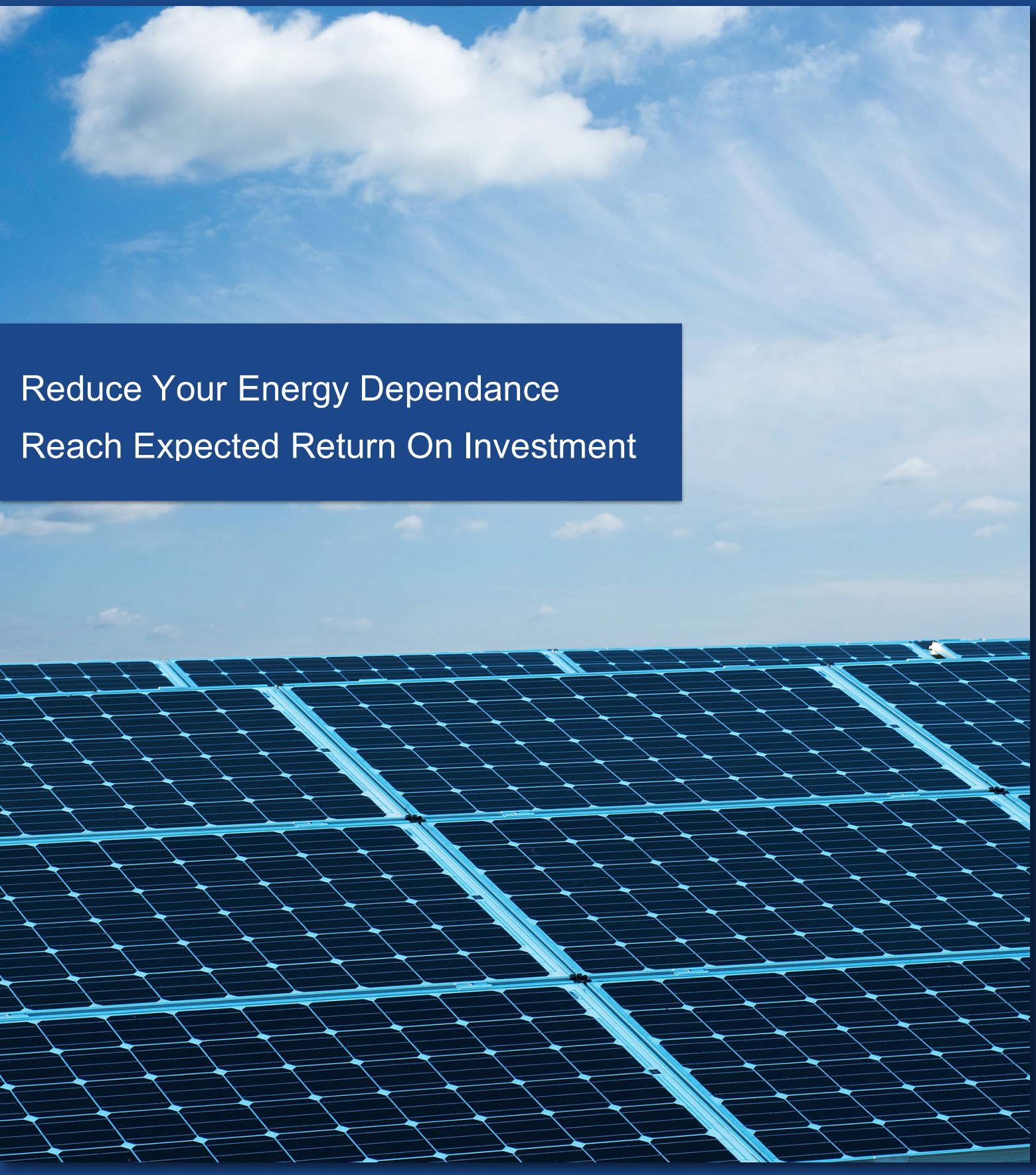


Welletron Hybrid – PhotoVoltaicThermal Panel

Meet your critical energy independence with the hybrid solution providing the highest electric efficiency and thermal energy

WELLETRON

Hybrid - PVT

Hybrid PVT panels

provide both electrical and thermal energy.

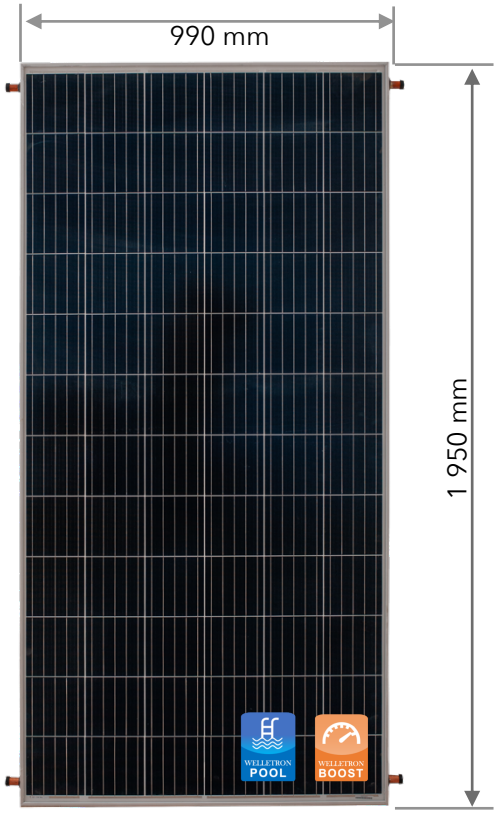
Thanks to the hybrid technology is traditional PV panel complemented, by patented thermal absorber. The thermal absorber is effectively cooling PV panel which resulting with increased PV performance, +18% in Electrical power as well as significantly longer lifetime of PV modules.

Thermal Absorber

The greater part of the solar energy is always absorbed by surface of PV panel and transformed to the heat energy, small part is reflected and the rest is converted to Electrical energy.

Thermal absorber with fluid circulation is therefore extremely beneficial because is effectively cooling the PV panel as well as is providing collected thermal energy (heat) for secondary usage, central heating, sanitary water heating, pool heating , heat pump etc.

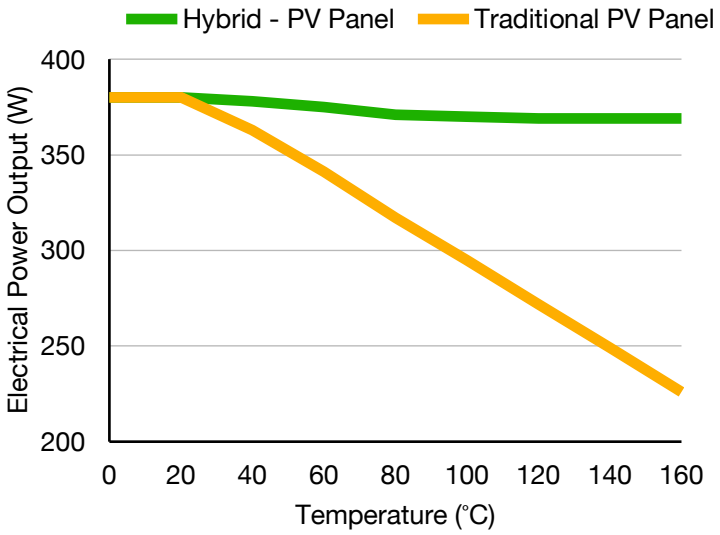
One system can provide all energy needs for residential, commercial or industrial buildings.



Suitable for aggressive cooling fluid (chloride or salted water)

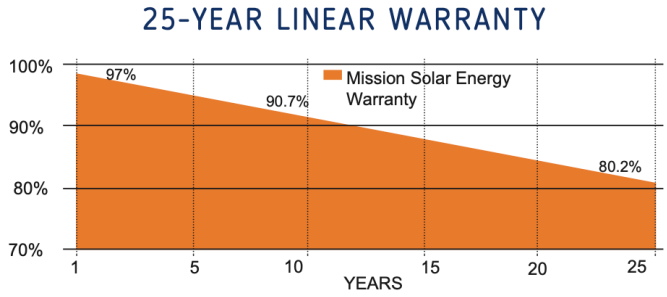
Patented Thermal absorber technology with the highest thermal collecting performance

Hybrid PVT vs PV traditional panel performance comparison



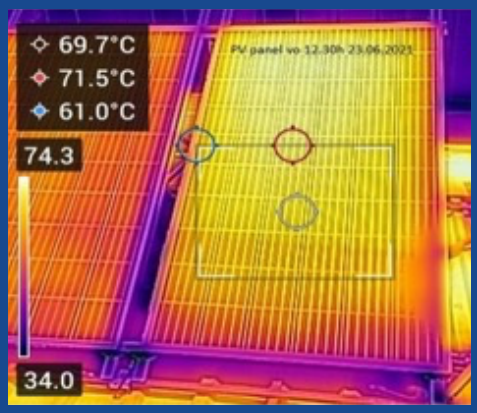
Hybrid PVT Technical characteristics

- Supremely low degradation
- Excellent low light performance
- Module efficiency up to 19.8%



Electrical Specification @ STC (AM, 5, 1000W/m2, 25°C)	
Dimensions	1950x990x35
Weight	31 kg
Type of frame	Aluminum
Front side	Low iron %, AR glass 3.2mm
Glass	Anodized AL with drainage holes / rigid anchored corners
Number of PV cells	72 (6x12)
Type of PV	Monocrystalline
Dimensions of PV cells	156x156 mm
Max. electrical Power P max	**380 Wp**
Power Output Tolerance	± 3%
Maximum Reverse Current	29.32 A
Maximum System Voltage	1,000 V (Application Class A)
Short Circuit Current Inc (A)	10.00
Open Circuit Voltage Voc (V)	48.95
MPP Current Impp (A)	9.45
MPP Voltage Vmpp (V)	40.24
Module Efficiency nm% (%)	19.8
Solar Cells	72 poly c-Si in series / 156mmx156mm (6+")
Junction Box / Connectors	Five bypass diodes / MC4 compatible / IP67
Certified Nominal Load (snow/wind)	5,400 Pa / 2,400 Pa
Impact resistance	Hailstone / dia 25mm / 83km/h (51mph)
*Current temperature Coefficient	+ 0,046%/˚C
*Temp. Coeff. Of P max (TK Pmax)	- 0,30 % / ˚C
*Temp. Coeff. Of Voc (TK Voc)	- 0, 39 % / ˚C
Gross area	1.93m2
Pic thermal power	**1020 W**
Input and output connection of thermal absorber	Copper pipe F22 mm
Type of medium	Propylene glycol/ Swimming pool water
Quantity of medium	1.7l
Absorber Sheet	Aluminum
Register	Copper pipe F6mm
Insulation	Stone wool 25 mm.

*Parameters of Temperature Coefficients are applicable to the PV module without cooling by Thermal Absorber
Full warranties in accordance with the warranty terms of the Welletron s.r.o. and installation manuals.
All unspecified tolerances are ~3%. Unspecified product properties remain under full discretion of Welletron s.r.o.



Traditional PV panel

Standard PV panel achieve during the summer temperature from 71-80`C (in some location up to 120`C).

This heat is reducing power performance drastically as well as resulting with the risk of lifetime reduction.

Hybrid - PVT panel

Temperature of PVT panel should not exceed 33`C during the summer. PVT panel always work in optimal temperature range which is providing +18% on Electrical Performance, Additional heat energy of 1040W/panel as well as long life-time. Hot water can be used for sanitary water, floor heating, pool etc.

Case Study

On the roof of residential building in Central Europe was installed 16 PVT panels with total El. Power 6.080W and 15.040W of Thermal power.

In summer 75 m³ swimming pool with 6 m³ jacuzzi are heated during the summer at 31`C without any additional heating system.

300 litters of sanitary water tank is heated at 55`C each morning

In Winter 210 m² of interior house living area is heated by floor water heating system which is significant support by the heat energy harvested by Welletron PVT system.

Return of investment was achieved within first 4,7 year of system operation.

Is in conformity with Directive : 2014/35/EC , 87/404/EEC

Norm Applied: 2009/105/EC
EN 1653:1997, EN 1759-3:2003
EN 1759- 3:2003/AC:2004
EN 61730-1:2018, EN 61730-2:2018

Year in which CE marking was issued : 2019