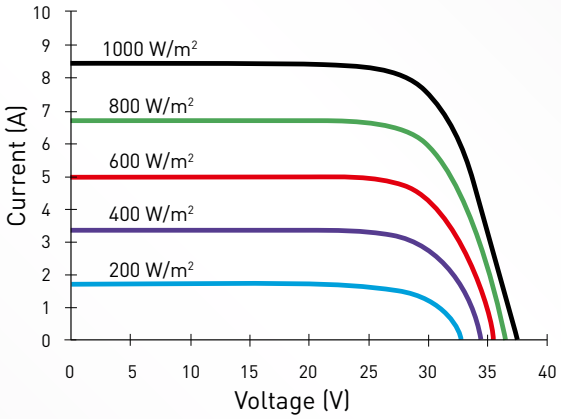
Other technical data

Class range (positive classification)	-0/+4.99	W_p
Max. system voltage	1,000	V
Weight	20 ± 0.5	kg
Reverse current carrying capacity IR	12	A
Measuring accuracy P_{mpp} at STC	± 3	%
Snow load	5,400	Pa
Physical dimensions	1,660 x 990 x 40	mm

The information contained herein is subject to change without notice.
TSMC Solar shall not be liable for technical or editorial errors or omissions contained herein.

I-V Curves

(TS-240 P60 Premium)



Get in contact with us! We look forward to your call or your email!

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