

Datasheet

Part no. and prices: See pricelist



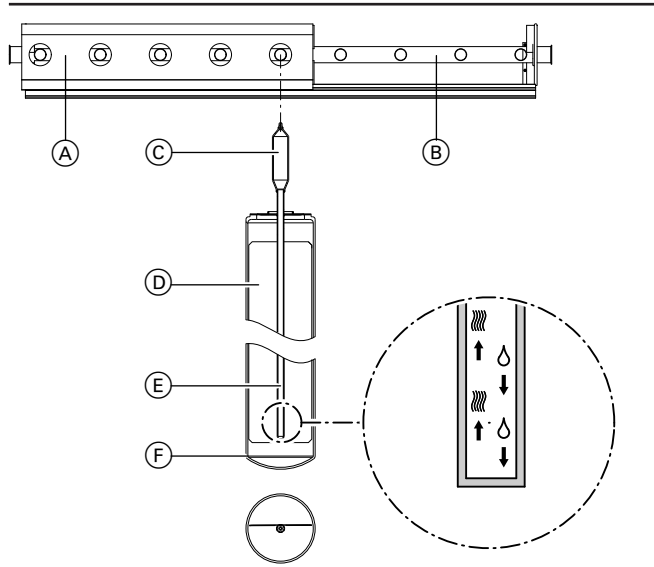
VITOSOL 200-TM Type SPEA

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 horizontal installation.

Product description



- (A) Aluminium casing
- (B) Heat exchanger
- (C) Condenser
- (D) Absorber
- (E) Heat pipe
- (F) Evacuated glass tube

The Vitosol 200-TM vacuum tube collector, type SPEA, is available in the following versions:

- 1.63 m² with 9 vacuum tubes
- 3.26 m² with 18 vacuum tubes

The Vitosol 200-TM, type SPEA, can be installed on pitched roofs, flat roofs, or as a freestanding collector.

Benefits

- Highly efficient vacuum tube collector based on the heat pipe principle, with ThermProtect automatic temperature-dependent shut-down for high operational reliability
- The absorber surface with highly selective coating integrated into the vacuum tubes is not susceptible to contamination
- Efficient heat transfer through a condenser fully surrounded by the heat exchanger
- Vacuum tubes can be rotated for optimum alignment with the sun, thereby maximising the energy utilisation.
- Dry connection, meaning tubes can be inserted or changed while the system is full
- Highly effective thermal insulation for minimised heat losses from the header casing
- Easy installation through the Viessmann assembly and connection systems

On pitched roofs the collectors may be positioned in line (vacuum tubes at right angles to the roof ridge) or across (vacuum tubes parallel to the roof ridge).

A metal absorber with highly selective coating is incorporated inside each vacuum tube. The metal absorber ensures high absorption of insolation and low emissions of thermal radiation.

A heat pipe filled with an evaporation liquid is fitted to the absorber. The heat pipe is connected to the condenser. The condenser is fitted inside a copper sensor well heat exchanger.

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

The heat is transferred from the absorber to the heat pipe. This causes the liquid to evaporate. The steam rises into the condenser. Heat is transferred by the heat exchanger with its copper manifold, which contains the condenser, to the heat transfer medium as it flows past. This causes the steam to condense. The condensate returns back down into the heat pipe and the process repeats.

The angle of inclination must be greater than zero to guarantee circulation of the evaporator liquid in the heat exchanger.

The vacuum tubes can be rotated to precisely align the absorber with the sun. The vacuum tubes can be rotated through 45° with reduced shade on the absorber surface.

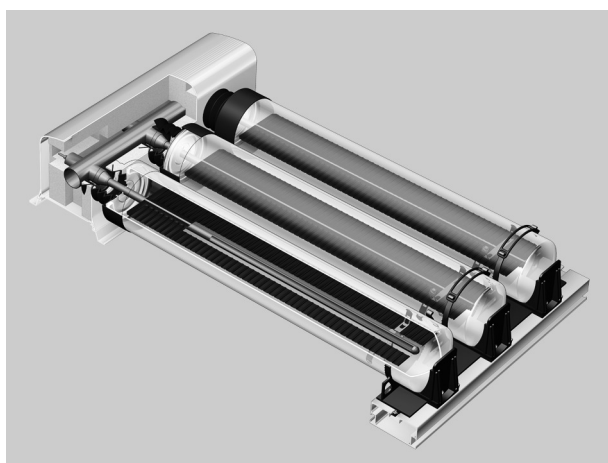
Up to 16.3 m² (or 5 collector modules) absorber area can be connected to form one collector array. For this purpose, the standard delivery includes flexible connection pipes with O-rings.

A calculation of the pressure drops in dependence of the required system flow rate (collectors, pipework, heat exchangers, etc.) is required. The correct pump size for higher pump rates (> 4 collectors) also has to be determined.

A connection set with locking ring fittings enables the collector array to be readily connected to the solar circuit pipework. The connection set is available with or without sensor well. The collector temperature sensor is fitted in the connection set sensor well.

The collectors can also be used in coastal regions.

Benefits (cont.)



Specification

Specification

Type SPEA		1.63 m ²	3.26 m ²
Number of tubes		9	18
Gross area	m ²	2.67	5.3
(required when applying for subsidies)			
Absorber area	m ²	1.63	3.26
Aperture area	m ²	1.73	3.46
Clearance between collectors	mm	44	44
Dimensions			
Width	mm	1194	2364
Height	mm	2244	2244
Depth	mm	160	160
The following values apply to the absorber area:			
– Optical efficiency	%	78.5	76.7
– Heat loss factor k₁	W/(m ² · K)	1.847	1.649
– Heat loss factor k₂	W/(m ² · K ²)	0.005	0.006
The following values apply to the aperture area:			
– Optical efficiency	%	73.9	72.3
– Heat loss factor k₁	W/(m ² · K)	1.74	1.554
– Heat loss factor k₂	W/(m ² · K ²)	0.004	0.006
The following values apply to the gross area:			
– Optical efficiency	%	47.9	47.2
– Heat loss factor k₁	W/(m ² · K)	1.127	1.014
– Heat loss factor k₂	W/(m ² · K ²)	0.003	0.004
Thermal capacity	kJ/(m ² · K)	3.23	3.28
Weight	kg	64	129
Liquid content (heat transfer medium)	litres	0.86	1.72
Permiss. operating pressure	bar/MPa	6/0.6	6/0.6
With installation of an 8 bar safety valve (accessories)	bar/MPa	8/0.8	8/0.8
Max. stagnation temperature	°C	175	175
Steam-producing power	W/m ²	60	60
Connection	Ø mm	22	22

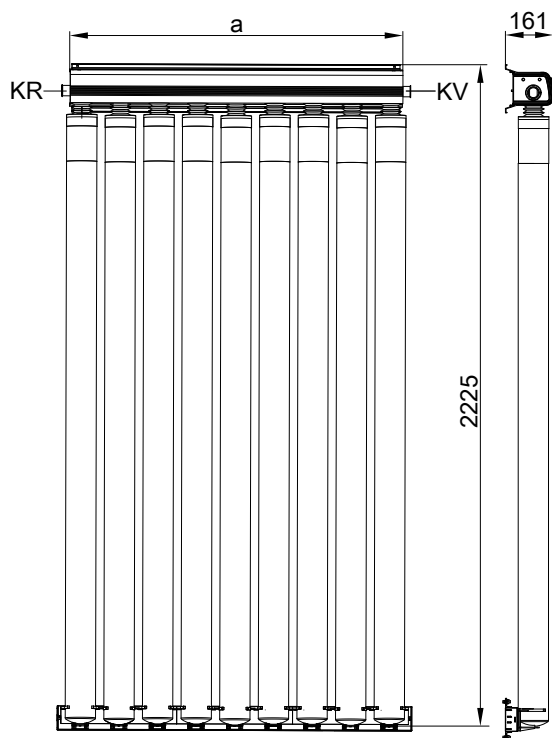
Specification (cont.)

Specification for determining the energy efficiency class (ErP label)

Type SPEA		1.63 m ²	3.26 m ²
Aperture area	m ²	1.73	3.46
The following values apply to the aperture area:			
– Collector efficiency η_{col} , at a temperature differential of 40 K	%	65	65
– Optical efficiency	%	71	71
– Heat loss factor k_1	W/(m ² · K)	1.2	1.2
– Heat loss factor k_2	W/(m ² · K ²)	0.006	0.006
Incidence angle modifier IAM		0.88	0.88

Note

Use different fixing kits according to snow load. See pricelist.



KR Collector return (inlet)

KV Collector flow (outlet)

Tested quality

Tested quality

These collectors meet the requirements of the "Blue Angel" eco-label to RAL UZ 73.

Tested in accordance with Solar KEYMARK to EN 12975 or ISO 9806.

 CE designation according to current EC Directives

Subject to technical modifications.

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