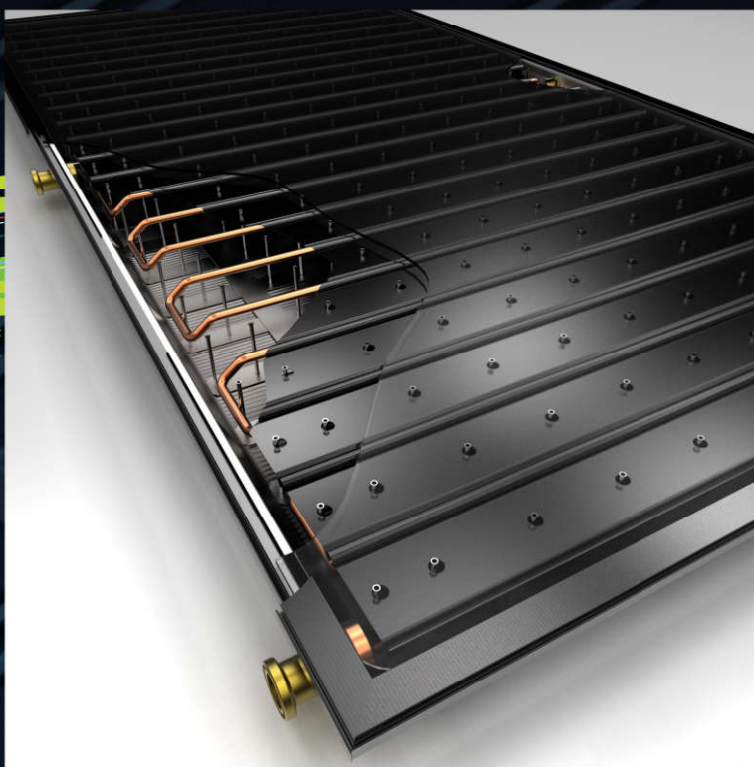


KSA Sea Sand Resistant Solar Engineering

(Maximum 224°C or 374°F)

- ✓ 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
- ✓ Stagnation temperature Maximum 224°C (at standard testing conditions -30°C, 1000W/m², IAM = 1.5). This stops overheating and the need for a heat dump
- ✓ Mechanical connection between the absorber plate and heat transfer pipework in the panel (No welding, soldering, brazing, etc.). The absorber is folded around the panel pipework
- ✓ One piece construction (Al Mg) of the trough and frame (mechanical joints) combined with a compression, vacuum proof design means long panel lifespan
- ✓ Absorber with plated, highly selective, aluminum 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. The panels can be evacuated and re-evacuated from inside property without having to access the roof
- ✓ Integrated roof piping which maintains the building aesthetics
- ✓ Surrounding vacuum sealing ring made of superior heat resistant and age resistant material. The sealed panel protects the absorber from sea salt & sand/dust corrosion as well as improving the efficiency of the panel
- ✓ Meandering heat transfer pipe consisting of compression proof copper piping



The KSA Sea Sand Resistant

Vaccum panel is a world leading flat plate, vertically mounted 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.

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 weather performance.



www.hotsolarwater.com



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. 0.95
Thermal emissivity: ε_{820C}	Max. 0.13
Optical efficiency:	90.00 \pm 1%
Operating temperature:	Above 100°C
Stagnation temp:	224°C or 374°F
Recommended operation:	4.5 bar
Maximum operating pressure:	6 bar
Total liquid capacity:	1.60 Litres
Recommended transfer fluid:	Water - Glycol
Recommended mix ratio:	50 / 50 (%)
Recommended flow rate:	20-120 (Lh ⁻¹)

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 90% due to high degree of transparency

Modular construction in line with architectural requirements

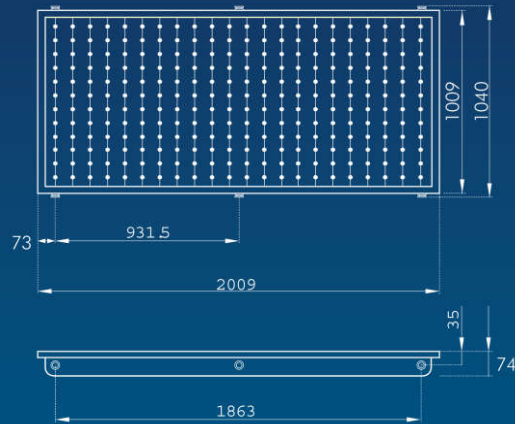
- attractive appearance due to integrated collection piping
- straightforward collector erection even for attic conversions

Energy and environmental protection

- The KSA panel saves the energy required for its manufacture in approximately 2 years.

Dimensions

Width x Height x Length:	1040 x 2009 x 74mm
Gross area:	2.031 m ²
Weight:	45.3kg
Fluid weight:	1.6kg
Combined weight:	46.9kg
Absorber surface:	1.70 m ²



Quality

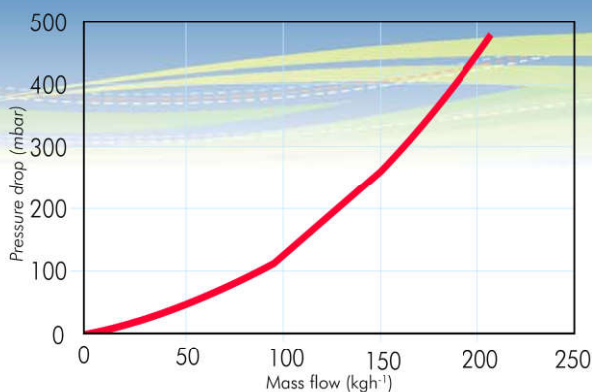
Thermosolar panels are a mature technology, manufactured to the highest standards in our state of the art plant

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

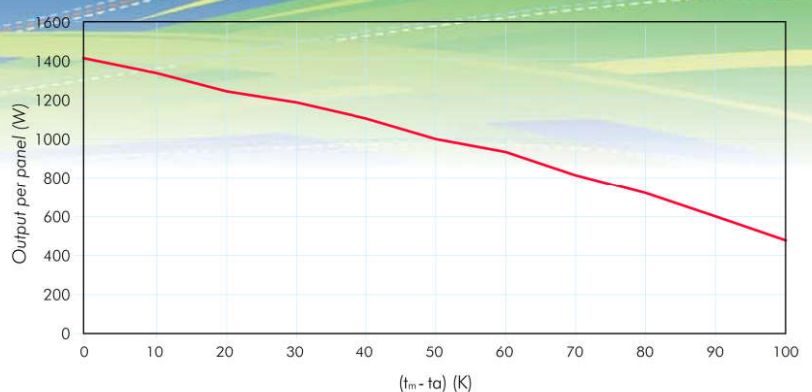
With a life expectancy of around thirty five years and requiring limited maintenance, the panel is both an attractive and high quality renewable energy solution for water heating, space heating, pool heating and air conditioning in combination with chillers. They will significantly reduce bills and at the same time substantially save carbon emissions.

Thermosolar technology are used in over 69 countries, providing clean, carbon free energy to a wide range of requirements including homes, schools, factories, sports stadia and swimming pools.

Pressure loss



Performance curve ($G_{Norm} = 1000 \text{ Wm}^{-2}$)



Thermosolar KSA Sea Sand Resistant
Solar Keymark Certification Ref: TSU 002 - 20/D (Vertical Panel)

Thermosolar

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