

Stock number 301317

XINLEI
Air for all

R290 EVI ATW Heat Pump

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The models and technical parameters
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Xinlei Group

Specialized Manufacturer Of Intelligent HVAC Equipment

Xinlei was founded in Taizhou, Zhejiang Province. On January 19, 2023, Xinlei was listed on the main board of Shenzhen Stock Exchange. As a leading enterprise in the industry, Xinlei independent research and development production of air energy across the piston, screw, magnetic levitation centrifugal all-fluid plate. Various types of products achieve high energy efficiency breakthroughs under the continuous innovation, access to more than 300 authorized patents. Xinlei has been recognized as a national. "Specialized and New" little giant enterprise. Up to now, Xinlei has more than 800 distribution outlets in more than 100 countries and regions around the world. Our energy-saving equipment and smart solutions are widely recognized by the market and our customer partners.

Over the years, Xinlei has been striving to provide customers with a comfortable, energy-efficient, environmentally friendly and convenient indoor environment. With the service tenet of "Innovation reflects Value", we serve every customer with heart and soul. Xinlei has many experienced pre-sales, sales and after-sales service personnel. Our team has a strong technical ability, creating a new world of "energy saving, environmental protection and intelligence" in the field of aerodynamics.

1876

The world's first air conditioner was born in the United States. In the 20 years since the invention of air conditioner, it has always been machines, not people, that have enjoyed it

1996

Xinlei brand was founded in the era of national "Ninth Five-Year Plan" economic take-off

2000

Xinlei's self-developed aerodynamic products enter the European and American markets

2006

Won the first instance decision in the "EU anti-dumping" lawsuit. Daily production of 12,000 units, accounting for more than 56% of customs export data

2017

Comprehensively laid out the air/maglev centrifuge market and gained the first breakthrough

2020

Helped Sinopec to increase production by 30% and save energy by 50%. A major step on the road of "domestic substitution" in the high-end manufacturing of air energy

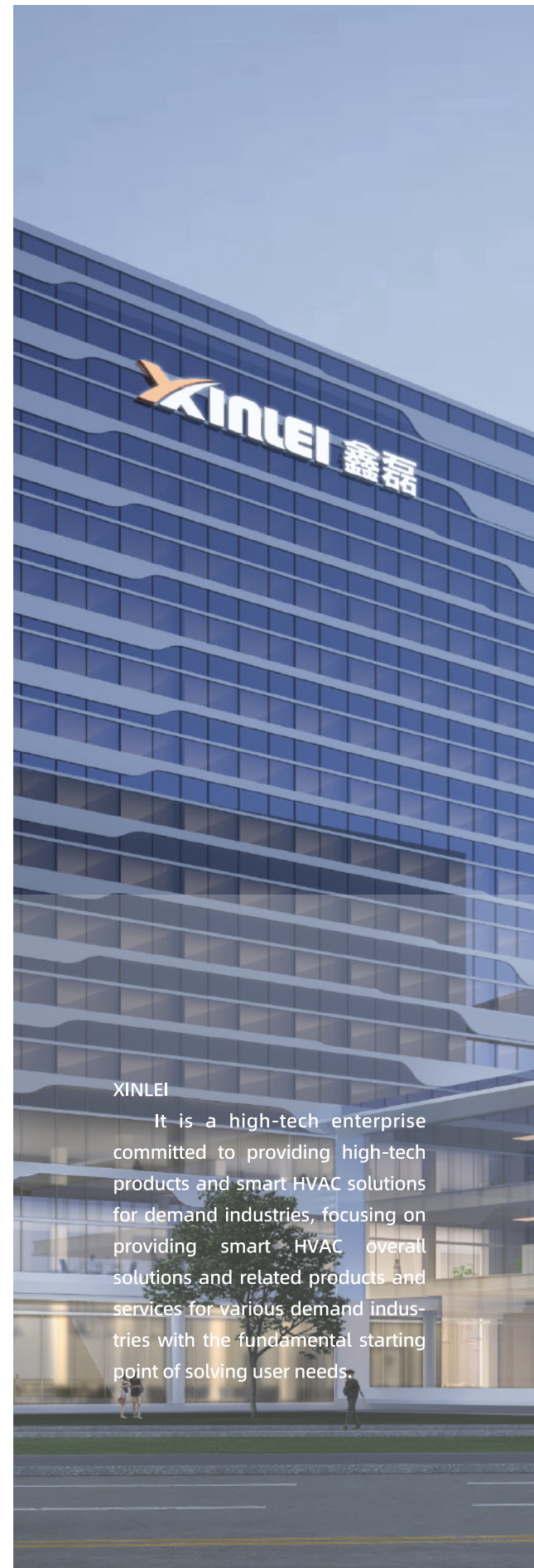
2022

Xinlei's first magnetic levitation frequency conversion centrifugal chilled water (heat pump) unit was launched, with an energy saving rate of up to 50%, triggering a revolutionary new journey in the industry

2023

Successful listing of Xinlei stock
Stock Code 301317
Xinlei heat pump achieves high energy efficiency breakthrough in continuous innovation

300RT and 1000RT water-cooled chilled water (heat pump) unit test bench certified by the National Testing Center

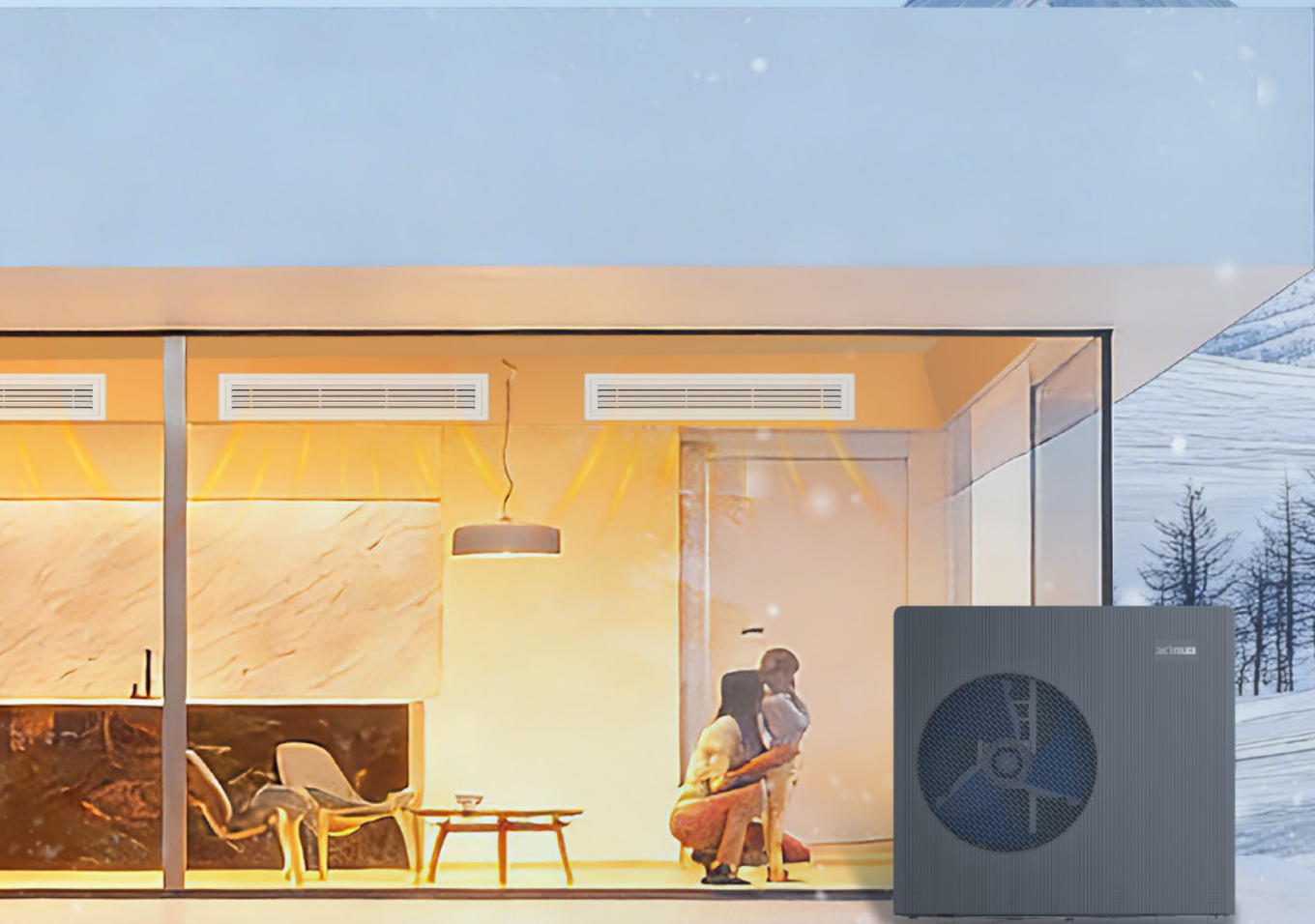


XINLEI

It is a high-tech enterprise committed to providing high-tech products and smart HVAC solutions for demand industries, focusing on providing smart HVAC overall solutions and related products and services for various demand industries with the fundamental starting point of solving user needs.

Air To Water Heat Pump

AI⁺ Full DC Inverter All-in-one Combined Cooling, Heating & DHW Functions



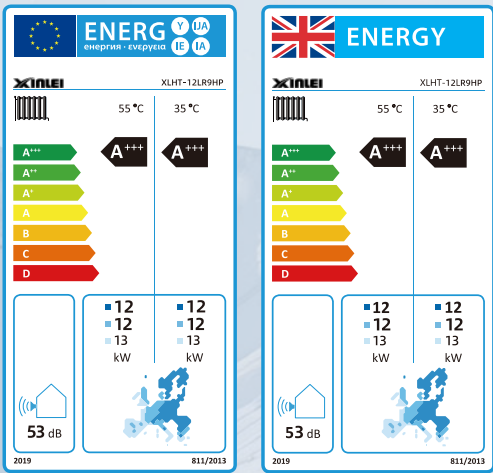
A+++ Efficiency Both At 35°C And 55°C

A+++ Efficiency both at 35°C and 55°C, with Hot Water Temperature up to 80°C.

Superior eco-performance

Highest ERP rating

- η_s Seasonal space heating energy efficiency
- η_s average up to A+++ at 35°C
- η_s average up to A+++ at 55°C



Eco-Friendly Natural Refrigerant R290

Environmentally friendly
Natural Refrigerant R290

GWP=3
Lower impact on
global warming

ODP=0
Neutral for the
ozone layer

- Much lower GWP value to meet EU carbon neutrality
- No ozone depletion potential
- Excellent thermodynamic performance
- Great thermal efficiency for most conditions



Wide Operating Range In Extreme Conditions

Core Technology: Equipped with EVI compressor, providing reliable performance in extreme conditions.

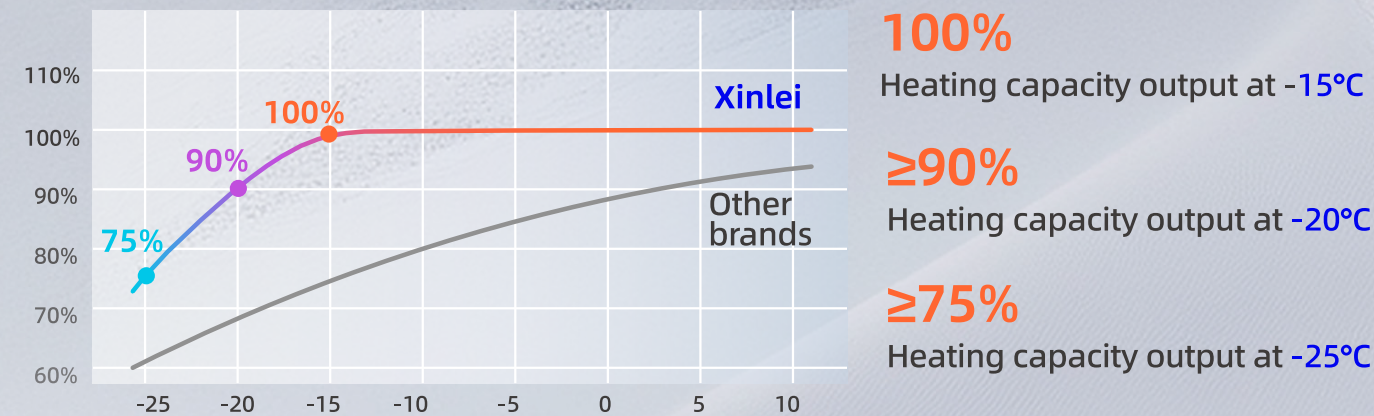
 **Ultra-wide operating range: -40°C to 46°C, ensuring stable operation even in severe cold or scorching heat.**



Performance does not degrade at ambient temperature -15°C.
At -20°C ambient temperature, heating capacity reaches 90%, with hot water temperature up to 75°C.

 **Powerful heating output at low ambient temperatures.**

Heat Capacity output at 35°C water temperature.



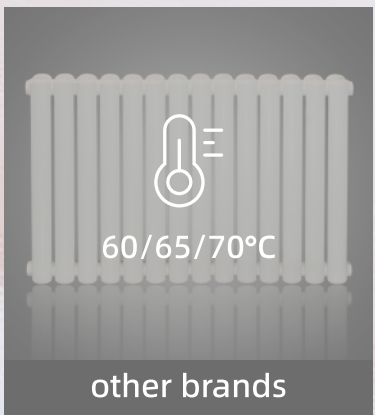
The above data is a general representation of the R290 EVI product line. For model-specific data, refer to Xinlei Engineering data book.

 **Ultra-Wide Voltage Operation**

The unit can operate stably across a wide voltage range of 145V-280V, adapting to complex power supply conditions.



 **Industry-leading 80°C leaving water temperature**



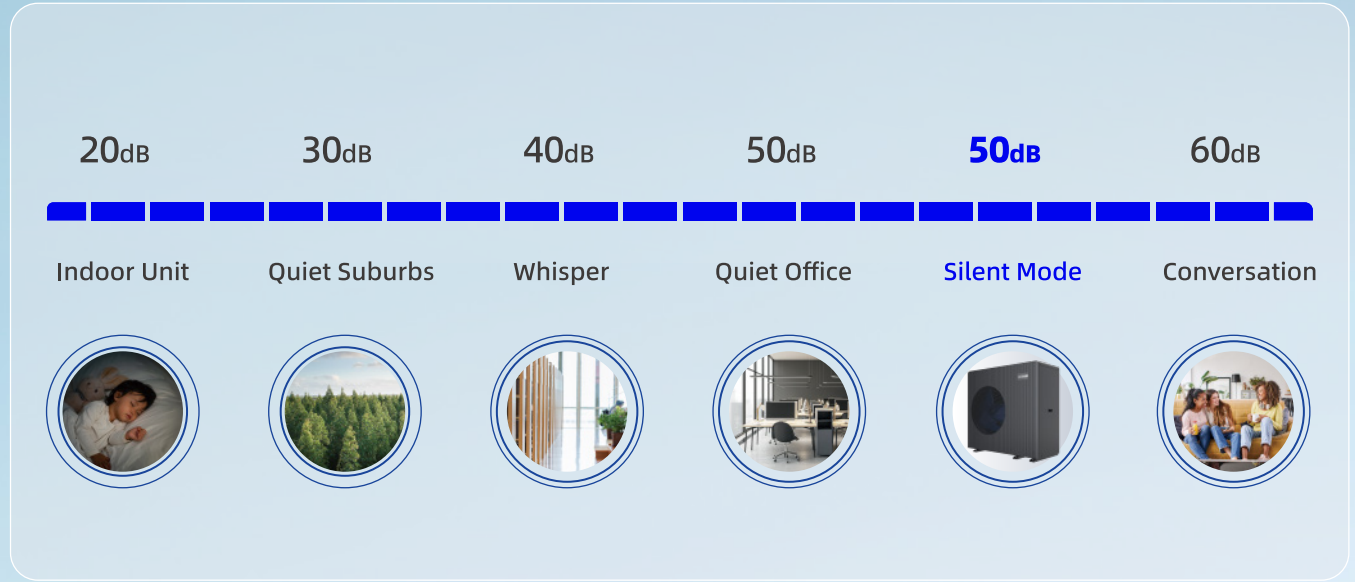
VS



80°C leaving water satisfies all household demands.

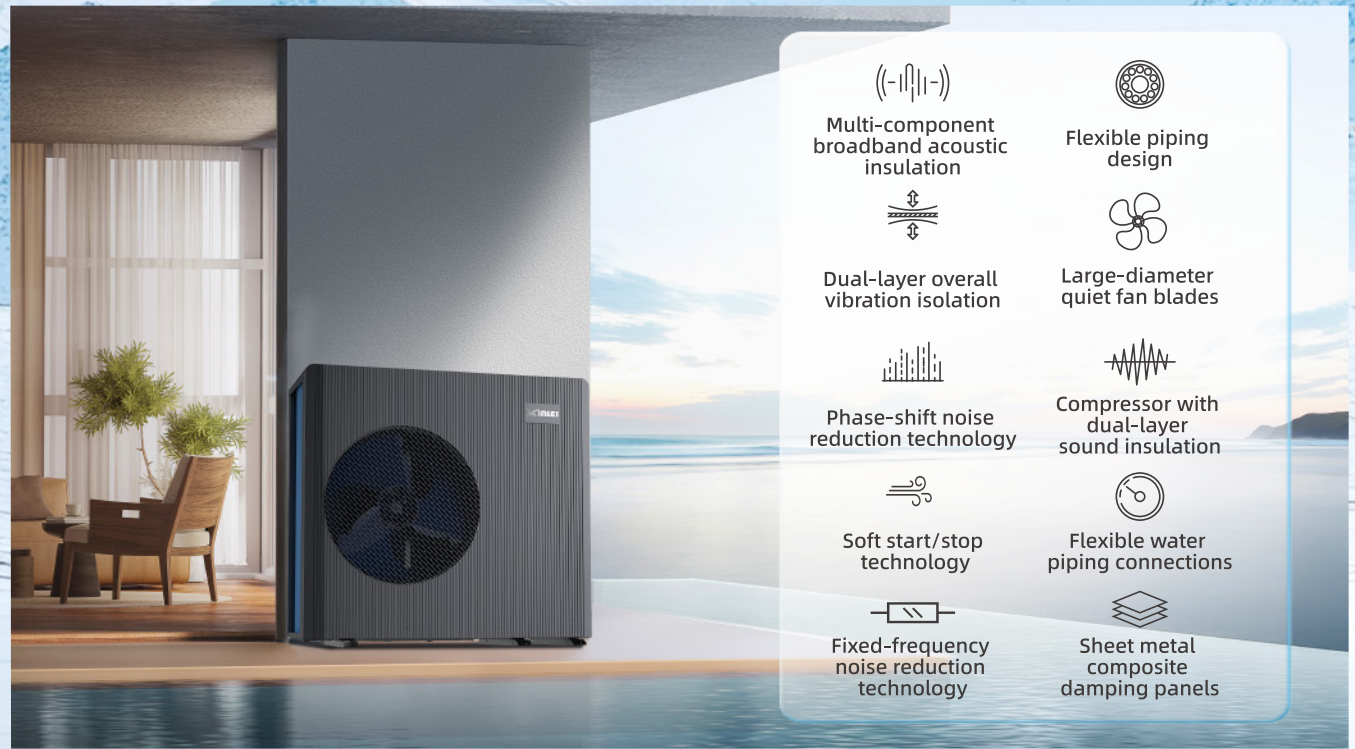
Silence Design

🔊 The unit features a noise-optimized design, achieving sound levels as low as 32 dB(A) maximum 55 dB(A).



Multi-Layer Noise Reduction Design

Quiet fan wheel for reduced airflow noise, Dual-component acoustic insulation around the unit, High-efficiency compressor wrapped with sound-absorbing material, Dual-stage vibration isolation, Flexible connections for compressor piping and water piping (to prevent vibration transmission to the casing) .

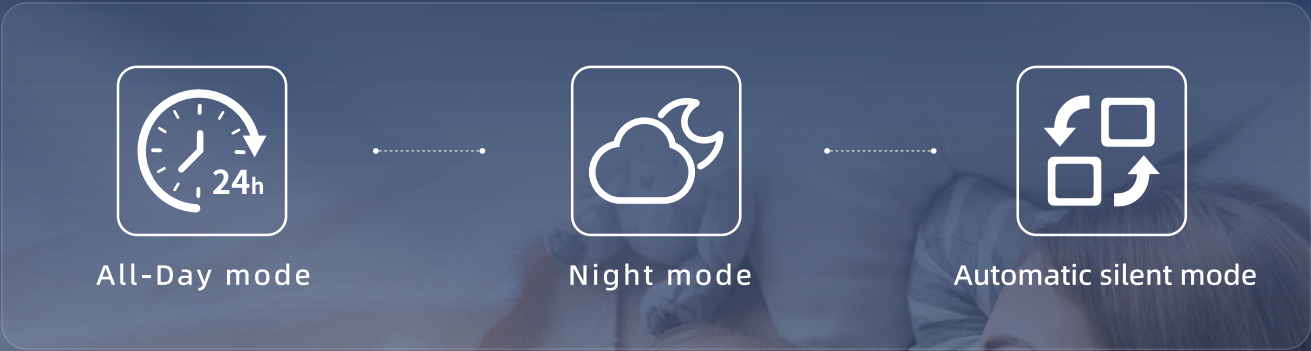


Full-Range Noise Reduction

Scene-Adaptive Silent Mode

Silent mode options: Standard Silent and Super Silent

Adapts to various scenarios for optimal quiet operation



AI Intelligent Control

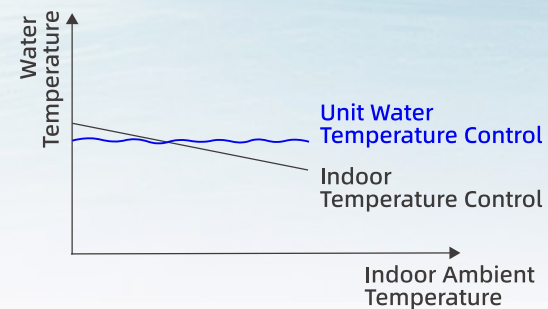
Equipped with AI intelligent control to achieve stable indoor temperature, water temperature regulation, and smart water pump operation, effectively reducing energy wastage.

Adaptive Water Temperature Control

AI intelligent control system, compared with traditional water temperature control, responds more sensitively to ambient temperature changes, and dynamically and intelligently adjusts the water temperature setpoints, making the system operation more energy-efficient.

The system uses AI algorithms to predict room temperature fluctuations in advance and adjusts the water temperature proactively –In winter, it prevents sudden drops in room temperature. In summer, it avoids excessive cooling.

This keeps the indoor temperature always within a narrow range, solving the common “hot and cold swings” issue of traditional systems, achieving both energy savings and comfort optimization.



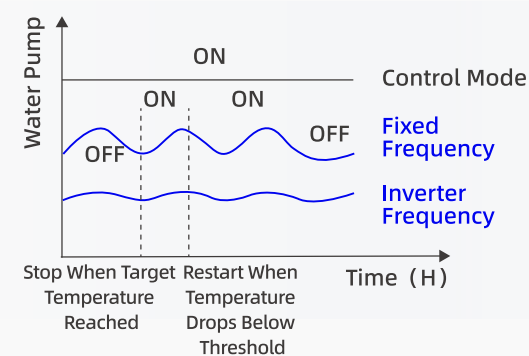
Water Pump Operation Control

The intelligent control system actively monitors the indoor ambient temperature. Based on changes in room temperature, it intelligently starts/stops the water pump, preventing idle operation and saving energy.

Traditional control: the main unit runs continuously at high load, and the water pump stops only when the end temperature is reached.

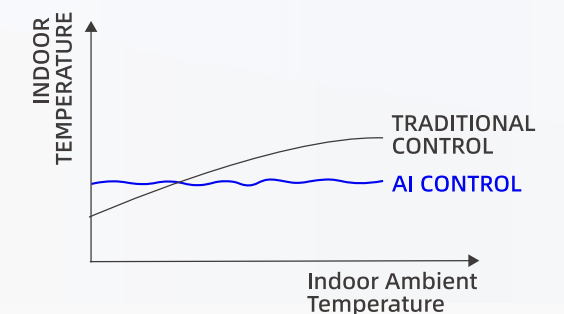
Fixed-frequency control: the main unit idles, wasting energy; frequent start/stop cycles are required due to large room temperature fluctuations, resulting in high energy consumption.

Variable-frequency control: continuously adjusts power according to temperature difference, accurately controls temperature, and significantly reduces ineffective energy consumption, achieving energy saving and efficiency improvement.



Indoor Temperature Control

Compared with traditional temperature control methods, the intelligent control system monitors indoor temperature more accurately, with higher precision and smaller fluctuations.



AI control, with stronger adaptive capability, can accurately maintain indoor comfort temperature, saving energy and enhancing user experience.

Traditional control, due to poor adaptability, is gradually being replaced in scenarios requiring high temperature stability.

Adapting to outdoor changes, AI control achieves smaller indoor temperature fluctuations and greater energy efficiency compared with traditional control.

Multiple Protections Safety Assurance

14 aspects protection & Continuously Intelligent warning upgrade

- ❄️ Anti-freeze technology and Algorithm
- 💧 Evaporation temperature protection
- 💧 Low water temperature protection
- 🔧 Compressor preheating anti-freeze
- ↔️ Inlet/outlet water temperature difference protection
- 🔧 Water pump anti-freeze operation protection
- 🔧 Water pump anti-rust operation



- ⚡ High and Low Pressure Protection
- 🔥 Discharge Temperature Protection
- 🔧 Compressor Overload Protection
- 🔄 Fan Overload Protection
- 💧 Low Water Flow Protection
- ⚡ Current & Phase Loss Protection
- 💧 Low & High Water Pressure Protection

Stability And Reliability

Designing & adopting worldwide famous core components, we have achieved a comprehensive upgrade in key dimensions such as quietness, performance, energy efficiency rating, and reliability.

Core Component Durability

■ Compressor

Low-temperature, high-efficiency full DC inverter design, adopting EVI continuous injection enthalpy technology. The dual-rotor design ensures low noise, high energy efficiency, and high stability.



■ Self-developed Main Control & Drive

AI variable frequency drive algorithm and AI adaptive control technology enable precise defrosting, remote OTA upgrades, and fault information alerts, providing reliable protection for equipment safety.



■ Plate Heat Exchanger

A well-known brand with a dot-wave asymmetric design, featuring high-efficiency heat exchange, low water resistance, high heat transfer coefficient, and a unique anti-freeze design for greater reliability.



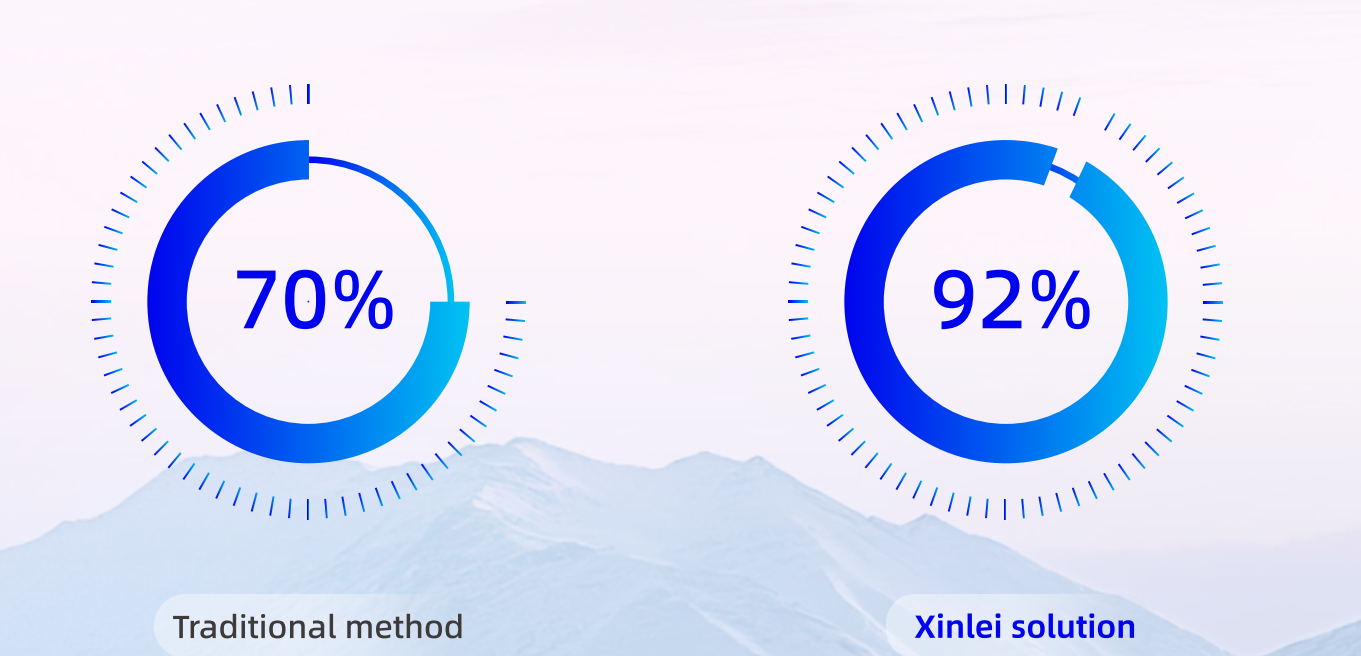
■ Integrated OTA Module

The integrated main board reduces component connection failure points, supports APP remote system upgrades, and enables continuous optimization of equipment performance.



Smart Capacity Calculation

The heat pump is equipped with a Vortex Flowmeter, which accurately measures the unit's water flow to calculate the energy generated by the heat pump. Users can access energy efficiency analysis and consumption data via the wired controller or the app.



Flow is estimated through the water pump, which is prone to unstable communication and inaccurate measurements. Achieving precise measurement requires retrofitting a flow meter, which is costly.

The unit has a built-in Vortex Flowmeter, providing accurate water flow measurement and stable signal transmission, enabling more precise calculation of the heat pump's thermal energy.

Intelligent Interaction

Core Technology: Adaptive scenario interaction innovation

A complete intelligent system of “Wired Control + Remote APP Control + Continuous Function Upgrade”, meeting the control and configuration requirements of smart home devices in different scenarios.

 The AI intelligent control hub supports multiple scenario modes (Away / Silent / Energy-saving / Timer, etc.)



Away Mode

After activating the One-Touch Away function, it saves more energy and power.



Quiet Mode

Multiple Quiet Mode options are available to meet noise requirements in various scenarios.



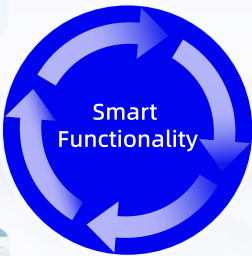
Energy Saving Mode

Once the energy-saving mode is activated, the unit will run at a low noise level, allowing you to enjoy a warm and cozy life.



Timer Mode

Preset the operating time and target temperature for efficient and energy-saving operation.



 App Remote Control

Smart Home App

Supports remote power on/off control, switching between operating modes (such as Away Mode, Energy-Saving Mode, and Silent Mode), parameter adjustment (including temperature and fan speed), reception of device alerts (such as fault warnings), and energy consumption statistics and analysis.



Wired Controller with Built-in Wi-Fi

Features integrated network connectivity, enabling seamless linkage with the Smart Home App without manual network configuration. Parameters are synchronized to the app, and devices connected to the wired controller can also be remotely controlled via the app.



OTA Remote Upgrade

When new features are released or control algorithms are optimized, users can complete system updates automatically via the app or directly through the device. No on-site service visits or hardware replacement are required.



Key Components

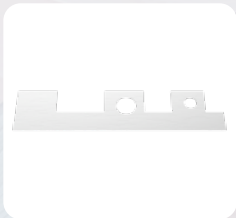
Fan Blade

Large-Diameter Fan Blade Optimized via AI simulation, featuring large diameter and low noise.



Chassis Heating Tape

In low-temperature and high-humidity environments, it prevents defrost water flow from freezing, which would otherwise clog the drain holes and cause the entire heat exchange system to freeze.



EVI Compressor

It improves the heating capacity and energy efficiency ratio of the compressor suction gas injection for enthalpy enhancement. Its performance is 20% higher than that of ordinary compressors under low-temperature conditions, and it can operate at -40°C.



Water Pressure Sensor

Real-time monitoring of system water pressure. It provides low-pressure alerts and protects the compressor and plate heat exchanger from damage.



Refrigerant Concentration Detection Sensor

Real-time monitoring of R290 concentration. When the concentration reaches LEL2 due to leakage, an alarm will be triggered to promptly cut off the unit's power supply, preventing explosions.



Micro-bubble Discharge Valve

Prevents R290 refrigerant from entering the water system after the plate heat exchanger is damaged. The valve discharges refrigerant from the water through micro-bubbles, eliminating the risk of R290 entering the indoor space and causing explosions.



Vortex Flowmeter

Accurately detects system water flow in real time, protecting the compressor and plate heat exchanger from damage. It can also precisely calculate the heat pump capacity.



Water Pump

Grundfos DC Water Pump

