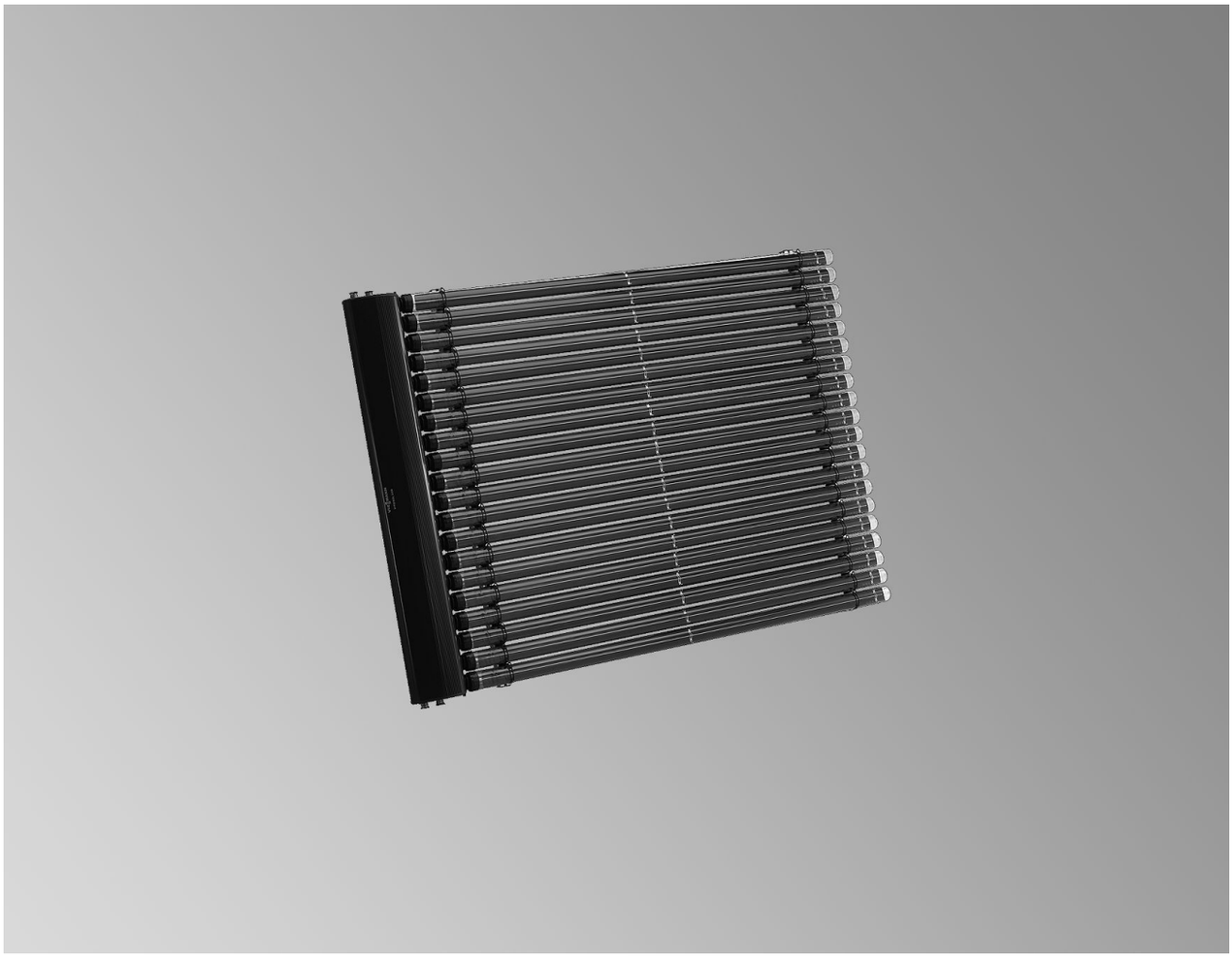
VIESMANN

VITOSOL 200-T

Direct flow vacuum tube collector
for the exploitation of solar energy

Datasheet

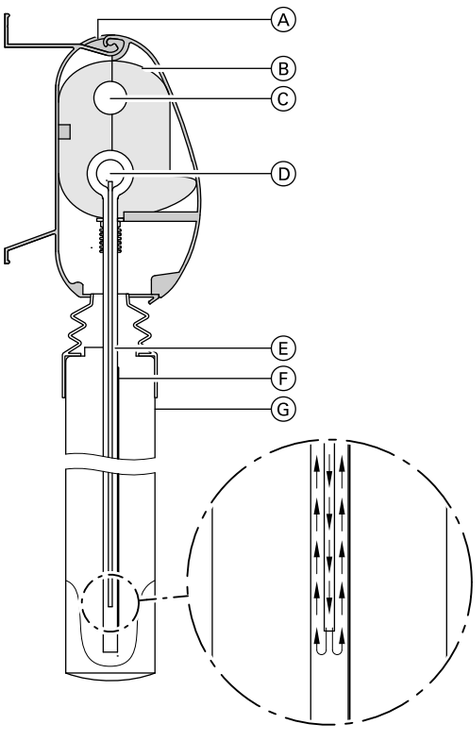


VITOSOL 200-T Type SD2A

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.
Suitable for installation on pitched and flat roofs, as well as on walls and freestanding installation.

5822 453 GB 2/2009

Product description



Ⓐ Header casing
Ⓑ Melamine epoxy foam insulation
Ⓒ Return pipe
Ⓓ Coaxial manifold and distributor pipe
Ⓔ Coaxial heat exchanger pipe
Ⓕ Absorber
Ⓖ Evacuated glass tube

The Vitosol 200-T vacuum tube collector is available in the following versions:

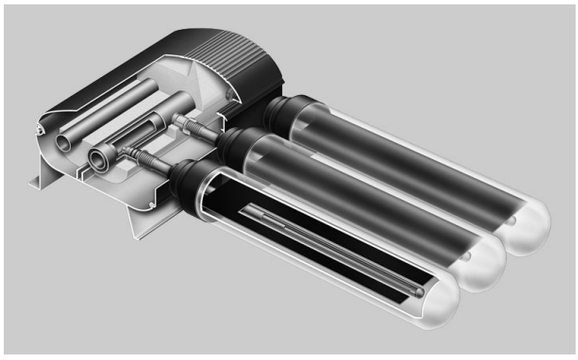
- 2 m^2 with 20 tubes
- 3 m^2 with 30 tubes.

The Vitosol 200-T can be installed on pitched roofs, flat roofs, on walls and as a freestanding collector.
On pitched roofs the collectors may be positioned in line (tubes at right angles to the roof ridge) or across (tubes parallel to the roof ridge).

- DHW heating systems:
  The collectors may be positioned vertically (tubes vertical, relative to the roof ridge) or horizontally (tubes parallel to the roof ridge).
- Systems to back up central heating:
  The collectors should be installed horizontally (tubes parallel to the roof ridge). This will positively influence the stagnation characteristics.

The vacuum in the glass tubes ensures optimum thermal insulation. Convection losses between the glass tube and the absorber are almost completely eliminated. This enables even low radiation levels to be utilised.
Each vacuum tube contains a highly selectively coated copper absorber. It ensures high absorption of insolation and low emissions of thermal radiation.
A coaxial heat exchanger pipe, through which the heat transfer medium flows, is arranged on the absorber. The heat transfer medium absorbs heat from the absorber via the heat exchanger pipe.
The heat exchanger pipe feeds into a distributor pipe.
To fully utilise the available solar energy, every vacuum tube is able to pivot so that the absorber can be turned towards the sun.
Up to 15 m^2 collector surface can be joined in series to create a single collector array (collectors arranged in series should be of the same size).
For this purpose, the standard delivery includes flexible connecting pipes with O-rings.
The flow and return pipes integrated into the connecting casing enable the connection of the solar flow and solar return pipes of several collectors on one side.
A connection set with locking ring fittings enables the collector array to be readily connected to the pipes of the solar circuit. Install the collector temperature sensor in a sensor well in the flow pipe of the solar heating circuit.

Benefits



- Highly efficient, direct flow vacuum tube collector for high solar energy utilisation.
- Universal application through vertical or horizontal installation in any location, either on rooftops or on walls.
- Easy and safe connection of the individual tubes through an innovative plug-in system.
- The absorber areas integrated into the vacuum tubes are not susceptible to contamination.
- Tubes can be rotated for optimum orientation towards the sun, thereby maximising the energy yield.
- Highly effective thermal insulation of the header casing for minimum thermal losses.
- Easy assembly through the Viessmann fixing system and corrugated stainless steel plug-in connectors.
- The flow and return connection on one side through the integral header inside the header casing minimises the effort required to connect the pipework.
- Attractive collector design, header casing in RAL 8019 (brown).

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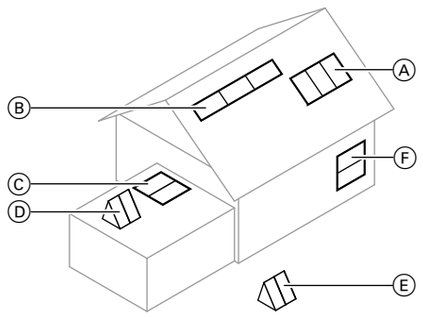
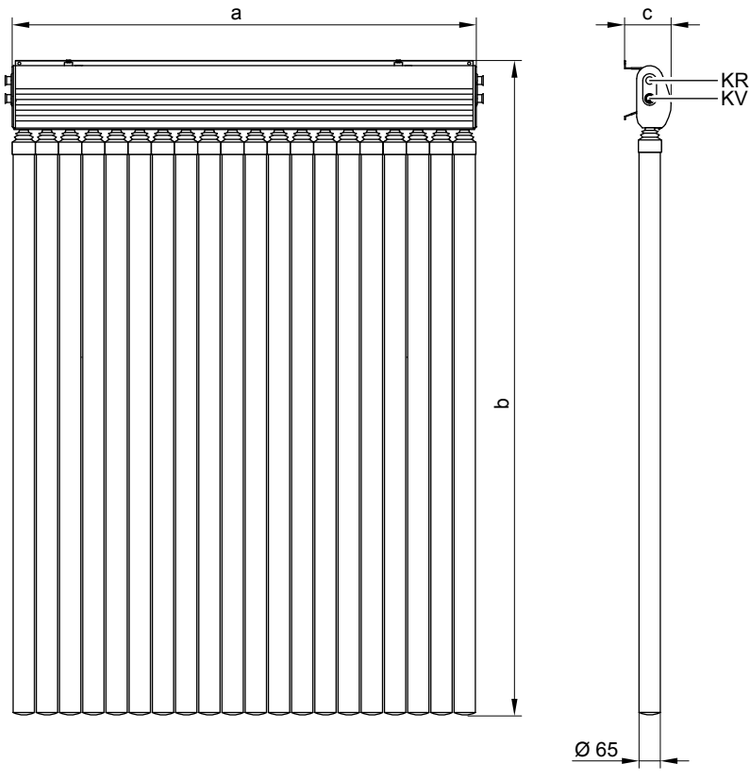
Specification

Type SD2A		**2 m²**	**3 m²**
Number of tubes		20	30
Gross area (required when applying for subsidies)	m^2	2.88	4.32
Absorber area	m^2	2.01	3.02
Aperture area	m^2	2.14	3.23
Installation position (see figure below)		Ⓐ, Ⓑ, Ⓒ, Ⓓ, Ⓔ, Ⓕ	
Spacing between collectors	mm	47	47
Dimensions			
Width a	mm	1418	2127
Height b	mm	2043	2043
Depth c	mm	143	143
The following values apply to the absorber area:			
– **Optical efficiency**	%	78.9	79.1
– **Thermal loss correction value k_1**	$W/(m^2 \cdot K)$	1.36	1.10
– **Thermal loss correction value k_2**	$W/(m^2 \cdot K^2)$	0.0075	0.0076
Thermal capacity	$kJ/(m^2 \cdot K)$	10.0	10.1
Weight	kg	61	95
Liquid content **(heat transfer medium)**	litres	4.2	6.2
Permiss. operating pressure (see chapter "Solar expansion vessel")	bar	6	6
Max. idle temperature	°C	295	295
Steam output			
– Favourable installation position	W/m^2	100	100
– Unfavourable installation position	W/m^2	200	200
Connection	Ø mm	22	22



Specification (cont.)



KR Collector return
KV Collector flow

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 200-T (packs) for DHW heating (see pack pricelist).

Accessories

Packed separately, subject to order:
- The fixing kits contain the components required for the relevant method of installation:
  – Timber
  – Roof hook
  – Mounting plates
  – Mounting rails
  – Clamping brackets, screws, nuts
- Connecting pipes
- Connection set
- Sensor well set
- 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 (6 and 12 m long)
- Fill valve
- Manual solar fill pump
- Solar expansion vessel with shut-off valve
- Stagnation cooler
- Pre-cooling vessel
- Antifreeze gauge
- Heat transfer medium
  Non-toxic liquid for solar thermal systems with active anti-corrosion and anti-ageing protection
- Filling station
- Filling trolley
- Solar service case

Heat transfer medium specification

Frost protection:	down to –28 °C
Density at 20 °C:	1032 to 1035 g/cm^3 to ASTM D 1122

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Accessories (cont.)

Viscosity at 20 °C:	4.5 up to 5.5 mm^2/s to DIN 51562	Colour:	transparent, red fluorescent
pH value:	9.0 to 10.5 to ASTM D 1287	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 and EN 12975.

CE designation according to current EC Directives

Printed on environmentally friendly, chlorine-free bleached paper

Subject to technical modifications.

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