

QVANTUM QE

Exhaust air heat pump

The Quantum QE is a top efficient exhaust air heat pump that provides heating, cooling, ventilation, and hot water in a compact, all-in-one unit. The heat pump features an integrated accumulator tank, functioning as a thermal battery, allowing heat storage at up to 90°C. The heat pump is flexready – by charging during periods of low electricity prices or renewable energy surplus, it optimises energy consumption and helps balance the power grid while ensuring consistent comfort. With API communication capabilities, the QE is prepared for flexibility markets, enabling automated energy trading based on real-time electricity prices and grid demand.

Domestic hot water is produced instantly via a heat exchanger. This means that you avoid the risk of legionella and you do not need different corrosion protection depending on the water quality.

With advanced rapid discharge defrosting, the QE maintains high performance even in cold conditions, reducing energy loss and ensuring efficient operation when it's needed most. With one of the lowest noise levels in its class, the QE delivers top efficiency while ensuring a quiet and comfortable indoor environment.

The Quantum QE is available in 4 kW and 6 kW models, suitable for living spaces up to 200 m². It's a perfect solution for both single-family homes and apartments in multi-family buildings – when ventilation is available as an energy source. A user-friendly interface further enhances convenience, making the QE a smart and efficient choice for modern homes and everyday indoor comfort.



QE-4: Product's efficiency class room heating, 35/55 °C.



QE-6: Product's efficiency class room heating, 35/55 °C.



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

THERMAL BATTERY

A patented solution where the integrated accumulator tank can be used as a thermal battery which means that the heat pump is adapted for the flexibility market.

BUILT FOR THE FUTURE

As Quantum's software develops, the heat pump will automatically be upgraded with new features.

BALANCING SERVICES

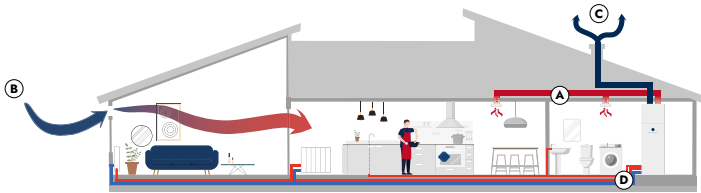
By responding to fluctuations in energy availability, flexready heat pumps ease grid strain, lower energy costs, and enhance system stability.



HOW DOES IT WORK?

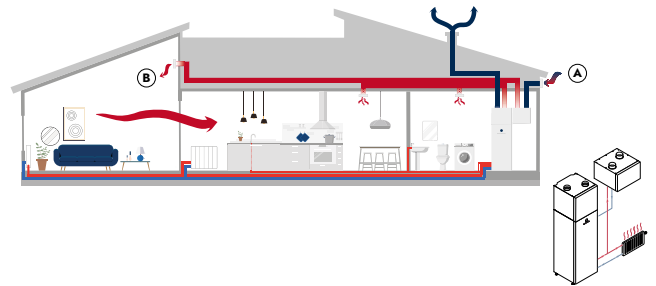
PRINCIPLE

An exhaust air heat pump is a type of heat pump that provides mechanical ventilation, heating and hot water. By combining these, the heat pump extracts waste air from the home and efficiently uses this as an energy.



4-DUCT SOLUTION

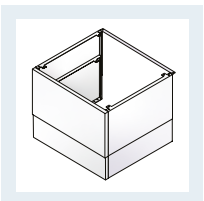
The addition of the QS supply air unit removes the need for background ventilators and introduces filtered pre-warmed fresh air to the home via ductwork (similar to an MVHR system).



- A** The heat pump provides ventilation by extracting stale air from the kitchen, bathrooms and utility rooms.
- B** Extracting air creates a slight negative pressure allowing fresh air is introduced to the home by background (non mechanical) ventilators to the living rooms & bedrooms
- C** Once the heat has been recovered from the extract air it is discharged to the outside via insulated ductwork as it can be up to 30°C cooler than the extracted air.
- D** The heat pump uses the heat recovered from ventilation, via the vapour compression cycle, to efficiently produce heating and hot water for the home

- A** Fresh air is drawn in to the QS unit where it passes across filters to improve the air quality before pre-warming the air across a heater that is supplied by the heat pump.
- B** The filtered pre-warmed air is then supplied to the living & bedrooms via ductwork and diffusers. This provides an elegant solution if the home is located in an area where outdoor noise and air quality are of concern.

ACCESSORIES



TOP CABINET

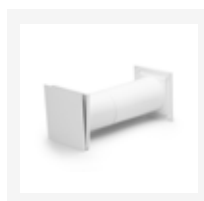
To conceal the ventilation ducts above the heat pump, an adjustable top cabinet is available as an accessory. The top cabinet has a minimum height of 300 mm and a maximum height of 620 mm.



QUANTUM QS*

Our supply air unit is designed to preheat centrally supplied air together with Quantum QE. This accessory requires central air supply to the rooms.

** coming soon*



FRESH AIR VENTS

In cases where Quantum QS is not used, fresh air vents with cold draft protection must be installed. We do not supply these, but we recommend the FRESH TL 100 DE with one vent per 20 m² of living space.

100% DIGITAL – SMART COMFORT

For installers and energy consultants, efficiency and reliability are key when working with heating systems. Quantum’s software-driven platform simplifies installation, integration, and operation — making heat pumps easier to manage and more adaptable to the evolving energy landscape.

REMOTE CONTROL

Quantum’s smart control system enables remote monitoring and adjustments, ensuring optimal comfort, efficiency, and energy savings — anytime, anywhere. Installers can adjust settings, track performance, and diagnose issues from anywhere, reducing on-site visits and improving service efficiency.



flexready®

Quantum’s flexready heat pumps support balancing services by allowing heat storage at up to 90°C. Acting as thermal batteries, they store excess energy when electricity prices are low and reduce consumption during peak hours — without affecting comfort.

By responding to fluctuations in energy availability, flexready heat pumps ease grid strain, lower energy costs and enhance system.

HEAT PUMP TO GRID (HP2G®)

Fossil-free cities need more than renewable electricity — they require smarter, more integrated energy solutions. Quantum’s HP2G®-optimised heat pumps can be used as standalone solutions for single-family homes or connected in larger thermal networks to create flexible, efficient energy systems. By transforming heat pumps into active grid assets, reduces emissions, stabilises the grid and increases energy independence.

THERMAL GRID – EFFICIENT HEATING & COOLING FOR CITIES

Quantum’s heat pumps are grid optimized and enables efficient heating and cooling by a shared low-temperature network. Instead of relying on gas boilers or traditional district heating, the shared network captures and redistributes excess heat from data centres, supermarkets and industrial processes etc, ensuring minimal energy losses.

By integrating both centralized and decentralized heat pumps, buildings can efficiently extract and use available thermal energy, reducing reliance on fossil fuels. The low-temperature network integrates with renewable electricity sources, optimising energy use across urban environments.

This future-ready heating and cooling solution helps cities reduce emissions, lower energy costs and transition toward a more sustainable and resilient energy system.

Quantum QE KEY FEATURES

- The 4 kW and 6 kW power sizes with inverter control fulfil the comfort needs of the home.
- Domestic hot water is produced without risk of Legionella via a heat exchanger, and you don’t have to choose corrosion protection based on water quality.
- Future proof connectivity.
- Inverter controlled compressor with high effect and low noise level.
- Low noise level.
- Large hot water capacity.
- Preheated supply air with the QS accessory.
- Inverter controlled compressor with high efficiency.



QE-4: Product's efficiency class room heating, 35/55 °C.



QE-6: Product's efficiency class room heating, 35/55 °C.



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

| TECHNICAL DATA | | QE-4 | QE-6 |
|---|-------|---------------------------------|-----------|
| Ventilation | | | |
| Recommended air flow | l/s | 25–55 | 40–70 |
| Heating efficiency and capacity | | | |
| The product's efficiency class room heating, average climate 35 / 55 °C | | A+++/A+++ | A++/A++ |
| The system's efficiency class room heating, average climate 35 / 55 °C | | A+++/A+++ | A++/A++ |
| SCOP _{EN14825} average climate, 35 °C/55 °C | | 4,66/3,86 | 3,84/3,21 |
| Nominal heating output _(P_{designh}) | kW | 4 | 6 |
| Operational range, exhaust air / sink side * | | 5–35 / 20–80 | |
| Electrical data | | | |
| Rated voltage | V | 400V 3N ~ 50Hz / 230V 1N ~ 50Hz | |
| Max power immersion heater | kW | 5,0 kW (1+2+2) | |
| Sound data | | | |
| Sound power level _{EN12102 (LWA)} | dB(A) | 39–52 | 40–54 |
| Sound pressure level in installation area (L _{P(A)})** | dB(A) | 36–48 | 36–50 |
| Hot water efficiency and capacity | | | |
| Amount of hot water (40 °C) _{EN16147 (V_{max})} *** | l | 235 | |
| Max amount of domestic hot water (40 °C)**** | l | 350 | |
| Efficiency class hot water heating / declared tap profile | | A/XL | |
| Refrigerant circuit | | | |
| Type of refrigerant (GWP) | | R513A (629) | |
| CO ₂ equivalent | kg | 692 | 786 |
| Refrigerant quantity | kg | 1,1 | 1,25 |
| Weight and dimensions | | | |
| Ventilation connection Ø | mm | 125 | |
| Dimensions (W x D x H)***** | mm | 600 x 620 x 2 045 | |
| Net weight | kg | 190 | 195 |

* With electrical addition ** Declared value is applicable with a 4 dB noise damping. The sound pressure level is dependant on the soundproofing properties of the room.

*** Depending on the system settings and tap water flow rate. **** When the 'Extra hot water' operating mode is active. *****Height without ventilation connections.

HEAT PUMPS FOR SUSTAINABLE CITIES

WE CHANGE THE WAY THE CITIES OF EUROPE ARE HEATED

Quantum, 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

Ji-te gatan 7, 265 38 Åstorp – Sweden
+46 10 332 00 50 | quantum.com



Q V A N T U M