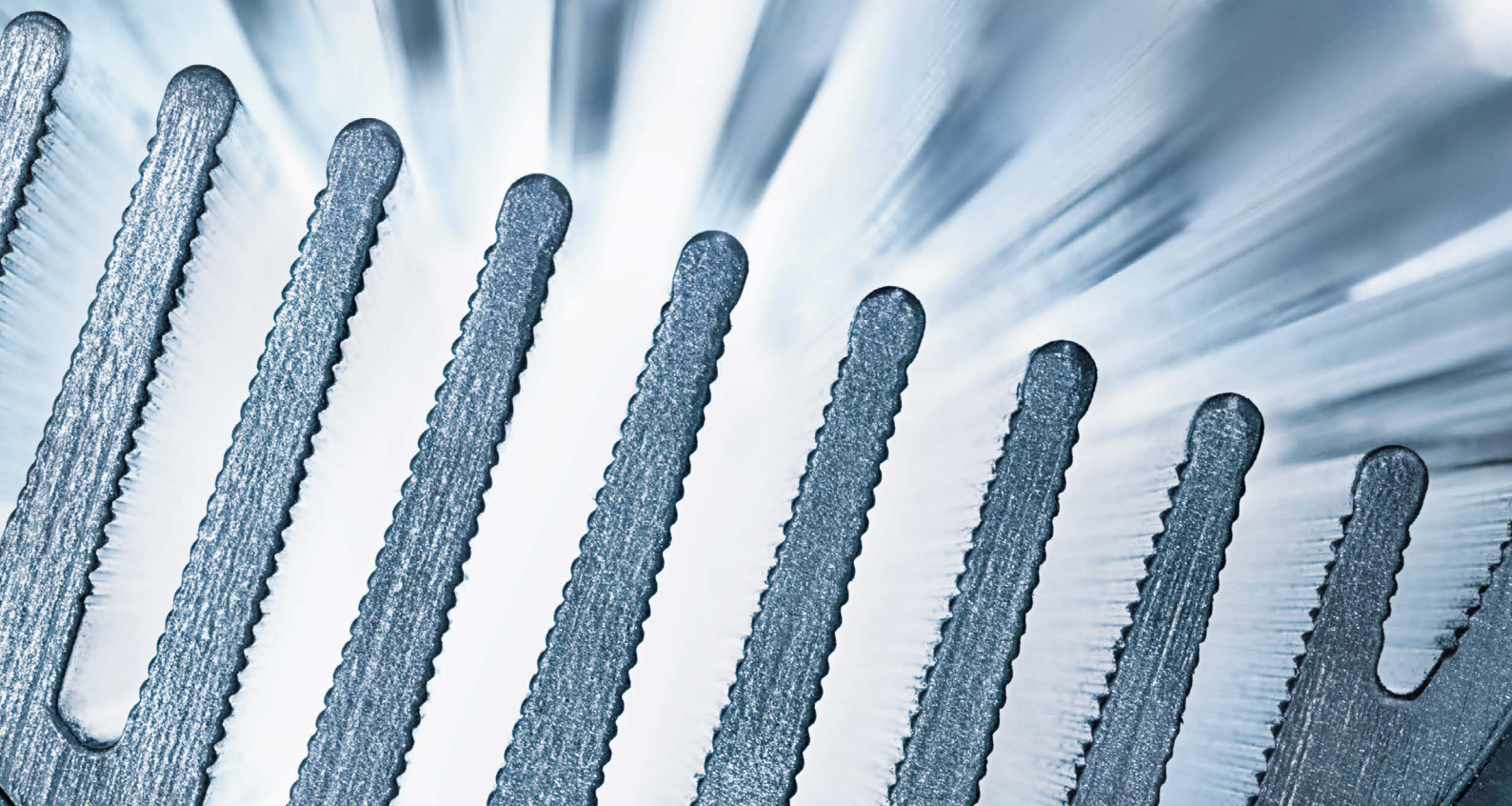


Condensing gas boilers

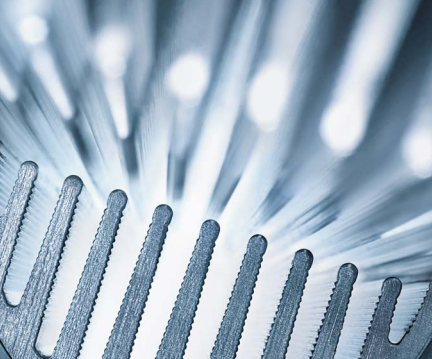
UltraGas®

Hoval

Responsibility for energy and environment



Optimum efficiency ratings reduce consumption and increase cost-effectiveness.
High efficiency, low emissions and flexible combination options.



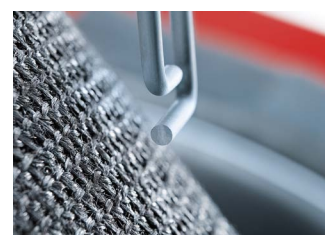
Front page:
Close-up of the fins of the patented aluFer® heat exchanger.
The special construction and the combination of aluminium and stainless steel ensure maximum heat transmission and optimum efficiency.

Condensing gas boiler. UltraGas®.

The Hoval UltraGas® is a high-efficiency condensing boiler featuring various technical and design details that improve efficiency and thereby reduce gas consumption.

The finely graduated UltraGas® range extends from 15 kW single boilers to 2300 kW double boiler systems. This provides the perfect solution for any output requirement.

The UltraGas® also stands out due to its flexibility: it can easily be combined with any type of heat generator and solar energy system.



Strong Systems

A particularly strong system is the UltraGas, together with other components from Hoval, and centrally controlled by the TopTronic®E.

Hoval system controller TopTronic®E



Hoval wood pellet boilers



Hoval air/water heat pumps



Hoval solar energy systems



Hoval storage tank charging modules



Hoval calorifiers



Hoval buffer storage tanks



Hoval flat substations



Hoval cogeneration systems

UltraGas® (15-100) and (125-2300D).
As versatile as the requirements..



UltraGas® (15-100)
Innovative condensation design
for single family dwellings and small multi-dwellings.

UltraGas® (125-2300D)
Maximum efficiency for large output classes.
Rapid amortisation, flexible use, space-saving.

UltraGas® (15-100) and (125-2300D).

Advantages at a glance.

Economical



Patented aluFer® heat exchanger

- **Maximum efficiency**
due to optimised condensation design with the patented aluFer® heat exchanger
- **Low consumption**
due to the modulating burner
- **Low energy consumption** by circulating pumps
due to large water capacity
- **Energy Consumption Indicator**
for permanent cost control

Ecological



Low emissions due to Ultraclean® combustion

- **Low pollutant emissions**
due to clean combustion with the UltraClean® grid burner
- **Reduced start emissions**
due to modulating burner and large water capacity acting as a buffer storage tank
- **Suitable for operation with biogas***
- **Simple adjustment of operating times**
facilitates energy-conscious heating

*Natural gas quality

Easy to use



High thermal comfort

- **High thermal comfort**
due to its predicting the future outside temperature and sunlight (using an online weather forecast)
- **Low maintenance**
due to low-emission combustion, self-cleaning aluFer® heat exchanger and easy-to-service design
- **Maintenance indicator**
which automatically reminds you when a service is required

Sophisticated



Versatile and suitable for combination

- **Versatile installation options**
due to uncomplicated integration into existing systems
- **Up to 6% higher condensation effect**
due to separate high and low temperature returns
- **Smartphone -App**
for easy adjustability whilst you're on the road, and receiving system messages in real time
- **The latest interface standards** for connection to building automation or expected smart grids

System controller TopTronic® E. The new generation.



Smart – cosy climate even when the weather is changing.



Ecological

Take responsibility for Energy and Environment and live comfortably at the same time. This is now easier than ever before.

With the new generation boilers and heat pumps from Hoval you will use less energy, reduce your environmental footprint and preserve the planet.

Reliable

You can fully rely on us.

The new generation Hoval boilers and heat pumps will automatically inform you and our service when they need maintenance or repair.

A Hoval service partner is always near you. More than 500 000 satisfied customers worldwide can confirm this. Our references speak for themselves.

Economical

The new generation Hoval boilers and heat pumps have best in class efficiency helping you to cut your energy bill.

They give you real time and historical information about their performance and efficiency so you always have an overview on your energy costs. With a click of a mouse.

Smart

Automatically use the weather forecast in real time to heat up your house in cold mornings but reduce the power in a warm afternoon.

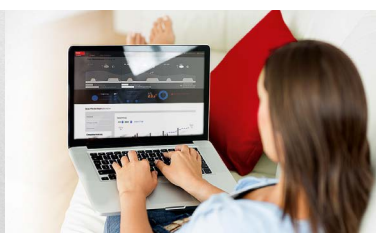
Let you control your heating over your smartphone to adjust it to your daily or weekly routine - so you save energy during a working day but enjoy a cosy warmth in the evening.



Control your heating over your smartphone.



Easy control in the living room.

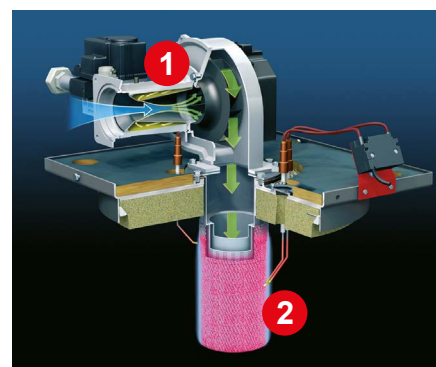
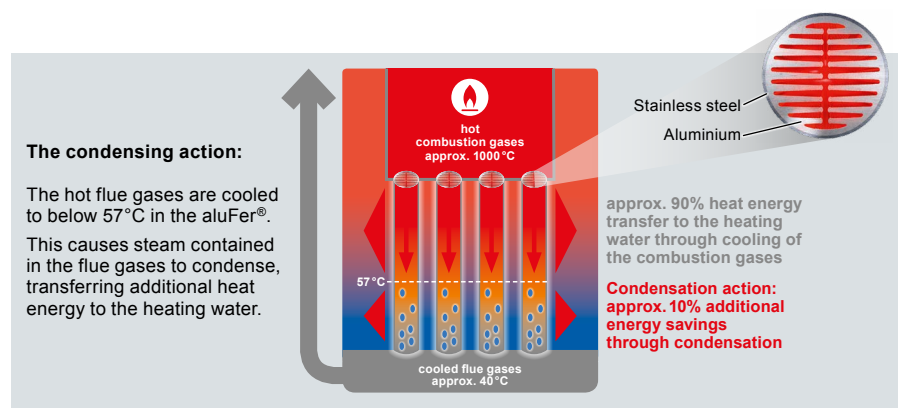


Hoval desk – overview on energy costs.



Automatic service information.

UltraGas® (15-100) and (125-2300D). The advantages in detail.



Ultra-low emissions due to modulating premix burner.



Condensation design for maximum efficiency

As a general rule: the more heat energy is transferred from the combustion gases to the heating water, the more efficiently a boiler works.

With the condensation design, the gas is cooled from 1000°C right down to 40°C and transfers all of its directly usable heat energy to the heating water. In contrast, low-temperature boilers have considerably higher flue gas temperatures of around 200°C. This means that a lot of the heat energy escapes unused via the chimney.

The condensation design also makes use of a second crucial element, condensation: the combustion gases contain steam, which stores large quantities of “latent” energy. When the steam cools to below 57°C, it becomes liquid (= condenses). In the process, this “latent” energy is released and transferred to the heating water.

This enables the UltraGas® condensing boiler to achieve additional energy savings of approx. 10–20% and increase its efficiency to over 109%!



Patented aluFer® heat exchanger for maximum condensation

To ensure maximum condensation, it is crucial that the hot combustion gases transfer their heat energy as quickly as possible, cooling as they do so.

In the UltraGas®, this is guaranteed by the unique design of the patented aluFer® heat exchanger:

- The material combination of aluminium (on the inside) and stainless steel (on the outside) provides maximum conductivity for the transfer of heat.
- The cooling fins inside the aluFer® pipe produce a five times larger effective surface for heat transmission.

Further advantages result from the vertical installation of the aluFer® heat exchanger in the boiler:

- Temperature stratification of the heating water is supported, contributing to an additional increase in efficiency.
- Any deposits in the heat exchanger drop down of their own accord, producing a self-cleaning effect.
- The vertical design enables compact dimensions to be achieved and a small floor space to be used.



Modulating premix burner with ultra-low emissions

Another factor contributing to the high efficiency of the UltraGas® range is the combustion system. This comprises a fan-premix unit, which also controls the output, and the Ultraclean® grid burner.

In the **fan-premix unit (1)**, a finely-tuned, homogeneous gas/air mixture is produced, which is optimised for the subsequent combustion process. The output is matched (modulated) to the heat demand using the rotational speed of the fan. This means the burner can run continually in partial load operation and avoid energy-intensive start-stop operation and the associated increase in emissions. Moreover, reducing the speed of the fan reduces energy consumption.

In the **Ultraclean® grid burner (2)**, the gas/air mixture is ignited on the surface of a metal fabric and burns gently, virtually without flame. Here, the combustion temperature is consistent and lies within the optimum range for ultra-low pollutant emissions.



Additional energy savings due to separate high and low temperature returns



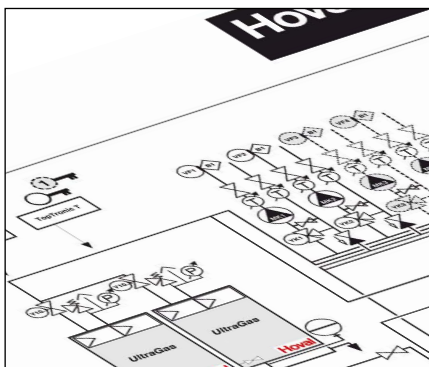
Separate high and low temperature returns for optimum condensation

With the UltraGas®, there is the option of allowing the return lines from the high and low temperature circuits to flow into the best location in the boiler. This maintains stable temperature stratification in the boiler and offers consistent ideal conditions for condensation. It increases the efficiency of the condensation design by up to an additional 6% and means lower consumption and reduced heating costs.



For maximum output: double or multiple boiler systems

For very high output requirements or if maximum operational safety is required, the UltraGas® can be used as a double boiler or multiple boiler system. With the TopTronic®E controller, up to eight boilers can be connected in a cascade and managed centrally.



The UltraGas® allows for the use of simple hydraulic systems – ideal when replacing a boiler.



Large water capacity provides increased cost-effectiveness due to simple systems

The entire UltraGas® system is designed with maximum efficiency in mind. Its particularly large water capacity produces several advantages, for example:

- **Simple hydraulic systems** without complex additional units because the UltraGas® does not require a minimum amount of circulating water or minimum return temperatures. This is of particular practical value as this enables easy integration into any heating system.
- **Low energy consumption** because the lack of a minimum amount of circulating water means that a boiler primary pump is not required. In addition, the low flow resistance allows for the use of a smaller heating pump.
- **Fewer start-stop procedures** because the large water capacity of the boiler acts as a buffer storage tank. This reduces the number of energy-intensive burner starts.



High output with limited space requirements.



Compact design saves space

Its compact design makes the UltraGas® the preferred choice for renovations. The system is easy to transport, takes up little space in boiler rooms and can be positioned against a wall without the need for clearance.

Flexible connections also ensure that the system is easy to install – irrespective of the space available on-site.

UltraGas (200-575) is also available for installation on site. It can therefore be installed in very cramped spatial conditions such as in renovations.



Suitable for biogas

Natural-gas quality biogas has recently also become an interesting source of heating energy. All UltraGas® systems can already be operated with this type of biogas.

UltraGas® (15-100).

State-of-the-art gas condensation design for single family dwellings and multi-dwellings.



All components are readily accessible, easy to clean and can be replaced quickly and economically in the event of a breakdown. For example, the entire burner assembly can be conveniently pivoted out for maintenance.

Heating flow

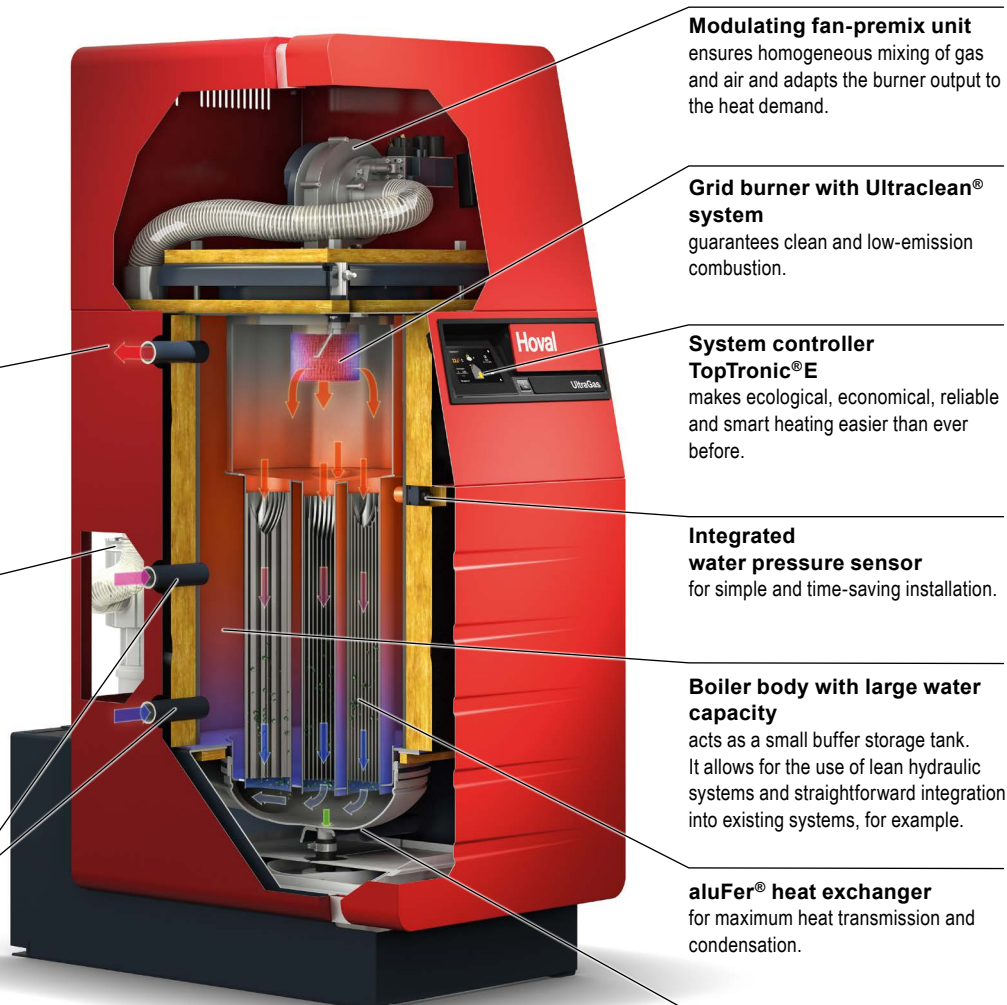
can be located on the left or right, flexibly as the situation requires, and simplifies installation, especially when replacing existing systems. The boiler can be positioned directly against the wall.

Concentric vertical flue gas connection and connecting hose (LAS system)

allows room-air independent operation and ensures a constant supply of fresh air. The supplied combustion air is preheated simultaneously.

Separate high and low temperature returns

create ideal conditions for condensation, thereby enhancing energy recovery from the flue gases. The connections can be located on the left or right.



Modulating fan-premix unit
ensures homogeneous mixing of gas and air and adapts the burner output to the heat demand.

Grid burner with Ultraclean® system
guarantees clean and low-emission combustion.

System controller TopTronic® E
makes ecological, economical, reliable and smart heating easier than ever before.

Integrated water pressure sensor
for simple and time-saving installation.

Boiler body with large water capacity
acts as a small buffer storage tank. It allows for the use of lean hydraulic systems and straightforward integration into existing systems, for example.

aluFer® heat exchanger
for maximum heat transmission and condensation.

Condensate drip tray
ensures safe collection and removal of condensate

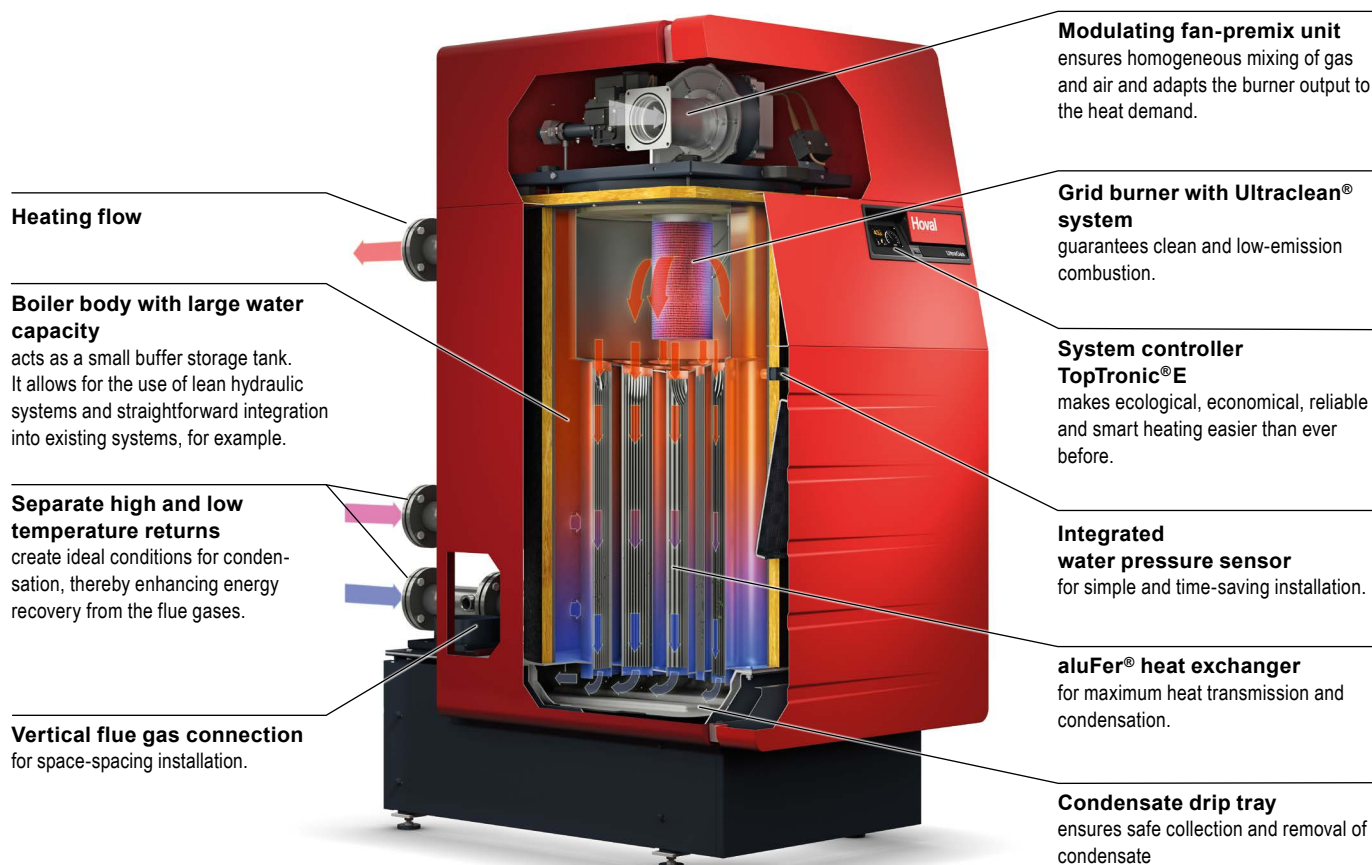
UltraGas® technical data		(15)	(20)	(27)	(35)	(50)	(70)	(100)
Energy efficiency class (package label with controller)		A	A	A	A	A	A	–
Heat output range at 40/30°C	kW	3.3–15.5	4.3–20.3	5.0–27.2	5.8–35.7	8.3–49.9	13.6–69.9	20.9–100.0
Heat output range at 80/60°C	kW	3.0–14.3	3.8–18.7	4.5–25.0	5.2–32.8	7.5–46.1	12.2–64.0	19.0–92.0
Efficiency at 30% partial load* (as per EN 303)	%	107.9 / 97.2	108.0 / 97.3	108.0 / 97.3	108.1 / 97.4	108.1 / 97.4	108.1 / 97.4	108.1 / 97.4
Standard utilisation rate at 40/30°C (as per DIN 4702 Part 8)	%	109.5 / 98.6	109.5 / 98.6	109.5 / 98.6	109.5 / 98.6	109.5 / 98.6	109.5 / 98.6	109.1 / 98.3
Max. operating pressure	bar	3					4	
Boiler water capacity	Litres	57	55	51	81	75	157	144
Boiler weight	kg	176	179	186	205	217	302	331
Dimensions W / H / D	mm	520 / 1400 / 820			520 / 1640 / 820		675 / 1685 / 990	

* relative to net/gross calorific value

Subject to changes

UltraGas® (125-2300D).

Maximum cost-effectiveness and rapid amortisation for medium to high output requirements.



UltraGas® technical data		(125)	(150)	(200)	(250)	(300)	(350)	(400)	(450)	(500)	(575)	(650)	(720)**	(850)	(1000)**	(1150)
Heat output range at 40/30°C	kW	28–125	28–150	44–200	49–250	57–300	58–350	97–400	97–450	97–500	136–575	136–650	142–720	166–850	224–1000	233–1150
Heat output range at 80/60°C	kW	25–114	25–139	39–185	44–231	51–278	51–324	87–371	87–417	87–463	122–533	122–603	127–665	148–788	199–927	208–1060
Efficiency at 30% partial load* (as per EN 303)	%	108.1 / 97.4	108.0 / 97.3	108.1 / 97.4	108.1 / 97.4	108.0 / 97.3	108.0 / 97.3	108.1 / 97.4	108.0 / 97.3	108.0 / 97.3	108.1 / 97.4	108.0 / 97.3	108.0 / 97.3	108.1 / 97.4	108.1 / 97.4	108.1 / 97.4
Standard utilisation rate at 40/30°C (as per DIN 4702 Part 8)	%	109.6 / 98.7	109.6 / 98.7	109.7 / 98.8	109.7 / 98.8	109.7 / 98.8	109.8 / 98.9	109.8 / 98.9	109.8 / 98.9	109.8 / 98.9	109.9 / 99.0	109.9 / 99.0	109.9 / 99.0	109.9 / 99.0	109.9 / 99.0	109.9 / 99.0
Max. operating pressure	bar	5					6									
Boiler water capacity	Litres	206	194	359	341	318	428	411	387	375	549	529	478	860	793	737
Boiler weight	kg	434	458	641	674	726	881	922	972	991	1277	1303	1396	1850	1965	2023
Dimensions W / H / D	mm	820 / 1823 / 1336		930 / 1923 / 1684			1110 / 2070 / 1775					1290 / 2086 / 1928			1550 / 2139 / 2243	

		(250D)	(300D)	(400D)	(500D)	(600D)	(700D)	(800D)	(900D)	(1000D)	(1150D)	(1300D)	(1440D)**	(1700D)	(2000D)**	(2300D)
Heat output range at 40/30°C	kW	28–250	28–300	44–400	49–500	57–600	58–700	97–800	97–900	97–1000	136–1150	136–1300	142–1440	166–1700	224–2000	233–2300
Heat output range at 80/60°C	kW	25–228	25–278	39–370	44–462	51–556	51–648	87–742	87–834	87–926	122–1066	122–1206	127–1330	148–1576	199–1854	208–2120
Efficiency at 30% partial load* (as per EN 303)	%	108.1 / 97.4	108.0 / 97.3	108.1 / 97.4	108.1 / 97.4	108.0 / 97.3	108.0 / 97.3	108.1 / 97.4	108.0 / 97.3	108.0 / 97.3	108.1 / 97.4	108.0 / 97.3	108.0 / 97.3	108.1 / 97.4	108.1 / 97.4	108.1 / 97.4
Standard utilisation rate at 40/30°C (as per DIN 4702 Part 8)	%	109.6 / 98.7	109.6 / 98.7	109.7 / 98.8	109.7 / 98.8	109.7 / 98.8	109.8 / 98.9	109.8 / 98.9	109.8 / 98.9	109.8 / 98.9	109.9 / 99.0	109.9 / 99.0	109.9 / 99.0	109.9 / 99.0	109.9 / 99.0	109.9 / 99.0
Max. operating pressure	bar	5					6									
Boiler water capacity	Litres	412	388	719	682	636	857	822	774	751	1098	1058	956	1720	1586	1474
Boiler weight	kg	868	916	1282	1348	1452	1762	1844	1944	1982	2554	2606	2792	3700	3930	4046
Dimensions W / H / D	mm	1770 / 1823 / 1443		1880 / 1923 / 1790			2240 / 2070 / 1969					2600 / 2086 / 2223			3120 / 2139 / 2538	

* relative to net/gross calorific value

** UltraGas (720, 1000, 1440D, 2000D) also available as UltraGas H with operating pressure 8 bar

Subject to changes

Hoval UltraGas® and up to 70% renewable energy. Solutions for the energy transition laws.

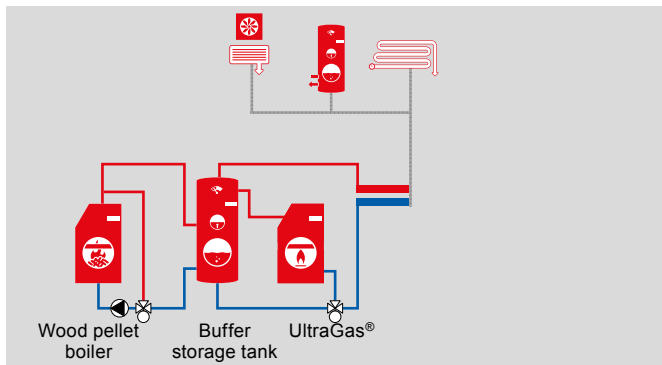
National laws within Europe stipulate that a **large percentage of the energy** used for heat generation must come from **renewable sources**. With the Hoval UltraGas®, you can ensure compliance with these legal requirements whilst also enjoying the benefits of condensing gas technology. Bivalent systems from Hoval are the solution. For single-family homes and multi-dwellings, Hoval condensing boilers can easily be combined with a solar energy system or an air heat pump.

For larger buildings, combinations with wood pellet boilers or CHP units are virtually the only way to achieve the required percentage of renewable energy. Hoval provides complete systems from a single source – perfectly coordinated and controlled centrally with the TopTronic® E system controller.

UltraGas® with wood pellet boiler

- Up to approx. 1000 kW
- Percentage of renewable energy up to 70% annually
- Precise power gradations due to flexible cascading
- Not affected by price fluctuations on the oil or wood pellet market
- Increased supply certainty TopTronic® E system controller

Renewable energy
70%



Office-Building in Munich (DE) System: bivalent Cascade



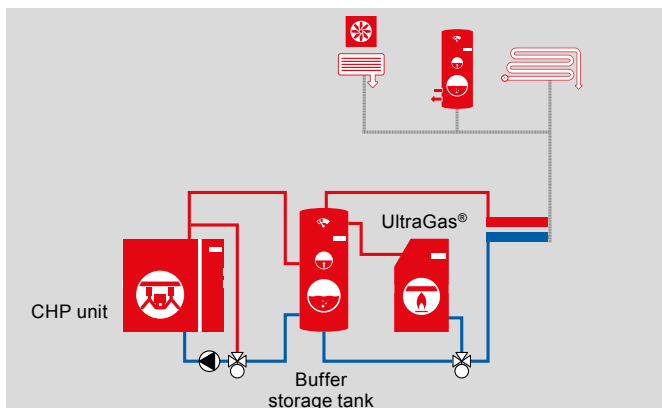
Volume: 3000 m²
Heat output: 410 kW
Percentage of renewables: 39%

- Pellet boiler BioLyt (160)
- UltraGas® (250)
- 2 buffer storage tanks EnerVal (2000)
- System controller TopTronic® E

UltraGas® with CHP unit

- Up to approx. 1000 kW
- Energy percentage from cogeneration system up to 70% annually
- TopTronic® E system controller

Energy from
cogeneration
system
70%



Heating centre of a local heating network in Triesen (FL). Multivalent system with cogeneration (CHP) systems



2 schools, 1 indoor swimming pool
and other public buildings as well
as 4 multi-dwellings.
Total output: 410 kW
Percentage of renewables: 39%

- 1 UltraGas® condensing gas boiler
- 2 PowerBloc combined heat and power units
- 1 UltraOil® condensing oil boiler
- 2 Thermalia® heat pumps
- 1 TransTherm pro RS district heating station
- buffer storage tanks and additional system components.



Solutions you can rely on.

Hoval

Responsibility for energy and environment.

The Hoval brand is internationally recognised as one of the leading suppliers of indoor climate control solutions. Around 70 years of experience have given us the necessary capabilities and motivation to continuously develop exceptional solutions and technically superior equipment.

Maximising energy efficiency and thus protecting the environment are both our conviction and our incentive. Hoval has established itself as an expert provider of intelligent heating and climate control systems that are exported to over 50 countries worldwide.



Hoval indoor climate systems

Indoor climate systems ensure top air quality and economical usability. Hoval has been installing decentralised systems for many years. The key to its work is using combinations of multiple air conditioning units (even those of different types) that can be controlled individually, but also together as a single system. This enables Hoval to respond flexibly to a wide range of requirements for heating, cooling and ventilation.



Design support from experts.

Take advantage of the expertise of our experienced specialists. We will be happy to support you throughout all project phases when designing your system.

Working in close cooperation with you and taking into account all the specifications of the energy supplier, we develop the most efficient and cost-effective solution for you.



Hoval service expertise.

Hoval systems are professionally commissioned by specially trained and experienced Hoval service technicians, ensuring that the systems will operate perfectly from day one.

Maintenance and troubleshooting are performed on-site by an expert customer service team.



Your Hoval Partner:

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