ADVECO

ARDENT

Electric Boiler Range



www.adveco.co

Adveco ARDENT Electric Boliers



The ARDENT range of wall-hung and floor-standing electric boilers provide a high capacity, reliable, and compact response for hot water and central heating demands in commercial buildings

Designed to serve an indirect water heater or heating system, multiple electric heating elements immersed into ARDENT's integrated water storage tank provide a rapid and reliable source of thermal energy for heat outputs from 9 to 100 kW

Integrates with heat pump systems to provide a high-temperature energy source during the coldest months

As part of an indirect hot water system can help eliminate scale build-up common on direct electrical immersion heaters

WORKING TOWARDS A ZERO CARBON FUTURE

50 YEAR HISTORY

CONTINUED GROWTH IN TURNOVER for 10 YEARS

IN HOUSE TRAINING FACILITIES

ARDENT Standard Wall - Hung 24 & 36 kw Heat Output

ARDENT Premium Wall-Hung 9, 12 & 24 kw Heat Output

ARDENT Floor-Standing 60, 80 & 100 kw Heat Output

KEY RANGE FEATURES

- Electric-only operation avoids reliance on gas energy supplies
- Multiple heating elements per unit provide built in redundancy
- Stepped element control to reduce start-up current and wear on heating elements
- Integrated overheat safety protection
- Simple integration into existing system

www.adveco.co

ARDENT Wall-Hung

With stepped power control ARDENT reduces start-up current and provides optimum heating output by economically adjusting the output when approaching the set point temperature. Range rating allows the maximum output to be limited to reduce wear on the heating elements and operate within the power availability on site. ARDENT includes integrated overheat protection as standard to ensure safe operation.

The ARDENT wall-hung variant is available in two model ranges:

ARDENT S

The ARDENT Standard 24 and 36 kW model features one to three heating elements with thermostat input and output control to an external pump.

ARDENT P

The ARDENT Premium 9kW, 12 kW and 24 kW models feature two or three heating elements with six or nine circuits with a front-mounted controller with LCD display. Models include an integrated expansion vessel, relief valve, and circulation pump. Additional controls include 3-port valve and fault output.

All wall hung models boast a protective IP40-rated outer shell



ARDENT P9 | P12 | P24 | S24 | S36

ARDENT Floor-Standing

ARDENT S60 | S80 | S100



Available as a floor-standing appliance with outputs from 60 to 100 kW, the ARDENT features stepped element control to economically adjust the heating load when approaching set point temperature, and range rating to tailor the boiler power to suit the application.

All boilers feature an integral controller with LCD display and fault output.

An automatic air relief valve, safety valve, and temperature and pressure sensors.

Rear flanged pipework connections.

Protective IP20-rated outer shell.

www.adveco.co

Recognising The Threat Of Limescale in Electric DHW Systems

Electric immersion heaters are perfectly suitable for low-demand backup applications in boiler-fed indirect cylinders.

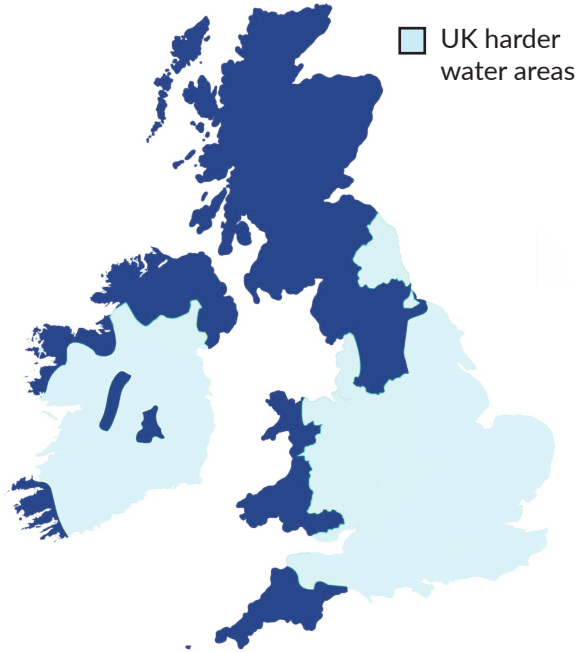
While but when used 'directly' in commercial, high-demand applications as the primary heat source they prove unreliable in hard water areas where scale can develop and become trapped in the bundle or rods of the immersion.

In all types of heat exchanger, the operating temperature and the heat intensity (the amount of energy that passes through a cm2 of heat exchanger surface area) affects the rate of scale formation. An electric immersion heater has a high heat intensity compared to gas or indirect and can be expected to build up more scale which, over time, will cause the element to rupture.

In response, protecting a system from limescale is often only addressed by a vigorous cleaning regime. This method has a cost and downtime associated with it that is not acceptable for many commercial buildings. For this reason, minimisation of scale formation with water softener or a scale inhibitor, may be adopted, but for many sites neither provides a satisfactory response because of space, maintenance, downtime, or cost.

A better option for these sites would be to replace the immersion heaters with a low scale forming hot water system.

Immersion heaters can fail in hard water areas in as little as six months



Countering Limescale With ARDENT Electric Boilers

The Adveco ARDENT electric boiler range provides a proven and cost-effective answer.

ARDENT still utilises immersion heaters located in a small tank heat exchanger within the boiler housing. This electric boiler supplies a sealed 'primary' loop to an indirect coil in the cylinder.

The electric boiler heats the same water continuously so there is only a finite amount of scale in the system which will not damage the elements. The heat exchanger in the cylinder is a large coil operating at relatively low temperatures. Extensive experience with indirect coil use in the UK has shown that scale is not a significant problem in these systems. The electric boiler operates at the same efficiency as an electric immersion heater (100%) and so the only overall difference in system efficiency is the minimal pump electrical consumption and a small amount of heat loss in the pipework.

An electric boiler hot water system will take up a little more space than an all-in-one electric cylinder, but it has more versatility and requires less clearance for the cylinder.

Similarly priced to an immersion heater, an electric boiler based system will cost slightly more due to the small amount of additional installation work. But with virtually no maintenance and the cylinder forming significantly less scale, vastly improving reliability, operational and maintenance savings will offset these additional capital costs.



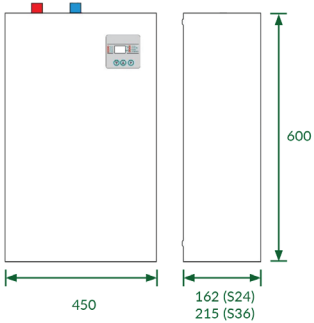
Scale collected in the bundle of an immersion heater

The electric boiler additionally offers a level of redundancy that is not achieved with a single immersion heater.

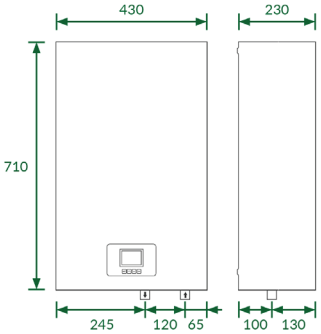
Talk to Adveco about retrofitting tanks with a new indirect coil to replace the legacy electric immersion

www.adveco.co

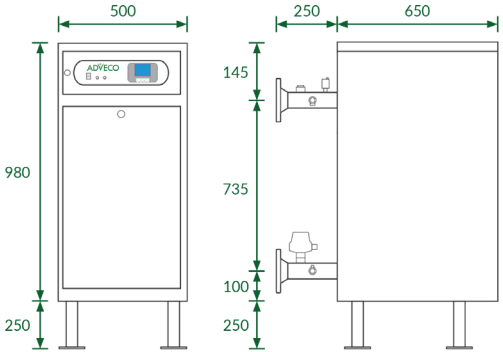
ARDENT Dimensions



ARDENT S24 | S36



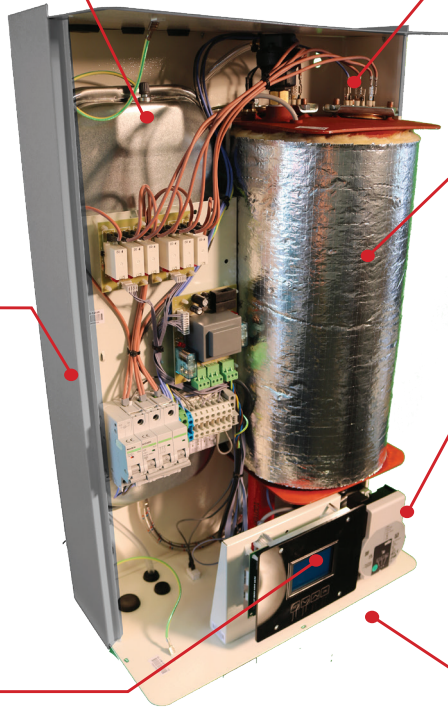
ARDENT P9 | P12 | P24



ARDENT 60 | 80 | 100



ARDENT P Internal Configuration



www.adveco.co

ARDENT Specifications | Wall-Mounted

Ardent Standard: Technical Specifications	S24	S36
Power output at nominal resistance	At 400V: 24.0 At 440V: 29.0	At 400V: 36.0 At 440V: 43.6
Element configuration	3 × 8.0	3 × 12.0
Element nominal resistance	19.8Ω ±10%	22.0Ω ±10%
Heating element efficiency	100%	100%
Power supply (V_{AC} / Phases / Hz)	400 / 3 phase / 50	
Full load current per phase (A) at nominal resistance	At 400V: 34.8 A At 440V: 38.3 A	At 400V: 52.2 A At 440V: 57.4 A
Inlet and outlet connections	1" (DN25)	
Boiler water content (l)	14.2	21.0
Maximum operating temperature (°C)	80	
Operating pressure range (bar)	0.5 – 3.0	
Energy efficiency class	D	
Sound power level (dB)	46	
Housing protection	IP20	
Dimensions H × W × D (mm)	600 × 450 × 162	600 × 450 × 215
Empty weight (kg)	13.5	17.2

Ardent Premium: Technical Specifications	P9	P12	P24
Power output at nominal resistance	At 240V / 400V: 9.0 kW At 440V: 10.9 kW	12.0 (at 440V) 14.5 (at 400V)	24.3 (at 440V) 29.4 (at 400V)
Element configuration	6 × 1.5	6 × 2.0	9 × 2.7
Element nominal resistance	35.3Ω ±10%	26.5Ω ±10%	19.6Ω ±10%
Heating element efficiency	100%	100%	100%
Power supply (V_{AC} / Phases / Hz)	240 / 1 phase / 50 or 400 / 3 phase / 50	400 / 3 phase / 50	
Full load current per phase (A) at nominal resistance	At 240V 1ph: 39.1 A At 440V 3ph: 14.3 A	At 400V: 17.4 A At 440V: 19.1 A	At 400V: 35.2 A At 440V: 38.7 A
Inlet and outlet connections (inch)	G 3/4"	G 3/4"	G 3/4"
Boiler water content (l)	12.5	12.5	12.5
Expansion vessel water content (l)	7.0	7.0	7.0
Maximum operating temperature	80	80	80
Operating pressure range (bar)	0.8 – 2.2	0.8 – 2.2	0.8 – 2.2
Energy efficiency class	D	D	D
Sound power level (dB)	32	32	32
Housing protection	IP40	IP40	IP40
Dimensions H × W × D (mm)	700 × 430 × 230	700 × 430 × 230	700 × 430 × 230
Empty weight (kg)	25	25	25

ARDENT Specifications | Floor-Standing

Standard: Technical Specifications	S60	S80	S100
Power output range at nominal resistance	At 400V: 10.0–60.0 kW At 440V: 12.1–72.6 kW	At 400V: 10.0–80.0 kW At 440V: 12.1–96.8 kW	At 400V: 10.0–100.0 kW At 440V: 12.1–121.0 kW
Element configuration	6 × 10.0 kW	8 × 10.0 kW	10 × 10.0 kW
Element nominal resistance	15.9Ω ±10%	15.9Ω ±10%	15.9Ω ±10%
Heating element efficiency	100%	100%	100%
Power supply (3 phase) (V_{AC} / Hz)	400 / 50	400 / 50	400 / 50
Full load current per phase (A) at nominal resistance	At 400V: 87.0 A At 440V: 95.7 A	At 400V: 115.9 A At 440V: 127.5 A	At 400V: 144.9 A At 440V: 159.4 A
Inlet and outlet connection (mm)	DN50 PN16	DN50 PN16	DN50 PN16
Boiler water content (l)	95	95	95
Operating temperature range (°C)	10–90	10–90	10–90
Operating pressure range (bar)	0.4 – 2.6	0.4 – 3.6	0.4 – 3.6
Expansion relief valve	U0023/3 0.75" 3 bar	U0023/4 0.75" 4 bar	U0023/4 0.75" 4 bar
Energy efficiency class	D	D	D
Dimensions H × W × D (mm)	1240 × 500 × 900	1240 × 500 × 900	1240 × 500 × 900
Empty weight (kg)	92	106	120



ARDENT P9 | P12 | P24

www.adveco.co

ADVECO



Adveco Ltd. Unit 7 & 8 Armstrong Mall, Southwood Business Park,
Farnborough, Hampshire GU14 0NR

T | 01252 551 540 E | enquiries@adveco.co

ADVECO ARDENT ELECTRIC BOILER RANGE

SR300123v3

www.adveco.co

© Adveco Ltd. 2023 Company Reg : 09493966