VIESMANN

climate of innovation

Energy from the sun


VIESSMANN

Energy from the sun – delivered free to your door

Anyone who invests in a new heating system today should design it from the outset to include a solar thermal system. This will allow you to benefit from lower energy consumption and also look forward to lower monthly energy bills.

Furthermore, by installing solar collectors, you are demonstrating your commitment to protecting the climate, by sustainably lowering CO_2 emissions. To help you do this, Viessmann guarantees optimum interaction of all appliance components with futureproof technology.

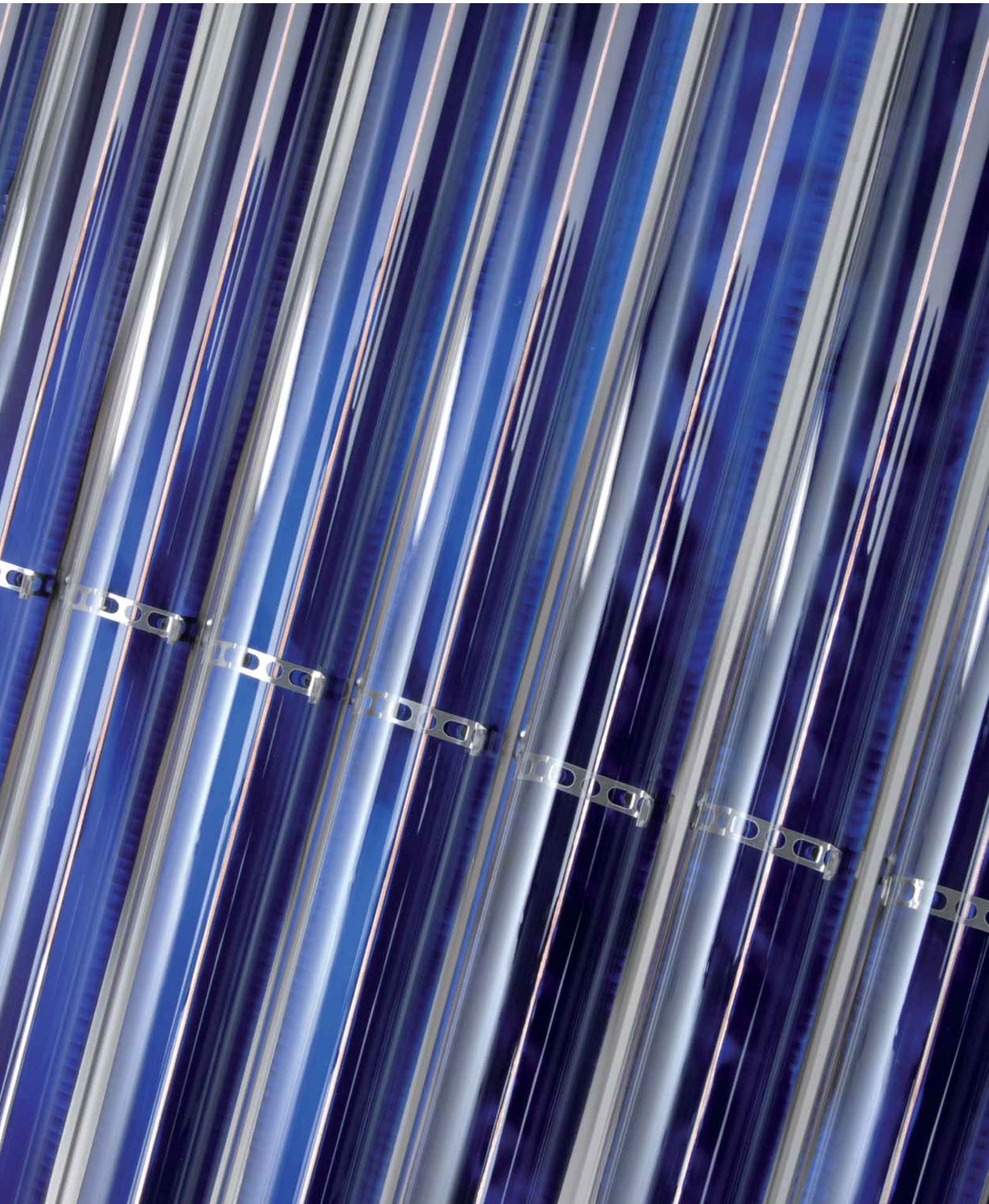
Another argument for investing in solar technology that should not be underestimated, is the associated increase in the value of your property.

On the following pages, you will find comprehensive information about the possibilities open to you with Viessmann solar technology, for energy-efficient DHW heating, central heating backup and power generation.

With more than 30 years' experience in the development and manufacture of solar thermal systems, with Viessmann you can count on futureproof technology and the highest quality.

It makes no difference whether you are starting out with a new condensing boiler for oil or gas, a heating system for wood, or even a heat pump – all Viessmann systems are designed to work in combination with solar technology. Don’t forget our photovoltaic modules, which you can use with free solar energy to generate power. This is fed into the public grid and remunerated month by month by your power supply utility.

Contents

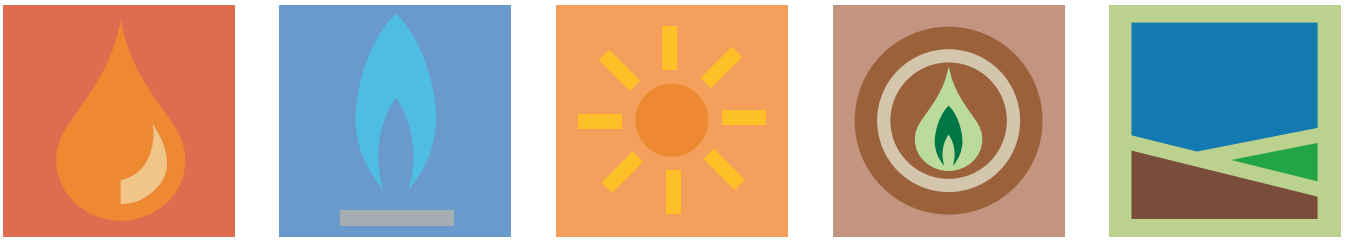


About this brochure

The Viessmann flat-plate and vacuum tube collectors meet every requirement for efficient and cost-effective central heating backup and DHW heating. This brochure provides information about our current solar and photovoltaic range, and contains plenty of other useful facts about accessories, service, opportunities for subsidies and financial options.

Saving energy and protecting the climate

Viessmann is aware of its responsibility for the sustained protection of the environment. Its company philosophy and products focus on this.



"Nothing is so good that it cannot be improved." This maxim is at the heart of the company's principles. In this industry, Viessmann can rightfully claim to be the leader in quality and technology, and as such, aims to continually set new standards.

This applies in particular to their product range, which is consistently geared towards significantly lowering the consumption of fossil fuels, and gradually replacing them with renewable sources of energy.

At around 40 percent, the heating market actually accounts for the largest proportion of energy consumption in Germany. The rest is shared by goods transport, personal transport and power, with 20 percent each. These are values that can also be applied, to some extent, to other industrial countries. Ever-rising energy costs mean that the emphasis is on reducing the consumption of fossil fuels as quickly as possible.

Condensing technology plus solar – an optimum result

Anyone who invests in a new heating system would do well to choose a condensing boiler. Taking current energy prices into consideration, it is the most economical alternative. Viessmann oil and gas condensing boilers convert up to 98 percent of the fuel oil or gas used into heat.

By combining them with highly efficient solar collectors from Viessmann, you can save up to 35 percent on your heating costs, if you utilise the solar collectors for both DHW heating and central heating backup. For DHW heating alone, the energy consumption required can be lowered by up to 60 percent.

Viessmann offers you energy-efficient heating systems for oil, gas, solar, biomass and natural heat. The pictograms will help to guide you.

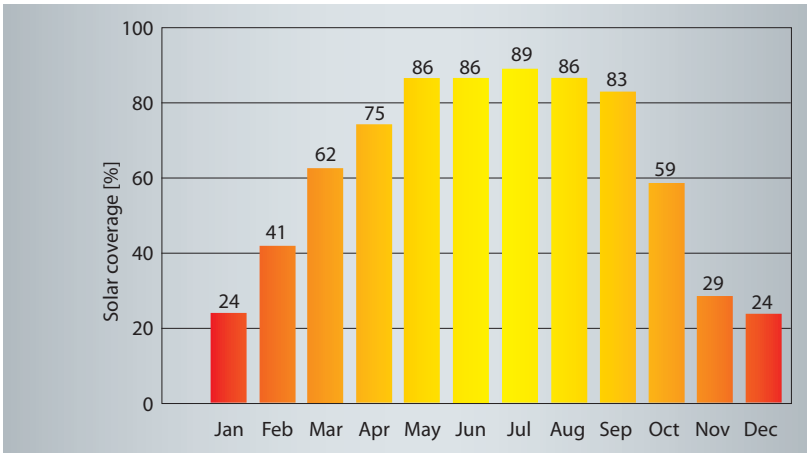
Viessmann works consistently on new, environmentally responsible solutions. The result is environmentally friendly, cost effective and efficient heating systems.

Did you know?

Good reasons for extending your heating system with Viessmann solar heating and photovoltaics.

In Germany alone, there are still around two million heating systems in use that are over 25 years old. Their owners are often completely unaware of how much money they are wasting unnecessarily on energy, which is pointlessly burned up and goes out of the chimney as unused heat. Furthermore, these old systems have an impact on the climate through unnecessary CO_2 emissions and contribute to global warming.

By promptly replacing these systems with highly efficient condensing boilers, pellet boilers or heat pumps in combination with solar technology, end users can cut down on energy consumption by up to 25 percent. This would work out to be 10 percent of Germany's total energy consumption, with annual CO_2 emissions being reduced by 54 million tonnes at the same time.



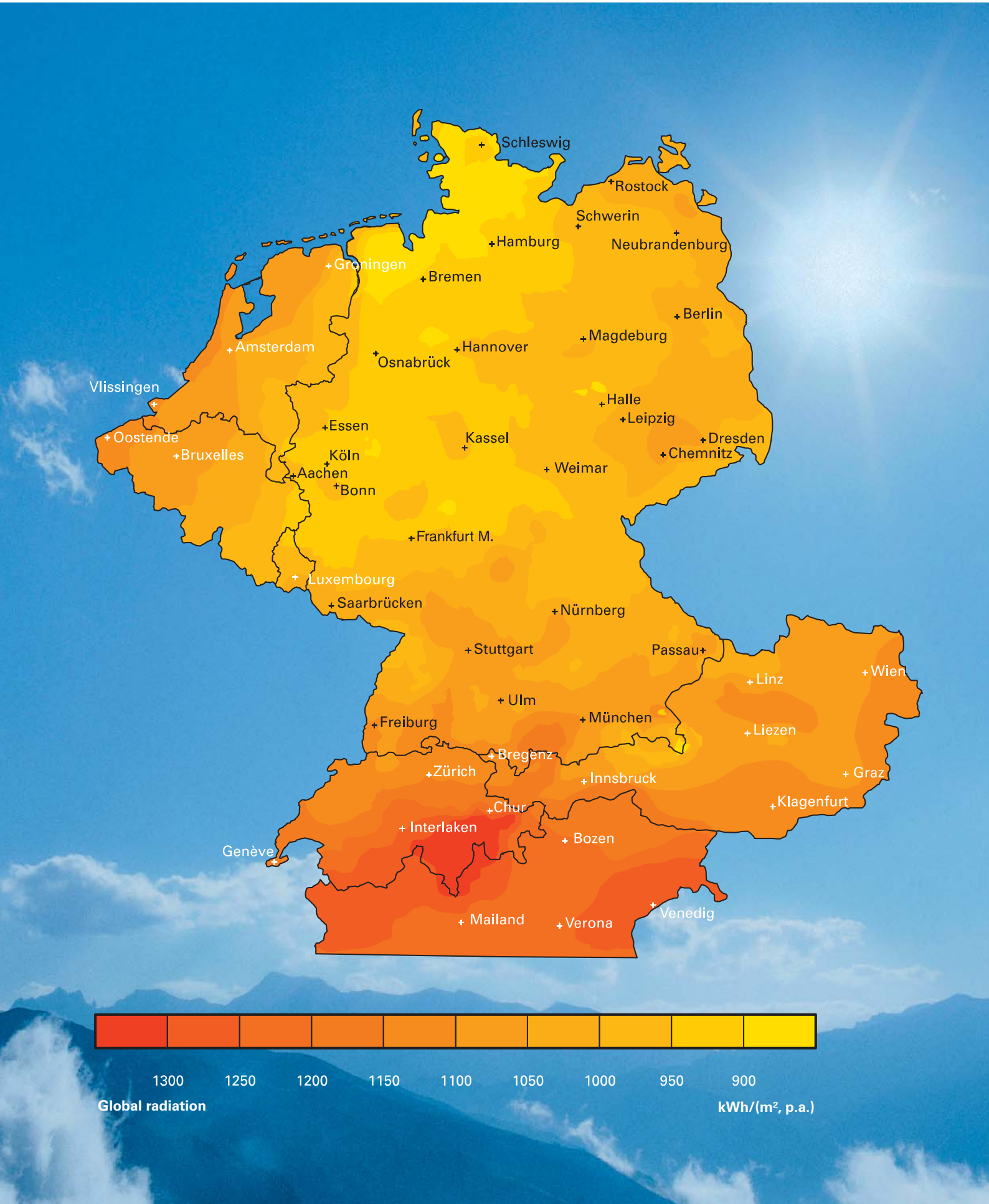
In a detached house, solar energy covers up to 60 percent of the energy required for heating DHW.

Heat from the sun
Around one third of the total energy demand in Germany is expended on heating buildings. Energy-conscious construction and economical heating systems, such as condensing technology, can substantially reduce this consumption. This then contributes to the preservation of resources and to the protection of the Earth's atmosphere.

One important savings potential is offered by DHW heating. In our latitudes, solar collectors combined with a DHW cylinder represent the most interesting alternative to boiler operation, especially during the summer months. In spring and autumn, you may often be able to turn off your boiler when using solar energy to back up your central heating.

Power from the sun
With a photovoltaic system, you have your own power plant right on the roof of your house. Up to 100 percent of the total annual power consumption of a four-person household can be produced from it, and fed into the public grid.

Government subsidies
Government subsidies can be claimed for the purchase of solar and photovoltaic systems. After all, the investment costs will pay for themselves after just a few years because of the high energy savings. Up-to-date overviews can be found at www.viessmann.de.


Schleswig
Rostock
Schwerin
Hamburg
Neubrandenburg
Groningen
Bremen
Berlin
Amsterdam
Magdeburg
Hannover
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Halle
Leipzig
Essen
Oostende
Kassel
Dresden
Bruxelles
Köln
Chemnitz
Aachen
Weimar
Bonn
Frankfurt M.
Luxembourg
Saarbrücken
Nürnberg
Stuttgart
Passau
Linz
Wien
Ulm
München
Freiburg
Liezen
Bregenz
Zürich
Innsbruck
Graz
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Interlaken
Bozen
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1100
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1000
950
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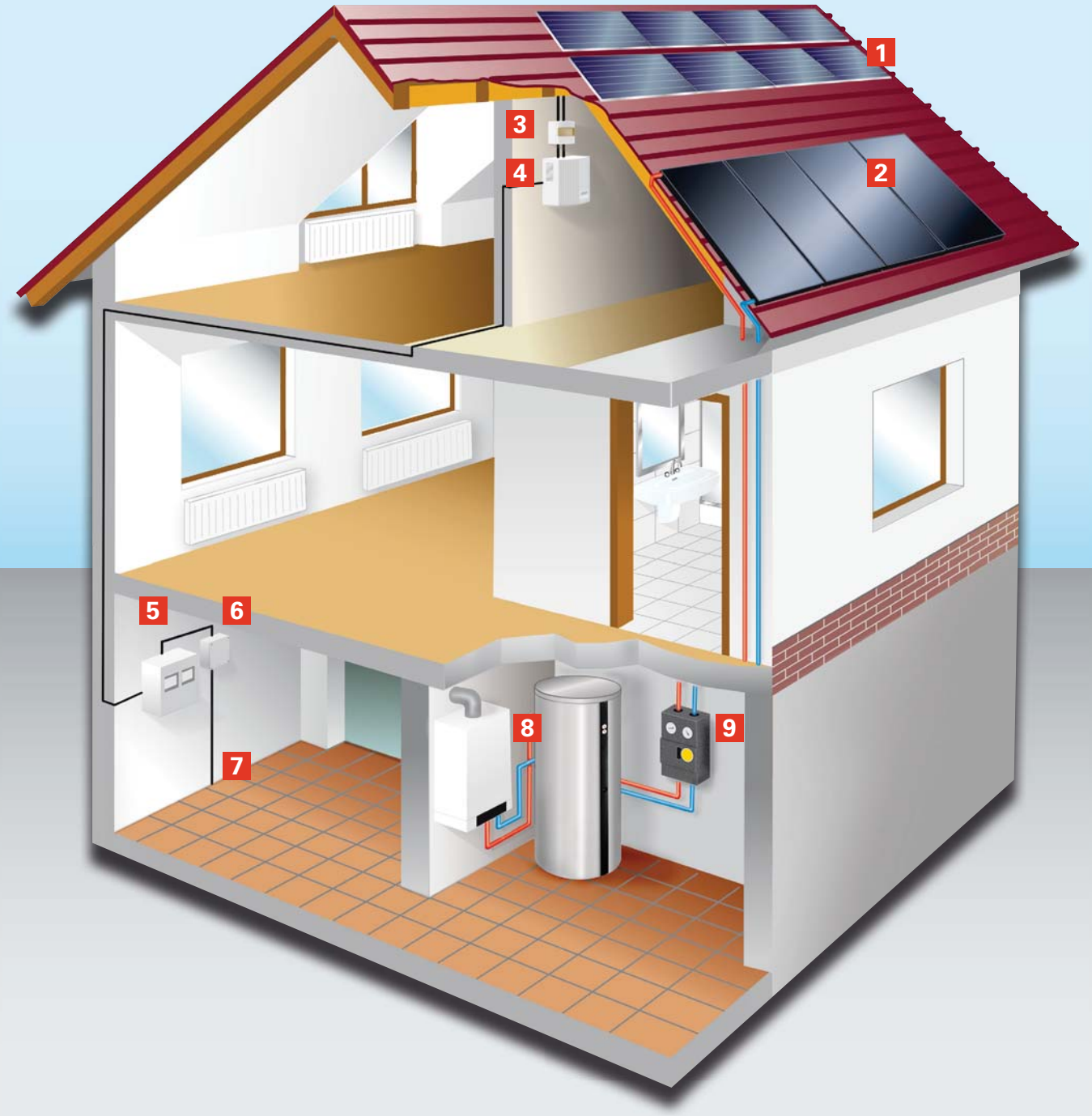
Global radiation
kWh/(m², p.a.)



1. Vitovolt photovoltaic modules
2. Vitosol solar collectors
3. DC enable point
4. Inverter
5. Electricity meters for consumption and feed-in
6. Main fuse
7. Public grid
8. Condensing heating system with multi-mode combi cylinder for DHW heating and central heating backup
9. Solar-Divicon pump station

DHW heating and central heating backup with solar energy

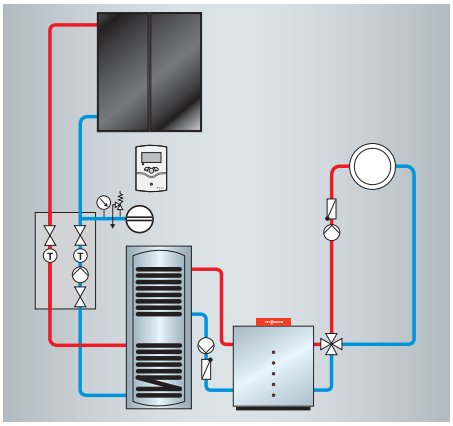
Solar thermal systems are ideally suited for DHW heating and central heating backup. Thanks to the freely available solar energy, your investment will pay for itself within a few years through high savings on fossil fuel.

You basically have the option of using solar energy for DHW heating and central heating backup. The savings on oil or gas are considerable, as you will be able to reduce your energy consumption, required to heat DHW for the daily demand, by 60 percent. If you combine the heating of DHW and heating water, your annual savings will be around 35 percent of the total energy required.

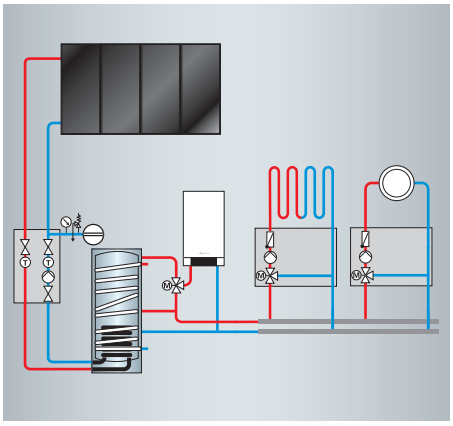
Solar thermal system with dual mode DHW cylinder
The dual mode DHW cylinder is key to this type of system. When there is sufficient insolation, the heat transfer medium in the solar thermal system heats up the water in the DHW cylinder via the lower indirect coil.

When the temperature drops through water being drawn off, such as for a bath or shower, the boiler will start if required to provide additional heating via the second circuit.

Solar thermal system for DHW heating and central heating backup
The heat transfer medium heated up in the solar collectors can be used for back-up heating of the heating water, as well as for DHW heating. For this, the heating circuit, via a heat exchanger, uses the water in the solar cylinder that is continuously heated by the solar collectors. The control unit checks whether the required room temperature can be achieved. If the temperature is below the set value, the boiler will also start.

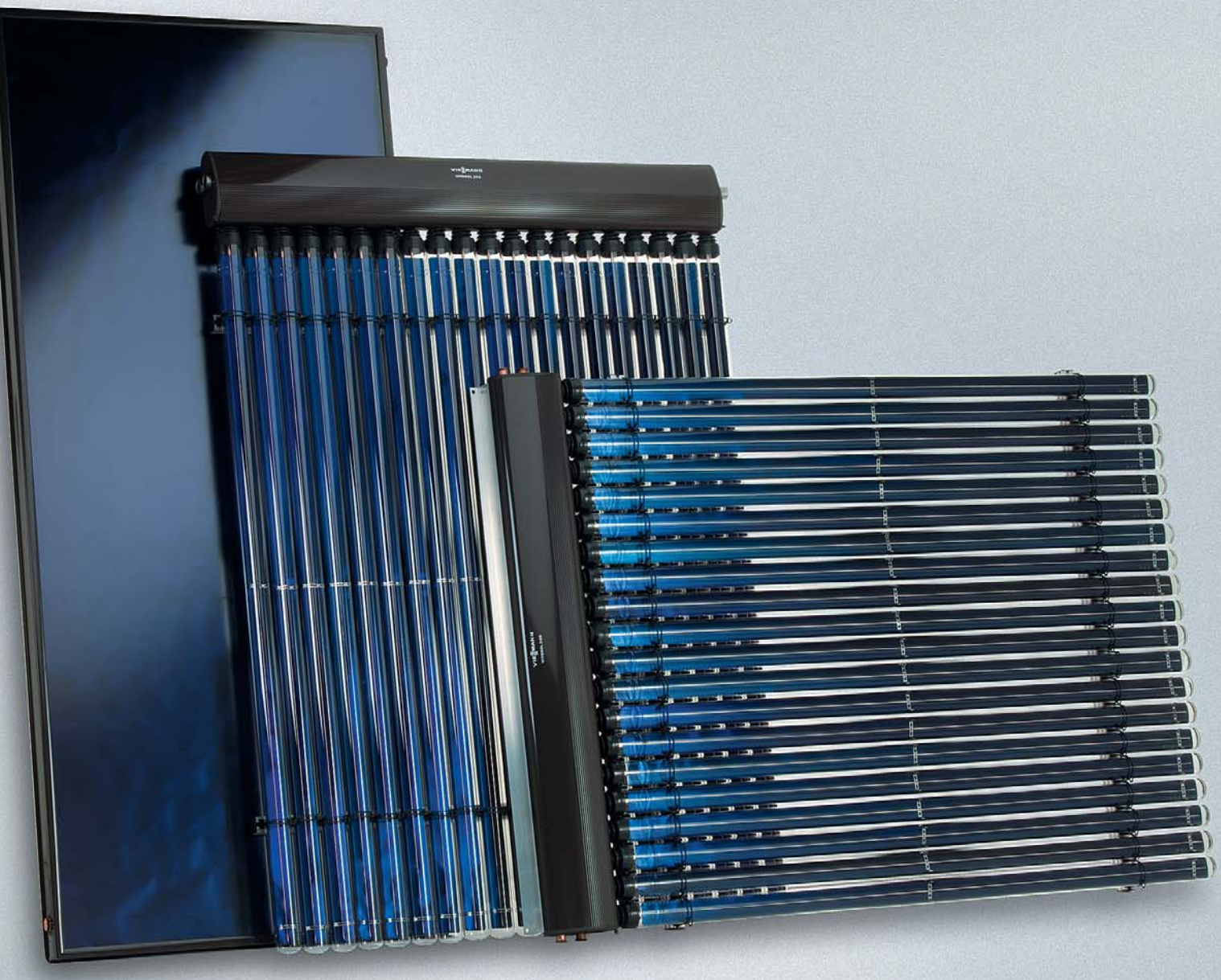


Solar DHW heating



Solar DHW heating and central heating backup

With Viessmann, the complete heating and solar technology comes from a single source. All components are perfectly matched.



VITOSOL

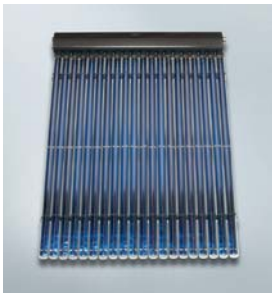
With a wide range of flat-plate and vacuum tube collectors, Viessmann provides flexible and individual solutions for every kind of modern heating system.

Every year, the sun radiates on average 1000 kWh onto every square metre of ground in Central Europe. This corresponds to the energy content of 100 litres of fuel oil. With Viessmann solar collectors, you can utilise this energy to generate heat. A solar thermal system is the ideal extension to any heating system, and lowers energy consumption in the long term.

The heating system that loves the environment
Even when it comes to environmental compatibility, with Viessmann solar thermal systems you'll be on the sunny side of the street. On average, in a detached house, about three quarters of a tonne less carbon dioxide (CO_2) is produced.

Futureproof in every respect
All Viessmann flat-plate and tube collectors are distinguished by their high operational safety and long service life. No wonder, the Vitosol solar collectors are made of corrosion and UV resistant materials. This is most impressively verified by quality tests according to the EN 12975 test standard, which at the same time also confirms the consistently high thermal output.

Viessmann can draw on 30 years of experience in the development and manufacture of solar collectors.



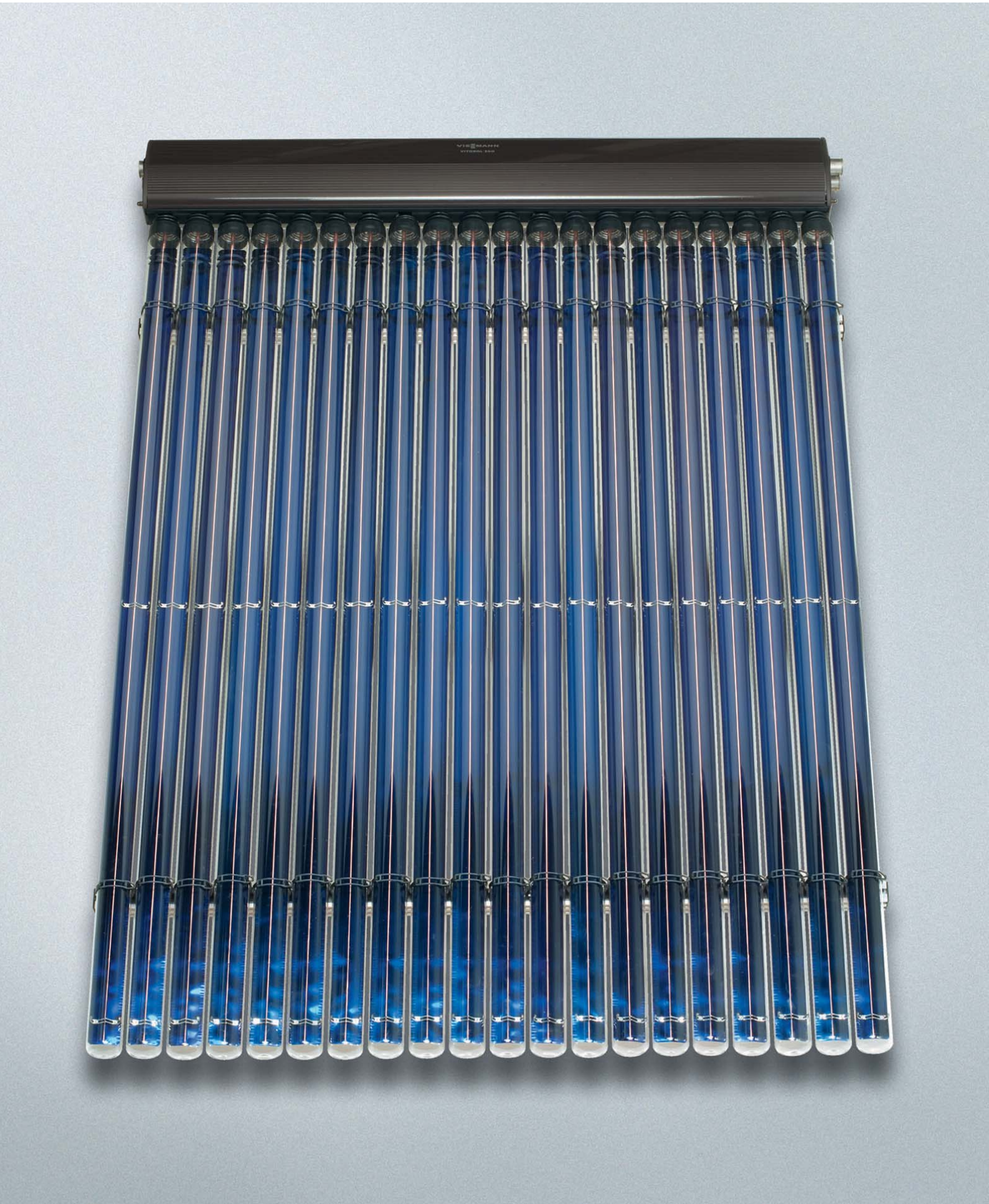
Vitosol 300-T
Vacuum tube collectors with heat pipe technology for the highest level of efficiency and operational reliability.
Page 14

Vitosol 200-T
Vacuum tube collectors according to the heat pipe principle for installation independent of location.
Page 14

Vitosol 300-F
Vitosol 200-F
Powerful, durable and easy to install flat-plate collectors.
Page 20

Solar technology,
tube collectors

Vitosol 300-T
Vitosol 200-T



VITOSOL 300-T
VITOSOL 200-T

Highly efficient tube collectors with time-saving and safe clamping system.

Effective use of the sun's heat
The highly selectively coated absorbers collect a vast amount of solar energy and thereby ensure high efficiency. The vacuum in the tubes guarantees very effective thermal insulation. There are therefore almost no losses between the glass tubes and the absorber, enabling the collector to convert even low levels of solar radiation into useful energy.

High energy yields for years to come
Viessmann solar collectors are designed for an exceptionally long service life. This is guaranteed by the use of high grade, corrosion-resistant materials, such as glass, aluminium, copper and stainless steel. The absorber is an integral part of the vacuum tube. This protects it from weather influences and contamination, and ensures lasting energy utilisation.

Quick and safe installation
Vitosol tube collectors are delivered in a pre-assembled modular design. An innovative clamping system enables the easy and quick installation of tubes. Plug the tubes into the manifold – close the clamp – click – done. The tubes can be rotated individually for optimum alignment with the sun. The tubes are connected in a dry state, i.e. without direct contact between the process and the heat transfer medium, thus ensuring a perfect tube connection. It is also possible, for example, to replace individual tubes when the system is already filled.
The stainless steel corrugated plug-in connectors interconnect the individual collectors.

Vitosol 300-T

VITOSOL 300-T

With the Vitosol 300-T, Viessmann offers a high performance vacuum tube collector that meets the highest demands for efficiency and safety.

The high performance Vitosol 300-T vacuum tube collector is based on the proven heat pipe principle. The preferred areas of application for the Vitosol 300-T include systems in which no heat is transferred over a prolonged period of high solar radiation. This includes school buildings, for example, in which no energy is required during the summer holidays. Here, the dry connection of the heat pipe tubes inside the header and the small amount of fluid contents inside the collector ensure particularly high operational reliability.

Heat pipe principle for high operational reliability

In heat pipe systems, the solar medium does not flow directly through the tubes. Instead, a process medium evaporates in the copper pipe below the absorber and transfers the heat to the heat transfer medium via a heat exchanger.

Duotec: Twice the benefit

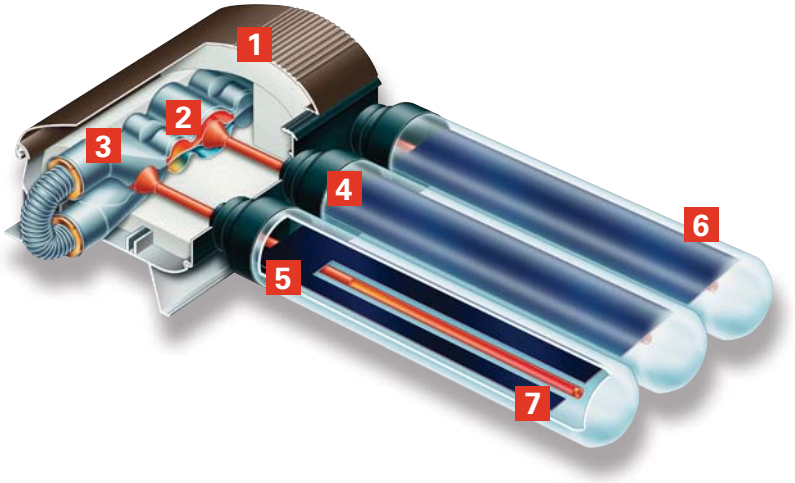
The condenser diameters were increased at their upper end to ensure the maximum heat transfer. These condensers are fully surrounded by the patented Duotec twin-pipe heat exchanger. This absorbs the heat particularly well and passes it into the heat transfer medium flowing past it.

Simple maintenance and installation

During installation, the collectors are rapidly interconnected through the proven stainless steel corrugated pipe plug-in connectors. The individual tubes can be precisely aligned with the sun by axial rotation. The tubes are connected in a dry state, i.e. without direct contact between the process and the heat transfer medium, thus ensuring a perfect tube connection. It is also possible, for example, to replace individual tubes when the system is already filled.

High grade materials

High grade, corrosion-resistant materials ensure safety, operational reliability and a long service life. Among other materials, glass, aluminium, copper and stainless steel are used.



Vitosol 300-T

1. Highly effective thermal insulation
2. "Dry" connection, no direct contact between process and heat transfer medium
3. Duotec twin pipe heat exchanger
4. Tubes are easy to replace and rotate
5. Highly selectively coated absorber
6. High grade, low ferrous glass
7. Heat pipe

Vitosol 300-T offers universal application options on the roof.

Efficient heat transfer through fully encapsulated condensers and twin-pipe Duotec heat exchanger.

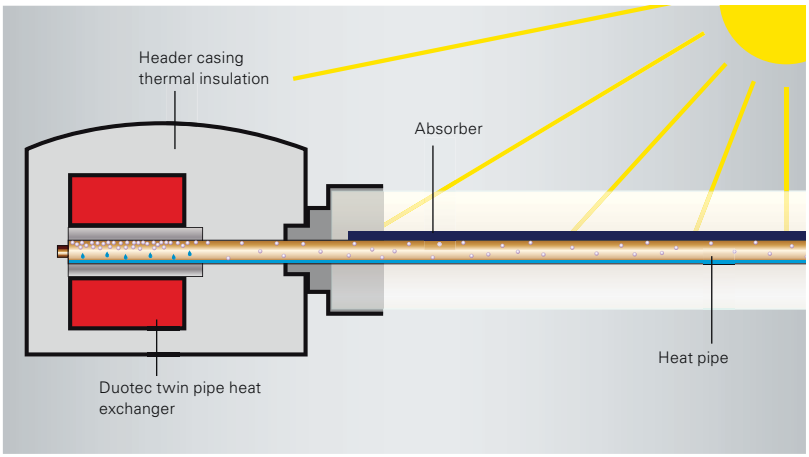
Take advantage of these benefits

- Highly efficient vacuum tube collector based on the heat pipe principle for high operational reliability
- The absorber surfaces with highly selective coating, which are integrated into the vacuum tube, are not susceptible to contamination
- Efficient heat transfer through condensers fully surrounded by the twin-pipe Duotec heat exchanger
- Tubes can be rotated for optimum alignment with the sun, thereby maximising the energy yield
- Dry connection, no contact between the process and heat transfer media, i.e. individual tubes can be replaced whilst the system is already filled
- Highly effective thermal insulation of the header casing for minimum thermal losses
- Easy installation through the Viessmann assembly and connection systems

For specification, see page 30.

VITOSOL 200-T

The Vitosol 200-T is a highly efficient tube collector based on the heat pipe principle that is ideal for installation in any location.



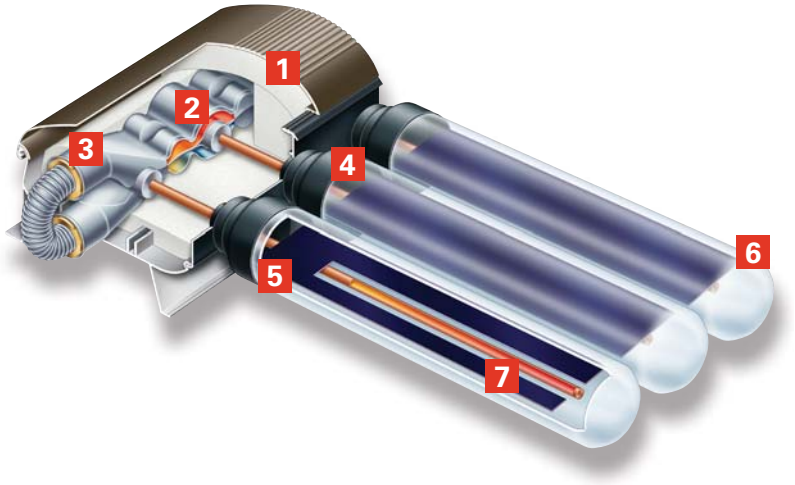
The water heated by the sun evaporates and shifts to the colder part of the tube. There, the steam condenses, transfers the heat to the collector and is reheated in a new cycle.

With the Vitosol 200-T vacuum tube collector, Viessmann increases the reliability of solar collectors to the extent that they can be installed anywhere. This collector can be installed vertically and horizontally at any angle between 0 and 90 degrees. It is as suitable for private as for commercial systems. Here, the dry connection of the heat pipe tubes inside the header and the small amount of fluid inside the collector ensure particularly high operational reliability. The collector is available either with 20 tubes (= 2 m^2) or with 30 tubes (= 3 m^2).

Sophisticated design
No matter where you install the Vitosol 200-T vacuum tube collector, it will always be an appealing design feature. As a result, it is an exceptionally good architectural addition to new build or to existing buildings. The aluminium header casing is unobtrusively painted in brown (RAL 8019) and is equipped with highly effective thermal insulation.

Making the most of solar energy
To convert the maximum amount of solar energy into heat, every tube can be optimally aligned towards the sun, which maximises energy utilisation. The highly effective thermal insulation in the header casing minimises heat losses, particularly during spring and autumn, and through cold winters.

Quick and easy installation
Standard installation material made of stainless steel simplifies collector installation. During maintenance, an innovative plug-in system allows tubes to be replaced quickly without the need for tools. Corrugated stainless steel plug-in connectors make the installation of several collectors in series very much easier than the connection by conventional plumbing methods.



Vitosol 200-T

1. Highly effective thermal insulation
2. "Dry" connection, no direct contact between process and heat transfer medium
3. Duotec twin pipe heat exchanger
4. Tubes are easy to replace and rotate
5. Highly selectively coated absorber
6. High grade, low ferrous glass
7. Heat pipe

Example of using Vitosol 200-T tube collectors.

Take advantage of these benefits

- Universal application through installation in any location, horizontal or vertical, from 0 to 90 degrees on rooftops, walls or freestanding
- Particularly reliable operation through the heat pipe principle and small liquid contents
- Easy and safe connection of the individual tubes through an innovative plug-in system
- The absorber surfaces, which are integrated into the vacuum tubes, are not susceptible to contamination
- Tubes can be rotated for optimum alignment with 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

For specification, see page 30.

Solar technology,
flat-plate collectors

Vitosol 300-F
Vitosol 200-F

VITOSOL 300-F
VITOSOL 200-F

Powerful and durable flat-plate collectors at an attractive price.
The Vitosol 200-F was awarded the rating "Very Good" by "Stiftung Warentest", the German consumer association.

For DHW heating and central heating backup
The Vitosol 200-F flat-plate collector is distinguished by its high quality, lasting operational reliability and high efficiency.

With its extremely translucent anti-reflex glass and highly efficient thermal insulation, the high performance Vitosol 300-F flat-plate collector utilises the intensive solar radiation particularly efficiently.

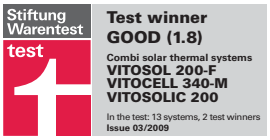
These powerful solar flat-plate collectors can save on average up to 60 percent of the energy required each year for DHW heating. Thanks to free solar energy, in combination with a condensing boiler, more than a third of the total annual energy can be saved.

Weatherproof
The Vitosol 300-F/200-F casings are made from an all-round aluminium frame. The pane seal is endless, resilient, as well as weather and UV resistant.

Attractively designed, individual solar collectors
The Vitosol 300-F/200-F can be integrated into the roof cover. Optional edge trims help to create an harmonious transition between the collector surface and the roof. The frames are available on request in any RAL colour.

Easy installation
The Vitosol 300-F/200-F are particularly easy to install. The integral flow and return pipes enable simple and safe installation, even when it comes to larger collector arrays. Up to twelve solar collectors can be linked up.

Tailor-made for every demand
With their absorber areas of 2.32 m^2, the Vitosol 300-F/200-F flat-plate collectors can be effectively matched to any energy demand. The collectors are available as vertical or horizontal versions.



Outstanding quality you can rely on.

Vitosol 200-F
Two-family home, Geisenfeld

Vitosol 300-F
The powerful alternative
With its special, extremely translucent anti-reflex glass and highly efficient thermal insulation, the high performance Vitosol 300-F flat-plate collector achieves particularly high levels of energy efficiency.

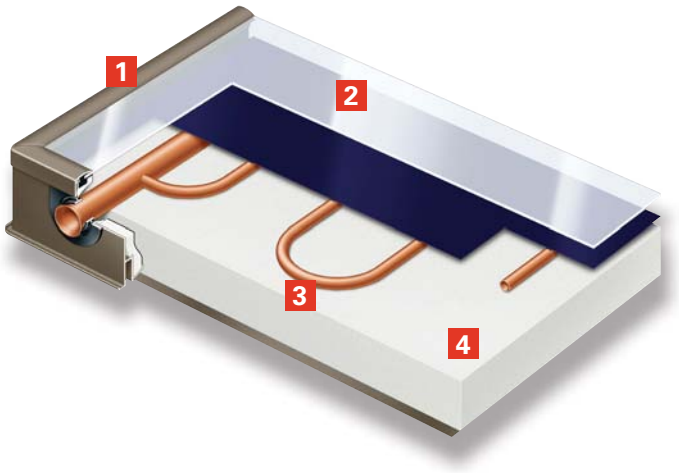
Vitosol 200-F: "Very Good"
In the "Stiftung Warentest" comparison test against eleven other solar thermal systems for DHW heating in March 2008, the Vitosol 200-F was judged to be "Very Good". The combined solar thermal system incorporating the Vitosol 200-F flat-plate collectors, the Vitocell 340-M combi cylinder and the Vitosolic 200 solar control unit stand for excellent energy efficiency, a long service life and particularly high DHW convenience - no surprise then that the "Stiftung Warentest" (issue 03/2009) assessed this combination as "Best in test".

Easy to handle
It couldn't be easier to install Vitosol flat-plate collectors. Up to twelve collectors can be reliably connected to form a single collector array via flexible corrugated stainless steel plug-in connectors. The easy-to-assemble Viessmann fixing system with load-tested and corrosion-resistant components made from stainless steel and aluminium is standard for all Viessmann collectors.

The flat-plate collectors can be used universally for above roof installation, roof integration and freestanding installation, e.g. on flat roofs. For vertical or horizontal installation, such as on walls, we recommend a 20 percent larger collector area compared to standard roof installation, to ensure optimum energy utilisation.

Looking good
The collectors will captivate you with their attractive design. The frame is finished in RAL 8019 brown as standard and blends subtly into most roofs. Upon request, the frame is also available in all other RAL colours. Optional edge trims provide an harmonious transition between the collector surface and the roof. The large flat-plate collector is provided in bright aluminium, but can also be finished in any RAL colour.

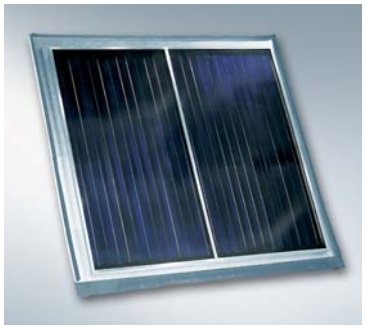
Permanently sealed and well insulated
The all-round folded aluminium frame and seamless pane seal guarantee permanent tightness and a highly stable collector. This reliably prevents the frame freezing-up through standing water in the transitions between frame and glass. The back panel is puncture-proof and corrosion-resistant. Highly effective thermal insulation reduces heat losses particularly in spring, autumn and winter.



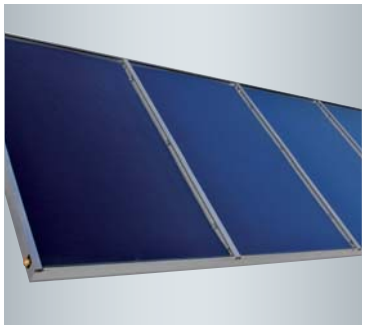
Vitosol 300-F

1. All-round folded aluminium frame, available in all RAL colours
2. Stable, highly transparent cover made from special glass
3. Meander absorber
4. Highly effective thermal insulation

With optional edge trim available in all RAL colours, the Vitosol solar collectors blend harmoniously into most roofs.



With an absorber area of 4.76 m^2, the Vitosol 200-F, type 5DI, is available as a large area collector. Its frame can be ordered in any RAL colour.



With an absorber area of 4.59 m^2, the Vitosol 200-F, type XL5 and type XL10 with 9.17 m^2 are available as large area collectors.

Take advantage of these benefits

- Permanently sealed and highly stable through all-round folded aluminium frame
- Quick and reliable collector connection through flexible corrugated stainless steel pipe plug-in connector
- Universal application for freestanding and above roof installation as well as roof integration

The bonus with the Vitosol 300-F

- High performance flat-plate collector with anti-reflex pane for particularly high energy efficiency

The bonus with the Vitosol 200-F

- Powerful flat-plate collector with a highly selectively coated absorber

For specification, see page 30.

VITOVOLT

Power from the sun. A 10 m^2 area of solar cells is sufficient to cover the average power consumption of one person.

Feed-in remuneration [in Germany]
If you produce your own power, you can receive a guaranteed remuneration from your power supply utility over 20 years. This is governed by the Renewable Energy Sources Act (EEG) [Germany], which states that energy providers are obliged to accept the renewable power and feed it into their grid.

Power for your own consumption continues to be drawn from your local power supply utility at the usual tariff. The feed-in remuneration for environmentally friendly photovoltaic power is higher than the consumption tariff. This difference, together with the public loans programmes, contribute to economic finance for a photovoltaic system. In addition, a number of regional subsidies are available. For up-to-date information, see the subsidies database at www.viessmann.de.

Under these conditions, the interest shown by many developers in this type of power generation is growing:

- Make a visible contribution towards protecting the climate. Photovoltaic systems reduce the damage caused by emissions and protect natural resources.
- The feed-in remuneration and various subsidy programmes make the investment worthwhile.
- They make your property more attractive and increase its value.

Viessmann photovoltaic systems are designed to last for decades. Thanks to their simple function, they are completely reliable and practically maintenance-free.

Vitovolt 200
Photovoltaic module with crystalline silicon technology.
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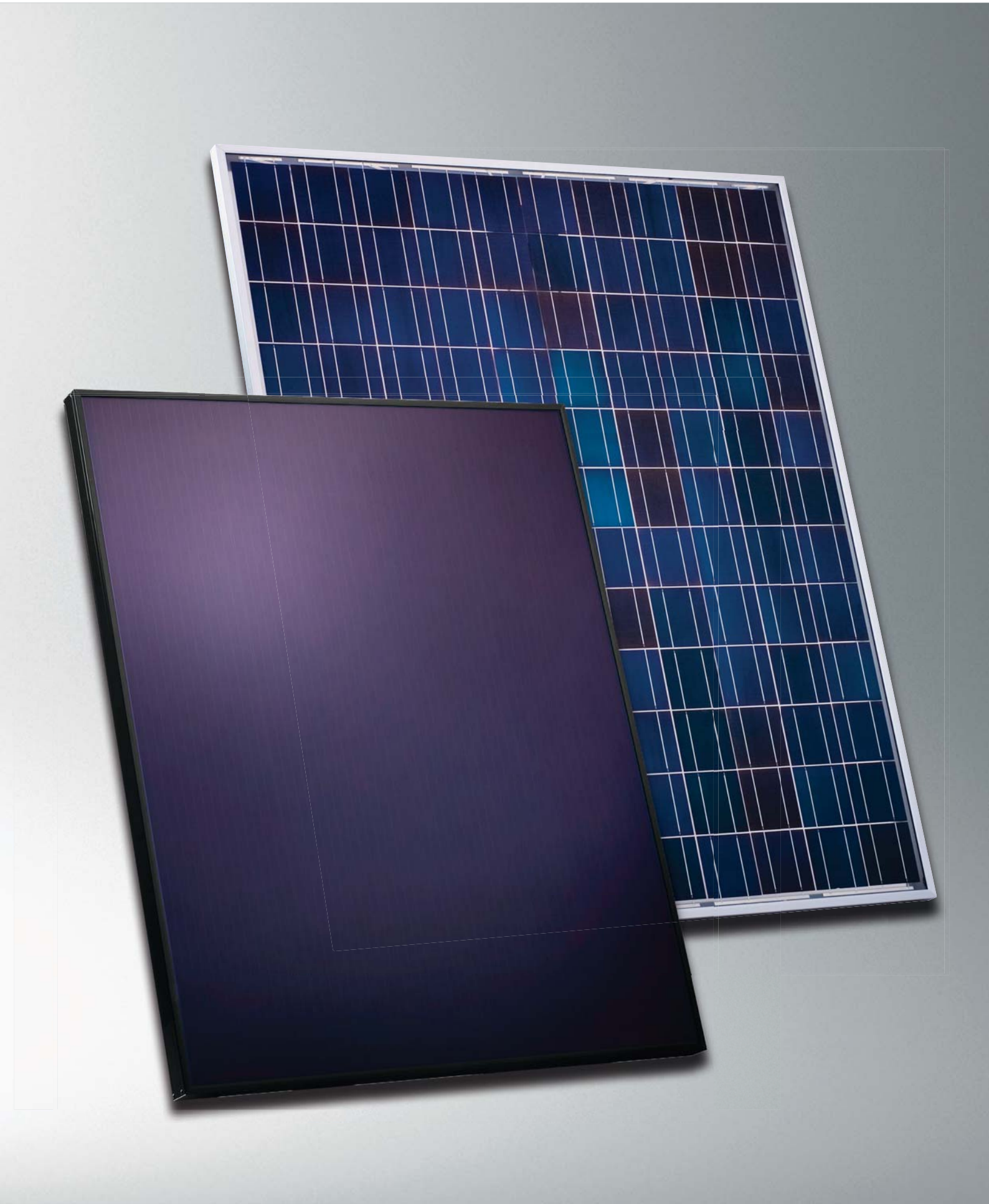
Vitovolt 100
Photovoltaic module with thin-layer technology.
Page 26

Photovoltaics, single pane modules

Vitovolt 200
Vitovolt 100



VITOVOLT 200
VITOVOLT 100

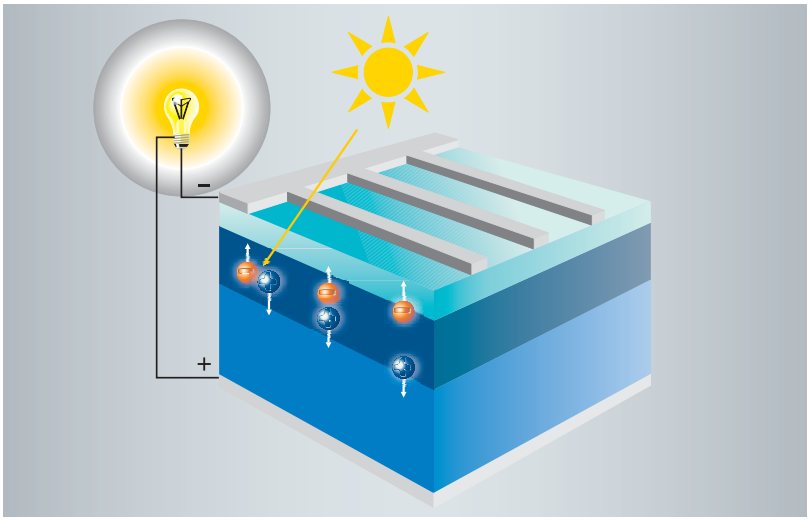
Installing a photovoltaic system isn't rocket science. With the fully assembled modules, you too could soon be getting power straight from your roof.

Installing a Vitovolt photovoltaic system on the roof turns every homeowner into a power generator. Fit photovoltaic modules onto the roof, plug cables together, connect an inverter, done!

Vitovolt function explained
Basically, a mains-connected solar power system operates in three stages:

1. Harvesting energy
Electrons are released when light strikes the photovoltaic modules. Positive or negative charge carriers collect at the electrical contacts, resulting in a DC current between the front and back of the cell. This photoelectric effect is produced without mechanical or chemical reactions, and so is maintenance-free and not subject to wear.

2. Power conversion
DC power produced by the solar generator is converted by the inverter (also often referred to as the mains feed-in device) into AC power, suitable for the power network (230 V DC at 50 Hz). Proven safety standards and fully developed processors, as well as cutting edge power electronics, ensure effective conversion of the solar power.



Vitovolt

1. Negative electrode
2. n-Dope silicon
3. Boundary layer
4. p-Dope silicon
5. Positive electrode

3. Energy utilisation
Contrary to stand-alone systems where the solar power must be stored in rechargeable batteries, systems linked to the mains feed all harvested power directly into the public grid. A separate meter is installed which monitors the power fed into the mains system. The generated energy is reimbursed by the electricity supply utility in accordance with the Renewable Energy Sources Act (EEG) [Germany].

Vitovolt 200

Vitovolt 200: High performance module at an affordable price
Vitovolt 200 photovoltaic modules are available with monocrystalline and polycrystalline silicon cells. The photovoltaic modules are designed as a glass laminate construction. The individual solar cells are embedded between two plastic foils. The back cover is composed of a weather-resistant foil. Pane and foils are laminated together. This protects the cells reliably against weather influences.

The fully wired module is particularly easy to install on the roof thanks to its light weight and the standard Viessmann assembly sets.

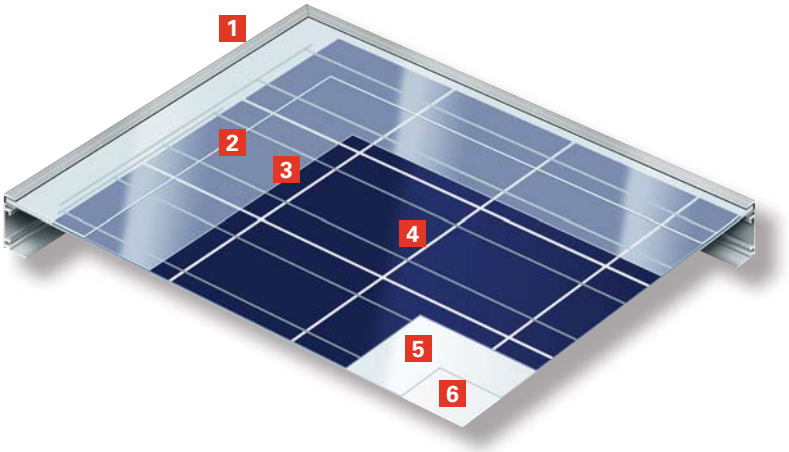
Vitovolt 100: High yields in low light conditions
Vitovolt 100 photovoltaic modules are based on amorphous silicon. This is applied to a glass substrate in a special vapour disposition process. This results in the conventional layers being thinner by a factor of 100 than with crystalline silicon, representing a substantial material saving.

The high absorption ability enables the Vitovolt 100 to achieve very high yields, particularly when light is poor and/or there is partial shading. This makes the photovoltaic module suitable for flat roofs or other installation conditions where the orientation is less than ideal. The integral series connection and the frames of the photovoltaic modules ensure quick and easy installation.

The dark, homogenous surface and the black anodised frame are aesthetically pleasing.

All necessary components, such as interconnecting cables and the inverter of the photovoltaic system, are perfectly matched.

Easy installation
The connection of the photovoltaic modules is prepared at the factory. Electrical cables are simply plugged together. Installation sets are available for the vertical and horizontal above roof installation. The stable aluminium frames ensure good inherent module stability and provide protection against damage.



Vitovolt 200

1. Aluminium frame
2. Low ferrous glass cover
3. Top EVA foil (EVA = ethylene vinyl acetate)
4. Silicon cell
5. Bottom EVA foil
6. Backing foil

The Vitovolt 200 module surface area of approx. 12 m^2 covers nearly 50 percent of the power consumption of an average detached house.

Vitovolt inverter

Take advantage of these benefits

- High quality standard in the selection of silicon cells
- All necessary components for the photovoltaic system are perfectly matched
- Quick installation with cables that simply plug together, and complete installation sets
- Highly efficient inverter with display – optional data capture via remote display

The bonus with the Vitovolt 200

- High quality single pane module with an attractive price/performance ratio
- High efficiency

The bonus with the Vitovolt 100

- Low investment costs
- Very good yields, even when the orientation is less than ideal, at high ambient temperatures and partial shading

Vitosol 300-T vacuum tube collector
Heat pipe system

Page 14

Type				**Vitosol 300-T** type SP3A	**Vitosol 300-T** type SP3A
Version			m^2	2	3
Gross area			m^2	2.88	4.32
Absorber area			m^2	2.00	3.02
Aperture area			m^2	2.15	3.23
Dimensions	Width		mm	1420	2129
	Height		mm	2040	2040
	Depth		mm	143	143
Weight			kg	58	87

Vitosol 200-T vacuum tube collector
Heat pipe system

Page 14

Type				**Vitosol 200-T** type SP2	**Vitosol 200-T** type SP2
Version			m^2	2	3
Gross area			m^2	2.87	4.32
Absorber area			m^2	2.00	3.02
Aperture area			m^2	2.15	3.23
Dimensions	Width		mm	1420	2129
	Height		mm	2040	2040
	Depth		mm	143	143
Weight			kg	58	87

Vitosol 300-F, Vitosol 200-F flat-plate collectors

Page 20

Type		**Vitosol 300-F** type SV3A **Vitosol 200-F** type SV2A	**Vitosol 300-F** type SH3A **Vitosol 200-F** type SH2A	**Vitosol 200-F** type 5DI	**Vitosol 200-F** type XL5	**Vitosol 200-F** type XL10
Gross area	m^2	2.51	2.51	5.25	5.04	10.05
Absorber area	m^2	2.32	2.32	4.65	4.59	9.17
Aperture area	m^2	2.33	2.33	4.85	4.70	9.43
Dimensions						
Width	mm	1056	2380	2570	2441	4867
Height	mm	2380	1056	2040	2064	2064
Depth	mm	90	90	116	114	114
Weight	kg	52	52	105	90	170

Vitovolt 200, Vitovolt 100 photovoltaic modules

Specification on request or at www.viessmann.de.


VIESMANN
VITOCELL 300

Comfort and economy with system design

Viessmann supplies you with all the technology you need from a single source.

For the complete solar thermal range, Viessmann supplies you with optimally matching system technology from a single source. All the components fit seamlessly together. This gives you the guarantee of optimum efficiency and high operational reliability when you use your heating and solar thermal system.

The Viessmann comprehensive product range includes solar collectors, specially developed combi DHW cylinders for use with solar thermal systems, the Vitosolic solar control units, the Solar-Divicon pump station for reliable hydraulics and thermal protection of solar thermal systems, plus oil and gas condensing boilers, wood boilers and heat pumps.

Correctly sized solar thermal systems with matching system components cover up to 60 percent of the annual energy demand for DHW heating of detached houses and two-family homes, or up to 35 percent of the total demand of low energy houses for DHW and central heating.

Vitocell
Dual mode DHW cylinders, combi cylinders and heating water buffer cylinders with up to 950 litres capacity.
Pages 34/35

Vitosolic
Intelligent energy management for your solar and heating technology.
Pages 36/37

Vitohome and Vitocom
Convenient control for your solar and heating technology.
Pages 38/39

The Vitocell range from Viessmann offers the right DHW cylinder for every demand, ideally matched to your heat source.

DHW cylinders

Dual mode DHW cylinders work to heat the DHW with separate indirect coils that are connected directly to the solar thermal system. If required, an electric immersion heater can be fitted at a later date.

Vitocell 300-B (300, 500 litre)
Vitocell 100-B (300, 400, 500 litre)
The heat absorbed by the solar collectors is transferred in the dual mode Vitocell 300-B and Vitocell 100-B DHW cylinders to the DHW via a separate lower indirect coil. An indirect coil, arranged in the upper area and heated by a boiler, additionally heats the DHW upon demand. The Vitocell 100-B is protected against corrosion through Ceraprotect enamel coating; the Vitocell 300-B is made from stainless steel.

Vitocell 100-U (300 litre)
The dual mode Vitocell 100-U is fully equipped for the rapid and easy integration of solar thermal systems for DHW heating. The DHW cylinder is protected against corrosion by Ceraprotect enamel coating and an additional cathode (magnesium or impressed current anode).

Heating water buffer cylinders

Heating water buffer cylinders are recommended particularly for larger systems. Connectors at different heights enable the utilisation of different heat sources, e.g. solid fuel boilers or heat pumps.

Vitocell 340-M and 360-M (750, 950 litre)
The Vitocell 340-M/360-M are multi-mode combi cylinders designed for the simultaneous connection of several heat sources; they are equipped as standard with an integral internal solar coil.

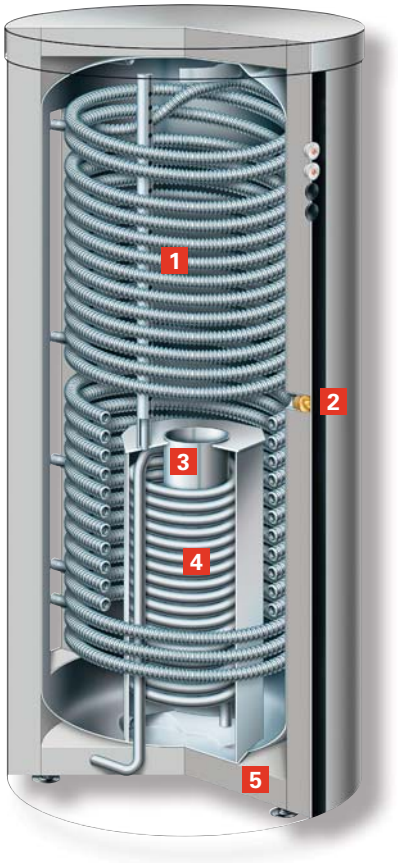
The Vitocell 360-M is additionally equipped with a stratification system that ensures a temperature-dependent stratification of solar energy. This makes DHW heated by solar energy available very quickly.

Vitocell 140-E and 160-E (750, 950 litre)
In conjunction with solar thermal systems, the Vitocell 140-E and Vitocell 160-E heating water buffer cylinders with integral internal solar coils are available. These help to keep the DHW cylinder small, particularly in larger systems.

The Vitocell 160-E is additionally equipped with a stratification system, comprising an encapsulated solar heat exchanger and a riser pipe with outlets at different levels.

Vitocell 100-E (200, 400, 750, 950 litre)
For storing heating water in conjunction with solar thermal systems, Viessmann offers the Vitocell 100-E. These help to keep the DHW cylinder small, particularly in larger systems. This is particularly beneficial with regard to the hygiene of the DHW, which can then be regularly replaced with fresh water.

Vitocell DHW cylinders only require a small amount of floor space. Thanks to their elegant design they can readily be installed in multi-purpose rooms.



Vitocell 360-M

1. Corrugated stainless steel indirect coil for DHW
2. Connection for the electric immersion heater
3. Stratification system
4. Internal steel indirect coil for the connection to solar collectors
5. Highly effective all-round thermal insulation made from polyester fleece

With the Vitosolic 100 and 200 solar control units, optimum use is made of the heat obtained from the solar collectors for DHW heating or central heating backup.

Intelligent energy management

Well-designed, electronic control units help to make maximum use of the solar energy. The Vitosolic control units are characterised by their simple operation.

With a Vitosolic solar control unit, you can use solar energy particularly effectively. This intelligent energy management system covers all conventional applications and can control up to four separate consumers.

By communicating with the Vitotronic boiler control unit, the Vitosolic ensures that optimum use is made of the heat obtained with the solar collectors, and that as little additional energy as possible is used for DHW or central heating. This relieves the boiler and reduces heating costs.

Thanks to a plain text display with user prompts, the Vitosolic 200 is easy to operate and corresponds to the proven Vitotronic user interface. Information regarding the solar thermal system can also be scanned at the Vitotronic boiler control unit and the Vitotrol 300 remote control.

The bonus with the Vitosolic 200
The Vitosolic 200 regulates up to four consumers. This control unit is primarily designed for multi-cylinder operation, heating swimming pool water and central heating backup. High operating convenience through four-line plain text display with menu guidance.

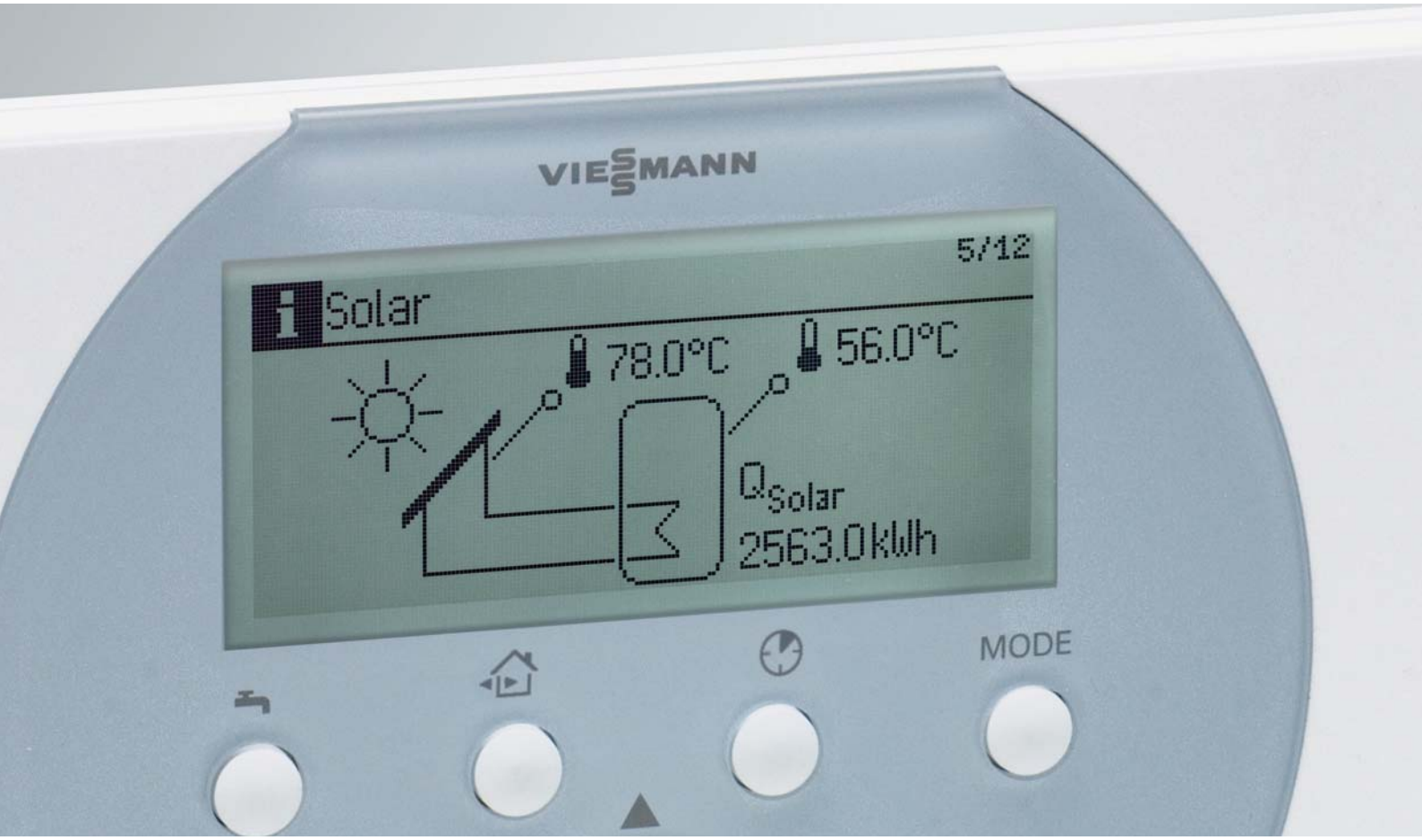
- Electronic temperature differential control of up to four consumers
- Easy operation
- High operating convenience through four-line plain text display with menu guidance
- Designed for multi-cylinder operation, swimming pool heating and central heating backup
- Large wiring chamber for easy installation

The bonus with the Vitosolic 100
The Vitosolic 100 is an attractively priced, electronic differential control thermostat, and is primarily designed for heating DHW in solar thermal systems. A two-line display provides information about current temperatures and pump operating conditions.

- Attractively priced, electronic differential control thermostat for heating DHW in solar thermal systems
- Easy operation
- Two-line display provides information about current temperatures and pump operating conditions
- Small casing dimensions

Solar-Divicon
Compact, complete and reliable – the Solar-Divicon pump station for thermal safety and all hydraulic functions. Here, the corresponding safety and functional components are compactly arranged.

The Solar-Divicon is the compact pump station for all hydraulic functions.



The Vitohome 300 control unit display lets you keep an eye on everything – even the current yield of your solar thermal system.

Convenient communication technology

Innovative data technology permits retrofitting of further functions, such as controls for lights and blinds.

Vitohome 300 – lets you see what you're saving
Enjoy greater convenience and still save money – the Vitohome 300 from Viessmann is the ideal solution. With this centralised home automation system, you can directly scan the yield of your solar thermal system.

Furthermore, you can set the exact temperature in every room individually. You gain a higher level of comfort and lower your energy consumption, as you only heat when and where required. The system automatically detects when a window is opened and immediately responds by acting on the heating operation in the room concerned.

Vitohome 300 is easy right from the start. Components communicate by wireless signals, making it ideal for retrofitting, as no wiring is required. Your heating system does not require any expensive conversion either. The Vitohome 300 fits perfectly, anywhere a Vitotrol 300 can be connected to the boiler.

The room temperature is regulated according to the European KNX communication standard. This enables additional functions to be added with ease later. Your electrical wholesaler will offer you matching devices, such as window contacts, smoke detectors or controls for lighting and blinds. They offer optional simulation of a presence, and panic circuits. The result is not just improved comfort, but also a higher level of security.

Monitor and control your heating system from wherever you are.

Vitocom 100 – the mobile phone control unit

The Vitocom 100 is an affordable and uncomplicated remote monitoring system, specifically designed for the requirements of holiday homes as well as detached and two-family houses. To be able to monitor and operate a heating system via mobile phone from anywhere and at any time is an invaluable benefit. One "call" is enough to ensure that your home is comfortably warm when you arrive. Operation via simple SMS commands. Faults are also reported to your mobile phone via SMS in plain text.

Vitohome 300 – energy savings and convenience at the touch of a button.

The Vitocom 100 receives your commands via SMS – and also informs you of faults.

With our trade partners, you're in good hands

For Viessmann, proximity to trade partners is the basis of the company's success. You too can benefit from their expertise if you choose Viessmann heating technology.

You can receive advice and have access to sales, installation and customer service exclusively via Viessmann trade partners, who are trained regularly by the company, and have in-depth knowledge of its products. Take advantage of the comprehensive service you can expect from your heating contractor.

Some service examples

- Free, no-obligation and individual advice, even on site
- Clear calculation of heating cost savings after the modernisation of your heating system, even in combination with solar collectors
- Calculation of the payback period, after which the new heating system will have paid for itself through energy savings
- Calculation of the actual heating and DHW demand for your household or property
- Information about the economical combination of a new heating system with solar thermal systems for central heating backup and DHW heating
- Up-to-date information about government grant programmes, that could subsidise your new heating system and solar thermal system
- Support when applying for subsidies

Technology from Viessmann – government subsidies
You don't just save on running costs. Energy-saving and environmentally responsible heating technology is financially supported by local, regional and national bodies, as well as by your local power supply utility. So find out more about the various subsidies that may be on offer. Up-to-date information can be found on the internet at www.viessmann.de/foerderprogramme, or ask your heating contractor.

Attractive finance – invest now and save on heating costs immediately
With the Viessmann financial model, you can start saving straight away, and turn your plans into reality. The unbureaucratic, fast and reliable process makes your modernisation project easier, and your financial planning remains flexible. The special advantage to you is that with Viessmann's low-cost terms and conditions, you generally save much more on heating costs than you spend on finance.

Finance offered by UmweltBank AG
Viessmann, in co-operation with the UmweltBank AG, offers a simple and convenient solution for financing photovoltaic systems. Further information and current conditions can be found at www.viessmann.de.

Please note:
Applications for subsidies and finance must be made before the heating and/or solar thermal system is purchased. A retrospective subsidy or financial agreement is not possible. Detailed information regarding the Viessmann financial model can be obtained from your heating contractor, on site.

Creditplus BANK

Terms and conditions to shout about
If you invest now in a solar thermal system for your property, you can receive an attractive finance offer from Viessmann in conjunction with CreditPlus Bank: Just 3.99 percent* effective APR.

* Over 24 months.

Individual solutions with efficient systems

Futureproof heating systems for all fuel types and applications.

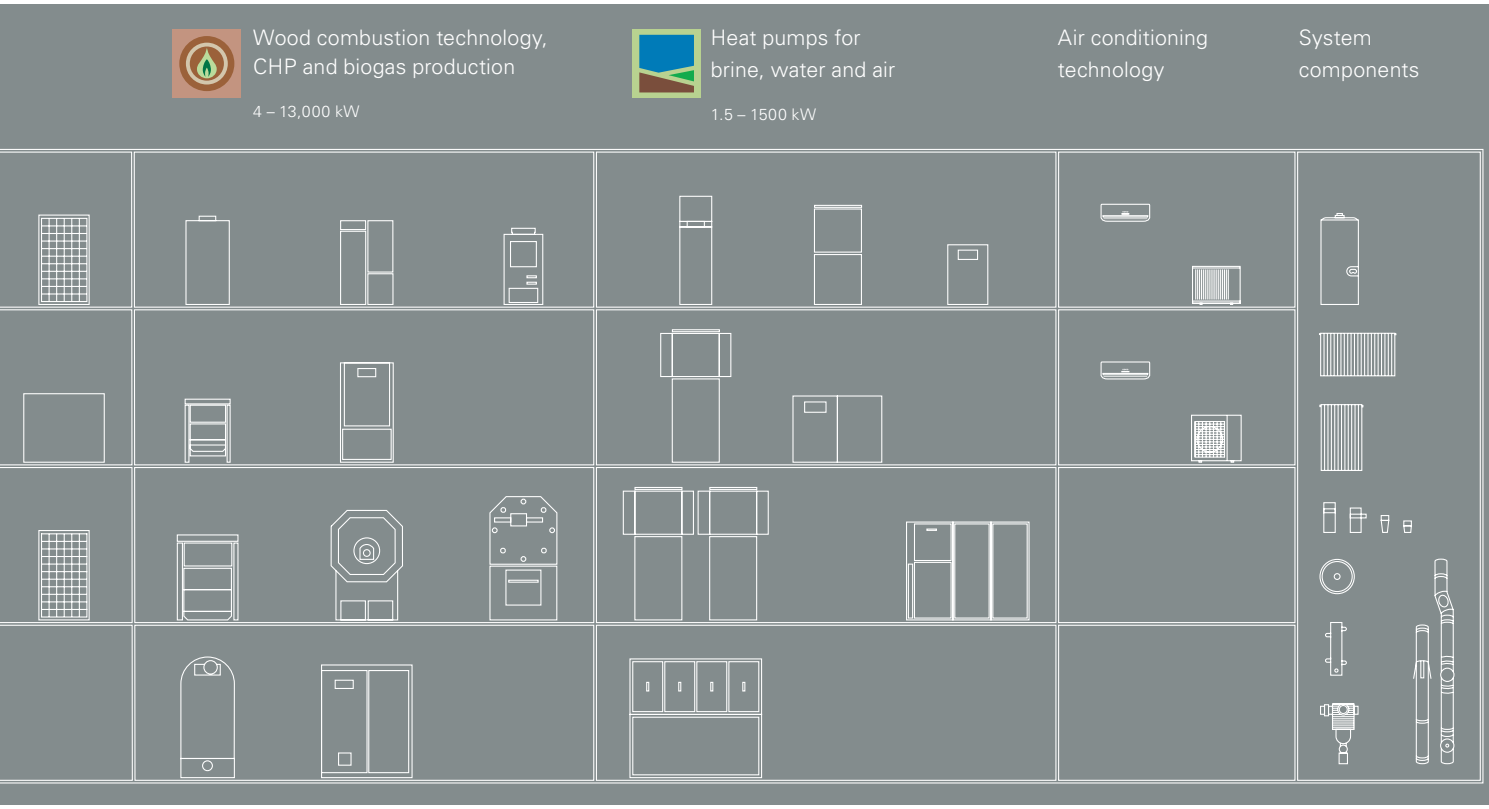
The comprehensive Viessmann product range

Viessmann sets the technological pace for the heating industry. The comprehensive product range from Viessmann offers individual solutions with efficient systems for all applications and all energy sources. As environmental pioneers, the company has, for decades, been supplying particularly efficient and clean heating systems for oil and gas, as well as solar thermal and PV systems plus heating systems for sustainable fuels and heat pumps.

The comprehensive product range from Viessmann offers top technology and sets new benchmarks. With its high energy efficiency, this range helps to save heating costs and is always the right choice where ecology is concerned.

All Viessmann products meet the requirements of European Directives regarding the reduction of environmental pollution by emissions. Viessmann feels a long-standing responsibility for the best possible environmental preservation and the maximum protection of natural resources. To this end, the company employs the best available technology for the generation of heat.

Oil | Gas | Solar | Biomass | Natural heat



The comprehensive Viessmann product range: Individual solutions with efficient systems for all energy sources and applications

Individual economical solutions

Viessmann offers the right heating system for any demand – wall mounted and floorstanding, in individual combinations, both futureproof and economical. Whether for detached or two-family houses, for large residential buildings, for commerce and industry or for local heating networks. It makes no difference whether the system is intended for modernisation or new build.

Viessmann develops and produces innovative heating systems, which demonstrate top quality, energy efficiency and a long service life. Many of these products have become milestones of heating technology.

Detached houses

Apartment buildings

Commerce / Industry

Local heating networks

It's convenient to find out more from home: Viessmann online offers detailed information about products, subsidy opportunities and services.

Always there for you

Viessmann is a family business, operating globally. In constant contact with associates, the company develops innovative solutions – always with your wishes and requirements in mind.

Viessmann contacts are your competent and enthusiastic local points of reference and will be happy to support you with any questions about heating and modernisation. You are best advised to arrange a personal consultation. Your Viessmann heating contractor will be happy to help!

Viessmann online
Further information regarding Viessmann products and their capacities can be found at www.viessmann.de.

There, you can obtain information on all Viessmann products.

www.viessmann.de

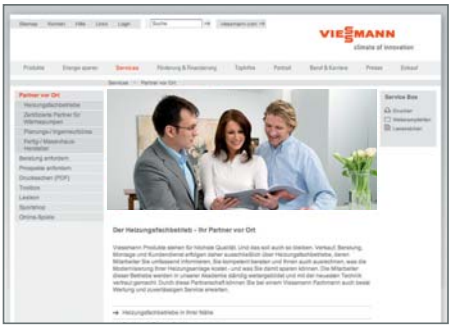
Quick help via the internet

Do you have questions about Viessmann products or on the subject of heating? At www.viessmann.de, you can find comprehensive information round the clock on all Viessmann heating systems and services, a technical lexicon and much more.

Subsidy programmes

For current information about subsidies that are available to you when you choose an environmentally responsible heating system from Viessmann, see www.viessmann.de.

Furthermore, you can obtain individual and professional advice from all Viessmann sales offices or directly from your heating contractor.

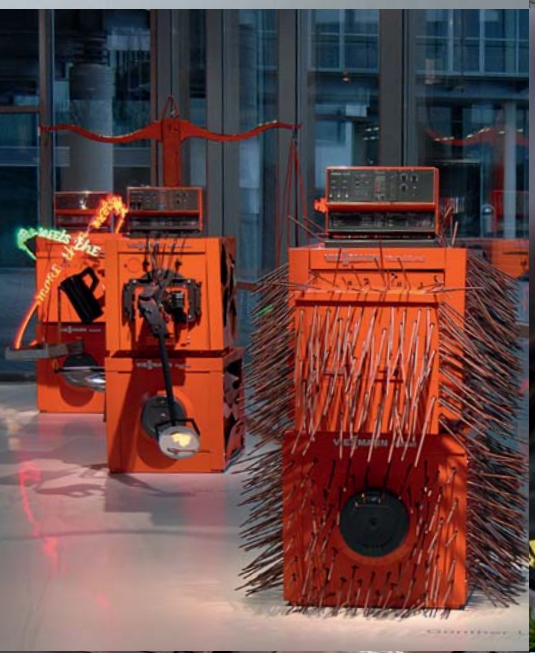


Your local contact

Are you still trying to find Viessmann contacts in your area? Use the quick search function at www.viessmann.de.

Simply click on "Partner vor Ort" and in a few steps you will find your contact.


VIESSMANN




VIESSMANN


VIESMANN
VITOLADENS 300


Öl
Oil

The Viessmann Group

For three generations, the Viessmann family business has been committed to generating heat conveniently, economically, with environmental responsibility and in accordance with demand.

With a number of outstanding product developments and problem-solving solutions, Viessmann has created milestones which have frequently made it the trailblazer and trendsetter for the entire industry.

Viessmann's orientation is decidedly international. It maintains 17 factories in Germany, France, Canada, Poland, Hungary, Austria, Switzerland and China, sales organisations in 37 countries, plus 120 branch sales offices worldwide.

Members of the Viessmann Group
Viessmann is a family business that has financed its growth almost exclusively with its own resources. In more recent times, company takeovers have also contributed to its growth. Today, members of the Viessmann Group include the wood combustion specialists, Köb and Mawera, the heat pump manufacturer, KWT, the manufacturer of combined heat and power units, ESS as well as BIOFerm and Schmack as market leaders in biogas systems.

Skilful workforce
Initial and ongoing training is becoming ever more important. As long ago as the 1960s, the company set itself the task of offering a programme of further training to its skilled contractors.

Today Viessmann maintains a modern information centre at its company head office in Allendorf (Eder), that is second to none. Every year at the Viessmann academy, more than 70,000 contractors bring their knowledge right up to date.

Model project "Efficiency Plus"
As part of a model project, Viessmann has implemented a sustainability concept that links economic actions with ecological and social responsibility. It encompasses the generation and consumption of energy and the resource-efficient production in the Allendorf (Eder) factory. As a result, the amount of fossil fuel consumed at the factory has been cut by 40 percent compared to previous levels, and CO_2 emissions have been reduced by a third.

Responsibility
Viessmann is committed to fulfilling its environmental and social responsibilities. The company employees form a team acting on a global footing. This team is defined by the loyalty, reliability and the responsible actions of each individual. We ensure all our processes are environmentally compatible and encourage the use of renewable forms of energy. Furthermore we take an interest in economics, art and culture and have for many years engaged in successful international sport sponsorship.

For its commitment to climate protection and efficient use of resources, Viessmann won the German Sustainability Award 2009.

Viessmann Group

VIESMANN KWT KÖB MAWERA ESS BIOFERM Schmack

VIESMANN

climate of innovation

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Your heating contractor:

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