Datasheet

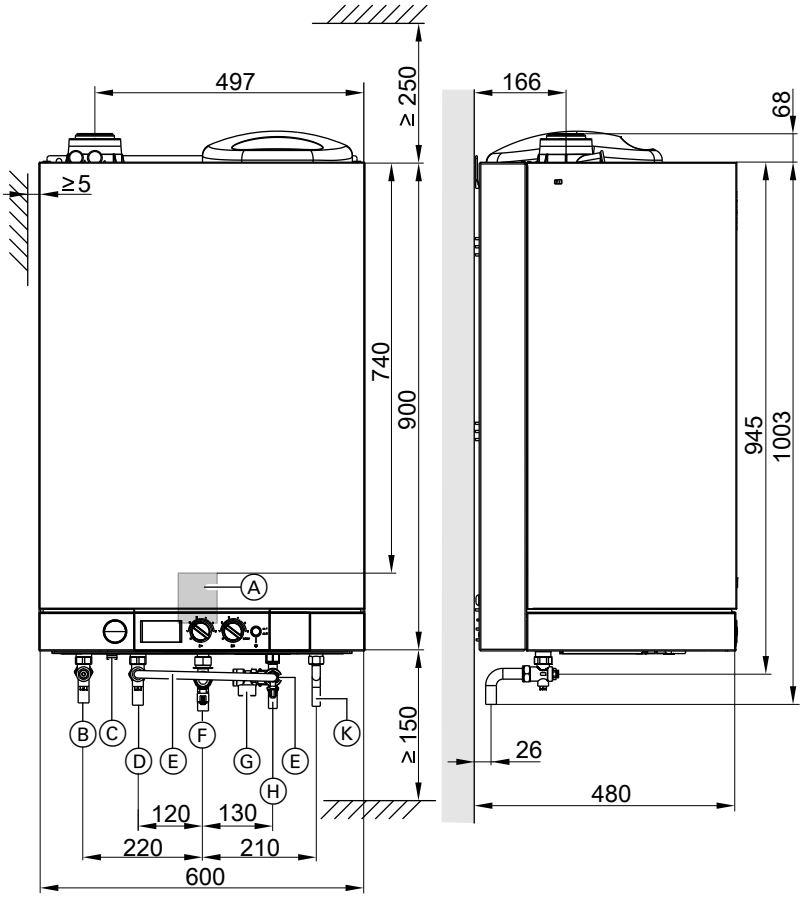
For part no. and prices: see pricelist

VITODENS 111-W Type B1LA

Gas condensing storage combi boiler,
6.5 to 35.0 kW,
for natural gas and LPG

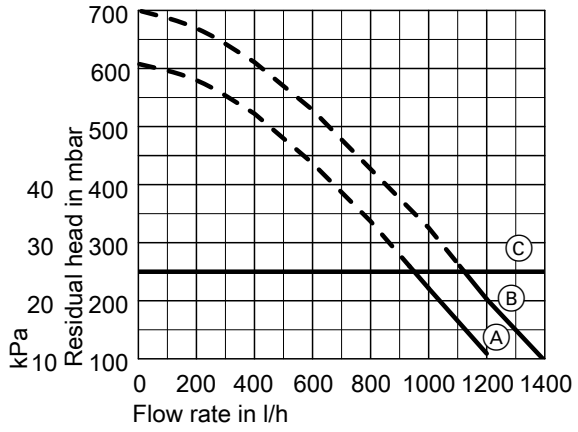
(cont.)

Dimensions



Ⓐ Area for electrical connections
Ⓑ Heating flow Ø 22 mm
Ⓒ Condensate drain Ø 22 mm
Ⓓ Heating return Ø 22 mm
Ⓔ Filling loop
Ⓕ Gas connection Ø 22 mm
Ⓖ Safety valve (DHW side)
Ⓗ Cold water Ø 15 mm
Ⓚ DHW Ø 15 mm

Residual head of the integral circulation pump

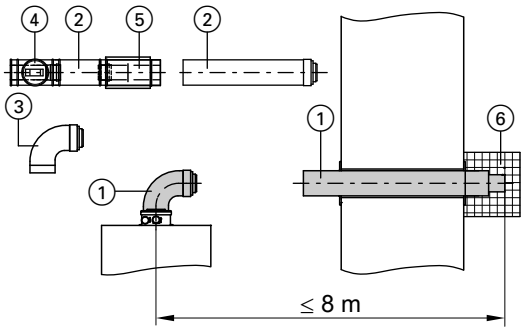


Ⓐ 26 kW
Ⓑ 35 kW
Ⓒ Upper operational limit

5822 567 GB

Balanced flue systems

Balanced flue system with external wall connection
For routing through the external wall or a sloping roof. Max. length of the balanced flue:
- 26 kW: 10 m
- 35 kW: 8 m



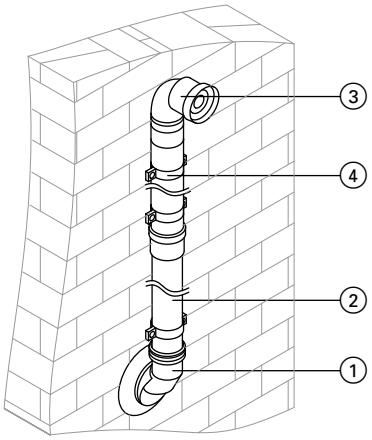
Deduct the following lengths from the max. flue lengths:
- For each additional 87° balanced flue bend: 1.0 m
- For each additional 45° balanced flue bend: 0.5 m

Route the horizontal connection line with a rise of at least 3°.

Pos. no.	Component	Part no.
①	**Balanced flue external wall connection set** Comprising: -1 x 87° balanced flue bend -1 x balanced flue external wall connection incl. 2 wall bezels	7373 237
②	**Balanced flue pipe**	
	1 m long	7373 224
	0.5 m long	7373 223
③	**Balanced flue bend**	
	87° (1 pce)	7373 226
	45° (2 pce)	7373 227
	or	
	Balanced flue inspection bend 87° (1 pce)	7373 229
④	**Balanced flue inspection piece**, straight (1 pce)	7373 228
⑤	**Balanced flue slide coupling**	7373 236
⑥	**Grille** (where the flue terminal is near public paths)	7189 821
	Fixing clip, white (1 pce) (balanced flue pipe)	7176 762

Plume kit
Observe the max. length of the entire balanced flue.
For the standard plume kit, deduct 3 m from the max. possible pipe length.

When using an additional 87° bend or two 45° bends, reduce the max. length by 1 m.

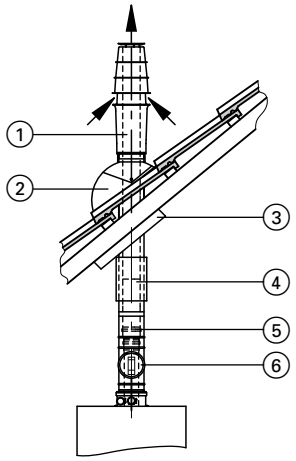


Component	Part no.
Plume kit Comprising: ① 87° connecting bend ② Pipe, 1 m long (2 pce) ③ 87° bend with animal guard ④ Fixing clips ∅ 60 mm (3 pce)	7373 238
Bend (∅ 60 mm)	
87° (1 pce)	7373 266
45° (2 pce)	7373 267
Pipe, 1 m long (∅ 60 mm)	7373 268
Fixing clip, (∅ 60 mm)	7246 572

Balanced flue system with vertical sloping or flat roof outlet
Max. length of the balanced flue:
- 26 kW: 10 m
- 35 kW: 8 m

Deduct the following lengths from the max. flue lengths:
- For each additional 87° balanced flue bend: 1.0 m
- For each additional 45° balanced flue bend: 0.5 m

(cont.)



Pos. no.	Component	Part no.
①	**Balanced flue roof outlet** with fixing clip	
	Colour: black	7373 230
	Colour: red	7373 231
	Roof extension with fixing clip	
	Colour: black	
	0.5 m long	7311 367
	1.0 m long	7311 369
	Colour: red	
	0.5 m long	7311 368
	1.0 m long	7311 370
②	**Universal roof tile**	
	Colour: black	7452 499
	Colour: red	7452 500
	or	
	Flat roof collar	7426 187
③	**Universal cover plates**	7185 139
④	**Balanced flue slide coupling**	7373 236
⑤	**Balanced flue pipe**	
	1 m long (trim to size)	7373 224
	0.5 m long (trim to size)	7373 223
	Balanced flue bend	
	87°	7373 226
	45° (2 pce)	7373 227
⑥	**Balanced flue inspection piece,** straight	7373 228
	Fixing clip, white (1 pce)	7176 762

Specification

Gas boiler, type C			
Rated heating output range			
T_V/T_R=50/30 °C	**kW**	**6.5-26.0**	**8.8-35.0**
T_V/T_R=80/60 °C	**kW**	**5.9-23.7**	**8.0-31.9**
Rated heating output for DHW heating	kW	5.9-29.3	8.0-35.0
Rated heat input	kW	6.1-30.5	8.2-36.5
Product ID		CE-0085 BT 0029	
Efficiency			
At full load (100 %)	%	97.5	97.5
At partial load (30 %)	%	108.4	108.4
Standby losses	W	70	66
Sound power level (partial load)	dB(A)	<37	<40
NOx class		5	5
Gas supply pressure			
Natural gas	mbar	20/25	20/25
LPG	mbar	37	37
Max. permissible gas supply pressure			
Natural gas	mbar	25/31	25/31
LPG	mbar	45	45
Max. power consumption (including circulation pump)	W	102	143
Weight			
– Boiler	kg	62	64
– Boiler incl. packaging	kg	71	73
Water capacity			
– Boiler	litre	2.8	3.4
– Heat exchanger	litre	2.2	2.8
– Plate heat exchanger	litre	0.1	0.2
Max. amount of circulation water At ΔT = 20 K	litre	1018	1370
Expansion vessel			
Capacity	litre	10	10
Pre-charge pressure	bar	0.75	0.75
Permiss. operating pressure	bar	3	3

(cont.)

Gas boiler, type C			
Rated heating output range			
T_V/T_R=50/30 °C	**kW**	**6.5-26.0**	**8.8-35.0**
T_V/T_R=80/60 °C	**kW**	**5.9-23.7**	**8.0-31.9**
Dimensions (LxWxH)	mm	480x600x900	480x600x900
DHW primary store			
Capacity	l	46	46
Max. operating pressure (DHW side)	bar	10	10
DHW temperature setting range	°C	35-60	35-60
Continuous DHW output	kW	29.3	35.0
DHW outlet output for heating DHW from 10 to 45 °C	litre/10 min	180	200
Performance factor N_L *1		1.3	1.5
Connection values relative to the max. load			
Natural gas H	m^3/h	3.23	3.86
LPG P	kg/h	2.39	2.86
Flue gas parameters			
Temperature (at a return temperature of 30 °C)			
– at rated heating output	°C	45	45
– at the lower heating output	°C	35	35
Temperature (at a return temperature of 60 °C)	°C	68	70
Mass flow rate for natural gas			
– at rated heating output	kg/h	58	69
– at the lower heating output	kg/h	12	16
Mass flow rate for LPG			
– at rated heating output	kg/h	57	68
– at the lower heating output	kg/h	12	15
Flue gas connection	Ø mm	60	60
Ventilation air connection	Ø mm	100	100

Design information

Siting for balanced flue operation
As equipment type C_{13}, C_{33}, C_{53} or C_{63}, the Vitodens can be operated in **balanced flue** mode, **independent** of the size or ventilation of the installation room.
It may, for example, be installed in occupied areas or in living spaces, in adjacent rooms without ventilation, in cupboards and recesses without maintaining minimum clearances to combustible components, as well as in attic rooms (pitched attics and long pane of the roof) where the balanced flue pipe can be directly routed through the roof.
The installation location must be safe from the risk of frost.

Siting for open flue operation
In open flue operation the installation room is subject to the following requirements:
- Avoid air contamination by halogenated hydrocarbons (e.g. as contained in sprays, paints, solvents and cleaning agents); otherwise operate in balanced flue mode
- Avoid very dusty conditions
- Avoid high levels of humidity
- Prevent frost and ensure good ventilation
- Provide a drain in the installation room for the discharge pipe of the safety valve
- The maximum ambient temperature of the system should not exceed 35 °C
- Install the Vitodens near the chimney/shaft

If these instructions are not observed, any consequential boiler damage directly related to any of these causes is excluded from our warranty.

Clearance for maintenance work
700 mm **in front** of the boiler or DHW cylinder.

Electrical connections
- Provide the power supply (230 V/50 Hz) via a permanent connection.
- Protect the power cable with a fuse with a maximum rating of 16 A.

Cables

NYM-J 3 × 2.5 mm^2	**2-core min. 0.75 mm^2**	**NYM-O 3 ×1.5 mm^2**
– Power cables	– Vitotrol 100, type UTDB – Outside temperature sensor	– Vitotrol 100, type RT – Vitotrol 100, type UTA

Chemical anti-corrosion agents
Corrosion is generally avoided in correctly installed and operated sealed unvented heating systems.
Never use chemical anti-corrosion agents.
Some manufacturers of plastic pipes recommend the use of chemical additives. In such cases, only use anti-corrosion agents supplied by heating merchants and which have been approved for boilers with DHW heating via single-walled heat exchangers (plate heat exchangers or cylinders).

Heating circuits
For heating systems with plastic pipes, we recommend the use of impermeable pipes to prevent the diffusion of oxygen through the pipe walls. Provide system separation in heating systems with plastic pipes that are permeable to oxygen. We supply a separate heat exchanger for this purpose.

Underfloor heating circuit
Install a temperature limiter into the flow of the underfloor heating circuit to limit the maximum temperature.

**1 At 70 °C average boiler water temperature and cylinder storage temperature Tcyl = 60 °C.*
The DHW performance factor NL depends on the cylinder storage temperature Tcyl.
Standard values: Tcyl = 60 °C → 1.0 × NL Tcyl = 55 °C → 0.75 × NL Tcyl = 50 °C → 0.55 × NL Tcyl = 45 °C → 0.3 × NL.

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Safety valve/overflow valve (heating water side)
The hydraulic block of the Vitodens 100-W includes a safety valve and an overflow valve.

Opening pressure:
Safety valve 3 bar
Overflow valve ≈ 250 mbar

Water quality/frost protection
Unsuitable fill and top-up water increases the level of deposits and corrosion and may lead to boiler damage.
- Flush the heating system thoroughly before filling.
- Only fill with water of potable quality.
- Soften fill water with a water hardness above 3.0 mol/m^3, e.g. with the small softening system for heating water (see the Viessmann Vitoset pricelist).
- An antifreeze additive suitable for heating systems can be added to the fill water. The antifreeze manufacturer must verify its suitability.

DHW quality
From a water hardness of 3.58 mol/m^3 and higher, we recommend the use of DHW cylinders or a water treatment system in the cold water supply when heating DHW.

Connection of the gas condensing combi boiler on the DHW side
The Vitodens is not suitable for use in conjunction with zinc-plated/galvanised pipes.

Sizing the expansion vessel
A diaphragm expansion vessel is integrated into the Vitodens:

Pre-charge pressure	0.75 bar
Capacity	10 litres
Vitodens heating water capacity	
– 26 kW	2.8 litres
– 35 kW	3.4 litres

When making the hydraulic connections, check that the size of the expansion vessel matches the system conditions.
Install a second expansion vessel on site if the integral expansion vessel is not large enough.

Subject to technical modifications.

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