

# Genersys 1850 Super Hot Flat Plate Vacuum Solar Collector



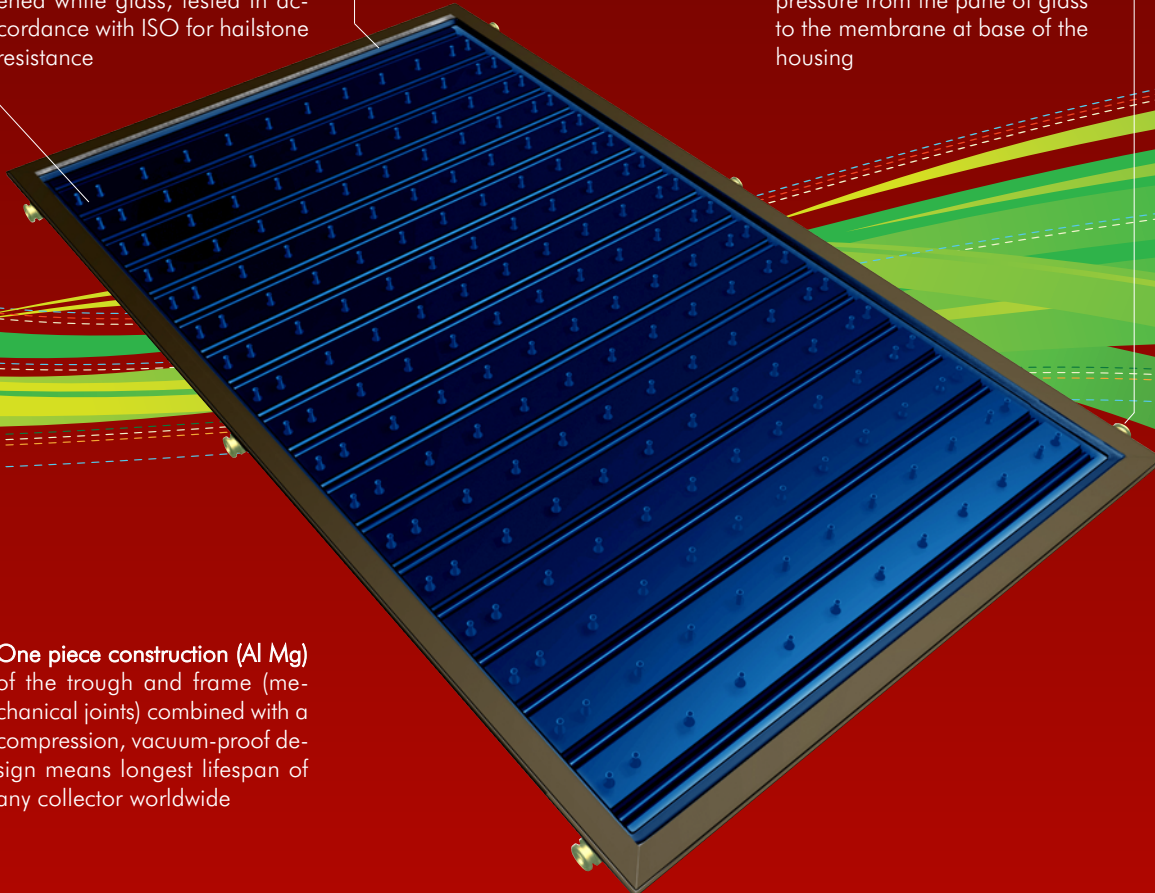
*The World's only panel combining the advantages of both flat plate aesthetics and vacuum technology, intended for Industrial and Commercial use.*

✓ **Low-reflection transparent, special solar glass**, consisting of thermically pre-stressed, hardened white glass, tested in accordance with ISO for hailstone resistance

✓ **Surrounding frame** with integral groove to seal the collector to roof join

✓ **High temperature-resistant**, elastic support elements to absorb and transmit atmospheric pressure from the pane of glass to the membrane at base of the housing

✓ **Patented connection clamp** for pressure sealed link up to adjacent collector and system piping without soldering or welding



✓ **One piece construction (Al Mg)** of the trough and frame (mechanical joints) combined with a compression, vacuum-proof design means longest lifespan of any collector worldwide

✓ **Absorber** with plated, highly selective, titanium oxide coating in thin layer technology for low loss light-heat conversion with quick transfer of heat to heat transfer pipe.

✓ **Evacuation connection** to create and maintain vacuum. Arrays of Genersys 1450 panels can be evacuated and re-evacuated from inside property without having to access the roof

✓ **Meandering heat transfer pipe** consisting of compression-proof copper piping

✓ **Surrounding vacuum sealing ring** made of superior heat-resistant and age-resistant material

✓ **Integrated roof piping** allowing erection of collector panels so as to accommodate Tichelmann piping system



The **Genersys 1850 solar panel** is a world leading flat-plate, vertically-mounted type collector without collection pipes, intended for applications in systems equipped with circulating pumps. It consists of a one-piece forged metal casing to which safety solar glass is fixed by means of a frame made from non-corrosive aluminium profile.

This super hot vacuum flat plate is designed for appli-

cations which need constant high heat demand.

Stamped from a single Al-Mg sheet, the absorber fins have a high selective conversion layer which fold around the meandering copper pipe. The flanged connection pipes are connected to the hydraulic circuit by patented connection clamps. The collectors can be connected in series, up to 10 panels in total.

Krypton can be used as a replacement of the residual gas inside the collector to enhance cold weather performance.

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Krypton Inside™

## Genersys 1850 Specifications

Cover glass:	4mm safety solar ESG white glass
Connection:	Patented connection clamp.
Casing:	Non-corrosive Al Mg sheet.
Thermowell:	4mm or 6mm $\varnothing$ sensor.
Header tube:	Cu 18 x 0.8mm
Absorber tube:	Cu 10 x 0.5mm
Thermal insulation:	Vacuum 100 Pa
Conversion layer:	Selective coating
Hydraulic circuit:	Meandering
Solar absorptivity: $\alpha_{M1.5}$	Min. 0.94
Thermal emissivity: $\varepsilon_{820C}$	Max. 0.16
Optical efficiency:	95.00 $\pm$ 0.5%
Emittance:	5%
Operating temperature:	Above 100°C
Maximum operating temp:	150°C
Recommended operation:	4.5 bar
Maximum operating pressure:	6 bar
Total liquid capacity:	1.57 Litres
Recommended transfer fluid:	Water - Glycol
Recommended mix ratio:	50 / 50 (%)
Recommended flow rate:	20-120 (Lh <sup>-1</sup> )

### The casing

- created from a single sheet of non-corrosive Al Mg sheet, no welds
- sea-water resistant

### The Absorber

- made of corrosion-resistant aluminium
- corrosion-proof and pressure-proof copper piping for fluids

### The glass covering

- safety glass for security against breakage, tested for hailstone-resistance
- maximum light-transmitting properties in excess of 95% due to high degree of transparency

### Modular construction in line with architectural requirements

- attractive appearance due to integrated collection piping
- straightforward collector erection even for attic conversions

### Energy and environmental protection

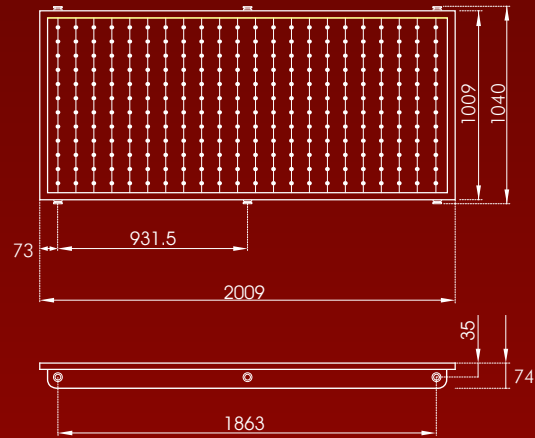
- The Genersys 1850 saves the energy required for its manufacture in approximately 2 years.



Certified and independently tested to comply with **European Standards EN 12975 Parts 1 & 2**. Certification documentation is available on request.

## Genersys 1850 Dimensions

Width x Height x Length:	1040 x 2009 x 74mm
Gross area:	2.031m <sup>2</sup>
Weight:	45.3kg
Fluid weight:	1.57kg
Combined weight:	46.87kg
Absorber surface:	1.698 m <sup>2</sup>



## Genersys Quality

Genersys solar panels are a mature technology, manufactured to the highest standards in our state of the art plant in Slovakia.

Genersys solar panels are particularly suitable for integrated roof installations where the panel would become an integral part of the building. Genersys solar panels can also be installed on-roof and on racks or A-frames with a wide range of fixing kits available to our installers.

With a life expectancy of around thirty five years and requiring no maintenance, the Genersys 1850 is both an attractive and high quality renewable energy solution for water heating, space heating, pool heating and air conditioning in combination with chillers. They will significantly reduce bills and at the same time substantially save carbon emissions.

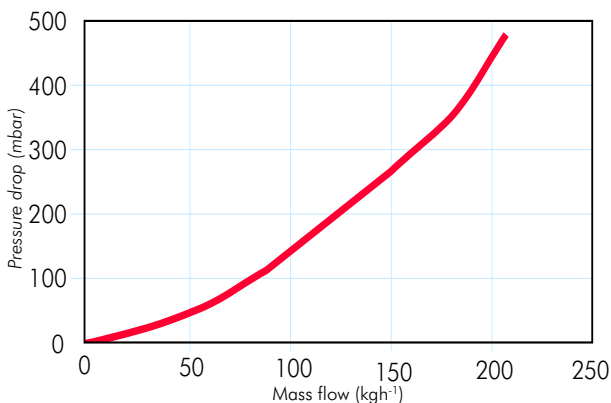
Genersys solar technology are used in over 55 countries, providing clean, carbon free energy to a wide range of requirements including homes, schools, factories, sports stadia and swimming pools.

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## Genersys 1850 Pressure loss



## Performance curve ( $G^*_{Norm} = 1000 \text{ Wm}^{-2}$ )

