

flat-plate  
thermal  
collector

# TS 400

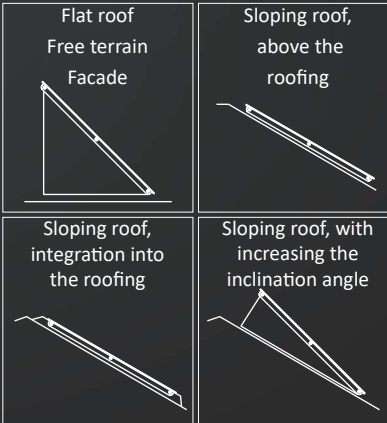
The TS 400 solar collector is the only flat-plate vacuum collector in the world. This unique construction allows its deployment in the most extreme conditions, ranging from hot deserts to high mountain regions.

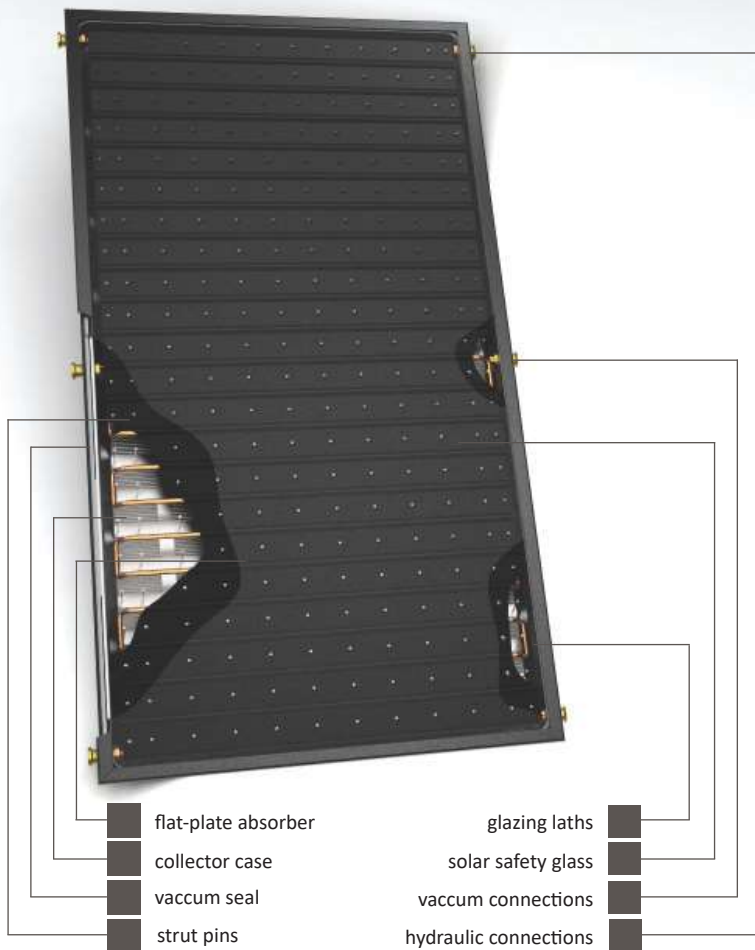
It is suitable particularly for industrial and various other special applications, including a combined operation of solar systems and heat pumps.

## Why choose TS 400?



Unique flat-plate vacuum collector with exceptional thermal power output. Suitable for combined operations of solar systems and heat pumps.





### Flat-plate vacuum collector TS400:

Flat-plate vacuum collector designed for special applications where higher output temperatures of heat-transfer medium or higher energy gain during cold periods of the year are required (e.g. combination with heat pumps, industrial applications, etc.).

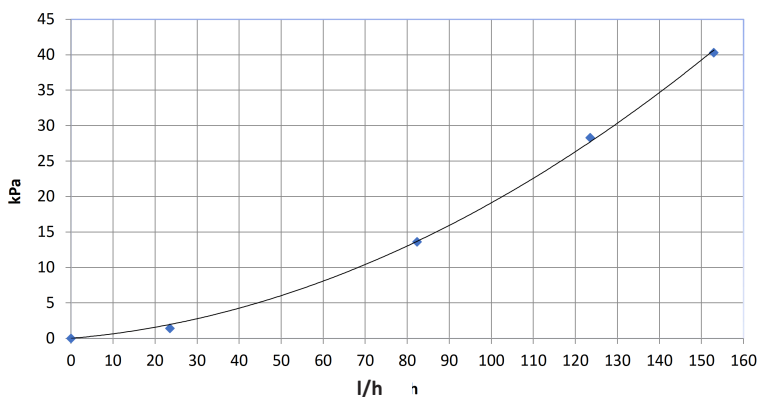
Its thermal insulation is provided by vacuum or krypton. It is designed for solar systems with circulating pumps. It is installed in vertical position. Collectors are connected in parallel to each other. Maximum 10 collectors can be connected in one row.

Collector TS400 is produced in the following variants:

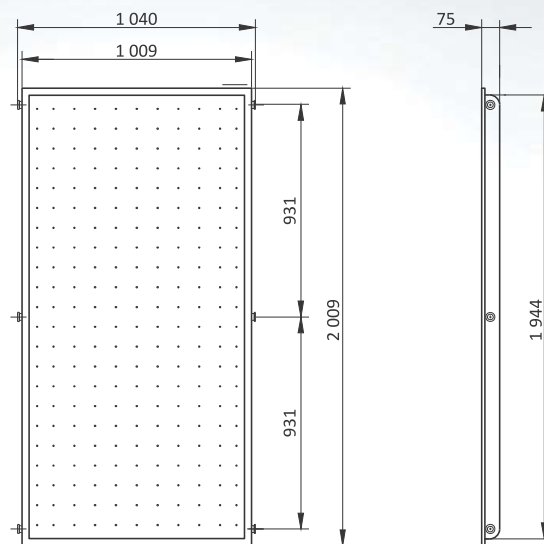
- with flanged connections (connection to solar circuit is provided by quick couplers  $\varnothing$  40 mm)

<b>TS400</b>	with flanged connections	S1617
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**TS400 Graph: Pressure Drop (kPa) vs Flow Rate (l/h)**  
Medium: Thesol (Propylene glycol 50%) Temperature: 50 °C



### Dimensions:



### Technical parameters :

<b>Dimensions</b>	1 009 x 2 009 x 75 mm
<b>Gross area</b>	2,031 m <sup>2</sup>
<b>Absorption area</b>	1,7 m <sup>2</sup>
<b>Aperture area</b>	1,85 m <sup>2</sup>
<b>Linkage dimensions</b>	1 040 mm
<b>Weight</b>	45,3 kg
<b>Liquid content</b>	1,7 l
<b>Max. operation pressure of heat transfer liquid</b>	600 kPa
<b>Recommended flow rate of heat transfer liquid</b>	30-100 l/h per one collector
<b>Connections</b>	• flanged connections ( $\varnothing$ 40 mm)
<b>Thermowell</b>	for sensor $\varnothing$ 6 mm
<b>Cover glass</b>	solar safety glass, thickness 4mm
<b>Collector case</b>	stamping made of non-corrosive Al-Mg sheet
<b>Thermal insulation</b>	Vacuum (100 Pa)
<b>Selective absorber coating</b>	ALOX (black)
<b>Solar absorptivity <math>\alpha_{AM1.5}</math></b>	95%
<b>Thermal emissivity <math>\epsilon_{82^\circ C}</math></b>	13% ALOx
<b>Optical efficiency</b>	86%- by EN ISO 12975-2 72%- by EN ISO 9806
<b>Recommended operation temperature</b>	bellow 100°C
<b>No-load temperature (1000 W/m<sup>2</sup>, 30°C)</b>	230°C
<b>Max. thermal power output (1000 W/m<sup>2</sup>, 30°C)</b>	1 464 W



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