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# Vaillant aroTHERM PLUS



HIGH TEMPERATURE R290 HEAT PUMP

POWERED BY

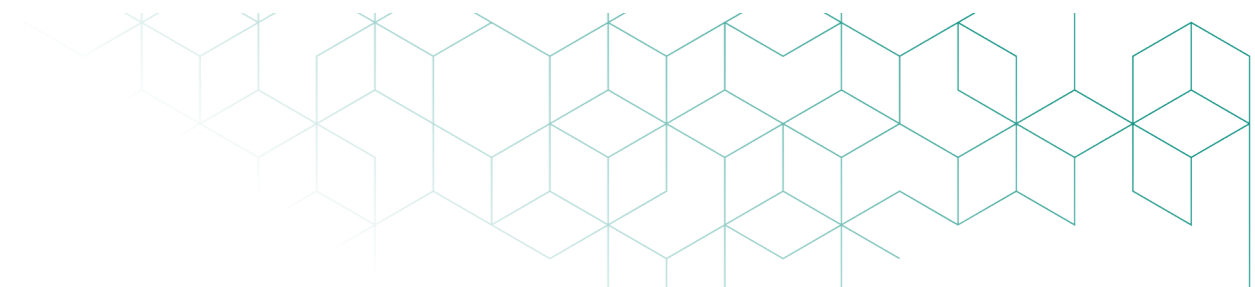
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# VAILLANT AROTHERM PLUS

## R290 HIGH TEMPERATURE HEAT PUMP

**THE NEW AROTHERM PLUS USES THE NATURAL REFRIGERANT R290 TO ACHIEVE HIGHER FLOW TEMPERATURES OF UP TO 75°C. SUITABLE FOR ALL HEATING AND HOT WATER APPLICATIONS THIS AIR SOURCE HEAT PUMP CAN POWER EXISTING RADIATORS WITHOUT RESIZING AND OPERATES DOWN TO -25°C.**

Setting new standards in the heating market has been a Vaillant tradition for years. Now they are leveraging their expertise to help protect the climate – by being the first manufacturer to introduce R290 into their heat pump product range.

It has clear advantages over alternative refrigerants: 1) approx. 75% less filling quantity is needed, 2) low global warming potential (GWP) which is a comparative value that indicates the greenhouse effect of a refrigerant. 3) high flow temperature of 75°C, which makes the solution perfect for retrofit installations. The new aroTHERM Plus was also the first R290 heat pump released in New Zealand.

### What is R290?

It's the technical name for the natural refrigerant also known as propane. R290 is already commonly used in many parts of our daily life, such as in refrigerators, air conditioning or even hairspray – Vaillant is one of the first companies to introduce the environmentally friendly refrigerant into heat pumps.

**R290 brings unbeatable benefits to our heat pumps:**

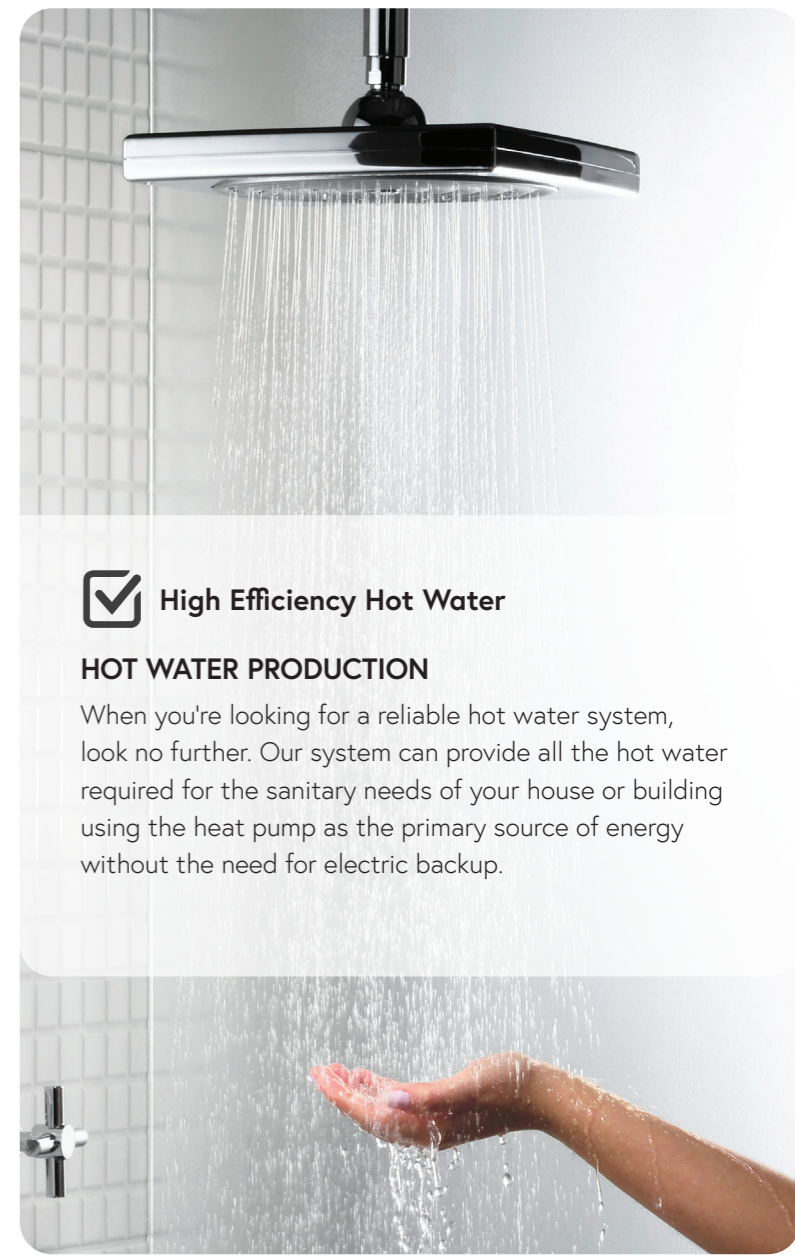
- Improved COP of up to 5.4 for lower running costs
- Higher flow temperature – up to 75°C in heat pump mode; ideal for radiator central heating
- Higher hot water comfort and legionella protection without backup element
- Wide working envelope from -25 to +46°C
- Low GWP of 3 – exceptionally eco-friendly and future-proof
- Stable service costs over product life cycle

**\* What is global warming potential (GWP)?**  
GWP is a comparative value that indicates the greenhouse effect of a greenhouse gas, such as a refrigerant, if it were to be released into the environment. The higher the value, the worse the impact on the climate.

**Exemplary GWP's of some refrigerants:**

CO2	1
R290	3
R32	675
R410A	2,088

The value indicates the amount of CO<sub>2</sub> which has an equal global warming effect. To calculate the CO<sub>2</sub> impact of a refrigerant, the amount contained in the heat pump is multiplied by its GWP value.




### High Efficiency Hot Water


#### HOT WATER PRODUCTION

When you're looking for a reliable hot water system, look no further. Our system can provide all the hot water required for the sanitary needs of your house or building using the heat pump as the primary source of energy without the need for electric backup.

**Exemplary calculation**

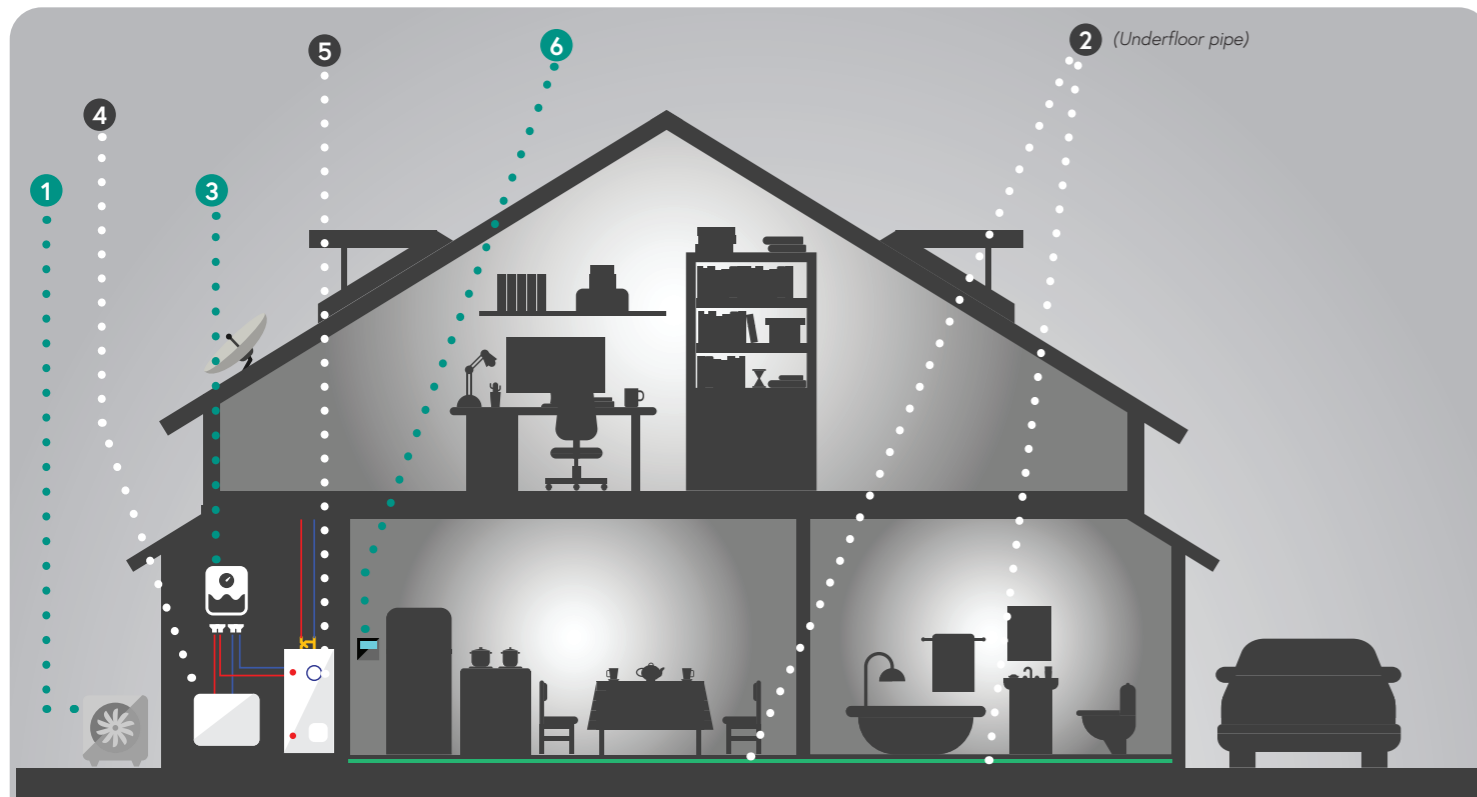
R410A	1.8 kg of R410A x 2,088 GWP	R290 (aroTHERM plus)	0.6 kg of R290 x 3 GWP
	<b>= 3,760 kg CO<sub>2</sub></b>		<b>= 1.8 kg CO<sub>2</sub></b>

 **13-hour flight** from New Zealand to Thailand

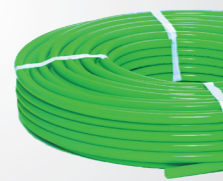
 **15 km** drive by car

# VAILLANT AROTHERM PLUS HEAT PUMP

## UNDERFLOOR HEATING OPTIONS



**1. Vaillant aroTHERM Heat Pump (heat source)**  
Ultra high efficiency air to water R290 heat pump for Active Ceiling or underfloor heating, cooling and/or indirect domestic hot water.



**2. Pipex Underfloor Pipe**  
Pipex piping systems heat from the floor slab in your home. Surface and underfloor heating ensures even distribution of heat throughout the living space.

**3. Vaillant Hydrobox**  
Indoor hydrobox module simplifies the installation and protects vulnerable control hardware from harsh environments



**4. Caleffi Composite Distribution Panel**  
Central manifold to collect the pipes from each zone and connect them to the system. Allows options for balancing and zone control. Each area can be controlled at different temperatures to maximise the comfort in the zone and minimise running costs.

**5. Protank with Valve Set**  
Indirect hot water cylinder with high capacity and mains pressure water delivery. Designed to take the energy from the high efficiency heat source and convert it into hot water for your taps and showers.



**6. Vaillant GBVRC720 (system control)**  
This thermostat controller sets the schedule for heating, cooling and hot water performance. In the winter time it uses temperature compensation to maximise comfort and minimise running costs, in summer it uses dew point management to prevent condensation.

# VAILLANT AROTHERM PLUS HEAT PUMP

## RADIATOR OPTIONS

Radiator based heating solutions offer a residential or commercial space ultimate flexibility in designing a system that fits a particular room or zone. Waterware's radiators are European designed and manufactured, and are of a high quality and finish. Constructed from pressed steel or alloy means they are durable, making them ideal for home life or in a commercial environment. Offering a range of solutions that deliver a lower running cost through their ability to heat quickly, suitable for renovation or new build projects, and are not dependent on concrete or timber floors. Radiators offer an elegant and effective home heating solution to keep you warm and safe during those cooler temperatures.



*Radiators emit warmth via a combination of natural convection and radiant heat*

### RADIATOR STYLES

European designed and manufactured, our radiators are of a high quality and finish, and their durability make them an ideal choice for home life. We offer a range of solutions delivering a lower running cost through their ability to heat quickly, and are suitable for renovation or new build projects.

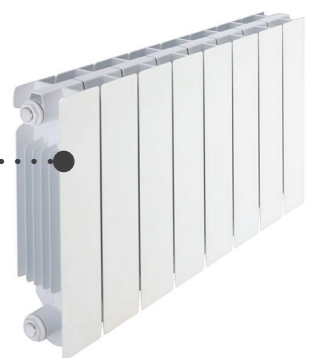


#### BRUGMAN STEEL PANEL RADIATORS

Brugman radiators from Belgium are our premium brand steel panel radiator and beautifully finished to a high standard. Being constructed from pressed steel they are also durable in the case of accidental impact. Available in 400mm, 600mm, 1800mm or 2000mm high, 68mm or 102mm thick and up to 2400mm long.

#### BLITZ ALLOY RADIATORS

Blitz alloy radiators are a clean modern design made in Italy by the Fondital Group. They are available in 350mm, 600mm or 1800mm heights by an infinite range of lengths thanks to their modular construction.



#### CAST IRON & STEEL COLUMN RADIATORS (INDENT)

Whilst high tech in its design and manufacture, offering great size options and heat outputs, it still manages to look traditional and authentic. Being sectional and adaptable, it fits in perfectly suited to large, high-ceilinged rooms where a lot of heat is needed.

The vintage style is popular not just for its imaginative authentic look, but also its range of contemporary colours. The standard finish is white, but the 'transparent coating' only further enhances its steampunk credentials. There is also the option of floor or wall mounting. They are available in 600mm height and range from 960 - 1440mm in length.



# VAILLANT AROTHERM PLUS HEAT PUMP

## FEATURES & BENEFITS

The Vaillant aroTHERM air to water heat pumps harvest free energy found in the air outside the building envelope, and convert it into all season comfort and convenience. Heat pumps from Vaillant are very quiet, powerful, energy-efficient and environmentally friendly.

- Low noise level (35dBA @4meters) ensures quiet operation for the comfort of home owners and neighbours.
- A high level of performance even when its -10°C outside.
- Ultra energy efficient and compared to a gas-fired system saves the equivalent CO<sup>2</sup> emissions reduced by a forest area of around 2,500m<sup>2</sup>.

Engineered in Germany, Vaillant heat pumps offer world leading quality and reliability. Vaillant have more than 140 years of experience in heating systems, including 40 years in the area of heat pumps.

### Cascade and hybrid power

Multiple aroTHERM's and/or Vaillant ecoTEC gas boilers can be seamlessly cascaded together to supersize system performance.



Arotherm Plus	HPVP9	HPVP16
Width	1,100mm	1,100mm
Height	965mm	1,565mm
Depth	450mm	450mm
Weight, ready for operation	128kg	210kg
Heating water temp min/max	20 to 75°C	20 to 75°C
Refrigerant, type	R290	R290
Refrigerant, fill quantity	0.90kg	1.30kg
Compressor type	Rotary	Scroll
Heat output, nominal, A7/W35	7.80 kW	14.3 kW
Coefficient of performance, COP, EN 14511, A7/W35	4.4	4.3
Power consumption, effective, A7/W35	1.77 kW	3.33 kW
Cooling output, A35/W18	6.40 kW	10.8 kW
Energy efficiency ratio, EER, EN 14511, A35/W18	4.3	4.6
Power consumption, effective, A35/W18	1.05 kW	2.35 kW
Sound pressure level @1, 3, and 5m*	39   28.5   24 dB(A)	43   33.5   29 dB(A)

\*Sound pressure levels stated above achieved using Night Mode. Certified to EN 12102, EN 14511 LWA, A7/W45

# VAILLANT SENSO COMFORT CONTROLLER

## FEATURES & BENEFITS

## Simply Beautiful

Vaillant's senso controls use eBUS software with load compensation technology to precisely regulate heat source output, optimizing energy use and saving money by reducing electrical consumption whenever possible.



### Stylish design

Sleek, elegant and stylish, senso controls have been designed to complement all modern interiors.

### Intuitive operation

An easy-to-use touch interface provides precise, effortless control over your complete heating system.

### Peace of mind

MyVaillant phone app can monitor and display your energy usage\*, and notify you of any system faults or service reminders.

\*Internet Gateway (VR 940) required.

## PLUS YOU HAVE COMPLETE CONTROL ACROSS THE VAILLANT RANGE

To get the very best out of the Vaillant boiler or heat pump for the customer, it is always best to fit Vaillant controls. Our controls are designed and tested to work with our products only. Fitting a complete Vaillant controls system can increase efficiency by up-to 4%.\*

\* When fitted with a weather compensating thermostat

