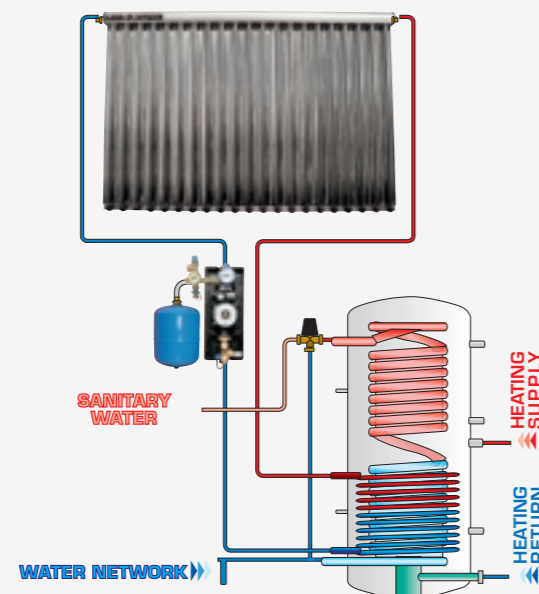


Complete solar systems for sanitary water and heating integration - serie TOTALENERGY

A complete solar system for sanitary hot water production and underfloor heating integration. The innovated combined tank series SSP SOLAR cylinder has been manufactured for high heating distribution and a high level of insulation to prevent the waste of solar energy.

TOTALENERGY

COMPONENTS	TOTALENERGY 500	TOTALENERGY 800	TOTALENERGY 1000
Solar Collector SP21 3,76 m ² (pc)	2	3	4
Expansion vessel 10 bar (l)	50	50	80
Solar Station Low flow from 2 up to 16 l/min (pc)	1	1	1
Antifreezing fluid (kg)	50	50	80
Solar Control with sensors (pc)	1	1	1
Combined tank SSP Solar (l)	500	800	1000
Fitting with manual air vent (pc)	1	1	1
Thermostatic valve 30/65°C (pc)	1	1	1



Natural circulation system for sanitary water production - serie HEAT PIPE CPC DIFFUSION

Using this exclusive system, the quantity of natural circulation of domestic water heating increases considerably compared with the traditional systems. This aspect is remarkably emphasized during unfavourable weather periods or in less favourable climatic areas.

The perfectly constructed modular system allows an easy installation of the component's kit, also in series. The high quality standards offered by the system are completed by the stainless steel cylinder, welded using plasma technology, and its high quality insulation. The transport and the storage are facilitated by the compact packaging size, that consents also an easy pallettization.

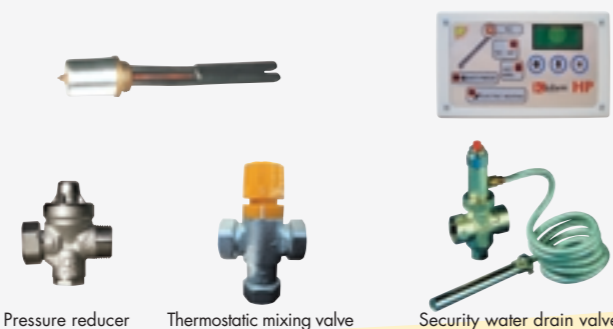


TECHNICAL CHARACTERISTICS	HEAT PIPE 110 CPC DIFFUSION	HEAT PIPE 170 CPC DIFFUSION	HEAT PIPE 220 CPC DIFFUSION
Aperture area (m ²)	1,42	2,20	2,84
Tanks capacity (l)	110	170	220
Tanks material	stainless steel AISI 316 L		
Tanks insulation (mm)	77,5		
No. of vacuum tubes (pcs)	9	14	18
Thermal losses coefficient (W/K)	1,15		
Dimensions: width x height x length (mm)	1250 x 1530 x 1720	1800 x 1530 x 1720	2240 x 1530 x 1720
Weigh (kg)	70	85	115

ACCESSORIES:

- electrical resistance and differential regulation, which ensure an efficient antifreezing function and maintains the desired temperature inside the cylinder.

- pressure reducer from 1,5 up to 5 bar (it is supplied pre setted at 3 bar)
- specific thermostatic mixing valve for high temperatures
- security thermal water drain valve, supplied with sensor and immersion covering (pre setted at 97°C)



Pressure reducer

Thermostatic mixing valve

Security water drain valve



Rev. 01 del 31.05.2006

biella

Kloben sas si riserva di variare in qualunque momento e senza preavviso i propri prodotti nell'ambito di miglioramenti senza pregiudicare le caratteristiche essenziali. Questo prospetto pertanto non può essere considerato come un contratto nei confronti di terzi

SOLAR COLLECTORS & COMPLETE SYSTEMS



Kloben
Heizsysteme

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Kloben
Heizsysteme

A SOURCE OF CLEAN ENERGY

Utilising solar energy is one way of actively participating in maintaining a clean environment. Fossil energy sources in the form of coal, petroleum and gas are the major contributors to the increase in environmental pollution. KLOBEN's vacuum-sealed solar collectors are high performance energy absorbers, and represent a real contribution towards making solar energy the primary energy source for future generations.



A SUSTAINABLE ENERGY SOURCE WITHOUT LIMITS

Unlike fossil fuel sources, solar energy is available in unlimited quantities. Using techniques perfected at KLOBEN, even diffused or unfavourably angled sunlight achieves optimum results.

LOW COSTS

Research and development in making more efficient solar appliances are at centre of the KLOBEN principles. Within a short period of time, the purchasing of vacuum – sealed solar collectors will save you money; just check your next gas bill for proof.

SOFTWARE

KLOBEN offers a software service to sector professionals, which determines:

- Number of solar collectors
- Boiler capacity
- Type of thermal regulation necessary
- List of required materials and their quantities – print out of technical specifications.

This software comes equipped with all installation and user instructions and can be delivered by the KLOBEN commercial network.

SUPPORT

A qualified technical office and a commercial network are on stand by, ready to satisfy any client needs, whether during the planning or installation phases.



SOLAR COLLECTORS CPC DIFFUSION

The solar collector is formed by a series of borosilicate glass tubes in a double cavity, soldered at the extremes to render the internal cavity a vacuum. This technology allows the best efficiency during the whole year, even by cold outside temperatures or low solar irradiation. It has low iridescence, and a total reflective co-efficient higher than 90% using the Compound Parabolic Concentrator system.



N. of Tubes	7 PCS	14 PCS	21 PCS
Thermal efficiency/ η_{0a}	63,20 %	63,20 %	63,20 %
Thermal losses/ a_1	0,936 W/m ² K	0,936 W/m ² K	0,936 W/m ² K
Thermal losses/ a_2	0,0076 W/m ² K ²	0,0076 W/m ² K ²	0,0076 W/m ² K ²
Max overpressure (bar)	10,0	10,0	10,0
Length, Width, Height (mm)	1605 x 808 x 140	1605 x 1580 x 140	1605 x 2348 x 140
Total area (m ²)	1,29	2,53	3,76
Aperture area (m ²)	1,10	2,20	3,30
Weight (empty - Kg)	22,5	45	67,50
Volume of fluid (l)	1,02	2,05	3,07

Solar controls KB

The solar controls series KB are linked to thermal sensors fitted in the collector and the top and bottom of the solar cylinder. This enables the KB to automatically control the solar system ensuring the highest operating efficiency. There is the facility to control up to three circuits.



Heat transfer fluid

Ready to use reversibly evaporisable special pre-mixed heat transfer fluid for vacuum solar installations. It is a biodegradable mixture based on propylene glycol, water and anti-corrosion inhibitors (ASTM D 1384). It assures the highest thermal efficiency preventing the surfaces of heat exchangers from becoming fouled.



Solar stations

Compact return branch module for solar energy systems. Pre-assembled, insulated and ready for installation, it is supplied with all the necessary components. Available in two different models, in relation to the solar plant's dimension.

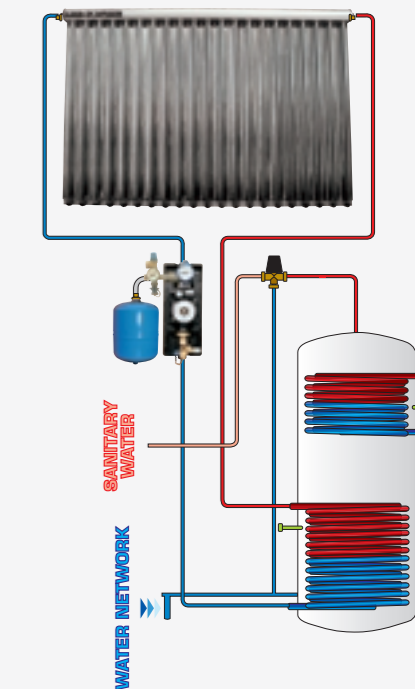


KLOBEN - COMPLETE SOLAR SYSTEMS

Complete solar systems for sanitary water production – serie GRAND SOLEIL

The GRAND SOLEIL system consists of a sealed circuit between solar collectors and the hot water cylinders with two coils (one for the solar circuit, another for the boiler).

COMPONENTS	GRAND SOLEIL						
	GRAND SOLEIL 200	GRAND SOLEIL 300	GRAND SOLEIL 400	GRAND SOLEIL 500	GRAND SOLEIL 750	GRAND SOLEIL 1000	GRAND SOLEIL 1500
Solar collector SP14 2,53 m ² (pcs)		2	1				
Solar collector SP21 3,76 m ² (pcs)	1		1	2	3	4	6
Expansion vessel 10 bar (l)	18	24	35	35	50	80	105
Solar Station Low flow from 2 up to 16 l/min (pc)	1	1	1	1	1	1	1
Antifreezing fluid (kg)	30	30	30	30	50	70	90
Solar Control with sensors (pc)	1	1	1	1	1	1	1
2 coils tank (l)	200	300	400	500	750	1000	1500
Fitting kit with manual air vent (pc)	1	1	1	1	1	1	2
Thermostatic valve 30/65°C (pc)	1	1	1	1	1	1	1



Complete solar systems for sanitary water production – serie ECO ENERGY

With the serie ECO ENERGY Kloben wanted to offer a solution for hot water systems, completely independent from mains electric, thanks to a 12 volt pump supplied by 60 W photovoltaic collector.

COMPONENTS	ECO ENERGY		
	ECO ENERGY 150	ECO ENERGY 200	ECO ENERGY 300
Solar collector SP14 2,53 m ² (pcs)	1		
Solar collector SP21 3,76 m ² (pcs)		1	1
Photovoltaic modul 60 W (pc)	1	1	1
Solar control ECO MASTER with sensor (pc)	1	1	1
Expansion vessel 10 bar (l)	18	24	24
Solar station ECO with 12V pump and flow meter from 2 up to 16 l/min (pc)	1	1	1
Antifreezing fluid (kg)	20	20	20
Tank (l)	150 (1 coil)	200 (2 coils)	300 (2 coils)
Fitting kit with manual air vent (pc)	1	1	1
Thermostatic valve 30/65°C (pc)	1	1	1

