



COMBINED MODULE  
**PV-Therm**  
 MONOCRISTALLINE

### 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%

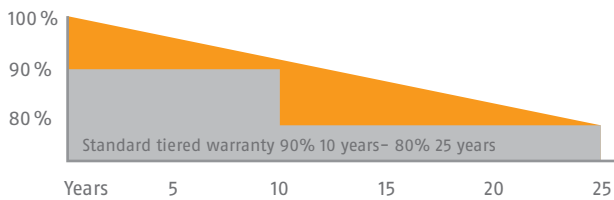
This combined module, with a surface temperature of up to 80° C, can be cooled down to a temperature below 20° C in a very short period of time using water at a temperature of 12° C. This equals an increase in efficiency of up to 30 percent.

### 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.



Added Value – Linear performance warranty from WIOSUN®



### General

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

### Electrical Datas (STC\*)

MODULETYPE			PVT-195M	PVT-200M	PVT-205M	Thermal Datas	
Nominal Power	P <sub>MPP</sub>	Wp	195	200	205	Receptive surface	1.305 m <sup>2</sup>
MPP-Voltage	U <sub>MPP</sub>	V	24.00	24.50	24.80	Connections	DN 15
MPP-Current	I <sub>MPP</sub>	A	8.10	8.20	8.30	Liquid capacity	3.88 l
Open-circuit voltage	U <sub>OC</sub>	V	29.60	30.00	30.40	System pressure	max. 1.5 bar
Short-circuit current	I <sub>SC</sub>	A	8.70	8.70	8.80	Test pressure	max. 2.5 bar
Module efficiency	η%		14.50	14.88	15.26	Flow rate per module	30-100 l/h
Cell efficiency	η%		18.43	18.63	18.84	Delta T	5K / STC

### Electrical Datas (NOCT\*\*)

MODULETYPE			PVT-195M	PVT-200M	PVT-205M	Thermal Datas	
Nominal Power	P <sub>MPP</sub>	Wp	167.59	170.89	174.09	Operating temperature	-20 °C to 75 °C
MPP-Voltage	U <sub>MPP</sub>	V	21.20	21.50	21.80	Stagnation temperature	75 °C
Open-circuit voltage	U <sub>OC</sub>	V	26.70	27.00	27.30	Efficiency (η <sub>0</sub> )	71.5 %
Short-circuit current	I <sub>SC</sub>	A	7.10	7.10	7.20	Collector energy output (η <sub>0</sub> )	ca. 930 W <sub>th</sub>
						Thickness heat exchanger	0.8 / 1.5 mm

### Thermal Datas II

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

### Temperature coefficients

Temperature coefficients I <sub>SC</sub>	+ 0.07 % / K
Temperature coefficients U <sub>OC</sub>	- 0.34 % / K
Temperature coefficients P <sub>MPP</sub>	- 0.46 % / K
NOCT	48 °C ± 2 °C

### Limits

System voltage max.	600V / 1000V
Reverse current max.	15 A
Operating temperature	- 40 °C - 80 °C
Maximum load	5400 Pa/m <sup>2</sup> = 550 kg/m <sup>2</sup> (75 lbs/ft <sup>2</sup> )
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.

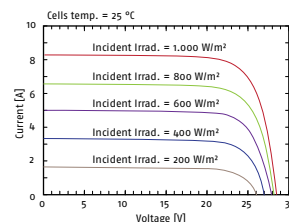
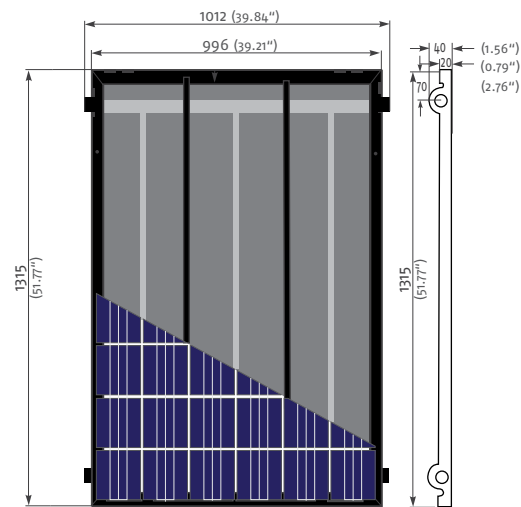
Tolerance at rated power 0 to +4.99 Wp. All other specifications ± 3%.

At a low irradiation intensity of 200 W/m<sup>2</sup> (AM 1.5, cell temperature 25 °C) 96 % of the STC module efficiency will be archived.

\* Standard Test conditions (1000 W/m<sup>2</sup>, AM 1.5, cell temperature 25 °C)

\*\* Normal Operating Cell Temperature (800 W/m<sup>2</sup>, AM 1.5, windspeed 1 m/s, ambient temperature 25 °C)

### Technical drawing



### Your WIOSUN® Dealer

