

Photovoltaic modules

TE2200 : 210-240 Wp

► High efficiency, reduced area

Tenesol manufactures its own photovoltaic modules in two facilities.

Tenesol's modules **use the high-output technology of the multicrystalline 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**. The laminate **guarantees total watertightness** and long-term protection of the cells.

The **reinforced 50 mm aluminium** frame makes handling easy and allows for quick, easy and **highly resistant assembly**.

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

Product warranty: 10 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 €249 million in 2009, +29%), Tenesol works on behalf of businesses, local authorities and private individuals.

For more than 26 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 1100 employees across 20 subsidiaries including 2 production facilities.



Sun access provider.

TENESOL
TOTAL & EDF GROUPS

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► TE2200

Electrical characteristics

TE2200

Nominal Power (STC)	Wp	210 ¹	220	230	240 ¹
Minimum power		205	215	225	235
Maximum power		215	225	235	245
Sorting limits	Wp	-5 / +5			
Sorting limits	%	±2,4	±2,3	±2,2	±2,1
Voltage at max. power	(V)	29,5	29,7	29,9	30,1
Current at max. power	(A)	7,2	7,5	7,8	8,0
Open circuit voltage	(V)	36,2	36,5	36,8	37,0
Short circuit current	(A)	7,8	8,0	8,2	8,3

According to specifications at STC: Irradiation 1000 W/m²; AM 1.5; Cell at ambient Temperature T: 25°C.

(1) : Modules available upon request.

Nominal Power 45°C / 800W/m ² Wp		156,8	164,5	172,2	177,9
Voltage at max. power	(V)	26,9	27,1	27,3	27,5
Current at max. power	(A)	5,8	6,1	6,3	6,5
Open circuit voltage	(V)	33,6	33,9	34,2	34,4
Short circuit current	(A)	6,3	6,5	6,6	6,7

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	- 129,0 mV/°C
Temperature Coefficient of Current	+ 4,4 mA/°C
Temperature Coefficient of Power	- 0,46 %/°C
NOCT	45 °C

Cells

Size	156 x 156 mm
Layout	60 cells / 6 x 10
Type	Multicrystalline

General information

Maximum system voltage	1000 V
Maximum reverse current	17 A
Diodes	3 by-pass
Type of connection	Tyco connectors
Junction Box	IP55
Weight	19 kg
Operating ambient temperature	-40 / +85°C

Certifications

IEC61215 + IEC61730

Warranty

Product warranty	10 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

