

PV-Therm

Connection of the Future

The WIOSUN PV-Therm module is a product of WIOSUN's internal research and development and has been awarded the „Bundespreis (German National Award) for excellent innovational achievements in trade.“

It successfully combines the benefits of a thermal solar system and a photovoltaic system which for a long time used to be separate systems. This combined module, with a surface temperature of up to 80° C, can be cooled down to a temperature below 20° C in a very short period of time using water at a temperature of 12°C. This equals an **increase in efficiency of up to 30 percent**.

Based on the region of the median latitude an increase in output **of minimum 10 percent** per year can be achieved.

The benefits of combining thermal solar systems and photovoltaic systems include easy mounting, reduced space requirements and higher efficiency. The grants available for photovoltaic and thermal output can help to lower the purchase costs of such systems.

Benefits:

- Efficiency increase by up to 30%
- Output increase by minimum 10%
- Heating of swimming pools
- In combination with a thermal heat pump:
 - Heat energy storage in the ground
 - Pre-heating of ground water
 - Heating of sole
- Hot water generation
- Supplementary heating
- Defrosting of snow and ice



Polyurethane frame

- 25 years manufacturer's guarantee for UV resistance

PV + Thermal

- up to 190 Wp PV
- 550 W/m² collector output

Easy mounting

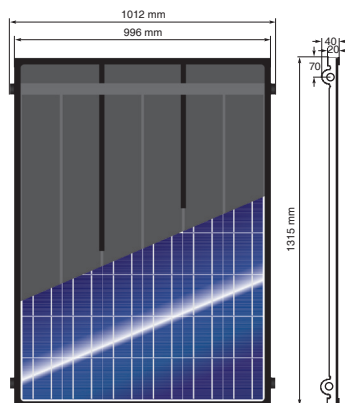
- via plug-in connectors

Cathodic dip coating (KTL finish)

High static load bearing capacity

Combined module WIOSUN PV-Therm

Standard Test Conditions (STC), defined as follows: Radiated Power 1000W/m² // Spectral density AM 1.5 // Cell temperature 25°C



Module Properties	
Maximum system voltage	1000 V
Output tolerance	-0/+3 %
Cell size	156 x 156 mm
Number of cells and type	48, polycrystalline, 8 x 6
Laminate size	990 mm x 1310 mm
NOCT (Nominal operating cell temperature)	48 °C ± 2 °C
Temperature coefficient I _{sc}	+ 0.04 % / °C
Temperature coefficient U _{oc}	- 0.35 % / °C
Temperature coefficient P _{MPP}	- 0.5 % / °C
External dimensions L x W x H	1315 x 1012 (996) x 20 mm
Weight	40 kg
Glas thickness	3.2 mm
Permissible module load	5400 Pa
Connection system	MC4
Product warranty	5 years
Performance warranty, electrical	90/80% - 10/25 years
Protection class	II
TÜV / ANSI / UL	IEC 61215 / IEC 61730 / 1703 i.P.

Thermal Properties	
Receptive surface	1.305 m ²
Connections	DN 15
Liquid capacity	3,83 l
Operating pressure	max 1.5 bar
Test pressure	max 2.5 bar
Flow rate	30 - 100 l/h and module
Delta T	approx. 5K at STC
Operating temperature	approx. -20 °C up to 75 °C
Idle temperature	75 °C
Thermal efficiency eta 0	71,5 %
Collector energy output	approx. 550 W/m ²
Steel thickness of heat exchanger	0,8 / 1,5 mm



			PVT180P	PVT185P	PVT190P
Peak power	P _{max} (STC)	Wp	180	185	190
MPP voltage	U _{MPP}	V	23.8	24.0	24.2
MPP current	I _{MPP}	A	7.56	7.71	7.85
Short circuit current	I _{sc}	A	8.32	8.49	8.65
Open circuit voltage	U _{oc}	V	28.56	28.80	29.04
Cell efficiency	%		15.41	15.83	16.27
Module efficiency	%		13.73	14.11	14.50

MADE IN GERMANY

WIOSUN®

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Obtainable via: