LG
Life's Good

LG THERMA V
PRODUCT CATALOGUE
2021 - 2022

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PRODUCT CATALOGUE

LG

LG
Life's Good

LG Electronics
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THERMA V™

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ACCESSORIES

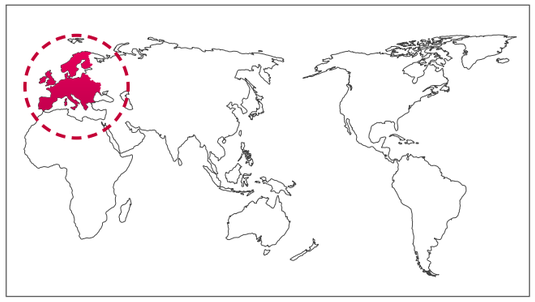
LG BUSINESS PARTNERSHIP & PRE-SALES/ENGINEERING TOOLS

European Business Infrastructure

LG Electronic's European Air Solution department is committed to ensuring your business success. With 16 pan-European sales offices and academies, we want deliver on our promise of support, efficiency and proactivity throughout each stage of our business partnership.

Our highly competitive products are delivered through our dedicated European distribution centre to ensure a steady and reliable supply of inventory.

At our European Energy Lab, LG Business Solutions is developing heat pump technology that is optimized for the varied European climates and weather patterns along with continuous product performance verification.



- Europe B2B regional head office
- National sales office
- LG Academy
- European distribution center
- European energy lab

Pre-sales/Engineering Tools

LG provides a variety of software to support THERMA V for all customers including designers, installers, and end users.

1. LG THERMA V SELECTOR

The LG THERMA V Selector is a mobile application for designers, installers and end users, which provide various real-life simulations. An energy simulation can quickly indicate energy consumption and cost as well as CO_2 emission values that can be vastly reduced from conventional heating systems using minimal input values.
With both model selection and energy simulation tools, quick and accurate selection is made possible with detailed input values such as desired system configuration, required heating and domestic hot water (DHW) load, which will calculate payback, result in a faster energy simulation and generate cost comparisons. Sound level can also be calculated through simulations based on the installation environment.

2. LATS THERMA V

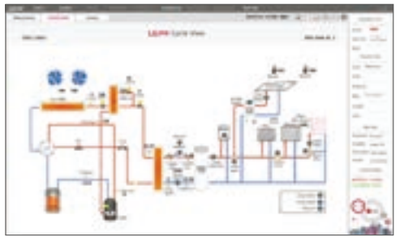
LATS THERMA V IS a PC-based model selection program of LG THERMA V products, enabling an accurate and quick selection of the most suitable model in each end-user environment.
In addition to model selection, faster energy simulation and cost comparison to other system is possible. Furthermore, customer is easily able to simulate payback comparing conventional system such as gas boiler, electric boiler by using LATS THERMA V.

* LATS THERMA V is available on the LG Partner portal.

3. LGMV

LGMV is a useful engineering tool that monitors THERMA V's real-time refrigerant and water cycle. It assists installers with effective and efficient start-up and commissioning after the THERMA V installation. LGMV enables service/field engineers to detect the errors and troubleshooting for fast and reliable problem solving.

* LGMV is available on the LG Partner portal.



THERMA V™

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_2 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_2 emission, and payback result.
- 'Sound Simulation' is to see the calculated sound result.

Model Selection & Energy Simulation

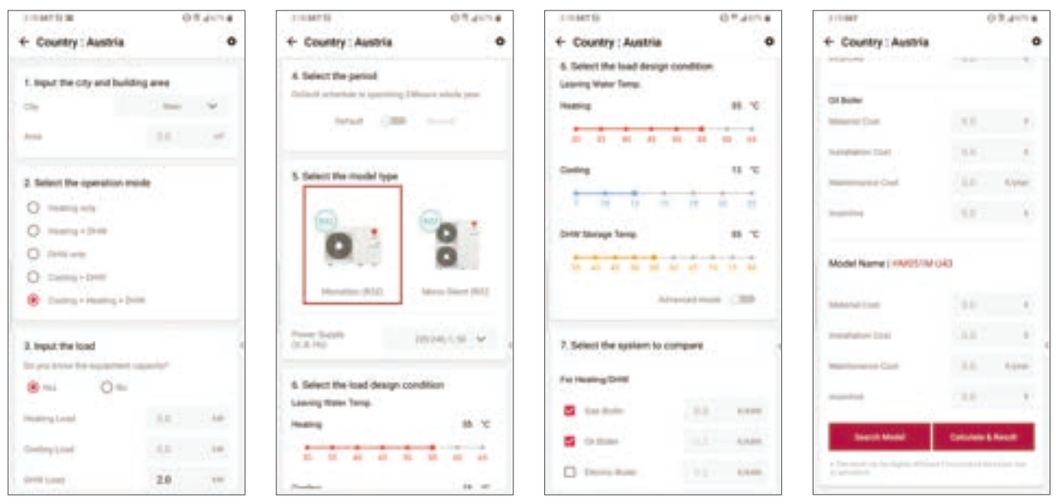
Before choosing an air to water heat pump, many customers wonder how much energy costs can be saved compared to conventional heating systems, and how to select a product with the right capacity for the home. The LG THERMA V selector allows you to calculate annual energy costs and payback periods as well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



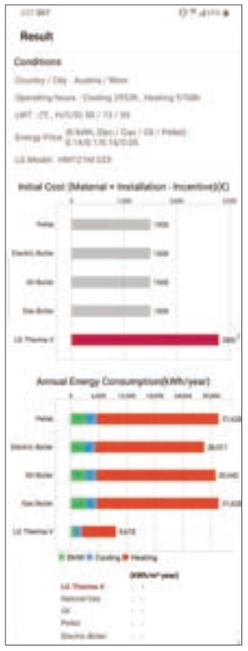
THERMA V SELECTOR

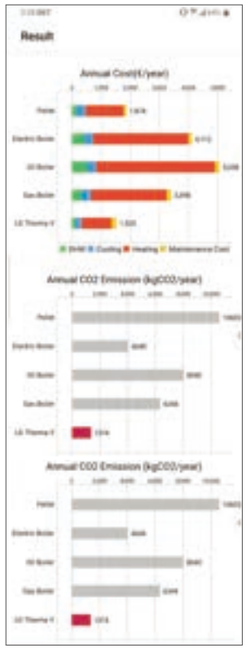
Result & Report

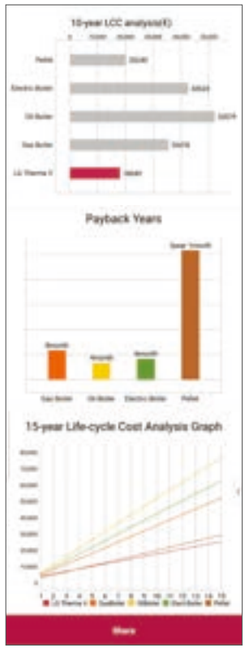
After the simulation, analysis results including initial investment cost, annual energy consumption, and payback period can be checked in the form of various graphs. Moreover, this report is provided in PDF format and can be shared by e-mail and messenger.

Result

- Simulation conditions summary
- Initial cost
- Annual energy consumption
- Annual cost
- Annual CO_2 emission
- 10-year LCC analysis
- 10-year LCC analysis
- Payback year
- 15-year LCC analysis graph

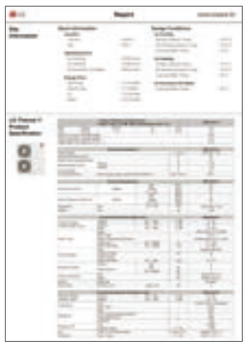


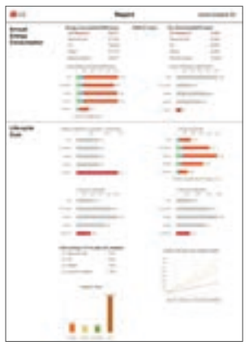


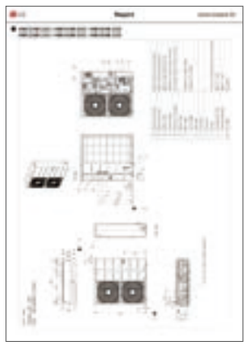


Report

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



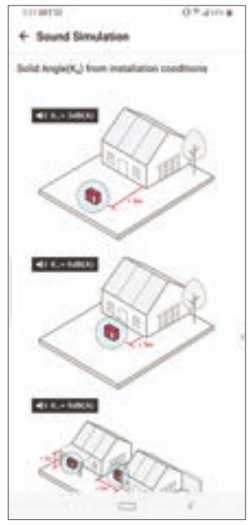


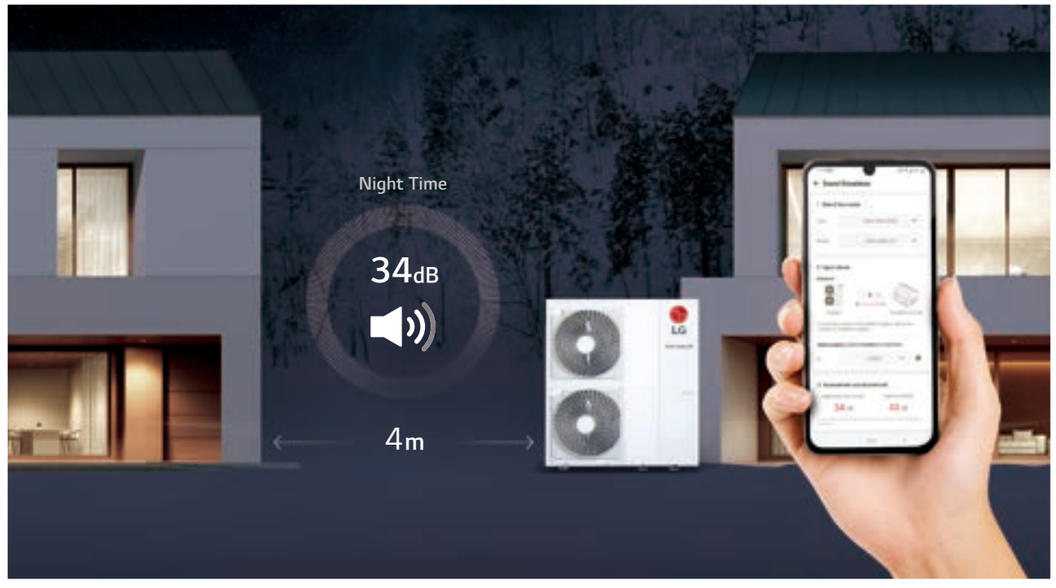


Sound Simulation

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

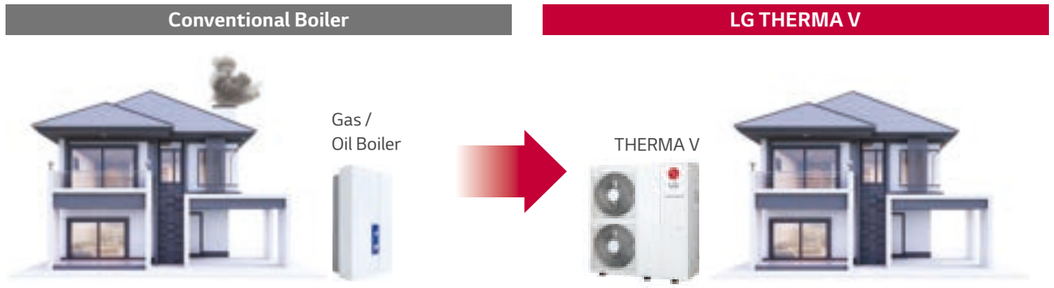
LG Electronics leads the way in heat pump technology

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?

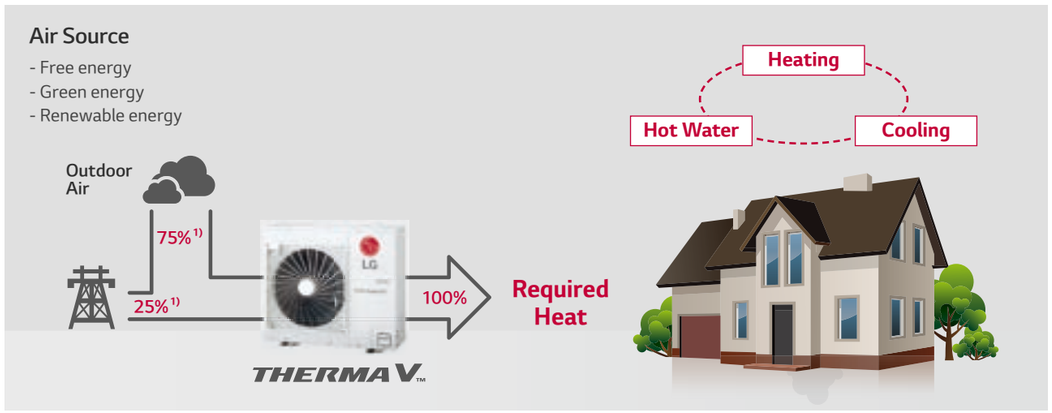
Modern Technology to Replace Conventional Boilers

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.



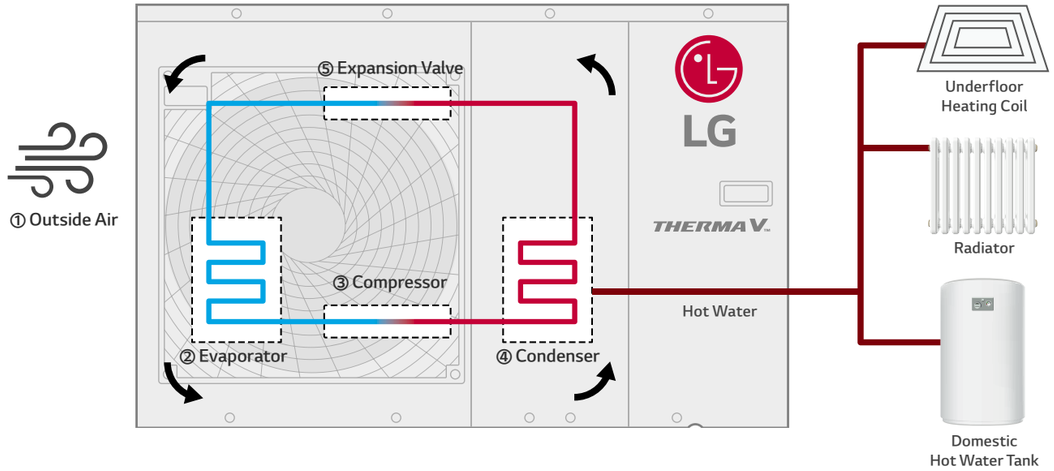
Modern Technology for Renewable Energy

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% [1] 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.

R32

- 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.

Space Heating

The wide span THERMA V systems with high efficiency can cover heating loads of various types of houses.

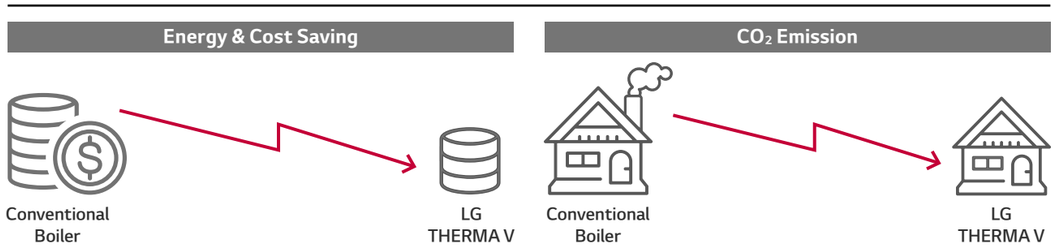
Domestic Hot Water

As the hot water efficiency becomes more and more important, THERMA V can provide an optimized solution for this.

Space Cooling

THERMA V is a single device that can also provide a cooling solution besides the heating and hot water provided by boilers.

High Efficiency and Low CO_2 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

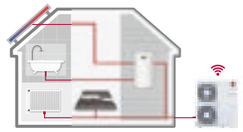
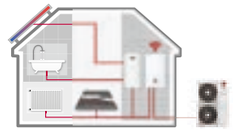
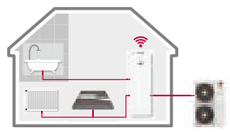
For Installers & Designers

- 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

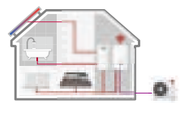
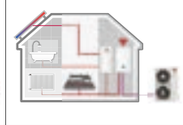
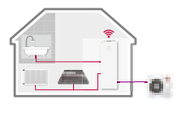
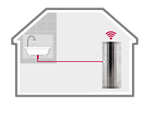
- Energy saving by utilizing renewable energy and high efficiency equipment
- Multiple solutions with space heating, cooling and DHW supply
- Low repair cost and high reliability with durable equipment
- Various user convenient functions
- No disturbing to neighbors with low noise
- Convenient control 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+++ / 55°C A++	Space Heating 35°C A+++ / 55°C A+ DHW Heating 1) A+ 5/7/9 kW, A 12/14/16 kW 2) A+ 5/7/9 kW	Space Heating 35°C A+++ / 55°C A++	Space Heating 35°C A+++ / 55°C A++ DHW Heating Profile L A+
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	- Don't want refrigerant piping work - Using existing facilities (Conventional boiler)			
		- Saving installation and commissioning time (All-in-one & No ref. piping work) - No indoor unit (No space for IDU)		- Saving installation and commissioning time (No ref. piping work)	- Saving installation and commissioning time (All-in-one & No ref. piping work) - Where mechanical room is very limited - Saving installation space for buffer tank and expansion tank
	End-User	- Don't want to take the potential risk of refrigerant leak - Easy and intuitive controls - Reliable operation and long lifetime		- Low operation cost - Remote control by smartphone - Control integration between boiler and THERMA V	- Quiet operation
					- Necessity to install indoor unit in living space due to Insufficient machine room space
LG Approach		- No refrigerant piping work - New interface (standard III Remote controller) - Interlocking operation with 3rd party boiler		- High energy efficiency - LG ThinQ Wi-Fi Control solution - Easy commissioning by PC tool (LG heating configurator)	- Low noise mode operation with schedule setting - High corrosion resistance heat exchanger
		- All in one concept		- Hydrosplit concept	- All in one concept (Integrated DHW tank with indoor unit) - Hydrosplit concept - Sophisticated and harmonious exterior of indoor unit - Provides an option to integrate buffer tank and DHW expansion tank into indoor units
Benefit		- Multiple solution (heating, cooling and DHW supply) - Energy saving by utilizing renewable energy and high efficient equipment - Economic support by incentive program - Simple replacement of existing boiler while maintaining the existing heating system			- Free of potential risk of refrigerant leak - Quick & easy installation and commissioning - Hybrid operation with existing facilities
		- Saving mechanical room space			- Use of valuable machine room space for private purpose

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
					
Line-up	R32 Split Hydro Box	R410A Split Hydro Box	R32 Split IWT	High Temperature	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
					
Application	Heating, Cooling and DHW		Heating, Cooling and DHW	Heating and DHW	DHW
Energy Label	Space Heating 35°C A+++ / 55°C A++	Space Heating 35°C A+++ / 55°C A++	Space Heating 35°C A+++ / 55°C A+ DHW Heating Profile L A+	Space Heating 35°C A+ / 55°C A+	DHW Heating 200L Profile L A+, 270L Profile L A+
Outdoor Air	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C	-5 ~ 48°C
Leaving Water	15 ~ 65°C	15 ~ 57°C	15 ~ 65°C	25 ~ 80°C	35 ~ 65°C
Designer & Installer	- 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)		- Saving installation and commissioning time (All-in-one) - Where mechanical room is very limited - Saving installation space for buffer tank and expansion tank - Using existing facilities (Conventional boiler)	- Solution for poorly insulated or old house - High DHW temperature to meet sanitary water regulation	- Short installation time - Convenience to check the operation - Convenient maintenance
End-User	- Don't want to take the potential freezing risk at exposed water piping - Quiet operation - Remote control by smartphone		- Low operation cost - Easy and intuitive controls - Reliable operation and long lifetime		- Low operation cost - Sufficient warm water - Quite operation - Easy control
	- Control integration between boiler and THERMA V		- Necessity to install indoor unit in living space due to Insufficient machine room space - Control integration between boiler and THERMA V	- Using existing facilities (Old radiators)	
	- High energy efficiency - New interface (standard III Remote controller) - High corrosion resistance heat exchanger		- Low noise mode operation with schedule setting - LG ThinQ Wi-Fi Control solution - Easy commissioning by PC tool (LG heating configurator)		- Stylish design - Top class energy efficiency - Powerful heating performance - Low noise operation - Smart control
	- Placing hydronic components into indoor unit and water piping in the mechanical room - Interlocking operation with 3rd party boiler		- All in one concept (Integrated DHW tank with indoor unit) - Sophisticated and harmonious exterior of indoor unit - Provides an option to integrate buffer tank and DHW expansion tank into indoor units - Interlocking operation with 3rd party boiler	- Max. 80°C LWT by Cascade 2 stage compression (R410A - R134a) - Suitable for old radiator	
	- Free of potential freezing risk against exposed water piping even long black out - Energy saving by utilizing renewable energy and high efficient equipment - Quick & easy installation and commissioning - Economic support by incentive program				- Interior with stylish design - Energy saving with inverter technology - Faster and warmer water heating - Low noise - Smart control with Wi-Fi by LG ThinQ
	- Multiple solution (heating, cooling and DHW supply) - Hybrid operation with existing facilities		- Multiple solution (heating, cooling and DHW supply) - Hybrid operation with existing facilities - Use of valuable machine room space for private purpose	- Multiple solution (heating and DHW supply) - Obtaining 80°C high LWT without supplementary heater - Simple replacement of existing boiler	- Quick and easy installation - Easy check and monitoring - LG compressor with 10 years warranty

LINE-UP OVERVIEW

Refrigerant	Type		Line-up	Unit	Power Supply [1]	Appearance	5 kW	7 kW	9 kW	Appearance	12 kW	14 kW	16 kW
R32	Monobloc		**R32 Monobloc S** P.38	Set	1Ø / 230V		HM051MR U44	HM071MR U44	HM091MR U44		HM121MR U34	HM141MR U34	HM161MR U34
					3Ø / 400V						HM123MR U34	HM143MR U34	HM163MR U34
			R32 Monobloc P.54	Set	1Ø / 230V		HM051M U43	HM071M U43	HM091M U43		HM121M U33	HM141M U33	HM161M U33
					3Ø / 400V						HM123M U33	HM143M U33	HM163M U33
	Hydro split	Hydro Box	**R32 Hydrosplit Hydro Box** P.70	Outdoor Unit	1Ø / 230V						HU121MRB U30	HU141MRB U30	HU161MRB U30
					3Ø / 400V						HU123MRB U30	HU143MRB U30	HU163MRB U30
				Indoor Unit	Common						HN1600MC NK1		
		IWT	**R32 Hydrosplit IWT** P.80	Outdoor Unit	1Ø / 230V						HU121MRB U30	HU141MRB U30	HU161MRB U30
					3Ø / 400V						HU123MRB U30	HU143MRB U30	HU163MRB U30
				Indoor Unit	Common						HN1616Y NB1		
	Split	Hydro Box	**R32 Split Hydro Box** P.90	Outdoor Unit	1Ø / 230V		HU051MR U44	HU071MR U44	HU091MR U44				
				Indoor Unit			HN091MR NK5		HN091MR NK5				
		IWT	**R32 Split IWT** P.98	Outdoor Unit	1Ø / 230V		HU051MR U44	HU071MR U44	HU091MR U44				
				Indoor Unit			HN0916T NB1		HN0916T NB1				
R410A		Hydro Box	**R410A Split Hydro Box** P.108	Outdoor Unit	1Ø / 230V						HU121MA U33	HU141MA U33	HU161MA U33
				Indoor Unit							HN1616M NK5		
				Outdoor Unit	3Ø / 400V						HU123MA U33	HU143MA U33	HU163MA U33
				Indoor Unit							HN1636M NK5		
R410A + R134a		Floor standing	**High Temperature** P.118	Outdoor Unit	1Ø / 230V								HU161HA U33
				Indoor Unit									HN1610H NK3

1) The power supply is shown based on the outdoor unit.

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

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

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 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 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 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.

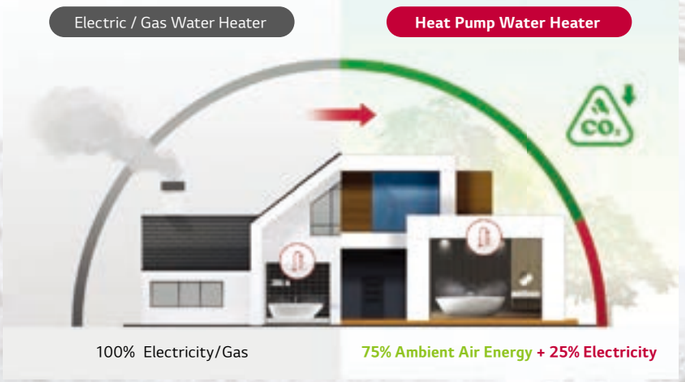
Line-up	Capacity (kW)	5.5	7.0	9.0	12.0	14.0	16.0
High Temperature	1Ø 230V						●
	3Ø 400V						

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

LINE-UP INTRODUCTION

What is a Heat Pump Water Heater?

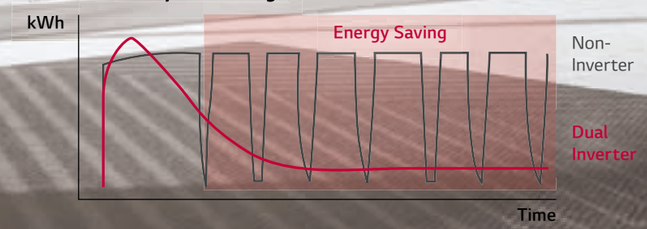
With an increasing emphasis on eco-conscious energy solutions, the LG Heat Pump Water Heater obtains 75% of its energy from outside air. This renewable energy source converts low temperature to high temperature using two heat exchangers, a condenser and an evaporator.



* 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

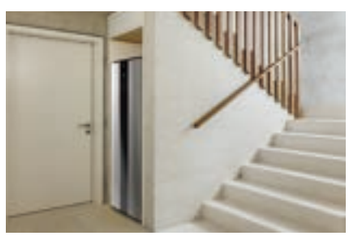
Smart Control
- Wi-Fi Embedded
- Smart Diagnosis
- Easy Check & Monitoring

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.

THERMA V™
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

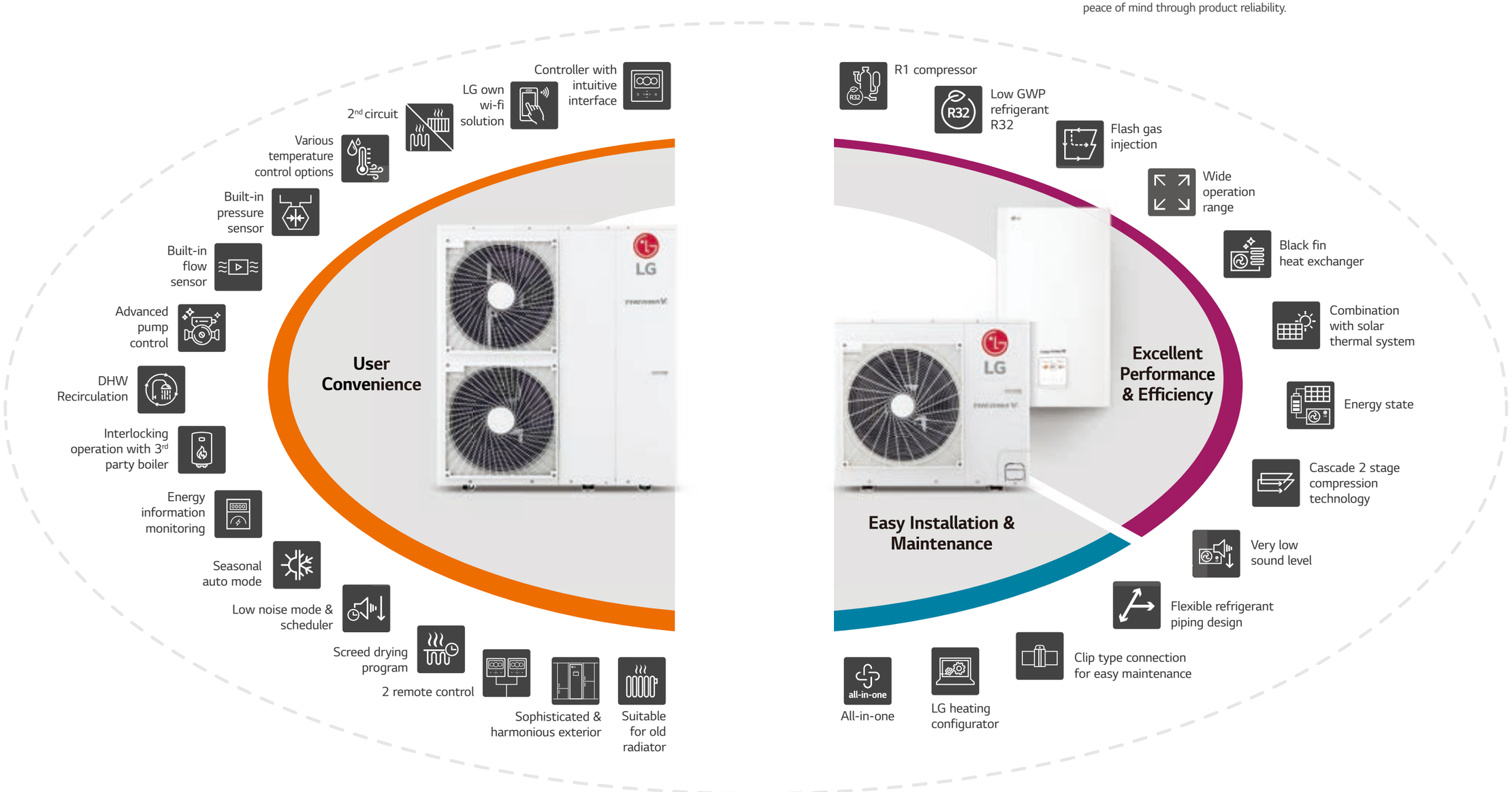
LG THERMA V is equipped with various user convenience functions, which allow for enhanced comfort and control. The text-based user-friendly interface on the remote control allows for optimized user intuition and the unit's wide connectivity also provide user control convenience.

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

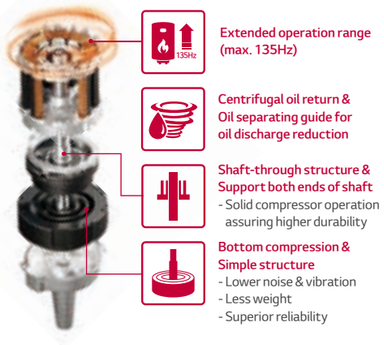
LG THERMA V offers installation and design flexibility to professional installers. The LG Heating Configurator also allows professionals to save time during commissioning. During maintenance, the clip type connection allows fast and easy disassembly of the components.



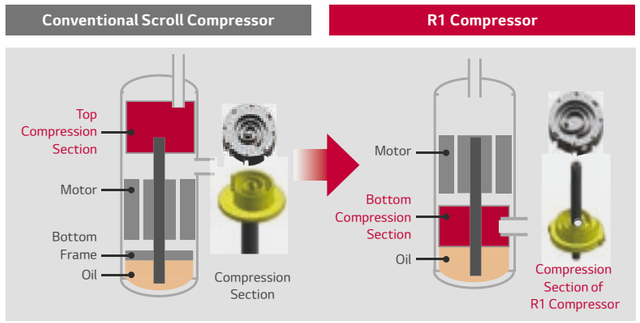
EXCELLENT PERFORMANCE & EFFICIENCY

R1 Compressor™ LG's Revolutionary Technology

R1 Compressor™ technology offers advanced efficiency, reliability and operational range due in part to the enhanced tilting motion of the scroll.



- **Extended operation range (max. 135Hz)**
- **Centrifugal oil return & Oil separating guide for oil discharge reduction**
- **Shaft-through structure & Support both ends of shaft**
  - Solid compressor operation assuring higher durability
- **Bottom compression & Simple structure**
  - Lower noise & vibration
  - Less weight
  - Superior reliability



Black Fin Heat Exchanger

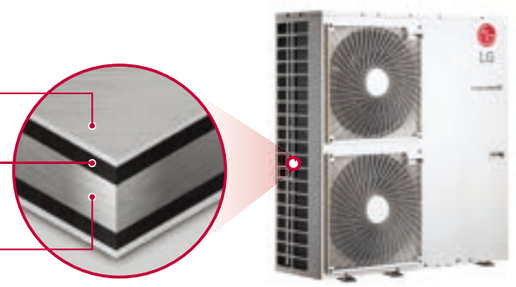
The THERMA V line-up includes a heat exchanger enhanced by black coating with enhanced epoxy resin for strong protection. This improvement in durability prolongs the product's lifespan and lowers both the operational and maintenance costs.

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.

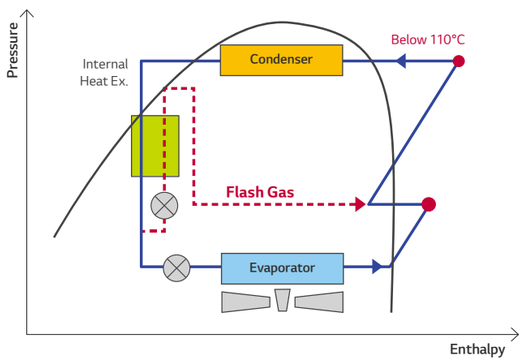
Aluminum Fin



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

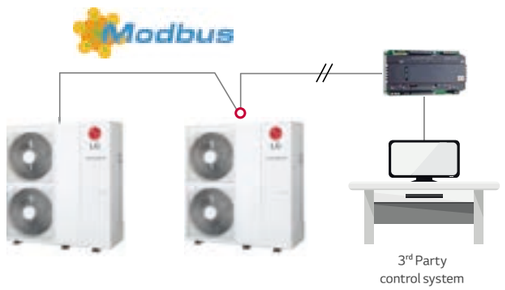
Flash Gas Injection

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 us 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

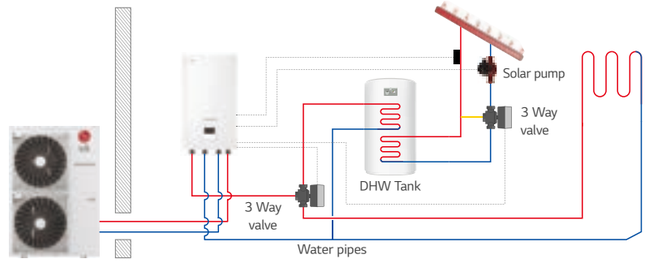
R32 efficiently works even in small volume compared to existing R410A refrigerant, which decreases the potential hazard of global warming. Furthermore, R32 refrigerant is easy to recycle thanks to its single composition.

Description	R32	R410A
Low Global Warming Potential (GWP)	675 [1]	2088 [1]
Lower Amount of Gas Charge	Less (20% [2])	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 Hydrosplit Hydro Box, R32 Split Hydro Box.

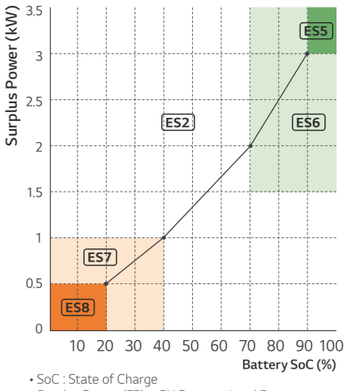
Energy State

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)		Modbus Mode (ESS)		
	Operation Mode	Power Supply Status	Operation Mode	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℃, DHW : +5℃)
ES4*	On Command				Changed target temperature higher (DHW : 80℃)
ES5**			On Command (step2)		Changed target temperature higher (heating : +5℃, cooling : -5℃, DHW : +30℃)
ES6**			On Recommend (step1)		Changed target temperature higher (heating : +2℃, cooling : -2℃, DHW : +10℃)
ES7**			Energy Saving		Changed target temperature lower (heating : -2℃, cooling : +2℃)
ES8**			Super Energy Saving		Changed target temperature lower (heating : -5℃, cooling : +5℃)

* 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.

[Area of energy state for ESS]



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

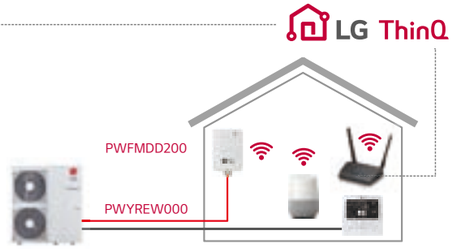
USER CONVENIENCE

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.

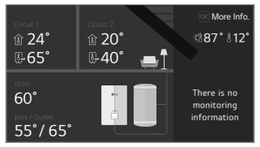
Mandatory accessory :
PWFMDD200 (LG Wi-Fi Modem)
PWYREW000 (10m extension connect cable in between THERMA V and LG Wi-Fi Modem) could be required depends on installation condition.

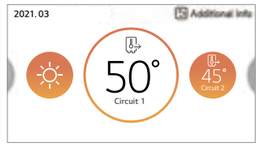
* Search "LG ThinQ" on Google playstore or App store, then download the app.
* Google home voice is supported in United Kingdom, France, Germany, Spain, Italy, Austria, Ireland, Portugal.



Intuitive Control

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



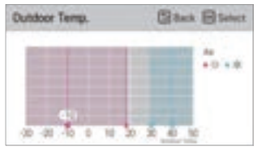


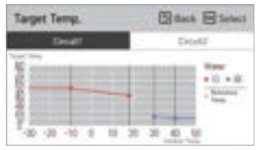
- Premium design (4.3 inch color LCD)
- User friendly interface (simple graphic, icon & text)
- Convenient functions (easy schedule setting & installer setting)
- Energy monitoring without meter interface (estimated power consumption)

* Instant power consumption and cumulative power consumption

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.

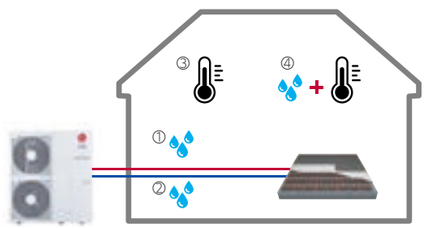




Various Temperature Control Options

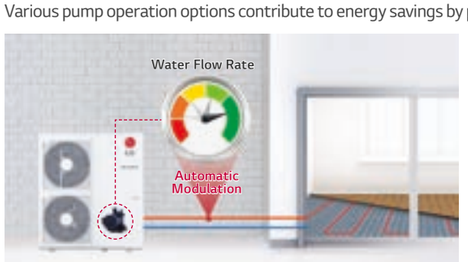
Various temperature control options are possible for the user's comfort and convenience, to include the newly added simultaneous control option (room and water temperature).

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



Advanced Pump Control Options

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



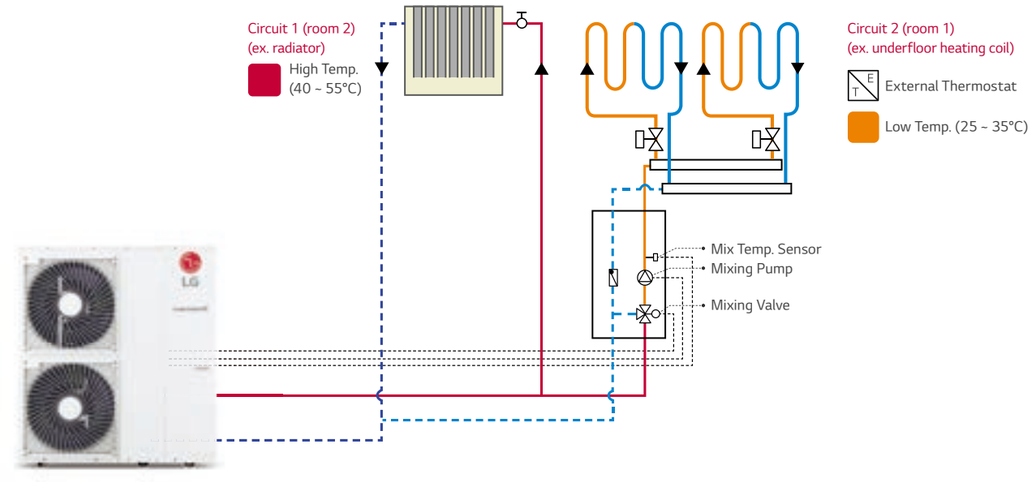
Options	Description	Water Flow Change as per load condition
Pump Capacity	It operates with the capacity set for the water pump. (range 10 ~ 100%)	No
Fixed Flow Rate	Automatically controlled to maintain the set flow rate. (5, 7, 9kW range : 8 ~ 26 LPM / 12, 14, 16kW range : 17 ~ 46 LPM)	No
Fixed ΔT*	Automatically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

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

2nd Circuit

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

2nd Circuit Diagram



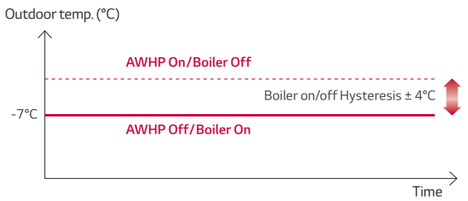
Interlocking Operation with 3rd Party Boiler

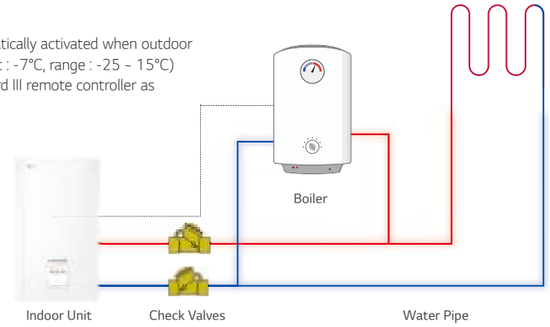
3rd Party boiler such as oil, gas or electric boiler can be activated automatically or manually by the THERMA V controller.

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℃, range : -25 ~ 15℃)
- Manual control mode : User can manually operate 3rd party boiler via Standard III remote controller as needed.

Auto Control Mode

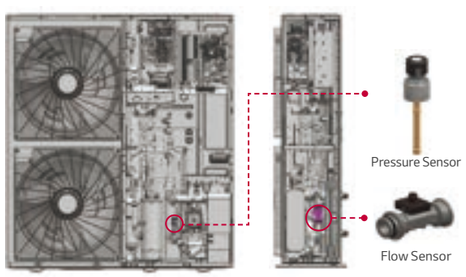


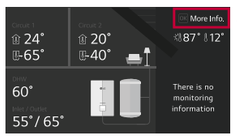


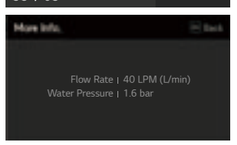
* 3rd Party boiler should have a water pump integrated with it.

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

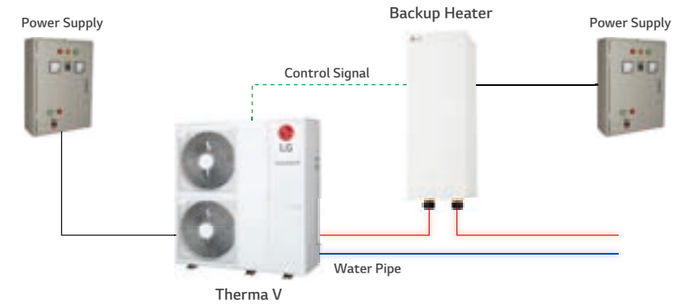
THERMA V

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



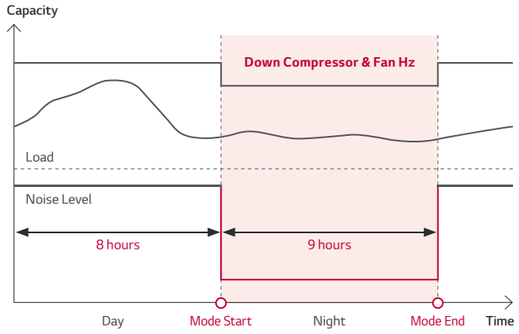
Installer setting menu

Monitoring view

- Instant power consumption
- Cumulative Power consumption

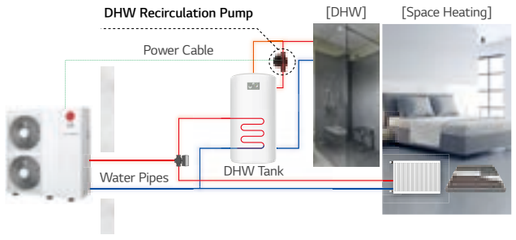
Low Noise Mode & Scheduler

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

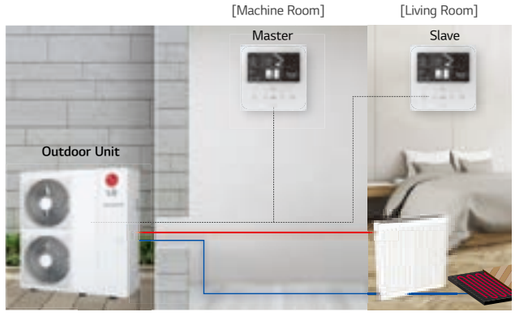
The DHW recirculation pump can be connected to the Therma V and controlled according to the schedule function. DHW recirculation function helps maintain the hot water temperature inside the pipe even when hot water is not in use and prevents Legionella bacteria.



2 Remote Control

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

System Diagram

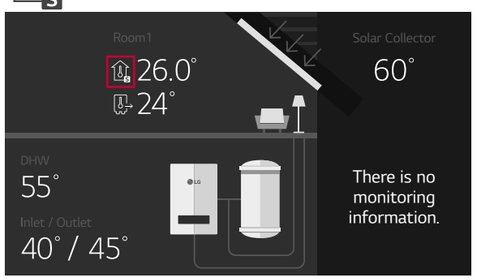


* Master is for the installation setting.
* Slave is for user setting.

Standard III Controller Interface

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

: Room air temperature sensed by slave remote controller



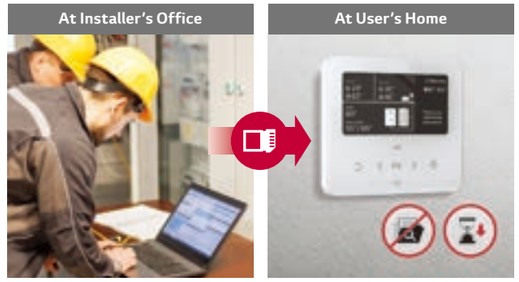
THERMA V

EASY INSTALLATION & MAINTENANCE

LG Heating Configurator

Easy Installation Setting and Commissioning

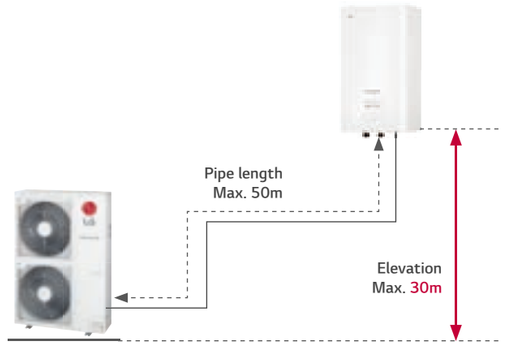
- Based on installation site information, installers can prepare presetting with the LG heating configurator and save data into a memory card from the office.
- Once on site, installers can simply insert memory card into the back of the remote control to activate configuration data.



Flexible Refrigerant Piping Design

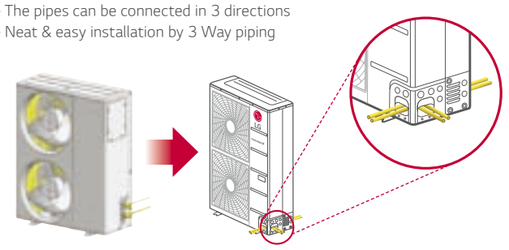
Long piping length and 3 Way piping enable flexible design and easy installation.

Piping Capabilities



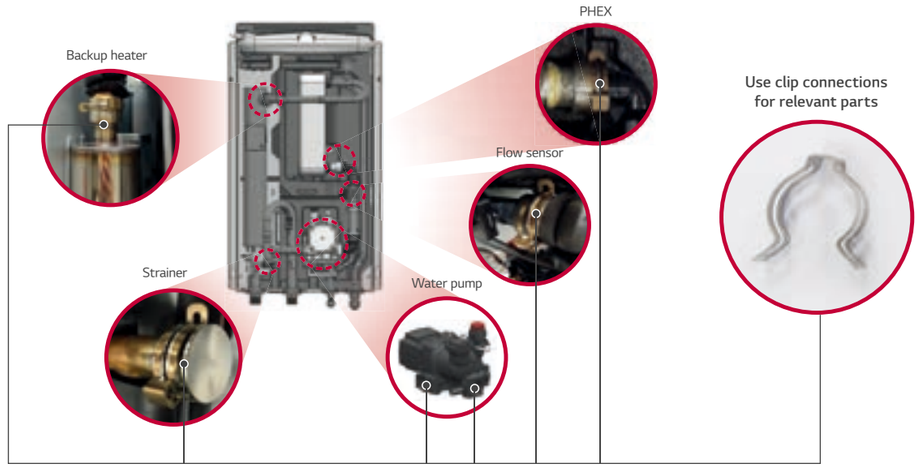
3 Way Piping

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

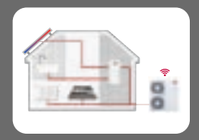


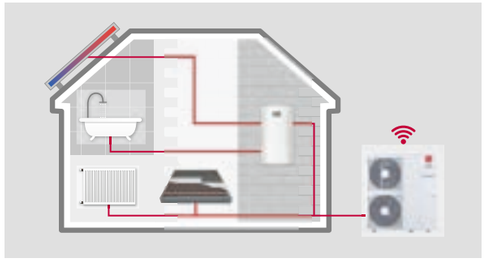
Clip Type Connection for Easy Maintenance

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

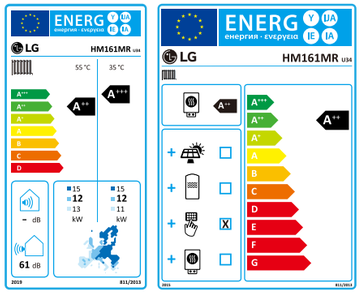


THERMA V™
PRODUCTS





Energy Label



* 16kW 1Ø model.
* A+++ to D scale.

Excellent Performance & Efficiency

- R1 compressor
- R32 refrigerant
- Flash gas injection
- Wide operation range
- Black Fin heat exchanger
- Solar thermal
- Energy state

User Convenience

- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode
- Advanced pump control options
- Flow sensor
- Pressure sensor
- 2 Remote Control
- DHW Recirculation

Easy Installation & Maintenance

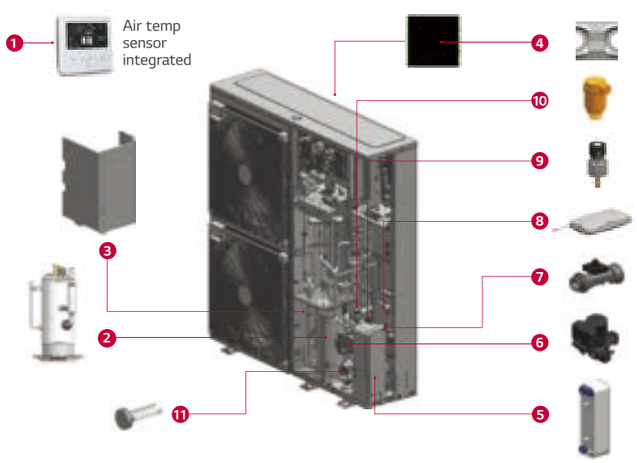
- All-in-one
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 28 ~ 35.

R32 Monobloc S Introduction

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.

Key Components

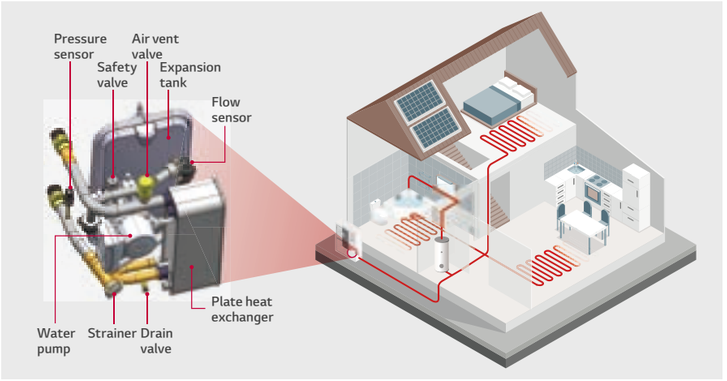


1. Standard III remote controller (separately provided)
2. R1 Compressor
3. Compressor noise shield
4. Black Fin heat exchanger (ref/air)
5. Plate type heat exchanger (ref/water)
6. Water pump (GRUNDFOS)
7. Water flow sensor
8. Expansion vessel (8ℓ)
9. Water pressure sensor
10. Air vent valve
11. Strainer

Monobloc Concept

R32 Monobloc S is an all-in-one concept and reduced weight allows for quicker and easier installations.

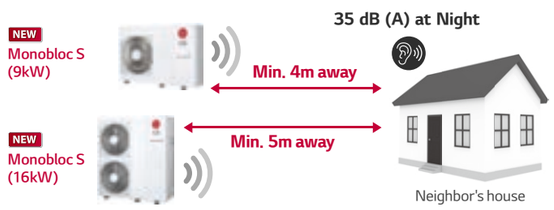
- Additional hydronic components are included in the package
- Easier and quicker installation without refrigerant piping work

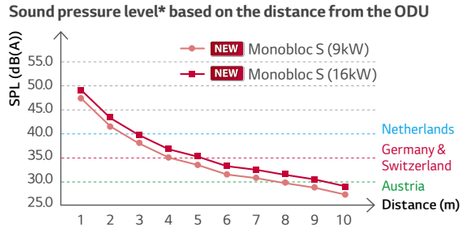


Reduced Noise Level

R32 Monobloc S can be installed at the minimum of 4m away (based on 9kW model & Low noise mode) from neighboring houses while complying with German noise regulation.

Description		Germany	Austria	Switzerland	Netherlands
Sound Pressure Threshold	Day Time	50 dB (A) (06:00 ~ 22:00)	40 dB (A) (06:00 ~ 19:00)	40 dB (A) (07:00 ~ 19:00)	45 dB (A) (07:00 ~ 19:00)
	Evening	-	35 dB (A) (19:00 ~ 22:00)	-	-
	Night Time	35 dB (A) (22:00 ~ 06:00)	30 dB (A) (22:00 ~ 06:00)	35 dB (A) (19:00 ~ 07:00)	40 dB (A) (19:00 ~ 07:00)





* Sound Pressure Level is converted from Sound Power Level of Low Noise Mode based on Tonality penalty of 0dB and installation in free-field.

PRODUCT SPECIFICATION

R32 Monobloc S

HM051MR U44
HM071MR U44
HM091MR U44

011-1W0471 EHPA for Germany

R1 Compressor™ Black Fin LG ThinQ

Features

- All-in-one outdoor unit
- SCOP up to 4.55 (Average climate / Low temp. application) : A+++
  SCOP up to 3.20 (Average climate / Mid temp. application) : A++
- COP up to 4.70 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -15°C OAT (@ LWT 35°C)
- Low sound level allowing high installation location flexibility
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Improved heat exchanger design (New Black Fin)
- LG ThinQ
- KEYMARK / EHPA (for Germany) / MCS / EUROVENT certification

* EHPA (for Austria and Switzerland) label under development

Model Line-up

Capacity	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM051MR U44	HM071MR U44	HM091MR U44

Seasonal Energy

Description			Unit	HM051MR U44	HM071MR U44	HM091MR U44
Space Heating (According to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.46	4.48	4.55
		Seasonal Space Heating Efficiency (η_s)	%	175	176	179
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.20	3.20	3.20
		Seasonal Space Heating Efficiency (η_s)	%	125	125	125
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++

Nominal Capacity and Nominal Power Input

Description		OAT[1] (DB)	LWT[2] (DB)	Unit	HM051MR U44	HM071MR U44	HM091MR U44
Nominal Capacity	Heating	7°C	35°C	kW	5.50	7.00	9.00
		7°C	55°C		5.50	5.50	5.50
		2°C	35°C		4.40	5.60	6.80
	Cooling	35°C	18°C		5.50	7.00	9.00
		35°C	7°C		5.50	7.00	9.00
Nominal Power Input	Heating	7°C	35°C	kW	1.17	1.49	1.96
		7°C	55°C		2.04	2.04	2.04
		2°C	35°C		1.22	1.58	1.94
	Cooling	35°C	18°C		1.17	1.56	2.14
		35°C	7°C		1.67	2.19	2.90
COP	Heating	7°C	35°C	W/W	4.70	4.70	4.60
		7°C	55°C		2.70	2.70	2.70
		2°C	35°C		3.60	3.55	3.50
EER	Cooling	35°C	18°C	W/W	4.70	4.50	4.20
		35°C	7°C		3.30	3.20	3.10

1) OAT : Outdoor Air Temperature
2) LWT : Leaving Water Temperature

Product Specification

Technical Specification				Unit	HM051MR U44	HM071MR U44	HM091MR U44
Water Side	Operation Range (leaving water temperature)	Heating	Min. ~ Max.	°C DB	15 ~ 65		
		Cooling			5 ~ 27 (16 ~ 27)[1]		
		DHW			15 ~ 80[2]		
	Piping Connections	Water Circuit	Inlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)		
			Outlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)		
	Rated Water Flow Rate at LWT 35°C			LPM	15.8	20.1	25.9
Refrigerant Side	Operation Range (outdoor temperature)	Heating	Min ~ Max	°C DB	-25 ~ 35		
		Cooling			5 ~ 48		
	Compressor	Quantity		EA	1		
		Type		-	Hermetic Sealed Scroll		
	Refrigerant	Type		-	R32		
		GWP (Global Warming Potential)		-	675		
		Precharged Amount		g	1,400		
		t-CO2 eq		-	0.945		
Sound Power Level		Heating	Rated	dB(A)	57		
			Low Noise Mode		54	55	
Sound Pressure Level (at 1m)		Heating	Rated	dB(A)	35		
			Low Noise Mode		32	33	
Dimensions		Unit	W × H × D	mm	1,239 × 834 × 330		
Weight		Unit		kg	89.0		
Exterior		Color / RAL Code		-	Warm Gray / RAL 7044		
Power Supply		Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50		
		Rated Running Current	Heating	A	5.2	6.6	8.7
			Cooling	A	5.2	6.9	9.5
		Recommended Circuit Breaker		A	16	20	25
Wiring Connections		Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C		

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are accordance with EN14511 and reflect ErP testing conditions. Above gives the declared values at rated conditions acc. ErP regulation.
   • Rated running current : Outdoor Temp. 7°C DB / 6°CWB, LWT 35°C
5. This product contains Fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HM051MR U44

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	5.50	5.50	5.50	5.50	-	-	-	-
-20°C DB	5.50	5.50	5.50	5.50	5.23	-	-	-
-15°C DB	5.50	5.50	5.50	5.50	5.23	5.23	-	-
-7°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	-
-4°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
-2°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
2°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
7°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
10°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
15°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
18°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
20°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50

HM071MR U44

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	5.85	5.85	5.85	5.85	-	-	-	-
-20°C DB	6.43	6.43	6.43	6.43	6.10	-	-	-
-15°C DB	7.00	7.00	7.00	7.00	6.65	6.65	-	-
-7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
-4°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
-2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
10°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
15°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
18°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
20°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

HM091MR U44

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	6.20	6.20	6.20	6.20	-	-	-	-
-20°C DB	7.60	7.60	7.60	7.60	7.22	-	-	-
-15°C DB	9.00	9.00	9.00	9.00	8.55	8.55	-	-
-7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	-
-4°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
-2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
10°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
15°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
18°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
20°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HM051MR U44

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50
20°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50
30°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50
40°C DB	5.29	5.32	5.36	5.38	5.41	5.43	5.45
45°C DB	5.09	5.15	5.21	5.25	5.31	5.36	5.40

HM071MR U44

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00
20°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00
30°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00
40°C DB	6.36	6.45	6.55	6.61	6.71	6.77	6.84
45°C DB	5.71	5.82	5.92	5.99	6.10	6.17	6.24

HM091MR U44

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00
20°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00
30°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00
40°C DB	7.66	7.66	7.65	7.65	7.65	7.65	7.65
45°C DB	6.31	6.35	6.39	6.42	6.45	6.48	6.51

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

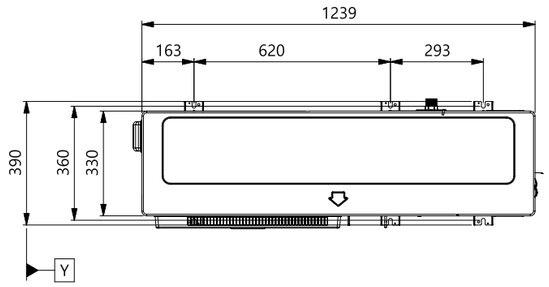
PRODUCT SPECIFICATION

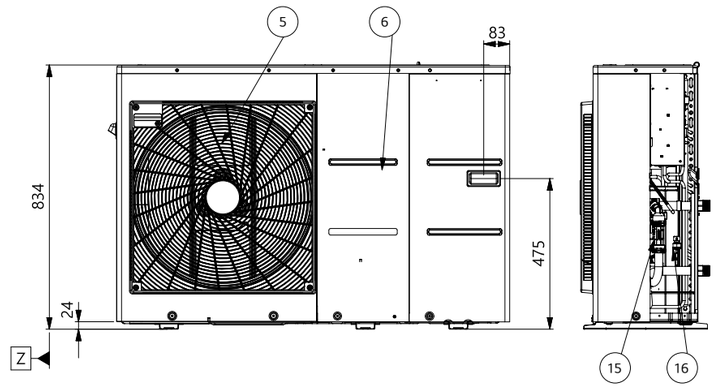
Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM051MR U44	HM071MR U44	HM091MR U44

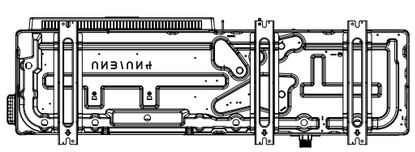
HM051MR U44 / HM071MR U44 / HM091MR U44

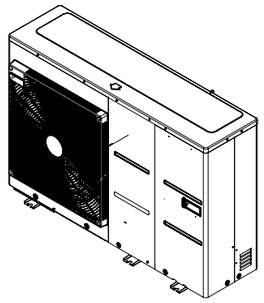
[Unit : mm]



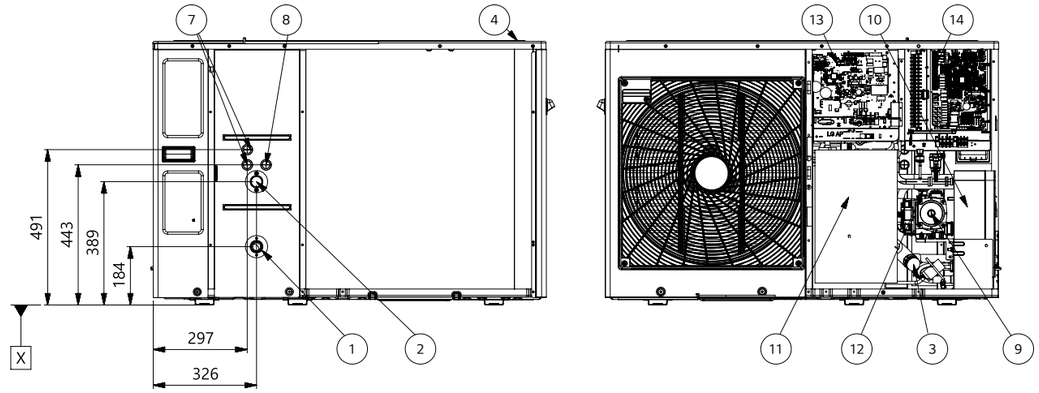


Side View





3D View



No.	Part Name	Description
1	Entering water pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving water pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Strainer	Filtering and stacking particles inside circulating water
4	Top cover	-
5	Front Panel	-
6	Side Panel	-
7	Low Voltage	Communication cable hole
8	UNIT Power	Power cable hole
9	Water Pump	GRUNDFOS UPM3K 20-75 CHBL
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Compressor shield panel	-
12	Safety valve	Open at water pressure 3 bar
13	Indoor Control Box	Indoor PCB and terminal blocks
14	Outdoor Control Box	Outdoor PCB and terminal blocks
15	Flow sensor	SIKA VVX20 5-80 LPM
16	Pressure Sensor	SENSATA 2HMP3-05W 0-2MPa

PRODUCT SPECIFICATION

R32 Monobloc S

HM121MR U34
HM141MR U34
HM161MR U34
HM123MR U34
HM143MR U34
HM163MR U34

011-1W0470 EHPA for Germany (3Ø model only)

R32 65°C A+++ R1 Compressor™ Black Fin LG ThinQ

Features

- All-in-one outdoor unit
- SCOP up to 4.67 (Average climate / Low temp. application) : A+++
  SCOP up to 3.47 (Average climate / Mid temp. application) : A++
- COP up to 4.90 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -15°C OAT (@ LWT 35°C, except for 16kW model)
- Low sound level allowing high installation location flexibility
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Improved heat exchanger design (New Black Fin)
- LG ThinQ
- KEYMARK / EHPA (for Germany, 3Ø model only) / MCS / EUROVENT certification

* EHPA (for Austria and Switzerland) label under development

Model Line-up

Capacity	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM121MR U34	HM141MR U34	HM161MR U34
3 Phase Model 380 ~ 415V, 3Ø, 50Hz		HM123MR U34	HM143MR U34	HM163MR U34

Seasonal Energy

Description			Unit	HM121MR U34 (1Ø) / HM123MR U34 (3Ø)	HM141MR U34 (1Ø) / HM143MR U34 (3Ø)	HM161MR U34 (1Ø) / HM163MR U34 (3Ø)
Space Heating (According to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.67	4.62	4.53
		Seasonal Space Heating Efficiency (η_s)	%	184	182	178
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.47	3.46	3.45
		Seasonal Space Heating Efficiency (η_s)	%	136	135	135
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++

Nominal Capacity and Nominal Power Input

Description		OAT[1] (DB)	LWT[2] (DB)	Unit	HM121MR U34 (1Ø) / HM123MR U34 (3Ø)	HM141MR U34 (1Ø) / HM143MR U34 (3Ø)	HM161MR U34 (1Ø) / HM163MR U34 (3Ø)
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		11.00	11.50	12.00
		2°C	35°C		11.00	12.00	13.80
	Cooling	35°C	18°C		12.00	14.00	16.00
		35°C	7°C		12.00	14.00	16.00
Nominal Power Input	Heating	7°C	35°C	kW	2.45	2.92	3.40
		7°C	55°C		3.79	4.04	4.29
		2°C	35°C		3.01	3.31	3.83
	Cooling	35°C	18°C		2.53	3.26	4.00
		35°C	7°C		3.64	4.24	5.16
COP	Heating	7°C	35°C	W/W	4.90	4.80	4.70
		7°C	55°C		2.90	2.85	2.80
		2°C	35°C		3.65	3.63	3.60
EER	Cooling	35°C	18°C	W/W	4.75	4.30	4.00
		35°C	7°C		3.30	3.30	3.10

1) OAT : Outdoor Air Temperature
2) LWT : Leaving Water Temperature

Product Specification

Technical Specification				Unit	HM121MR U34	HM141MR U34	HM161MR U34	HM123MR U34	HM143MR U34	HM163MR U34
Water Side	Operation Range (leaving water temperature)	Heating	Min. ~ Max.	°C DB	15 ~ 65					
		Cooling			5 ~ 27 (16 ~ 27)[1]					
		DHW			15 ~ 80[2]					
	Piping Connections	Water Circuit	Inlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
			Outlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
	Rated Water Flow Rate at LWT 35°C			LPM	34.5	40.3	46.0	34.5	40.3	46.0
Refrigerant Side	Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35					
		Cooling			5 ~ 48					
	Compressor	Quantity		EA	1					
		Type		-	Hermetic Sealed Scroll					
	Refrigerant	Type		-	R32					
		GWP (global warming potential)		-	675					
		Precharged Amount		g	2,000					
		t-CO_2 eq		-	1.350					
Sound Power Level	Heating	Rated		dB(A)	60	61		60	61	
		Low Noise Mode			56	57		56	57	
Sound Pressure Level (at 1m)	Heating	Rated		dB(A)	38	39		38	39	
		Low Noise Mode			34	35		34	35	
Dimensions	Unit	W x H x D		mm	1,239 x 1,380 x 330					
Weight	Unit			kg	118.6					
Exterior	Color / RAL Code			-	Warm Gray / RAL 7044					
Power Supply	Voltage, Phase, Frequency			V, Ø, Hz	220-240, 1, 50			380-415, 3, 50		
	Rated Running Current	Heating		A	10.9	12.9	15.1	3.6	4.3	5.0
		Cooling		A	11.2	14.4	17.7	3.7	4.8	5.9
	Recommended Circuit Breaker			A	40			16		
Wiring Connections	Power Supply Cable (included earth, H07RN-F)			mm^2 x cores	6.0 x 3C			4.0 x 5C		

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are accordance with EN14511 and reflect ErP testing conditions. Above gives the declared values at rated conditions acc. ErP regulation.
   • Rated running current : Outdoor Temp. 7°C DB / 6°CWB, LWT 35°C
5. This product contains Fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HM121MR U34 / HM123MR U34

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	9.50	9.50	9.50	9.50	-	-	-	-
-20°C DB	10.75	10.75	10.75	10.75	10.21	-	-	-
-15°C DB	12.00	12.00	12.00	12.00	11.50	11.50	-	-
-7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	-
-4°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
-2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
15°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
18°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00

HM141MR U34 / HM143MR U34

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.00	10.00	10.00	10.00	-	-	-	-
-20°C DB	12.00	12.00	12.00	12.00	11.40	-	-	-
-15°C DB	14.00	14.00	14.00	14.00	13.30	13.30	-	-
-7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	-
-4°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
-2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
15°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
18°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00

HM161MR U34 / HM163MR U34

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.50	10.50	10.50	10.50	-	-	-	-
-20°C DB	13.25	13.25	13.25	13.25	12.59	-	-	-
-15°C DB	16.00	14.40	14.40	14.40	13.68	13.68	-	-
-7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	-
-4°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
-2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
15°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
18°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HM121MR U34 / HM123MR U34

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
30°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
40°C DB	11.05	11.19	11.33	11.43	11.57	11.67	11.76
45°C DB	10.10	10.37	10.64	10.83	11.10	11.28	11.46

HM141MR U34 / HM143MR U34

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	12.50	12.80	13.10	13.30	13.60	13.80	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
30°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
40°C DB	12.35	12.60	12.84	13.01	13.26	13.42	13.59
45°C DB	10.69	11.19	11.69	12.02	12.51	12.84	13.17

HM161MR U34 / HM163MR U34

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	13.00	13.60	14.20	14.60	15.20	15.60	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
30°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
40°C DB	13.60	13.96	14.32	14.56	14.92	15.16	15.40
45°C DB	11.20	11.76	12.32	12.69	13.25	13.62	14.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

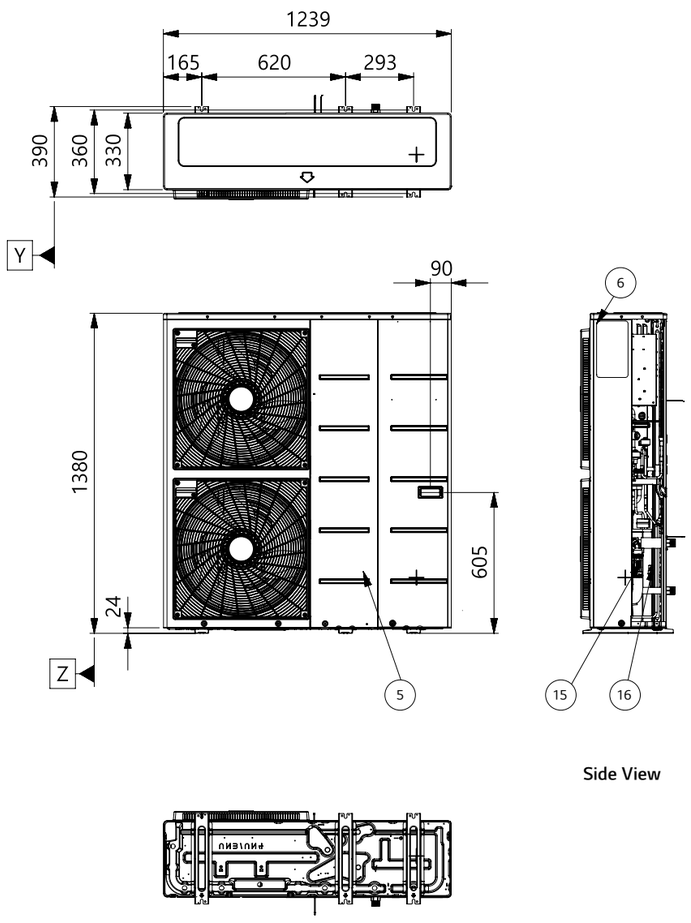
PRODUCT SPECIFICATION

Drawings

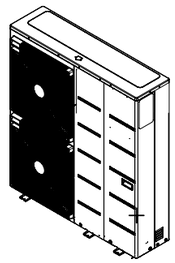
Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM121MR U34	HM141MR U34	HM161MR U34
3 Phase Model 380 ~ 415V, 3Ø, 50Hz		HM123MR U34	HM143MR U34	HM163MR U34

HM121MR U34 / HM141MR U34 / HM161MR U34
HM123MR U34 / HM143MR U34 / HM163MR U34

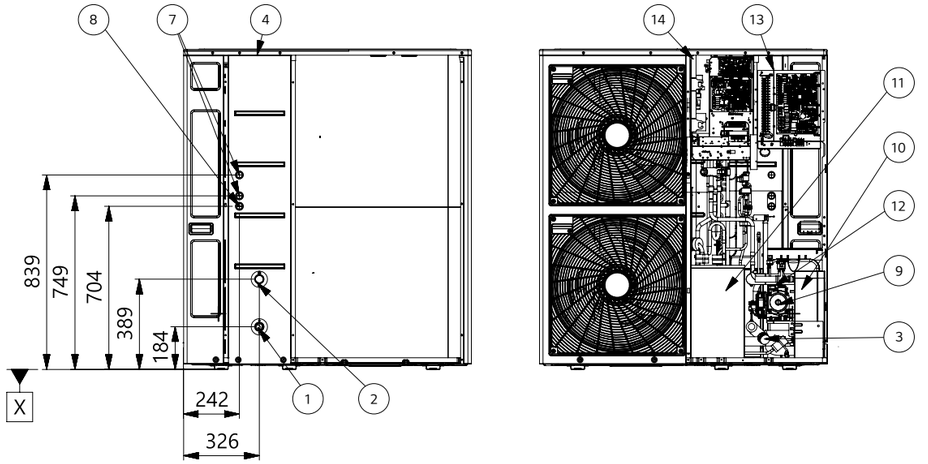
[Unit : mm]



Side View



3D View

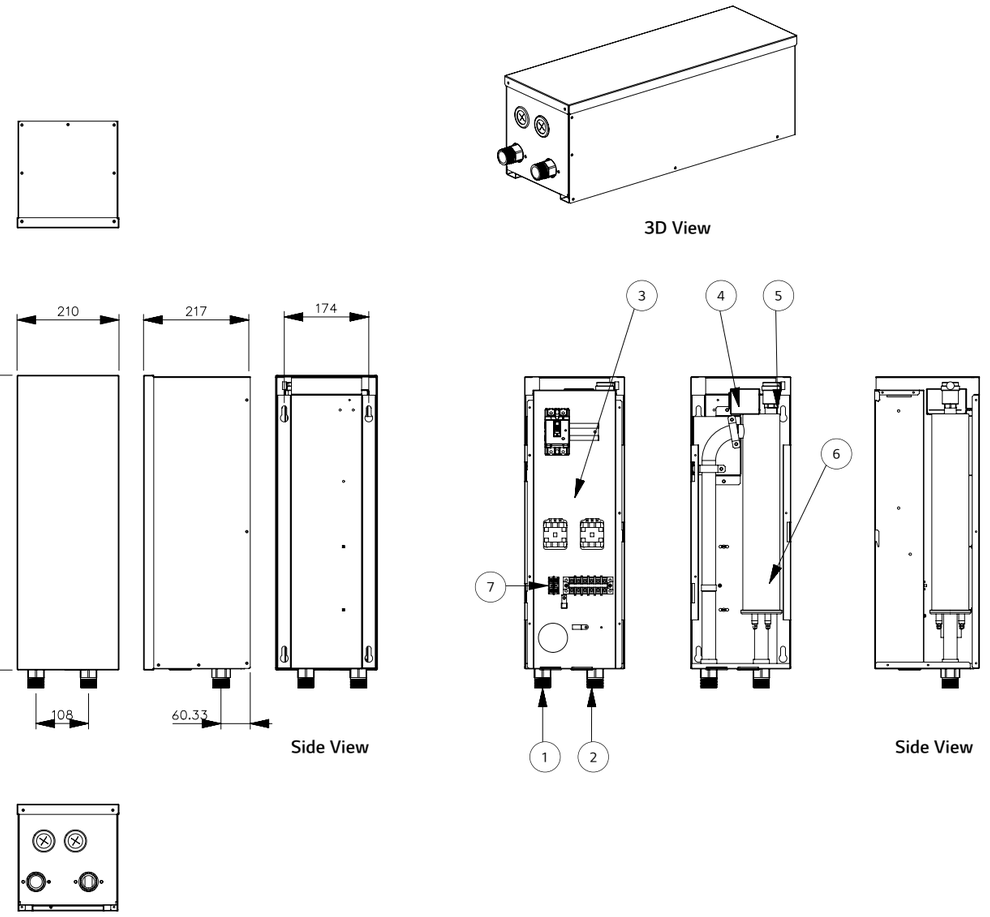


No.	Part Name	Description
1	Entering water pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving water pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Strainer	Filtering and stacking particles inside circulating water
4	Top cover	-
5	Front Panel	-
6	Side Panel	-
7	Low Voltage	Communication cable hole
8	UNIT Power	Power cable hole
9	Water Pump	GRUNDFOS UPML 20-105 CHBL
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Compressor shield panel	-
12	Safety valve	Open at water pressure 3 bar
13	Indoor Control Box	Indoor PCB and terminal blocks
14	Outdoor Control Box	Outdoor PCB and terminal blocks
15	Flow sensor	SIKA VVX20 5-80 LPM
16	Pressure Sensor	SENSATA 2HMP3-05W 0-2MPa

PRODUCT SPECIFICATION

Electric Backup Heater

HA031M E1
HA061M E1
HA063M E1



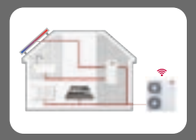
Backup Heater Specification

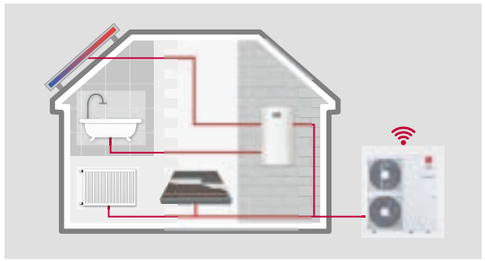
Electrical Specification		Unit	HA031M E1	HA061M E1	HA063M E1
Backup Heater	Type	-	Sheath		
	Number of Heating Coil	EA	1	2	3
	Capacity Combination	kW	3.0	3.0 + 3.0	2.0 + 2.0 + 2.0
	Heating Steps	Step	1	2	1
	Power Supply	V, Ø, Hz	220 ~ 240, 1, 50		380 ~ 415, 3, 50
	Rated Running Current	A	12.5	25.0	8.7
	Recommended Circuit Breaker	A	25	40	25
	Dimensions (W x H x D)	mm	210 x 607 x 217		
	Net Weight (unit)	kg	13.0	13.8	14.1
Wiring Connections	Power Supply Cable (included earth, H07RN-F)	mm^2 x cores	1.5 x 3C	4.0 x 3C	2.5 x 4C
	Communication Cable (H07RN-F)	mm^2 x cores	0.75 x 4C		0.75 x 2C

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.

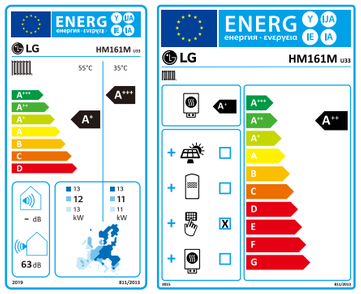
No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Control Box	Circuit breaker, Magnetic switch, Terminal blocks
4	Thermal switch	Cut-off power input to E/heater at 90°C
5	Air vent	Air purging when charging water
6	Electric Heater	Refer the related information
7	Backup heater outlet sensor(SI3)	Connect to unit (heat pump)

R32 MONOBLOC





Energy Label



* 16kW 1Ø model.
* A+++ to D scale.

Excellent Performance & Efficiency

R1 compressor · R32 refrigerant · Flash gas injection · Wide operation range · Black Fin heat exchanger · Solar thermal · Energy state

User Convenience

Intuitive interface · LG ThinQ · 2nd circuit · Various control options · 3rd party boiler · Energy monitoring · Seasonal auto mode · Low noise mode · 2 Remote Control

Easy Installation & Maintenance

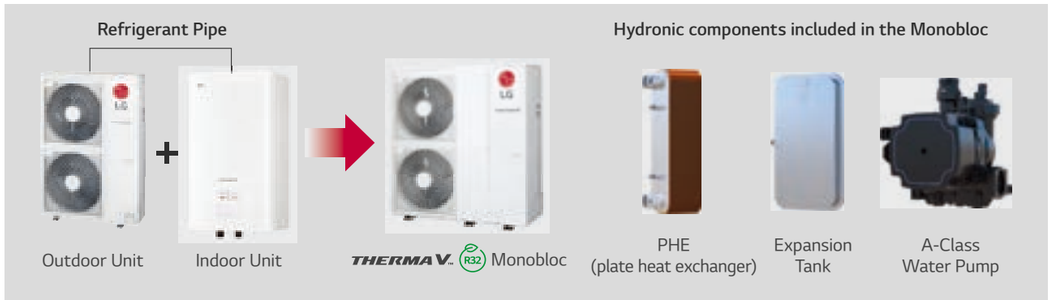
All-in-one · LG heating configurator · Clip connection

* Detailed description for each function is presented on page 28 ~ 35.

R32 Monobloc Introduction

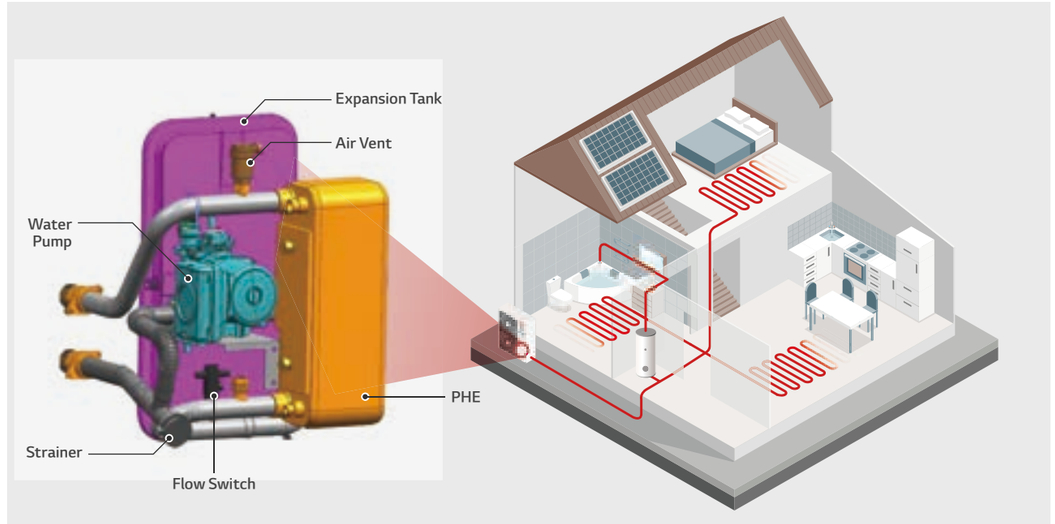
The LG THERMA V R32 Monobloc is a fully packaged unit, where the indoor and outdoor units are combined as one module. This unit does not require refrigerant piping work since the Monobloc's outdoor unit is connected exclusively to water piping. Further, hydronic components such as plate heat exchanger, expansion tank and water pump are included in the package.

Key Components



Monobloc Concept

R32 Monobloc is an all-in-one concept and reduced weight allows for quicker and easier installations.
- Additional hydronic components are included in the package
- Easier and quicker installation without refrigerant piping work



PRODUCT SPECIFICATION

R32 Monobloc

HM051M U43
HM071M U43
HM091M U43

011-1W0243 EHPA for Austria

Features

- All-in-one outdoor unit
- SCOP up to 4.45 (Average climate / Low temp. application) : A+++
  SCOP up to 3.12 (Average climate / Mid temp. application) : A+
- COP up to 4.50 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -7°C OAT (@ LWT 35°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA (for Austria) / MCS / EUROVENT certification

* EHPA (for Germany and Switzerland) under renewal of valid date

Model Line-up

Capacity	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM051M U43	HM071M U43	HM091M U43

Seasonal Energy

Description			Unit	HM051M U43	HM071M U43	HM091M U43
Space Heating (According to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.45	4.45	4.45
		Seasonal Space Heating Efficiency (η_S)	%	175	175	175
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.12	3.12	3.12
		Seasonal Space Heating Efficiency (η_S)	%	122	122	122
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+	A+	A+

Nominal Capacity and Nominal Power Input

Description		OAT[1] (DB)	LWT[2] (DB)	Unit	HM051M U43	HM071M U43	HM091M U43
Nominal Capacity	Heating	7°C	35°C	kW	5.50	7.00	9.00
		7°C	55°C		5.50	5.50	5.50
		2°C	35°C		3.30	4.20	5.40
	Cooling	35°C	18°C		5.50	7.00	9.00
		35°C	7°C		5.50	7.00	9.00
Nominal Power Input	Heating	7°C	35°C	kW	1.22	1.56	2.15
		7°C	55°C		2.04	2.04	2.04
		2°C	35°C		0.94	1.20	1.54
	Cooling	35°C	18°C		1.20	1.56	2.14
		35°C	7°C		1.96	2.59	3.46
COP	Heating	7°C	35°C	W/W	4.50	4.50	4.18
		7°C	55°C		2.70	2.70	2.70
		2°C	35°C		3.52	3.51	3.50
EER	Cooling	35°C	18°C	W/W	4.60	4.50	4.20
		35°C	7°C		2.80	2.70	2.60

1) OAT : Outdoor Air Temperature
2) LWT : Leaving Water Temperature

Product Specification

Technical Specification				Unit	HM051M U43	HM071M U43	HM091M U43
Water Side	Operation Range (leaving water temperature)	Heating	Min. ~ Max.	°C DB	15 ~ 65		
		Cooling			5 ~ 27 (16 ~ 27)[1]		
		DHW			15 ~ 80[2]		
	Piping Connections	Water Circuit	Inlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)		
			Outlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)		
	Rated Water Flow Rate at LWT 35°C			LPM	15.8	20.1	25.9
Refrigerant Side	Operation Range (outdoor temperature)	Heating	Min ~ Max	°C DB	-25 ~ 35		
		Cooling			5 ~ 48		
	Compressor	Quantity		EA	1		
		Type		-	Hermetic Sealed Scroll		
	Refrigerant	Type		-	R32		
		GWP (Global Warming Potential)		-	675		
		Precharged Amount		g	1,400		
		t-CO2 eq		-	0.945		
Sound Power Level		Heating	Rated	dB(A)	60		
Sound Pressure Level (at 1m)		Heating	Rated	dB(A)	50		
Dimensions		Unit	W × H × D	mm	1,239 × 834 × 330		
Weight		Unit		kg	88.0		
Exterior		Color / RAL Code		-	Warm Gray / RAL 7044		
Power Supply		Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50		
		Rated Running Current	Heating	A	5.4	6.9	9.6
			Cooling	A	5.3	6.9	9.5
		Recommended Circuit Breaker		A	16	20	25
Wiring Connections		Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C		

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are accordance with EN14511 and reflect ErP testing conditions. Above gives the declared values at rated conditions acc. ErP regulation.
   • Rated running current : Outdoor Temp. 7°C DB / 6°CWB, LWT 35°C
5. This product contains Fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HM051M U43

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	3.79	3.67	3.54	3.42	-	-	-	-
-20°C DB	4.22	4.09	3.96	3.83	3.70	-	-	-
-15°C DB	4.66	4.52	4.38	4.25	4.11	3.97	-	-
-7°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	-
-4°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
-2°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
2°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
7°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
10°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
15°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
18°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
20°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50

HM071M U43

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	4.82	4.67	4.51	4.36	-	-	-	-
-20°C DB	5.38	5.21	5.05	4.88	4.72	-	-	-
-15°C DB	5.93	5.76	5.58	5.41	5.23	5.06	-	-
-7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
-4°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
-2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
10°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
15°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
18°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
20°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

HM091M U43

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	6.20	6.00	5.80	5.60	-	-	-	-
-20°C DB	6.91	6.70	6.49	6.28	6.06	-	-	-
-15°C DB	7.63	7.40	7.18	6.95	6.73	6.50	-	-
-7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	-
-4°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
-2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
10°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
15°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
18°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
20°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HM051M U43

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	5.16	5.65	6.14	6.47	6.96	7.29	7.62
20°C DB	5.29	5.59	5.89	6.08	6.38	6.58	6.77
30°C DB	5.43	5.53	5.63	5.69	5.79	5.86	5.92
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50
40°C DB	5.57	5.50	5.43	5.38	5.31	5.27	5.22
45°C DB	5.64	5.50	5.36	5.27	5.13	5.04	4.94

HM071M U43

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	6.56	7.19	7.82	8.24	8.86	9.28	9.70
20°C DB	6.74	7.11	7.49	7.74	8.12	8.37	8.62
30°C DB	6.91	7.04	7.16	7.25	7.37	7.46	7.54
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00
40°C DB	7.09	7.00	6.91	6.85	6.76	6.70	6.65
45°C DB	7.18	7.00	6.82	6.70	6.53	6.41	6.29

HM091M U43

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	8.44	9.24	10.05	10.59	11.40	11.93	12.47
20°C DB	8.66	9.15	9.63	9.95	10.44	10.76	11.08
30°C DB	8.89	9.05	9.21	9.32	9.48	9.59	9.69
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00
40°C DB	9.11	9.00	8.89	8.81	8.70	8.62	8.54
45°C DB	9.23	9.00	8.77	8.62	8.39	8.24	8.09

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

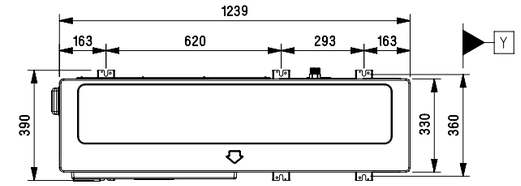
PRODUCT SPECIFICATION

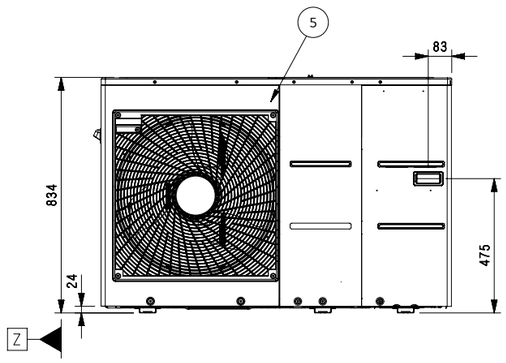
Drawings

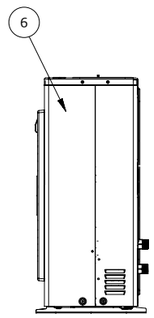
Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM051M U43	HM071M U43	HM091M U43

HM051M U43
HM071M U43
HM091M U43

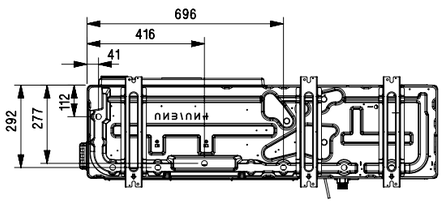
[Unit : mm]



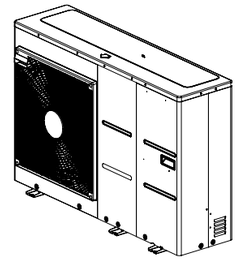




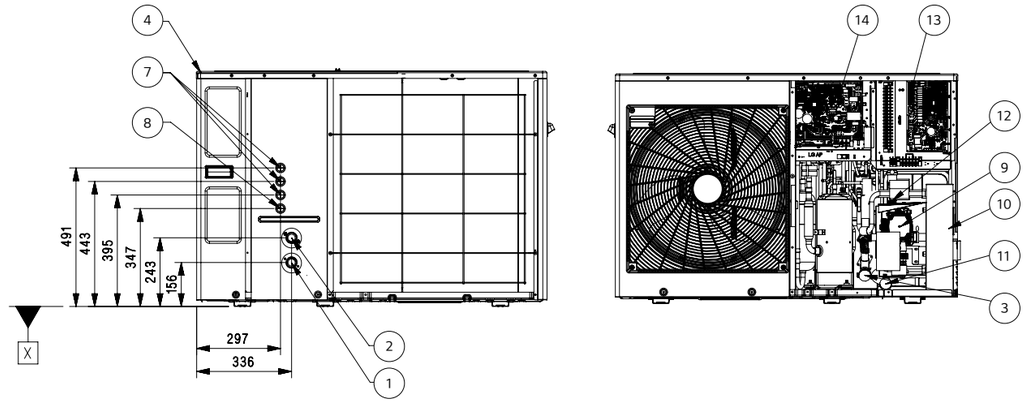
Side View



[Unit : mm]



3D View



No.	Part Name	Description
1	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Strainer	Filtering and stacking particles inside circulating water
4	Top Cover	-
5	Front Panel	-
6	Side Panel	-
7	Low Voltage	Communication cable hole
8	Unit Power	Power cable hole
9	Water Pump	GRUNDFOS UPM3K 20-75 CHBL
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gauge	Indicates circulating water pressure
12	Safety Valve	Open at water pressure 3 bar
13	Indoor Control Box	Indoor PCB and terminal blocks
14	Outdoor Control Box	Outdoor PCB and terminal blocks

PRODUCT SPECIFICATION

R32 Monobloc

HM121M U33
HM141M U33
HM161M U33
HM123M U33
HM143M U33
HM163M U33

011-1W0244 EHPA for Austria (3Ø model only)

R1 Compressor™ Black Fin LG ThinQ

Features

- All-in-one outdoor unit
- SCOP up to 4.45 (Average climate / Low temp. application) : A+++
  SCOP up to 3.12 (Average climate / Mid temp. application) : A+
- COP up to 4.50 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -7°C OAT (@ LWT 35°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA (for Austria, 3Ø model only) / MCS / EUROVENT certification

* EHPA (for Germany and Switzerland) under renewal of valid date

Model Line-up

Capacity	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM121M U33	HM141M U33	HM161M U33
3 Phase Model 380 ~ 415V, 3Ø, 50Hz		HM123M U33	HM143M U33	HM163M U33

Seasonal Energy

Description			Unit	HM121M U33 (1Ø) HM123M U33 (3Ø)	HM141M U33 (1Ø) HM143M U33 (3Ø)	HM161M U33 (1Ø) HM163M U33 (3Ø)
Space Heating (According to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.45	4.45	4.45
		Seasonal Space Heating Efficiency (η_s)	%	175	175	175
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.18	3.18	3.18
		Seasonal Space Heating Efficiency (η_s)	%	124	124	124
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+	A+	A+

Nominal Capacity and Nominal Power Input

Description		OAT[1] (DB)	LWT[2] (DB)	Unit	HM121M U33 (1Ø) HM123M U33 (3Ø)	HM141M U33 (1Ø) HM143M U33 (3Ø)	HM161M U33 (1Ø) HM163M U33 (3Ø)
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		12.00	12.00	12.00
		2°C	35°C		11.00	12.00	13.80
	Cooling	35°C	18°C		12.00	14.00	16.00
		35°C	7°C		12.00	14.00	16.00
Nominal Power Input	Heating	7°C	35°C	kW	2.61	3.11	3.64
		7°C	55°C		4.29	4.29	4.29
		2°C	35°C		3.13	3.42	3.94
	Cooling	35°C	18°C		2.61	3.26	4.00
		35°C	7°C		4.44	5.38	6.40
COP	Heating	7°C	35°C	W/W	4.60	4.50	4.40
		7°C	55°C		2.80	2.80	2.80
		2°C	35°C		3.52	3.51	3.50
EER	Cooling	35°C	18°C	W/W	4.60	4.30	4.00
		35°C	7°C		2.70	2.60	2.50

1) OAT : Outdoor Air Temperature
2) LWT : Leaving Water Temperature

Product Specification

Technical Specification				Unit	HM121M U33	HM141M U33	HM161M U33	HM123M U33	HM143M U33	HM163M U33
Water Side	Operation Range (leaving water temperature)	Heating	Min. ~ Max.	°C DB	15 ~ 65					
		Cooling			5 ~ 27 (16 ~ 27)[1]					
		DHW			15 ~ 80[2]					
	Piping Connections	Water Circuit	Inlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
			Outlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
	Rated Water Flow Rate at LWT 35°C			LPM	34.5	40.3	46.0	34.5	40.3	46.0
Refrigerant Side	Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35					
		Cooling			5 ~ 48					
	Compressor	Quantity		EA	1					
		Type		-	Hermetic Sealed Scroll					
	Refrigerant	Type		-	R32					
		GWP (global warming potential)		-	675					
		Precharged Amount		g	2,400					
		t-CO_2 eq		-	1.620					
Sound Power Level		Heating	Rated	dB(A)	63					
Sound Pressure Level (at 1m)		Heating	Rated	dB(A)	52					
Dimensions		Unit	W x H x D	mm	1,239 × 834 × 330					
Weight		Unit		kg	124.5					
Exterior		Color / RAL Code		-	Warm Gray / RAL 7044					
Power Supply		Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50			380-415, 3, 50		
		Rated Running Current	Heating	A	11.6	13.8	16.1	3.8	4.6	5.4
			Cooling	A	11.6	14.4	17.7	3.8	4.8	5.9
		Recommended Circuit Breaker		A	40			16		
Wiring Connections		Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	6.0 x 3C			4.0 x 5C		

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are accordance with EN14511 and reflect ErP testing conditions. Above gives the declared values at rated conditions acc. ErP regulation.
   • Rated running current : Outdoor Temp. 7°C DB / 6°CWB, LWT 35°C
5. This product contains Fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HM121M U33 / HM123M U33

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	8.75	8.50	8.25	8.00	-	-	-	-
-20°C DB	10.13	10.00	9.88	9.75	9.63	-	-	-
-15°C DB	11.50	11.50	11.50	11.50	11.50	11.50	-	-
-7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	-
-4°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
-2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
15°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
18°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00

HM141M U33 / HM143 U33

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	9.25	9.00	8.75	8.50	-	-	-	-
-20°C DB	10.63	10.50	10.38	10.25	10.13	-	-	-
-15°C DB	12.00	12.00	12.00	12.00	12.00	12.00	-	-
-7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	-
-4°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
-2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
15°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
18°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00

HM161M U33 / HM163 U33

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.50	10.00	9.50	9.00	-	-	-	-
-20°C DB	12.30	11.75	11.44	11.13	10.75	-	-	-
-15°C DB	14.10	13.50	13.38	13.25	13.13	13.00	-	-
-7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	-
-4°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
-2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
15°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
18°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HM121M U33 / HM123M U33

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	11.25	12.33	13.40	14.12	15.20	15.91	16.63
20°C DB	11.55	12.20	12.84	13.27	13.92	14.35	14.78
30°C DB	11.85	12.07	12.28	12.42	12.64	12.78	12.93
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
40°C DB	12.15	12.00	11.85	11.75	11.59	11.49	11.39
45°C DB	12.30	12.00	11.69	11.49	11.19	10.99	10.78

HM141M U33 / HM143 U33

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	13.13	14.38	15.64	16.47	17.73	18.57	19.40
20°C DB	13.48	14.23	14.98	15.48	16.24	16.74	17.24
30°C DB	13.83	14.08	14.33	14.49	14.75	14.91	15.08
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
40°C DB	14.18	14.00	13.82	13.70	13.53	13.41	13.29
45°C DB	14.35	14.00	13.64	13.41	13.05	12.82	12.58

HM161M U33 / HM163 U33

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	15.00	16.43	17.87	18.83	20.26	21.22	22.17
20°C DB	15.40	16.26	17.12	17.70	18.56	19.13	19.70
30°C DB	15.80	16.09	16.37	16.57	16.85	17.04	17.23
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
40°C DB	16.20	16.00	15.80	15.66	15.46	15.32	15.19
45°C DB	16.40	16.00	15.59	15.32	14.92	14.65	14.38

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

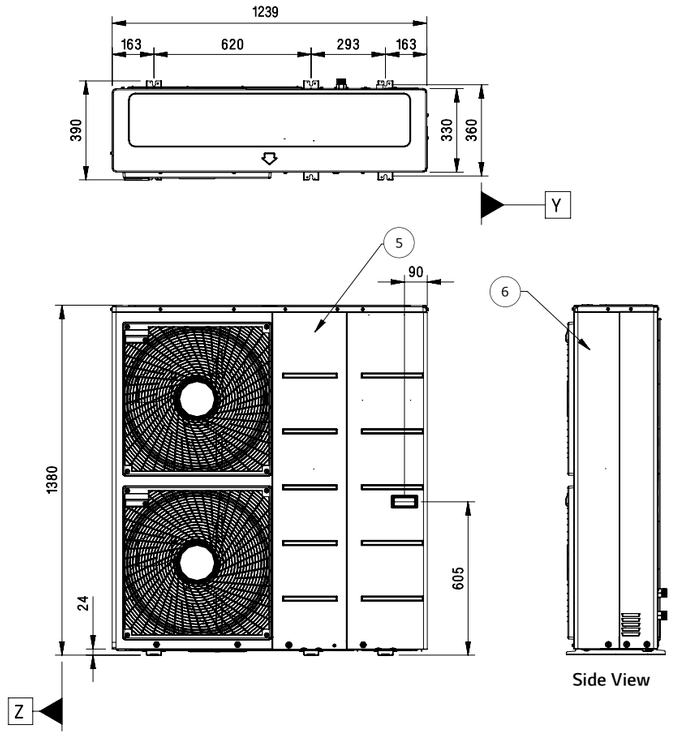
PRODUCT SPECIFICATION

Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM121M U33	HM141M U33	HM161M U33
3 Phase Model 380 ~ 415V, 3Ø, 50Hz		HM123M U33	HM143M U33	HM163M U33

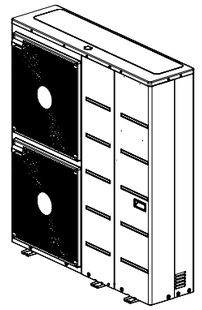
HM121M U33 / HM141M U33 / HM161M U33
HM123M U33 / HM143M U33 / HM163M U33

[Unit : mm]

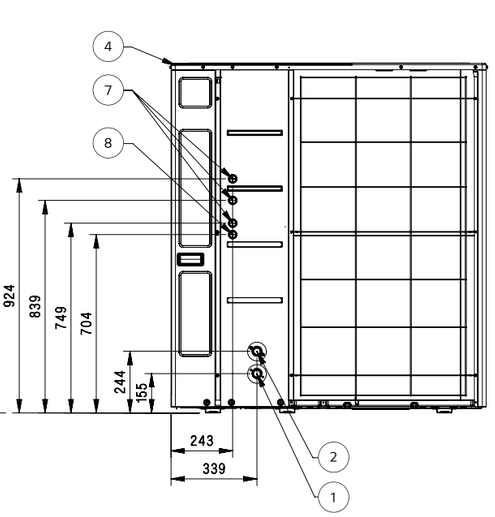


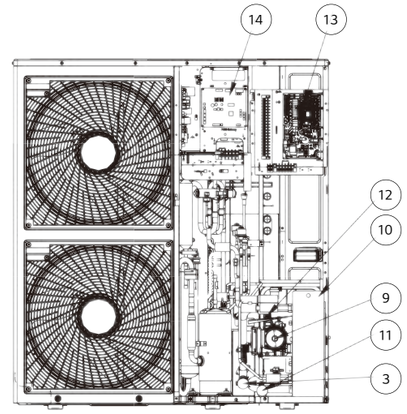
Side View

[Unit : mm]



3D View





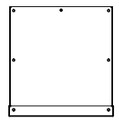
No.	Part Name	Description
1	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Strainer	Filtering and stacking particles inside circulating water
4	Top Cover	-
5	Front Panel	-
6	Side Panel	-
7	Low Voltage	Communication cable hole
8	UNIT Power	Power cable hole
9	Water Pump	GRUNDFOS UPML 20-105 CHBL
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gauge	Indicates circulating water pressure
12	Safety Valve	Open at water pressure 3 bar
13	Indoor Control Box	Indoor PCB and terminal blocks
14	Outdoor Control Box	Outdoor PCB and terminal blocks

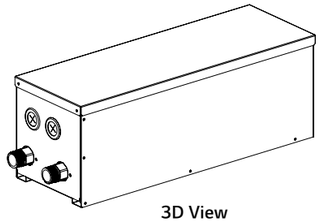
PRODUCT SPECIFICATION

Electric Backup Heater

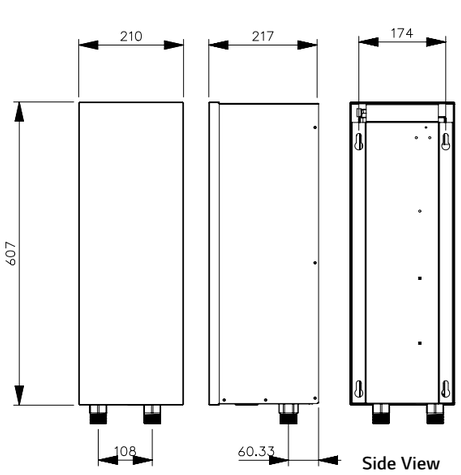
HA031M E1
HA061M E1
HA063M E1

[Unit : mm]

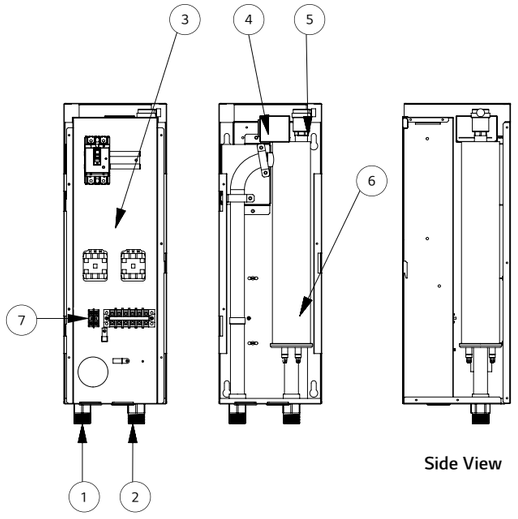




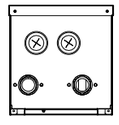
3D View



Side View



Side View



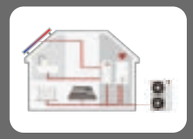
Product Specification

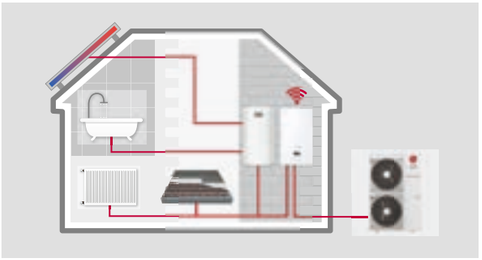
Electrical Specification		Unit	HA031M E1	HA061M E1	HA063M E1
Backup Heater	Type	-	Sheath		
	Number of Heating Coil	EA	1	2	3
	Capacity Combination	kW	3.0	3.0 + 3.0	2.0 + 2.0 + 2.0
	Heating Steps	Step	1	2	1
	Power Supply	V, Ø, Hz	220 ~ 240, 1, 50		380 ~ 415, 3, 50
	Rated Running Current	A	12.5	25.0	8.7
	Recommended Circuit Breaker	A	25	40	25
	Dimensions (W x H x D)	mm	210 x 607 x 217		
	Net Weight (unit)	kg	13.0	13.8	14.1
Wiring Connections	Power Supply Cable (included earth, H07RN-F)	mm^2 x cores	1.5 x 3C	4.0 x 3C	2.5 x 4C
	Communication Cable (H07RN-F)	mm^2 x cores	0.75 x 4C		0.75 x 2C

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.

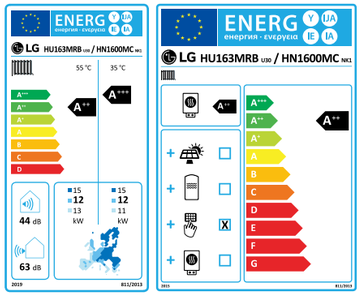
No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Control Box	Circuit breaker, Magnetic switch, Terminal blocks
4	Thermal Switch	Cut-off power input to E/heater at 90°C
5	Air Vent	Air purging when charging water
6	Electric Heater	Refer the related information
7	Backup Heater Outlet Sensor (S13)	Connect to unit (heat pump)

R32 HYDROSPLIT HYDRO BOX





Energy Label



* 16kW 3Ø model.
* A+++ to D scale.

Excellent Performance & Efficiency

- R1 compressor
- R32 refrigerant
- Flash gas injection
- Wide operation range
- Black Fin heat exchanger
- Solar thermal
- Energy state

User Convenience

- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode
- Advanced pump control options
- Flow sensor
- Pressure sensor
- 2 Remote Control
- DHW Recirculation

Easy Installation & Maintenance

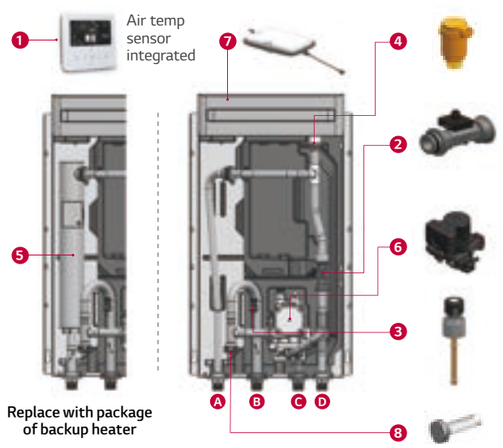
- Hydrosplit
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 28 ~ 35.

R32 Hydrosplit Hydro Box Introduction

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 and cooling with high installation flexibility thanks to the characteristic of being a wall mounted type.

Key Components



1. Standard III Remote Controller (attached on the front panel)
2. Flow sensor (SIKA)
3. Water pressure sensor (SENSATA)
4. Air vent valve
5. Backup electric heater (6kW, accessory)
6. Water pump (GRUNDFOS)
7. Expansion vessel (8L)
8. Strainer

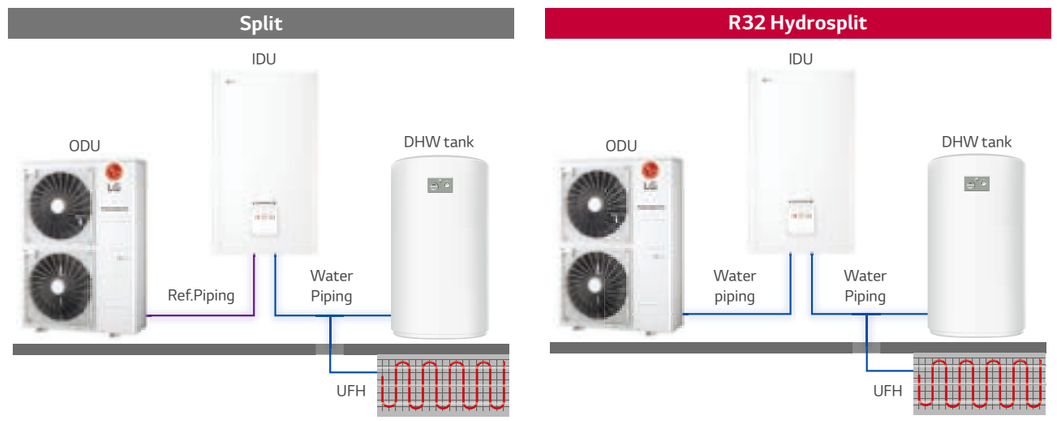
A. Heating circuit outlet pipe (male PT 1")
B. Heating circuit inlet pipe (male PT 1")
C. Outlet pipe to outdoor unit (male PT 1")
D. Inlet pipe from outdoor unit (male PT 1")

Hydrosplit Concept

The THERMA V R32 Hydrosplit Hydro Box connects an IDU and ODU by water pipes due to the heat exchanger's location in the outdoor unit, thus reducing the risk of indoor refrigerant leakage.

No Risk of Indoor Refrigerant Leakage

As there is no refrigerant inside of room, no need to consider minimum floor area requirement for IDU due to R32 refrigerant. As a result, it is possible to expand living area more for other purpose.



If Piping length between IDU and ODU is 30m

The IDU should be installed in a room with a floor area larger than 10m²

1) Total Ref. Amount 2.7kg
- Pre-Charged Ref. Amount : 2.1kg
- Additional Ref. Charge Amount for 30m : 0.6kg

2) Based on 1.5m installed height
3) IEC 60335-2-40 6th edition applied

No minimum floor area requirement

PRODUCT SPECIFICATION

R32 Hydrosplit Hydro Box

Indoor Unit
HN1600MC NK1
Outdoor Unit
HU121MRB U30 / HU123MRB U30
HU141MRB U30 / HU143MRB U30
HU161MRB U30 / HU163MRB U30

011-1W0382 EHPA for Germany, Austria

R32 65°C A+++ R1 Compressor™ Black Fin LG ThinQ

Features

- Water pipes connects IDU & ODU
- SCOP up to 4.60 (Average climate / Low temp. application) : A+++
  SCOP up to 3.50 (Average climate / Mid temp. application) : A++
- COP up to 5.04 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -7°C OAT (@ LWT 35°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA (for Germany, Austria) / MCS / EUROVENT certification

* Only the outdoor units are registered in EHPA certification.

Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30
	Indoor Unit	HN1600MC NK1		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1600MC NK1		

Seasonal Energy

Description			Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)
				HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)
			Indoor Unit	HN1600MC NK1		
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.60	4.57	4.55
		Seasonal Space Heating Efficiency (η_s)	%	181	180	179
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.50	3.47	3.45
		Seasonal Space Heating Efficiency (η_s)	%	137	136	135
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A++	A++	A++

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)
					HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)
				Indoor Unit	HN1600MC NK1		
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		11.00	11.50	12.00
		2°C	35°C		11.00	12.00	13.80
	Cooling	35°C	18°C		12.00	14.00	16.00
		35°C	7°C		12.00	14.00	16.00
Nominal Power Input	Heating	7°C	35°C	kW	2.38	2.86	3.33
		7°C	55°C		3.79	4.04	4.29
		2°C	35°C		3.01	3.31	3.83
	Cooling	35°C	18°C		2.53	3.26	4.00
		35°C	7°C		4.44	5.38	6.40
COP	Heating	7°C	35°C	W/W	5.04	4.89	4.80
		7°C	55°C		2.90	2.85	2.80
		2°C	35°C		3.65	3.63	3.60
EER	Cooling	35°C	18°C	W/W	4.75	4.30	4.00
		35°C	7°C		2.70	2.60	2.50

PRODUCT SPECIFICATION

R32 Hydrosplit Hydro Box

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30	HU123MRB U30	HU143MRB U30	HU163MRB U30
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35					
	Cooling			5 ~ 48					
Compressor	Quantity		EA	1					
	Type		-	Hermetic Sealed Scroll					
Refrigerant	Type		-	R32					
	GWP (global warming potential)		-	675					
	Precharged Amount		g	2,100					
	t-CO_2 eq		-	1.418					
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
		Outlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
Rated Water Flow Rate (at LWT 35°C)			LPM	34.5	40.3	46.0	34.5	40.3	46.0
Sound Power Level	Heating	Rated	dB(A)	61	62	63	61	62	63
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	53	54	55	53	54	55
Dimensions	Unit	W x H x D	mm	950 × 1,380 × 330					
Weight	Unit		kg	91.7					
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044					
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50			380-415, 3, 50		
	Rated Running Current	Heating	A	10.6	12.7	14.8	3.5	4.2	4.9
		Cooling	A	11.2	14.4	17.7	3.7	4.8	5.9
	Recommended Circuit Breaker		A	40			16		
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	6.0 x 3C			2.5 x 5C		

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation.
   Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are based on the following conditions (It is according to EN14511) :
   • Interconnected Pipe Length is standard length and difference of Elevation
5. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is 0m.

Product Specification (Indoor Unit)

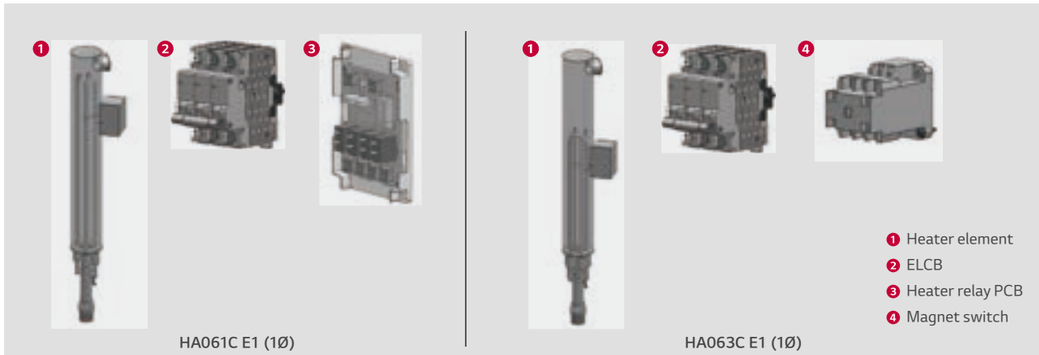
Technical Specification			Unit	HN1600MC NK1
Operation Range (leaving water)	Heating	Min. ~ Max.	°C DB	15 ~ 65
	Cooling			5 ~ 27 (16 ~ 27)[1)]
	DHW			15 ~ 80[2)]
Flow Sensor	Measuring Range	Min. ~ Max.	ℓ/min	5 ~ 80
Water Pressure Sensor	Measuring Range	Min. ~ Max.	bar(G)	0 ~ 20
Expansion Vessel	Volume		ℓ	8
Safety Valve	Pressure Limit	Upper limit	bar	3
Piping Connections	Water Circuit	Outlet to Heat Load	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)
		Inlet from Heat Load		Male PT 1" according to ISO 7-1 (tapered pipe threads)
		Outlet to Outdoor Unit		Male PT 1" according to ISO 7-1 (tapered pipe threads)
		Inlet from Outdoor Unit		Male PT 1" according to ISO 7-1 (tapered pipe threads)
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm^2 x cores	0.75 x 4C
Sound Power Level	Heating	Rated	dB(A)	44
Dimensions	Unit	W x H x D	mm	490 × 850 × 315
Weight	Unit		kg	30.5
Exterior	Color / RAL Code		-	Noble White / RAL 9016

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. This product contains Fluorinated greenhouse gases.

Accessory Parts (Optional Accessory)

Backup Heater



HA061C E1 (1Ø)

HA063C E1 (1Ø)

Electrical Specification			HA061C E1 (1Ø)	HA063C E1 (1Ø)
Backup Heater	Type	-	Sheath	
	No. of Heating Coil	EA	2	3
	Max. Power Consumption	kW	3.0 + 3.0	2.0 + 2.0 + 2.0
	Heating Step	Step	1	1
	Power Supply	V, Ø, Hz	220 ~ 240, 1, 50	380 ~ 415, 3, 50
	Current (rated)	A	24.0	8.7
	Circuit Breaker (ELCB)	A	40	20
Wiring Connection	Power Cable (included earth, H07RN-F)	mm^2 x cores	6.0 x 3C	2.5 x 5C

Accessory Parts (Separately Provided)

Strainer

Technical Specification		Details
Material	Body	Brass
	Mesh	Stainless steel (STS304)
Mesh	Mesh No.	30
	Max. Particle Size	0.6mm
Piping Connection		Female G 1" according to ISO 228-1

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU121MRB U30 / HU123MRB U30 + HN1600MC NK1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	9.66	8.85	8.42	8.29	-	-	-	-
-20°C DB	10.13	10.00	9.88	9.75	9.63	-	-	-
-15°C DB	11.50	11.50	11.50	11.50	11.50	11.50	-	-
-7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	-
-4°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
-2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
15°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
18°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00

HU141MRB U30 / HU143MRB U30 + HN1600MC NK1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.04	9.21	8.76	8.62	-	-	-	-
-20°C DB	11.82	11.25	10.95	10.67	10.59	-	-	-
-15°C DB	12.52	12.90	13.26	12.88	12.81	12.63	-	-
-7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	-
-4°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
-2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
15°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
18°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00

HU161MRB U30 / HU163MRB U30 + HN1600MC NK1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.98	10.00	9.50	9.33	-	-	-	-
-20°C DB	13.43	12.54	12.03	11.78	11.47	-	-	-
-15°C DB	14.23	14.39	14.50	13.95	13.86	13.12	-	-
-7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	-
-4°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
-2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
15°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
18°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HU121MRB U30 / HU123MRB U30 + HN1600MC NK1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
30°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
40°C DB	11.75	12.00	12.00	12.00	12.00	12.00	12.00
45°C DB	11.50	12.00	12.00	12.00	12.00	12.00	12.00

HU141MRB U30 / HU143MRB U30 + HN1600MC NK1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
30°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
40°C DB	13.75	14.00	14.00	14.00	14.00	14.00	14.00
45°C DB	13.50	14.00	14.00	14.00	14.00	14.00	14.00

HU161MRB U30 / HU163MRB U30 + HN1600MC NK1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
30°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
40°C DB	15.75	16.00	16.00	16.00	16.00	16.00	16.00
45°C DB	15.50	16.00	16.00	16.00	16.00	16.00	16.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

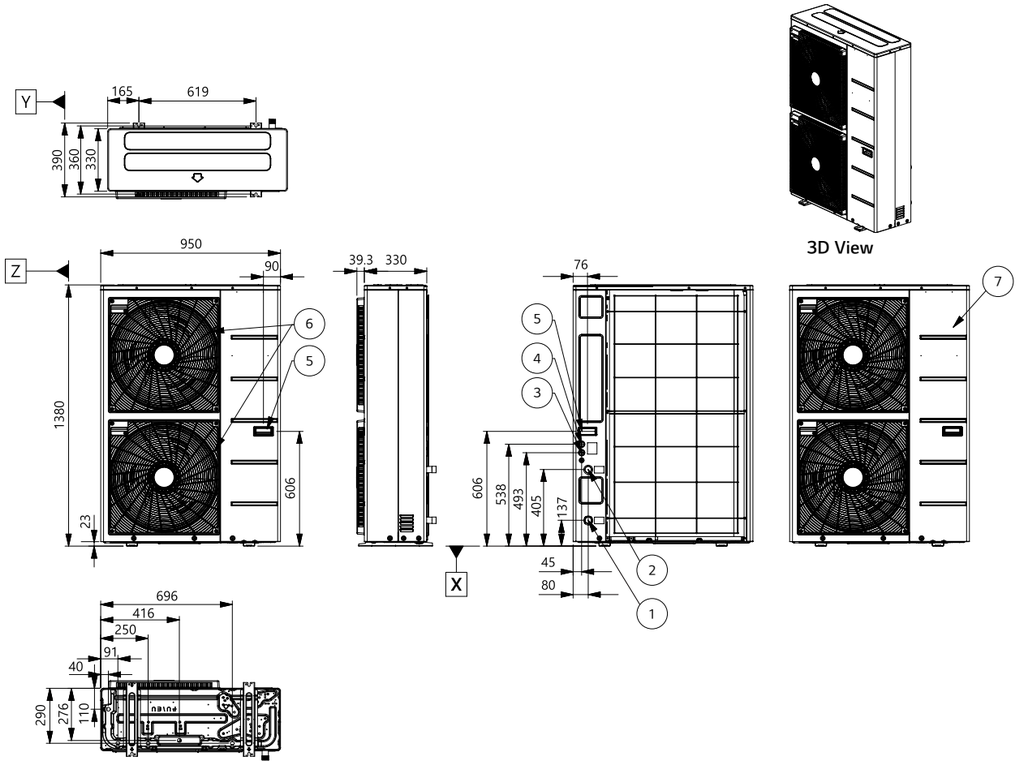
PRODUCT SPECIFICATION

Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30
	Indoor Unit	HN1600MC NK1		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1600MC NK1		

HU121MRB U30 / HU141MRB U30 / HU161MRB U30
HU123MRB U30 / HU143MRB U30 / HU163MRB U30

[Unit : mm]



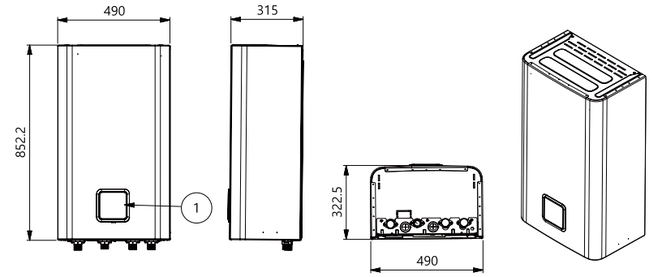
3D View

No.	Part Name	Description
1	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Unit Power	Power cable hole
4	Low Voltage	Communication cable hole
5	Handle	-
6	Air Outlet	-
7	Side Panel	-

HN1600MC NK1

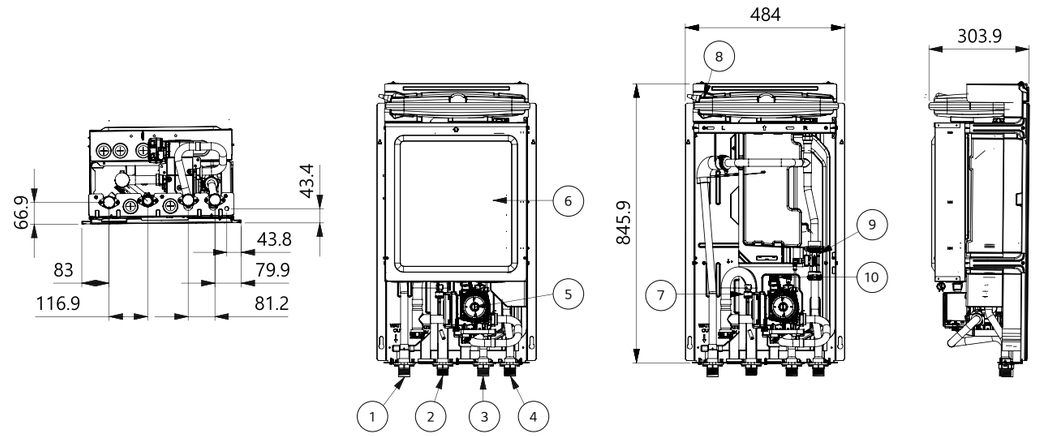
[Unit : mm]

External



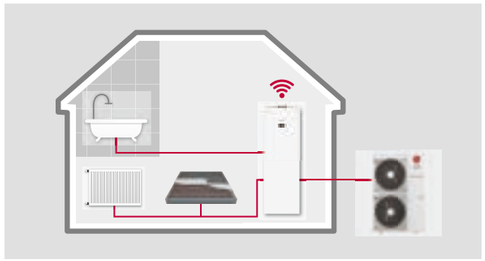
No.	Part Name	Description
1	Control Panel	Built-in remote controller

Internal

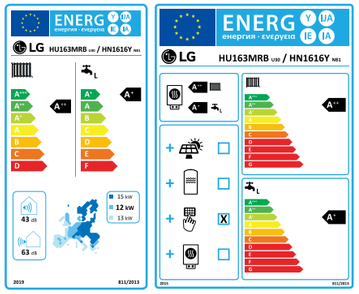


No.	Part Name	Description
1	Heating Circuit Outlet Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Heating Circuit Inlet Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Outlet Pipe to Outdoor Unit	Male PT 1" according to ISO 7-1 (tapered pipe threads)
4	Inlet Pipe to Outdoor Unit	Male PT 1" according to ISO 7-1 (tapered pipe threads)
5	Water Pump	GRUNDFOS UPML 20-105 CHBL
6	Control Box	PCB and Terminal blocks
7	Pressure Sensor	SENSATA 2HMP3-04W, 0-2Mpa
8	Expansion Tank	8 Liter, 3/4" connection
9	Flow Sensor	Flow range : 5 ~ 80 LPM
10	Safety Valve	Open at water pressure 3 bar

R32 HYDROSPLIT IWT



Energy Label



* 16kW 3Ø model.
* A+++ to D scale.

Excellent Performance & Efficiency

R1 compressor · R32 refrigerant · Flash gas injection · Wide operation range · Black Fin heat exchanger · Solar thermal · Energy state

User Convenience

Harmonious Exterior · Intuitive interface · LG ThinQ · 2nd circuit · Various control options · 3rd party boiler · Energy monitoring

Seasonal auto mode · Low noise mode · Advanced pump control options · Flow sensor · Pressure sensor · 2 Remote Control · DHW Recirculation

Easy Installation & Maintenance

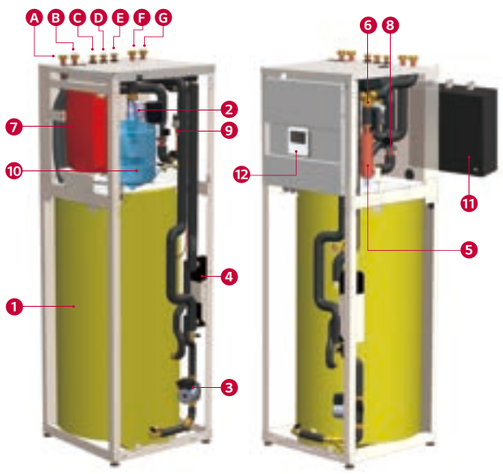
All-in-one · Hydrosplit · LG heating configurator · Clip connection

* Detailed description for each function is presented on page 28 ~ 35.

R32 Hydrosplit IWT Introduction

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 is a domestic hot water supply, space heating and cooling solution that conveniently combines an indoor hot water tank with a separate outdoor unit.

Key Components



1. DHW storage tank (200ℓ)
2. Main water pump
3. Water pump for DHW charging
4. Plate heat exchanger for DHW (water / DHW)
5. Electric heater (Max. 6kW)
6. 3-way diverting valve
7. Expansion vessel for heating (12ℓ)
8. Flow sensor
9. Water pressure sensor
10. Expansion vessel for DHW (8ℓ, option)
11. Buffer tank (40ℓ, option)
12. Standard III Remote controller (attached on the front panel)

- A Inlet pipe from outdoor unit (female G1")
- B Outlet pipe to outdoor unit (female G1")
- C Domestic hot water outlet pipe (female G3/4")
- D Domestic cold water outlet pipe (female G3/4")
- E DHW recirculation pipe (female G3/4")
- F Heating circuit inlet pipe (female G1")
- G Heating circuit outlet pipe (female G1")

Hydrosplit Concept

The THERMA V R32 Hydrosplit IWT connects an IDU and ODU by water pipes due to the heat exchanger's location in the outdoor unit, thus reducing the risk of indoor refrigerant leakage.

Sophisticated and Harmonious Exterior

The THERMA V R32 Hydrosplit IWT indoor unit can be installed in multiple indoor spaces, to include the utility or laundry room, garage or kitchen due to its sleek design.

Save Space and Time

Compared with conventional system, easy & quick installation is possible and smaller spaces are required for installation.

All in One

- Small footprint for product installation
- Quick & easy installation
- DHW tank (200ℓ) & hydronic component integration
- Integrated max. 6kW back up heater
- Integrated expansion tank for heating (12ℓ)
- Integrated buffer tank (40ℓ) & expansion tank for DHW circuit (8ℓ) (Optional)

PRODUCT SPECIFICATION

R32 Hydrosplit IWT (Integrated Water Tank)

Indoor Unit
HN1616Y NB1
Outdoor Unit
HN121MRB U30 / HU123MRB U30
HN141MRB U30 / HU143MRB U30
HN161MRB U30 / HU163MRB U30

011-1W0466 EHPA for Germany, Austria

R32 65°C A+++ R1 Compressor™ Black Fin LG ThinQ

Features

- Water pipes connects IDU & ODU
- SCOP up to 4.60 (Average climate / Low temp. application) : A+++
  SCOP up to 3.50 (Average climate / Mid temp. application) : A++
  $SCOP_{DHW}$ 2.74 (water heating efficiency 120%, profile L) : A+
- COP up to 5.04 (Outdoor air 7℃ / Leaving water 35℃)
- DHW tank (200ℓ) & hydronic component integration
- Integrable buffer tank (40ℓ) & expansion tank for DHW circuit (8ℓ) (optional)
- 100% heating capacity at -7 ℃ OAT (@ LWT 35℃)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA (for Germany, Austria) / EUROVENT certification

* Only the outdoor units are registered in EHPA certification.

Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30
	Indoor Unit	HN1616Y NB1		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1616Y NB1		

Seasonal Energy

Description			Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)
				HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)
			Indoor Unit	HN1616Y NB1		
Space Heating (According to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.60	4.57	4.55
		Seasonal Space Heating Efficiency (η_S)	%	181	180	179
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.50	3.47	3.45
		Seasonal Space Heating Efficiency (η_S)	%	137	136	135
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++
Domestic Hot Water Efficiency (According to EN16147)	Average Climate	Declared Load Profile	-	L	L	L
		Water Heating Efficiency (η_{WH})	%	120	120	120
		$SCOP_{DHW}$	-	2.74	2.74	2.74
		Water Heating Eff. Class	-	A+	A+	A+
	Warmer Climate	Declared Load Profile	-	L	L	L
		Water Heating Efficiency (η_{WH})	%	151	151	151
		$SCOP_{DHW}$	-	3.43	3.43	3.43
	Colder Climate	Declared Load Profile	-	L	L	L
		Water Heating Efficiency (η_{WH})	%	101	101	101
		$SCOP_{DHW}$	-	2.34	2.34	2.34

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)
					HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)
				Indoor Unit	HN1616Y NB1		
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		11.00	11.50	12.00
		2°C	35°C		11.00	12.00	13.80
	Cooling	35°C	18°C		12.00	14.00	16.00
		35°C	7°C		12.00	14.00	16.00
Nominal Power Input	Heating	7°C	35°C	kW	2.38	2.86	3.33
		7°C	55°C		3.79	4.04	4.29
		2°C	35°C		3.01	3.31	3.83
	Cooling	35°C	18°C		2.53	3.26	4.00
		35°C	7°C		4.44	5.38	6.40
COP	Heating	7°C	35°C	W/W	5.04	4.89	4.80
		7°C	55°C		2.90	2.85	2.80
		2°C	35°C		3.65	3.63	3.60
EER	Cooling	35°C	18°C	W/W	4.75	4.30	4.00
		35°C	7°C		2.70	2.60	2.50

PRODUCT SPECIFICATION

R32 Hydrosplit IWT (Integrated Water Tank)

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30	HU123MRB U30	HU143MRB U30	HU163MRB U30
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35					
	Cooling			5 ~ 48					
Compressor	Quantity		EA	1					
	Type		-	Hermetic Sealed Scroll					
Refrigerant	Type		-	R32					
	GWP (global warming potential)		-	675					
	Precharged Amount		g	2,100					
	t-CO_2 eq		-	1.418					
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
		Outlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)					
Rated Water Flow Rate (at LWT 35°C)			LPM	34.5	40.3	46.0	34.5	40.3	46.0
Sound Power Level	Heating	Rated	dB(A)	61	62	63	61	62	63
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	53	54	55	53	54	55
Dimensions	Unit	W x H x D	mm	950 × 1,380 × 330					
Weight	Unit		kg	91.7					
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044					
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50			380-415, 3, 50		
	Rated Running Current	Heating	A	10.6	12.7	14.8	3.5	4.2	4.9
		Cooling	A	11.2	14.4	17.7	3.7	4.8	5.9
	Recommended Circuit Breaker		A	40			16		
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	6.0 x 3C			2.5 x 5C		

Product Specification (Indoor Unit)

Technical Specification			Unit	HN1616Y NB1
Operation Range (Leaving Water Temperature)	Heating	Min. ~ Max.	°C DB	15 ~ 65
	Cooling			5 ~ 27 (16 ~ 27)[1]
	DHW			15 ~ 80[2]
Domestic Hot Water Tank	Volume		ℓ	200
	Internal Thermal Protect Limit		°C	85
Flow Sensor	Measuring Range	Min. ~ Max.	LPM	5 ~ 80
	Water Pressure Sensor	Measuring Range	bar(G)	0 ~ 20
Expansion Vessel (Heating Circuit)	Volume		ℓ	12
Safety Valve	Heating Circuit	Upper Limit	bar	3
	DHW Circuit	Upper Limit	bar	10
Electric Heater (Case 1 / Case 2 / Case 3) [3]	Type		-	Sheath
	Number of Heating Coil		EA	1 / 2 / 3
	Capacity combination		kW	2.0 / 2.0 + 2.0 / 2.0 + 2.0 + 2.0
	Heating Step		Step	1
	Power Supply		V, Ø, Hz	220-240, 1, 50 / 220-240, 1, 50 / 380-415, 3, 50
	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3C / 4.0 x 3C / 2.5 x 5C
	Rated Running Current		A	8.7 / 17.4 / 8.7
Piping Connections	Water Circuit	Inlet	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)
		Outlet	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)
		Inlet from Outdoor Unit	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)
		Outlet to Outdoor Unit	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)
	DHW Tank Water Circuit	Cold Inlet	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)
		Hot Outlet	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)
		Recirculation	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm^2 x cores	0.75 x 4C
Sound Power Level	Heating	Rated	dB(A)	43
Dimensions	Unit	W × H × D	mm	601 × 1,812 × 685
Weight	Unit		kg	130.0
Exterior	Color / RAL Code		-	White / RAL 9002

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.
3) The capacity of electric heater can be adjusted by wiring.

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation.
   Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are based on the following conditions (It is according to EN14511) :
   • Interconnected Pipe Length is standard length and difference of Elevation
5. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is 0m.

Accessory Parts (Optional Accessory)

Buffer Tank for Space Heating

As an optional accessory, the installer can install a standard 40ℓ buffer tank for space heating. Fitting seamlessly into the main casing, it can be attached on the backside of the indoor unit.

Buffer tank for space heating		Unit	OSHB-40KT.AEU
Water Volume		ℓ	40
Dimensions (W x H x D)		mm	518 x 560 x 175
Weight (w/o water)	Product	kg	24

Expansion Vessel for DHW

As an optional accessory, the installer can install a standard 8ℓ DHW expansion vessel that conveniently fits inside the indoor unit. It is provided with an accessory kit that includes a flexible connection tube.

Expansion vessel for DHW		Unit	OSHE-12KT.AEU
Expansion Volume		ℓ	8
Connection		inch	3/4
Max. Pressure		bar	10
Pre-charge		bar	3
Dimensions (W x H x D)		mm	416 x 238 x 502
Weight (w/o water)	Product	kg	2.5

Accessory Parts (Separately Provided)

Shut-off valve (1EA)

Shut-off valve with strainer (1EA)

Strainer

Technical Specification		Details
Material	Body	Brass
	Mesh	Stainless steel (STS304)
Mesh	Mesh No.	30
	Max. Particle Size	0.6mm
Piping Connection		Female G 1" according to ISO 228-1

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU121MRB U30 / HU123MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	9.66	8.85	8.42	8.29	-	-	-	-
-20°C DB	10.13	10.00	9.88	9.75	9.63	-	-	-
-15°C DB	11.50	11.50	11.50	11.50	11.50	11.50	-	-
-7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	-
-4°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
-2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
15°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
18°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00

HU141MRB U30 / HU143MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.04	9.21	8.76	8.62	-	-	-	-
-20°C DB	11.82	11.25	10.95	10.67	10.59	-	-	-
-15°C DB	12.52	12.90	13.26	12.88	12.81	12.63	-	-
-7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	-
-4°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
-2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
15°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
18°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00

HU161MRB U30 / HU163MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	10.98	10.00	9.50	9.33	-	-	-	-
-20°C DB	13.43	12.54	12.03	11.78	11.47	-	-	-
-15°C DB	14.23	14.39	14.50	13.95	13.86	13.12	-	-
-7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	-
-4°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
-2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
15°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
18°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HU121MRB U30 / HU123MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
30°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
40°C DB	11.75	12.00	12.00	12.00	12.00	12.00	12.00
45°C DB	11.50	12.00	12.00	12.00	12.00	12.00	12.00

HU141MRB U30 / HU143MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
30°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
40°C DB	13.75	14.00	14.00	14.00	14.00	14.00	14.00
45°C DB	13.50	14.00	14.00	14.00	14.00	14.00	14.00

HU161MRB U30 / HU163MRB U30 + HN1616Y NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
30°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
40°C DB	15.75	16.00	16.00	16.00	16.00	16.00	16.00
45°C DB	15.50	16.00	16.00	16.00	16.00	16.00	16.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

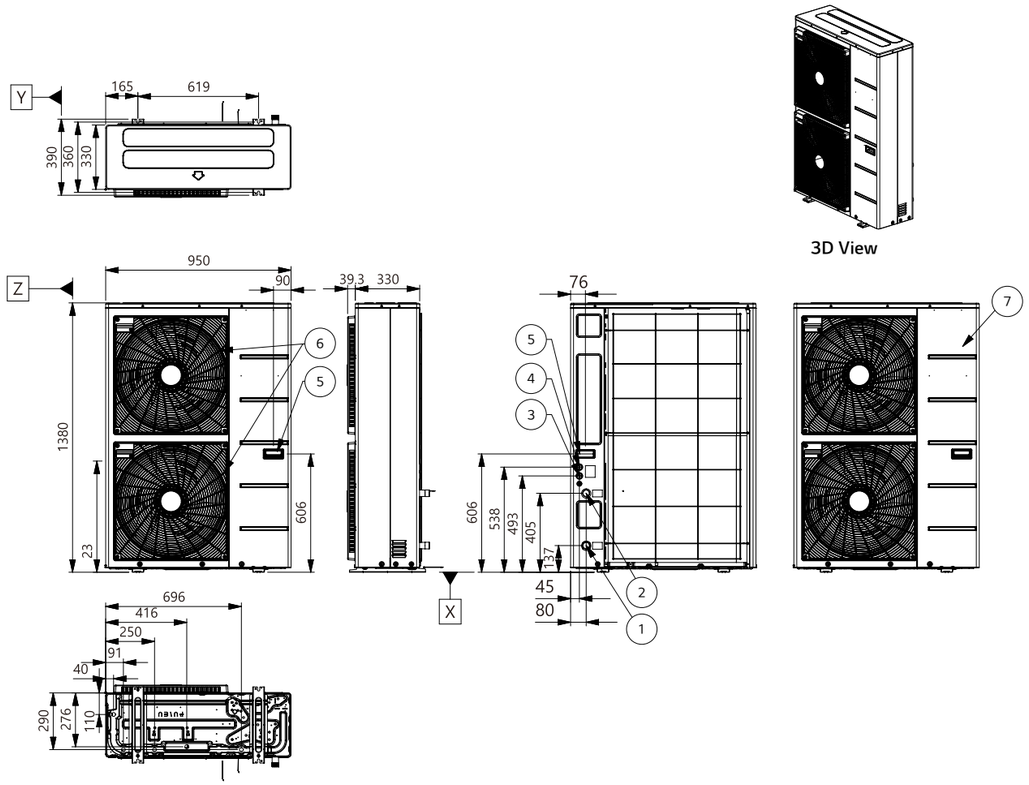
PRODUCT SPECIFICATION

Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30
	Indoor Unit	HN1616Y NB1		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1616Y NB1		

HU121MRB U30 / HU141MRB U30 / HU161MRB U30
HU123MRB U30 / HU143MRB U30 / HU163MRB U30

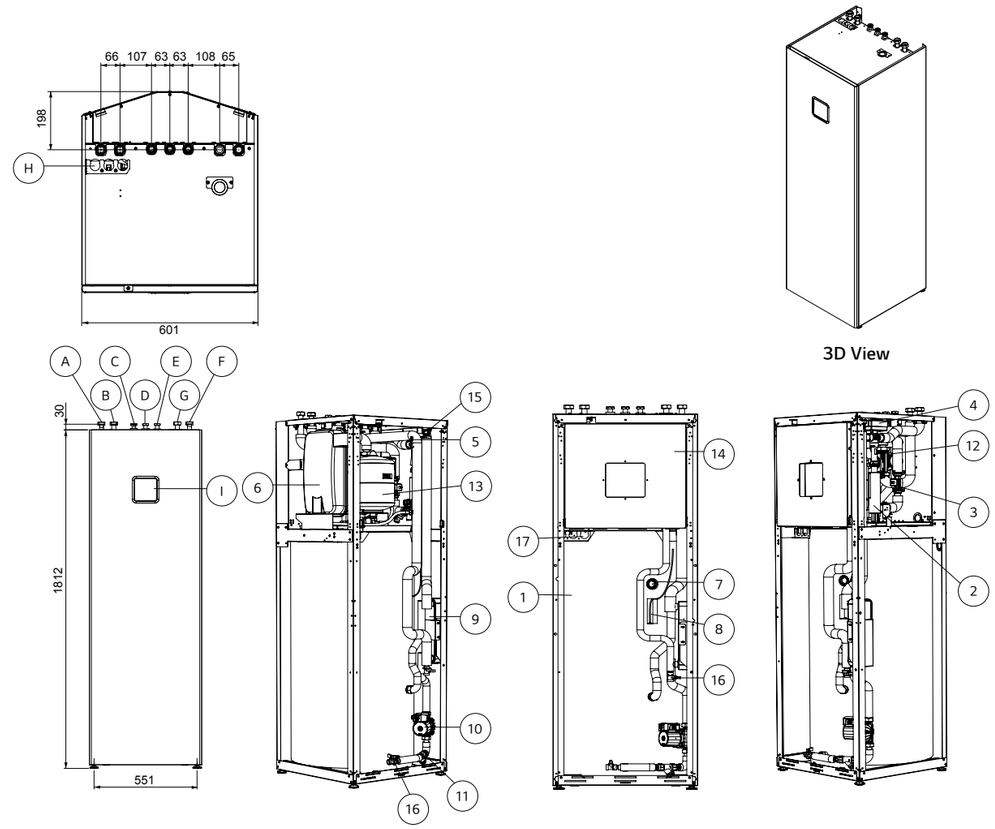
[Unit : mm]



No.	Part Name	Description
1	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Unit Power	Power cable hole
4	Low Voltage	Communication cable hole
5	Handle	-
6	Air Outlet	-
7	Side Panel	-

HN1616Y NB1

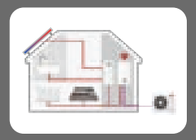
[Unit : mm]

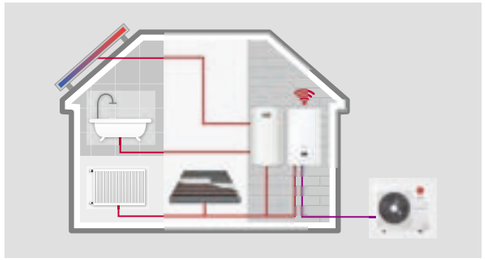


No.	Part Name	Description
1	Domestic hot water tank	200 L
2	Electric heater	Max 6 kW
3	Flow Sensor	SIKA VVX20 5-80 LPM
4	3 Way valve	Heating / DHW circuit
5	Water pressure sensor	SENSATA 2HMP
6	Expansion vessel	12 L for heating circuit
7	Magnesium anode	To prevent corrosion
8	DHW tank sensor	Temperature sensor
9	Plate heat exchanger	Heat exchange (Water / DHW tank)
10	DHW water pump	WILO ZRS 15/6-3
11	Strainer For DHW tank	Filtering and stacking particles
12	Main water pump	GRUNDFOS UPML 25-105 130 PWM A
13	Expansion vessel	8 L For DHW circuit (Accessory)
14	Control box	PCB and terminal blocks
15	Air vent	Air purging when charging water
16	Drain cock	Valve for water draining
17	Electrical conduits	For electric wiring

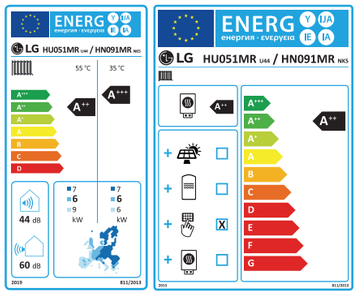
No.	Part Name	Part Name
A	Inlet pipe from outdoor unit	Female G1"
B	Outlet pipe to outdoor unit	Female G1"
C	Domestic hot water outlet pipe	Female G3/4"
D	Domestic cold water inlet pipe	Female G3/4"
E	Domestic re-circulation pipe	Female G3/4"
F	Heating circuit inlet pipe	Female G1"
G	Heating circuit outlet pipe	Female G1"
H	Electrical conduits	For electric wiring
I	Control panel	Built-in remote controller

R32 SPLIT HYDRO BOX





Energy Label



* 5kW 1Ø model.

* A+++ to D scale.

Excellent Performance & Efficiency

- R1 compressor
- R32 refrigerant
- Flash gas injection
- Wide operation range
- Black Fin heat exchanger
- Solar thermal
- Energy state

User Convenience

- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode
- Advanced pump control options
- Flow sensor
- Pressure sensor
- 2 Remote Control

Easy Installation & Maintenance

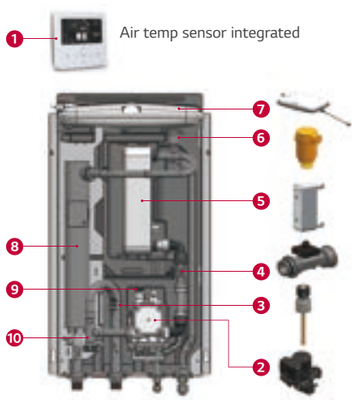
- Flexible Piping Design
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 28 ~ 35.

R32 Split Hydro Box Introduction

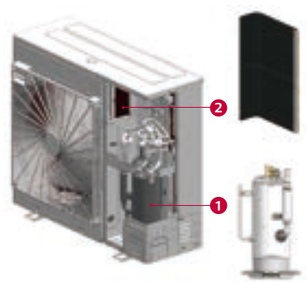
The LG THERMA V R32 Split Hydro Box is a hydro box type comprising a separate indoor and outdoor unit, which are connected by refrigerant piping. Hydronic components such as plate heat exchanger, expansion tank and water pump are located within the indoor unit, making the unit capable of withstanding freezing outside ambient temperatures.

Key Components



1. Standard III Remote controller (attached on the front panel)
2. Water pump (GRUNDFOS)
3. Water pressure sensor (SENSATA)
4. Flow sensor (SIKA)
5. Plate type heat exchanger (ref/water)
6. Air vent valve
7. Expansion vessel (8ℓ)
8. Back up electric heater (6kW)
9. Safety valve
10. Strainer

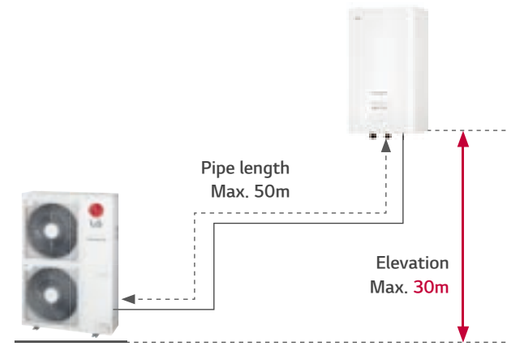
1. R1 compressor
2. Black Fin heat exchanger (ref/air)



Flexible Refrigerant Piping Design

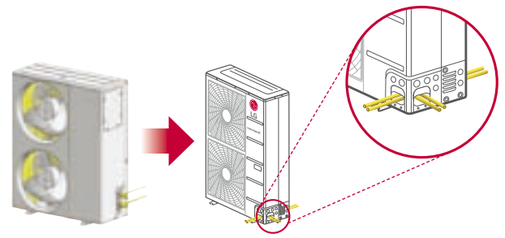
Long piping length and 3 Way piping enable flexible design and easy installation.

Piping Capabilities



3 Way Piping

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



PRODUCT SPECIFICATION

R32 Split Hydro Box

Indoor Unit
HN091MR NK5
Outdoor Unit
HU051MR U44
HU071MR U44
HU091MR U44

011-1W0315

Features

- Refrigerant pipes connects IDU & ODU
- SCOP up to 4.65 (Average climate / Low temp. application) : A+++
  SCOP up to 3.23 (Average climate / Mid temp. application) : A++
- COP up to 4.90 (Outdoor air 7℃ / Leaving water 35℃)
- 100% heating capacity at -7 ℃ OAT (@ LWT 35℃)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / MCS / EUROVENT certification

* EHPA label under development

Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
	Indoor Unit	HN091MR NK5		

Seasonal Energy

Description			Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
			Indoor Unit	HN091MR NK5		
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.65	4.65	4.65
		Seasonal Space Heating Efficiency (η_s)	%	183	183	183
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.23	3.23	3.23
		Seasonal Space Heating Efficiency (η_s)	%	126	126	126
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A++	A++	A++

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
				Indoor Unit	HN091MR NK5		
Nominal Capacity	Heating	7°C	35°C	kW	5.50	7.00	9.00
		7°C	55°C		5.50	5.50	5.50
		2°C	35°C		3.30	4.20	5.40
	Cooling	35°C	18°C		5.50	7.00	9.00
		35°C	7°C		5.50	7.00	9.00
Nominal Power Input	Heating	7°C	35°C	kW	1.12	1.43	1.94
		7°C	55°C		2.04	2.04	2.04
		2°C	35°C		0.94	1.20	1.54
	Cooling	35°C	18°C		1.20	1.56	2.14
		35°C	7°C		1.96	2.59	3.46
COP	Heating	7°C	35°C	W/W	4.90	4.90	4.65
		7°C	55°C		2.70	2.70	2.70
		2°C	35°C		3.52	3.51	3.50
EER	Cooling	35°C	18°C	W/W	4.60	4.50	4.20
		35°C	7°C		2.80	2.70	2.60

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU051MR U44	HU071MR U44	HU091MR U44
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35		
	Cooling			5 ~ 48		
Compressor	Quantity		EA	1		
	Type		-	Hermetic Sealed Scroll		
Refrigerant	Type		-	R32		
	GWP (global warming potential)		-	675		
	Precharged Amount		g	1,500		
	t-CO_2 eq		-	1.013		
Piping Connections	Outside Diameter	Gas	mm (inch)	Φ 15.88 (5/8)		
		Liquid	mm (inch)	Φ 9.52 (3/8)		
	Length	Standard	m	5		
		Max.	m	50		
	Level Difference	Max.	m	30		
	Chargeless-Pipe Length		m	10		
	Additional Charging Volume		g/m	40		
Rated Water Flow Rate (at LWT 35°C)			LPM	15.8	20.1	25.9
Sound Power Level	Heating	Rated	dB(A)	60		
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	52		
Dimensions	Unit	W x H x D	mm	950 × 834 × 330		
Weight	Unit		kg	60.0		
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044		
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50		
	Rated Running Current	Heating	A	5.0	6.3	8.6
		Cooling	A	5.3	6.9	9.5
	Recommended Circuit Breaker		A	16	20	25
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C		

Note

1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation.
   Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are based on the following conditions (It is according to EN14511) :
   • Interconnected Pipe Length is standard length and difference of Elevation
5. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is 0m.

Product Specification (Indoor Unit)

Technical Specification			Unit	HN091MR NK5
Operation Range (leaving water)	Heating	Min. ~ Max.	°C DB	15 ~ 65
	Cooling			5 ~ 27 (16 ~ 27)[1)]
	DHW			15 ~ 80[2)]
Flow Sensor	Measuring Range	Min. ~ Max.	LPM	5 ~ 80
Water Pressure Sensor	Measuring Range	Min. ~ Max.	bar(G)	0 ~ 20
Expansion Vessel	Volume		ℓ	8
Safety Valve	Pressure Limit	Upper Limit	bar	3
Backup Heater	Type		-	Sheath
	Number of Heating Coil		EA	2
	Capacity Combination		kW	3.0 + 3.0
	Heating Steps		Step	2
	Power Supply		V, Ø, Hz	220-240, 1, 50
	Rated Running Current		A	25.0
	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C
Piping Connections	Water Circuit	Inlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)
		Outlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)
	Refrigerant Circuit	Gas (outside diameter)	mm (Inch)	Ø 15.88 (5/8)
		Liquid (outside diameter)	mm (Inch)	Ø 9.52 (3/8)
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm^2 x cores	0.75 x 4C
Sound Power Level	Heating	Rated	dB(A)	44
Dimensions	Unit	W × H × D	mm	490 × 850 × 315
Weight	Unit		kg	37.6
Exterior	Color / RAL Code		-	Noble White / RAL 9016

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU051MR U44 + HN091MR NK5

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	4.02	3.90	3.78	3.66	-	-	-	-
-20°C DB	4.64	4.51	4.38	4.26	4.13	-	-	-
-15°C DB	5.26	5.12	4.99	4.85	4.72	4.58	-	-
-7°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	-
-4°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	-
-2°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	-
2°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
7°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
10°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
15°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
18°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
20°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50

HU071MR U44 + HN091MR NK5

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	5.00	4.85	4.71	4.56	-	-	-	-
-20°C DB	5.58	5.43	5.27	5.11	4.95	-	-	-
-15°C DB	6.17	6.00	5.83	5.66	5.49	5.32	-	-
-7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
-4°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
-2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
10°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
15°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
18°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
20°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

HU091MR U44 + HN091MR NK5

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	6.40	6.20	6.00	5.80	-	-	-	-
-20°C DB	7.23	7.00	6.77	6.54	6.31	-	-	-
-15°C DB	8.06	7.80	7.54	7.28	7.02	6.76	-	-
-7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	-
-4°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	-
-2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	-
2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
10°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
15°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
18°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
20°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HU051MR U44 + HN091MR NK5

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	6.42	6.95	7.49	7.85	8.39	8.75	9.11
20°C DB	6.05	6.37	6.70	6.91	7.23	7.45	7.66
30°C DB	5.68	5.79	5.90	5.97	6.08	6.15	6.22
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50
40°C DB	5.32	5.34	5.35	5.37	5.38	5.40	5.41
45°C DB	5.13	5.17	5.21	5.23	5.27	5.29	5.32

HU071MR U44 + HN091MR NK5

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	8.17	8.85	9.54	9.99	10.68	11.13	11.59
20°C DB	7.70	8.11	8.52	8.80	9.21	9.48	9.75
30°C DB	7.23	7.37	7.51	7.60	7.74	7.83	7.92
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00
40°C DB	6.77	6.79	6.81	6.83	6.85	6.87	6.88
45°C DB	6.53	6.58	6.63	6.66	6.70	6.74	6.77

HU091MR U44 + HN091MR NK5

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	10.50	11.38	12.26	12.85	13.73	14.31	14.90
20°C DB	9.90	10.43	10.96	11.31	11.84	12.19	12.54
30°C DB	9.30	9.48	9.65	9.77	9.95	10.06	10.18
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00
40°C DB	8.70	8.73	8.76	8.78	8.81	8.83	8.85
45°C DB	8.40	8.46	8.52	8.56	8.62	8.66	8.70

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

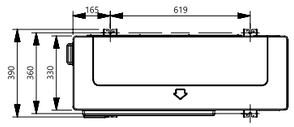
PRODUCT SPECIFICATION

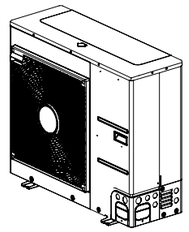
Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
	Indoor Unit	HN091MR NK5		

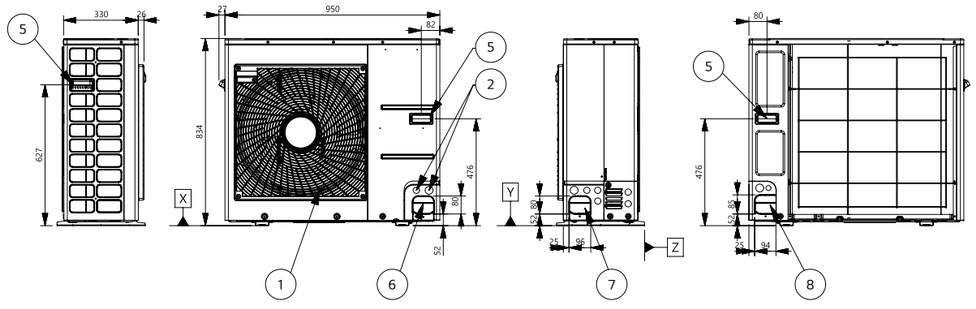
HU051MR U44 / HU071MR U44 / HU091MR U44

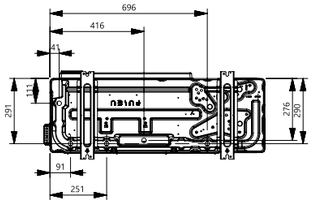
[Unit : mm]

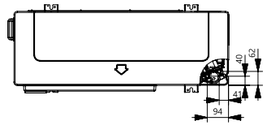


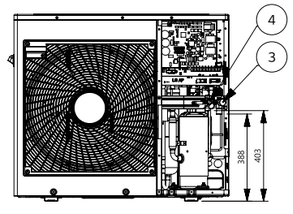


3D View







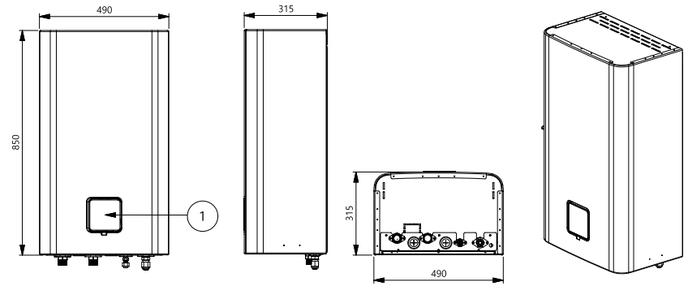


No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

HN091MR NK5

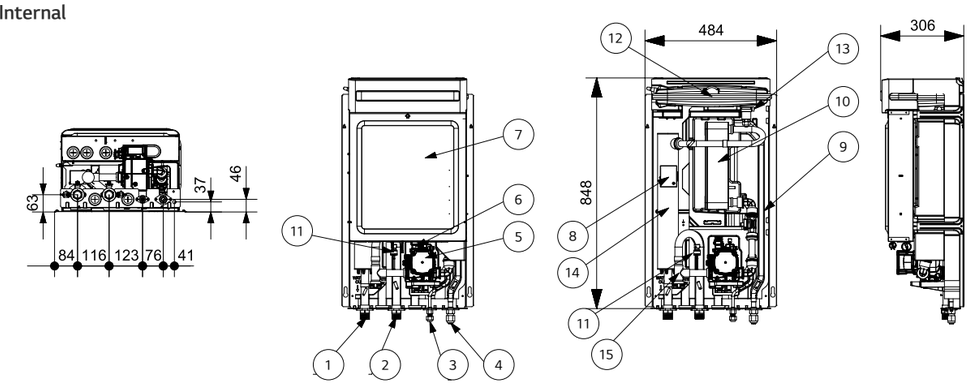
[Unit : mm]

External



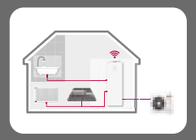
No.	Part Name	Description
1	Control Panel	Built-in remote controller

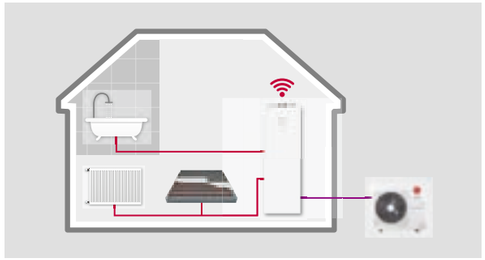
Internal



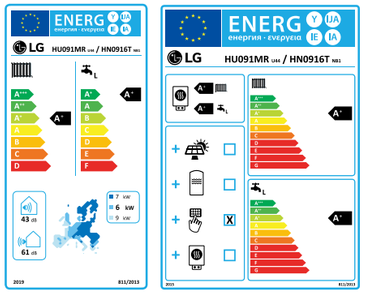
No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Refrigerant Pipe (Liquid)	Ø9.52 (mm)
4	Refrigerant Pipe (Gas)	Ø15.88 (mm)
5	Water Pump	GROUNDFOS UPM3K 20-75 CHBL
6	Safety Valve	Open at water pressure 3bar
7	Control Box	PCB and terminal blocks
8	Thermal Switch	Cut-off power input to electric heater at 90°C
9	Flow Sensor	SIKA VVX20 5-80LPM
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Sensor	SENSATA 2HMP3-04W, 0-2MPa
12	Expansion Tank	Absorbing volume change of heated water
13	Air Vent	Air purging when charging water
14	Backup Heater	6kW
15	Strainer	Filtering and stacking particles inside circulating water

R32 SPLIT IWT





Energy Label



* 9kW 1Ø model.
* A+++ to D scale.

Excellent Performance & Efficiency

- R1 compressor
- R32 refrigerant
- Flash gas injection
- Wide operation range
- Black Fin heat exchanger
- Solar thermal
- Energy state

User Convenience

- Harmonious Exterior
- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode
- Advanced pump control options
- Flow sensor
- 2 Remote Control

Easy Installation & Maintenance

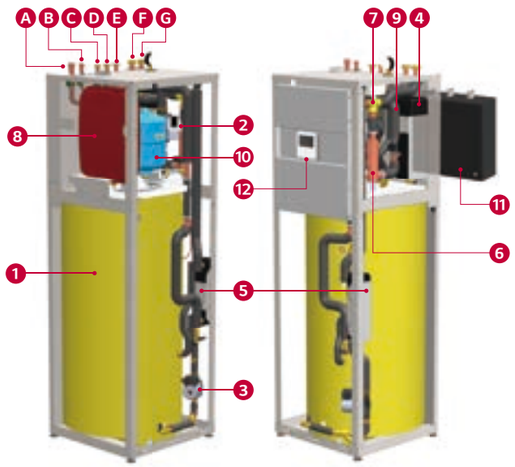
- All-in-one
- Flexible piping design
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 28 ~ 35.

R32 Split IWT Introduction

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.

Key Components



1. DHW storage tank (200ℓ)
2. Main water pump
3. Water pump for DHW charging
4. Main plate heat exchanger (ref. / water)
5. Plate heat exchanger for DHW (water / DHW)
6. Back up electric heater (max. 6kW)
7. 3 Way diverting valve
8. Expansion vessel for heating (12ℓ)
9. Flow sensor
10. Expansion vessel for DHW (8ℓ, option)
11. Buffer tank (40ℓ, option)
12. Standard III Remote controller (attached on the front panel)

- A 5/8" Refrigerant gas pipe
- B 3/8" Refrigerant liquid pipe
- C G3/4" Domestic hot water outlet
- D G3/4" Domestic cold water inlet
- E G3/4" DHW Re-circulation
- F G1" Heating circuit inlet
- G G1" Heating circuit outlet

Sophisticated and Harmonious Exterior

The THERMA V R32 Split IWT indoor unit can be installed in multiple indoor spaces, to include the utility or laundry room, garage or kitchen due to its sleek design.

Save Space and Time

Compared with conventional system, easy & quick installation is possible and smaller spaces are required for installation.

All in One

- Small footprint for product installation
- Quick & easy installation
- DHW tank (200ℓ) & hydronic component integration
- Integrated max. 6kW back up heater
- Integrated expansion tank for heating (12ℓ)
- Integrated buffer tank (40ℓ) & expansion tank for DHW circuit (8ℓ) (Optional)

PRODUCT SPECIFICATION

R32 Split IWT (Integrated Water Tank)

Indoor Unit
HN0916T NB1
Outdoor Unit
HU051MR U44
HU071MR U44
HU091MR U44

011-1W0407 EHPA for Germany, Austria

R32 65°C A+++ R1 Compressor™ Black Fin LG ThinQ

Features

- Refrigerant pipes connects IDU & ODU
- SCOP up to 4.52 (Average climate / Low temp. application) : A+++
  SCOP up to 3.03 (Average climate / Mid temp. application) : A+
  $SCOP_{DHW}$ 2.89 (water heating efficiency 120%, profile L) : A+
- COP up to 4.50 (Outdoor air 7°C / Leaving water 35°C)
- DHW tank (200ℓ) & hydronic component integration
- Integrable buffer tank (40ℓ) & expansion tank for DHW circuit (8ℓ) (optional)
- 100% heating capacity at -7°C OAT (@ LWT 35°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA (for Germany, Austria) / EUROVENT certification

Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		5.0	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
	Indoor Unit	HN0916T NB1		

Seasonal Energy

Description			Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
			Indoor Unit	HN0916T NB1		
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.52	4.47	4.45
		Seasonal Space Heating Efficiency (η_s)	%	178	176	175
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.01	3.00	3.03
		Seasonal Space Heating Efficiency (η_s)	%	117	117	118
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+	A+	A+
Domestic Hot Water Efficiency acc. EN16147	Average Climate	Declared Load Profile	-	L	L	L
		Water Heating Efficiency (η_{WH})	%	125	125	125
		$SCOP_{DHW}$	-	2.89	2.89	2.89
		Water Heating Efficiency Class	-	A+	A+	A+
	Warmer Climate	Declared Load Profile	-	L	L	L
		Water Heating Efficiency (η_{WH})	%	156	156	156
		$SCOP_{DHW}$	-	3.61	3.61	3.61
	Colder Climate	Declared Load Profile	-	L	L	L
		Water Heating Efficiency$_{(\eta wh)}$	%	106	106	106
		$SCOP_{DHW}$	-	2.44	2.44	2.44

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
				Indoor Unit	HN0916T NB1		
Nominal Capacity	Heating	7°C	35°C	kW	5.50	7.00	9.00
		7°C	55°C		5.00	5.25	5.50
	Cooling	35°C	18°C		5.50	7.00	9.00
Nominal Power Input	Heating	7°C	35°C	kW	1.22	1.56	2.05
		7°C	55°C		1.92	2.02	2.12
	Cooling	35°C	18°C		1.20	1.59	2.20
COP	Heating	7°C	35°C	W/W	4.50	4.50	4.40
		7°C	55°C		2.60	2.60	2.60
EER	Cooling	35°C	18°C		4.60	4.40	4.10

PRODUCT SPECIFICATION

R32 Split IWT (Integrated Water Tank)

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU051MR U44	HU071MR U44	HU091MR U44
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35		
	Cooling			5 ~ 48		
Compressor	Quantity		EA	1		
	Type		-	Hermetic Sealed Scroll		
Refrigerant	Type		-	R32		
	GWP (global warming potential)		-	675		
	Precharged Amount		g	1,500		
	t-CO_2 eq		-	1.013		
Piping Connections	Outside Diameter	Gas	mm (inch)	Ø 15.88 (5/8)		
		Liquid	mm (inch)	Ø 9.52 (3/8)		
	Length	Standard	m	5		
		Max.	m	50		
	Level Difference	Max.	m	30		
	Chargeless-Pipe Length		m	10		
	Additional Charging Volume		g/m	40		
Rated Water Flow Rate (at LWT 35°C)			LPM	15.8	20.1	25.9
Sound Power Level	Heating	Rated	dB(A)	60	61	
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	52	53	
Dimensions	Unit	W x H x D	mm	950 × 834 × 330		
Weight	Unit		kg	60.0		
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044		
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50		
	Rated Running Current	Heating	A	5.0	6.3	8.6
		Cooling	A	5.3	6.9	9.5
	Recommended Circuit Breaker		A	16	20	25
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C		

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation.
   Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are based on the following conditions (It is according to EN14511) :
   • Interconnected Pipe Length is standard length and difference of Elevation
5. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is 0m.

Product Specification (Indoor Unit)

Technical Specification			Unit	HN0916T NB1
Operation Range (leaving water)	Heating	Min. ~ Max.	°C DB	15 ~ 65
	Cooling			5 ~ 27 (16 ~ 27)[1]
	DHW			15 ~ 80[2]
Domestic Hot Water Tank	Volume		ℓ	200
	Internal Thermal Protect Limit		°C	85
Flow Sensor	Measuring Range	Min. ~ Max.	LPM	5 ~ 80
Water Pressure Sensor	Measuring Range	Min. ~ Max.	bar(G)	0 ~ 20
Expansion Vessel (Heating Circuit)	Volume		ℓ	12
Safety Valve	Heating Circuit	Upper Limit	bar	3
	DHW Circuit	Upper Limit	bar	10
Electric Heater (Case 1 / Case 2 / Case 3)[3]	Type		-	Sheath
	Number of Heating Coil		EA	1 / 2 / 3
	Capacity combination		kW	2.0 / 2.0 + 2.0 / 2.0 + 2.0 + 2.0
	Heating Step		Step	1
	Power Supply		V, Ø, Hz	220-240, 1, 50 / 220-240, 1, 50 / 380-415, 3, 50
	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3C / 4.0 x 3C / 2.5 x 5C
	Rated Running Current		A	8.7 / 17.4 / 8.7
Piping Connections	Refrigerant Circuit	Gas (outside diameter)	mm (inch)	Ø 15.88 (5/8)
		Liquid (outside diameter)	mm (inch)	Ø 9.52 (3/8)
	Water Circuit	Inlet	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)
		Outlet	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)
	DHW Tank Water Circuit	Cold Inlet	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)
		Hot Outlet	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)
		Recirculation	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)
Wiring Connections	Power and Communication Cable(included earth, H07RN-F)		mm^2 x cores	0.75 x 4C
Sound Power Level	Heating	Rated	dB(A)	43
Dimensions	Unit	W × H × D	mm	601 × 1,812 × 685
Weight	Unit		kg	140.0
Exterior	Color / RAL Code		-	White / RAL 9002

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.
3) The capacity of electric heater can be adjusted by wiring.

Accessory Parts (Optional Accessory)

Buffer Tank for Space Heating

As an optional accessory, the installer can install a standard 40ℓ buffer tank for space heating. Fitting seamlessly into the main casing, it can be attached on the backside of the indoor unit.

Buffer tank for space heating		Unit	OSHB-40KT.AEU
Water Volume		ℓ	40
Dimensions (W x H x D)		mm	518 x 560 x 175
Weight (w/o water)	Product	kg	24

Expansion Vessel for DHW

As an optional accessory, the installer can install a standard 8ℓ DHW expansion vessel that conveniently fits inside the indoor unit. It is provided with an accessory kit that includes a flexible connection tube.

Expansion vessel for DHW		Unit	OSHE-12KT.AEU
Expansion Volume		ℓ	8
Connection		inch	3/4
Max. Pressure		bar	10
Pre-charge		bar	3
Dimensions (W x H x D)		mm	416 x 238 x 502
Weight (w/o water)	Product	kg	2.5

Accessory Parts (Separately Provided)

Shut-off valve (1EA)

Shut-off valve with strainer (1EA)

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU051MR U44 + HN0916T NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	4.02	3.90	3.78	3.66	-	-	-	-
-20°C DB	4.64	4.51	4.38	4.26	4.13	-	-	-
-15°C DB	5.26	5.12	4.99	4.85	4.72	4.58	-	-
-7°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	-
-4°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	-
-2°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	-
2°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
7°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
10°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
15°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
18°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
20°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50

HU071MR U44 + HN0916T NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	5.00	4.85	4.71	4.56	-	-	-	-
-20°C DB	5.58	5.43	5.27	5.11	4.95	-	-	-
-15°C DB	6.17	6.00	5.83	5.66	5.49	5.32	-	-
-7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
-4°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
-2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
10°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
15°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
18°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
20°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

HU091MR U44 + HN0916T NB1

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	6.40	6.20	6.00	5.80	-	-	-	-
-20°C DB	7.23	7.00	6.77	6.54	6.31	-	-	-
-15°C DB	8.06	7.80	7.54	7.28	7.02	6.76	-	-
-7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	-
-4°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	-
-2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	-
2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
10°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
15°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
18°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
20°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HU051MR U44 + HN0916T NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	6.42	6.95	7.49	7.85	8.39	8.75	9.11
20°C DB	6.05	6.37	6.70	6.91	7.23	7.45	7.66
30°C DB	5.68	5.79	5.90	5.97	6.08	6.15	6.22
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50
40°C DB	5.32	5.34	5.35	5.37	5.38	5.40	5.41
45°C DB	5.13	5.17	5.21	5.23	5.27	5.29	5.32

HU071MR U44 + HN0916T NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	8.17	8.85	9.54	9.99	10.68	11.13	11.59
20°C DB	7.70	8.11	8.52	8.80	9.21	9.48	9.75
30°C DB	7.23	7.37	7.51	7.60	7.74	7.83	7.92
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00
40°C DB	6.77	6.79	6.81	6.83	6.85	6.87	6.88
45°C DB	6.53	6.58	6.63	6.66	6.70	6.74	6.77

HU091MR U44 + HN0916T NB1

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
10°C DB	10.50	11.38	12.26	12.85	13.73	14.31	14.90
20°C DB	9.90	10.43	10.96	11.31	11.84	12.19	12.54
30°C DB	9.30	9.48	9.65	9.77	9.95	10.06	10.18
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00
40°C DB	8.70	8.73	8.76	8.78	8.81	8.83	8.85
45°C DB	8.40	8.46	8.52	8.56	8.62	8.66	8.70

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

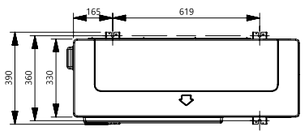
PRODUCT SPECIFICATION

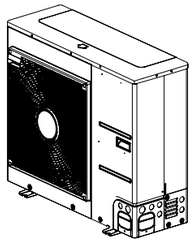
Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
	Indoor Unit	HN0916T NB1		

HU051MR U44 / HU071MR U44 / HU091MR U44

[Unit : mm]



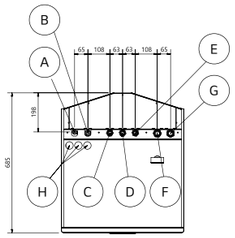


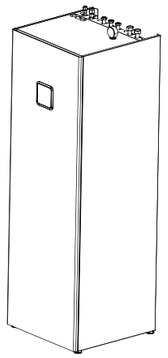
3D View

No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

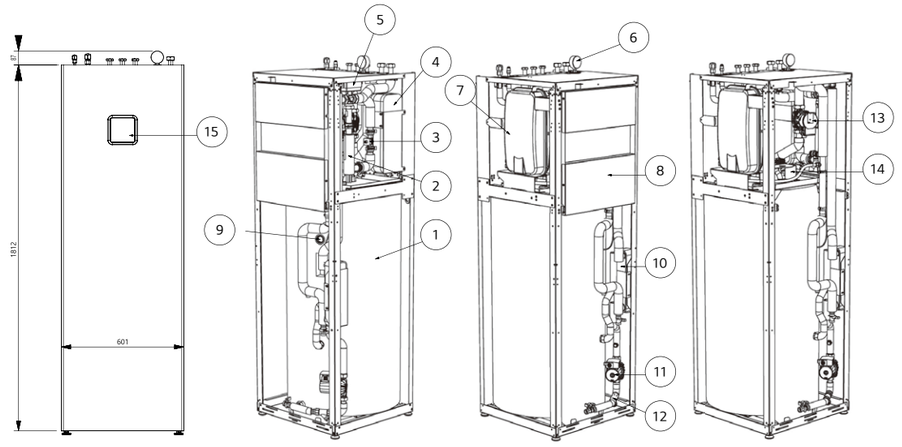
HN0916T NB1

[Unit : mm]





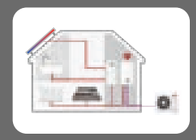
3D View

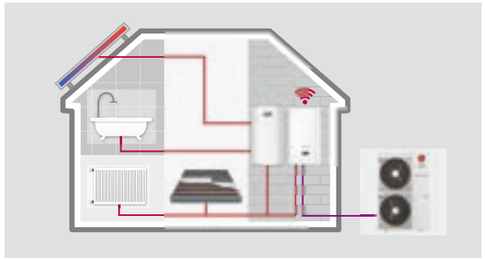


No.	Part Name	Description
1	DHW Tank	Domestic Hot Water Tank (200L)
2	Electric Heater	Max. 6kW
3	Flow Sensor	SIKA VVXC9SNBUC00252P
4	Heat Exchanger	Plate-heat-exchanger (refrigerant / water)
5	3 Way Valve	3 Way valve (DHW / heating)
6	Pressure Gauge	Pressure gauge
7	Expansion Vessel (12L)	Expansion vessel for Heating
8	Control Box	PCB and terminal blocks
9	Magnesium Anode	To prevent corrosion
10	Heat Exchanger	Plate-heat-exchanger (water / DHW)
11	DHW Water Pump	WILO ZRS 15/6-3 KU
12	DHW Strainer	Filtering and stacking particles
13	Main Water Pump	WILO Para KU 25-130/8-75/12 iPWM1
14	Bracket	For DHW Expansion vessel (accessory)
15	Remote Controller	Built-in remote controller

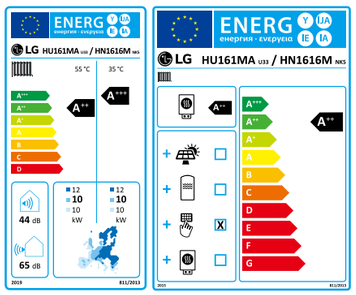
No.	Description
A	G5/8'' Refrigerant Gas Pipe
B	G3/8'' Refrigerant liquid Pipe
C	G3/4'' Domestic hot water outlet
D	G3/4'' Domestic cold water inlet
E	G3/4'' DHW Re-circulation
F	G1'' Heating circuit inlet
G	G1'' Heating circuit outlet
H	Cable lead throughs

R410A SPLIT HYDRO BOX





Energy Label



* 16kW 1Ø model.

* A+++ to D scale.

Excellent Performance & Efficiency

- R1 compressor
- R410A refrigerant
- Wide operation range
- Gold Fin heat exchanger
- Solar thermal
- Energy state

User Convenience

- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode
- Advanced pump control options
- Flow sensor
- Pressure sensor
- 2 Remote Control

Easy Installation & Maintenance

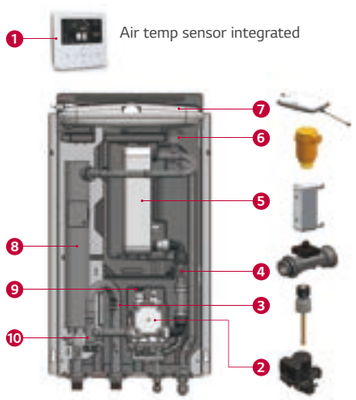
- Flexible Piping Design
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 28 ~ 35.

R410A Split Hydro Box Introduction

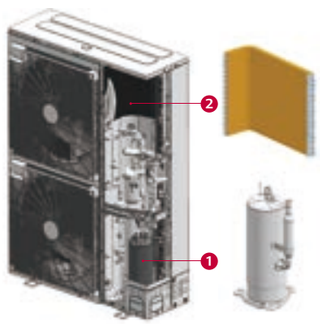
The LG THERMA V R410A Split Hydro Box is a hydro box type comprising a separate indoor and outdoor unit, which are connected by refrigerant piping. Hydronic components such as plate heat exchanger, expansion tank and water pump are located within the indoor unit, making the unit capable of withstanding freezing outside ambient temperatures.

Key Components



1. Standard III Remote controller (attached on the front panel)
2. Water pump (GRUNDFOS)
3. Water pressure sensor (SENSATA)
4. Flow sensor (SIKA)
5. Plate type heat exchanger (ref/water)
6. Air vent valve
7. Expansion vessel (8ℓ)
8. Back up electric heater (6kW)
9. Safety valve
10. Strainer

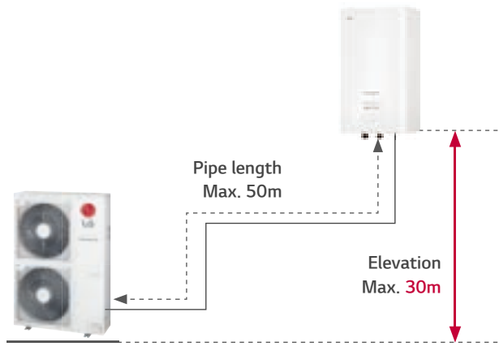
1. R1 compressor
2. Gold Fin heat exchanger (ref/air)



Flexible Refrigerant Piping Design

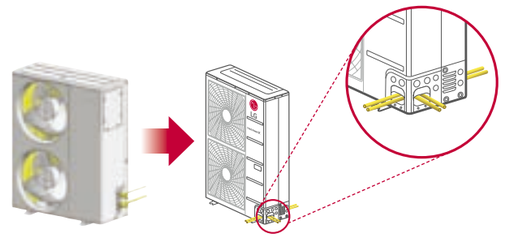
Long piping length and 3 Way piping enable flexible design and easy installation.

Piping Capabilities



3 Way Piping

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



PRODUCT SPECIFICATION

R410A Split Hydro Box

Indoor Unit

HN1616M NK5
HN1636M NK5

Outdoor Unit

HU121MA U33
HU141MA U33
HU161MA U33
HU123MA U33
HU143MA U33
HU163MA U33

011-1W0190

R410A 57°C A+++ R1 Compressor™ LG ThinQ

Features

- Refrigerant pipes connects IDU & ODU
- SCOP up to 4.65 (Average climate / Low temp. application) : A+++
  SCOP up to 3.37 (Average climate / Mid temp. application) : A++
- COP up to 4.55 (Outdoor air 7℃ / Leaving water 35℃)
- 100% heating capacity at -7 ℃ OAT (@ LWT 35℃)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R1 compressor
- Gold Fin heat exchanger
- LG ThinQ
- KEYMARK / MCS / EUROVENT certification

* EHPA label under development

Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121MA U33	HU141MA U33	HU161MA U33
	Indoor Unit	HN1616M NK5		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MA U33	HU143MA U33	HU163MA U33
	Indoor Unit	HN1636M NK5		

Seasonal Energy

Description			Outdoor Unit	HU121MA U33 (1Ø) / HU123MA U33 (3Ø)	HU141MA U33 (1Ø) / HU143MA U33 (3Ø)	HU161MA U33 (1Ø) / HU163MA U33 (3Ø)
			Indoor Unit	HN1616M NK5 (1Ø) / HN1636M NK5 (3Ø)		
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.65	4.61	4.56
		Seasonal Space Heating Efficiency (η_s)	%	183	182	179
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.36	3.37	3.32
		Seasonal Space Heating Efficiency (η_s)	%	131	132	130
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A++	A++	A++

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit / Indoor Unit	HU121MA U33 (1Ø) / HU123MA U33 (3Ø) / HN1616M NK5 (1Ø) / HN1636M NK5 (3Ø)	HU141MA U33 (1Ø) / HU143MA U33 (3Ø) / HN1616M NK5 (1Ø) / HN1636M NK5 (3Ø)	HU161MA U33 (1Ø) / HU163MA U33 (3Ø) / HN1616M NK5 (1Ø) / HN1636M NK5 (3Ø)
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		11.00	11.50	12.00
		2°C	35°C		11.00	12.00	13.80
	Cooling	35°C	18°C		10.40	12.00	13.00
		35°C	7°C		7.94	8.50	8.92
Nominal Power Input	Heating	7°C	35°C	kW	2.64	3.17	3.76
		7°C	55°C		4.31	4.51	4.71
		2°C	35°C		3.04	3.32	3.83
	Cooling	35°C	18°C		2.60	3.08	3.60
		35°C	7°C		2.66	3.02	2.53
COP	Heating	7°C	35°C	W/W	4.55	4.41	4.26
		7°C	55°C		2.55	2.55	2.55
		2°C	35°C		3.62	3.61	3.60
EER	Cooling	35°C	18°C	W/W	4.00	3.90	3.61
		35°C	7°C		2.98	2.81	3.53

PRODUCT SPECIFICATION

R410A Split Hydro Box

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU121MA U33	HU141MA U33	HU161MA U33	HU123MA U33	HU143MA U33	HU163MA U33
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35					
	Cooling			5 ~ 48					
Compressor	Quantity		EA	1					
	Type		-	Hermetic Sealed Scroll					
Refrigerant	Type		-	R410A					
	GWP (global warming potential)		-	2,088					
	Precharged Amount		g	2,500					
	t-CO_2 eq		-	5.219					
Piping Connections	Outside Diameter	Gas	mm (inch)	Ø 15.88 (5/8)					
		Liquid	mm (inch)	Ø 9.52 (3/8)					
	Length	Standard	m	7.5					
		Max.	m	50					
	Level Difference	Max.	m	30					
	Chargeless-Pipe Length		m	7.5					
	Additional Charging Volume		g/m	40					
Rated Water Flow Rate (at LWT 35°C)			LPM	34.5	40.3	46.0	34.5	40.3	46.0
Sound Power Level	Heating	Rated	dB(A)	63	64	65	63	64	65
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	55	56	57	55	56	57
Dimensions	Unit	W x H x D	mm	950 x 1,380 x 330					
Weight	Unit		kg	84.8			85.4		
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044					
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50			380-415, 3, 50		
	Rated Running Current	Heating	A	11.5	13.8	16.3	6.6	8.0	9.4
		Cooling	A	11.3	13.4	15.7	6.5	7.7	9.0
	Recommended Circuit Breaker		A	40			20		
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	6.0 x 3C			2.5 x 5C		

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation.
   Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. Performances are based on the following conditions (It is according to EN14511) :
   • Interconnected Pipe Length is standard length and difference of Elevation
5. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is 0m.

Product Specification (Indoor Unit)

Technical Specification			Unit	HN1616M NK5	HN1636M NK5
Operation Range (leaving water)	Heating	Min. ~ Max.	°C DB	15 ~ 57	
	Cooling			5 ~ 27 (16 ~ 27)[1)]	
	DHW			15 ~ 80[2)]	
Flow Sensor	Measuring Range	Min. ~ Max.	LPM	5 ~ 80	
Water Pressure Sensor	Measuring Range	Min. ~ Max.	bar(G)	0 ~ 20	
Expansion Vessel	Volume		ℓ	8	
Safety Valve	Pressure Limit	Upper Limit	bar	3	
Backup Heater	Type		-	Sheath	Sheath
	Number of Heating Coil		EA	2	3
	Capacity Combination		kW	3.0 + 3.0	2.0 + 2.0 + 2.0
	Heating Steps		Step	2	2
	Power Supply		V, Ø, Hz	220-240, 1, 50	380-415, 3, 50
	Rated Running Current		A	25.0	8.7
	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C	2.5 x 4C
Piping Connections	Water Circuit	Inlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)	
		Outlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)	
	Refrigerant Circuit	Gas (outside diameter)	mm (Inch)	Ø 15.88 (5/8)	
		Liquid (outside diameter)	mm (Inch)	Ø 9.52 (3/8)	
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm^2 x cores	0.75 x 4C	
Sound Power Level	Heating	Rated	dB(A)	44	
Dimensions	Unit	W x H x D	mm	490 x 850 x 315	
Weight	Unit		kg	40.0	41.0
Exterior	Color / RAL Code		-	Noble White / RAL 9016	

1) When fan coil unit not used.
2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. This product contains Fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU121MA U33 + HN1616M NK5 / HU123MA U33 + HN1636M NK5

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C
	TC	TC	TC	TC	TC	TC
-20°C DB	11.25	10.95	10.22	9.85	-	-
-15°C DB	12.00	11.32	10.90	10.32	-	-
-7°C DB	12.00	11.66	11.45	11.16	11.13	-
-4°C DB	12.00	12.00	12.00	12.00	12.00	11.24
-2°C DB	12.00	12.00	12.00	12.00	12.00	11.98
2°C DB	12.00	12.00	12.00	12.00	12.00	12.00
7°C DB	12.00	12.00	12.00	12.00	12.00	12.00
10°C DB	12.00	12.00	12.00	12.00	12.00	12.00
15°C DB	12.00	12.00	12.00	12.00	12.00	12.00
18°C DB	12.00	12.00	12.00	12.00	12.00	12.00
20°C DB	12.00	12.00	12.00	12.00	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00

HU141MA U33 + HN1616M NK5 / HU143MA U33 + HN1636M NK5

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C
	TC	TC	TC	TC	TC	TC
-20°C DB	11.25	11.17	10.79	10.32	-	-
-15°C DB	12.11	11.98	11.54	10.90	-	-
-7°C DB	13.06	12.99	12.77	12.27	12.42	-
-4°C DB	14.00	14.00	14.00	13.64	13.09	11.67
-2°C DB	14.00	14.00	14.00	14.00	14.00	12.67
2°C DB	14.00	14.00	14.00	14.00	14.00	13.98
7°C DB	14.00	14.00	14.00	14.00	14.00	14.00
10°C DB	14.00	14.00	14.00	14.00	14.00	14.00
15°C DB	14.00	14.00	14.00	14.00	14.00	14.00
18°C DB	14.00	14.00	14.00	14.00	14.00	14.00
20°C DB	14.00	14.00	14.00	14.00	14.00	14.00
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00

HU161MA U33 + HN1616M NK5 / HU163MA U33 + HN1636M NK5

Outdoor Temperature	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C
	TC	TC	TC	TC	TC	TC
-20°C DB	12.27	12.01	11.48	10.86	-	-
-15°C DB	13.11	12.90	12.62	12.30	-	-
-7°C DB	13.73	13.70	13.46	13.16	12.42	-
-4°C DB	14.36	14.50	14.30	14.01	13.40	12.50
-2°C DB	15.20	14.80	14.50	14.25	14.00	13.50
2°C DB	16.00	16.00	16.00	16.00	16.00	14.51
7°C DB	16.00	16.00	16.00	16.00	16.00	16.00
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00
15°C DB	16.00	16.00	16.00	16.00	16.00	16.00
18°C DB	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HU121MA U33 + HN1616M NK5 / HU123MA U33 + HN1636M NK5

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
20°C DB	7.60	8.55	9.51	10.33	11.19	11.98	-
30°C DB	8.62	9.05	9.78	10.67	10.90	11.37	-
35°C DB	7.94	8.66	9.33	10.10	10.40	10.75	11.16
40°C DB	7.56	8.02	8.81	9.36	9.54	9.89	10.28
45°C DB	6.38	7.08	7.79	8.44	9.14	9.44	9.78

HU141MA U33 + HN1616M NK5 / HU143MA U33 + HN1636M NK5

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
20°C DB	8.13	9.87	10.97	11.92	12.91	13.82	-
30°C DB	9.24	10.44	11.29	12.31	12.58	13.12	-
35°C DB	8.50	9.99	10.76	11.65	12.00	12.40	12.88
40°C DB	8.10	9.25	10.17	10.80	11.01	11.42	11.86
45°C DB	7.17	8.17	8.99	9.73	10.55	10.89	11.23

HU161MA U33 + HN1616M NK5 / HU163MA U33 + HN1636M NK5

Outdoor Temperature	LWT 7°C	LWT 10°C	LWT 13°C	LWT 15°C	LWT 18°C	LWT 20°C	LWT 22°C
	TC	TC	TC	TC	TC	TC	TC
20°C DB	8.54	10.69	11.89	12.91	13.98	14.97	-
30°C DB	9.70	11.31	12.22	13.34	13.63	14.21	-
35°C DB	8.92	10.82	11.66	12.63	13.00	13.43	13.96
40°C DB	8.51	10.03	11.02	11.70	11.93	12.37	12.85
45°C DB	7.52	8.85	9.73	10.55	11.42	11.80	12.16

Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

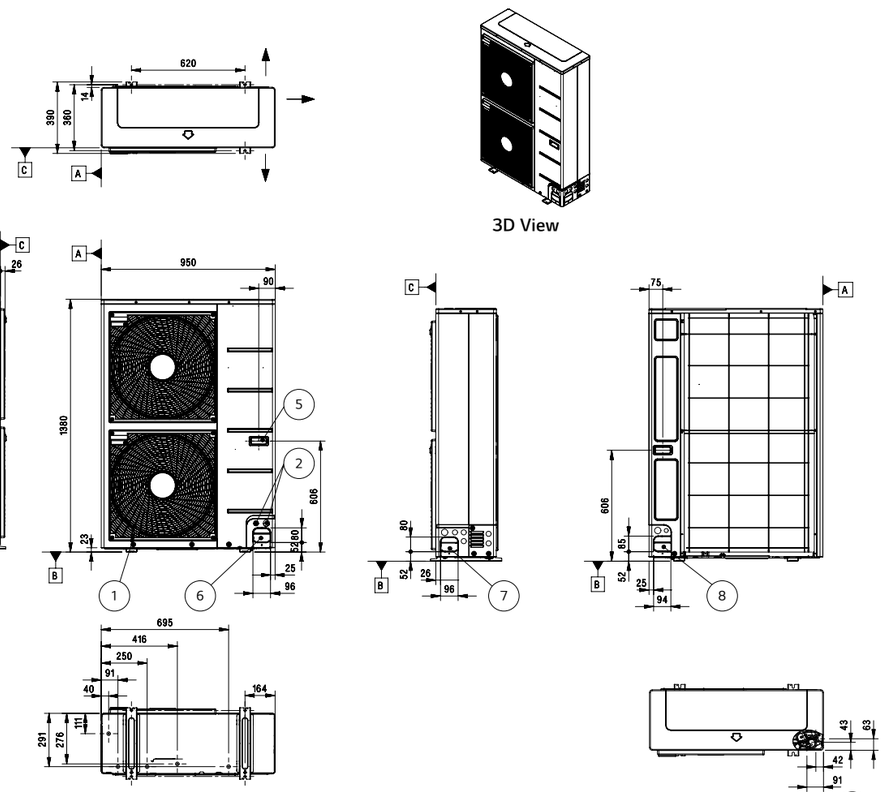
PRODUCT SPECIFICATION

Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121MA U33	HU141MA U33	HU161MA U33
	Indoor Unit	HN1616M NK5		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MA U33	HU143MA U33	HU163MA U33
	Indoor Unit	HN1636M NK5		

HU121MA U33 / HU141MA U33 / HU161MA U33 /
HU123MA U33 / HU143MA U33 / HU163MA U33

[Unit : mm]



3D View

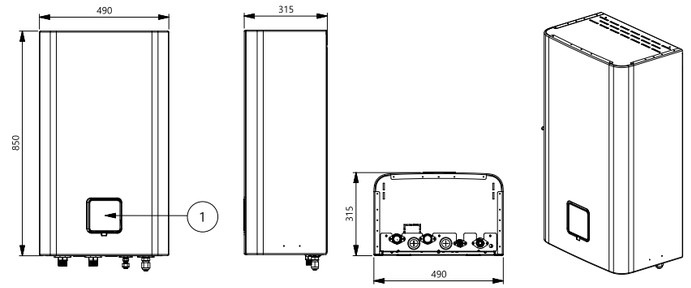
No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

Piping Connection Port

HN1616M NK5 / HN1636M NK5

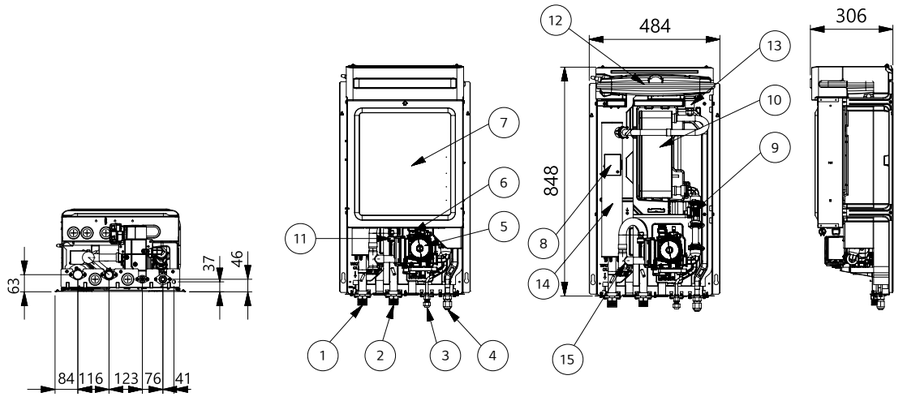
[Unit : mm]

External

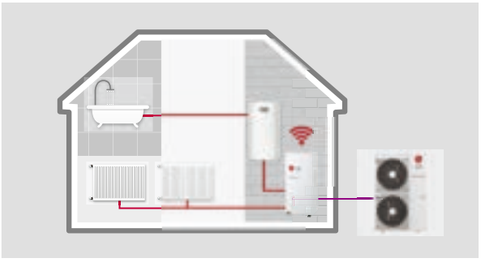


No.	Part Name	Description
1	Control Panel	Built-in remote controller

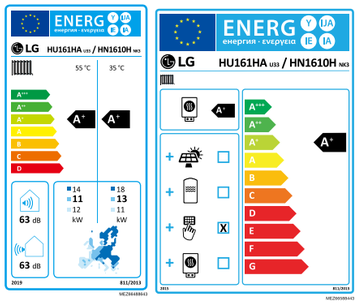
Internal



No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Entering Water pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Refrigerant Pipe (Liquid)	Ø9.52 (mm)
4	Refrigerant Pipe (Gas)	Ø15.88 (mm)
5	Water Pump	GROUNDFOS UPML 20-105 CHBL
6	Safety Valve	Open at water pressure 3bar
7	Control Box	PCB and terminal blocks
8	Thermal Switch	Cut-off power input to electric heater at 90°C
9	Flow Sensor	SIKA VVX20 5-80LPM
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Sensor	SENSATA 2HMP3-04W, 0-2MPa
12	Expansion Tank	Absorbing volume change of heated water
13	Air Vent	Air purging when charging water
14	Backup Heater	6 kW
15	Strainer	Filtering and stacking particles inside circulating water



Energy Label



* 16kW 1Ø model.
* A+++ to D scale.

Excellent Performance & Efficiency

- R1 compressor
- Cascade 2 stage compression
- Wide operation range
- Black Fin heat exchanger
- Energy state

User Convenience

- Intuitive interface
- LG ThinQ
- 2 Remote Control
- Energy monitoring
- Seasonal auto mode
- Suitable for old radiator

Easy Installation & Maintenance

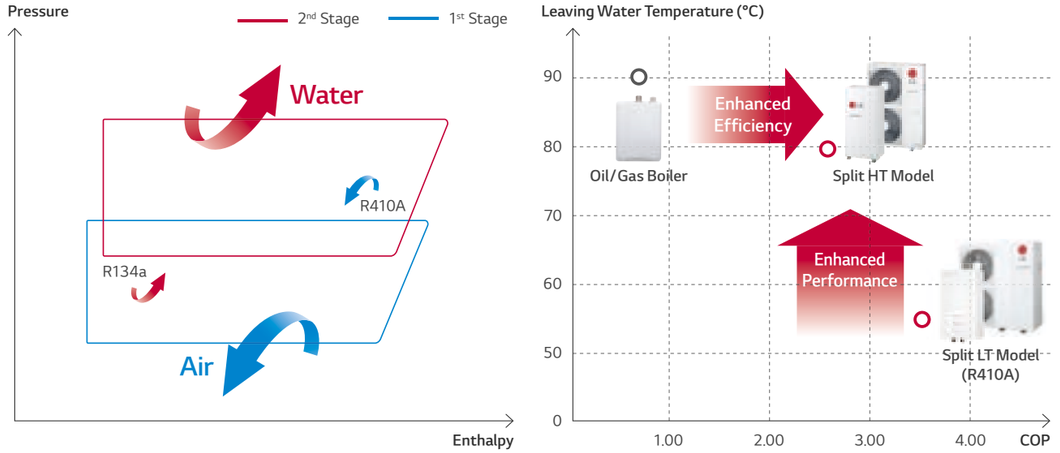
- Flexible Piping Design
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 28 ~ 33.

Cascade 2 Stage Compression Technology

The THERMA V High Temperature unit can produce up to 80°C hot water with high efficiency through cascade 2 stage compression (from R410A to R134a) technology, making it an optimized replacement for a boiler heating system which demands hot water supply.

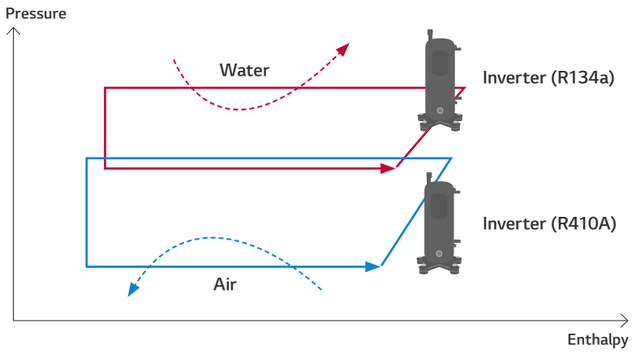
High Temperature through Cascade Cycle Technology



* Condition for HT model : Outdoor air temp. 18°C, Entering water temp. 70°C
* Condition for LT model : Outdoor air temp. 18°C, Entering water temp. 55°C

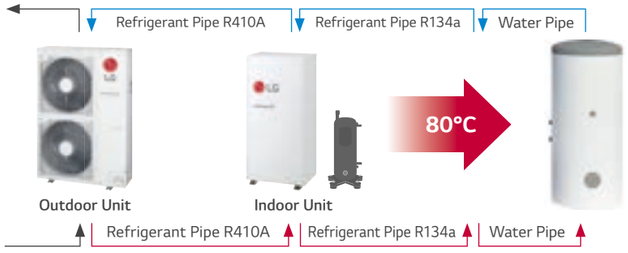
Note
1. OAT : Outdoor Air Temperature, EWT : Entering Water Temperature, LWT : Leaving Water Temperature

THERMA V High Temperature Cycle



High Temperature Introduction

The LG THERMA V High Temperature is a split type unit that consists of a separate indoor and outdoor unit. With cascade 2 stage compression technology, it can supply a high leaving water temperature of up to 80°C, while maintaining high energy efficiency.



Suitable for Old Radiator

The LG THERMA V High Temperature product is suitable for houses with poor insulation, an existing radiator heating system, or are required to meet sanitary water regulation needs at high temperatures.

PRODUCT SPECIFICATION

High Temperature

Indoor Unit
HN1610H NK3
Outdoor Unit
HU161HA U33

011-1W0336

R410A/ R134a

80°C

R1 Compressor™ Black Fin LG ThinQ

Features

- Maximum 80°C Leaving water temperature
- Cascade 2 stage compression
- Only for heating (no cooling)
- Suitable for old radiator
- SCOP up to 3.23 (Average climate / Low temp. application) : A+
  SCOP up to 3.01 (Average climate / Mid temp. application) : A+
- COP up to 3.27 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -7 ℃ OAT (@ LWT 35°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 25 ~ 80°C)
- R1 compressor (for outdoor unit)
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / MCS / EUROVENT certification

Model Line-up

Category	Unit	Model Name
		Capacity (kW)
		16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU161HA U33
	Indoor Unit	HN1610H NK3

Seasonal Energy

Description			Outdoor Unit	HU161HA U33
			Indoor Unit	HN1610H NK3
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	3.23
		Seasonal Space Heating Efficiency (η_S)	%	126
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+
	Average Climate Water Outlet 55°C	SCOP	-	3.01
		Seasonal Space Heating Efficiency (η_S)	%	117
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU161HA U33
				Indoor Unit	HN1610H NK3
Nominal Capacity	Heating	7°C	35°C	kW	16.00
		7°C	55°C		14.00
		2°C	35°C		16.00
Nominal Power Input	Heating	7°C	35°C	kW	4.89
		7°C	55°C		5.00
		2°C	35°C		4.92
COP	Heating	7°C	35°C	W/W	3.27
		7°C	55°C		2.78
		2°C	35°C		3.25

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU161HA U33
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35
Compressor	Quantity		EA	1
	Type		-	Hermetic Sealed Scroll
Refrigerant	Type		-	R410A
	GWP (global warming potential)		-	2,088
	Precharged Amount		g	3,800
	t-CO_2 eq		-	7.933
Piping Connections	Outside Diameter	Gas	mm (inch)	Ø 15.88 (5/8)
		Liquid	mm (inch)	Ø 9.52 (3/8)
	Length	Standard	m	7.5
		Max.	m	50
	Level Difference	Max.	m	30
	Chargeless-Pipe Length		m	7.5
	Additional Charging Volume		g/m	40
Rated Water Flow Rate	at LWT 35 °C		LPM	46.0
Sound Power Level	Heating	Rated	dB(A)	63
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	55
Dimensions	Unit	W x H x D	mm	950 × 1,380 × 330
Weight	Unit		kg	89.0
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50
	Rated Running Current	Heating	A	8.4
	Recommended Circuit Breaker		A	20
Wiring Connections	Power Cable (included earth)		mm^2 x cores	4.0 x 3C

Product Specification (Indoor Unit)

Technical Specification			Unit	HN1610H NK3
Operation Range (leaving water temp.)	Heating	Min. ~ Max.	°C DB	25 ~ 80
Compressor	Quantity		EA	1
	Type		-	Hermetic Sealed Twin Rotary
Refrigerant	Type		-	R134a
	GWP (global warming potential)		-	1,430
	Precharged Amount		g	1,800
	t-CO_2 eq		-	2.574
Piping Connections	Water Circuit	Inlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)
		Outlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)
	Refrigerant Circuit	Gas (outside diameter)	mm (Inch)	Ø15.88 (5/8)
		Liquid (outside diameter)	mm (Inch)	Ø9.52 (3/8)
Rated Water Flow Rate (at LWT 35°C)			LPM	46.0
Sound Power Level	Heating	Rated	dB(A)	58 / 63[1)]
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	50
Dimensions	Unit	W x H x D	mm	520 x 1,080 x 330
Weight	Unit		kg	84.0
Exterior	Color / RAL Code		-	Morning Gray / RAL 7030
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220 ~ 240, 1, 50
	Rated Running Current	Heating	A	9.8
	Recommended Circuit Breaker		A	25
Wiring Connections	Power Cable (included earth)		mm^2 x cores	4.0 x 3C (H07RN-F)
	Communication Cable (included earth)		mm^2 x cores	1.0 ~ 1.5 x 2C (VCTF-SB)
Accessory Kit of the Indoor Unit			**Unit**	**HN1610H NK3**
Remote Controller			-	Standard III
Water Tank Temperature Sensor with Holder	Sensor Size		Ø	7
	Resistance		kΩ	5
Strainer	Mesh Size / Material		-	28 mesh / Stainless Steel

1) This sound power level (63dB(A)) is when AC cooling fan is operated.

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes.
   Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound power level is measured on the rated condition in according with ISO 9614 standard.
   Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field.
   Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
4. This product contains Fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU161HA U33 + HN1610H NK3

Outdoor Temperature	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55°C	LWT 60 °C	LWT 65 °C	LWT 70 °C	LWT 75 °C	LWT 80 °C
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
-25°C DB	13.50	13.29	13.07	12.86	12.64	12.43	12.21	12.00	-	-
-20°C DB	14.19	14.04	13.88	13.73	13.58	13.42	13.27	13.11	12.96	-
-15°C DB	14.89	14.79	14.70	14.60	14.51	14.41	14.32	14.22	14.10	14.00
-7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
-4°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
-2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
2°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
7°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
10°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
15°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
18°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
20°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

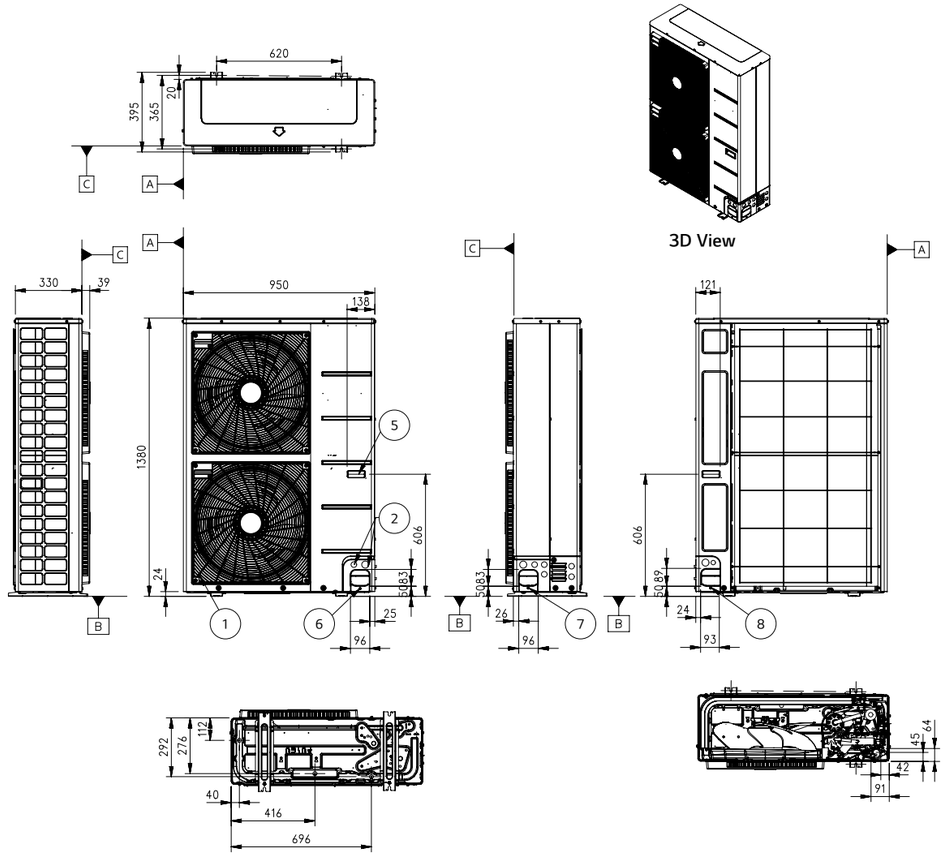
Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be found on specifications.
   • Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
   • In accordance with the test standard (or nations), the rating will vary slightly.
4. The shaded areas are not guaranteed continuous operation.

PRODUCT SPECIFICATION

Drawings

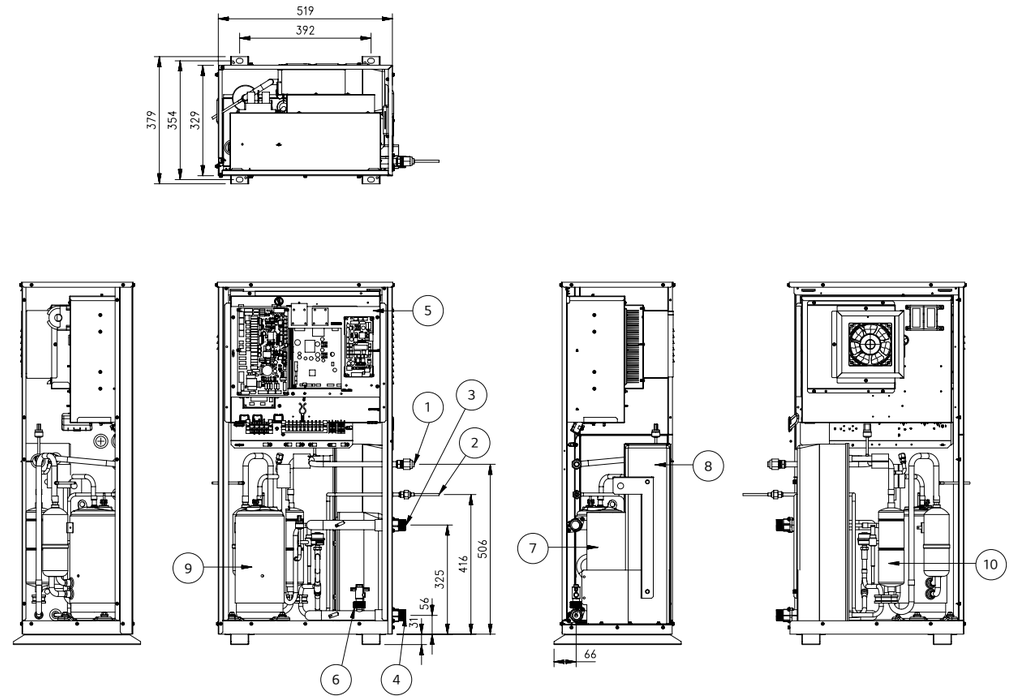
Category	Unit	Model Name
		Capacity (kW)
		16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU161HA U33
	Indoor Unit	HN1610H NK3

HU161HA U33 [Unit : mm]



No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

HN1610H NK3 [Unit : mm]



No.	Part Name	Description
1	Refrigerant Pipe (Liquid)	Ø9.52 (mm)
2	Refrigerant Pipe (Gas)	Ø15.88 (mm)
3	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
4	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
5	Control Box	PCB and terminal blocks
6	Flow Switch	Minimum operation range at 15LPM
7	Plate Heat Exchanger	Heat exchanger between refrigerant and water
8	Plate Heat Exchanger	Heat exchanger between refrigerant and refrigerant
9	Compressor	EPT525MBA
10	Accumulator	716 cc

THERMA V™

HEAT PUMP WATER HEATER

OVER 70%
Energy Saving

30%
Faster Water Heating

PRODUCT FEATURES

Stylish Design

LG's exclusive square design and luxury silver color make it an excellent design for the interior.

Perfect Matching with Various Spaces



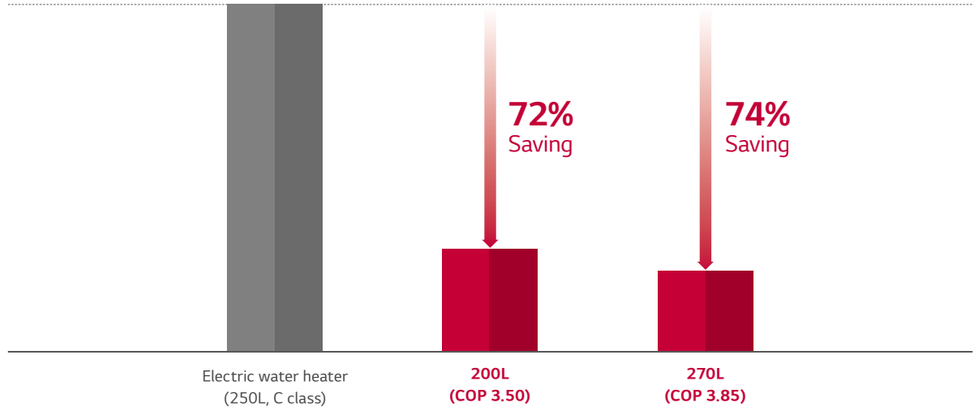

Top Class Energy Efficiency

LG's new Inverter Heat Pump Water Heater allows for an impressive energy savings of over 70% compared to a conventional electric heater due to the highly efficient DUAL Inverter Compressor.

Energy Saving

LG's Heat Pump Water Heater, using market's first DUAL Inverter Compressor, DUAL Inverter Compressor can run at low rotational speed (up to 10Hz)and reduces energy consumption, 70% more than Electric Water Heater (250L, C class).

Average Estimated Energy Consumption Saving Per Year



※ Simulation Data on Daily Electricity Consumption, based on EU Climate Condition (Average, 15°C).
※ Data is based on LG Internal Simulation.
※ The data is depending on the experimental condition and is changeable according to the usage environment

PRODUCT FEATURES

Powerful Heating Performance

The DUAL Inverter Compressor maximizes the heat pump's power in turbo mode for a 30% faster heating time for first-use water than auto mode operation.

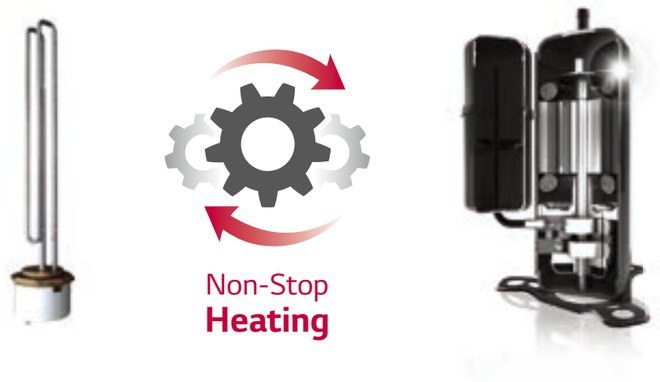
Fast & Powerful Water Heating

Turbo Mode can run at high speeds (up to 80Hz) with simultaneous heating. The target water temperature in the tank will be achieved 30% faster in Turbo Mode than in Use auto mode or Auto Mode. Furthermore, Turbo Mode can recover the water at 25% warmer temperatures than Use auto mode or Auto Mode after 1 hour from an empty tank.

※ The data is based on LG internal test and simulation.
※ The data is depending on the experimental condition and is changeable according to the usage environment

Continuous Operation

The two heat sources, two heaters and heat pump, complement each other perfectly. If one of the heaters or the heat pump fails, the other heat source allows alternative operation.

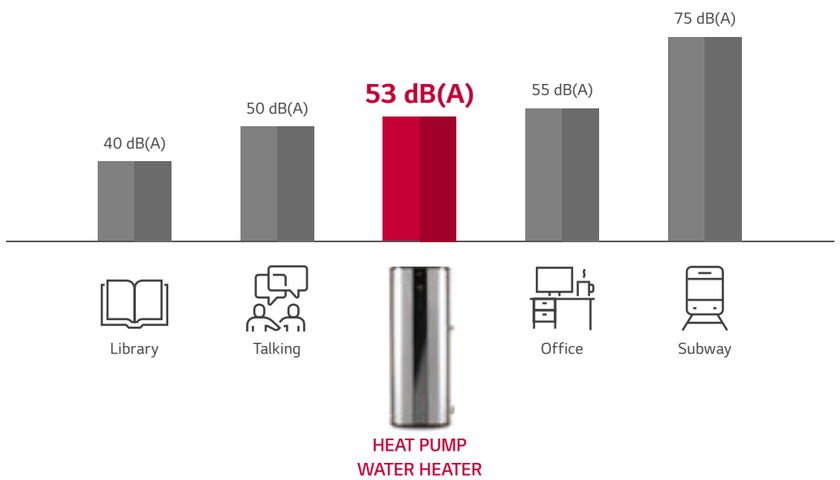


Low Noise Operation

Through BLDC Motor and DUAL Inverter Compressor, noise is reduced to 53 dB(A) (sound power) and provides a comfortable environment even in indoor installation scenes.

Low Noise Operation

Through BLDC Fan Motor and DUAL Inverter Compressor, noise is reduced to 53 dB(A) and creates a comfortable environment even in indoor installation scenes.



※ Sound Pressure is 38 dB(A) based on LG internal test.
※ The data is based on LG Internal Test (Sound Power).
※ The data is based on LG internal test and simulation.
※ The data is depending on the experimental condition and is changeable according to the usage environment.

PRODUCT FEATURES

Various Operation Mode

LG Inverter Heat Pump Water Heater can be operated in 4 different modes for different conditions.

Heat Pump
Heating water with the heat pump function

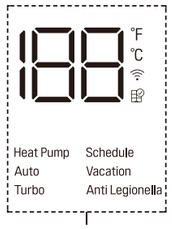
Turbo
Boosting heat function to quickly heat water

Auto
Automatically controls the heat pump and heating functions for optimal performance

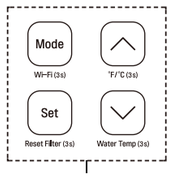
Vacation
Minimizing the energy loss while heat function is not in use

Operation

Using Basic Control
Display Screen



❷ Display Screen

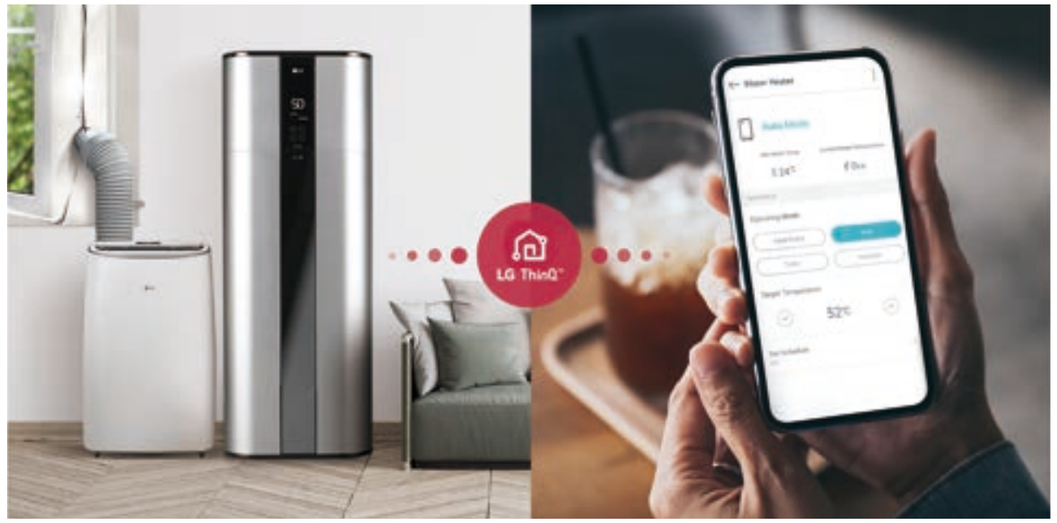


❶ Button

Button	Display Screen	Description
Mode	Heat Pump	To select the Heat Pump mode.
	Auto	To select the Auto mode.
	Turbo	To select the Turbo mode.
	Vacation	To select the Vacation mode.
-	Schedule	Set Schedule mode only in LG ThinQ application.
-	Anti Legionella	To select the Anti Legionella mode.
Set	-	To set the desired water temperature.
∧ ∨	188	To adjust the desired water temperature.
Wi-Fi (3s)		To enable the Wi-Fi pairing.
Reset Filter (3s)		To reset the filter alarm.
°F/°C (3s)	°F °C	To change unit between °F and °C.
Water Temp (3s)	188	To display the current water temperature for 5 seconds.

Smart Control

With the LG ThinQ smartphone app, users can easily control and monitor the heat pump, checking for current water temperatures, setting operating schedules and more.



Embedded Wi-Fi

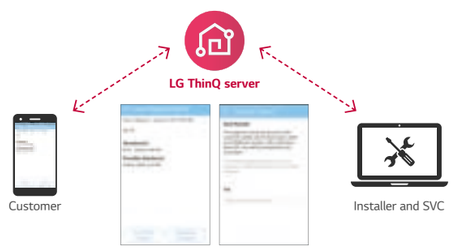
You can control the LG ThinQ app, checking information such as current water temperature, operating mode and more.

Smart Diagnosis

Smart Diagnosis allows users to conveniently check setup, installation, troubleshooting and other information directly from a smartphone.

Easy Check & Monitoring

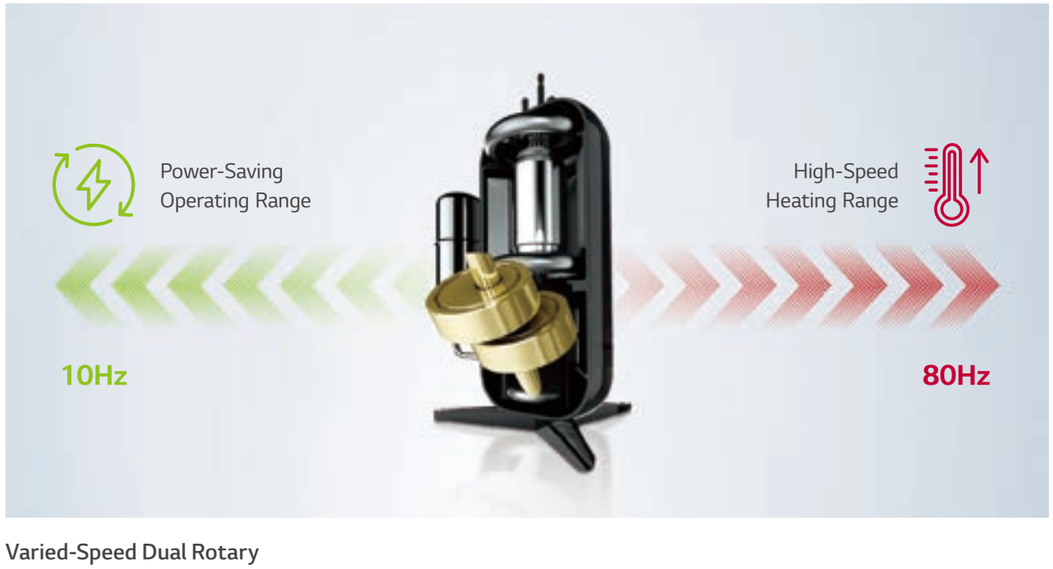
Easily comprehensible error messages make detecting a solution and contacting the service center simple and convenient.



PRODUCT FEATURES

powered by
DUAL Inverter Compressor™

LG's DUAL Inverter Compressor™ saves energy with a wide power-saving operating range. Also, in max operation mode, it produces power heating to perform quiet and efficient heating.



Varied-Speed Dual Rotary

A compressor motor with a wider rotational frequency that is energy efficient and has a higher volumetric quick cooling capacity than conventional non-inverter compressor.

Product Reliability Improvement

As twin rotaries balance each other while they are rotating with high speed, it reduces noise dramatically compared to the shaking single rotary compressor. The reduction in vibration reduces the possibility of fractures occurring in the surrounding pipework.

※ The data is based on LG internal test and simulation.
※ The data is depending on the experimental condition and is changeable according to the usage environment

Benefit & Verification

Reliable Air Conditioner
Product safety is emphasized by offering a 10-year warranty on the compressor to reassure customers about

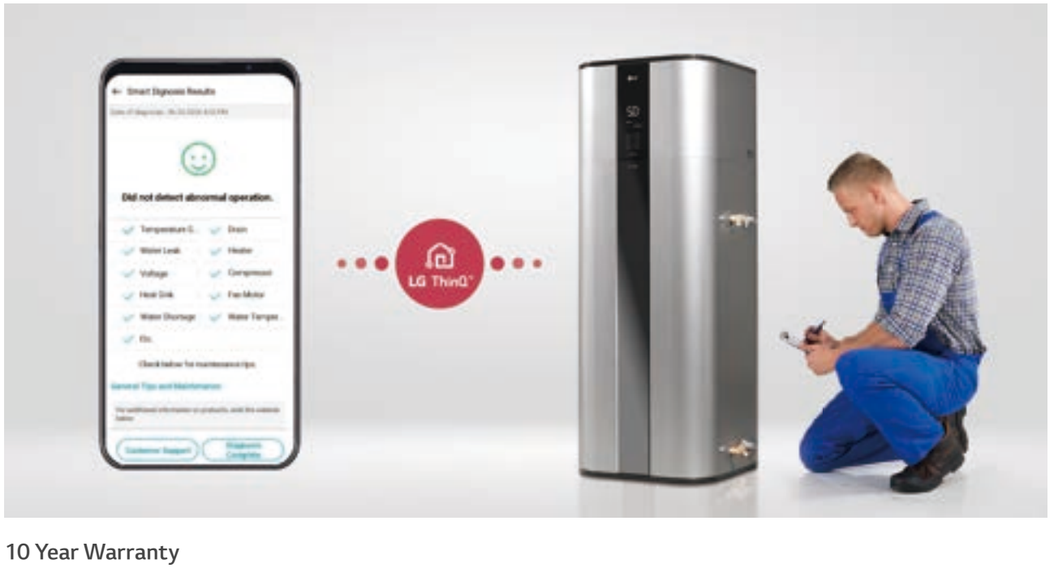
Verification
TUV Rheinland, Long Term Accelerated-reliability Test & High Marginal Test

Twin Rotary Type

※ Long Term Accelerated-Reliability test
LG's unique testing method with reinforced operating condition for a product life assurance to test and determine the product life cycle in a short period of time by accelerating the life cycle.
※ High Marginal Test
Test method to secure durability in various adverse conditions that may occur in the field by performing comp reliability test against higher pressure and temperature than the designed range of pressure and temperature which the comp operates in.
※ Verification obtained from TUV Rheinland for 10-year product life cycle.

Quick & Easy Installation

The machine's one-direction inlet and outlet piping and easy-to-connect wires in the junction box allow for quick and easy installation. Furthermore, the LG ThinQ app provides Service Alarm and Self Diagnosis programs for convenience maintenance.



10 Year Warranty

10 year warranty for the core parts of the heat pump water heater - Water Tank, Compressor, TUV Rheinland certified 10 year durability of Dual Inverter Compressor. Ceramic coating inside water tank meets Germany Ceramic Standard DIN 4753 and it provides 10 years of corrosion resistance

※ Other Parts warranty may vary according to After Sales Service condition

PRODUCT SPECIFICATION

Product Specification

Sales Model			WH20S
Factory Model			R5TT20F-SA1
Capacity	Volume (Nominal)		200L
Energy Efficiency 1)	COP (7℃ / 15℃)		3.30 / 3.50
Energy Consumption	Annual Energy Consumption (7℃ / 15℃)	kWh	756 / 709
Load Profile			Large
Power Input	Upper Element Wattage (230V)	kW	2
	Lower Element Wattage (230V)	kW	2
Energy Efficiency Class (7℃ / 15℃)		-	A+ / A+
Power Supply		V, Ø, Hz	230 / 1 / 50
Available Voltage Range		V	195 ~ 265
Operating Mode			Turbo / Auto / Heat Pump / Vacation
Air Flow Rate	H / M	m^3/min	6.7 / 4.4
	H / M	CFM	236.6 / 155.4
Sound Pressure Level	Auto	dB(A)+3	38
Sound Power Level		dB(A)	55
Dimensions	Net (W x H x D)	mm	580 x 1,625 x 582
Weight	Net	kg	100
Nominal insulation thickness	Min. / Max.	mm	40 / 80
Heat Pump Operation Range	Min. / Max.	℃ DB	-5 / 48
Exterior Color Code		-	Luxury Silver
Compressor	Type	-	Inverter Twin Rotary
	Warranty	Year	10
	Manufacturer	-	LG Electronics
	Motor Output	W	43
Design Pressure (System)	High Side	-	2.0MPa / 290 PSI
	Low Side	-	0.9MPa / 130.5 PSI
Max. Working Pressure (Water Tank)		-	150 PSI (1034 kPa)
Circuit Breaker		A	15
Condensate water connection	I.D	mm	19, 12.7
V40 (Mixed water at 40°C)		L	260
Refrigerant	Type	-	R134a
	Pre Charge	kg	0.650
	GWP		1, 430
	t-CO_2 eq		0.930
Defrost Method		-	Reverse Cycle
Anode			ICCP
T&P Relief Valve		-	Yes
Water Connection Location		-	side
Water Connection Size		inch	G ¾ M
Digital Display		-	Yes
Wi-Fi (LG ThinQ) 2)		-	Yes
Tank Warranty		Year	10

1) Water Heater Energy Efficiency (At Auto mode)
2) ThinQ Main Function
- Operation mode (Auto. Heatpump, Turbo, Vacation, Schedule), Temperature setting
- Monitoring hot water Temperature
- Maintenance point Alarm (Filter, Anode Rod, etc.)

※ This product contains Fluorinated greenhouse gases (R134a).
※ GWP : Global warming potential
※ t-CO_2eq : F-gas(kg)*GWP/1000
※ Specification, design and feature are subject to change without prior notice.

Product Specification

Sales Model			WH27S
Factory Model			R5TT27F-SA0
Capacity	Volume (Nominal)		270L
Energy Efficiency 1)	COP (7℃ / 15℃)		3.45 / 3.85
Energy Consumption	Annual Energy Consumption (7℃ / 15℃)	kWh	712 / 646
Load Profile			Large
Power Input	Upper Element Wattage (230V)	kW	2
	Lower Element Wattage (230V)	kW	2
Energy Efficiency Class (7℃ / 15℃)		-	A+ / A++ 2)
Power Supply		V, Ø, Hz	230 / 1 / 50
Available Voltage Range		V	195 ~ 265
Operating Mode			Turbo / Auto / Heat Pump / Vacation
Air Flow Rate	H / M	m^3/min	6.7 / 4.4
	H / M	CFM	236.6 / 155.4
Sound Pressure Level	Auto	dB(A)+3	38
Sound Power Level		dB(A)	55
Dimensions	Net (W x H x D)	mm	580 x 2,008 x 582
Weight	Net	kg	119
Nominal insulation thickness	Min. / Max.	mm	40 / 80
Heat Pump Operation Range	Min. / Max.	℃ DB	-5 / 48
Exterior Color Code		-	Luxury Silver
Compressor	Type	-	Inverter Twin Rotary
	Warranty	Year	10
	Manufacturer	-	LG Electronics
	Motor Output	W	43
Design Pressure (System)	High Side	-	2.0MPa / 290 PSI
	Low Side	-	0.9MPa / 130.5 PSI
Max. Working Pressure (Water Tank)		-	150 PSI (1034 kPa)
Circuit Breaker		A	15
Condensate water connection	I.D	mm	19, 12.7
V40 (Mixed water at 40°C)		L	360
Refrigerant	Type	-	R134a
	Pre Charge	kg	0.750
	GWP		1,430
	t-CO_2 eq		1.073
Defrost Method		-	Reverse Cycle
Anode			ICCP
T&P Relief Valve		-	Yes
Water Connection Location		-	side
Water Connection Size		inch	G ¾ M
Digital Display		-	Yes
Wi-Fi (LG ThinQ) 2)		-	Yes
Tank Warranty		Year	10

1) Water Heater Energy Efficiency (At Auto mode)
2) Energy Label marked A+ and more than COP 3.75 in EU Standard is A++
3) ThinQ Main Function
- Operation mode (Auto. Heatpump, Turbo, Vacation, Schedule), Temperature setting
- Monitoring hot water Temperature
- Maintenance point Alarm (Filter, Anode Rod, etc.)

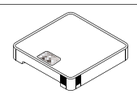
※ This product contains Fluorinated greenhouse gases (R134a).
※ GWP : Global warming potential
※ t-CO_2eq : F-gas(kg)*GWP/1000
※ Specification, design and feature are subject to change without prior notice.

THERMA V™
ACCESSORIES

ACCESSORIES

Accessories Provided by LG

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature
Sensors	Room Temperature Sensor	PQRSTA0		All Therma V products	Room Temperature Based Control	To detect room air temperature for room temperature based control	• Max. wire length : 15m
	Thermistor for 2nd Circuit or E/Heater	PRSTAT5K10		All except for High Temperature	2nd Circuit (mixing circuit)	To detect 2nd circuit temperature when using 2nd circuit function	• 5kΩ thermistor, 10m
	Domestic Hot Water Sensor	PHRSTA0		All except for R32 Split IWT and R32 Hydrosplit IWT	Domestic Hot Water Heating	To detect DHW tank temperature	• Included in PHLTA kit
Valves	3 Way Valve	OSHA-3V		All except for R32 Split IWT and R32 Hydrosplit IWT	Domestic Hot Water Heating	To divert water flow between space heating and DHW heating	• Size : DN 20 G 1" connection, male threaded
	Thermostatic Mixing Valve	OSHA-MV		Regardless of model	Domestic Hot Water Supply	To blend hot water with cold water for ensuring constant, safe shower and bath outlet temp.	• Size : 3/4" DN20 male threaded
		OSHA-MV1					• Size : 1" DN25 male threaded
DHW Tanks	Domestic Hot Water Tank (single coil)	OSHW-200F		All except for R32 Split IWT and R32 Hydrosplit IWT	Domestic Hot Water Heating	To generate and store domestic hot water	• Storage volume : 200L, 300L, 500L • Type : Internal double coil • Material : Stainless steel • Capacity of booster heater : 2.4kW
		OSHW-300F					
		OSHW-500F					
	Domestic Hot Water Tank (double coil)	OSHW-300FD		All except for R32 Split IWT, R32 Hydrosplit IWT and High Temperature			• Storage volume : 300L • Type : Internal double coil • Material : Stainless steel • Capacity of booster heater : 2.4kW
Installation Kits	Domestic Hot Water Tank Kit	PHLTA		R32 Split Hydro Box, R410A Split Hydro Box, R32 Hydrosplit Hydro Box	Domestic Hot Water Heating	To operate with DHW tank	• Parts included : DHW tank sensor (thermistor), Circuit breaker, Relay
		PHLTC		R410A Split Hydro Box (HN1639 NK3, 3Ø only)			
		PHLTB		R32 Monobloc, R32 Monobloc S			• Parts included : DHW tank sensor (thermistor), Circuit breaker, Relay, Multi harness
	Solar Thermal Kit	PHLLA		R32 Monobloc, R410A Split Hydro Box (HN1639 NK3, 3Ø only)	Solar Thermal Heat Utilization	To operate with solar thermal system	• Length of thermistor : 12m • Size of tube connector (W x H x D) : 110 x 55 x 22

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature
Installation Kits	Electric Back Up Heater	HA031M E1		R32 Monobloc, R32 Monobloc S	Capacity Back Up & Emergency Operation	To supplement insufficient capacity	• Heater capacity : 3kW • Number of heating coil : 1EA (3.0kW) • Size (W x H x D) : 210 x 607 x 217 • Power : 220 ~ 240V, 1Ø
		HA061M E1					• Heater capacity : 6kW • Number of heating coil : 2EA (3.0 + 3.0kW) • Size (W x H x D) : 210 x 607 x 217 • Power : 220 ~ 240V, 1Ø
		HA063M E1					• Heater capacity : 6kW • Number of heating coil : 3EA (2.0 + 2.0 + 2.0kW) • Size (W x H x D) : 210 x 607 x 217 • Power : 380 ~ 415V, 3Ø
		HA061C E1		R32 Hydrosplit Hydro Box (HN1600MC NK1)	Capacity Back Up & Emergency Operation	To supplement insufficient capacity	• Heater capacity : 6 kW • Number of heating coil : 2EA (3.0 + 3.0kW) • Power : 220-240 V, 1Φ
		HA063C E1					• Heater capacity : 6 kW • Number of heating coil : 3EA (2.0 + 2.0 + 2.0kW) • Power : 220-240 V, 3Φ
Vessel	Buffer Tank for Space Heating	OSHB-40KT		R32 Split IWT and R32 Hydrosplit IWT	-	To provide the buffer volume of water to the heating circuit	• Volume : 40L • Size (W x H x D) : 518 x 560 x 175
	Expansion Vessel for DHW	OSHE-12KT		R32 Split IWT and R32 Hydrosplit IWT	-	To absorb the volume changes by temperature of water for the DHW circuit	• Volume : 8L • Connection : 3/4" • Max. pressure : 10 bar • Size (W x H x D) : 416 x 238 x 502
ETC	Extension Wire for Wire Remote Controller	PZCWRC1		All Therma V products	-	To extend wire between wired remote controller and indoor unit	• Length : 10m
	Extension Cable for Wi-Fi Modem	PWYREW000		All Therma V products	Wi-Fi Control via LG ThinQ	To extend wire between WI-Fi modem and indoor unit	• Length : 10m
	2 Remote Control Wire	PZCWRC2		All Therma V products	2 Remote Control	To connect two remote controller on the one indoor unit	• Length : 0.25m
	Drain Pan	PHDPB		R32 Split Hydro Box (HN0916M NK4), R410A Split Hydro Box (HN1616 NK3 / HN1639 NK3)	Cooling Operation	To collect condensed water in indoor unit when cooling operation	-
		PHDPC		R32 Hydrosplit , R32 Split Hydro Box (HN091MR NK5), R410A Split Hydro Box (HN1616M NK5 / HN1636M NK5)			
	Cover Plate	PDC-HK10		R32 Hydrosplit Hydro Box, R32 Hydrosplit IWT, R32 Split Hydro Box , R32 Split IWT, R410A Split Hydro Box	-	To fill the blank space of the indoor unit front panel when the remote controller is relocated indoors.	-

ACCESSORIES

Accessories Provided by LG

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature
Remote Controller	Wired Remote Controller	PREMTW101		All Therma V products	2 Remote Control	To control AWHP using two remote controller (additional remote controller)	• New modern design 4.3 inch color LCD display • Information displayed with simple graphic, icon & text • Built-in temperature sensor • Size (W x H x D) : 120 x 120 x 16 • Extension cable (PZCWRC1, 10m) and 2 remote cable (PZCWRC2, 0.25m) are included
Central Controller	AC Ez Touch	PACEZA000		All Therma V products	Centralized Control	To control AWHP using LG central controller	• 5 inch color display • User-friendly control with iconographic interface (touch screen) • Max. 32 unit control • Total 200 schedule events (weekly / monthly / yearly / exception day) • Operation history • Remote controller lock (all, temp, mode) • PC access supported (IPv6 supported) • DI 1EA (emergency stop only) • Size (W x H x D) : 137 x 121 x 25
	AC Smart 5	PACS4B000 (Smart 4) PACS5A000 (Smart 5)					• 10.2 inch color display • User-friendly control with iconographic interface (touch screen) • (Smart 4)_Max. IDU 32, (Smart 5)_Max. IDU 64 • Total 100 schedule events (weekly / monthly / yearly / exception day) • History / operation trend • Interlock with 3rd party equipment (ACS IO, ACU IO module is needed) • Error alarm by e-mail • Remote controller lock (all, temp, mode) • Map view (visual navigation) • Web access supported with HTML5 (PC, smartphone, tablet) • DI 2EA, DO 2EA • BACnet IP/ modbus TCP protocol support • Size (W x H x D) : 253.2 x 167.7 x 28.9
	ACP 5	PACP4B000 (ACP4) PACP5A000 (ACP5)					• Web access controller • Max. 128 unit control • Total 100 schedule events (weekly / monthly / yearly / exception day) • History / operation trend • Interlock with 3rd party equipment (ACS IO, ACU IO module is needed) • Error alarm by e-mail • Remote controller lock (all, temp, mode) • Map view (visual navigation) • DI 10EA, DO 4EA • BACnet IP/ modbus TCP protocol support • Size (W x H x D) : 270 x 155 x 65

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature
Gateway	ACP Lonworks	PLNWKB000		All Therma V products	Centralized Control	To link with AWHP and other existing building control system	• Web access controller • Max. 64 unit control • ACP function included • Lonworks protocol support • Size (W x H x D) : 270 x 155 x 65
	Modbus RTU Gateway	PMBUSB00A				To communicate and control through the central controller (providing modbus RTU connection between AWHP and BMS)	• Modbus RTU slave (RS485) / 9,600 bps • Size (W x H x D) : 53.6 x 89.7 x 60.7 • Max. 16 IDUs with single module / Max. 64 IDUs with 4 modules • Power : DC 12V
	PI485 Gateway	PMNFP14A1				To communicate and control through the central controller (converting LG protocol to RS485 protocol)	• 1 for each outdoor unit • Power : Supplied by outdoor unit
Dry Contact	Simple Dry Contact	PDRYCB000		All Therma V products	-	To connect between the AWHP and external devices to control various functions	• 1 Set per 1 unit • 1 Input contact for turning on/off • Input power : 220 ~ 240V • 2 output contacts - Operation status - Error status
	Dry Contact for Thermostat	PDRYCB320					• 1 Set per 1 unit • Non voltage or 12 ~ 24V • 8 digital input contacts for thermostat - On/off, operation mode, DHW heating - Emergency mode, silent mode • 2 Output contacts - Operation status - Error status
ETC	LG Wi-Fi Modem	PWFMDD200		All Therma V products	Wi-Fi Control via LG ThinQ	To control AWHP via smartphone	• Basic control function - On/off, operation mode, set temp - DHW heating and set temp • Weekly on/off schedule • Error status check • Frequency : 2.4GHz • IEEE 802.11b/g/n supported
	Meter Interface	PENKTH000			Energy Monitoring	To measure production / consumption power	• Energy meter interface to monitor Electricity and Heat energy - Max. 3 watt - Hour meter - Max. 1 heat meter - Pulse width : 40ms ~ 100ms • Modbus RTU comm. with THERMA V - 2 wire RS485 / 9600bps • Power : DC 12V • Size (W x H x D) : 54 x 90 x 61

Note
1. PI485 Gateway (PMNFP14A1) should be installed on outdoor unit to use central controller.

ACCESSORIES

LG Wi-Fi Modem

PWFMDD200 ENCXLEU

Access LG THERMA V anytime and from anywhere with Wi-Fi equipped device. LG's exclusive Home Appliances control app (LG ThinQ) is available.
Simple operation for various functions.

- On/off
- Operation mode selection
- Current temperature
- Set temperature
- On/off reservation scheduling
- Energy monitoring
- ESS monitoring
- Silent mode reservation
- Holiday mode
- Quick DHW heating

Model Name	PWFMDD200
Size (mm)	46 x 68 x 14
Interfaceable Products	All THERMA V Line-ups except for R410A IWT
Connection Type	Indoor Unit 1 : 1
Communication Frequency	2.4GHz
Wireless Standards	IEEE 802.11b/g/n
Mobile Application	LG ThinQ (Android v4.1 (Jellybean) or higher, iPhone iOS 9.0 or higher)
Optional Extension Cable	PWYREW000 (10m extension)

Note

1. Functionality may be different according to each Indoor model.
2. User interface of application shall be revised for its design and contents improvement.
3. Application is optimized for smartphone use, so it may not be well functioning with tablet devices.
   - For the compatibility with indoor unit, please contact regional office.

Domestic Hot Water Tank

OSHW-200F AEU
OSHW-300F AEU
OSHW-500F AEU
OSHW-300FD AEU

Single Coil Double Coil

Technical Specification		Unit	OSHW-200F	OSHW-300F	OSHW-500F	OSHW-300FD
General Characteristics	Water Volume	ℓ	200	300	500	300
	Diameter	mm	640	640	640	640
	Height	mm	1,350	1,850	1,900	1,850
	Empty Weight	Kg	61	100	146	106
	Tank Materials	-	STS : F18	STS : F18	STS : F18	STS : F18
	Color	-	Grey	Grey	Grey	Grey
Specification of Electric Back up	Additional Electric Heater	W	2,400	2,400	2,400	2,400
	Power Supply	V, Ø, Hz	230, 1, 50 (60)	230, 1, 50 (60)	230, 1, 50 (60)	230, 1, 50 (60)
	Adjustable Thermostat	°C	0 ~ 90	0 ~ 90	0 ~ 90	0 ~ 90
Specification of Heat Exchanger	Exchanger Type	-	Single	Single	Single	Double
	Material Exchanger	-	STS : F18	STS : F18	STS : F18	STS : F18
	Maximum Water Temp.	°C	90	90	90	90
	Coil Surface	m^2	2.3	3.1	4.8	3.1 + 0.97
Water Connections	Heat Pump Inlet	inch	1 BSP female	1 BSP female	1 ¼ BSP female	¾ BSP female (upper coil)
	Heat Pump Outlet	inch	1 BSP female	1 BSP female	1 ¼ BSP female	¾ BSP female (upper coil)
	Solar Inlet	inch	-	-	-	1 BSP Female (lower coil)
	Solar Outlet	inch	-	-	-	1 BSP Female (lower coil)
	City Water Inlet	inch	¾ BSP male	¾ BSP male	1 BSP male	¾ BSP male
	Hot Water Outlet	inch	¾ BSP female	1 BSP female	1 BSP female	1 BSP female
Energy Efficiency Class (A+ to F scale)		-	B	B	B	B
Standing Heat Loss		W	61	70	83	70

Mandatory Optional Accessories	
Domestic Hot Water Tank Installation Kit	PHLTA (1Ø, split), PHLTB (Monobloc), PHLTC (3Ø, split)
Optional Accessories	
Thermostatic Mixing Valve (3/4" DN20)	OSHA-MV
Thermostatic Mixing Valve (1" DN25)	OSHA-MV1
3 Way Valve	OSHA-3V

ACCESSORIES

Combined Test with DHW Tank

LG has conducted a combination test of THERMA V with DHW tanks in accordance with EN16147 and obtained an ErP label for packages in order to cope with European nZEB regulations.

- R32 Monobloc (5, 7, 9kW) + OSHW-200F
- R32 Monobloc (12, 14, 16kW) + OSHW-200F
- R32 Monobloc (5, 7, 9kW) + OSHW-300F

Model	THERMA V	R32 Monobloc (5, 7, 9kW)	R32 Monobloc (12, 14, 16kW)	R32 Monobloc (5, 7, 9kW)
	Model Name	HM051M U43 HM071M U43 HM091M U43	HM121M U33 HM141M U33 HM161M U33	HM051M U43 HM071M U43 HM091M U43
	Tank	OSHW-200F AEU	OSHW-200F AEU	OSHW-300F AEU
Declared Load Profile		L	L	XL
Average Climate	Grade	A+	A	A+
	Efficiency	122%	109%	134%
	Annual Energy Consumption	839kWh	940kWh	1,254kWh
Energy Label