

Photovoltaic modules

TEI140/150-36M

► High efficiency, reduced area

Tenesol manufactures its own photovoltaic modules in two facilities.

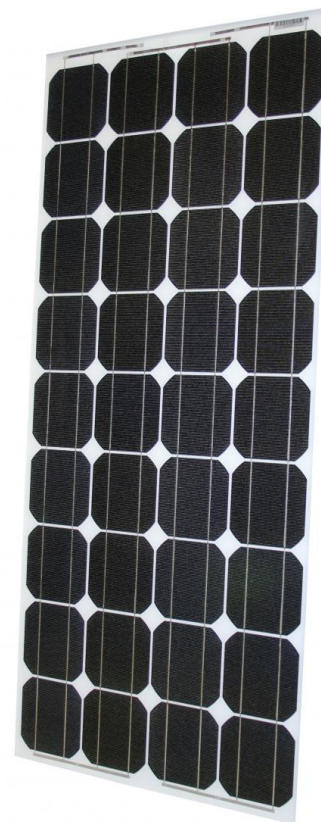
Tenesol's modules **use the high-output technology of the monocrystalline cell**. Each cell is individually measured and sorted before the encapsulation stage.

The combined use of **tempered glass, EVA and back sheet keeps its weight to a minimum**. This without frame **laminates guarantees total watertightness** and long-term protection of the cells.

Each module is subject to an **individual quality control process**.

Product warranty: 5 years

Power warranty: 25 years*



The quality of TENESOL modules are CE certified.

Our production facilities are also certified according to ISO 9001 and ISO 14001 standards.



A rapidly expanding global player in the field of solar energy (with a turnover of €304 million in 2010, average 25% growth per year over last 3 years), Tenesol works on behalf of businesses, local authorities and private individuals.

For more than 28 years, Tenesol has been engineering, designing, manufacturing, installing and managing solar energy systems including production and consumption of supplied systems (Off-grid sites, general grid supply via direct connection, solar water heating) for its customers around the globe.

A benchmark player in its sector, Tenesol currently has a staff of more than 800 employees across 18 subsidiaries including 2 production facilities.



Sun access provider.

TENESOL
TOTAL GROUP

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► TEI140/150-36M

Electrical characteristics

Nominal Power (STC)	Wp	140	145	150 ¹
Minimum power		137.5	142.5	147.5
Maximum power		142.5	147.5	152.5
Sorting limits	Wp	-2.5/+2.5		
Sorting limits	%	±1.7		
Voltage at max. power	(V)	17.5	17.9	18.05
Current at max. power	(A)	8.0	8.1	8.3
Open circuit voltage	(V)	22.1	22.3	22.5
Short circuit current	(A)	8.4	8.6	8.8

According to specifications at STC: Irradiation 1000 W/m²; AM 1.5; Cell at ambient Temperature T: 25°C.
 (1) : Module available upon request.

Nominal Pow. 45°C/800W/m ²	Wp	103.2	107.1	110.7
Voltage at max. power	(V)	15.9	16.3	16.5
Current at max. power	(A)	6.5	6.6	6.7
Open circuit voltage	(V)	20.5	20.7	20.9
Short circuit current	(A)	6.8	7.0	7.1

NOCT tests realized with a maximum power (in Wp), junction temperature 45 °C; irradiation 800 W/m²; Am 1,5 ; Ambient temperature 20 °C; Windspeed 1 m/sec.

Temperature coefficients

Temperature Coefficient of Voltage	- 77,4 mV/°C
Temperature Coefficient of Current	+ 4.8 mA/°C
Temperature Coefficient of Power	- 0,43 %/°C
NOCT	45 °C

Cells

Size	156 x 156 mm
Layout	36 Cells / 4 x 9
Type	Monocrystalline

General information

Maximum system voltage	1000 V
Maximum reverse current	17 A
Type of connection	Tyco connectors
Diodes	2 by-pass
Junction Box	IP55
Weight	14.5 kg
Operating ambient temperature	-40 / +85°C

Certifications

	IEC61215 + IEC61730
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Warranty

Product warranty	5 years
Power warranty (*)	25 years - 80 % of minimal power 10 years - 90 % of minimal power

Irradiant dependency

Irradiation (W/m ²)	Pm	Vpm	Ipm
1000	1	1	1
800	0,799	0,999	0.8
500	0,497	0,994	0.5
400	0,394	0,986	0.4
300	0,291	0,970	0.3
200	0,187	0,936	0.2
100	0,086	0,862	0.1

