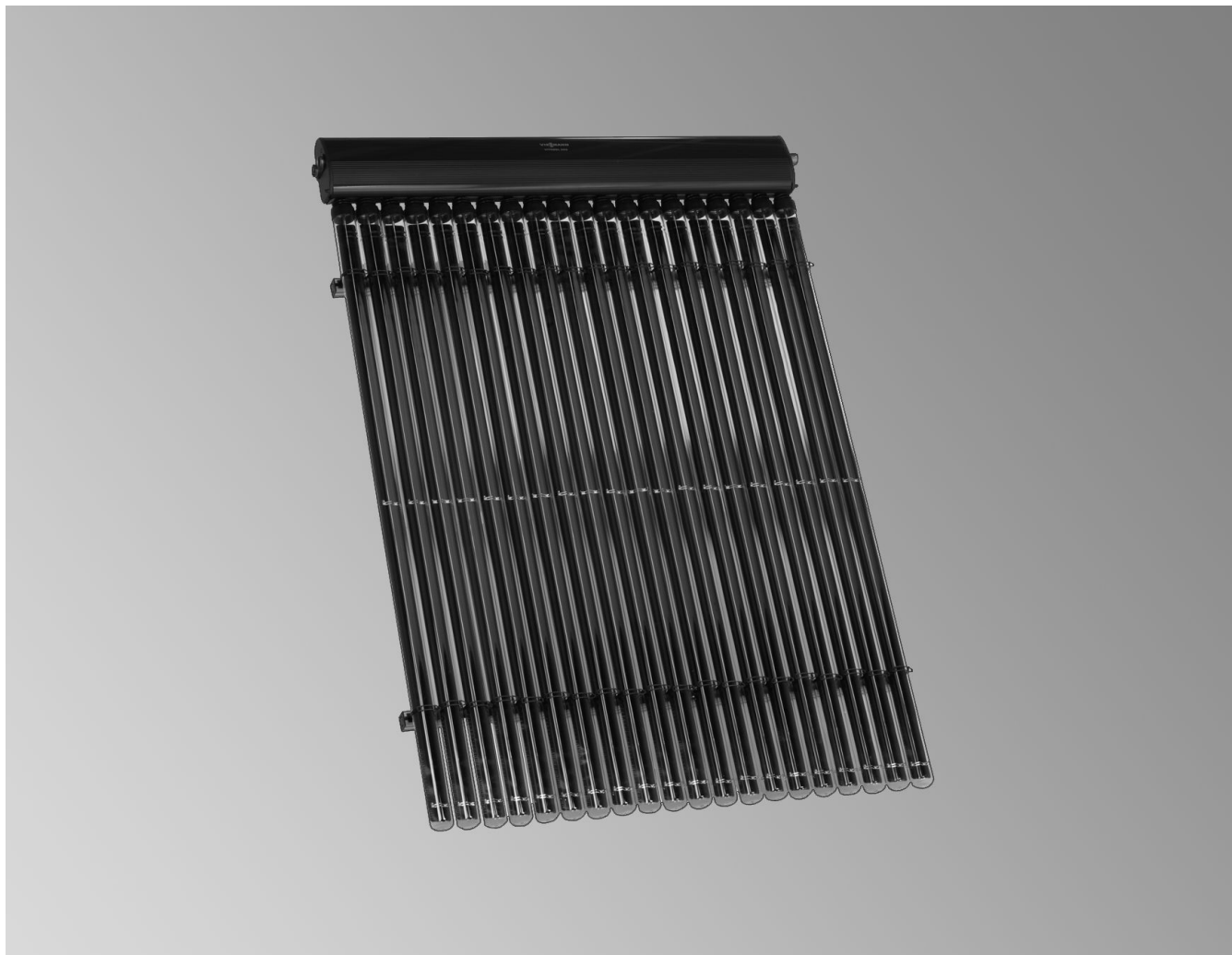


## Datasheet

Part nos. and prices: see pricelist



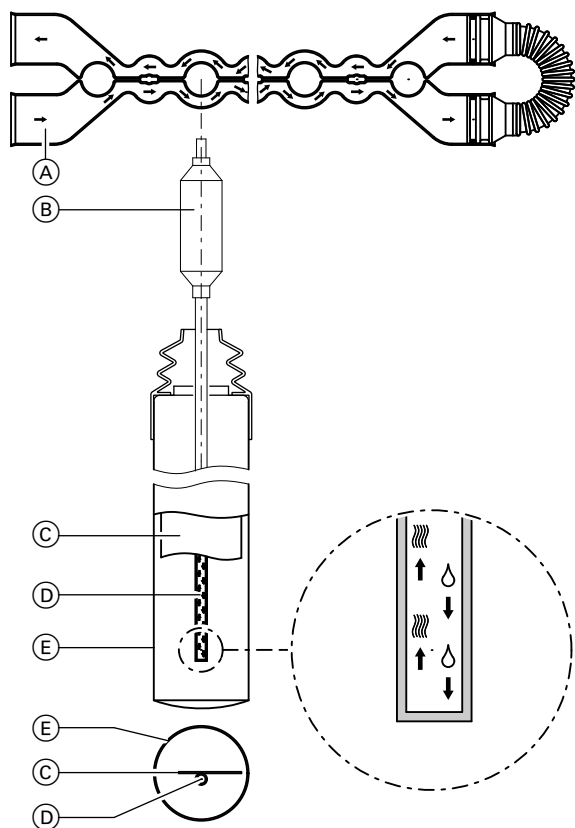
### **VITOSOL 300-T** Type SP3A

#### **Vacuum tube collector**

For the heating of DHW, central heating and swimming pool water via heat exchangers as well as for the generation of process heat.

For installation on pitched roofs and freestanding on flat roofs.

## Product description



- (A) Twin-pipe heat exchanger
- (B) Condenser
- (C) Absorber
- (D) Heat pipe
- (E) Evacuated glass tube

The Vitosol 300-T vacuum tube collector is available in the following versions:

- 2 m<sup>2</sup> with 20 tubes
- 3 m<sup>2</sup> with 30 tubes.

The Vitosol 300-T can be installed on pitched roofs or freestanding on flat roofs.

A Sol-titanium coated copper absorber is built into each vacuum tube. It ensures high absorption of insolation and low emissions of thermal radiation.

A heat pipe filled with an evaporation liquid is arranged on the absorber. The heat pipe is connected to the condenser. The condenser is fitted inside a "Duotec" twin-pipe heat exchanger.

This involves a so-called "dry connection", i. e. the tubes can be rotated or replaced even when the installation is filled and under pressure.

The heat is transferred from the absorber to the heat pipe. This causes the liquid to evaporate. The vapour rises into the condenser. The heat is transferred to the passing heat transfer medium by the twin-pipe heat exchanger containing the condenser which causes the vapour to condense. The condensate flows back into the heat pipe and the process is repeated.

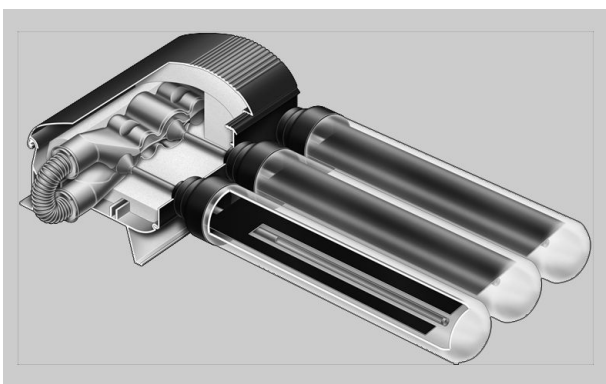
The angle of inclination must be at least 25° to guarantee circulation of the evaporator liquid in the heat exchanger.

Deviations from the south can be partially compensated by turning the vacuum tubes.

Up to 15 m<sup>2</sup> collector surface area can be joined to form a single collector array. For this purpose, the standard delivery includes flexible connecting pipes with O-rings.

A connection set with locking ring fittings enables the collector array to be readily connected to the pipes of the solar circuit. The collector temperature sensor is installed in a sensor mount on the flow pipe in the header casing of the collector.

## Benefits

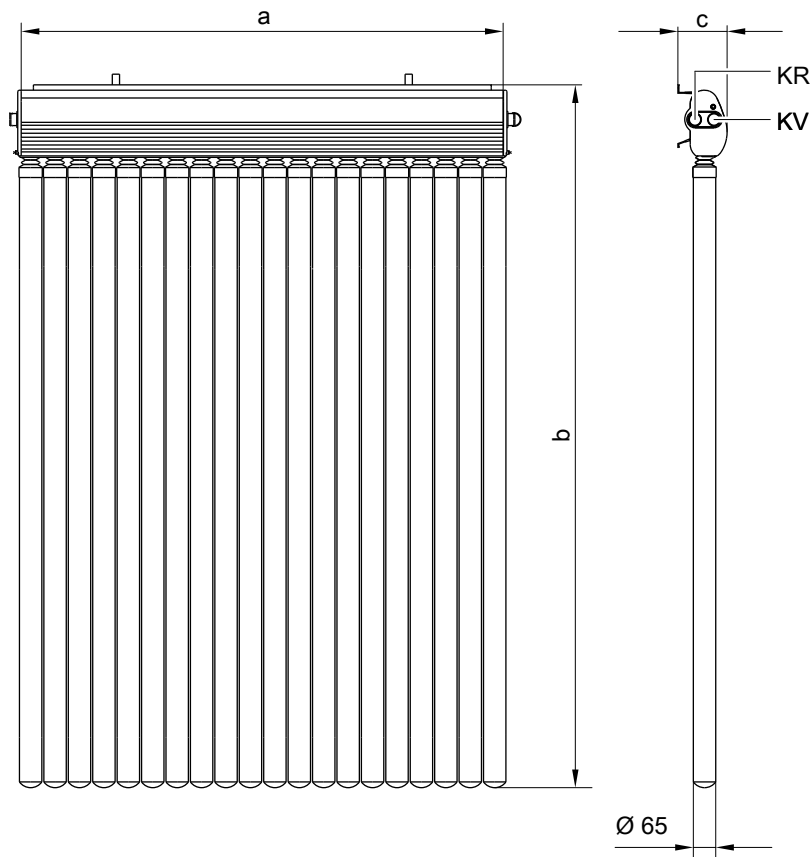


- Highly efficient vacuum tube collector based on the heat pipe principle for high operational reliability.
- The absorber areas with Sol-titanium coating that are integrated into the vacuum tubes, are not susceptible to contamination.
- Efficient heat transfer through fully encapsulated condensers and twin-pipe Duotec heat exchanger.
- Tubes can be rotated for optimum alignment with the sun, thereby maximising the energy yield.
- Dry connection, meaning pipes can be fitted or replaced when the system is full.
- Highly effective thermal insulation of the header casing for minimum thermal losses.
- Easy installation through the Viessmann assembly and connection systems.

## Specification

### Specification

|   |  |                  |                  |
|---|--|------------------|------------------|
| Type SP3A   |  | 2 m <sup>2</sup> | 3 m <sup>2</sup> |
| Number of tubes                                   |  | 20               | 30               |
| Gross area <sup>*1</sup>                          | m <sup>2</sup>   | 2.87             | 4.32             |
| Absorber area                                     | m <sup>2</sup>   | 2.00             | 3.02             |
| Aperture area <sup>*2</sup>                       | m <sup>2</sup>   | 2.15             | 3.23             |
| <b>Dimensions</b>                                 |  |                  |                  |
| Width a   | mm   | 1420             | 2129             |
| Height b  | mm   | 2040             | 2040             |
| Depth c   | mm   | 143              | 143              |
| Optical efficiency <sup>*3</sup>                  | %  | 80.9             | 80.4             |
| Thermal loss correction value $k_1$ <sup>*3</sup> | W/(m <sup>2</sup> · K)                                       | 1.37             | 1.33             |
| Thermal loss correction value $k_2$ <sup>*3</sup> | W/(m <sup>2</sup> · K <sup>2</sup> )                         | 0.0068           | 0.0067           |
| Thermal capacity <sup>*3</sup>                    | kJ/(m <sup>2</sup> · K)                                      | 8.5              | 8.4              |
| Weight  | kg   | 58               | 87               |
| Liquid content<br>(heat transfer medium)          | litres   | 1.13             | 1.65             |
| Permiss. operating pressure <sup>*4</sup>         | bar  | 6                | 6                |
| Max. idle temperature <sup>*5</sup>               | °C   | 273              | 273              |
| Connection  | Ø mm   | 22               | 22               |
| Requirements of base structure and fixings        | with sufficient ballast to counteract prevailing wind forces |                  |                  |



KR Collector return  
KV Collector flow

\*1 Decisive when applying for subsidies.

\*2 Decisive when sizing the system.

\*3 Relates to the absorber surface area.

\*4 In a cold, sealed system, the collectors must be pressurised to at least 1 bar.

\*5 The idle temperature is the temperature that occurs at the hottest part of the collector at 1000 W global radiation strength if no heat is drawn off.

## Delivered condition

Packed in separate cartons:

- Vacuum tubes, 10 pce. per packing unit
- Header casing with mounting rails

Viessmann offers complete solar thermal systems with Vitosol 300-T (packs) for DHW heating and/or central heating backup (see pack pricelist).

## Accessories

Packed separately, subject to order:

- The fixing kits contain the components required for the relevant method of installation:
  - Timber
  - Roof hooks
  - Mounting plates
  - Mounting rails
  - Clamping brackets, screws, nuts
- Connection pipes with thermal insulation
- Connection set with product documentation
- Spare parts set (assortment of small parts that may be lost during the collector installation)
- Solar-Divicon (pump station for the collector circuit)
- Solar pump line (for a second pump circuit)
- Connection line, 24 m long
- Installation set for connection line to the DHW cylinder
- Air separator
- Quick-acting air vent valve with tee and locking ring fitting
- Locking ring fitting (with or without air vent valve)
- Connection line, 1.0 m long, 2 pce.


- Solar flow and return line
- Fill valve
- Filling station
- Manual solar fill pump
- Solar expansion vessel with shut-off valve
- Pre-cooling vessel
- Antifreeze gauge
- Heat transfer medium  
Non-toxic liquid for solar thermal systems with active anti-corrosion and anti-ageing protection
- Solar service case

### Heat transfer medium specification

|                     |  |
|---------------------|--|
| Frost protection:   | down to -28 °C                                   |
| Density at 20 °C:   | 1032 to 1035 g/cm <sup>3</sup><br>to ASTM D 1122 |
| Viscosity at 20 °C: | 4.5 up to 5.5 mm <sup>2</sup> /s<br>to DIN 51562 |
| pH value:           | 9.0 to 10.5<br>to ASTM D 1287                    |
| Colour:             | transparent, red fluorescent                     |
| Container:          | 25 or 200 litres in a non-returnable container   |

## Approved quality

This collector meets the requirements of the "Blue Angel" certificate of environmental excellence to RAL UZ 73.  
Tested in accordance with Solar KEYMARK.

 CE designation according to current EC Directives

Printed on environmentally friendly,  
chlorine-free bleached paper



Subject to technical modifications.

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