



# LG THERMA V

2022



# THERMA V SELECTOR



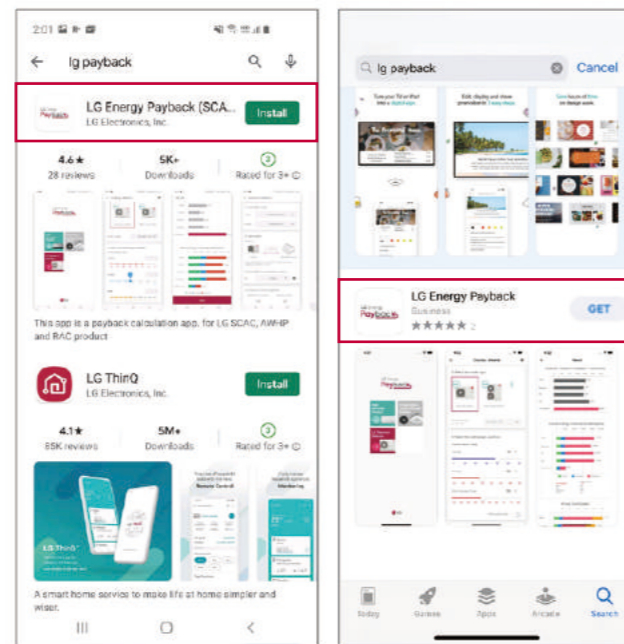
## How to install?

Search "LG Energy Payback" in Google Play Store or Apple App Store.

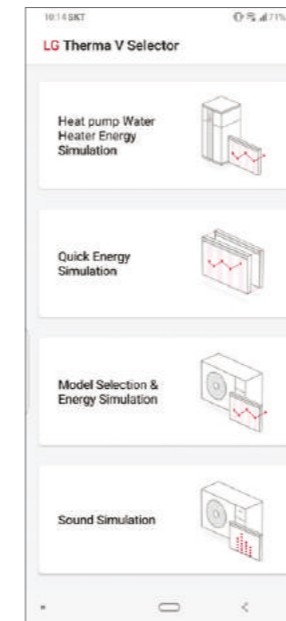
Android  
 URL : <https://play.google.com/store/apps/details?id=com.lg.smartinverterpayback>



iOS  
 URL : <https://apps.apple.com/us/app/id1339037884>



## Simulation Mode

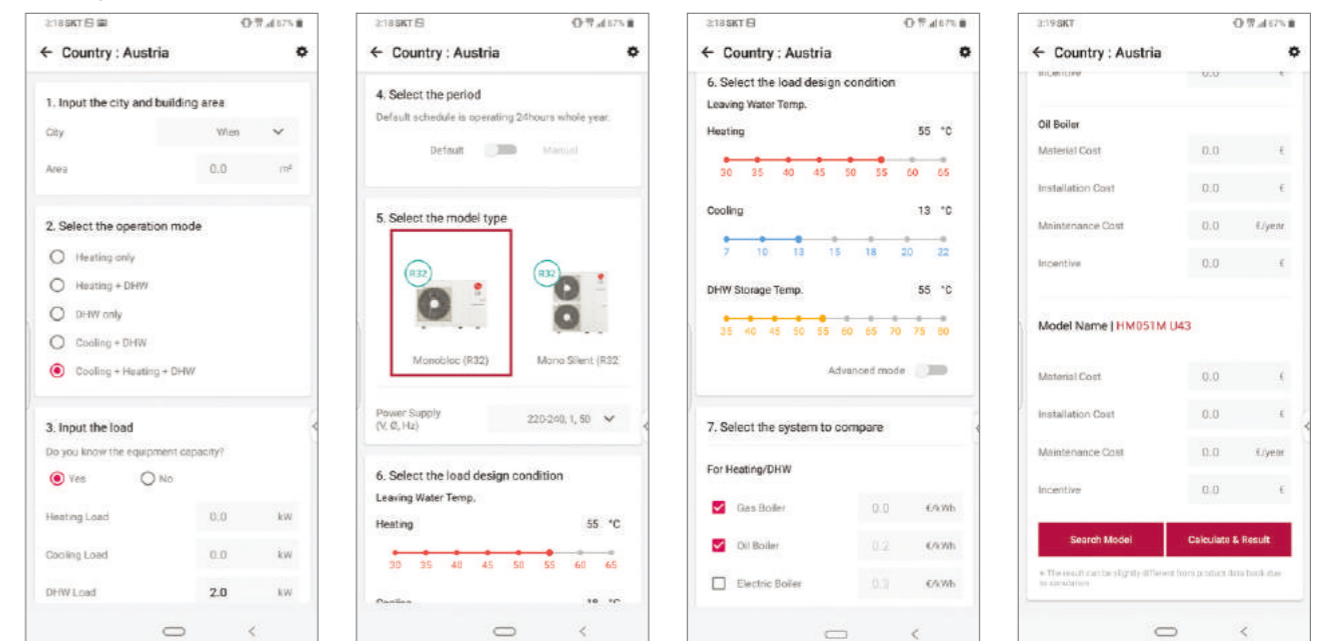


- ➔ 'Heat Pump Water Heater Energy Simulation' is to provide energy simulation of heat pump water heater compared to electric heater based on climate condition. (Colder, Average, Warmer)
- ➔ 'Quick Energy Simulation' is a quick & easy mode. Users can see the annual energy consumption, cost, and CO<sub>2</sub> emission with several input, which is similar to the LG THERMA V website version.
- ➔ 'Model Selection & Energy Simulation' is to provide more information about model, energy simulation and payback simulation. Users can select or input more information about site or design condition, then can see the suitable model, annual energy consumption, cost, CO<sub>2</sub> emission, and payback result.
- ➔ 'Sound Simulation' is to see the calculated sound result.

## Model Selection & Energy Simulation

Before choosing an air to water heat pump, many customers wonder how much energy costs can be saved compared to conventional heating systems, and how to select a product with the right capacity for the home. The LG THERMA V selector allows you to calculate annual energy costs and payback periods as well as model selection through sophisticated simulations through simple input values.

- City selection
- Building area input
- Operation mode selection
- Load input
- Operation period selection
- Model type selection
- Design condition input
- System selection to be compared
- Costs input for systems
- Searching model that meets criteria



# THERMA V SELECTOR

## Result & Report

After the simulation, analysis results including initial investment cost, annual energy consumption, and payback period can be checked in the form of various graphs. Moreover, this report is provided in PDF format and can be shared by e-mail and messenger.

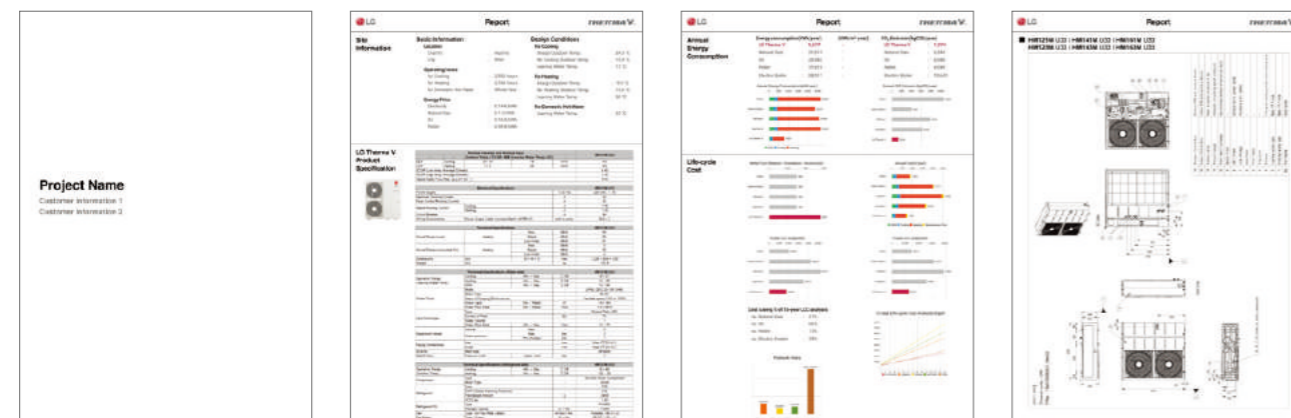
### Result

- Simulation conditions summary
- Initial cost
- Annual energy consumption
- Annual cost
- Annual CO<sub>2</sub> emission
- 10-year LCC analysis
- 15-year LCC analysis
- 10-year LCC analysis
- Payback year
- 15-year LCC analysis graph



### Report

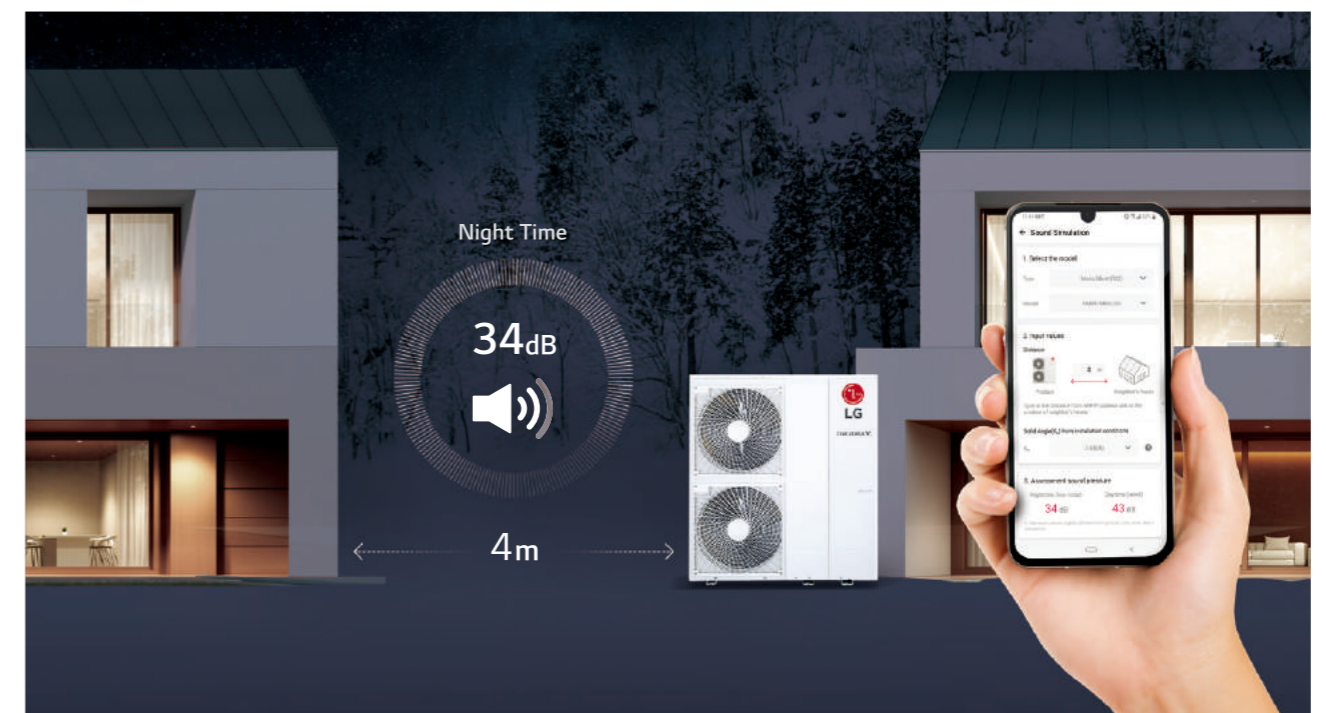
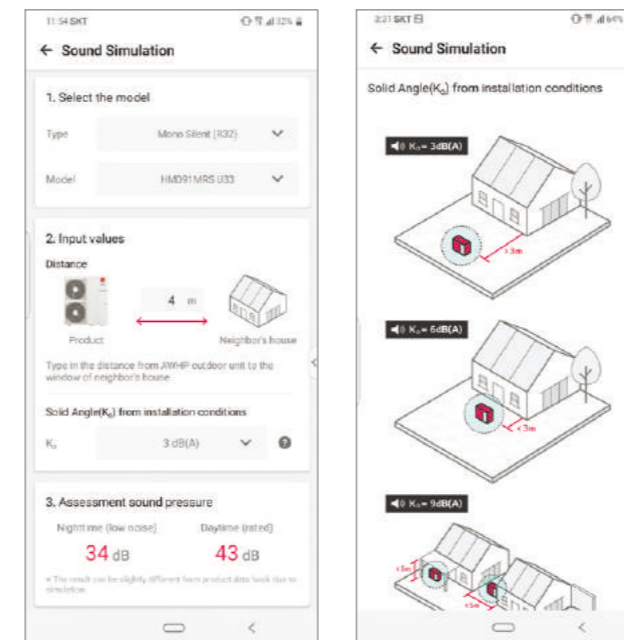
- Cover page
- Site information & design condition
- Product specification
- Annual energy consumption
- Life cycle cost
- Drawings



## Sound Simulation

Consumers are also wondering how much sound level will be after installing the Air to Water Heat Pump product. Using the sound simulation function of THERMA V selector, you can predict the expected sound pressure values in the daytime and nighttime according to the installation distance and conditions.

- Model selection
- Distance input
- Solid angle selection
- Reference for solid angle selection



\* The image above is a simulation example in case of R32 Silent Monobloc in low noise mode.

# HEAT PUMP TECHNOLOGY

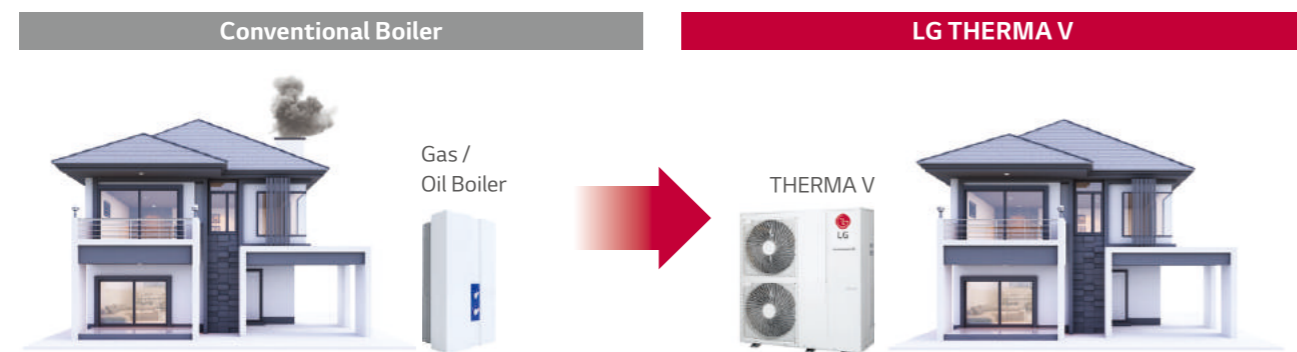
## LG Electronics leads the way in heat pump technology

As a leading HVAC supplier, LG's heating product portfolio comprises a wide range of highly energy efficient renewable energy systems, providing the right heating solution for any requirement and building.

## What is a Heat Pump System?

### Modern Technology to Replace Conventional Boilers

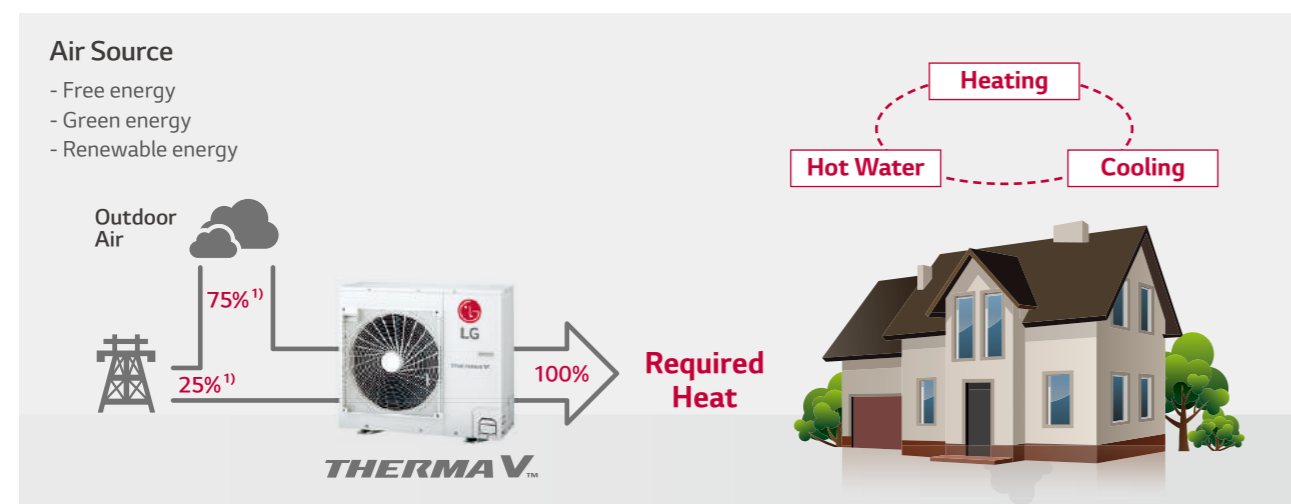
Historically, conventional heating systems have used either oil or gas or have been direct electric heaters. In such conventional heating systems, environmental aspects such as fossil fuel use and environmental pollution have been overlooked. In recent years, interest in these environmentally friendly devices has been increasing and in order to meet these market demands, LG has further developed their heat pump technology to produce the most efficient, environmentally friendly products in the industry.



### Modern Technology for Renewable Energy

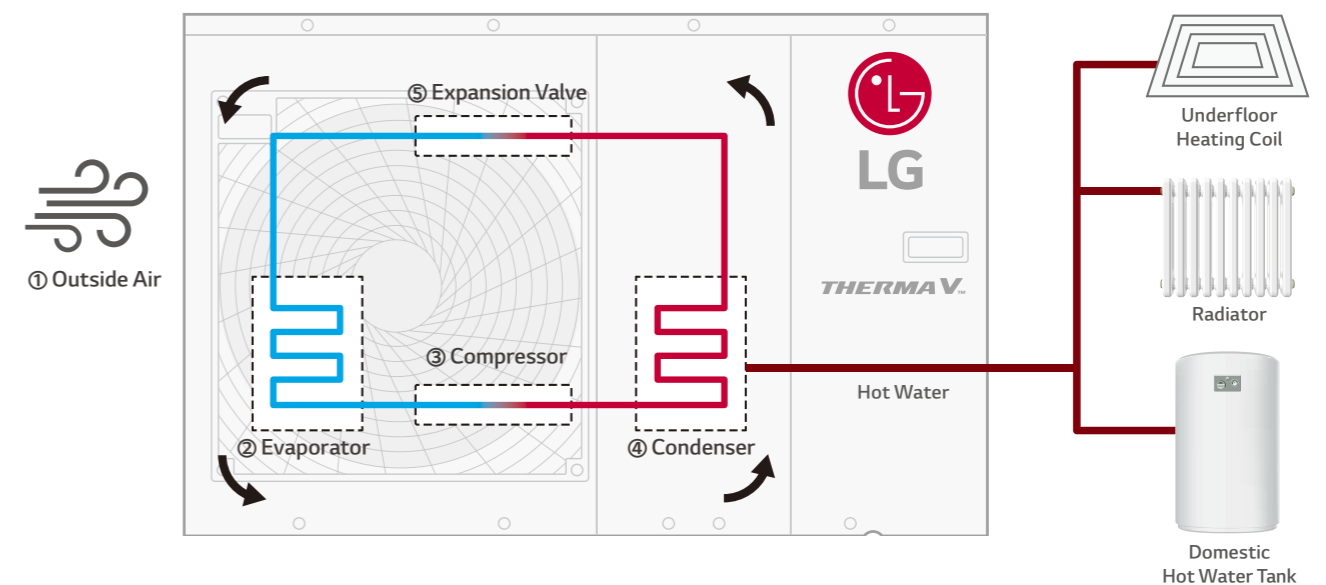
The term "heat pump" refers to a technique that pumps heat from renewable energy sources, like the air, ground and water. A heat pump device transforms this energy into a usable heat source via the refrigerant cycle.

With heat pump technology like THERMA V, about 75%<sup>1)</sup> of the energy needed to produce heating and hot water in home comes from natural air source.



1) Each ratio is general for helping understanding, and based on LG Therma V R32 Series vs. Electrical Boiler under Low Temperature & Average Climate conditions. so, it may differ from actual operation.

### How do Air to Water Heat Pumps Work?



#### ① Outside Air

Heat is extracted from the outside air.

#### ② Evaporator

As low temperature liquid refrigerant absorbs heat energy from the air, it transforms from liquid to vapor phase.

#### ③ Compressor

The vaporized refrigerant flows into the compressor. The electric energy used to operate the compressor is converted into heat and added to the refrigerant.

#### ④ Condenser

High temperature refrigerant gas flows into the heat exchanger and conveys heat energy to water by the heat exchanged between refrigerant and water.

#### ⑤ Expansion Valve

High-pressure liquid refrigerant flows through the expansion valve to restore the refrigerant to its original condition.

# THERMA V™ INTRODUCTION

## The Green Choice:

### THERMA V™

Discover the ultimate eco-conscious, energy efficient and convenient heating solution

Today's informed consumer will consider multiple factors when choosing a heating solution, like an Air to Water Heat Pump (AWHP) to include user-friendliness, reliability and regulation-compliance. European consumers are the most subject to shifting regulations year after year.

As a solution to the modern requirements, R32 refrigerant takes centre stage for a new smart solution. With a 68% reduced Global Warming Potential (GWP) from the current refrigerant, R410A, R32-applied products are not only eco-conscious but also meet the consumers' needs for energy efficiency, performance and more. LG Electronics' THERMA V R32 AWHP line-up fulfills both European regulations as well as customer needs.



- Ultimate Energy Efficiency : A+++ in the ErP energy labelling regulation, wide operation range, reduced noise level
- Excellent Performance : R1 Compressor embedded, high heating capacity at low ambient temperature
- User Convenience : LG ThinQ Wi-Fi control, convenient scheduler, wider connectivity, energy monitoring

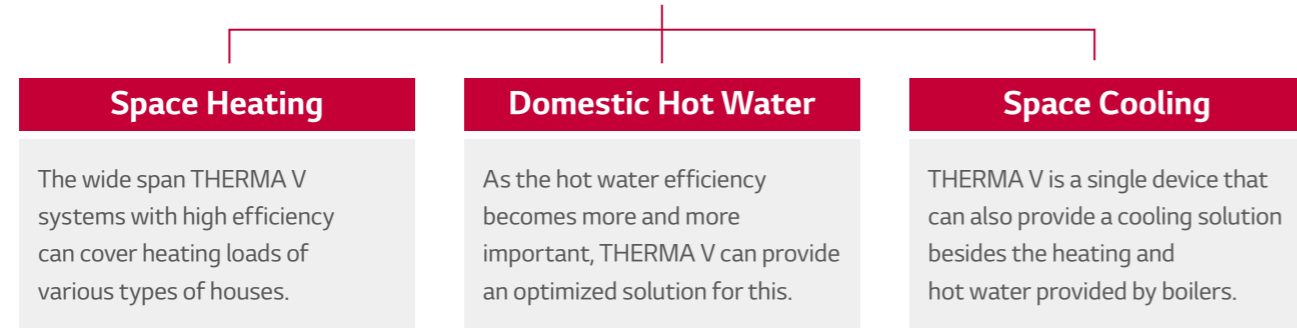
# WHAT IS LG THERMA V?

## LG's Advanced Heating Technology

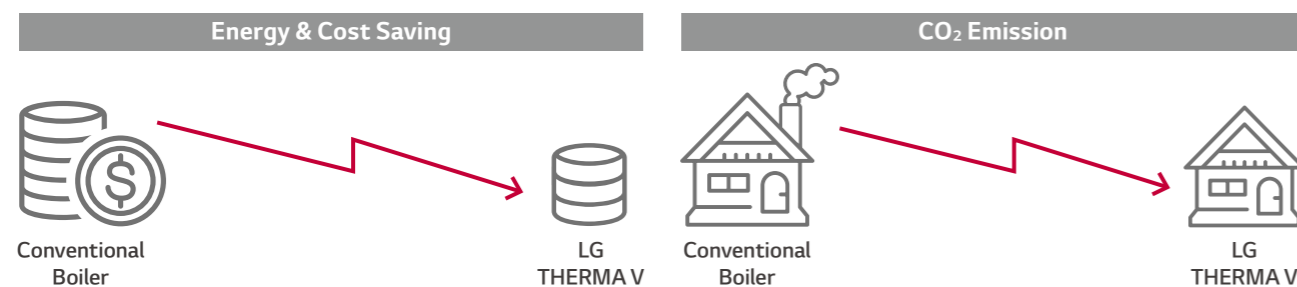
The LG THERMA V air to water heat pump system has been specially designed to provide a space and domestic hot water solution to both new build and renovated homes. Even more remarkable thing is LG's advanced heating technology, market leading technology that can minimize energy consumption more than any other solution in the market.



**THERMA V™**



## High Efficiency and Low CO<sub>2</sub> Emission

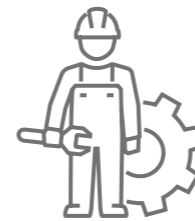


## Benefits of LG THERMA V



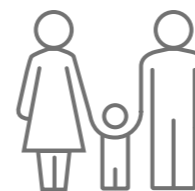
### For Homeowners

- Energy saving by utilizing renewable energy and high efficiency equipment
- Multiple solutions with space heating, cooling and DHW supply
- Economic support through domestic renewable heat incentive programme
- Save investment cost thanks to the compatibility with existing heating system like radiator, boiler, etc.
- Save valuable machine room space with the small footprint



### For Installers & Designers

- Time saving with features for quicker installation and commissioning
- Excellent heating performance even at low ambient temperature
- Less manpower for handling with the compact size and light weight
- Low repair cost and high reliability with durable equipment
- Same controller interface for all LG products, requiring less training



### For End-users

- Energy saving by utilizing renewable energy and high efficiency equipment
- Multiple solutions with space heating, cooling and DHW supply
- Low repair cost and high reliability with durable equipment
- Various user convenient functions
- No disturbing to neighbors with low noise
- Convenient control by user-friendly remote controller
- Remote connectivity for control and monitoring via LG ThinQ

# LG AIR TO WATER HEAT PUMP SOLUTION OVERVIEW







		Monobloc		Hydrosplit	
		-		Hydro Box (Wall hung)	IWT (Integrated Water Tank)
Line-up		R32 Monobloc S	R32 Monobloc	R32 Hydrosplit Hydro Box	R32 Hydrosplit IWT
		1Ø : 5/7/9/12/14/16 kW 3Ø : 12/14/16 kW	1Ø : 5/7/9/12/14/16 kW 3Ø : 12/14/16 kW	1Ø : 12/14/16 kW 3Ø : 12/14/16 kW	1Ø : 12/14/16 kW 3Ø : 12/14/16 kW
Application		Heating, Cooling and DHW 		Heating, Cooling and DHW 	Heating, Cooling and DHW 
Energy Label		 Space Heating: 35°C A <sup>+++</sup> , 55°C A <sup>+</sup> DHW Heating: 1) 5/7/9 kW A <sup>+</sup> , 12/14/16 kW A <sup>+</sup> ; 2) 5/7/9 kW A <sup>+</sup>		 Space Heating: 35°C A <sup>+++</sup> , 55°C A <sup>+</sup>	 Space Heating: 35°C A <sup>+++</sup> , 55°C A <sup>+</sup> DHW Heating: Profile L A <sup>+</sup>
Operation Range (heating)	Outdoor Air	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C
	Leaving Water	15 ~ 65°C	15 ~ 65°C	15 ~ 65°C	15 ~ 65°C
Customer Needs	Designer & Installer	<ul style="list-style-type: none"> <li>- Don't want refrigerant piping work</li> <li>- Using existing facilities (Conventional boiler)</li> <li>- Saving installation and commissioning time (All-in-one &amp; No ref. piping work)</li> <li>- No indoor unit (No space for IDU)</li> </ul>		<ul style="list-style-type: none"> <li>- Saving installation and commissioning time (No ref. piping work)</li> </ul>	<ul style="list-style-type: none"> <li>- Saving installation and commissioning time (All-in-one &amp; No ref. piping work)</li> <li>- Where mechanical room is very limited</li> <li>- Saving installation space for buffer tank and expansion tank</li> </ul>
	End-User	<ul style="list-style-type: none"> <li>- Don't want to take the potential risk of refrigerant leak</li> <li>- Easy and intuitive controls</li> <li>- Reliable operation and long lifetime</li> </ul>		<ul style="list-style-type: none"> <li>- Low operation cost</li> <li>- Remote control by smartphone</li> <li>- Control integration between boiler and THERMA V</li> </ul>	<ul style="list-style-type: none"> <li>- Quiet operation</li> <li>- High corrosion resistance heat exchanger</li> </ul>
LG Approach		<ul style="list-style-type: none"> <li>- No refrigerant piping work</li> <li>- New interface (standard III Remote controller)</li> <li>- Interlocking operation with 3rd party boiler</li> </ul>		<ul style="list-style-type: none"> <li>- High energy efficiency</li> <li>- LG ThinQ Wi-Fi Control solution</li> <li>- Easy commissioning by PC tool (LG heating configurator)</li> </ul>	<ul style="list-style-type: none"> <li>- Low noise mode operation with schedule setting</li> <li>- High corrosion resistance heat exchanger</li> </ul>
		- All in one concept		- Hydrosplit concept	<ul style="list-style-type: none"> <li>- All in one concept (Integrated DHW tank with indoor unit)</li> <li>- Hydrosplit concept</li> <li>- Sophisticated and harmonious exterior of indoor unit</li> <li>- Provides an option to integrate buffer tank and DHW expansion tank into indoor units</li> </ul>
Benefit		<ul style="list-style-type: none"> <li>- Multiple solution (heating, cooling and DHW supply)</li> <li>- Energy saving by utilizing renewable energy and high efficient equipment</li> <li>- Economic support by incentive program</li> <li>- Simple replacement of existing boiler while maintaining the existing heating system</li> </ul>		<ul style="list-style-type: none"> <li>- Free of potential risk of refrigerant leak</li> <li>- Quick &amp; easy installation and commissioning</li> <li>- Hybrid operation with existing facilities</li> </ul>	<ul style="list-style-type: none"> <li>- Free of potential freezing risk against exposed water piping even long black out</li> <li>- Energy saving by utilizing renewable energy and high efficient equipment</li> <li>- Quick &amp; easy installation and commissioning</li> <li>- Economic support by incentive program</li> </ul>
		- Saving mechanical room space			<ul style="list-style-type: none"> <li>- Use of valuable machine room space for private purpose</li> </ul>

1) Combination with OSHW-200F (profile L)


2) Combination with OSHW-300F (profile XL)

Split				Water Heater
Hydro Box (Wall hung)	IWT (Integrated Water Tank)	Floor standing	Water Heater	
R32 Split Hydro Box	R410A Split Hydro Box	R32 Split IWT	High Temperature	LG Inverter Heat Pump Water Heater
1Ø : 5/7/9 kW	1Ø : 12/14/16 kW 3Ø : 12/14/16 kW	1Ø : 5/7/9 kW	1Ø : 16 kW	1Ø : 200 / 270L
Heating, Cooling and DHW 		Heating, Cooling and DHW 	Heating and DHW 	DHW 
 Space Heating: 35°C A <sup>+++</sup> , 55°C A <sup>+</sup>		 Space Heating: 35°C A <sup>+++</sup> , 55°C A <sup>+</sup> DHW Heating: Profile L A <sup>+</sup>	 Space Heating: 35°C A <sup>+</sup> , 55°C A <sup>+</sup>	 DHW Heating: 200L Profile L A <sup>+</sup> , 270L Profile L A <sup>+</sup>
-25 ~ 35°C		-25 ~ 35°C	-25 ~ 35°C	-5 ~ 48°C
15 ~ 65°C		15 ~ 57°C	15 ~ 65°C	35 ~ 65°C
- Eliminating the potential freezing risk at exposed water piping				- Using less installation space in the machine room and storage room
- Using existing facilities (Conventional boiler)		<ul style="list-style-type: none"> <li>- Saving installation and commissioning time (All-in-one)</li> <li>- Where mechanical room is very limited</li> <li>- Saving installation space for buffer tank and expansion tank</li> <li>- Using existing facilities (Conventional boiler)</li> </ul>	<ul style="list-style-type: none"> <li>- Solution for poorly insulated or old house</li> <li>- High DHW temperature to meet sanitary water regulation</li> </ul>	<ul style="list-style-type: none"> <li>- Short installation time</li> <li>- Convenience to check the operation</li> <li>- Convenient maintenance</li> </ul>
<ul style="list-style-type: none"> <li>- Don't want to take the potential freezing risk at exposed water piping</li> <li>- Quiet operation</li> <li>- Remote control by smartphone</li> </ul>		<ul style="list-style-type: none"> <li>- Low operation cost</li> <li>- Easy and intuitive controls</li> <li>- Reliable operation and long lifetime</li> </ul>		<ul style="list-style-type: none"> <li>- Low operation cost</li> <li>- Sufficient warm water</li> <li>- Quiet operation</li> <li>- Easy control</li> </ul>
- Control integration between boiler and THERMA V		<ul style="list-style-type: none"> <li>- Necessity to install indoor unit in living space due to insufficient machine room space</li> <li>- Control integration between boiler and THERMA V</li> </ul>	- Using existing facilities (Old radiators)	
<ul style="list-style-type: none"> <li>- High energy efficiency</li> <li>- New interface (standard III Remote controller)</li> <li>- High corrosion resistance heat exchanger</li> </ul>		<ul style="list-style-type: none"> <li>- Low noise mode operation with schedule setting</li> <li>- LG ThinQ Wi-Fi Control solution</li> <li>- Easy commissioning by PC tool (LG heating configurator)</li> </ul>	<ul style="list-style-type: none"> <li>- Max. 80°C LWT by Cascade 2 stage compression (R410A - R134a)</li> <li>- Suitable for old radiator</li> </ul>	<ul style="list-style-type: none"> <li>- Stylish design</li> <li>- Top class energy efficiency</li> <li>- Powerful heating performance</li> <li>- Low noise operation</li> <li>- Smart control</li> </ul>
<ul style="list-style-type: none"> <li>- Placing hydronic components into indoor unit and water piping in the mechanical room</li> <li>- Interlocking operation with 3rd party boiler</li> </ul>		<ul style="list-style-type: none"> <li>- All in one concept (Integrated DHW tank with indoor unit)</li> <li>- Sophisticated and harmonious exterior of indoor unit</li> <li>- Provides an option to integrate buffer tank and DHW expansion tank into indoor units</li> <li>- Interlocking operation with 3rd party boiler</li> </ul>		
<ul style="list-style-type: none"> <li>- Free of potential freezing risk against exposed water piping even long black out</li> <li>- Energy saving by utilizing renewable energy and high efficient equipment</li> <li>- Quick &amp; easy installation and commissioning</li> <li>- Economic support by incentive program</li> </ul>				<ul style="list-style-type: none"> <li>- Interior with stylish design</li> <li>- Energy saving with inverter technology</li> <li>- Faster and warmer water heating</li> <li>- Low noise</li> <li>- Smart control with Wi-Fi by LG ThinQ</li> </ul>
<ul style="list-style-type: none"> <li>- Multiple solution (heating, cooling and DHW supply)</li> <li>- Hybrid operation with existing facilities</li> </ul>		<ul style="list-style-type: none"> <li>- Multiple solution (heating, cooling and DHW supply)</li> <li>- Hybrid operation with existing facilities</li> <li>- Use of valuable machine room space for private purpose</li> </ul>	<ul style="list-style-type: none"> <li>- Multiple solution (heating and DHW supply)</li> <li>- Obtaining 80°C high LWT without supplementary heater</li> <li>- Simple replacement of existing boiler</li> </ul>	<ul style="list-style-type: none"> <li>- Quick and easy installation</li> <li>- Easy check and monitoring</li> <li>- LG compressor with 10 years warranty</li> </ul>

# LINE-UP OVERVIEW

Refrigerant	Type	Line-up	Unit	Power Supply <sup>1)</sup>	Appearance	5 kW	7 kW	
R32	Monobloc	R32 Monobloc S P.38	Set	1Ø / 230V		HM051MR U44	HM071MR U44	
				3Ø / 400V				
		R32 Monobloc P.54	Set	1Ø / 230V		HM051M U43	HM071M U43	
				3Ø / 400V				
	Hydro split	Hydro Box	R32 Hydrosplit Hydro Box P.70	Outdoor Unit	1Ø / 230V			
					3Ø / 400V			
		IWT	R32 Hydrosplit IWT P.80	Outdoor Unit	1Ø / 230V			
					3Ø / 400V			
	Hydro Box	R32 Split Hydro Box P.90	Outdoor Unit	1Ø / 230V		HU051MR U44	HU071MR U44	
			Indoor Unit			HN091MR NK5		
IWT		R32 Split IWT P.98	Outdoor Unit	1Ø / 230V		HU051MR U44	HU071MR U44	
			Indoor Unit			HN0916T NB1		
R410A	Split	Hydro Box	R410A Split Hydro Box P.108	Outdoor Unit	1Ø / 230V			
				Indoor Unit				
				3Ø / 400V	Outdoor Unit			
					Indoor Unit			
R410A + R134a	Floor standing	High Temperature P.118	Outdoor Unit	1Ø / 230V				
			Indoor Unit					

<sup>1)</sup> The power supply is shown based on the outdoor unit.

Refrigerant	Type	Power Supply	Appearance	200 L	270 L
R134a	Inverter Heat Pump Water Heater P.126	1Ø / 230V		WH20S F5	WH27S F5

\* Production of this product could be discontinued without prior notice considering manufacturer's circumstances.

9 kW	Appearance	12 kW	14 kW	16 kW
HM091MR U44		HM121MR U34	HM141MR U34	HM161MR U34
		HM123MR U34	HM143MR U34	HM163MR U34
HM091M U43		HM121M U33	HM141M U33	HM161M U33
		HM123M U33	HM143M U33	HM163M U33
		HU121MRB U30	HU141MRB U30	HU161MRB U30
		HU123MRB U30	HU143MRB U30	HU163MRB U30
		HN1600MC NK1		
		HU121MRB U30	HU141MRB U30	HU161MRB U30
		HU123MRB U30	HU143MRB U30	HU163MRB U30
		HN1616Y NB1		
HU091MR U44				
HN091MR NK5				
HU091MR U44				
HN0916T NB1				
		HU121MA U33	HU141MA U33	HU161MA U33
		HN1616M NK5		
		HU123MA U33	HU143MA U33	HU163MA U33
		HN1636M NK5		
				HU161HA U33
				HN1610H NK3



# LINE-UP INTRODUCTION



## THERMA V R32 Monobloc S

The THERMA V R32 Monobloc S is the 2nd generation of LG's R32 Monobloc series. As implied by "silence" and "supreme," it boasts reduced noise level and best performance in the THERMA V Series. Combining the indoor and outdoor as one module, it's also connected by only water piping eliminating the need for refrigerant piping. Furthermore, hydronic components like the plate heat exchanger, expansion tank, water pump, flow sensor, pressure sensor, air vent valves, and safety valve are conveniently situated inside the unit. The R32 Monobloc S provides excellent heating performance, especially at low ambient temperature while lowering its carbon emissions with R32.

Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
R32 Monobloc S	1Ø 230V	●	●	●	●	●	●
	3Ø 400V				●	●	●



## THERMA V R32 Hydrosplit Hydro Box

The LG THERMA V Hydrosplit series separates the Indoor unit (IDU) and outdoor unit (ODU), connecting them via water pipes. The unit's heat exchanger is located within the ODU, reducing the risk of indoor refrigerant leakage. THERMA V R32 Hydrosplit Hydro Box is a solution providing space heating, cooling and DHW supply with high installation flexibility thanks to the characteristic of being a wall mounted type. Since the indoor unit is installed on the wall rather than on the floor, space in the machine room is not wasted, and the light weight enables quick installation. Also, it has good maintainability because the indoor unit is located in the machine room.

Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
R32 Hydrosplit Hydro Box	1Ø 230V				●	●	●
	3Ø 400V				●	●	●

\* The power supply is shown based on the outdoor unit.



## THERMA V R32 Monobloc

The LG THERMA V R32 Monobloc is a fully packaged unit, where the indoor and outdoor units are combined as one module. The outdoor Monobloc unit is connected to only water piping, therefore there is no need for refrigerant piping. Hydronic components such as the plate heat exchanger, expansion tank and water pump are situated inside the outdoor unit.

The Monobloc is designed for energy efficiency, convenience, and easy-to-use controls. Operating with low Global Warming Potential (GWP) R32 refrigerant and LG's exclusive R1 compressor, power meets sustainable heating. The system has an optional Wi-Fi modem and with LG's smartphone app, LG ThinQ, users can monitor and remotely control compatible LG products.

Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
R32 Monobloc	1Ø 230V	●	●	●	●	●	●
	3Ø 400V				●	●	●



## THERMA V R32 Hydrosplit IWT

The LG THERMA V Hydrosplit series separates the Indoor unit (IDU) and outdoor unit (ODU), connecting them via water pipes. The unit's heat exchanger is located within the ODU, reducing the risk of indoor refrigerant leakage. THERMA V R32 Hydrosplit IWT combines an indoor unit, a water tank and complex piping into a single, space-saving solution that is able to provide space heating, cooling and DHW supply. Relatively compact and lightweight, the innovative all-in-one is easy to install and operate, and boasts the outstanding reliability and efficiency. Since there is no need to install a separate domestic hot water tank for hot water supply, space in the machine room is not wasted, and the concept with all-in-one enables quick installation.

Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
R32 Hydrosplit IWT	1Ø 230V				●	●	●
	3Ø 400V				●	●	●

\* The power supply is shown based on the outdoor unit.

# LINE-UP INTRODUCTION



## THERMA V R32 Split Hydro Box

The LG THERMA V R32 Split Hydro Box is a hydro box type system consisting of an indoor hydro box unit and an outdoor unit. The two units are connected by refrigerant piping only, thus hydronic components such as plate heat exchanger, expansion tank and water pump are located within the indoor unit. Due to the split nature, freezing will not compromise this unit regardless of outdoor ambient temperatures. The Split has been designed specifically for new build and renovated houses. LG's highly efficient products can deliver effective space heating and hot water supply while operating with low Global Warming Potential (GWP) R32 refrigerant and LG's exclusive R1 compressor. The system has an optional Wi-Fi modem and with LG's smartphone app, LG ThinQ, users can monitor and remotely control compatible LG products.

Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
R32 Split Hydro Box	1Ø 230V	●	●	●			
	3Ø 400V						

\* The power supply is shown based on the outdoor unit.



## THERMA V R410A Split Hydro Box

The LG THERMA V R410A Split Hydro Box is a hydro box type system consisting of an indoor hydro box unit and an outdoor unit. The two units are connected by refrigerant piping only, thus hydronic components such as the plate heat exchanger, expansion tank and water pump are located within the indoor unit. Due to the split nature, freezing will not compromise this unit regardless of outdoor ambient temperatures.

LG's THERMA V R410A Split Hydro Box is designed for the benefit of users and installers who want to apply a heating solution to a large capacity building or applications subject to colder climate conditions. It has a maximized energy efficiency of A++ in the mid-temperature ranges, which leads reduced operating costs.

Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
R410A Split Hydro Box	1Ø 230V				●	●	●
	3Ø 400V				●	●	●

\* The power supply is shown based on the outdoor unit.



## THERMA V R32 Split IWT

The LG THERMA V R32 Split IWT is a domestic hot water supply, space heating and cooling solution that conveniently combines an indoor hot water tank with a separate outdoor unit. THERMA V R32 Split IWT is the perfect space-saving solution for residential applications because hydronic components like the Domestic Hot Water (DHW) and buffer tanks, which are typically installed separately, are fully integrated. Also, freezing will not compromise this unit regardless of outdoor ambient temperatures due to the split nature.

Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
R32 Split IWT	1Ø 230V	●	●	●			
	3Ø 400V						

\* The power supply is shown based on the outdoor unit.



## THERMA V High Temperature

The LG THERMA V High Temperature is a split type that consists of a floor standing indoor unit and an outdoor unit. Thanks to cascade (2 stage) compression technology, it can supply high leaving water temperature up to 80°C with high energy efficiency.

Since THERMA V High Temperature is solely able to produce and supply the high temperature water without electric heater, is suitable for houses which have poor insulation, older features or have to meet sanitary water regulations, which requires a higher water temperature.

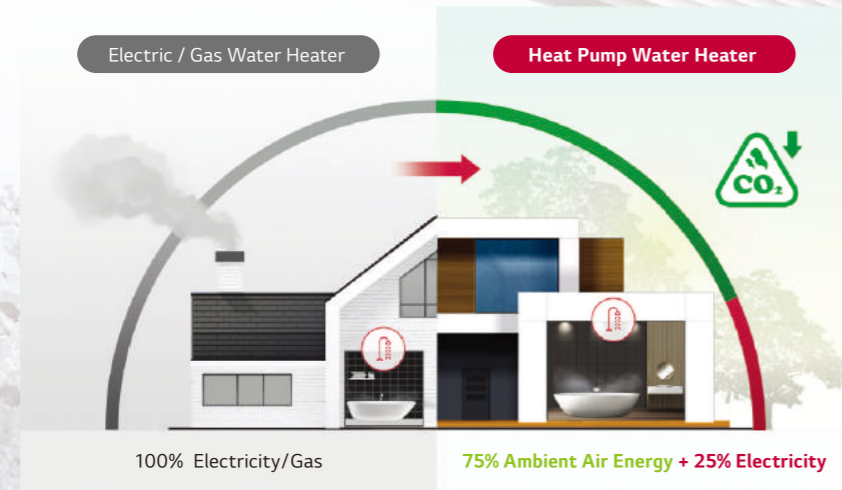
Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
High Temperature	1Ø 230V						●
	3Ø 400V						

\* The power supply is shown based on the outdoor unit.

# LINE-UP INTRODUCTION

## What is a Heat Pump Water Heater?

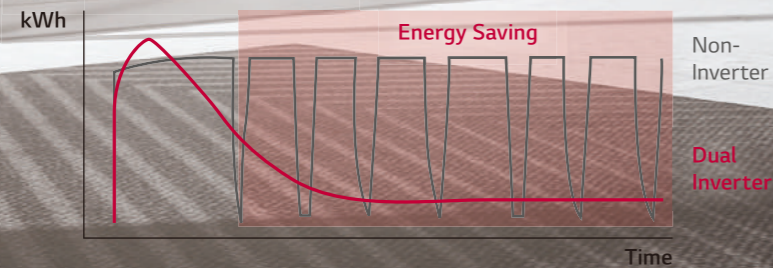
With an increasing emphasis on eco-conscious energy solutions, the LG Heat Pump Water Heater obtains 75% of its energy from outside air. This renewable energy source converts low temperature to high temperature using two heat exchangers, a condenser and an evaporator.



## \* LG Inverter Technology

LG Inverter Technology can be found in many of LG's renowned devices, from refrigerators and washing machines to our air conditioner line-up. This technology allows the inverter compressor to achieve superior energy efficiency, cooling performance and comfort compared to compressors with on-off capabilities.

## Power Consumption Change



## Dual Inverter Compressor

- The Top Class Efficiency
- Hot Water Performance ↑
- Low Noise Operation
- Various Operation Mode

## Smart Control

- Wi-Fi Embedded
- Smart Diagnosis
- Easy Check & Monitoring

## LG Design Identity

- Premium Interior design

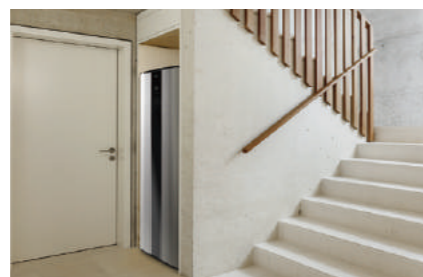
## Hygiene & Durable Tank

- Anti- Legionella
- Permanent Sacrifice Rod
- 10 Year Warranty

## Flexible Installation Locations



Laundry Room



Storage Room



Bathroom



Bathroom



Garage



Garage

※ Actual product appearance may differ from the above simulated scene.

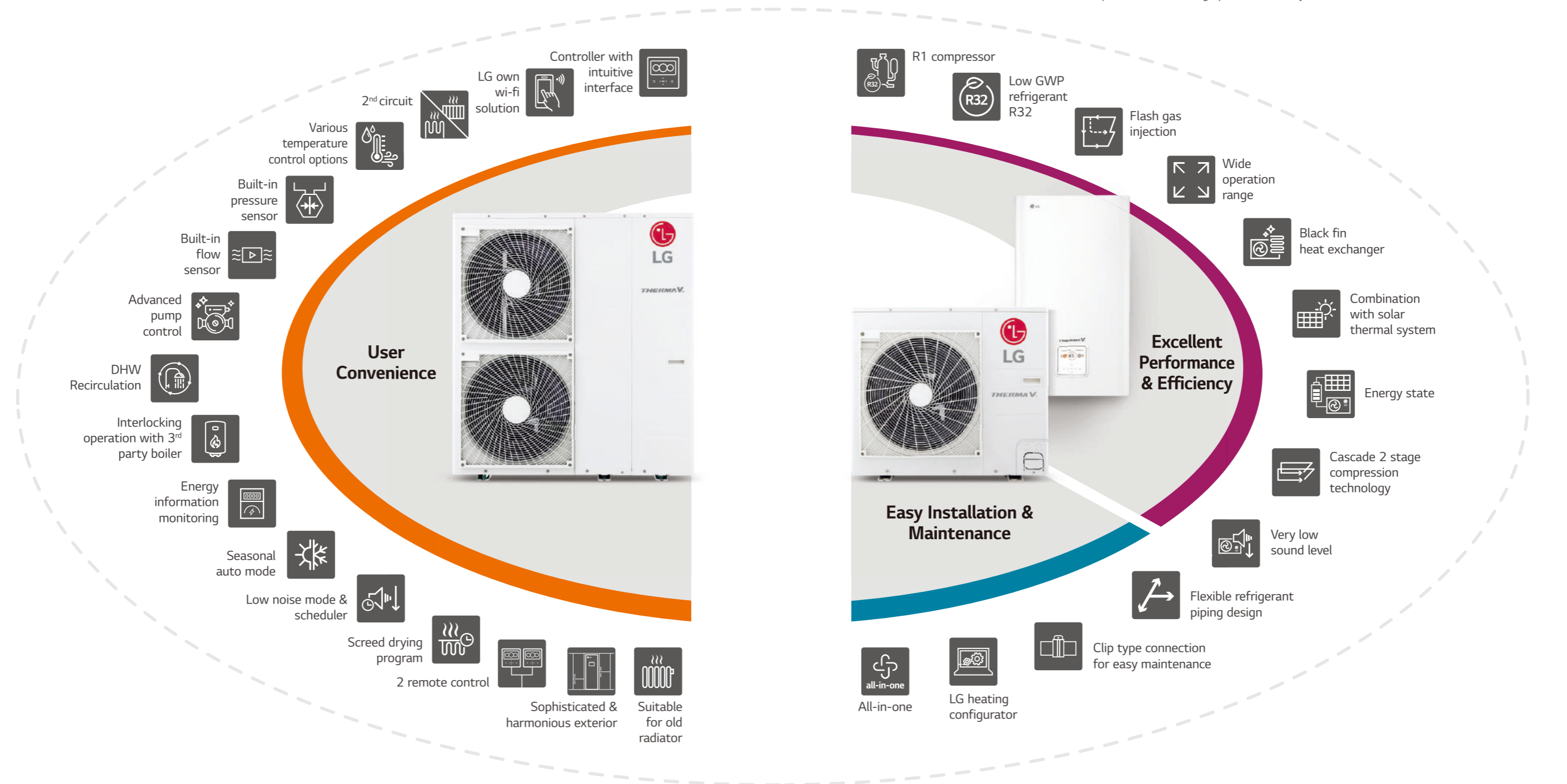


**THERMAV™**  
**FEATURES**

# FEATURE OVERVIEW

## LG THERMA V's Unique Features

LG THERMA V has been designed for providing efficient space heating and domestic hot water heating with usage convenience to the customer. To achieve this ultimate goal, LG has been developed and applied core technologies and functions for heating to the LG THERMA V.



### User Convenience

LG THERMA V is equipped with various user convenience functions, which allow for enhanced comfort and control. The text-based user-friendly interface on the remote control allows for optimized user intuition and the unit's wide connectivity also provide user control convenience.

### Excellent Performance & Efficiency

LG THERMA V provides world-class energy efficiency by adopting LG's revolutionary technology such as the R1 compressor and the Black Fin heat exchanger. LG products have achieved a high heating performance even in extremely cold weather conditions and LG THERMA V can bring customers peace of mind through product reliability.

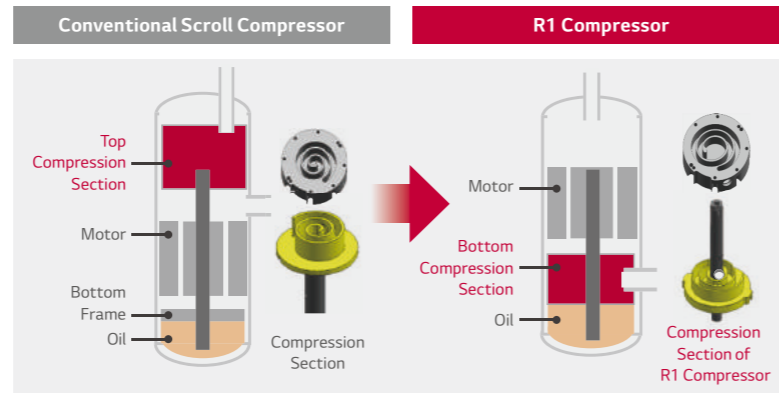
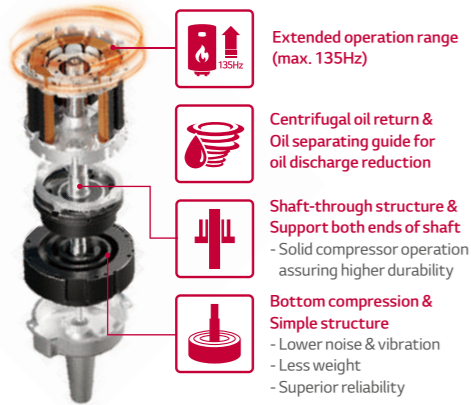
### Easy Installation & Maintenance

LG THERMA V offers installation and design flexibility to professional installers. The LG Heating Configurator also allows professionals to save time during commissioning. During maintenance, the clip type connection allows fast and easy disassembly of the components.

# EXCELLENT PERFORMANCE & EFFICIENCY

## RI Compressor™ LG's Revolutionary Technology

RI Compressor™ technology offers advanced efficiency, reliability and operational range due in part to the enhanced tilting motion of the scroll.

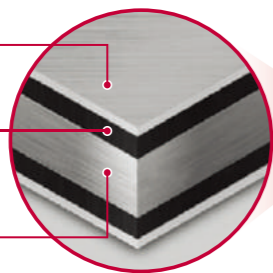


## Black Fin Heat Exchanger

The THERMA V line-up includes a heat exchanger enhanced by black coating with enhanced epoxy resin for strong protection. This improvement in durability prolongs the product's lifespan and lowers both the operational and maintenance costs.

### Black Fin

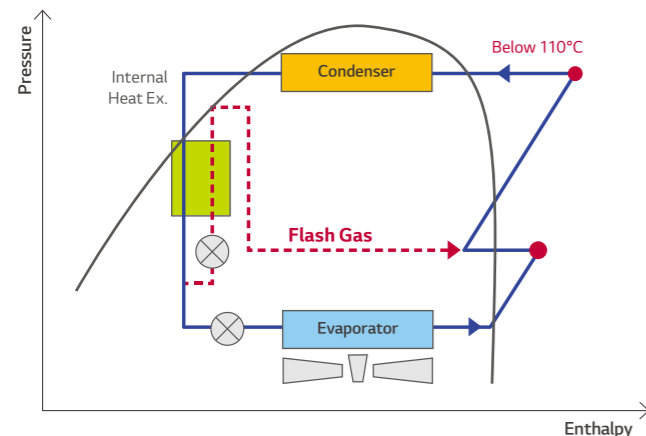
- Hydrophilic Film (water flow)**  
The hydrophilic coating minimizes moisture build up on the fin.
- Acryl + Epoxy + Melamine Resin (corrosion resistant)**  
The black coating provides strong protection from corrosion.
- Aluminum Fin**



- Longer lifespan, lower operation costs**
- Strengthened corrosion resistant coating**

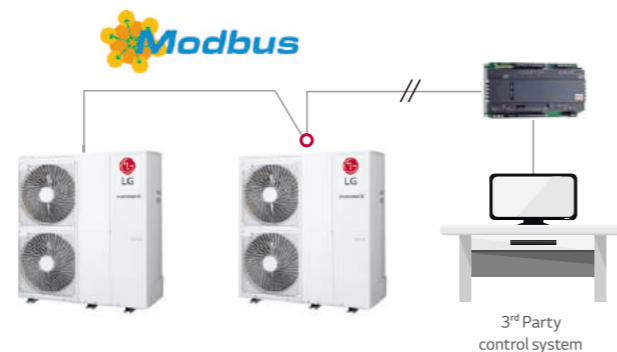
## Flash Gas Injection

With the LG THERMA V R32 series, flash gas injection technology is applied to control the discharge temperature of the compressor efficiently. As a result of this technology, the heating operation range is expanded and the heating performance at low ambient temperature is enhanced.



## Direct Modbus Communication

Therma V can be connected and controlled by 3rd party control system using Modbus protocol directly, without Modbus RTU gateway.



## Eco-Conscious with R32 Refrigerant

### Background

Due to accelerated global warming and the destruction of the ozone layer, various international conventions and meetings are held to enhance restrictions to the use of refrigerant or enforce the use of eco-conscious refrigerant R32 is internationally acclaimed for being eco-friendly. This low volume refrigerant is as efficient as any conventional refrigerant but boasts a 68% reduced global warming potential.



### Comparison & Benefit

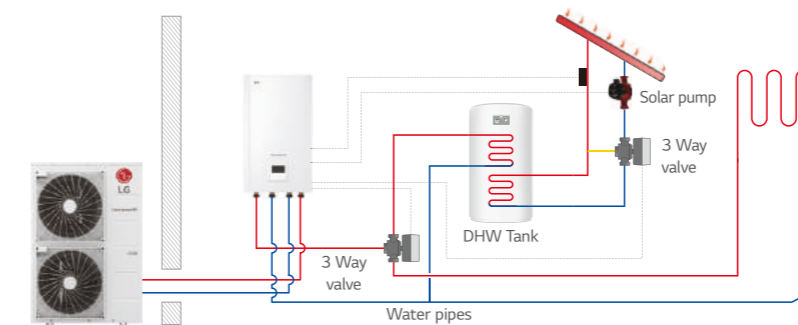
R32 efficiently works even in small volume compared to existing R410A refrigerant, which decreases the potential hazard of global warming. Furthermore, R32 refrigerant is easy to recycle thanks to its single composition.

Description	R32	R410A
Low Global Warming Potential (GWP)	675 <sup>1)</sup> ↓	2088 <sup>1)</sup> ↑
Lower Amount of Gas Charge	Less (20% <sup>2)</sup> ↓	High
Higher System Performance	R32 systems also use less refrigerant per kilowatt of capacity delivered.	
Simple Refrigerant Recyclability	Single component	Mixture R32 50% / R125 50%
High Capacity	High refrigerant compression rates lead to high capacity as compared to existing refrigerant R22 and R410A.	

※ 1) Source : Global Warming Potential Values (2007, AR4)  
2) This ratio is general for helping understanding, it may differ depending on the each product.

## Combination with Solar Thermal System

By combining the solar system with Therma V, the efficiency of DHW heating operation can be maximized.



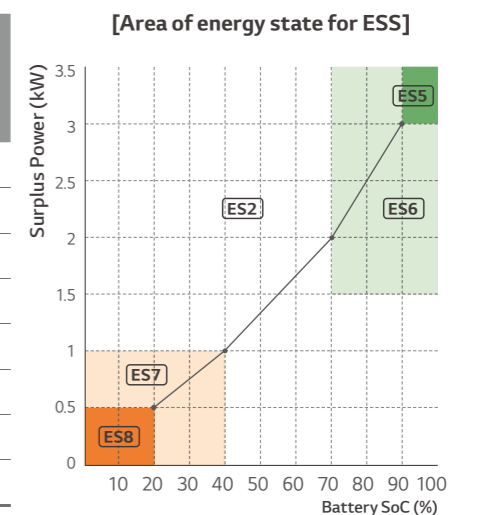
\* Applied model : Solar Thermal Kit (PHLLA) is required for R32 Monobloc and PT-1000 type temp. sensor (field supply) is required for R32 Monobloc S, R32 Hydro-split Hydro Box, R32 Split Hydro Box.

## Energy State

THERMA V is operated automatically according to the status signals received from power supply companies. This function can correspond to each country's specific tariff for heat pump application on smart grids.

Energy States	Description				Operation
	Signal Mode (Smart Grid)	Power Supply Status	Modbus Mode (ESS)	Battery Charged Status	
ES1	Operation Off	🔴			Forced off to avoid peak load
ES2	Normal	🟢	Normal	🟢	Normal operation
ES3*	On Recommend	🟡			Changed target temperature higher (heating : +2°C, DHW : +5°C)
ES4*	On Command	🟢			Changed target temperature higher (DHW : 80°C)
ES5**			On Command (step2)	🟢	Changed target temperature higher (heating : +5°C, cooling : -5°C, DHW : +30°C)
ES6**			On Recommend (step1)	🟡	Changed target temperature higher (heating : +2°C, cooling : -2°C, DHW : +10°C)
ES7**			Energy Saving	🟡	Changed target temperature lower (heating : -2°C, cooling : +2°C)
ES8**			Super Energy Saving	🔴	Changed target temperature lower (heating : -5°C, cooling : +5°C)

\* Contact signal designated ES3 and ES4 can be changed to ES5 - ES8.  
\*\* Offset values of heating, cooling and DHW are changeable.  
\*\*\* THERMA V can connect not only ESS but also 3rd party controller through Modbus, in that case, ES1 to ES8 are used.

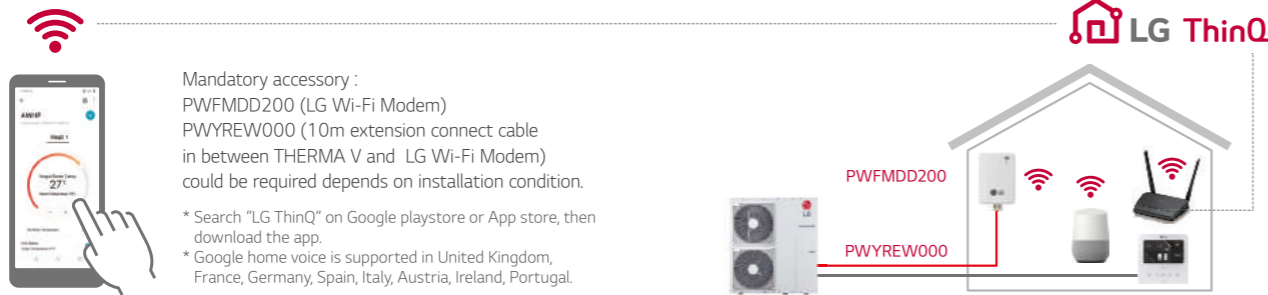


• SoC : State of Charge  
• Surplus Power (SP) = PV Power - Load Power  
• Area of Energy State for ESS can be adjusted by ESS.

# USER CONVENIENCE

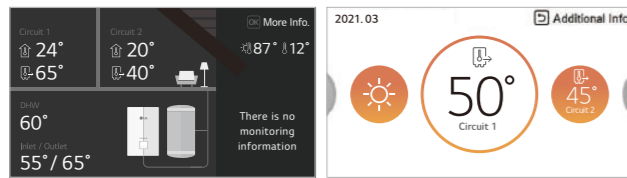
## LG ThinQ Seamless Connectivity

LG ThinQ allows users to monitor and control compatible LG products remotely, so they can set the temperature and regulate the use of their THERMA V anytime, anywhere. ThinQ technology also works with voice activation with Google Home.



## Intuitive Control

THERMA V is equipped with a new remote controller which supports various functions.



- Premium design (4.3 inch color LCD)
  - User friendly interface (simple graphic, icon & text)
  - Convenient functions (easy schedule setting & installer setting)
  - Energy monitoring without meter interface (estimated power consumption)
- \* Instant power consumption and cumulative power consumption

## Various Temperature Control Options

Various temperature control options are possible for the user's comfort and convenience, to include the newly added simultaneous control option (room and water temperature).

- Option 1 : Control based on leaving water temperature
- Option 2 : Control based on entering water temperature
- Option 3 : Control based on room air temperature
- Option 4 : Control based on room air and water temperature simultaneously

## Seasonal Auto Mode

The operation mode and target temperature will be changed according to the outdoor temperature automatically. Moreover, this function can be conveniently set using visualized graphics.



## Advanced Pump Control Options

Various pump operation options contribute to energy savings by providing optimum water pump control and reliable product operation.

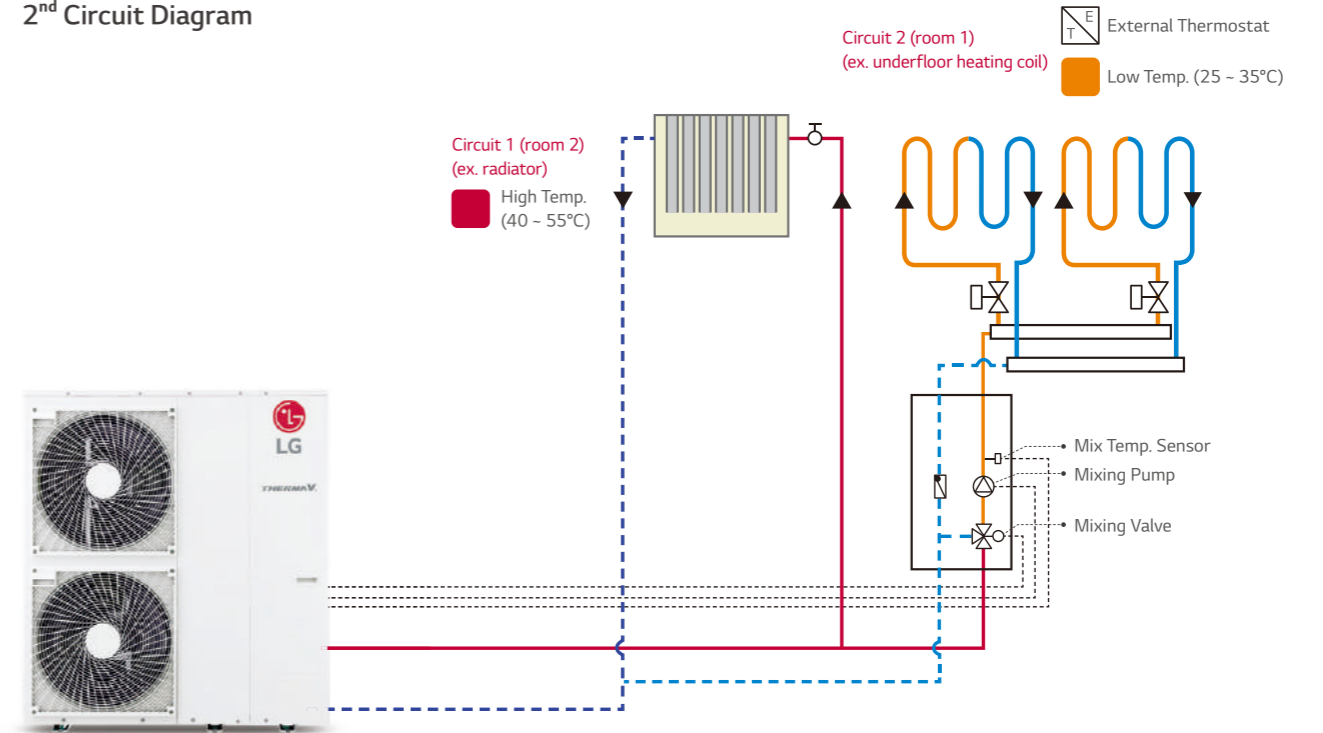
Options	Description	Water Flow Change as per load condition
Pump Capacity	It operates with the capacity set for the water pump. (range 10 - 100%)	No
Fixed Flow Rate	Automatically controlled to maintain the set flow rate. (5, 7, 9kW range: 8 - 26 LPM / 12, 14, 16kW range: 17 - 46 LPM)	No
Fixed ΔT*	Automatically controlled to maintain the set ΔT. (range 5 - 13°C)	Yes
Optimal Flow Rate (default)	ΔT is changed as per Target Temp.	Yes

\*ΔT = temperature difference between inlet and outlet water temperature.

## 2<sup>nd</sup> Circuit

2 Zones (circuit 1/ circuit 2) temperature control through separate heating circuits is possible with mixing valve kit.

### 2<sup>nd</sup> Circuit Diagram



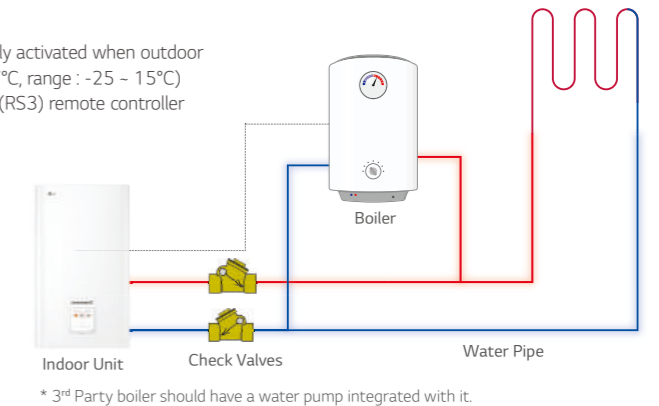
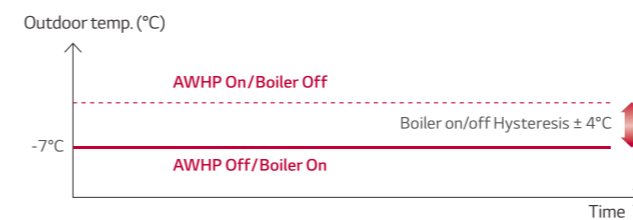
## Interlocking Operation with 3<sup>rd</sup> Party Boiler

3<sup>rd</sup> Party boiler such as oil, gas or electric boiler can be activated automatically or manually by the THERMA V controller.

### Control Mode : Auto / Manual

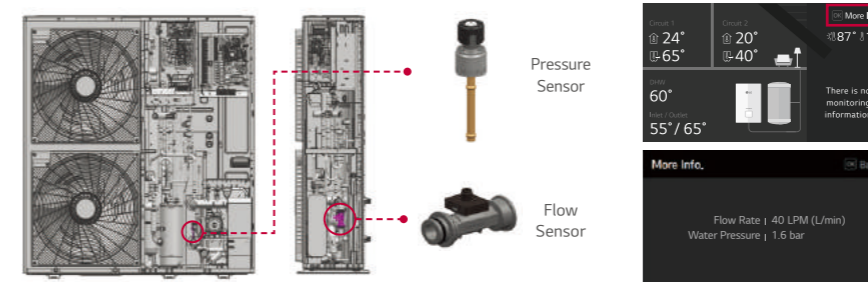
- Auto control mode : In order to protect THERMA V, 3rd party boiler is automatically activated when outdoor temperature is lower than certain temperature instead of THERMA V. (default : -7°C, range : -25 - 15°C)
- Manual control mode : User can manually operate 3rd party boiler via Standard III (RS3) remote controller as needed.

### Auto Control Mode



## Water Circuit Monitoring

It is possible to monitor via remote controller not only temperature of water circuit but also flow rate and pressure. These information provides installers with more reliable information for easier installation and maintenance (periodic strainer cleaning).



### Available information on the screen

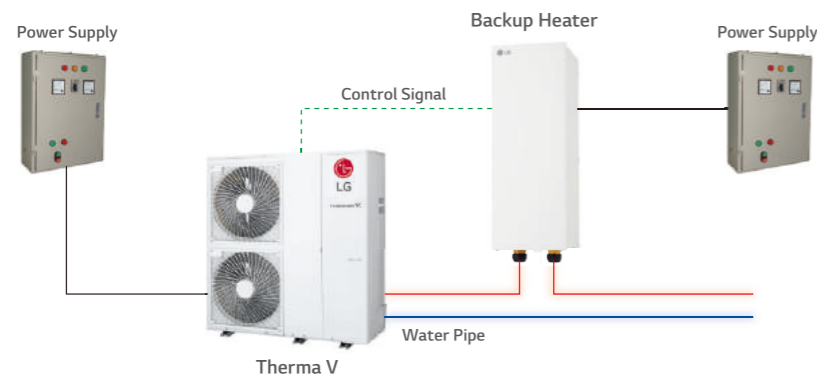
- The room temperature
- The water inlet / outlet temperature
- The water pump operation
- The water flow rate
- The water pressure
- The solar heat temperature
- The outdoor temperature

# USER CONVENIENCE

## Energy Monitoring

Without connection of Meter Interface, estimated power consumption for Therma V and backup heater can be monitored on the remote controller.

### System Diagram



### Installer setting menu



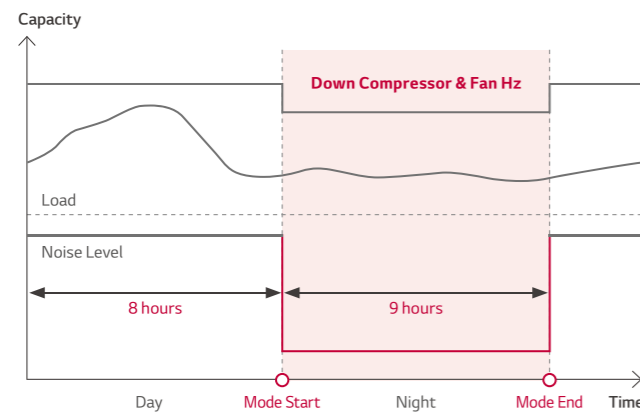
### Monitoring view

- Instant power consumption
- Cumulative Power consumption



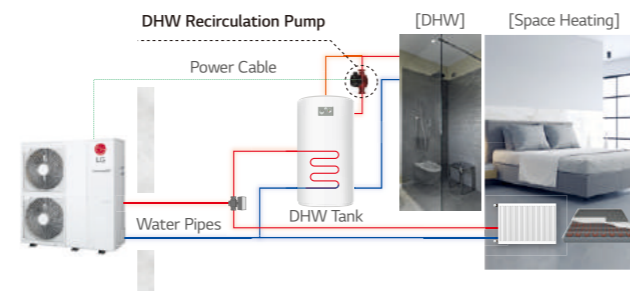
## Low Noise Mode & Scheduler

Low noise mode operation can be activated by remote controller and set on a weekly on/off schedule to reduce the unit's noise level.



## DHW Recirculation Pump

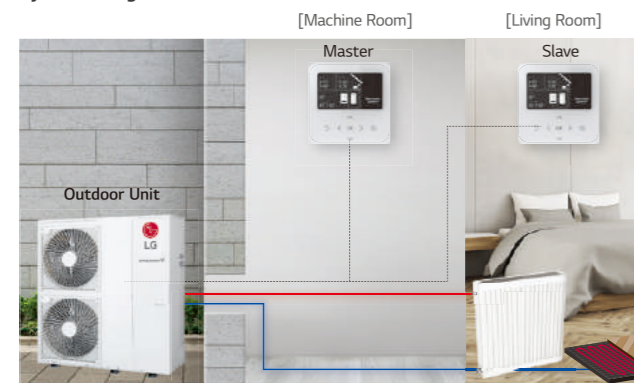
The DHW recirculation pump can be connected to the Therma V and controlled according to the schedule function. DHW recirculation function helps maintain the hot water temperature inside the pipe even when hot water is not in use and prevents Legionella bacteria.



## 2 Remote Control

Enhanced convenience with an additional control installed in another residential area.

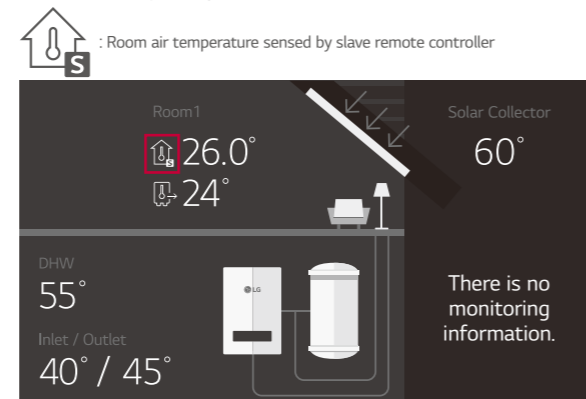
### System Diagram



\* Master is for the installation setting.  
\* Slave is for user setting.

### Standard III (RS3) Controller Interface

- THERMA V is operating based the room where slave controller is installed.

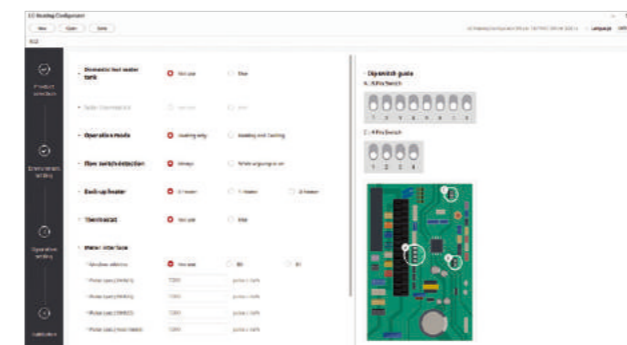


# EASY INSTALLATION & MAINTENANCE

## LG Heating Configurator

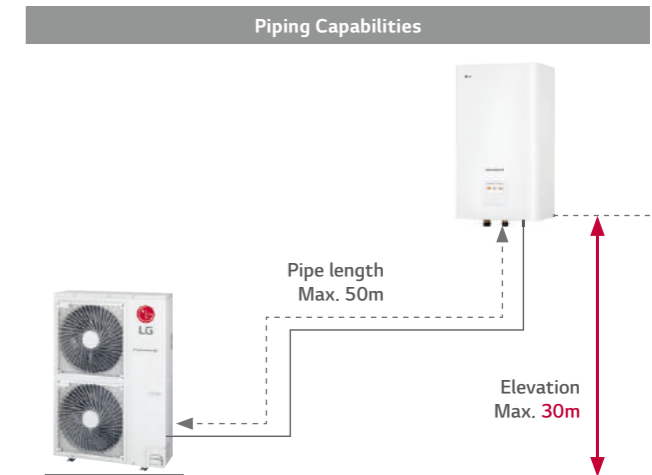
### Easy Installation Setting and Commissioning

- Based on installation site information, installers can prepare presetting with the LG heating configurator and save data into a memory card from the office.
- Once on site, installers can simply insert memory card into the back of the remote control to activate configuration data.



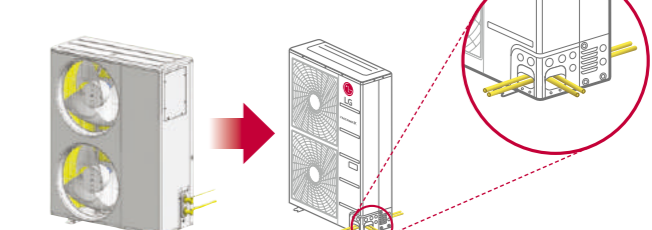
## Flexible Refrigerant Piping Design

Long piping length and 3 Way piping enable flexible design and easy installation.



### 3 Way Piping

- The pipes can be connected in 3 directions
- Neat & easy installation by 3 Way piping



## Clip Type Connection for Easy Maintenance

As clip solution provides easy maintenance and SVC works, maintenance for following parts can be done by hands without special tool.

