



COMBINED MODULE

PV-Therm

POLYCRISTALLINE

Hightech from the Allgäu

The WIOSUN® PV-Therm combination modules are manufactured in the Allgäu. With over 25 years of experience in photovoltaics, we offer high-tech products at fair prices. In all WIOSUN® modules only selected high-quality individual components are used.

Positive-only tolerance

You can count on our quality, because WIOSUN® delivers only modules with positive tolerance up to +4.99 Wp.

Efficiency of up to 30%

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.

Heat for free

In addition to the very easy installation, the combined engine by the association of photovoltaic and solar thermal energy is space-saving and economically advantageous. Additionally the thermal yield is financed by the feed-in remuneration for the photovoltaic.

5 year product warranty

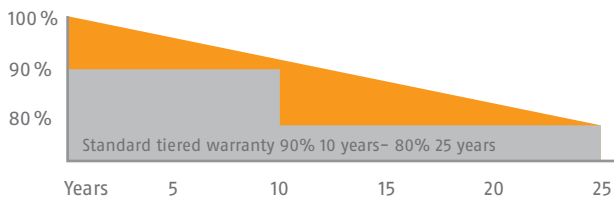
With the 5 year product warranty on the PVT-SERIES, as well as a 20 year performance guarantee, WIOSUN® photovoltaic modules are among the most reliably calculable components for efficient PV systems.



MADE IN GERMANY



5 YEAR WARRANTY



Added Value – Linear performance warranty from WIOSUN®



General

Cells	48 (6x8) polycrystalline	Cellsize	156 x 156 mm
Frame	Polyurethan, black	Front glass	3.2 mm Solarglass
Connection	none, 3 bypass-diodes	Wire	4 mm ² Solar cabel, 1300 mm length
Connector	MC4 compatible	Power tolerance	0 to +4.99 Wp

Electrical Datas (STC*)

MODULETYPE			PVT-190P	PVT-195P	PVT-200P
Nominal Power	P _{MPP}	Wp	190	195	200
MPP-Voltage	U _{MPP}	V	24.20	24.40	24.50
MPP-Current	I _{MPP}	A	7.85	7.98	8.05
Open-circuit voltage	U _{OC}	V	29.04	29.28	29.52
Short-circuit current	I _{SC}	A	8.65	8.80	8.95
Module efficiency	η%		14.50	14.88	15.26
Cell efficiency	η%		17.40	17.60	17.80

Thermal Datas

Receptive surface	1.305 m ²
Connections	DN 15
Liquid capacity	3.88 l
System pressure	max. 1.5 bar
Test pressure	max. 2.5 bar
Flow rate per module	30-100 l/h
Delta T	5K / STC
Operating temperature	-20 °C to 75 °C
Stagnation temperature	75 °C
Efficiency (η ₀)	71.5 %
Collector energy output (η ₀)	ca. 930 W _{th}
Thickness heat exchanger	0.8 / 1.5 mm

Electrical Datas (NOCT**)

MODULETYPE			163.59	166.89	169.99
Nominal Power	P _{MPP}	Wp	163.59	166.89	169.99
MPP-Voltage	U _{MPP}	V	23.99	24.19	24.38
Open-circuit voltage	U _{OC}	V	28.52	28.76	28.93
Short-circuit current	I _{SC}	A	7.12	7.25	7.39

Thermal Datas II

	not insulated	insulated
Collector efficiency (η ₀)	71.5 %	71.5 %
Heat loss coefficient b ₁ (T _m =T ₀)	22.89 $\frac{W}{m^2K}$	7.98 $\frac{W}{m^2K}$
Collector power output (T _m -T _u =5K)	781 W _{th}	878 W _{th}

Temperature coefficients

Temperature coefficients I _{SC}	+ 0.04 % / K
Temperature coefficients U _{OC}	- 0.34 % / K
Temperature coefficients P _{MPP}	- 0.48 % / K
NOCT	48 °C ± 2 °C

Limits

System voltage max.	600V / 1000V
Reverse current max.	24 A
Operating temperature	- 40 °C - 80 °C
Maximum load	5400 Pa/m ² = 550 kg/m ² (75 lbs/ft ²)
Safety class	II

Certifications and warranty

TÜV	IEC 61215, IEC 61730, 1703 i. p.
Product warranty	5 years
Performance warranty	linear 25 years

Mechanical Datas

Dimensions	1315 x 1012 (996) x 20 mm ±1mm 51.77 x 39.84 x 0.79 inch ±0.03inch
Weight	40 kg 88.18 lbs

All figures are according to DIN EN 50380.

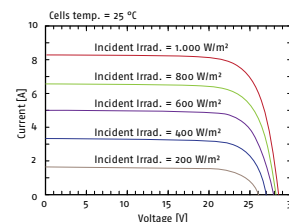
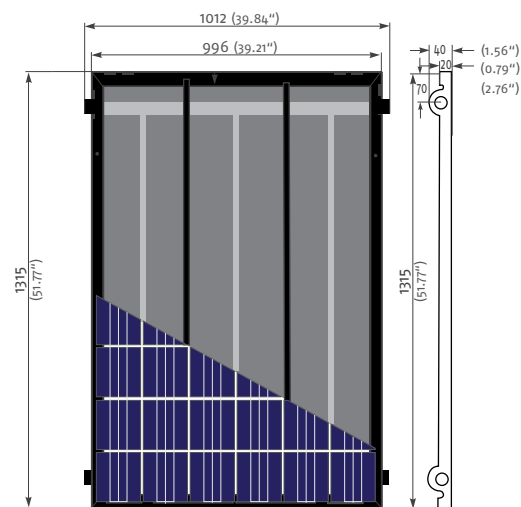
Tolerance at rated power 0 to +4.99 Wp. All other specifications ± 3%.

At a low irradiation intensity of 200 W/m² (AM 1.5, cell temperature 25 °C) 96 % of the STC module efficiency will be archived.

* Standard Test conditions (1000 W/m², AM 1.5, cell temperature 25 °C)

** Normal Operating Cell Temperature (800 W/m², AM 1.5, windspeed 1 m/s, ambient temperature 25 °C)

Technical drawing



Your WIOSUN® Dealer

