

Haier  
HVAC Solutions

GRF

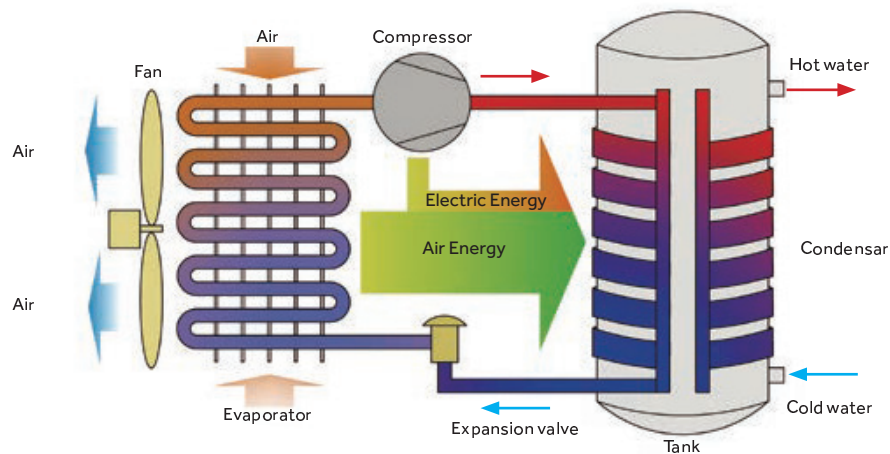


# Heat Pump Water Heater

# What is a Heat Pump Water Heater?






Our range of Heat Pump Water Heaters provides a direct solution to your hot water necessities. It combines the renewable energy of an aerothermal source with a storage capacity of 80-300 L, allowing it to adapt to a wide range of applications ranging from small homes to light commercial. This system will provide domestic hot water at a fraction of the cost of older technologies, and the installation will only involve water piping so it's suitable for renewing previous hot water installations easily and conveniently.

## How it works



To understand the concept of heat pumps, imagine a refrigerator working in reverse. While a refrigerator removes heat from an enclosed box and expels that heat to the surrounding air, a HPWH takes the heat from surrounding air and transfers it to water in an enclosed tank.

A refrigerant (R134A) changes state, through compression and expansion cycles, absorbing the heat in the air at low temperature and transferring it to domestic water at a higher temperature.

	Monobloc	Split
Floor standing	 PV  HP80M5 HP110M5	 HP200S1 HP300S1
	 PV  HP200M3 HP250M3 HP250M3 C	



## Condenser Design



### Micro-channel condenser

The micro-channel condenser has larger contact surface for better heat transfer performance and less refrigerant consumption.



### Bottom Coil

An extra coil fitted to the bottom of the tank increases the heat exchange area to deliver more hot water and contributes to better efficiency.

## Condenser micro-channel vs coil pipe



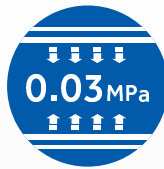
### Multiple channel design

Every piece of a micro-channel condenser has 18 micro-channels, which compared to the single-channel coil pipes offer much more contact surface.



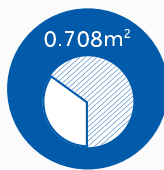
### Titanium - aluminum alloy for better corrosion & heat resistances

Micro-channel: 1500 hours salt spray test  
Coil pipe: 200 hours salt spray test



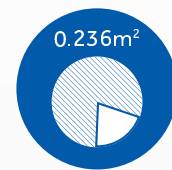
### Reduces the pressure drop which improves compress efficiency by 6%

Micro-channel: pressure drop 0.03Mpa  
Coil pipe: pressure drop 0.15Mpa

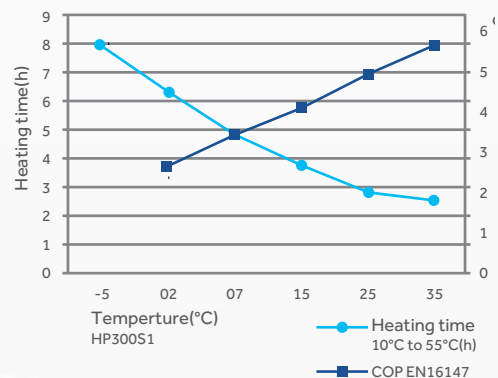
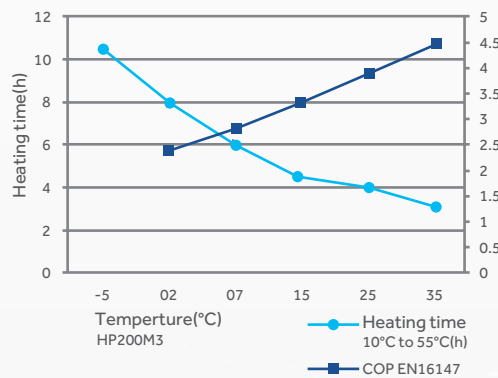


### Larger contact surface improves heat transfer efficiency by 30%

Micro-channel: contact surface 0.708m<sup>2</sup>  
Coil pipe: contact surface 0.236m<sup>2</sup>



## Performance curve



# Control panel-Monobloc

5" LED display with simple and user friendly touch control allows access to the 4 working modes

## AUTOMode

The Heat pump will work in priority with the electric heater as a backup.

## ECOMode

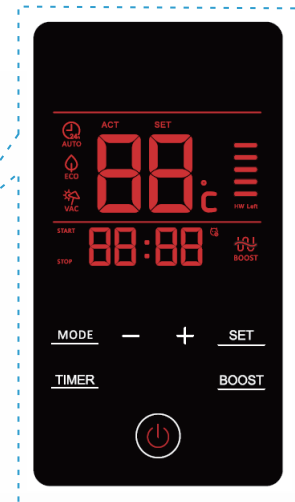
The Heat pump uses off-peak electricity to minimise the expenses.

## BOOSTmode

The Heat pump and electric heater starts up at same time to deliver hot water as fast as possible.

## VACATION mode

The unit stays in stand by mode during the vacation and then restarts in auto mode to prepare enough hot water just one day before the user returns from vacation.



HP200M3  
HP250M3  
HP250M3 C

# Control panel-Split

5" LED display with simple and user friendly touch control allows access to the 5 working modes

## AUTOMode

The Heat pump will work in priority with the electric heater as a backup.

## ECOMode

The Heat pump works 24 hours however the electric heater only works during off peak condition.

## ECOMode+

Both the Heat pump and electric heater only work under off peak conditions.

## VACATIONmode

The unit stays in stand by mode during the vacation and then restarts in auto mode to prepare enough hot water just one day before the user returns from vacation.

## BOOSTmode

The Heat pump and electric heater work at same time to deliver rapid hot water.



HP200S1  
HP300S1



HP80M5  
HP110M5 **Monobloc**



**Easy to install**

Plug and play like electric water heater, easy to install and replace.



**Eco Power**

Works under low tariff hours to reduce electric cost



**Micro-channel Condenser**

The micro-channel condenser has larger contact surface for better heat transfer performance and less refrigerant consumption.



**Fast Heating**

Powerful compressor enables faster heating.



**Slim Body**

Slim body design saves space.

**Comfort**

- ◆ Multi mode functionality including Eco, Boost, Auto, Anti-legionella & Vacation
- ◆ Additional heating element
- ◆ Timer control for Peak Power settings
- ◆ Hot water volume display

**Efficiency & Energy Saving**

- ◆ COP@7°C= 2.7 (HP80M5/HP110M5)
- ◆ Noise level ≤ 50 dB(A)
- ◆ Working temperature : -7°C~45°C
- ◆ Micro-Channel condenser

**Quality**

- ◆ Magnesium anode protection
- ◆ Titanium enamel steel tank
- ◆ 50 mm PUF insulation

**Design**

- ◆ LED display with touch control
- ◆ Off peak power



ABT



Smart Boost



Eco Comfort



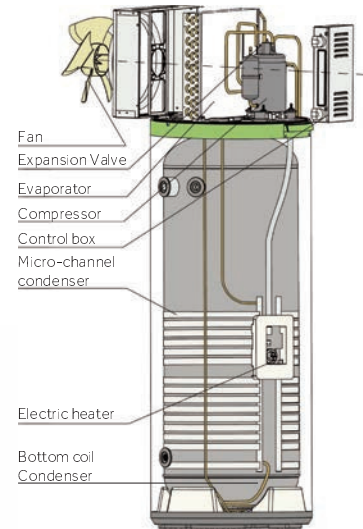
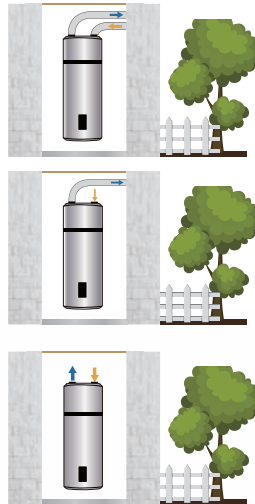
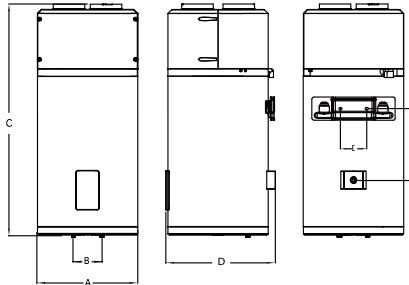
Smart Vacation



Anti-freeze

Model	A	B	C	D	E	F
HP80M5	492	140	1170	538	159	362
HP110M5	492	140	1320	538	159	362

Unit:MM



Model	HP80M5	HP110M5
Installation	Vertical wall-hung/ducted	Vertical wall-hung/ducted
Tank volume (L)	80	110
Rated voltage/ frequency (V/Hz)	220-240V/50Hz	220-240V/50Hz
Tank rated pressure (bar)	8	8
Corrosion protection	Magnesium anode	Magnesium anode
Water proof grade	IPX4	IPX4
<b>Assembled System</b>		
Electric backup power (W)	1200	1200
Average input - heat pump only(W)	240	240
Maximum input- heat pump only(W)	350	350
Maximum power input (W)	1550	1550
Default temperature setting (°C)	55	55
Temperature setting range with heater (°C)	35-75	35-75
Temperature setting range heat pump only (°C)	35-65	35-65
Refrigerant type / Weight (kg)	R134a/0.45	R134a/0.45
Noise power dB(A)	50	50
Working temperature - heat pump only (°C)	-7-45	-7-45
Working temperature - system (°C)	-7-45	-7-45
<b>Performance</b>		
Type of extraction	Exterior	Exterior
COP@7 °C (EN16147)	2.72	2.64
COP@14 °C (EN16147)	3.17	3.19
Heating up time (h) (@7°C)	4h58	6h35
Heating up time (h) (@14°C)	4h09	5h23
Tapping cycle (EN16147)	M	M
Maximum volume of usable hot water (L) V40 (EN16147)	102.5	132.6
Water heating energy efficiency class (ERP)	A+	A+
<b>Dimensions and connections</b>		
Water outlet connection	G1/2" M	G1/2" M
Water inlet & Drain connection	G1/2" M	G1/2" M
Safety valve connection	G1/2" M	G1/2" M
Product Dimensions (WxHxD) (mm) Tank unit/external unit	537 x 1170 x 492	537 x 1320 x 492
Packing dimensions (WxHxD) (mm) Tank unit/external unit	587 x 1247 x 587	587 x 1397 x 587
Gross weight (kg)	59	64
Net weight (kg)	51	55
Load qty. 40HQ	160	80





**A+**  
Energy Class

HP200M3  
HP250M3  
HP250M3C

## Monobloc



### PV (only M3C)

In combination with Photovoltaic panels you can set the unit to optimise the use of electricity



### Easy to install

Plug and play like electric water heater, easy to install and replace



### Eco Power

Works under low tariff hours to reduce electric cost.



### Micro-Channel Condenser

The micro-channel condenser has larger contact surface for better heat transfer performance and less refrigerant consumption.



### Fast Heating

Powerful compressor enables faster heating.



### Slim Body

Slim body design saves space.

### High Efficiency/Economy

- ◆ A+ Energy Class
- ◆ COP up to 3.56
- ◆ Multiple energy source capability (HP250M3C only)
- ◆ High performance compressor
- ◆ Micro - channel condenser
- ◆ 50mm PUF insulation
- ◆ Off peak electricity timer setting
- ◆ ECO Mode - heat water with heat pump only
- ◆ Vacation mode - for optimum system utilisation

### Easy Installation

Our monoblock heat pump water heater can be easily installed to replace a traditional electric storage water heater. Compared with the split heat pump water heater, a monoblock is more flexible where it can be installed.

When installed in locations such as basement, a monoblock provides cooling and dehumidification benefits.

### Health

Every 7 days, the ABT feature will raise tank water temperature to 65°C, to sanitise the inner tank with this automatic anti-bacteria technology, ensuring clean healthy water.



ABT



Auto Defrost



Anti-freeze



Eco Comfort



Smart Boost



Duct  
Installation



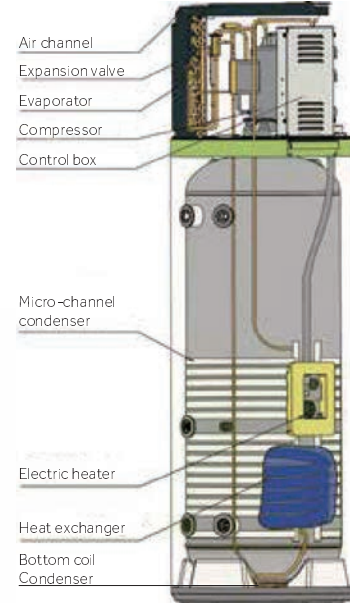
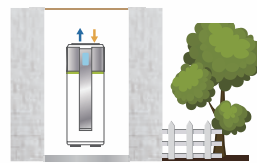
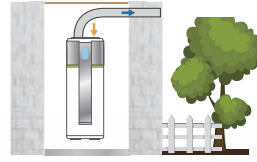
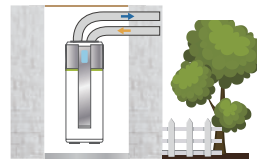
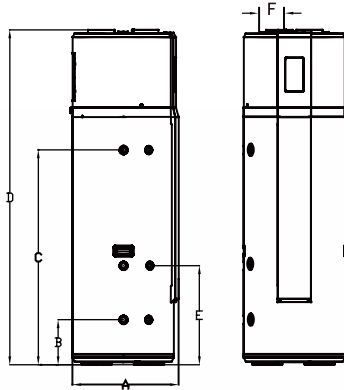
Smart Vacation

CE CB



Model	A	B	C	D	E	F
HP200M3	629	270	980	1692	-	180
HP250M3	629	270	1275	1987	-	180
HP250M3C	629	270	1275	1987	590	180

Unit:MM



Model	HP200M3	HP250M3	HP250M3C
<b>Tank</b>			
Tank volume (L)	195	246	240
Rated voltage/ frequency (V/Hz)	230V/50Hz	230V/50Hz	230V/50Hz
Tank rated pressure (bar)	7	7	7
Extra exchanger design / area	No	No	1m <sup>2</sup>
Corrosion proof	Magnesium anode	Magnesium anode	Magnesium anode
<b>Performance</b>			
Type of extraction	Ambient / Exterior	Ambient / Exterior	Ambient / Exterior
COP@7 °C (EN16147)	3.04	3.02	3.10
COP@15 °C (EN16147)	3.39	3.41	3.56
Tapping cycle (EN16147)	L	L	L
Electric backup power (W)	1500	1500	1500
Average input - heat pump only(W)	495	495	495
Maximum input- heat pump only(W)	625	625	625
Maximum power input (W)	2125	2125	2125
Standby power input/ Pes(W)	27	27	27
Vmax	224	311	332
Heating up time (h) (@7°C)	5h30	7h21	6h55
Heating up time (h) (@15°C)	4h41	6h10	6h
Default temperature setting (°C)	55	55	55
Temperature setting range with heater (°C)	35-75	35-75	35-75
Temperature setting range heat pump only (°C)	35-65	35-65	35-65
Refrigerant type / Weight (kg)	R134a/0.9	R134a/0.9	R134a/0.9
Noise power db(A)	57	58	59
Working temperature - system (°C)	-7-35	-7-35	-7-35
<b>Dimensions and connections</b>			
Product Dimensions (WxHxD) (mm) Tank	629 x 1692 x 600	629 x 1987 x 600	629 x 1987 x 600
Packing dimensions (WxHxD) (mm) Tank	695 x 1940 x 736	695 x 2250 x 736	695 x 2250 x 736
Gross weight (kg)-Tank/external unit	103	116	132
Net weight (kg)-Tank/external unit	91	102	119
Load qty. 40HQ	51	51	51





HP200S1  
HP300S1

## Split



### Micro-channel Condenser

The micro-channel condenser has a larger contact surface for better heat transfer performance and less refrigerant consumption.



### Fast Heating

Powerful compressor enables faster heating.



### Eco Power

Works under low tariff hours to reduce electric cost.

### Efficiency & Energy Saving

- ◆ A+ Energy Class
- ◆ COP is up to 3.8
- ◆ High performance compressor
- ◆ Micro-channel condenser
- ◆ 50mm PUF Insulation
- ◆ Off peak electricity timer setting
- ◆ ECO Mode - heat water with heat pump only
- ◆ Vacation mode - for optimum system utilisation

### Large Capacity Hot Water

- ◆ 200L & 300L Capacity
- ◆ Maximum volume of usable hot water (L) V40 (EN16147) is Up to 382L (HP300S1).
- ◆ High performance heat pump compressor
- ◆ Maximum water temperature using only the heat Pump is Up to 65°C

### Quick Heating

- ◆ 2150W electric heating element
- ◆ Under boost mode, the heat pump and electric heating element will work together to generate hot water quickly.



ABT



Auto Defrost



Anti-freeze



High Efficiency



Smart Boost



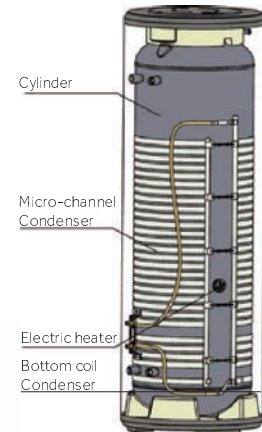
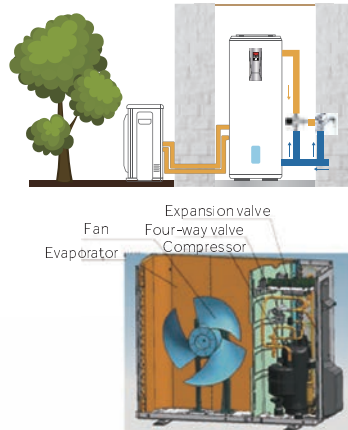
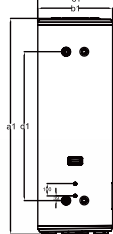
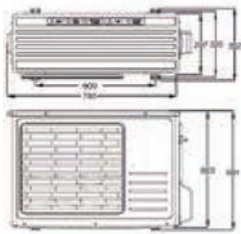
Quiet Operation



Smart Vacation

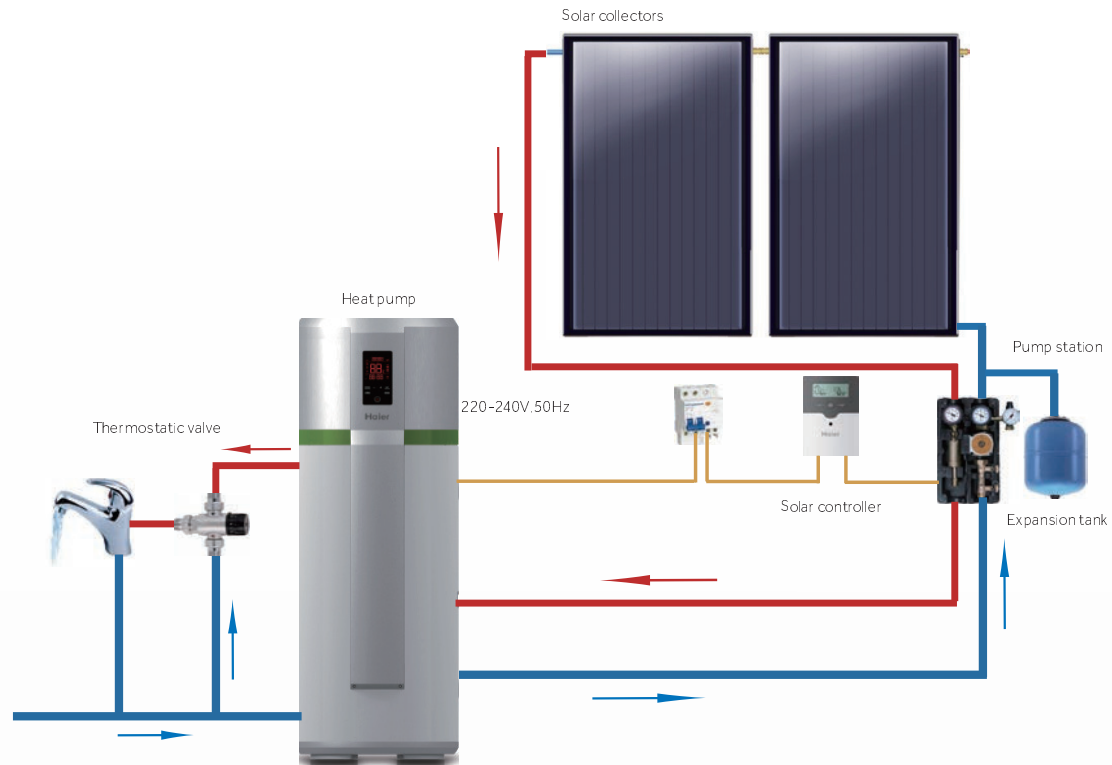
Model	A1	B1	C1	D1
HP200S1	1765	512	522	1270
HP300S1	1795	600	610	1242

Unit:MM



Model	HP200S1	HP300S1
Model (tank unit)	TS200HE-S1	TS300HE-S1
Model (external unit)	UE1.0-S1	UE1.5-S1
Tank volume (L)	195	293
Rated voltage/ frequency (V/Hz)	230V/50Hz	230V/50Hz
Tank rated pressure (bar)	8.5	8.5
Corrosion protection	Magnesium anode	Magnesium anode
Water proof grade	IPX4	IPX4
<b>Assembled System</b>		
Electric backup power (W)	2150	2150
Average input - heat pump only(W)	665	850
Maximum input- heat pump only(W)	1000	1350
Maximum power input (W)	3150	3500
Default temperature setting (°C)	55	55
Temperature setting range with heater (°C)	35-75	35-75
Temperature setting range heat pump only (°C)	35-65	35-65
Refrigerant type / Weight (kg)	R134a/1.3	R134a/1.5
Noise power dB(A)	64	64
Working temperature - heat pump only (°C)	-7-45	-7-45
Working temperature - system (°C)	-7-45	-7-45
<b>Performance</b>		
Type of extraction	Exterior	Exterior
COP@7 °C (EN16147)	3.09	3.2
COP@14 °C (EN16147)	3.54	3.8
Heating up time (h) (@7°C)	4h03	4h49
Heating up time (h) (@14°C)	3h32	3h49
Tapping cycle (EN16147)	L	XL
Standby power input/ Pes(W) (@7°C)	28	29
Maximum volume of usable hot water (L) V40 (EN16147)	245.1	382.6
Water heating energy efficiency class (ERP)	A+	A+
<b>Dimensions and connections</b>		
Water outlet connection	G3/4" F	G3/4" F
Water inlet & Drain connection	G3/4" F	G3/4" F
Safety valve connection	G3/4" F	G3/4" F
Product Dimensions (WxHxD) (mm) Tank unit/external unit	1765/899 x 352/681 x 544/512	1795/899 x 352/681 x 632/600
Packing dimensions (WxHxD) (mm) Tank unit/external unit	1927/960 x 425/735 x 676/636	1958/960 x 425/735 x 737/696
Gross weight (kg)	89/44	112/48
Net weight (kg)	77/41	98/44
Load qty. 40HQ	60	51

## Connection to solar collectors(HP250M3C)



## Connection to gas boiler(HP250M3C)

