User and Installer manual

Water heater
NIBE COMPACT

IHB EN 2517-1
M13734

Table of Contents

Important information

Safety information

This manual describes installation and service procedures for implementation by specialists.

The manual must be left with the customer.

For the latest version of the product's documentation, see nibe.se.

This appliance can be used by children aged from 3 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children aged from 3-8 years are only allowed to operate the tap connected to the water heater. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

This is an original manual. It may not be translated without the approval of NIBE.

Water may drip from the safety valve's overflow pipe. The overflow pipe must be routed to a suitable drain, to prevent hot water splashes from causing harm. The overflow pipe must be inclined along its entire length to prevent pockets where water can accumulate, and must be frost-proof. The overflow pipe must be at least the same size as the safety valve. The overflow pipe must be visible and its mouth must be open and not placed close to electrical components.

SYMBOLS

CAUTION!
This symbol indicates danger to person or machine.

NOTE!
This symbol indicates important information about what you need to consider when installing, servicing or maintaining the installation.

TIP!
This symbol indicates tips on how to facilitate using the product.

MARKING

Explanation of symbols that may be present on the product's label(s).


Dangerous voltage.

SERIAL NUMBER

The serial number can be found at the bottom right, inside the front cover.

NOTE!
Always give the product's serial number when reporting a fault.

RECOVERY


Leave the disposal of the packaging to the installer who installed the product or to special waste stations.

Do not dispose of used products with normal household waste. It must be disposed of at a special waste station or dealer who provides this type of service.

Improper disposal of the product by the user results in administrative penalties in accordance with current legislation.

For the User

Regular checks

SAFETY VALVE

The safety valve (FL1) sometimes releases a little water following hot water usage. This is because the cold water that enters the water heater expands during heating, causing the pressure to rise and the safety valve to open.

The function of the safety valve must be checked regularly. Perform checks as follows:

1. Open the valve by turning the knob anti-clockwise carefully.
2. Check that water flows through the valve.
3. Close the valve by releasing it. If it does not close automatically when released, turn it anti-clockwise slightly.

ANODE

Compact enamel is fitted with a magnesium anode (FR2). The anode is an important part of the water heater's corrosion protection.

> **CAUTION!**
>
> The anode is a consumable.

Check the consumption of the anode within a year and then regularly thereafter. When the anode is new, it has a diameter of approx. 21 mm. When this diameter has been reduced, in the most consumed area, to less than 10 mm, the anode is consumed and must be replaced.

If there is no anode consumption after a few years, this could be due to poor conductivity in the water and analysis of the water is recommended.

Replacement/checking of anode

If there is a hot water tap in the pipe installation situated below the water heater's highest point, the anode can be replaced/checked, without the water heater needing to be emptied. If there is no hot water tap, the water heater must be drained, see section "Emptying".

1. Turn off the power to the water heater.
2. Close the shut-off valve (QM35) by turning the knob clockwise until it bottoms.
3. Open the hot water tap mentioned above.
4. Remove the plastic cover and the insulation plug.
5. The sacrificial anode (FR2) is unscrewed using a 27 mm, or 24 mm, socket wrench.

For replacement of anodes in confined spaces, a chain anode is available that only requires approx. 185 mm space above the water heater.

Emptying

When installed in a location where there is the risk of frost, the water heater must be drained when it is not in operation. Freezing could result in the water heater cracking and causing water damage.

Draining is performed as follows:

1. Turn off the power to the water heater.
2. Shut off the incoming cold water.
3. Open the safety valve (FL1) by turning the knob slowly anticlockwise one quarter of a turn, until it is fixed in the raised position.

   > **CAUTION!**
   >
   > There may be some hot water, risk of scalding.

4. During draining, air must be supplied to the water heater by opening some hot water taps, preferably the closest and lowest. If this is not enough, disconnect the hot water connection (XL4).

It can take a few minutes for draining to start.

Keep the valves' positions after the above actions until the water heater is to be used again.

A small amount of water may remain at the bottom of the water heater after draining.

Disturbances in comfort

DEALING WITH MALFUNCTIONS

> **CAUTION!**
>
> Electrical installation and service must be carried out under the supervision of a qualified electrician, and in accordance with applicable electrical safety regulations.

If the water fails to heat up, check the fuses in the electrical distribution unit. If none of the fuses have blown, the cause could be the temperature limiter tripping due to a fault in the water heater. Once the fault has been remedied, the temperature limiter can be reset.

SERVICE

For service, contact the installer. Serial number (PF3) (14 digits) and installation date should always be stated.

Only replacement parts supplied by NIBE may be used.

For the Installer

General

Compact is available in four different volumes and with three different types of corrosion protection: copper (Cu), enamel (E) and stainless (R).

The pressure vessel is designed and manufactured for a maximum cut-off pressure of 10 bar.

The water heater is insulated with EPS (environmentally friendly cellular plastic), which provides good thermal insulation.

The outer casing consists of powder-coated steel plate and the rear section is in galvanised steel plate.

The flanged, stainless steel immersion heater, in a Ø 80 mm connection opening, allows for simple dismantling, internal inspection and cleaning of the pressure vessel.

A complete set of factory-fitted valves, consisting of a mixing valve, non-return valve, vacuum valve (copper only), safety/draining valve and shut-off valve.

Transport

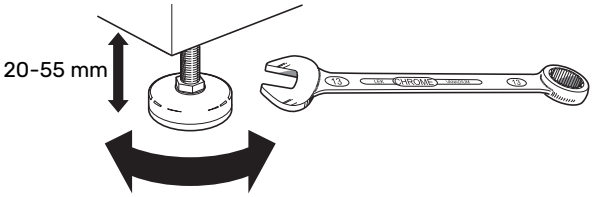
Compact should be transported and stored vertically in a dry place.

Check that Compact has not been damaged during transport.

Assembly

The water heater is only designed for upright installation.

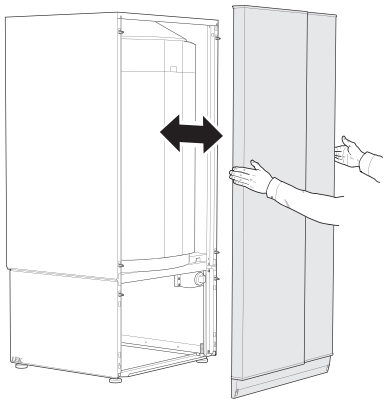
Position Compact on a firm base that can take the weight, preferably on a concrete floor or foundation. Use the water heater's adjustable feet to achieve a horizontal and stable set-up.



The area where the Compact is located must be frost-proof and equipped with a floor drain.

Handling panels

FRONT PANEL



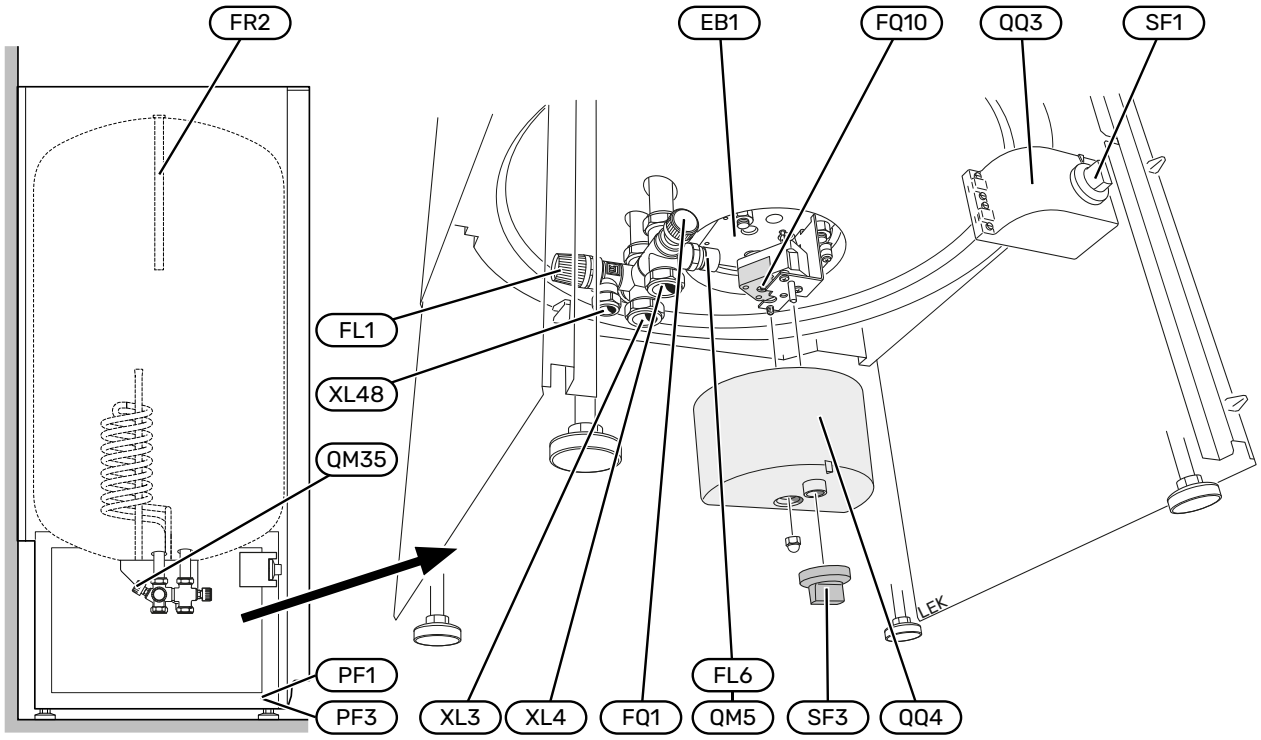
Pull the front straight out.

SIDE PANELS

The lower section of the side panels on Compact 150, 200 and 300 can be removed during installation, which facilitates access from the sides. The side panels can also be reinstalled in confined spaces.

Component positions

COMPACT



LIST OF COMPONENTS

Pipe connections

XL3	Connection, cold water compression fitting Ø22 mm
XL4	Connection, hot water compression fitting Ø22 mm
XL48	Connectiopm. safety valve compression fitting Ø15 mm

HVAC components

FL1	Safety valve/draining valve
FL6	Vacuum valve[1]
FQ1	Mixing valve
QM35	Shut-off valve cold water[2]

Electrical components

EB1	Immersion heater
FQ10	Temperature limiter
QQ3	Connection area with terminal block, switch
QQ4	Connection area, temperature limiter
SF1	Switch/circuit breaker
SF3	Thermostat knob

Miscellaneous

PF1	Type plate (on the base frame, behind the front cover)
PF3	Serial number plate (on the base frame, behind the front cover)

Designations in component locations according to standard IEC 81346-1 and 81346-2.

Pipe connections

GENERAL

Pipe installation must be carried out in accordance with current norms and directives.

The base of the water heater is generously sized to permit concealed pipe connections. Pipes can be routed from the floor or down through the ceiling (through recess in the rear section). A distribution manifold can also be installed in the base.

The valve connector must not be used for external installation, be relocated or separated. The mixing valve (FQ1) is set for the desired hot water temperature. Turn the mixing valve's knob anticlockwise to increase hot water temperature. Setting range 40 – 65 °C. An internal support bush must be fitted, if a plastic or annealed copper pipe is used.

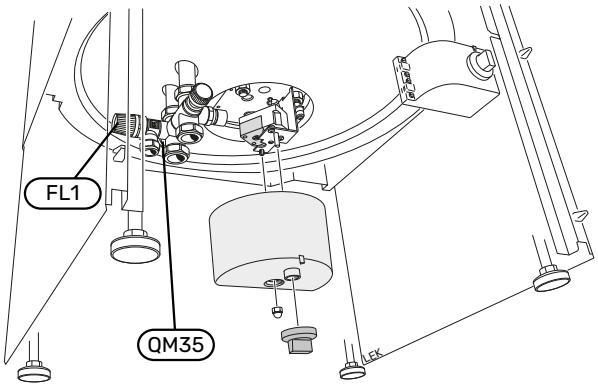
Water may drip from the safety valve's overflow pipe. The overflow pipe must be routed to a suitable drain, to prevent hot water splashes from causing harm. The overflow pipe must be inclined along its entire length to prevent pockets where water can accumulate, and must be frost-proof. The overflow pipe must be at least the same size as the safety valve. The overflow pipe must be visible and its mouth must be open and not placed close to electrical components.

> **NOTE!**
>
> Ensure that incoming water is clean. When using a private well, it may be necessary to supplement with an extra water filter.

If uncertain, contact a plumber alternatively see applicable standards.

Filling and venting

1. Check that the safety valve (FL1) is closed.
2. Open the shut-off valve (QM35).
3. Open a hot water tap in the house.
4. When the water that comes out of the hot water tap is no longer mixed with air, the water heater is full and the tap can be closed.



Electrical connection

> **CAUTION!**
>
> Electrical installation and service must be carried out under the supervision of a qualified electrician, and in accordance with applicable electrical safety regulations.

Connect incoming supply to the terminal block (X1). The circuit breaker/switch located in Compact is a combined circuit breaker/switch. It has a 3 mm breaking gap and is approved for use as a circuit breaker.

> **CAUTION!**
>
> The water heater must be completely filled with water before it is connected on the electrical side.

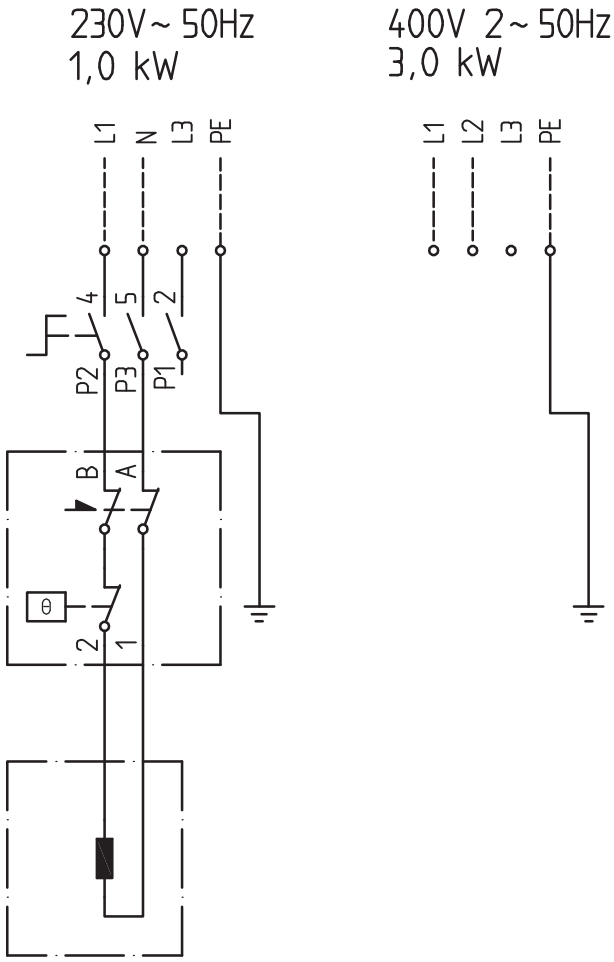
During 1 phase installation the water heater produces 1 kW, and during 2 phase installation it produces 3 kW. During 3 phase installation it produces 3/6 kW.

THERMOSTAT

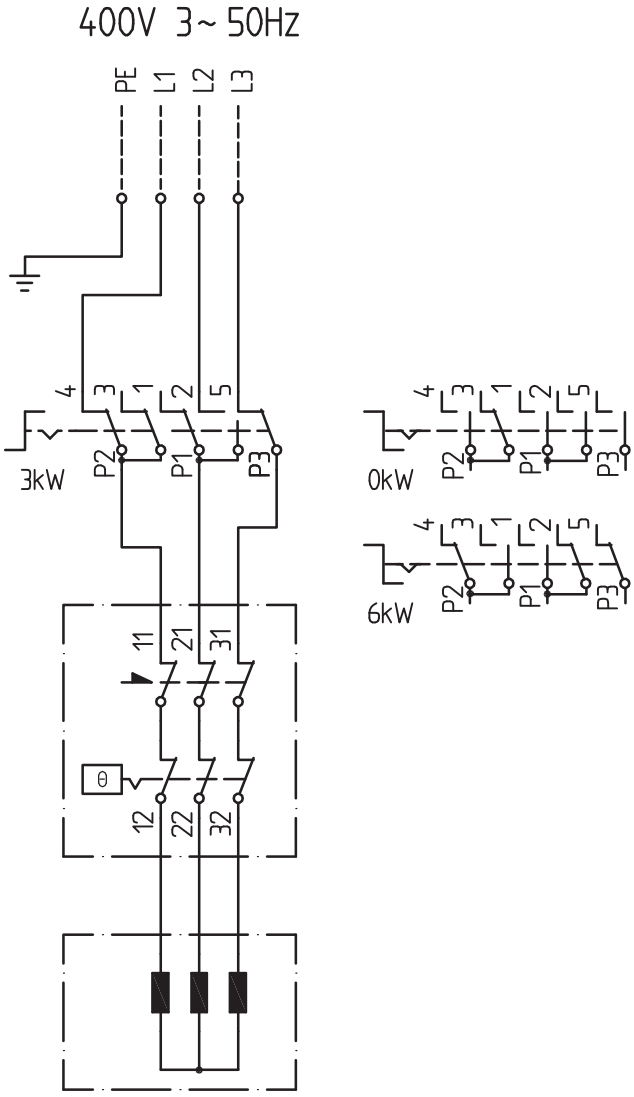
For optimum operating conditions, and to prevent bacterial growth, we recommend a setting of 60°C. If another temperature is required, set it using the thermostat knob (SF3) max. approx. 80 °C.

ELECTRICAL CIRCUIT DIAGRAM

1 phase 1 kW/2 phase 3 kW



3 phase 3/6 kW



Service

SERVICE ACTIONS

Safety valve

To check the safety valve, consult section “Regular checks” on page 5.

Emptying

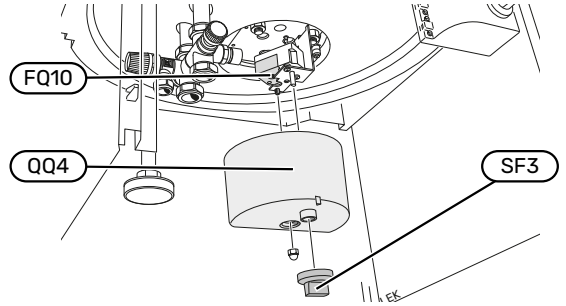
To drain the water heater, see section “Maintenance" on page 5.

Resetting the temperature limiter

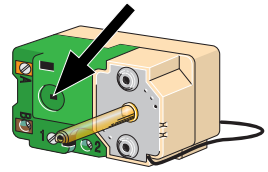
> **CAUTION!**
> Electrical installation and service must be carried out under the supervision of a qualified electrician, and in accordance with applicable electrical safety regulations.

If the temperature limiter (FQ10) tripped, the water heater must cool for at least one hour before it can be reset.

1. Remove the thermostat knob (SF3) and the plastic cover over the connection area (QQ4).
2. Press the button on the temperature limiter lightly.

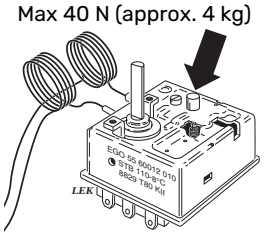


Max 15 N (approx. 1,5 kg



1-phase/2-phase installati

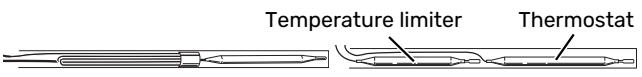
Max 40 N (approx. 4 kg)



3-phase installation

Reconnecting sensors

Reconnection of sensors for thermostat and temperature limiter. Check that the sensors are at the bottom of the submerged tube.



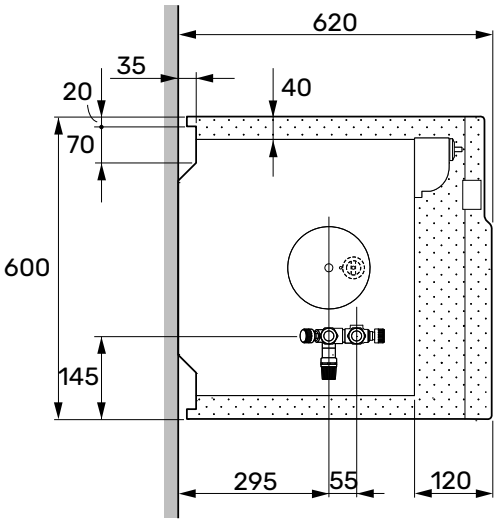
1-phase/2-phase installation

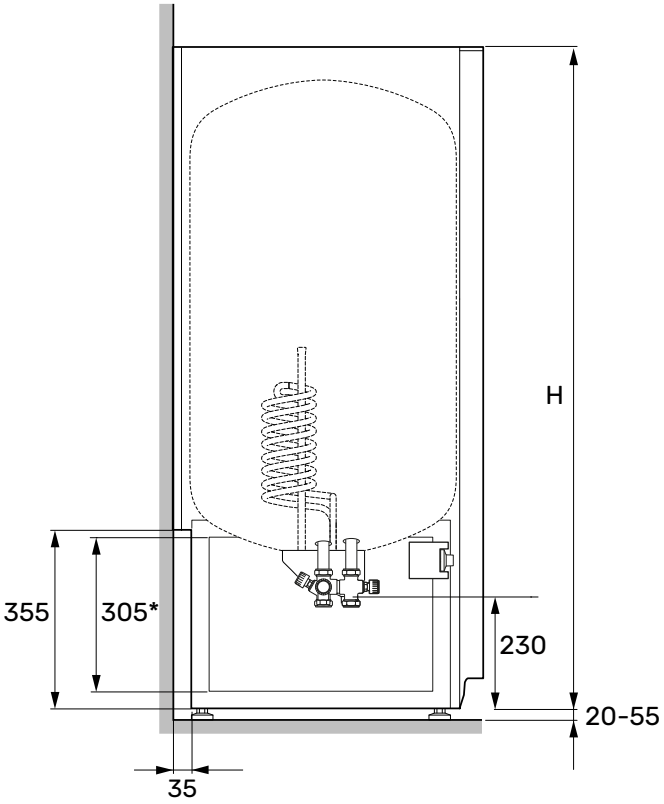
3-phase/ installation

Technical data

DIMENSIONS

All dimensions in mm.





Height Compact 100 - 820 mm
Compact 150 - 1200 mm
Compact 200 - 1310 mm
Compact 300 - 1710 mm

*The lower section of the side panels on Compact 150, 200 and 300 can be removed during installation, which facilitates access from the sides. The side panels can also be reinstalled in confined spaces.
Compact 100 has no lower side panels.

NOTE!

Pipes must not be run in the area indicated by dots!

TECHNICAL SPECIFICATIONS

Model		100	150	200	300	300 6 kW
Electrical data						
Rated voltage		230 V ~ 50 Hz / 400 V 2 ~ 50 Hz				
Output immersion heater	kW	1/3	1/3	1/3/6[2]	1/3/6[2]	6
Fuse	A	10				
Enclosure class		IP24				
Pipe connections						
Hot water ext ⌀	mm	22				
Cold water ext ⌀	mm	22				
Hot water heating						
Volume	l	93/-/-	-/140/-	176/182/180	261/269/266	261/269/266
Rated pressure	MPa/bar	1.0/10				
Max cut-off pressure	MPa/bar	0.9/9				
Heating time (10 °C to approx. 60 °C 1/3 kW)	h	5.5/2.0	8.0/3.0	10/3.5/2.0	15.5/5.0/2.5	2.5
Hot water capacity[1]	l	194	295	369/381/375	549/564/559	559
Dimensions and weight						
Length, anode Compact enamel	mm	-	-	590	815	815
Height (excl. feet)	mm	-	-	-	-	-
Ceiling height	mm	1010	1300	1470	1840	1840
Weight copper/stainless/enamel	kg	52/-/-	-/54/-	82/62/91	101/79/117	101/79/117
Corrosion protection		-				
Part no. copper		084 010	-	084 020	084 030	084 034
EPREL copper		-	-	225 182	225 183	225 190
Part no. enamel		-	-	084 070	084 080	084 082
EPREL enamel		-	-	225 209	225 210	225 212
Part no. stainless steel		-	084 040	084 050	084 060	084 062
EPREL stainless		225 181	225 185	225 192	225 204	225 206

[1] Applies for an incoming cold water temperature of 10 °C, outgoing hot water temperature of 40 °C, a drain flow of 12 litres per minute and a thermostat setting of 80 °C.

ENERGY LABELLING

Supplier		NIBE				
Model		**ER 57-100**	**ER 57-150**	**ER 57-200**	**ER 57-300**	**ER 57-300 6kW**
Declared tap profile [1]		**L**	**L**	**XL**	**XL**	**XL**
Water heating energy efficiency class [2]		**C**	**C**	**C**	**D**	**D**
Water heating energy efficiency, η_{wh}	%	37,8	38,0	38,1	37,3	37,3
Annual energy consumption water heating, AEC	kWh	2708	2695	4394	4491	4491
Quantity 40-degree hot water, V40	l	123	201	267	395	395
Thermostat setting	°C	60	60	60	60	60
Daily electrical consumption, Q_{elec}	kWh	12,53	12,45	20,29	20,86	20,86
Sound power level L_{WA}	dB	15	15	15	15	15
Applied standards		EN 50440				

1 Scale for declared tap profile3XS to 4XL.

2 Scale for efficiency class hot water A+ to F

ACCESSORIES

Immersion heater kit 6 kW

Part no. 018 288

Steatite immersion heater

The accessory is used with calcareous water.

Steatite copper

2.08 kW

Part no. 418 565

Steatite enamel

2.08 kW

Part no. 060 074

Direct-current anode (copper only)

Part no. 034 208

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