

RinNOVA COND X



Wall-mounted condensing boilers,
small in size,
big in performance



RinNOVA COND^X

Rinnova Cond^X completes the BIASI condensing range: perfect for under-floor systems and for radiator systems, it's the compact condensing boiler that guarantees high efficiency, low consumption and respect for the environment. Available for central heating and the production of domestic hot water, in powers of 25 and 35 kW, and for central heating alone in powers of 16, 25 and 35 kW.

COMPACT SIZE

BIASI's whole condensing range is of compact size that does not change depending on the power and the model: this means the system can be prepared and a BIASI condensing boiler can be installed choosing the exact model with the customer at the end of the project.

RinNova Cond^X's compactness enables the installer to adapt the boiler to different systems: from the small system (apartment), regulating the maximum output necessary, to the more substantial system (detached house) where with the same compactness RinNova Cond^X guarantees useful powers up to 34.1 kW.

SWEET DREAMS

It is possible to join the Sweet Dreams operation with RinNOVA Cond^X, which is a maintenance program that extends the conventional warranty conditions from 2 to 5 years.

Selecting a BIASI boiler means purchasing a product with high technological content. It is reliable, but above all, with this product you can count on a timely and qualified after-sales service.

There are many advantages of the extended warranty:

- Labour: in the event of a breakdown you will not have to pay any labour cost.
- Original parts: special prices in the BASIC formula, no cost with the ALL-INCLUSIVE formula
- Fixed cost of call right: should something go wrong, you will not have to pay any fixed cost for the call



HIGH EFFICIENCY

Pre-mixed boilers owe their high efficiency to:

- 1 The condensing exchanger that allows the latent heat to be recovered from the gases.
- 2 The total pre-mix burner that reduces the excess of air and increases the percentage content of CO₂ raising the dew point of the gases.

High efficiency means reduced consumption and lower costs on your gas bill!



LOW EMISSIONS HIGH RESPECT FOR THE ENVIRONMENT

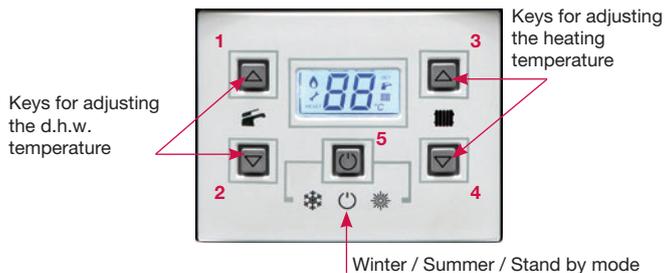
The stainless steel pre-mix burner, together with the condensing technology, minimises emissions of pollutants, ensuring maximum respect for the environment.

RinNova Cond^X in fact respects the limits required by class 5, the best and most restrictive of the classes set by European Directive EN297.



Simple to use

DIGITAL CONTROL PANEL



- 31°C** RinNova Cond^x in summer
- 32°C** RinNova Cond^x in winter
- 34°C** RinNova Cond^x with heating requested with heating temperature display
- 41°C** RinNova Cond^x with d.h.w. requested with d.h.w. temperature display
- Discharge at burner
- Comfort ON** By pressing keys 1 and 2 at the same time: Activation of d.h.w. comfort function (EN 13203)
- FL** Recommended filling
To display system pressure, press keys 3 and 5 at the same time:
- RinNova Cond^x reminds the user of the deadline for the regular service.
- Er 14+ RESET** Error warning, user reset
- Er 05+** Error warning, intervention of a BIASI Support Centre required.

SYSTEM FILLING

RinNova Cond^x indicates when it is recommended to fill the system, when FL shows on the display:

- FL** Insufficient pressure.
Filling recommended. While filling the FL symbol alternates with the pressure value. Filling is completed when the correct pressure value (1.2 bar) stays on.
- Er 04** Boiler stopped: it is necessary to fill it until the correct pressure value (1.2 bar) stays on.

INFO MENU

Pressing keys 3 and 5 at the same time accesses the INFO menu, where the boiler parameters can be viewed. Press keys 3 and 4 to scroll the list parameters. The main parameters are indicated below in the order in which they appear:

System pressure	d0 / value
External temperature (with external probe connected)	d1 / value
K value	d2 / value
Offset K value	d3 / value
Set heating temperature	d4 / value
Heating delivery temperature	d5 / value
Set d.h.w. temperature	co / value

The value of each parameter appears alternating with the parameter number.

REMOTE CONTROL (OPTIONAL)

The new (optional) remote control will enable you to control the boiler by customising its operation according to your different requirements.

- Two keys will let you regulate the temperature of the hot water produced without having to carry out tedious mixing operations.
- The desired ambient temperature will be easily set via two keys.
- A dedicated key will let you know the temperature of the domestic environment.





RinNOVA COND^X

TECHNICAL SPECIFICATIONS

- High performance (★★★ Compliant with efficiency directive 92/42 EEC and Leg. Decree 311/06)
- D.h.w. comfort ★★★ (EN 13203)
- Stainless steel primary condensate exchanger with plastic coating, offering maximum corrosion resistance
- Total premixing burner, built in stainless steel (Class NOx 5)
- Stainless steel domestic hot water plate heat exchanger
- Maximum power adjustable according to system requirements
- Degree of protection IPX5D
- Can be installed in a partially protected area
- Integration of BIASI solar systems with the solar kit
- Digital control panel with backlit display
- Digital reading of the pressure by means of the pressure transducer
- Set up for remote control and external probe

EFFICIENCY

★★★★ Heating (Efficiency directive 92/42 EEC)

Rinnova Cond^X is a premixed condensing boiler: the primary condensing stainless steel heat exchanger guarantees high efficiency, long duration and corrosion resistance.



Class 5 NOx (EN297)

The total premixing burner optimises the air and gas mixture, maximising efficiency and minimising polluting emissions. Rinnova Cond^X belongs to the most restrictive class in terms of emissions with only 17 ppm of NOx produced, a quantity 5 times less than the quantity of NOx produced by standard boilers.

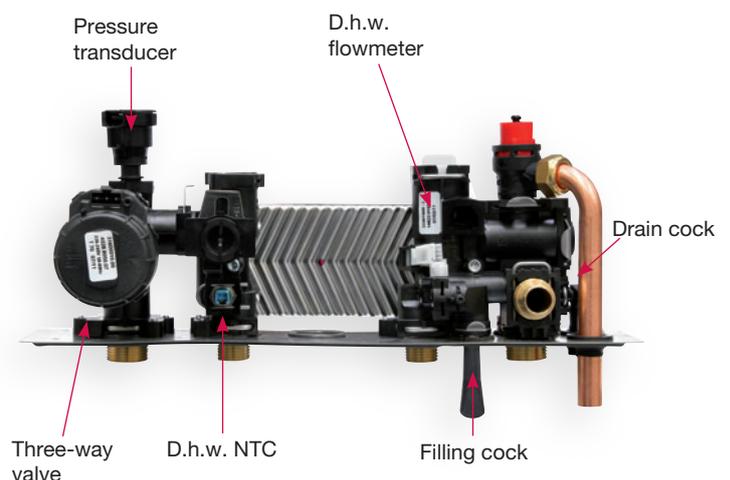


★★★ Domestic hot water (EN 13203)

Rinnova Cond^X ensures best performance in terms of domestic hot water, reducing the waiting times for hot water to be available and guaranteeing temperature stability.



HYDRAULIC GROUP



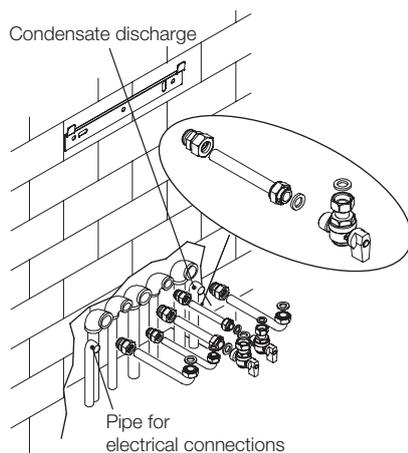
Technical specifications

EASY INSTALLATION, SIMPLE MAINTENANCE

RinNOVA Cond^x, to make installation and assembly easy, provides the following as standard:

- Paper template and bracket for installation
- Documentation: product manual, system manual, list of BIASI support centres, declaration of conformity
- Quick guide on magnetic support
- Set-up for external probe and remote control
- Electric power supply cable.

What's more, RinNOVA Cond^x can be easily installed in any room. The new range of pre-mixed boilers is extremely compact in size, 700 x 400 x 290 mm, and can be installed in partially protected places, following the directions given in the product's instruction manual. On the BIASI list a full range of flue pipes is available and all the accessories needed to carry out the installation of the RinNOVA Cond^x.

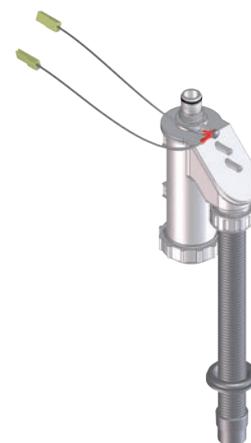


CONDENSATE DISCHARGE SIPHON

Pre-mixed boilers are set up to collect within the boiler the condensate produced by cooling the gases inside the condensate exchanger.

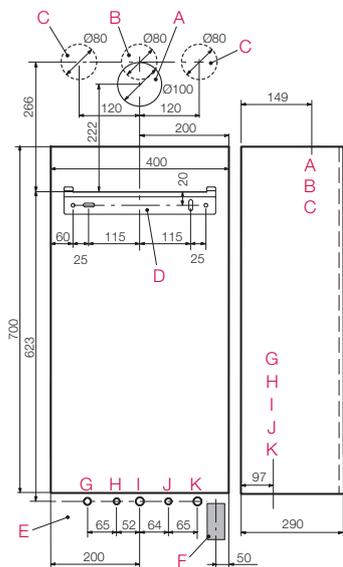
This cooling involves the releasing of the heat of the gases into the system's water, determining the efficiency of RinNova Cond^x (at 30% of load at low temperature, 108%).

The siphon collects the condensate produced in the boiler, so it must be connected to the domestic drain, and it acts as a safety device that protects the user and safeguards the boiler in abnormal situations of obstruction of the gas duct or obstruction of the domestic drain and the consequent rise in condensate in the boiler.



Condensate discharge siphon

INSTALLATION TEMPLATE



A	Flue gas exhaust / air suction (ø 60/100 mm coaxial pipe)
B	Flue gas exhaust (ø 80 mm twin pipe)
C	Air suction (ø 80 mm twin pipe)
D	Boiler mounting support
E	Area for positioning the electric connection channels
F	Area for positioning the condensate discharge pipe
G	MR - Heating delivery
H	US - D.h.w. outlet
I	Gas
J	ES - D.h.w. inlet
K	RR - Heating return

Connection dimensions		25 S	35 S	12 SV	25 SV	35 SV
Heating delivery and return	Ø mm	16 / 18	16 / 18	16 / 18	16 / 18	16 / 18
Gas inlet	Ø mm	16 / 18	16 / 18	16 / 18	16 / 18	16 / 18
D.h.w. inlet and outlet	Ø mm	12 / 14	12 / 14	12 / 14	12 / 14	12 / 14
Condensate discharge	Ø mm	30	30	30	30	30

RinNOVA COND^x

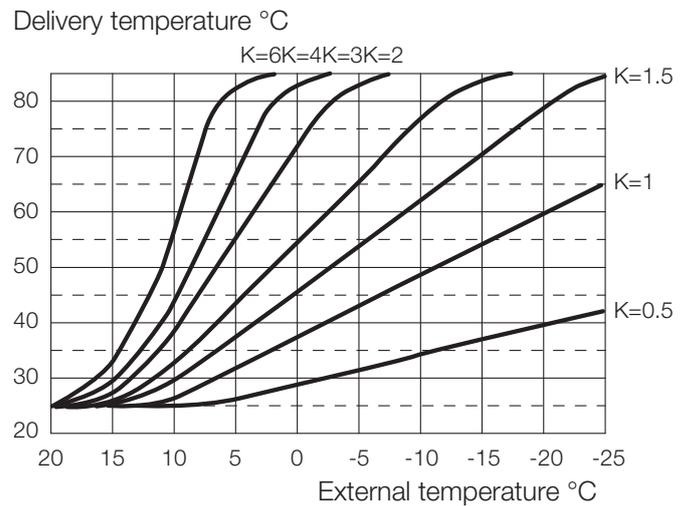
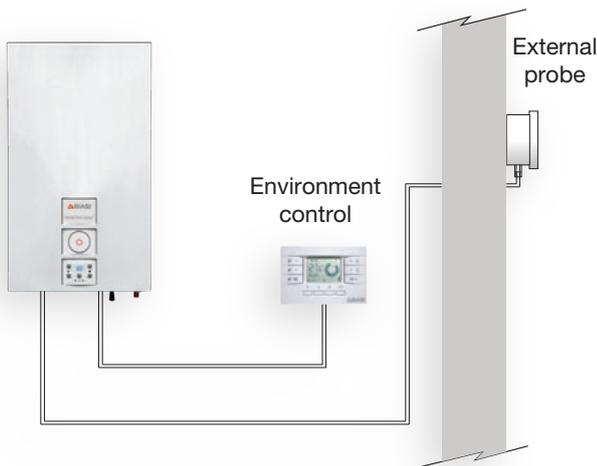
THERMOREGULATION

It is possible to benefit from climatic regulation by connecting the external probe (optional) directly to the boiler.

RinNOVA NOx adapts the temperature of the system water to the external climatic conditions, guaranteeing that the desired room temperature will be reached without waste and optimising consumption.

By using climatic regulation, the control efficiency is also increased, improving the value of your home.

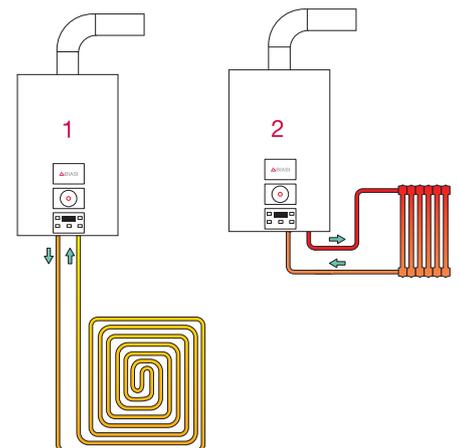
When connecting the external probe to the boiler, it is necessary to set the coefficient K which raises or lowers the temperature delivery based on the changing external temperature.



RINNOVA COND^x AND THE SYSTEMS

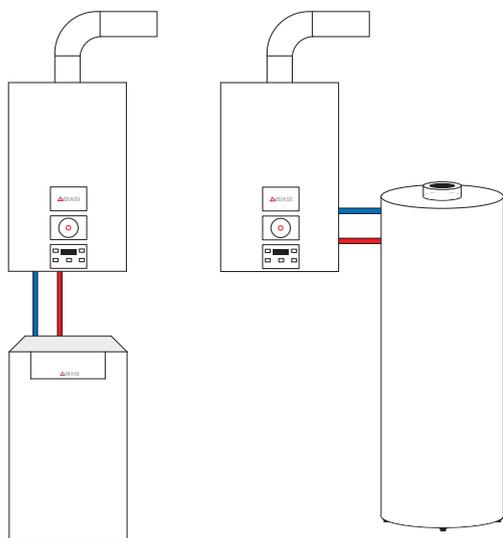
In real pre-mixed combustion, condensation begins when the temperature of the water returning to the boiler falls below the dew point of the gases: at about 56° C the water vapour contained in the gases condenses, transferring to the water the heat obtained from this transformation. When the temperature of water returning to the boiler falls below the dew point, the condensation process occurs. The lower the return temperature in the boiler, the more RinNOVA Cond^x works using the condensation system, achieving efficiencies of 108%.

1. This means that pre-mixed boilers achieve maximum efficiency, and therefore maximum savings, with under-floor systems in which the boiler works for 100% of its operation using the condensation system.
2. This does NOT mean that pre-mixed boilers do not bring any savings with radiator systems. First of all, the efficiency of RinNOVA Cond^x at the typical temperatures of a radiator system (80/60°) is in the order of 98%, therefore higher than the efficiency of a standard boiler. Secondly, traditional systems operate at maximum power for a few periods in a year; this is why they are of a size to ensure comfort in the most unfavourable and coldest conditions of the winter. For 90% of the operating period, therefore, the boilers work at a reduced rate: it is in these cases that condensing boilers can work at lower temperatures in radiator systems too. At the minimum or at 30% of the load, RinNOVA Cond^x optimises its efficiency, a further advantage of using a condensing boiler with traditional systems.



Versatility of solutions

SV model



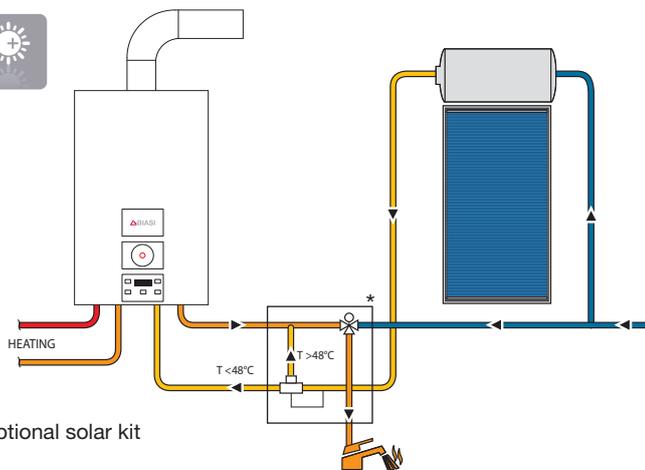
DOMESTIC HOT WATER ALSO WITH THE SUN

RinNOVA Cond^x for central heating and the production of domestic hot water: the stainless steel d.h.w. exchanger together with electronic management give excellent performance in the production of domestic hot water, too.

RinNOVA Cond^x for heating alone can be matched to boilers to satisfy even the most demanding users.

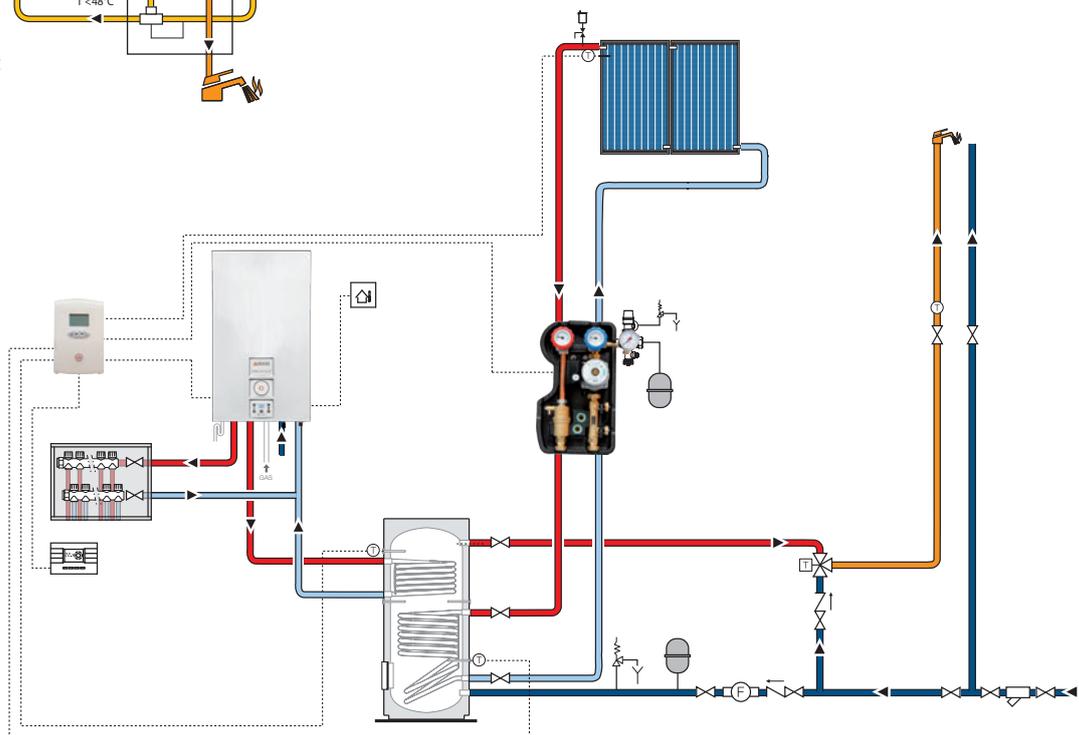
The boiler control panel manages the boiler probe so that the desired d.h.w. temperature can be selected directly by the boiler. In the boiler, it is possible to select the anti-Legionella function and the intervention times of the function itself: every 2 or 3 days (as chosen) the boiler intervenes, taking the water stored in the tank to a safe temperature for the time required to destroy the bacterium. Warning: in these conditions mixing is necessary. For the production of domestic hot water RinNOVA Cond^x (combined model) can be used with BIASI solar systems with the special solar kit (optional). The boiler intervenes only when necessary, making best use of the solar energy and guaranteeing the comfort required by the user. RinNOVA Cond^x (heating only model) can be used with the BIASISOL CF HE solar system with a dual coil tank: the boiler and the solar system heat the water stored in the tank ensuring it is always available for use.

S model



*Optional solar kit

SV model



TECHNICAL DATA

Cod. 4823.0391.0000 - 30000114 - Rev. 00 - UNIGRAF snc (VR)

RINNOVA COND ^x		16SV	25SV	25S	35SV	35S
Nominal heating/d.h.w. heat input	kW	16.0 / 16.0	20.0 / 25.0	20.0 / 25.0	30.0 / 34.0	30.0 / 34.0
Minimum heat input	kW	6.0	6.0	6.0	8.5	8.5
Output power for heating/d.h.w. (60/80° C)	kW	15.6 / 15.6	19.5 / 24.4	19.5 / 24.4	29.5 / 33.4	29.5 / 33.4
Minimum output power (60/80° C)	kW	5.8	5.9	5.9	8.3	8.3
Output power for heating/d.h.w. (30/50° C)	kW	17.1 / 17.1	21.2 / 26.6	21.2 / 26.6	32.1 / 36.4	32.1 / 36.4
Minimum output power (30/50° C)	%	6.5	6.5	6.5	9.2	9.2
Efficiency at nominal input (60/80° C) / (30/50° C)	%	97.7 / 106.9	97.4 / 106.2	97.4 / 106.2	98.2 / 107.1	98.2 / 107.1
Efficiency at minimum input (60/80° C) / (30/50° C)	%	97.4 / 107.6	97.9 / 107.6	97.4 / 107.6	97.6 / 107.9	97.6 / 107.9
Efficiency at 30% load (60/80° C)	%	101.5	101.5	101.5	102.1	102.1
Efficiency at 30% load (30/50° C)	%	107.4	107.7	107.7	107.3	107.3
Efficiency stars (Efficiency directive 92/42 EEC)*	no.	★★★★	★★★★	★★★★	★★★★	★★★★
Minimum/maximum heating temperature	° C	25 / 85	25 / 85	25 / 85	25 / 85	25 / 85
Minimum/maximum d.h.w. temperature	° C	/	/	35 / 55	/	35 / 55
Minimum/maximum heating pressure	bar	0.3 / 3	0.3 / 3	0.3 / 3	0.3 / 3	0.3 / 3
Minimum/maximum d.h.w. pressure	bar	/	/	0.3 / 10	/	0.3 / 10
Total capacity of the expansion tank	l	7	7	7	7	7
Available pressure head of the generator at 1000 l/h	bar	0.23	0.23	0.23	0.27	0.27
Maximum flow rate $\Delta t = 25$ K	l/min	/	/	15.9	/	21.6
Maximum flow rate $\Delta t = 30$ K	l/min	/	/	13.3	/	19.2
Electric degree of protection	IP	X5D	X5D	X5D	X5D	X5D
Voltage / electric power at nominal heat input	V / W	230 / 94	230 / 102	230 / 102	230 / 135	230 / 135
Electric power at minimum heat input	W	85	85	85	86	86
Electric power in stand-by	W	4	4	4	4	4
Height x Width x Depth	mm	700 x 400 x 290				
Weight	kg	30.0	30.0	31.5	35.5	37.0
Max. coaxial flue gas discharge length \varnothing 60/100 mm - \varnothing 80/125 mm	m	10 / 10	10 / 10	10 / 10	10 / 10	10 / 10
Loss due to insertion of 90° / 45° bend (\varnothing 60/100 mm - \varnothing 80/125 mm)	m	1 / 0.50	1 / 0.50	1 / 0.50	1 / 0.50	1 / 0.50
Max twin flue pipe gas discharge length \varnothing 80+80 mm	m	40	40	40	40	40
Loss due to insertion of 90° / 45° bend (\varnothing 80+80 mm)	m	1.65 / 0.90	1.65 / 0.90	1.65 / 0.90	1.65 / 0.90	1.65 / 0.90
Max / min exhaust gas mass flow rate***	kg/s	0.0071 / 0.0028	0.0089 / 0.0028	0.0089 / 0.0028	0.0089 / 0.0028	0.0133 / 0.0040
Max / min air mass flow rate***	kg/s	0.0068 / 0.0027	0.0085 / 0.0027	0.0085 / 0.0027	0.0085 / 0.0027	0.0127 / 0.0038
Max flue gas temperature (30/50° C)***	°C	50	54	54	58	58
Heat loss towards the environment through the casing with the burner operating**	%	0.2	0.2	0.2	0.1	0.1
Heat loss at the chimney with burner on**	%	2.2	2.4	2.4	1.7	1.7
Heat loss at the chimney with burner off**	%	0.2	0.2	0.2	0.2	0.2
Nominal / minimum O ₂ ***	%	3.9 / 4.8	3.9 / 4.8	3.9 / 4.8	3.9 / 4.8	3.9 / 4.8

*Compliant with Leg. Decree 192/05 and as updated

** Values measured with 1 meter of coaxial chimney \varnothing 60/100 mm

*** Values measured with 1 meter of discharge + 1 meter of twin pipe suction \varnothing 80 mm (G20)

The models are available in methane and LPG versions.

This catalogue replaces previous versions.

In order to constantly improve its products, BSG Caldaie a Gas S.p.A reserves the right to change the data provided in this catalogue any time and without notice. Product warranty pursuant to Leg. Decree. no. 24/2002