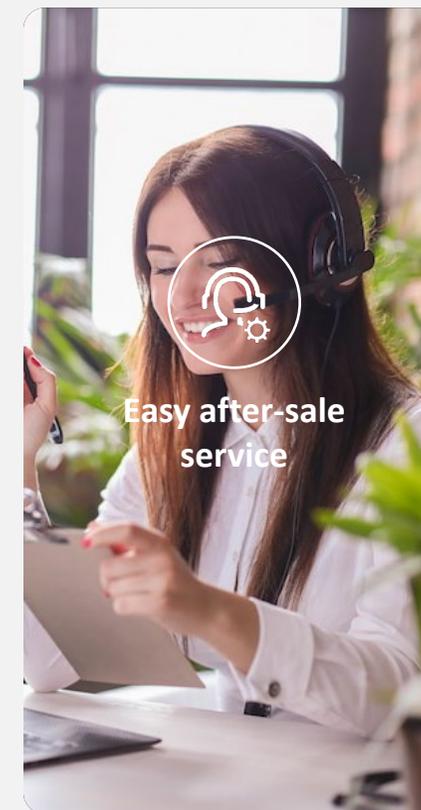
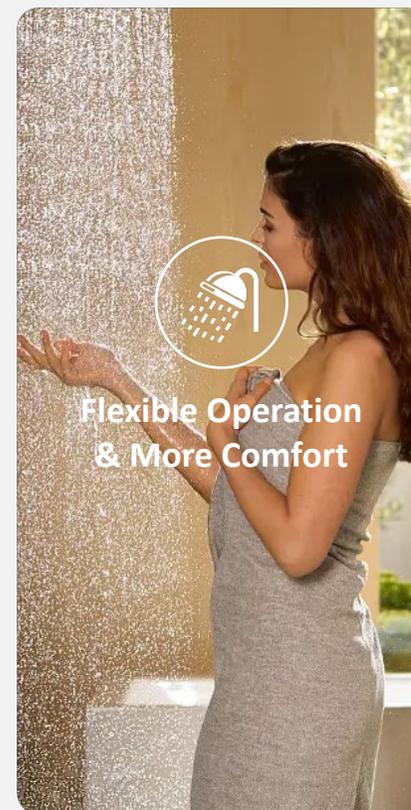
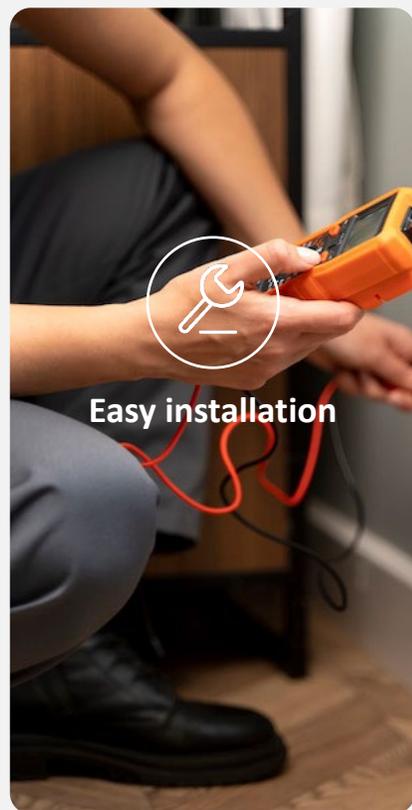


# ECO-AIR North American COMBO

Heat Pump Water Heater

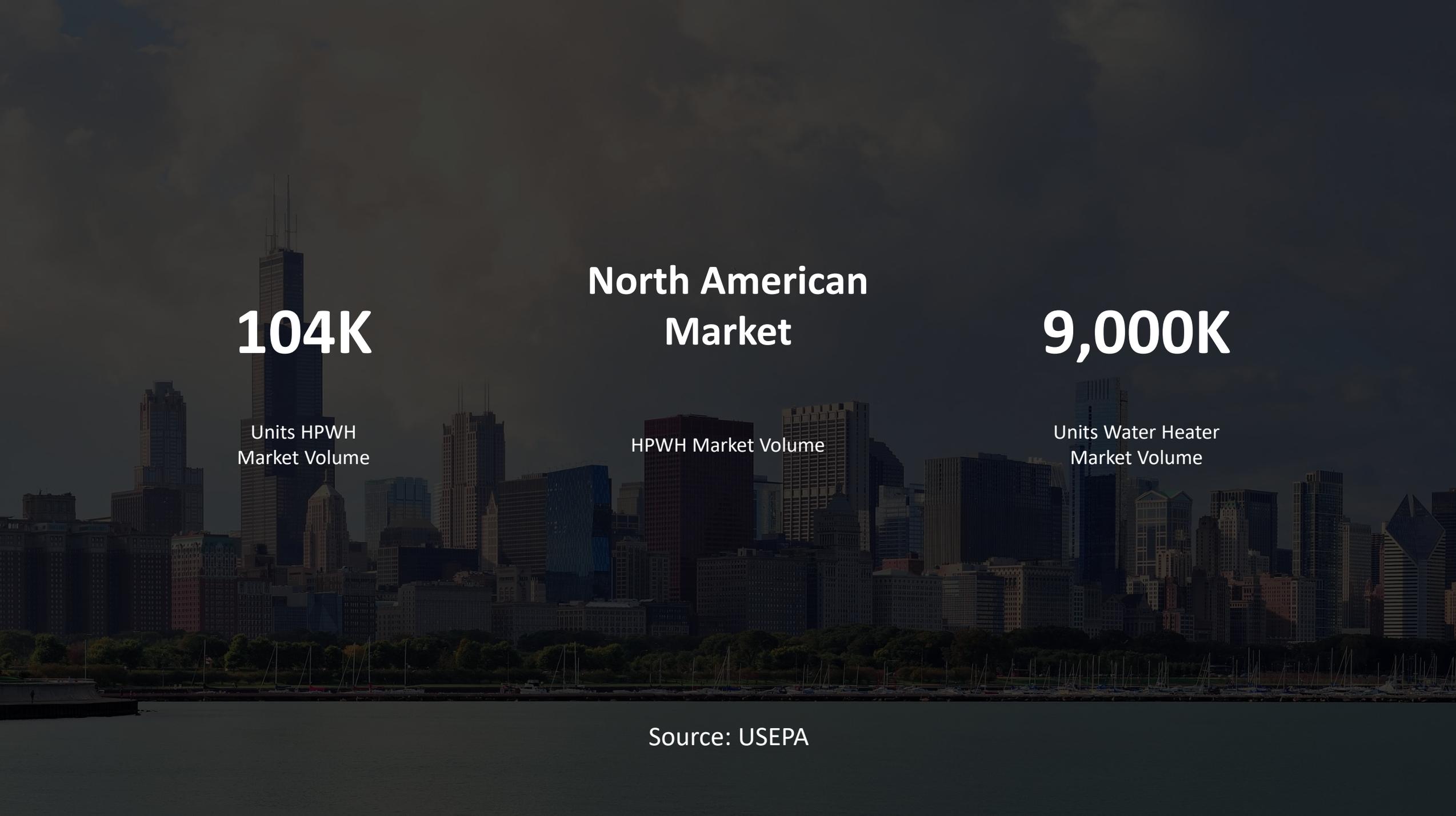


# ECO-AIR COMBO



# Market Overview





**104K**

Units HPWH  
Market Volume

## North American Market

HPWH Market Volume

**9,000K**

Units Water Heater  
Market Volume

Source: USEPA

# Installation Scenarios

Usually HPWHs are installed in a semi-heater space like garage or basement.



**Garage**



**Basement**



**Closet / washroom**



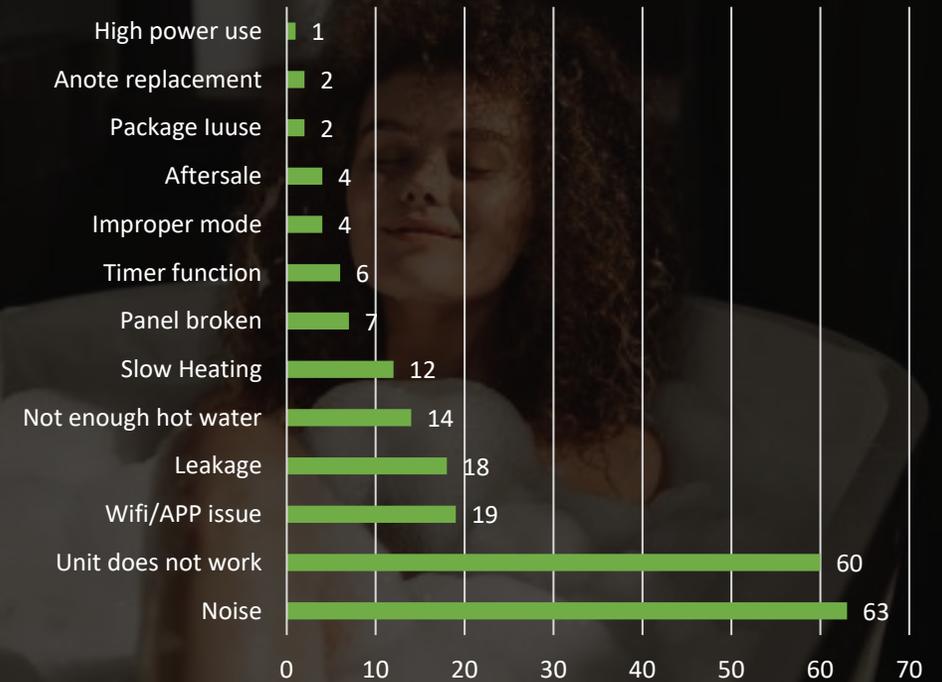
**Backyard**  
(\*need shelter)

# User considered design

From the analyze of competitor models' customer review, the most significant problem with the HPWH are noise and failure.

- **Noise:** The actual measured noise value is higher than the claimed noise.
- **Faults:** Fault codes are reported frequently and cannot be repaired.
- **APP/WIFI:** Lag, lack of necessary functions
- **Water leakage:** Water leakage from electric heating rods, pressure relief valves, etc.
- **Insufficient hot water:** More often to larger households
- **Slow heating:** On the one hand, it will cause the longer running and continue making noise. On the other hand hot water is not enough when needed.
- **Panel failure:** Dead control panel, uncontrollable and unreparable.
- **Timing function:** The machine often does not run according to the timer setting.
- **Mode problem:** Unable to operate according to the predetermined heat pump mode. E-heater often turn on automatically.

## User complains



Simple look in  
IKEA style

Eye-catching connection  
valve position







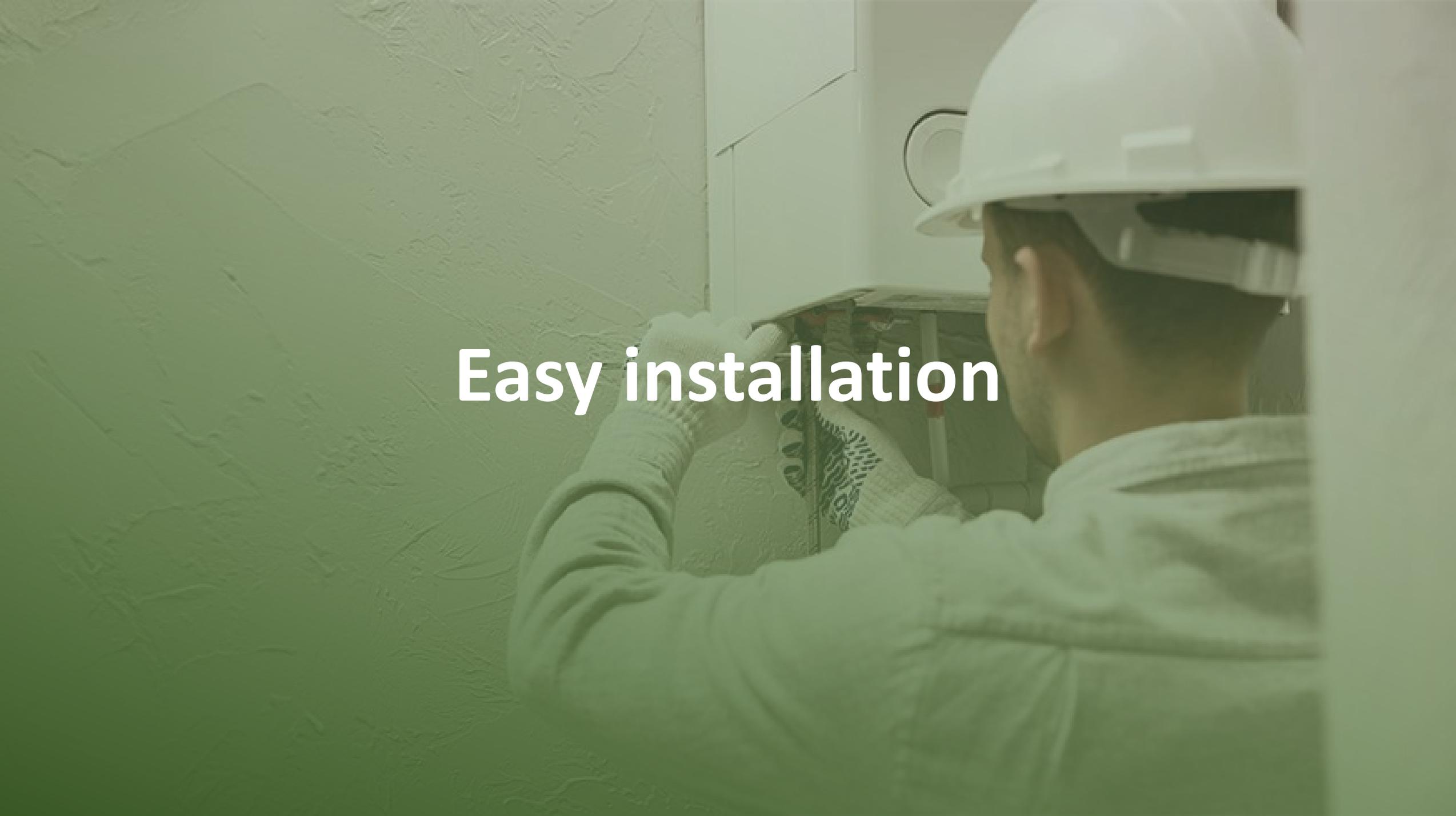


50 Gallons

80 Gallons

	Model Number	50 Gallon Model Number	80 Gallon Model Number	
Description	Normal Gallon Capacity	50	80	
	Rated Gallon Capacity	46	74	
	Voltage	208/240	208/240	
	Electric Breaker Size	30	30	
Energy Info	Uniform Energy Factor (UEF)	3.75	4.00	
	First Hour Rating (FHR)	68	88	
	Cold Climate Efficiency(CCE)	3	3	
Features	LED Screen	√	√	
	WiFi-Ready	Optional	Optional	
	Demand Response with built-in CTA-2045 Port	√	√	
	Leak Detection	Optional	Optional	
	Operation Modes	5	5	
	Outlet Water Temperature	110-149 °F	110-149 °F	
	Ambient Temperature Limits HP only	37~115°F	37~115°F	
	Ambient Temperature Limits Hybrid Mode	5~115°F	5~115°F	
	TP Valve installed	√	√	
	Element Wattage	Upper	4500W	4500W
		Lower	4500W	4500W
	Total Unit Wattage (input)	4908W	4908W	
	Max Amps	24Amps	24Amps	
	Compressor capacity	1593W	1593W	
	Replaceable Filter	√	√	
	Installation Clearance (back)	0mm	0mm	
	Installation Clearance (side)	150mm	150mm	
	Installation Clearance (top)	500mm	500mm	
	Dry Fire Protection	√	√	
	Ingress Protection	IP21	IP21	
Recovery In G.P.H. 90° F Rise	28	28		
Dimensions	Height(A)	1697	1894	
	Diameter(B)	455.6	652.6	
	Height To Condensate Connection(C)	1262	1461	
	Height To Cold Inlet & Drain(D)	141	141	
	Height To Hot Outlet And T&P(E)	1007	1184	
	Net Weight/Gross Weight(kg)	99/120kg	133/163kg	
	Ship Length	730*700mm	765*735mm	
	Ship Height	1785mm	1985mm	
	Water Connection Size	Inlet	3/4inch	3/4inch
		Outlet	3/4inch	3/4inch
Drainage Hose	3/4inch	3/4inch		
Certifications	NEEA	Tier 4	Tier 4	
	NSF/ANSI 372	√	√	
	Energy Star	√	√	
Sound Power(dba)	NEEA test protocol	49dba	49dba	

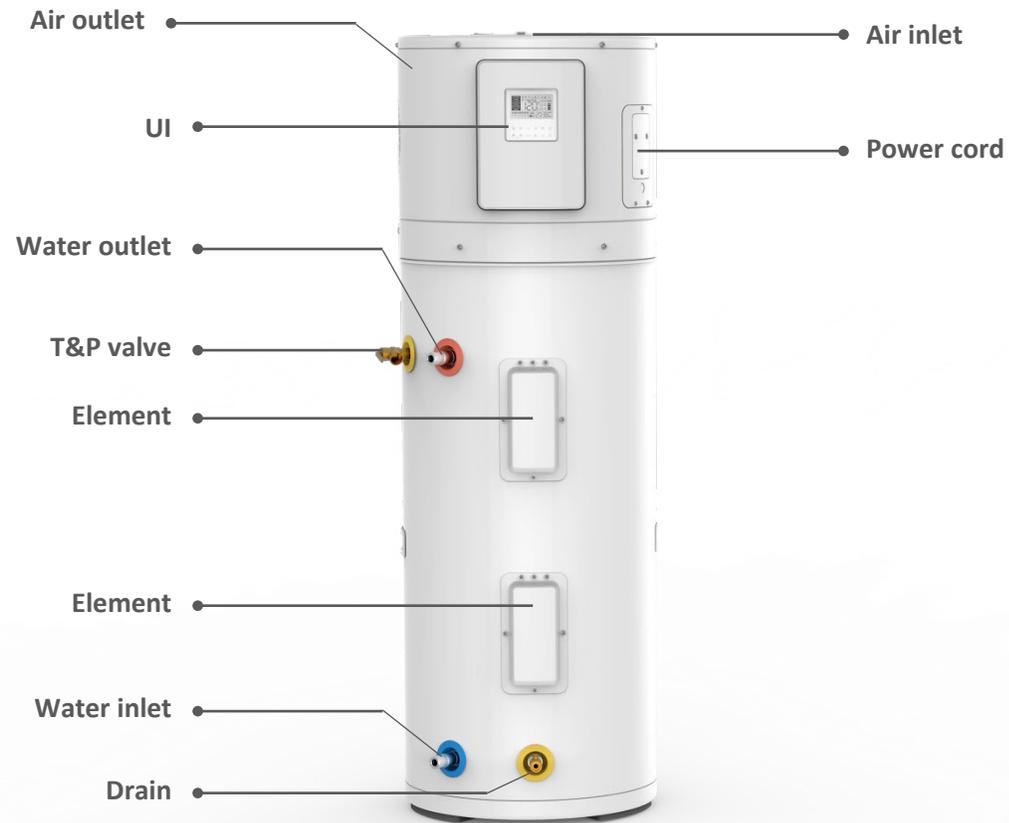
Volume	2023~2024	2025~2026
50 Gallon	 <p>Volume: 50Gallon Refrigerant: R134a UEF: 3.75</p>	 <p>Volume: 50Gallon Refrigerant: R290 / R454B UEF: 4+</p>
80 Gallon	 <p>Volume: 80Gallon Refrigerant: R134a UEF: 4.0</p>	 <p>Volume: 50Gallon Refrigerant: R290 / R454B UEF: 4+</p>
Features	<p>Energy Star Leakage Detection CAT-2045 Enabled</p>	<p>Energy Star Leakage Detection CAT-2045 Enabled Wi-Fi Ready &amp; APP control</p>



**Easy installation**

# Easy Installation

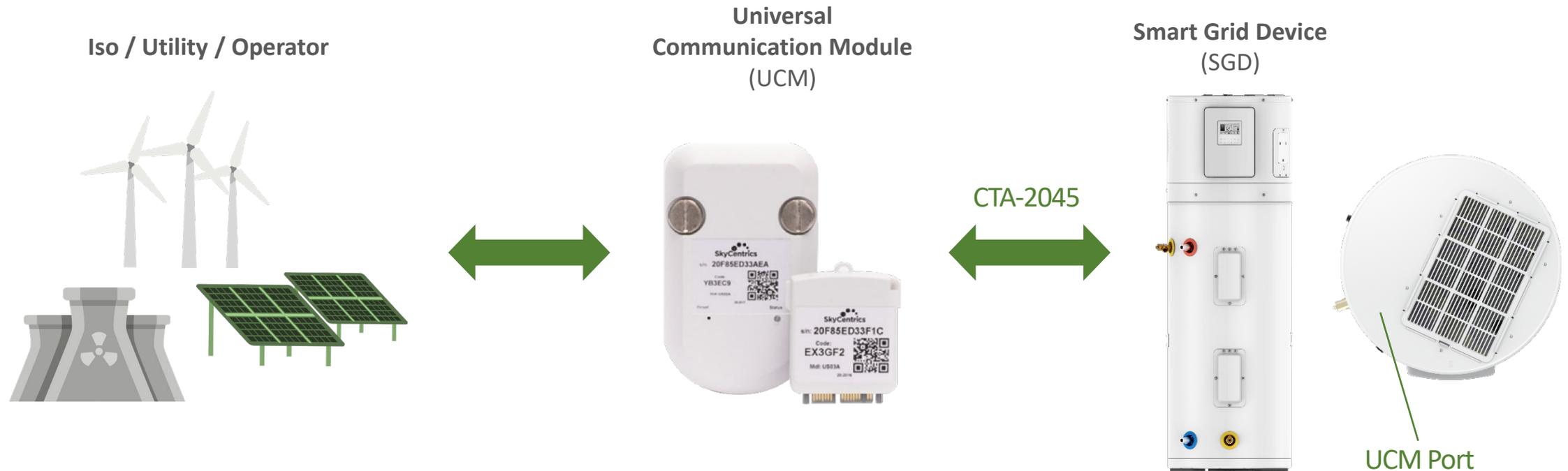
Plumbers can install the Combo heat pump water heaters. Connect the water inlet and water outlet pipe and power wires, then the machine can work.



# Demand Response Function

## Build-in Demand Response Port

A CTA-2045 port that fits UCM module is at the top of the unit.  
Plug a UCM in and realize Demand Response function.





# Unique Technology



# The Advantage of HPWH

## High COP

Compressor (1kW power input) pumps 3kW heat from ambient air, and the final output is 4kW to hot water.





ECO-AIR Combo Heat pump water  
heater can save up  
to **75%** of electricity



# Key components of ECO-AIR COMBO HPWH



## Evaporator

Double-Layer heat transfer coil, compact size & high capacity

## Compressor

High Efficiency Rotary Compressor, R134a refrigerant, durable and silence

## Water Tank

Blue-Diamond Enamel Tank with +15 years lifespan

## Condenser Coil

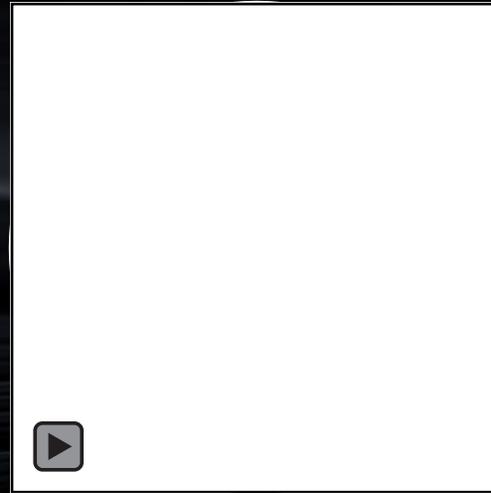
Microchannel heat exchanger, higher heat exchange area and higher efficiency

# Advanced Technology

High efficiency microchannel heat exchanger



Aluminum Microchannel Design



High-efficiency Thermal Grease



50mm  
Thick Insulation Layer

# Unique Technology

ECO-AIR Blue-Diamond Enamel Tank with +15 years lifespan



High impact strength  
More than 800 thousands of impact tests



Strong corrosion resistance  
500-hour acid resistance test (standard with 2 Mg + anodes)



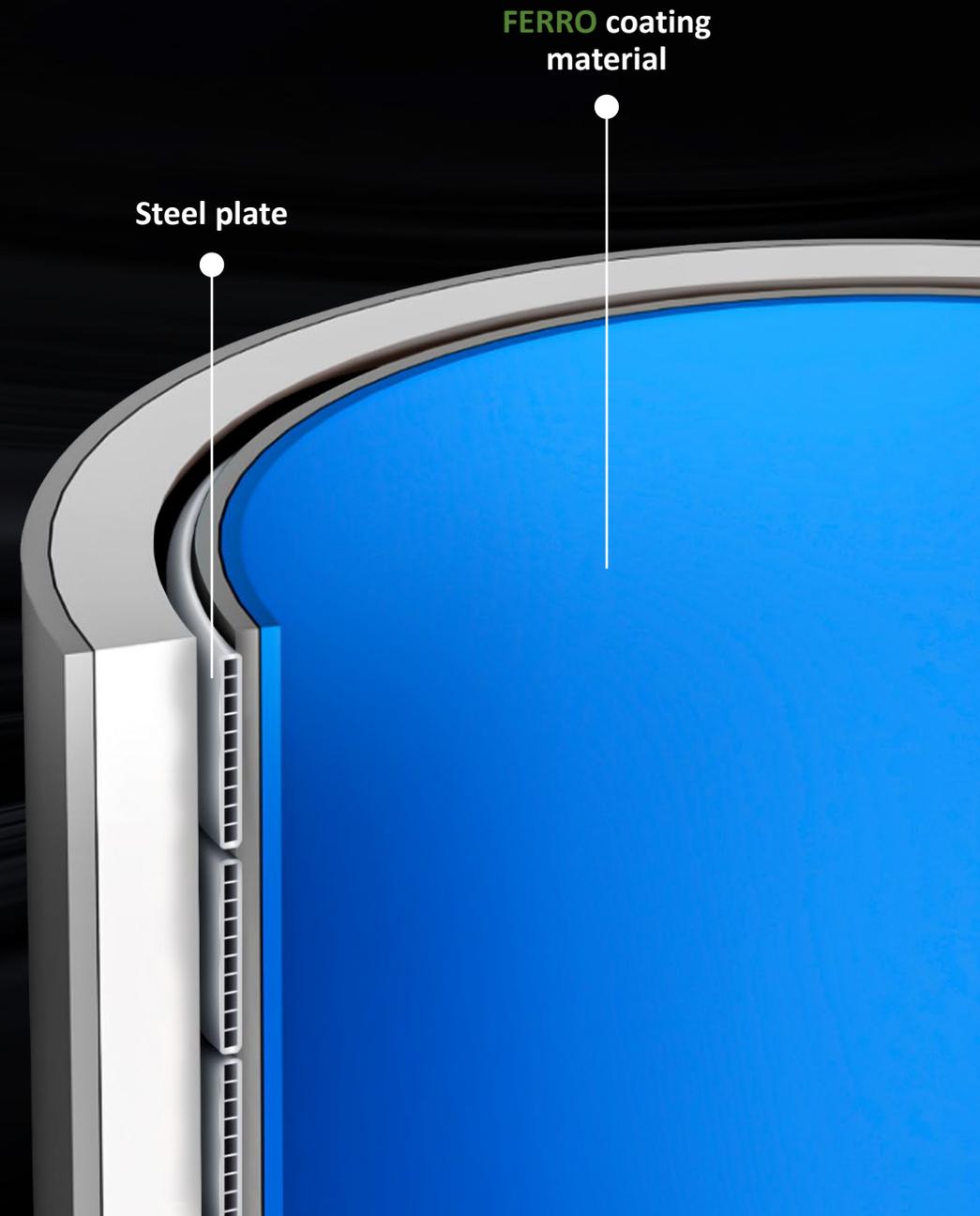
High adsorption capacity  
Tank coating materials from international famous brand FERRO,  
adhere to the tank tightly

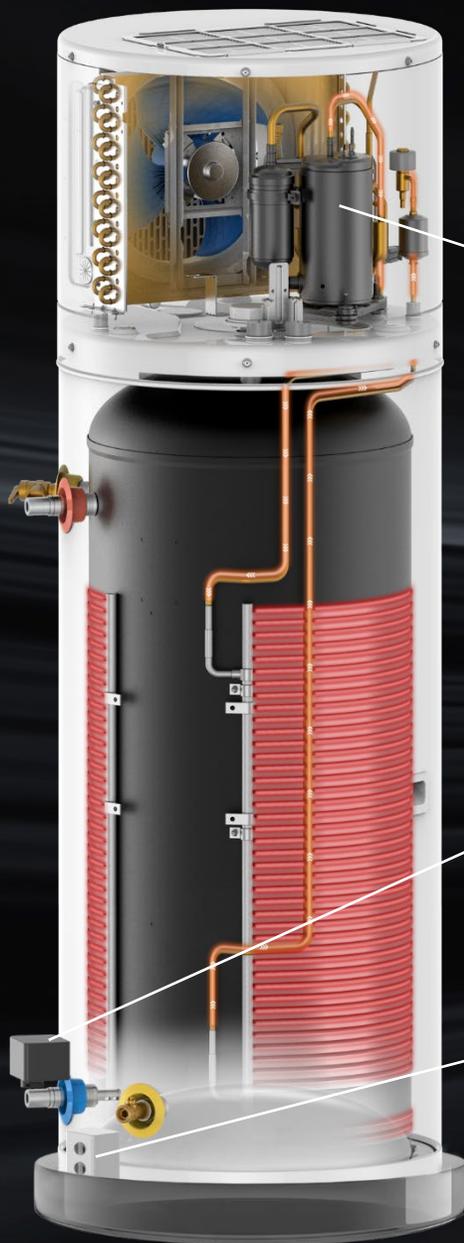


High pressure bearing strength  
Dedicated steel helps ensure the strength under pressure



Top manufacturing technology  
International cutting-edge enamel manufacturing process German famous  
EISENMAN professional production line





# Leakage Detection

Leakage detection kit (Optional)

● Main PCB  
Leakage prevention algorithm contained.

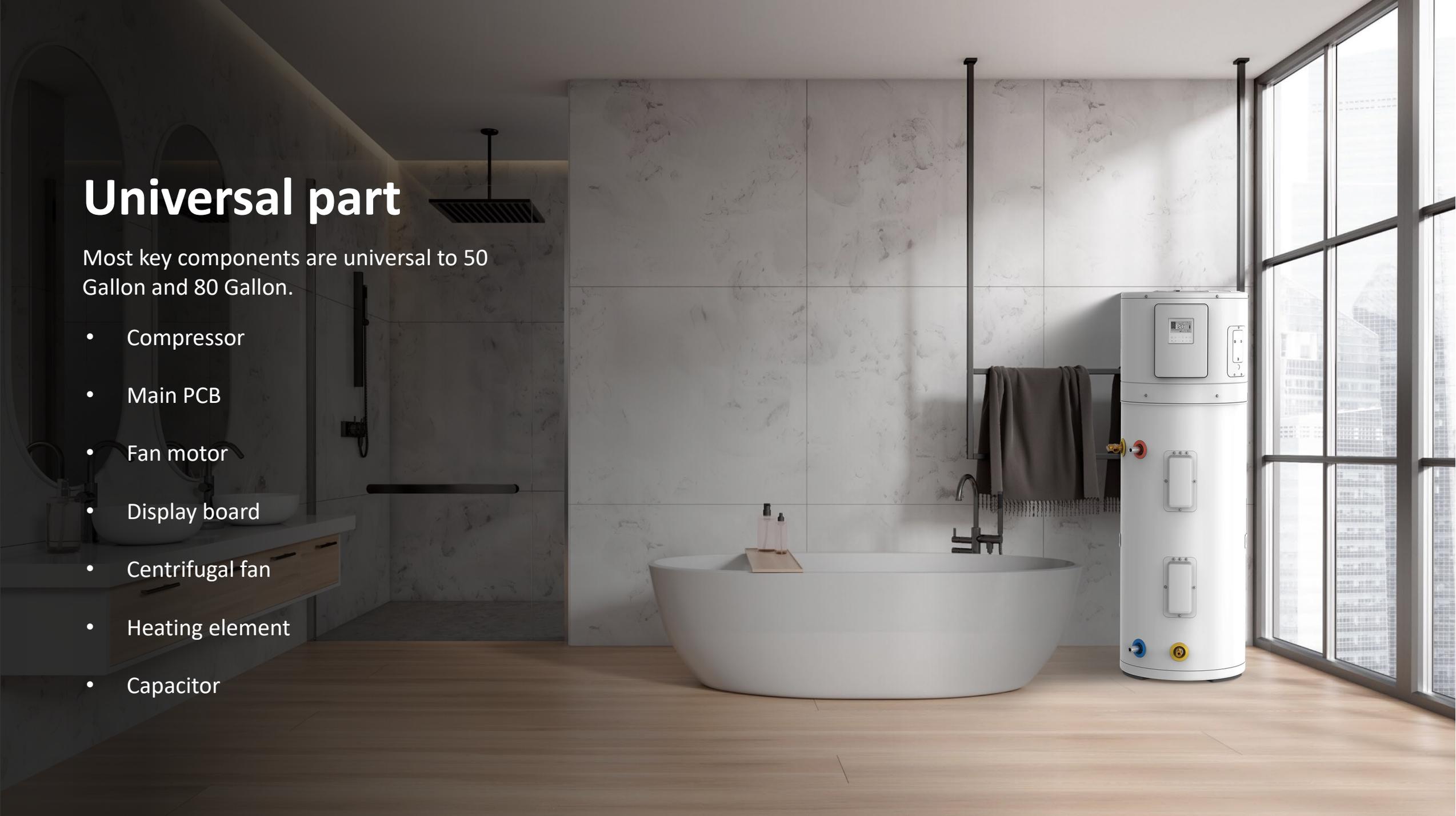
● Shut off valve (optional)  
Automatically close the water inlet valve when water leakage happens. Prevent your house from flooding, protect your carpet and floor.

● Leakage detector (optional)  
Located at the bottom of the unit, detect if water is leaking.

# Universal part

Most key components are universal to 50 Gallon and 80 Gallon.

- Compressor
- Main PCB
- Fan motor
- Display board
- Centrifugal fan
- Heating element
- Capacitor





Electronic Control  
Box

Display

Junction Box Cover

Junction Box

# Easy Maintenance

The E-box of ECO-AIR Combo can be easily accessed from the front control panel, making it more easier to do the maintenance.

**Common parts bring great  
convenience to stock management  
and after-sales maintenance.**



A photograph of a man and a child in a bathtub. The man is on the left, smiling with his arms raised. The child is on the right, looking towards the man. Water is splashing around them. The scene is overlaid with a green tint. In the center, there is white text that reads "Flexible Operation & More Comfort".

# Flexible Operation & More Comfort

# Multifunction Control Panel

- Weekly Timer
- Five modes
- Auto-run Disinfection
- Maintenance reminder
- Self Diagnosis



# Five modes

Five modes, suitable for various usage scenarios



## Hybrid

Heat pump with little element, save the bill & ensure comfortable usage



## High Demand

Element and Heat Pump works together, heat your water rapidly



## Electric Heating

Only the element heat the water, for harsh days use, or emergency use.



## Vacation

Protect the pipe system and water tank from frozen when you are away from home



## Heat Pump

Only the heat pump heat the water, most energy efficiently mode. Saving your electric bill significantly.

# Self Diagnosis

## System protection

Combo unit adopts a variety of protections to ensure the safety of water users, and adds multiple protections on the system to ensure the safe and stable operation of the unit.

### 1. High water temperature protection

Water tank temperature  $>78^{\circ}\text{C}$ , the power will be automatically cut off

### 2. System high pressure protection

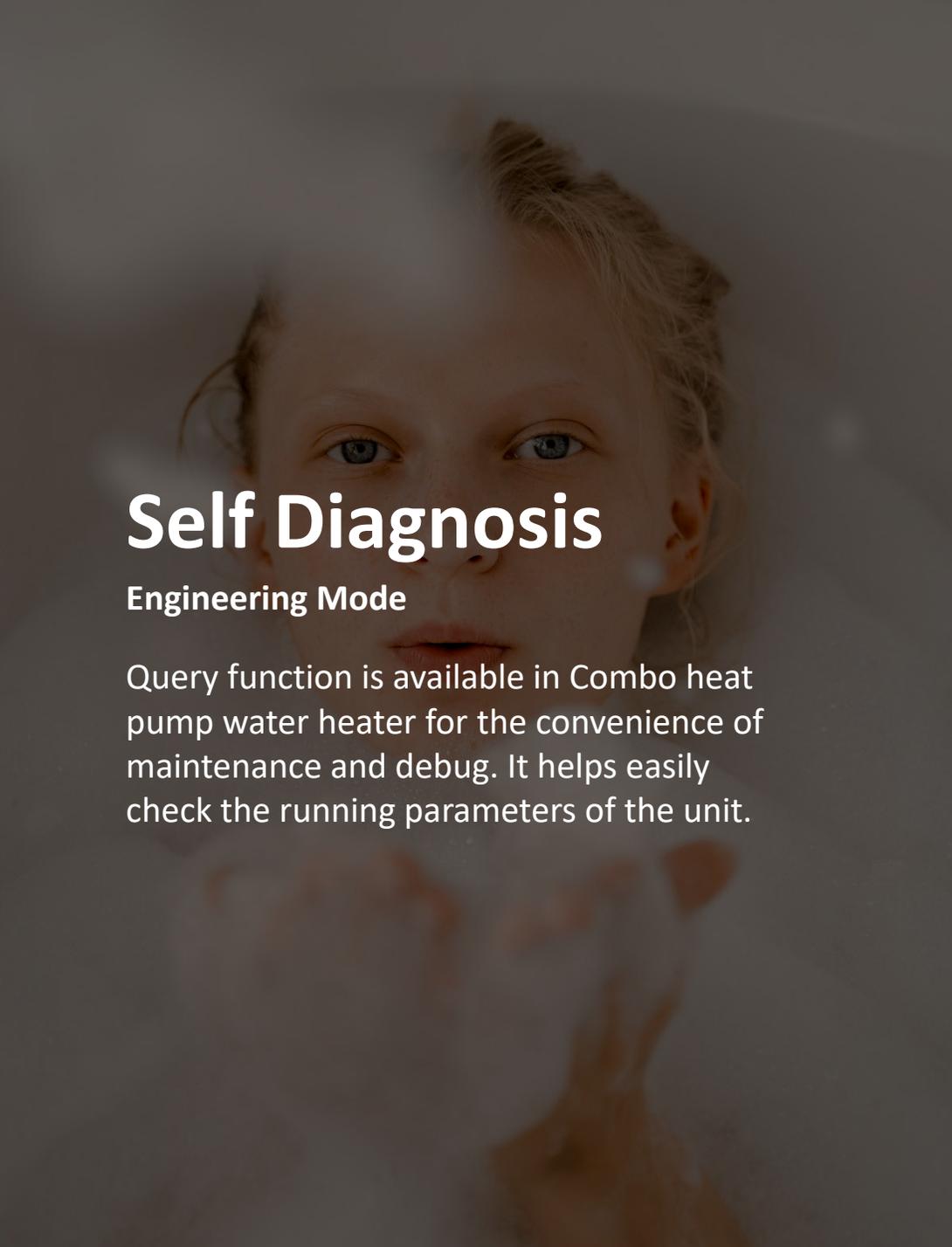
break value 3.0MPa; closing value: 2.4MPa

### 3. Excessive discharge temperature protection

### 4. Compressor overcurrent protection

### 5. Heat pump out of ambient temperature range protection





# Self Diagnosis

## Engineering Mode

Query function is available in Combo heat pump water heater for the convenience of maintenance and debug. It helps easily check the running parameters of the unit.

Items	Explanation
Temp.	T5U: Water temp. of upper water tank
Temp.	T5L: Water temp. of lower water tank
Temp.	T3: evaporator inlet temp.
Temp.	T4: ambient temp.
Temp.	Tp: discharge temp.
Temp.	Th: suction temp.
Current	Operation current
Fan speed	0 off, 1 low, 2 mid, 3 high
Version	Main board software version
Version	Display panel software version
Error code	Last failure
Error code	2nd to last failure
Error code	3rd to last failure
Model code	01 EU 190L; 02 EU 300L 03 AU 190L; 04 AU 300L .....
--	End

# ECO-AIR North America R134a COMBO Integrated Heat Pump Water Heater

- **Energy Saving:** UEF up to 4.0, saving about 75% electricity than traditional electrical water heater, government subsidy ready
- **Easy to use,** WIFI App control(optional), vacation mode, auto restart with power-off memory, child lock, timer
- **Energy Star** certified, NEEA(Tier4), UL, CSA
- Wireless **Demand Response** ready(CTA-2045)
- PV connection, Smart grid and Modbus
- **Quiet operation,** noise level as low as 49dBa(NEEA test protocol)
- Easy and flexible installation (plumbers can install directly)
- **"E+ Blue Diamond"** Enamel water tank with 15 years lifespan design
- Safe design, water and electricity completely isolated, PT valve, TCO, etc., highly anti-corrosive design, **Mg+ rod,** **Shut off Valve**(optional), **Leakage detector**(optional) to protect wooden floor or interior furniture or decorations from water leakage damage
- Outlet water temperature **110~149 °F (43~65°C)** , automatic high temperature sanitization to keep healthy hot water in the long run
- High efficiency R134a GMCC customized heat pump compressor
- High efficiency **aluminum microchannel heat exchanger**
- Operation ambient temperature **5~115 °F (-15~46°C)**(heat pump only **37~109 °F**)
- Both upper and lower part with 4.5kW electrical auxiliary heater to provide instant hot water
- 50mm ultra-thick, high-density insulation material
- Bottom inward convex design to reduce lime scale
- **Easy maintenance,** easily access of E-box from front control panel, filter reminder and water tank clean reminder
- Two models 50 Gallon (3-4 people), 80 Gallon(5-6 people)





**Thank You**