

Luxury invisible solar water heating

Avoid the ugly appearance of
solar panels

Demand the 100% invisible HelioPower

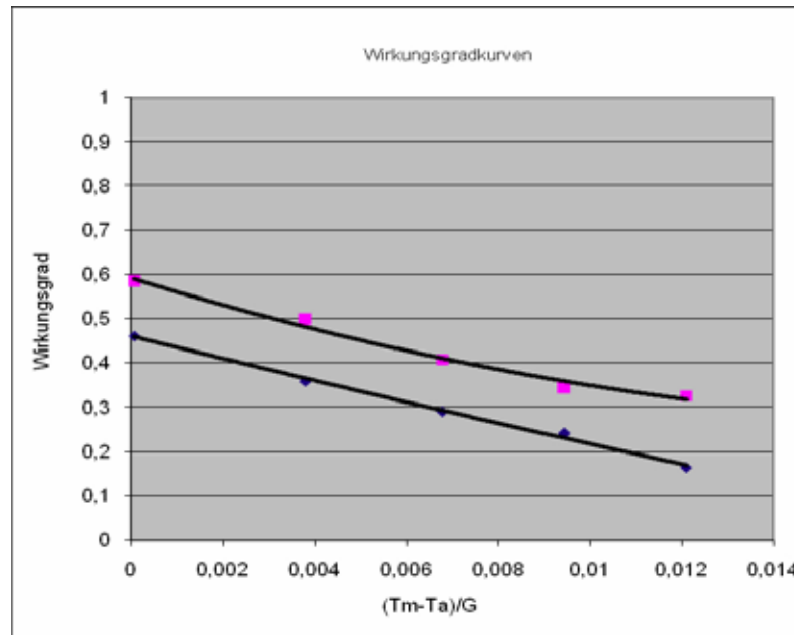
Sold globally by HelioPower International



Heat up-take - general performance in Europa

Harvesting energy from the sun with a 100% invisible solar panel is somewhat different as there is no visible glass shielding. Therefore the system efficiency is highest with minimum wind speed and lower system maximum temperature outlet. In practise such is compensated by a larger solar panel surface area. Depending on the latitude the system efficiency are ranging from 25 - 50%. The 40-50°C outlet water temperature is suitable for pre-heating hot tap water, floor heating, pool heating, etc.

The system will never over-heat and do hereby offer a high degree of safety in the case of power fall out or lack of being able to deliver the harvest power.



Test performed at Solar Institute Jülich, Germany spring 2008 on both bitumen coating and with natural slates on roof in 10 meter high and quite some wind. Chart above show results based on DIN EN 12975-2 norm. The purple describe the efficiency with bitumen coverage and the blue with slates.

Global irradiation	average 960 W/m ²
Ambient temperature	282,7 K
Wind speed	3,6 m/s
Mass flow	0,021 kg/s
Water inlet temperature	291,5 K
Collector area	2,55 m ²
Latitude	50°



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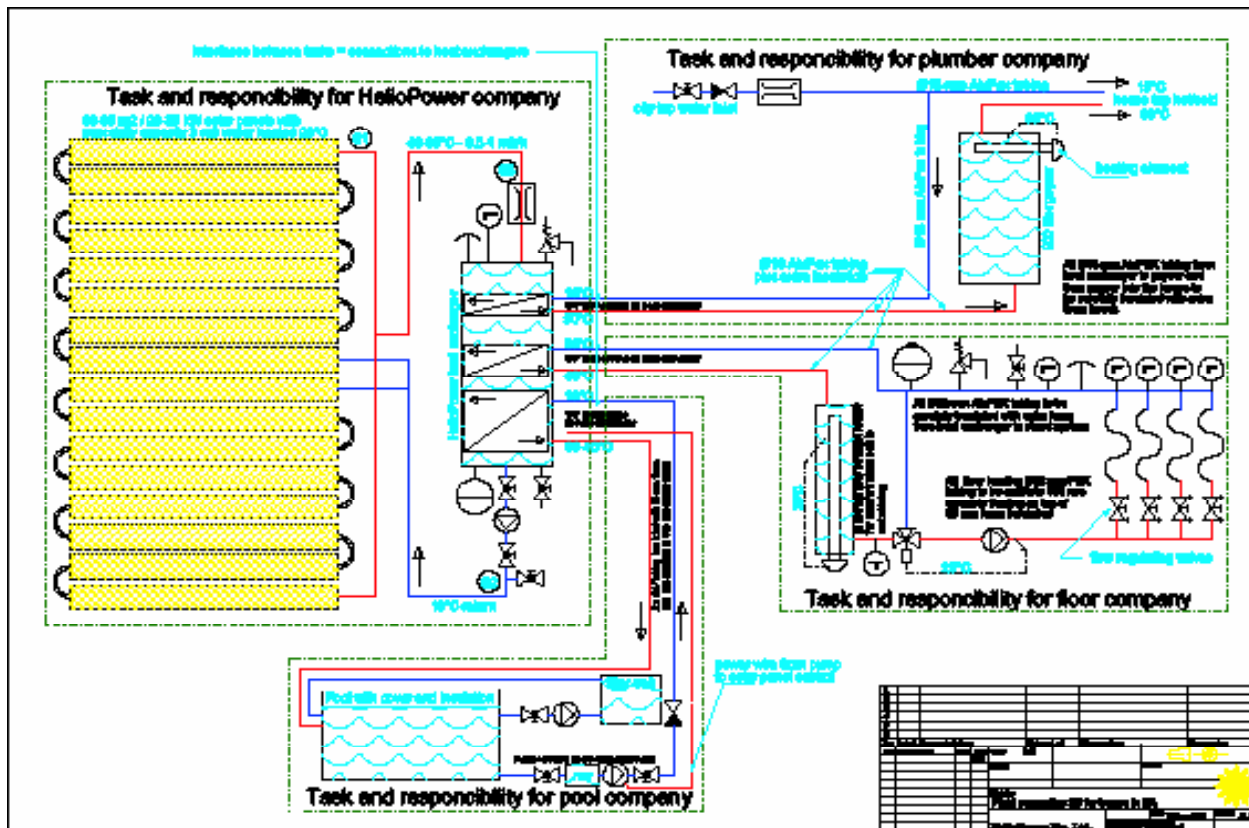


Heat up-take - general performance in ZA

Performance is depending on latitude, angle and location

- Irradiated power from the sun app 1000 W/m² - ~2,200 kWh/m²/year
- System delivered power 250-400 W/m²
- 50 m² system total power 20-25 kW
- Max roof surface temperature 75°C - typically now reduced to max 40°C
- Max water outlet temperature potentially 55-65°C
- System include 30 mm insulation in the cassettes
- water cooled roof reduces power consumption to air-condition

50 m² system with 20-25 kW output for home and pool heating



Natural slate roof design - glue fastening -

Designed for and in production in South Africa.

Extruded aluminum metal profiles incorporate fluid transferring channels and further covered with foam insulation on the rear side. The cassette is floating between the battens and forced into close contact with the slates by stainless steel sheet springs located on the rafters. The design insure optimum thermal contact between the back sides of the climate shield and the profiles.

Appropriate description such as:

- a truly invisible solar water heating system integrated fully into a roof
- a roof with controlled surface, climate shield temperature
- a roof with very long lasting invisible solar panel for harvesting solar power
- a roof with build-in heat exchanger to reduce the building temperature !!
- a solar power water heating system fully made of metals

We could further express the potentials like this:

- The dark roof is now not a problem in keeping any building cool!
- Harvest energy from the otherwise hot roof and save energy and emissions!
- Avoid degrading the beautiful view of a natural slate roof
- Patented technology



Natural slate roof design - nail fastening -

Designed for and in production in Scandinavia

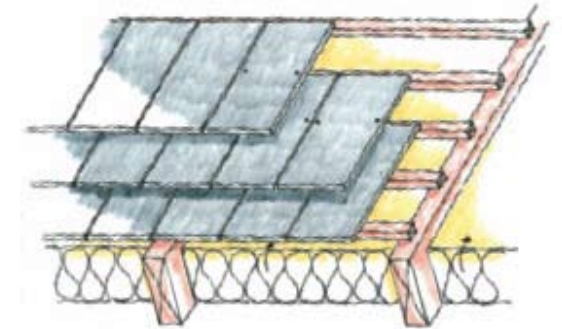
Extruded aluminum metal profiles incorporate grooves holding fluid transferring hoses on the top side and further covered with foam insulation on the rear side. The cassette is floating between the battens and forced into close contact with the slates by stainless steel sheet springs located on the rafters. The design insure optimum thermal contact between the back sides of the climate shield and the profiles.

Appropriate description such as:

- a truly invisible solar water heating system integrated fully into a roof
- a roof with controlled surface, climate shield temperature
- a roof with long lasting invisible solar panel for harvesting solar power
- a roof with build-in heat exchanger for reducing the building temperature !!
- stainless steel or plastic hoses for simple installation

Further potentials and benefits:

- No special skills or tools needed for mounting the solar panels
- No special nails, slates, battens are needed - all standard materials
- Reach 60°C water storage hot tap outlet temperature
- High-tech, expensive cost solar panel concept
- Patented technology



Natural slate roof design - hook fastening -

Designed for Spain, France and similar countries

Shaped metal sheet profiles incorporating a channel for housing a fluid transferring tube. The metal sheet profiles is mechanically secured via: 1. being laminated between the slates; 2. nails into the battens; 3. the traditional slate hooks.

Appropriate description such as:

- a truly invisible solar water heating system integrated fully into a roof
- a roof with controlled surface, climate shield temperature
- a roof with long lasting invisible solar panel for harvesting solar power
- a roof with build-in heat exchanger to reduce the building temperature

Further HelioPower potentials and benefits:

- No special skills or tools needed for mounting the solar panels
- No special nails, slates, battens are needed - all standard materials
- Reach 60°C water storage hot tap outlet temperature with special storage system
- Low-cost high-tech invisible solar panel concept
- The dark roof is now not a problem in keeping any building cool!
- Patented technology

