

E -PVT 2,0v2_320Wp – Hybrid collector

Collector E-PVT2,0v2_320Wp - is a combination of a flat solar collector and a photovoltaic module with polycrystalline silicon cells with a power of 320W. Solar thermal collector is responsible for conversion of solar radiation into heat Energy used for DHW (domestic hot water and CH (central heating). Whereas the photovoltaic module converts the solar Energy into electricity.

The temperature rise of each photovoltaic module reduces its generated electrical power. The power drops by about 0,5% for each kelvin temperature rise. The power characteristics given for PV cells in technical data refer to the module's standard temperatures, namely 25Celsius degrees.

By installing a thermal system in a hybrid PV-T collector, heat is received through a cooling liquid flowing through the collector. Through heat dissipation, the thermal system increases its' efficiency of converting solar radiation into electricity, and also supplies a large amount of thermal energy. The hybrid collector E-PVT 2,0v2_320Wp is a technological progres in increasing the efficiency of photovoltaic modules while converting solar energy into thermal and electric energy.

Advantages of a hybrid collector E-PVT 2,0v2_320Wp:

- Higher annual efficiency of electrical Energy production, in comparison to standard photovoltaic modules,
- The possibility of using the thermal part of collector to heat up DHW (domestic hot water) or supporting CH (central heating),
- Roof area saving and a significantly reduced mounting costs,
- Two in one! One device ensures production of electricity and heat,
- Lower investment cost for installations using PV-T collectors than for traditional devices (liquid thermal collectors and photovoltaic modules)

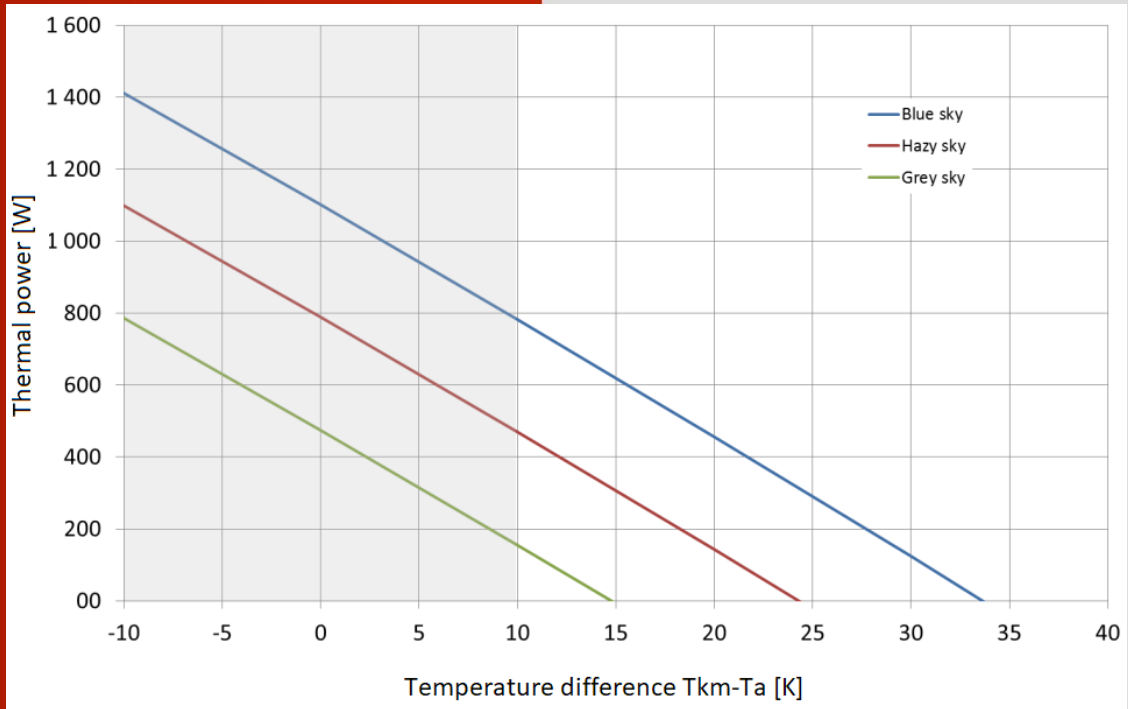
Collector E-PVT 2,0:	Symbol	Unit	Value
Width	A	mm	1000
Height	B	mm	2000
Depth	C	mm	62
Surface	S	m ²	2,0
Weight	m	kg	37
Housing	Patented aluminium profile		

Thermal parameters

Peak power (at 1000W/m2)	Q	W	1100
Absorber type	Aluminum exchanger Roll-Bond		
Aperture surface	S _n	m ²	2,0
Width	a	mm	1000
Height	b	mm	2000
Collector efficiency	η	%	56,7
Coefficient	a1	W/(m ² K)	19,65
Coefficient	a2	W/(m ² K ²)	0,018
Coefficient	a3	Ws/(m ³ K)	2,294
Coefficient	a4	-	0,42
Coefficient	a5	-	-
Coefficient	a6	s/m	0,015
Coefficient	a7	s/m	0,004
Coefficient	a8	W/(m ² K ⁴)	0
Max.work pressure	P _{max}	bar	6
Max.work temperature	t _{max}	°C	85
Liquid capacity	V	dm ³	1,2

Electrical parameters

Peak power (at 1000 W/m ²)	P _{max}	W	320
Type of cells	Polycrystalline		
Number of cells		Pcs	72
Rated current	I _{mpp}	A	8,60
Short-circuit current	I _{sc}	A	9,15
Nominal voltage	V _{mpp}	V	37,25
Open-circuit voltage	V _{oc}	V	45,20
Warranty for a hybrid collector	5 years		
Warranty for photovoltaic module	10 years		



Key:

T_{km} - average coefficient temperature

T_a -environment temperature

G- solar radiation intensity

