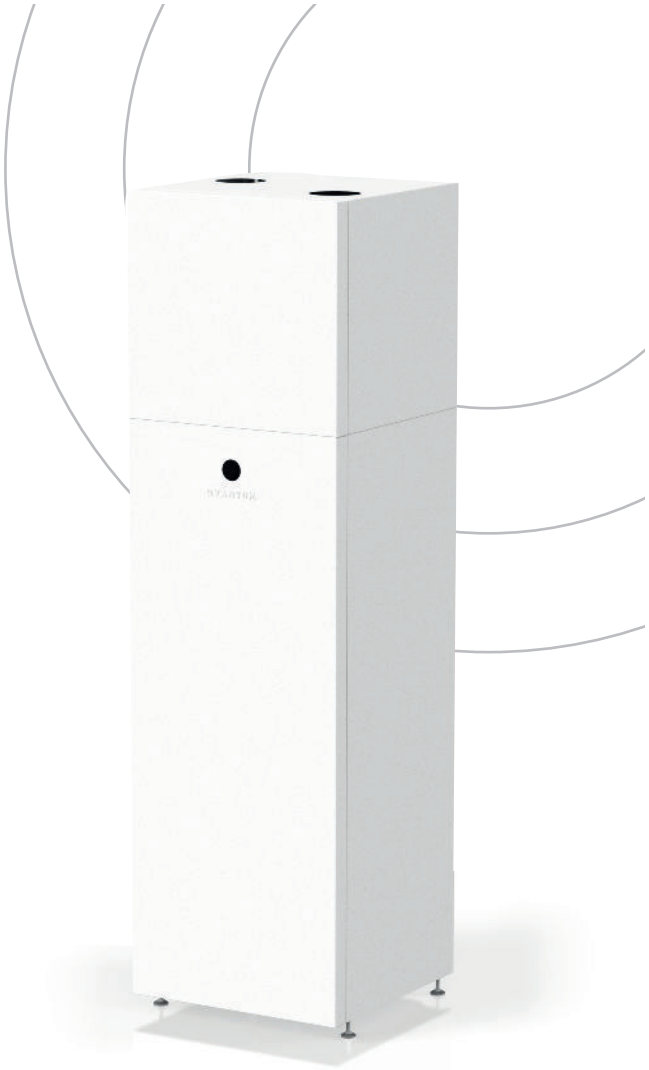
QVANTUM



QVANTUM QE Series

Exhaust air heat pump

The Qvantum QE is an energy efficient exhaust air heat pump, providing heating, cooling, ventilation, and hot water. The heat pump is inverter controlled and has an integrated buffer tank. The exhaust air unit extracts energy from the outgoing ventilation air. The inverter control automatically adjusts to the comfort demands of the home, thus minimising energy consumption.

Domestic hot water is produced instantaneously with heat from the integrated buffer tank. The buffer tank can also be used to avoid energy peak prices for both heating and hot water. The QE heat pump is available in 4 kW and 6 kW output and supports both single- and three phase connections. The heat pump can also provide cooling.

The compact and flexible design of the QE heat pump makes it easy to install, not only in newly build homes, but also as an upgrade for existing exhaust air heat pumps. The heat pump is well suited to replace gas boilers in low temperature systems. The heat pump is easy to operate and has a low noise level, which makes it an asset to any home.

A+++
System efficiency class room heating, 35 °C.

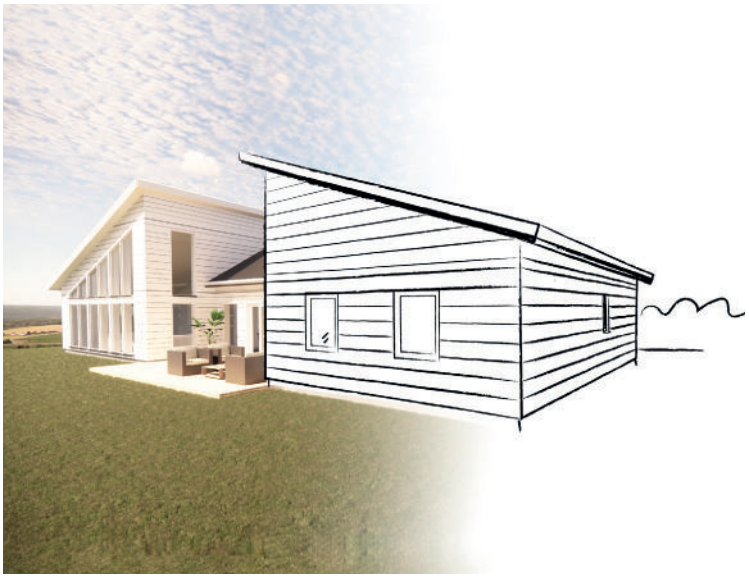
A++
System efficiency class room heating, 55 °C.

A+ XL
Product's efficiency class and load profile for hot water.

ALL-IN-ONE
Integrated heating, ventilation, heat recovery & hot water in one unit

COOLING
Including active cooling as standard

Q CLOUD
Open API & smart algorithms – integrated connectivity



HOW DOES AN EXHAUST AIR HEAT PUMP WORK?

PRINCIPLE

The room tempered exhaust air passes through a filter to the heat pumps evaporator. As the air passes through the evaporator, the refrigerant evaporates due to its low boiling point. This causes the air to release energy into the refrigerant. The refrigerant is then compressed in the compressor and the temperature rises considerably. The discharge is led to the condenser, where the refrigerant releases its energy into the water of the heating system, transforming the refrigerant from gas to liquid.

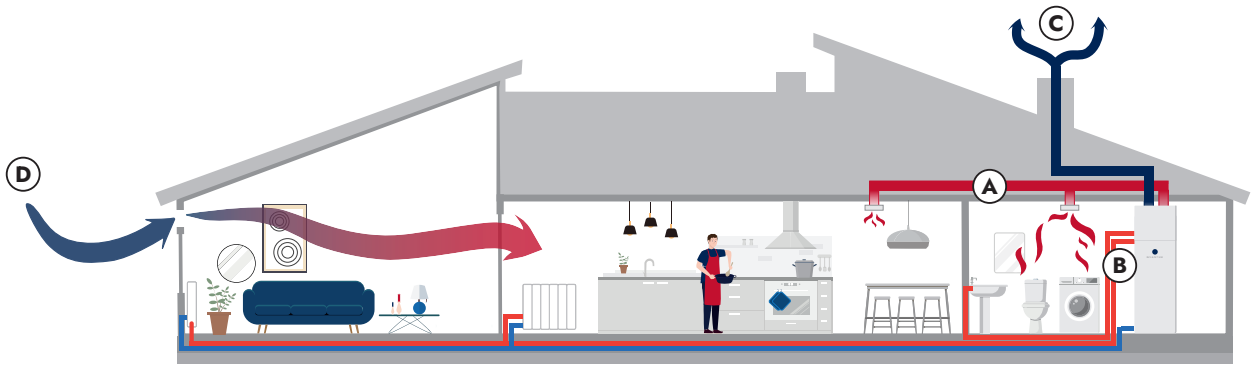
The heat pump distributes the heat to heating or domestic hot water via a diverting valve. The refrigerant then passes to the expansion valve where the pressure and temperature are reduced. The circuit is now complete, and the refrigerant passes back through the evaporator. In very cold weather, or at high consumption of hot water, the compressor's heat production can be supplemented by the immersion heater which is switched on in stages as needed.

A Indoor air is drawn into the air duct system and fed to the Qvantum QE. The energy in the indoor air is transformed to the heating.

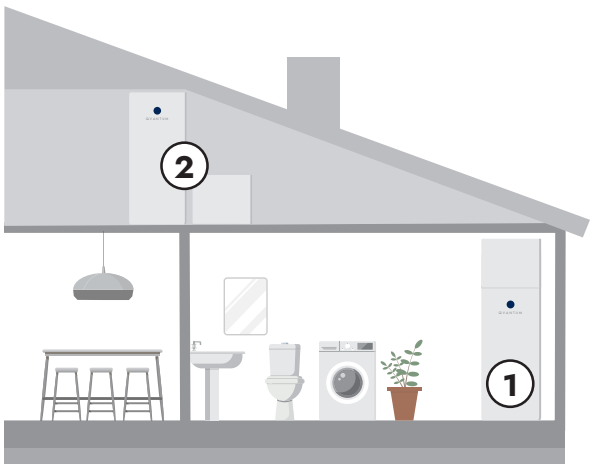
B Qvantum QE supplies the home with heat and hot water.

C The air is discharged with a temperature down to 30 degrees lower than the indoor air.

D Fresh outdoor air is drawn in via the outside air ducts, as the exhaust air heat pump creates a slight negative pressure in the house via the duct system. Air is transported from rooms with outdoor air devices to the exhaust air valves located in the house.



INSTALLATION POSSIBILITIES



Installation can be made in several diffrent ways due to the modular concept.

1 Complete All-in-one installation (A).

2 Modular installation as seperate units (M).

KEY FEATURES

- Available in 4 kW and 6 kW output and inverter control to meet the comfort demands of the home.
- Support for 4-pipe active cooling as standard.
- Additional active cooling through supply air with SAC accessory.
- Instantaneous domestic hot water for comfort as well as efficient legionella prevention.
- Future proof connectivity.
- Integrated buffer tank that enables true energy peak price shaving for both hot water and heating.
- Suitable for single - and three phase connections.
- Simple installation through low weight and compact dimensions.
- Modular design which enables multiple installation options.

FUTURE PROOF

Qvantum HP series is designed for the needs of the future energy landscape. In an integrated way, both the hardware and the software are designed to be able to support increased thermal storage, increased flexibility, faster response times for electrical grid services and more. You connect to the system using Wi-Fi or Bluetooth and the supporting cloud with its open API, enable smart home management capabilities.

This makes it possible to let the heat pump optimise its operation to maximise synergies with your own PV installation, peak shifting to avoid high hourly electricity tariffs as well as with grid power and frequency control markets.

The system also enables predictive maintenance – this heat pump will let you know when it needs your attention.

INSTALLATION FLEXIBILITY

The Qvantum exhaust air heat pump comes in two sizes:
4 kW and 6 kW enabling the system to work from 70 m^2 up to 220 m^2 dwellings.

The Qvantum exhaust air heat pump has a modular design which enables efficient installation via the All-in-one unit (A). One unit delivering space heating, tap water heating, cooling and ventilation.

The same product is also available in stand alone exhaust air modules (M) as well as floor-standing and wallmounted hydro units, enabling multiple and flexible installations when required. This makes the Qvantum QE series a solution for everything from single apartments to retrofit and energy efficiency renovation schemes.

Qvantum QE-4/6 (A)	Qvantum QE-4/6 (M)	Qvantum QH XLarge (Floor standing)	Qvantum QH Large (Wall mounted)

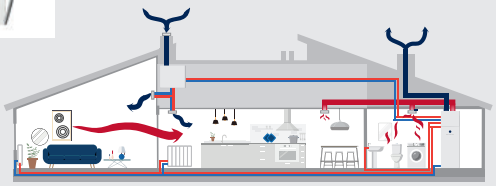
PRELIMINARY TECHNICAL DATA		QE-4	QE-6
Ventilation			
Recommended ventilation flow	l/s	20–45	40–65
Heating efficiency and capacity			
Space heating efficiency class of the system 35°C / 55°C		A+++/A++	
Space heating efficiency class 35°C / 55°C		A+++/A++	
SCOP $_{EN14825}$ average climate, 35°C / 55°C		4,45/3,22	4,41/3,16
Nominal heating output $_{(Pdesignh)}$	kW	4	6
Operational range source side	°C	15–35	
Operational range sink side	°C	25–60	
Electrical data			
Rated voltage	V	400V 3N ~ 50Hz / 230V 1N ~ 50Hz / 230V 2N ~ 50Hz	
Max power immersion heater	kW	5.0 kW (three steps)	
Sound			
Sound effect level $_{EN12102 (LWA)}$	dB(A)	40–52	40–54
Hot water efficiency and capacity			
Amount of hot water (40°C) $_{EN16147}$	l	235	
Efficiency class hot water heating / declared tap profile		A+/XL	A+/XL
Refrigerant circuit			
Type of refrigerant (GWP)		R134a (1430)	
CO_2-equivalent	kg	1 430	1 716
Refrigerant quantity	kg	1	1,2
Weight and dimensions			
Ventilation connections Ø	mm	125	
Dimensions (W x D x H)*	mm	600 x 600 x 2 050	
Weight	kg	160	170

* Height without ventilation connections.

ACCESSORIES

QVANTUM SAC

The Supply Air Conditioner is designed to pre-heat and cool central supply air together with the Qvantum QE. This accessory requires a central air flow into the rooms.



Principle with Qvantum QE and SAC.

FRESH AIR VENTS

If Qvantum SAC is not installed, it's crucial to use wallmounted fresh air vents, that reduce the risk of backdraught.

We recommend FRESH TL 100 DE, with one vent per 20m² of living space.

HEAT PUMPS FOR SUSTAINABLE CITIES

WE CHANGE THE WAY THE CITIES OF EUROPE ARE HEATED

Qvantum, founded in Sweden in 1993, develops high-quality heat pumps for individual buildings and innovative heat pump-based solutions for densely populated areas to enable everybody to benefit from emission free heating and cooling. The company has deep knowledge in both heat pump technology and energy systems engineering and works in close collaboration with engineering consultants, installers, project developers and utilities.

Qvantum
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