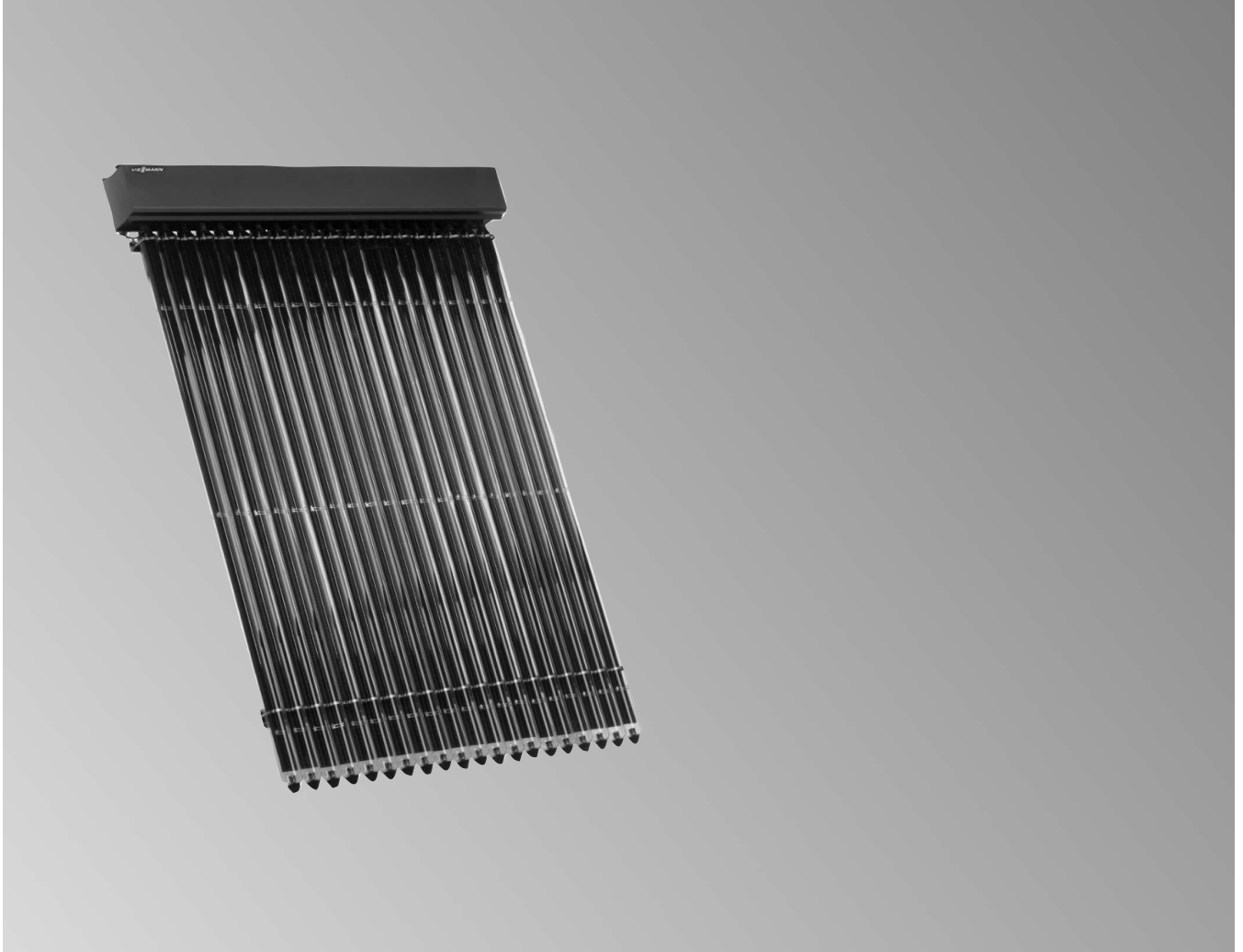


Technical Data

Part No. and prices: see Price List



File in:
Vitotec 1 Manual, Index 16

Vitosol 300

Type H20 and H30

Vacuum tube collector

for installation on flat and pitched roofs and for freestanding installation.

For heating domestic hot water, low-temperature heating systems and swimming pool water via a heat exchanger

Pressure loading capacity up to 6 bar



"Blue Angel" environmental certificate awarded to the Vitosol 300 vacuum tube collector in accordance with RAL-UZ 73

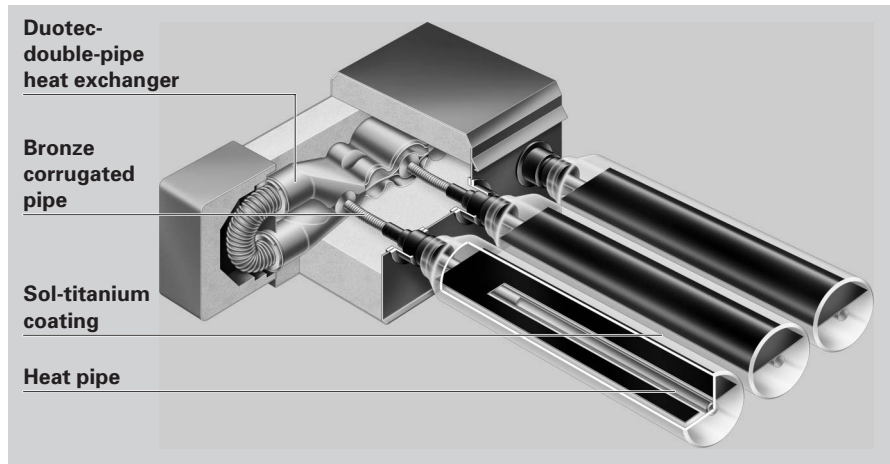


Certificated in accordance with DIN ISO 9001
Certificate Reg. No. 12 100 5581

VITOSOL 300

The benefits at a glance

- Extremely high efficiency thanks to the Sol-titanium coated absorber; the vacuum collector tubes reduce heat losses.
- Superior heat utilization by the patented "Duotec" double-pipe heat exchanger which almost completely encloses the condensers for better heat transfer.
- Universally suitable for installation on flat and pitched roofs, on walls/fascias and for freestanding installation. The tubes can be rotated for optimum alignment to the sun.
- The dry connection of the collector tubes enables individual tubes to be installed and disassembled without having to drain the solar heating system.
- High level of operational reliability and a long service life thanks to the use of high-grade, corrosion-resistant materials such as borosilicate glass, copper and stainless steel.
- Built-in temperature limiter provides protection against overheating.
- Awarded the "Blue Angel" environmental certificate, quality-tested by the SPF Institute Rapperswil.



Vitosol 300 – vacuum tube collector based on the heat pipe principle

Functional description

Vitosol 300 vacuum tube collectors are available in two versions: The H20 version consists of 20 ($\triangleq 2 \text{ m}^2$), the H30 version of 30 ($\triangleq 3 \text{ m}^2$) high-vacuum glass tubes.

Built into each vacuum tube is a Sol-titanium coated copper absorber. This ensures high absorption of the solar radiation and low emission of the thermal radiation.

A heat pipe filled with an evaporator liquid is arranged on the absorber. The heat pipe is connected to the condenser via a flexible coupling. The condenser is mounted in the Duotec double-pipe heat exchanger.

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

The heat is transferred from the absorber

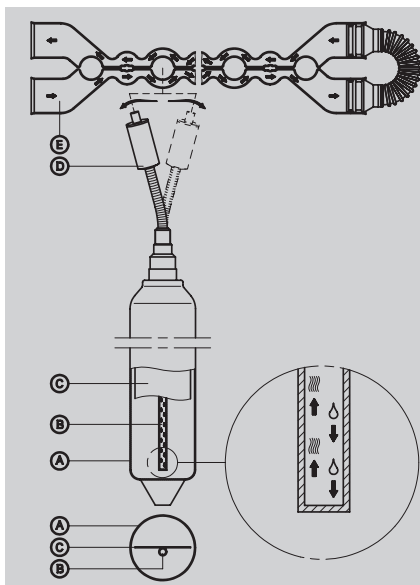
to the heat pipe, causing the liquid to evaporate. The vapour rises into the condenser. The heat is conveyed to the passing heat transfer medium by the double-pipe heat exchanger containing the condenser; this causes the vapour to condense. The condensate runs back into the heat pipe and the process is repeated.

Corrections for deviations from south can be made by rotating the vacuum tubes.

Collector surface areas of up to 6 m^2 can be joined to form a collector panel with the aid of flexible and insulated connecting pipes sealed with O-rings.

A connection kit with clamping ring connections facilitates the connection of the collector panel to the piping of the solar circuit.

The collector temperature sensor is installed in a sensor mounting on the flow pipe in the connection housing of the collector.



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

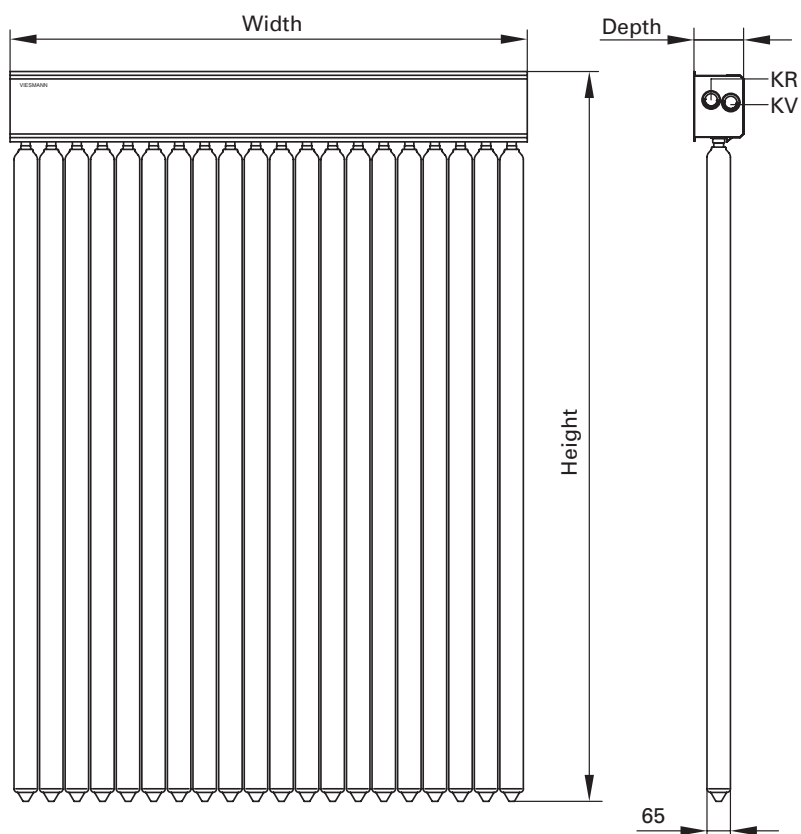
Technical data for the Vitosol 300 solar collector

Version		H20	H30
Number of tubes		20	30
DIN Reg. No.		GS 033/99	
Gross surface area	m ²	2.94	4.38
Absorber surface area	m ²	2	3
Aperture	m ²	2.14	3.21
Dimensions			
Width	mm	1450	2159
Height	mm	2024	2024
Depth	mm	138	138
Optical efficiency* ¹	%	82.5	82.5
Heat loss coefficient U ₁ * ¹	W/(m ² · K)	1.19	1.19
U ₂ * ¹	W/(m ² · K ²)	0.009	0.009
Weight	kg	45	68
Fluid capacity (heat transfer medium)	litres	1.2	1.8
Max. operating pressure* ²	bar	6	6
Max. stagnation temperature* ³	°C	150	150
Connection	∅ mm	22	22
Installation area on flat roofs	m ²	approx. 1.3	approx. 2.1
Requirements to be satisfied by installation surface and anchorage	Roof construction with adequate load capacity for prevailing wind forces		

*¹Based on the absorber surface area.

*²With sealed systems, an overpressure of at least 1.5 bar must be present in the collectors in the cold condition.

*³The stagnation temperature is the temperature which applies at the hottest point of the collector at a global radiation intensity of 1000 W when no heat is conducted away by the heat transfer medium.



5822 134 GB

KR Collector return (inlet)
KV Collector flow (outlet)

Technical data

Standard delivery

Technical data for the heat transfer medium

Non-toxic fluid for solar heating systems containing effective corrosion and ageing inhibitors.

Antifreeze protection:	down to -28°C to ASTM D 1177
Density at $+20^{\circ}\text{C}$:	1.032 to 1.035 g/cm^3 to ASTM D 1122
Viscosity at 20°C :	4.5 to $5.5\text{ mm}^2/\text{s}$ to DIN 51562
pH value:	9.0 to 10.5 to ASTM D 1287
Colour:	Clear, fluorescent red
Container:	20-litre drum, non-returnable

Standard delivery

The following are packed in separate cartons:

- Connection box with installation rails and product literature
- Vacuum tubes (10 per packaging unit)

Accessories, separately packed, depending on order:

Fastening accessories
Connecting pipes with insulation
Connection kit
Solar Divicon (pumping station for collector circuit)
Solar pump line (for a second pump circuit)
Air separator
Quick-acting air vent valve with tee and clamping ring connection
Connecting cables
Installation kit for connecting cable
Solar flow and return pipe
Clamping ring connection (with or without air vent)
Covering for the hydraulic connections
Filling valve
Solar manual filling pump
Solar expansion vessel with shut-off valve
Heat transfer medium
Antifreeze tester
Set of spare parts (assortment of small parts which may be mislaid during installation of the collectors)

Fastening kits

The fastening kits contain the parts required for the installation work concerned, such as:
Mounting plates, roof battens, roof hooks, nuts and bolts.

Please note:

Viessmann offers complete solar heating systems with Vitosol 300 (Type H30) for domestic hot water heating (see Price List, Index 16).

Subject to technical modifications.

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