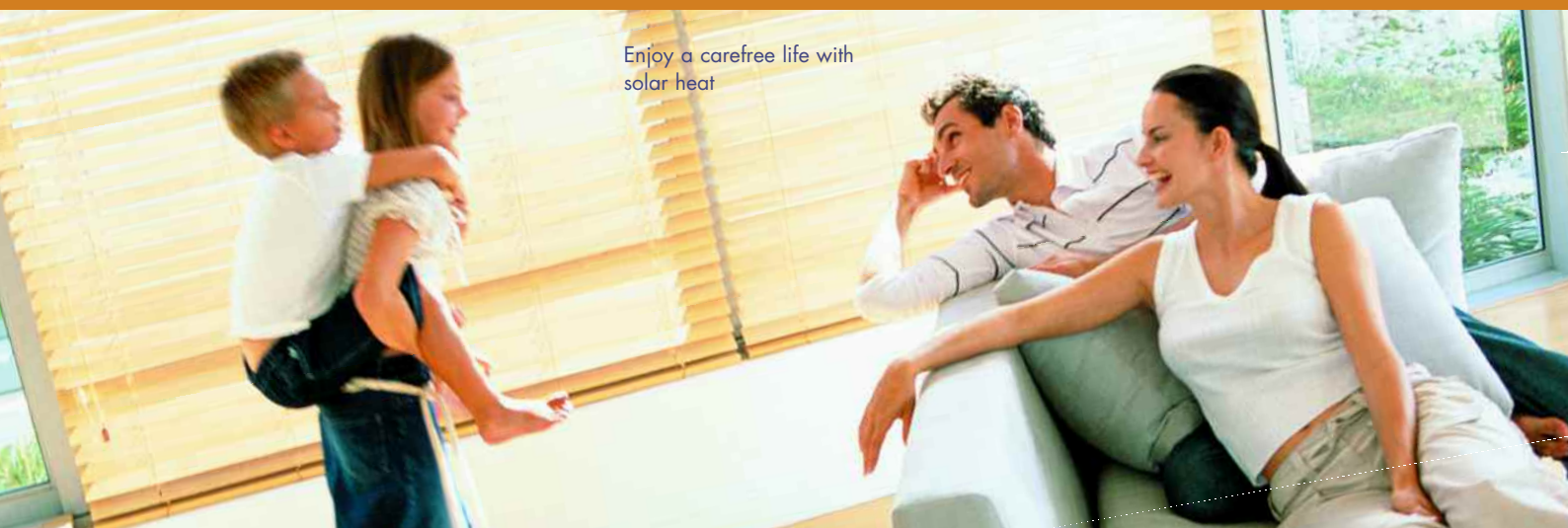


# TUBO 12 CPC

## The evacuated tube collector with base connections



Enjoy a carefree life with solar heat



The TUBO 12 CPC is a newly developed evacuated tube collector. It significantly stands out from other evacuated tube collectors on the market due to its tubing concept, its construction and the choice of materials. Particularly in autumn, winter and spring, when the demand for heat is at its peak, the TUBO 12 CPC yields considerably more solar heat than flat plate collectors.

### Usage

- Usable with a solar installation for hot water generation and particularly for space heating support
- In heating support there are about 30 - 50% higher energy savings when compared with flat plate installations of equal size
- For new builds or during renovation, the collector is mountable on a sloped or flat roof or on the facade
- Compatible with a complete solar installation using any solar hot water cylinder but particularly the Consolar thermal stores from the SOLUS II product range and CONUS 502

### Advantages

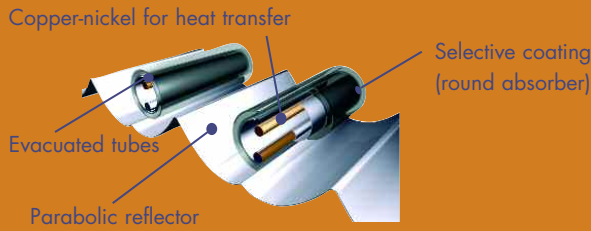
- The only evacuated tube collector on the market with idling friendly base connections
- Very high efficiency in the ITW test 2007
- The slimmest collector on the European market with a thickness of only 55mm
- Small modules for horizontal or vertical mounting
- Solar heating support even in the coldest season
- Slimline, elegant design without a visually noticeable connection box
- Slim design makes compliance with UK Planning Guidance easier
- Very swift payback of manufacturing embodied energy payback period due to the high grade and efficient use of materials



TUBO 12 CPC is certified according to Keymark. (Reg. no. 011-7S074 F)



# Sun: Day and Night.

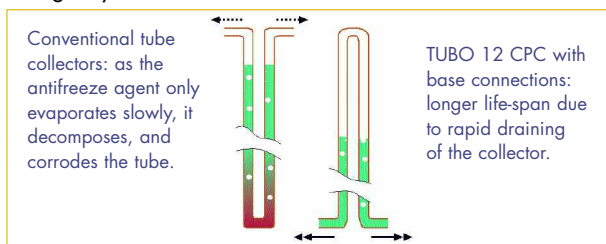


## Base manifold for a longer collector life

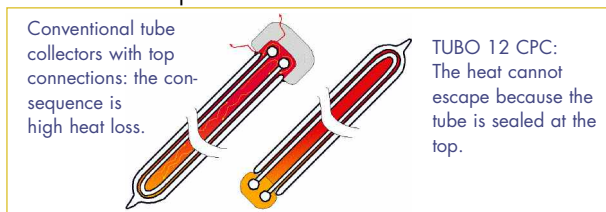
With almost all tube collectors on the market the connections are situated at the top. Since the arrangement of the collector tubing has a significant impact on its operating characteristics, the base connections of TUBO 12 CPC are an important development with fundamental advantages:



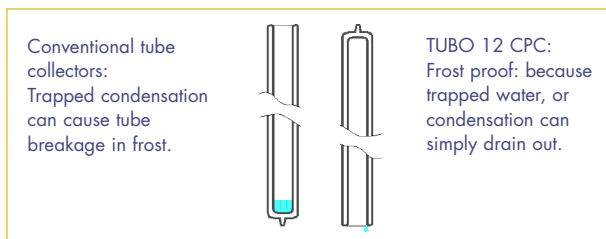
- During "system idling" in summer the solar fluid is expelled quickly from TUBO 12 CPC through the base connections. Therefore the antifreeze agent and the other components last longer and system longevity is ensured.



- The warm air in the tube cannot escape because it is sealed at the top. More heat can be obtained.



- Condensation, which can occur in certain weather conditions, flows down out of the tube avoiding glass tube breakage due to frost.



## Great flexibility on the roof

- It is possible to mount the collectors in a horizontal layout in addition to the more usual vertical mounting.
- Installation on flat or sloped roofs can be carried out easily with the optional additional frames.

## Attractive and slim design

- The neat design of the TUBO 12 CPC is impressive. The 55mm deep collector with the slim bottom manifold and the elegant upper caps compliment any roof form.
- The surface area of the collector module is 1.2m<sup>2</sup>. Up to 12 modules can be connected together to make one field, appearing as one collector. There are no obtrusive frames or bulky manifolds therefore making the collector compact and elegant.



## Thermos flask principle for maximum energy efficiency

- Savings of 30-50% can be achieved in comparison to flat plate collectors of the same size. This is due to the vacuum between the inner and outer glass tubes ensuring minimal heat loss.
- The round absorber of the TUBO 12 CPC is more efficient at capturing the sun's rays and transforming them into heat than flat plate or round tube with flat absorber surfaces, even if the flat absorbers can be turned.
- The integrated parabolic reflectors direct the sun's rays into the evacuated tubes and convert them into heat with little loss. This means that the area of roof covered for each effective m<sup>2</sup> of collector is much smaller than with other types of collector.

## Outstanding quality and carefully selected materials

The TUBO 12 CPC is manufactured with very high grade materials because a solar installation should deliver energy for many years.

- The TUBO 12 CPC is particularly resistant to hailstorms due to the stronger, high grade vacuum tubes which have 13 % thicker glass than the normal standard. The stainless steel casing also gives added strength.
- High grade copper nickel tubes are used in the collector manufacture because ordinary copper cannot withstand the prolonged high temperatures of 300°C. This material also makes the collector very corrosion resistant.
- High quality control through Consolar's in-house production of the TUBO 12 CPC is guaranteed.

## High efficiency solar installations

### The TUBO 12 CPC - The thinnest collector in Europe\*



\* Consolar Research

#### Choose high performance technology from Consolar

- 20,000 tried and tested installations throughout Europe.
- Over 20 patents and registered designs.
- Designed in collaboration with renowned institutes and research facilities.
- Ethically responsible with in-house development and environmentally friendly manufacturing in southern Germany. Winner of the Ethics in Business Award 2005.
- Longevity and safety due to high grade materials and more than 20 years development experience.

#### Outstanding efficiency test result

- Recent tests by the Instituts für Wärmetechnik und Thermodynamik (ITW) in Stuttgart, Germany, in 2007 showed that the combination of 6 TUBO 12 CPC collectors and a Solus 560L thermal store saved 16% more hot water and heating energy than in previous tests.
- This outstanding test result has only previously been achieved by using larger thermal stores and collector areas. The test was performed by Stiftung Warentest.



Lean-to facade mounting of 8 TUBO modules  
Germany



6 TUBO modules mounted on a flat roof - Italy



Elegant integration of 4 TUBO modules - Italy



Neatly integrated in-roof mounted TUBO modules  
- Germany



A facade mounting of TUBO 12 modules with a  
photovoltaic installation - Luxembourg



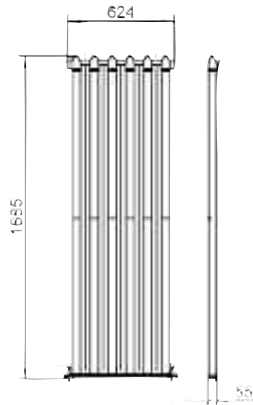
Upright mounting of TUBO 12 CPC collectors on low pitch roof - Southern Europe

# Inspiring high performance technology



## Installation advantages

- The compact size of the collector (62.5 x 188.5cm) makes it easy to handle and install. It can easily be mounted on difficult roofs or directly on the facade.
- The unusually lightweight of the collector (16.4 kg) makes handling easy.
- With a collector width of only (62.5 cm) it will fit through a sky-light window and can be easily handled on the roof.
- A single glass tube can be changed without draining the system down.
- Low maintenance: the antifreeze rarely needs to be changed because of the efficient evacuation of the system in overheat (idling or stagnation) conditions.
- The thickness of only 55mm means that the collector can be used in most installations without any concern about failure to meet the UK Planning Guidance "200mm above the plane of the roof"



Slimline, lightweight and compact: The TUBO 12 CPC can easily be fitted by only one person.

## How much energy can you save with the TUBO collector?

With the tubo 12 CPC collector you can save 60 - 70% of the annual hot water demand and between 25 - 40 % of the total heat energy for both hot water and space heating.

Replacement of an old boiler together with the installation of a solar system can often produce savings of more than 50% over an older, inefficient heating system.



## Complete packages from Consolar:

The Consolar TUBO 12 CPC collectors together with a SOLUS II or Conus 502 thermal store will provide a well coordinated high performance system. This can also be combined with a pellet or wood stove from the Lenius range to achieve even greater CO2 reductions.

Technical Data	TUBO 12 CPC
Collector dimensions and weight:	<ul style="list-style-type: none"> <li>■ Dimensions: (L x B x T) in mm 1885 x 625 x 55</li> <li>■ Weight: 16.4 kg</li> </ul>
Collector aperture area in fields of 1-7 modules:	<ul style="list-style-type: none"> <li>■ 1: 0.98 m<sup>2</sup> / 2: 2.06 m<sup>2</sup></li> <li>■ 3: 3.16 m<sup>2</sup> / 4: 4.24 m<sup>2</sup></li> <li>■ 5: 5.33 m<sup>2</sup> / 6: 6.42 m<sup>2</sup></li> <li>■ 7: 7.50 m<sup>2</sup></li> </ul>
Performance: Measured according to: EN 12975-2 from ITW Stuttgart, Test report No. 06COL 457	<ul style="list-style-type: none"> <li>■ Refer to aperture area:</li> <li>■ <math>\eta_{a0}</math>: 62 %; <math>a_1</math>: 0.395; <math>a_2</math>: 0.02</li> <li>■ Angle correction at 50° deviation from collector norm. Perpendicular to the tubes: 1.04; Parallel to the tubes: 0.95</li> <li>■ Idling temp: 250 °C</li> </ul>
Materials:	<ul style="list-style-type: none"> <li>■ Outer tube: Borosilicate glass with 5 x 10-3 Pa Vacuum with a Barium getter</li> <li>■ Inner tubing: Copper Nickel Alloy</li> <li>■ Manifold and upper tube support: Stainless Steel</li> <li>■ Tube top caps: Aluminium</li> <li>■ Reflector: Aluminium</li> </ul>
Mounting options:	<ul style="list-style-type: none"> <li>■ Vertical or horizontal mounting</li> </ul>
Quality testing:	<ul style="list-style-type: none"> <li>■ Tested according to EN 12975-2 by ITW Stuttgart, Prüfbericht No. 06COL 457</li> <li>■ Keymark certificate. Reg. No. 011-7S074 F</li> </ul>
Consolar Warranty:	<ul style="list-style-type: none"> <li>■ 10 years</li> </ul>

Installer address

PI700 Stand 06/2007UK

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