LG
Life's Good

LG THERMA V
PRODUCT CATALOGUE
2020 - 2021

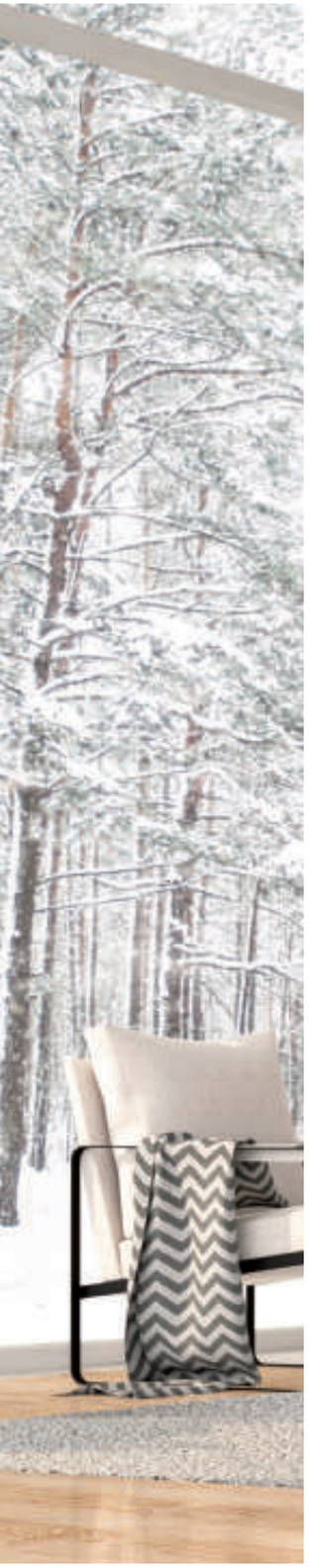
2020 - 2021 LG THERMA V
PRODUCT CATALOGUE

LG

LG
Life's Good

Distributed by

LG Electronics
www.lg.com http://partner.lge.com



INDEX

THERMA V™

INTRODUCTION

FEATURES

PRODUCTS

MONOBLOC

HYDROSPLIT

SPLIT

ACCESSORIES

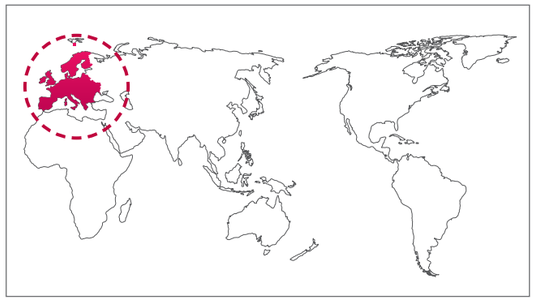
LG BUSINESS PARTNERSHIP & PRE-SALES/ENGINEERING TOOLS

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.

* LG THERMA V selector is available on the Google Play store, and a version for iOS is available within 2020 on the Appstore.

2. LATS THERMA V

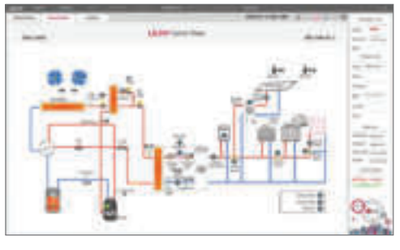
LATS THERMA V IS a PC-based model selection programme of LG THERMA V products, enabling an accurate and quick selection of the most suitable model in each end-user environment.
In addition to model selection, faster energy simulation and cost comparison to other system is possible. Furthermore, customer 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.

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

* iOS version will be available within 2020 on the Apple App Store.

Simulation Mode

‘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.

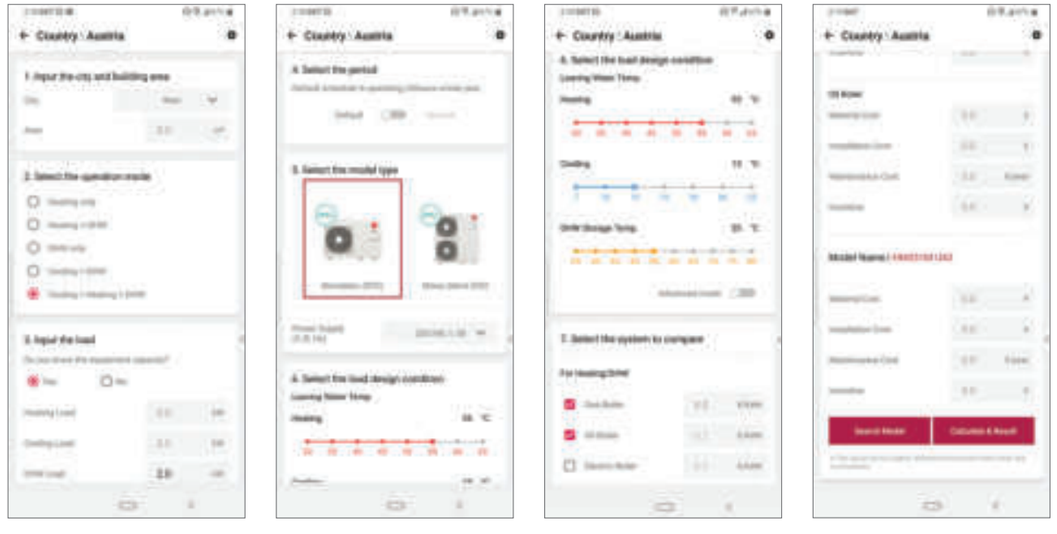
'Model Selection & Energy Simulation'
is to provide more information about model, energy simulation and payback simulation. Users can select or input more information about site or design condition, then can see the suitable model, annual energy consumption, cost, CO_2 emission, and payback result.

‘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



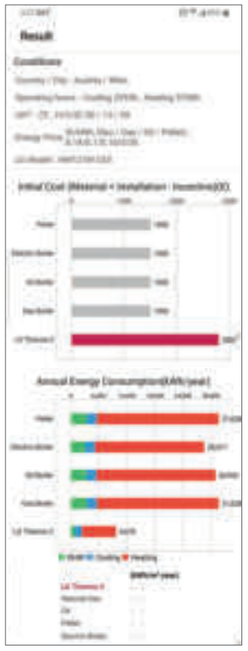
THERMA V SELECTOR

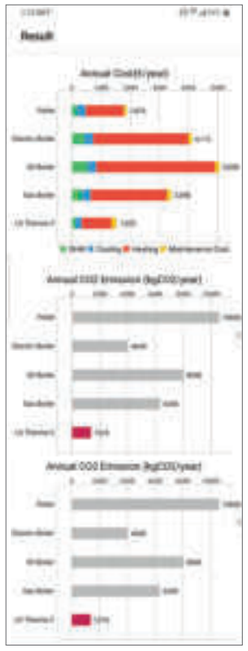
Result & Report

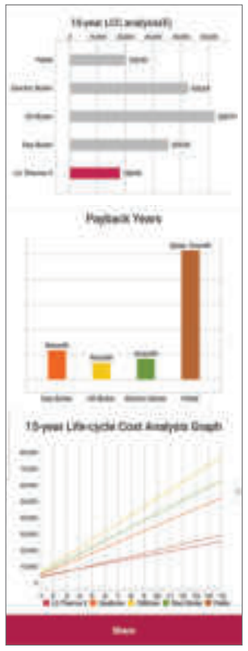
After the simulation, analysis results including initial investment cost, annual energy consumption, and payback period can be checked in the form of various graphs. Moreover, this report is provided in PDF format and can be shared by e-mail and messenger.

Result

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

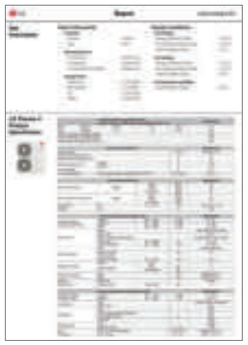


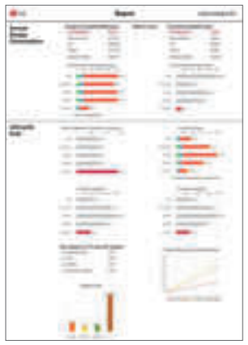


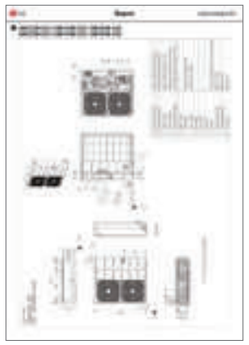


Report

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



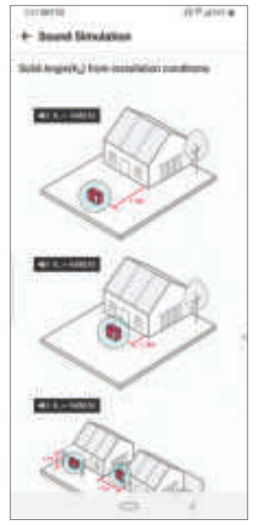


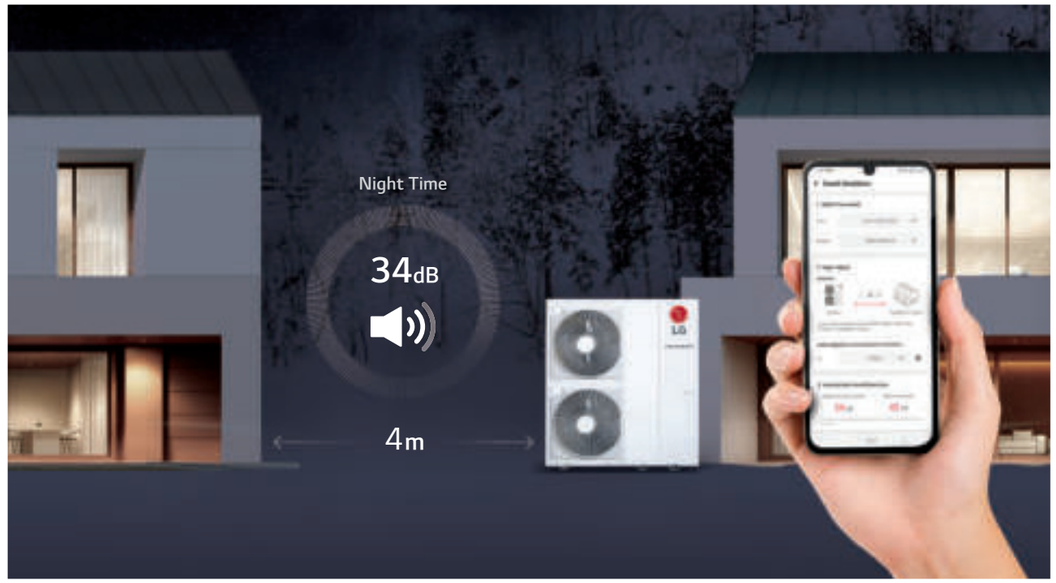


Sound Simulation

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

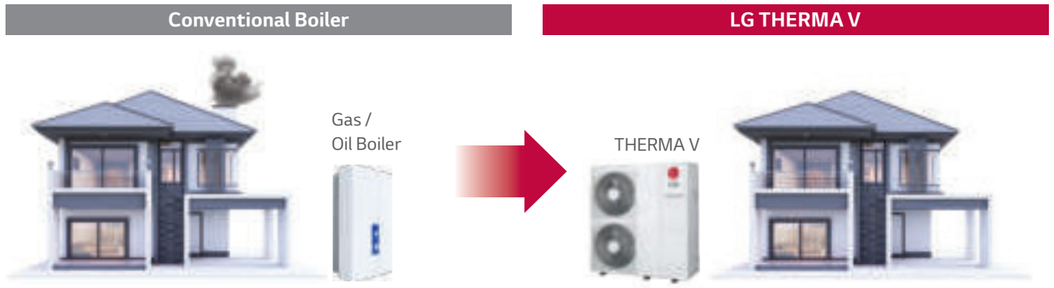
LG Electronics leads the way in heat pump technology

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?

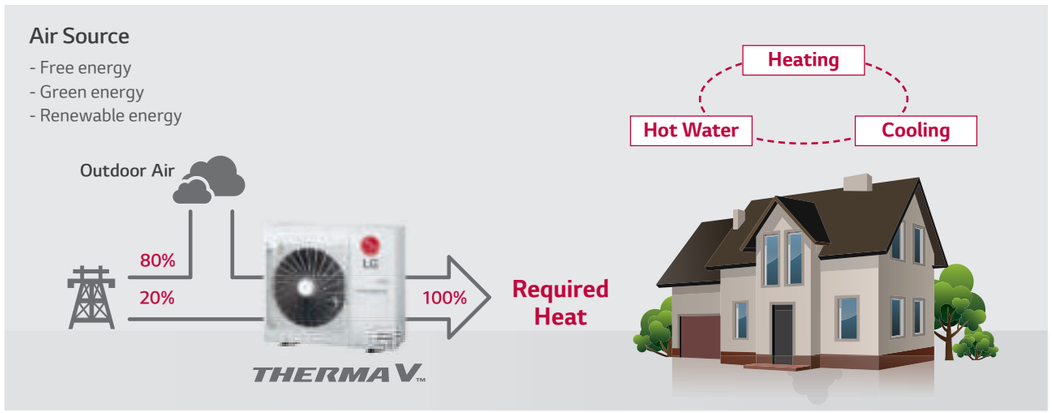
Modern Technology to Replace Conventional Boilers

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.

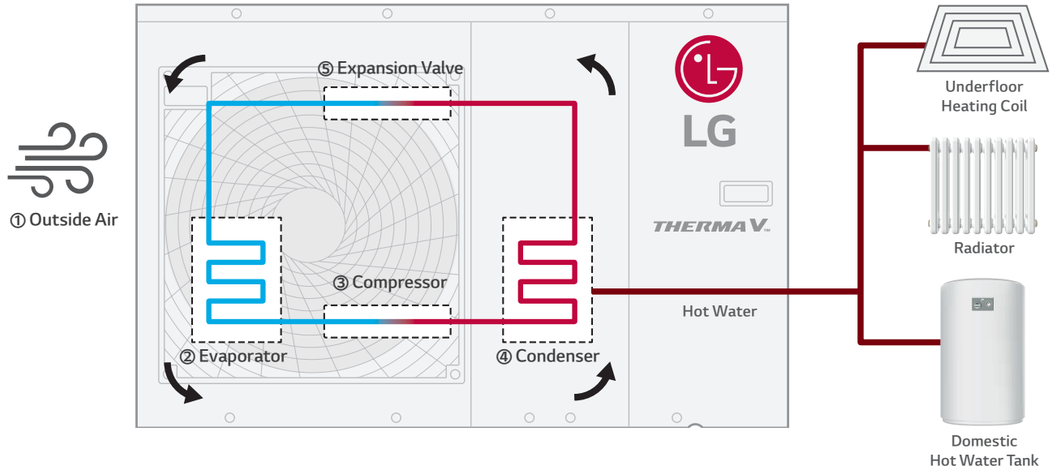


Modern Technology for Renewable Energy

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, 80% of the energy required to produce heating and hot water in a home is generated from a natural air source.



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.

The Green Choice:

THERMA V™

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

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

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

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

WHAT IS LG THERMA V?

LG's Advanced Heating Technology

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

THERMA V™

Space Heating

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

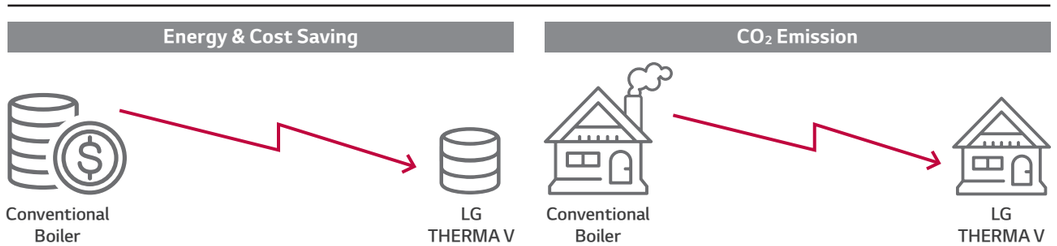
Domestic Hot Water

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 installations like radiator, boiler, etc.
- Save valuable machine room space with the small footprint

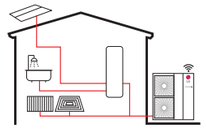
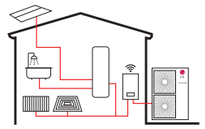
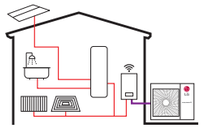
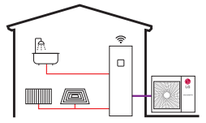
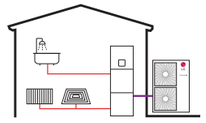
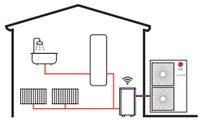
For Installers & Designers

- 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			Split		
		-	Silent	Hydro Box (Wall hung)	Hydro Box (Wall hung)		IWT (Integrated Water Tank)		Floor standing
									
Line-up		R32 Monobloc	R32 Silent Monobloc	R32 Hydrosplit	R32 Split	R410A Split	R32 IWT	R410A IWT	High Temperature
		1Ø : 5/7/9/12/14/16kW 3Ø : 12/14/16kW	1Ø : 9kW	1Ø : 12/14/16kW 3Ø : 12/14/16kW	1Ø : 5/7/9kW	1Ø : 12/14/16kW 3Ø : 12/14/16kW	1Ø : 5/7/9kW	1Ø : 9/12/14/16kW 3Ø : 12/14/16kW	1Ø : 16 kW
									
Application		Heating, Cooling and DHW		Heating, Cooling and DHW	Heating, Cooling and DHW		Heating, Cooling and DHW	Heating, Cooling and DHW	Heating and DHW
Energy Label		Space Heating 35°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+++	Space Heating 35°C A+++	Space Heating 35°C A+++ DHW Heating Combination with OSHW-200F (profile L) A+	Space Heating 35°C A+++ 12/14 kW, A++ 16 kW	Space Heating 35°C A+++ DHW Heating Profile L A+	Space Heating 35°C A+++ DHW Heating Profile XL A	Space Heating 35°C A+
Operation Range (heating)	Outdoor Air	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C	-20 ~ 35°C	-25 ~ 35°C	-20 ~ 35°C	-25 ~ 35°C
	Leaving Water	15 ~ 65°C	15 ~ 65°C	15 ~ 65°C	15 ~ 65°C	15 ~ 57°C	15 ~ 65°C	25 ~ 58°C	25 ~ 80°C
Customer Needs	Designer & Installer	- Don't want refrigerant piping work - Using existing facilities for conventional boiler - Saving installation and commissioning time - No indoor unit		- Don't want refrigerant piping work - Using existing facilities for conventional boiler - Saving installation and commissioning time - Easy to carry - Minimized wiring works	- Using existing facilities for conventional boiler - Minimized wiring works - Eliminating the potential freezing risk at exposed water piping		- Saving installation and commissioning time - Where mechanical room is very limited - Easy to carry - Saving installation space for buffer tank and expansion tank	- Saving installation time - Where mechanical room is very limited	- Solution for poorly insulated or old house - High DHW temperature to meet sanitary water regulation - Using existing facilities (old radiators)
	End-User	- Low operation cost - Reliable operation and long lifetime - Easy and intuitive controls - Control integration between boiler and THERMA V - Remote control by smartphone - Quiet operation					- Low operation cost - Reliable operation and long lifetime	- Remote control by smartphone - Quiet operation	
		- Don't want to install refrigerant piping indoors			- Eliminating the potential freezing risk at exposed water piping		- Easy and intuitive controls	- Necessity to install indoor unit in living space due to Insufficient machine room space	- Easy and intuitive controls
LG Approach		- High energy efficiency - High corrosion resistance heat exchanger - New interface (standard III remote controller) - LG ThinQ Wi-Fi control solution - Easy commissioning by PC tool (LG heating configurator) - Low noise mode operation with schedule setting - Interlocking operation with 3rd party boiler					- High energy efficiency - High corrosion resistance heat exchanger	- Low noise mode operation with schedule setting	
		- All in one concept (no refrigerant piping work) - THERMA V Silent Monobloc		- No refrigerant piping work	- Placing hydronic components and water piping in the mechanical room		- All in one concept (integrated DHW tank with indoor unit) - Light weight and small size units - New interface (standard III remote controller) - Sophisticated and harmonious exterior of indoor unit - Provides an option to integrate buffer tank and DHW expansion tank into indoor units - Easy commissioning by PC tool (LG heating configurator) - LG ThinQ Wi-Fi control solution	- All in one concept (integrated DHW tank with indoor unit) - Sophisticated and harmonious exterior of indoor unit	- Max. 80°C LWT by Cascade 2 stage compression (R410A - R134a) - Suitable for old radiator - New interface (standard III remote controller) - LG ThinQ Wi-Fi control solution
Benefit		- Multiple solution (heating, cooling and DHW supply) - Quick & easy installation and commissioning - Hybrid operation with existing facilities - Economic support by incentive program - Energy saving by utilizing renewable energy and high efficient equipment					- Energy saving by utilizing renewable energy and high efficient equipment	- Free of freezing risk against exposed water piping even long black out - Economic support by incentive program	
		- Simple replacement of existing boiler while maintaining the existing heating system - Saving mechanical room space		- Reduce the potential risk of flammable refrigerant	- Free of freezing risk against exposed water piping even long black out		- Multiple solution (heating, cooling and DHW supply) - Use of valuable machine room space for private purpose - Quick & easy installation and commissioning	- Multiple solution (heating, cooling and DHW supply) - Use of valuable machine room space for private purpose - Quick & easy installation and commissioning	- Multiple solution (heating and DHW supply) - Obtaining 80°C high temperature water without supplementary heater - Simple replacement of existing boiler

1) Combination with OSHW-200F (profile L)
2) Combination with OSHW-300F (profile XL)

LINE-UP OVERVIEW

Type		Refrigerant	Line-up	Capacity (kW)	5.5	7.0
Monobloc	-	R32	R32 Monobloc	1Ø 230V	HM051M U43	HM071M U43
				3Ø 400V		
	Silent		R32 Silent Monobloc	1Ø 230V		
Hydrosplit	Hydro Box	R32	R32 Split	1Ø 230V		
				3Ø 400V		
Split	Hydro Box	R32	R32 Split	1Ø 230V	HN0916M NK4	HN0916M NK4
					HU051MR U44	HU071MR U44
	IWT		R32 IWT	1Ø 230V	HN0916T NB1	HN0916T NB1
					HU051MR U44	HU071MR U44
	Hydro Box	R410A	R410A Split	1Ø 230V		
				3Ø 400V		
	IWT		R410A IWT	1Ø 230V		
				3Ø 400V		
	Floor Standing	R410A + R134a	High Temperature	1Ø 230V		

9.0	12.0	14.0	16.0
HM091M U43	HM121M U33	HM141M U33	HM161M U33
	HM123M U33	HM143M U33	HM163M U33
HM091MRS U33			
	HN1600MB NK0	HN1600MB NK0	HN1600MB NK0
	HU121MRB U30	HU141MRB U30	HU161MRB U30
	HN1600MB NK0	HN1600MB NK0	HN1600MB NK0
	HU123MRB U30	HU143MRB U30	HU163MRB U30
HN0916M NK4			
HU091MR U44			
HN0916T NB1			
HU091MR U44			
	HN1616 NK3	HN1616 NK3	HN1616 NK3
	HU121 U33	HU141 U33	HU161 U33
	HN1639 NK3	HN1639 NK3	HN1639 NK3
	HU123 U33	HU143 U33	HU163 U33
HN1616T NB0	HN1616T NB0	HN1616T NB0	HN1616T NB0
HU091 U43	HU121 U33	HU141 U33	HU161 U33
	HN1616T NB0	HN1616T NB0	HN1616T NB0
	HU123 U33	HU143 U33	HU163 U33
			HN1610H NK3
			HU161HA U33

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

LINE-UP INTRODUCTION

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	HM051M U43	HM071M U43	HM091M U43	HM121M U33	HM141M U33	HM161M U33
	3Ø 400V	-	-	-	HM123M U33	HM143M U33	HM163M U33

THERMA V R32 Silent Monobloc

The LG THERMA V R32 Silent Monobloc is designed for lower noise levels than conventional Monobloc series while retaining its previous advantages; All in one with eco-conscious R32 refrigerant and LG's powerful yet stable R1 compressor.

Thanks to its low noise level corresponding with DACH region noise regulations, THERMA V R32 Silent Monobloc offers maximized installation flexibility which allows installing within minimum safety space as 5m from neighboring houses. Moreover, the energy efficiency of THERMA V R32 Silent Monobloc is remarkably enhanced compared to conventional Monobloc as so it is recognized as an ultra-high efficient model.

Line-up	Capacity (kW)	9.0
R32 Silent Monobloc	1Ø 230V	HM091MRS U33

THERMA V R32 IWT

THERMA V R32 IWT, or integrated water tank, 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 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.

Line-up	Capacity (kW)	5.5	7.0	9.0
R32 IWT	1Ø 230V	HN0916T NB1	HN0916T NB1	HN0916T NB1
		HU051MR U44	HU071MR U44	HU091MR U44

THERMA V R32 Split

The LG THERMA V R32 Split 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
R32 Split	1Ø 230V	HN0916M NK4	HN0916M NK4	HN0916M NK4
		HU051MR U44	HU071MR U44	HU091MR U44

LINE-UP INTRODUCTION

THERMA V R410A IWT

The LG THERMA V R410A IWT, or integrated water tank is an integrated unit that indoor unit is combined with a domestic hot water tank while outdoor unit is separately located outside. THERMA V R410A IWT is more suitable for the house which has less indoor spaces because hydronic components such as DHW tank and buffer tank normally installed additionally are integrated as one unit.

LG's THERMA V R410A IWT is providing generous benefits supported by LG THERMA V's powerful and durable outdoor units.

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

Line-up	Capacity (kW)	9.0	12.0	14.0	16.0
R410A IWT	1Ø 230V	HN1616T NB0	HN1616T NB0	HN1616T NB0	HN1616T NB0
		HU091 U43	HU121 U33	HU141 U33	HU161 U33
	3Ø 400V	-	HN1616T NB0	HN1616T NB0	HN1616T NB0
		-	HU123 U33	HU143 U33	HU163 U33

THERMA V R410A Split

The LG THERMA V R410A Split 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 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)	12.0	14.0	16.0
R410A Split	1Ø 230V	HN1616 NK3	HN1616 NK3	HN1616 NK3
		HU121 U33	HU141 U33	HU161 U33
	3Ø 400V	HN1639 NK3	HN1639 NK3	HN1639 NK3
		HU123 U33	HU143 U33	HU163 U33

THERMA V R32 Hydrosplit

With innovation and safety in mind, the LG THERMA V R32 Hydrosplit separates the Indoor Unit (IDU) and Outdoor Unit (ODU), connecting them through water pipes. The unit's heat exchanger is located within the ODU, reducing the risk of indoor refrigerant leakage. Quick and easy installation is made possible by the IDU's built-in hydronic components such as water pump, expansion tank, and air vent as well as the fact that the electric wiring can be done in the same space as the IDU.

Line-up	Capacity (kW)	12.0	14.0	16.0
R32 Hydrosplit	1Ø 230V	HN1600MB NK0	HN1600MB NK0	HN1600MB NK0
		HU121MRB U30	HU141MRB U30	HU161MRB U30
	3Ø 400V	HN1600MB NK0	HN1600MB NK0	HN1600MB NK0
		HU123MRB U30	HU143MRB U30	HU163MRB U30

THERMA V High Temperature

The LG THERMA V High Temperature unit 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.

This unit 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)	16.0
High Temperature	1Ø 230V	HN1610H NK3
		HU161HA U33

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

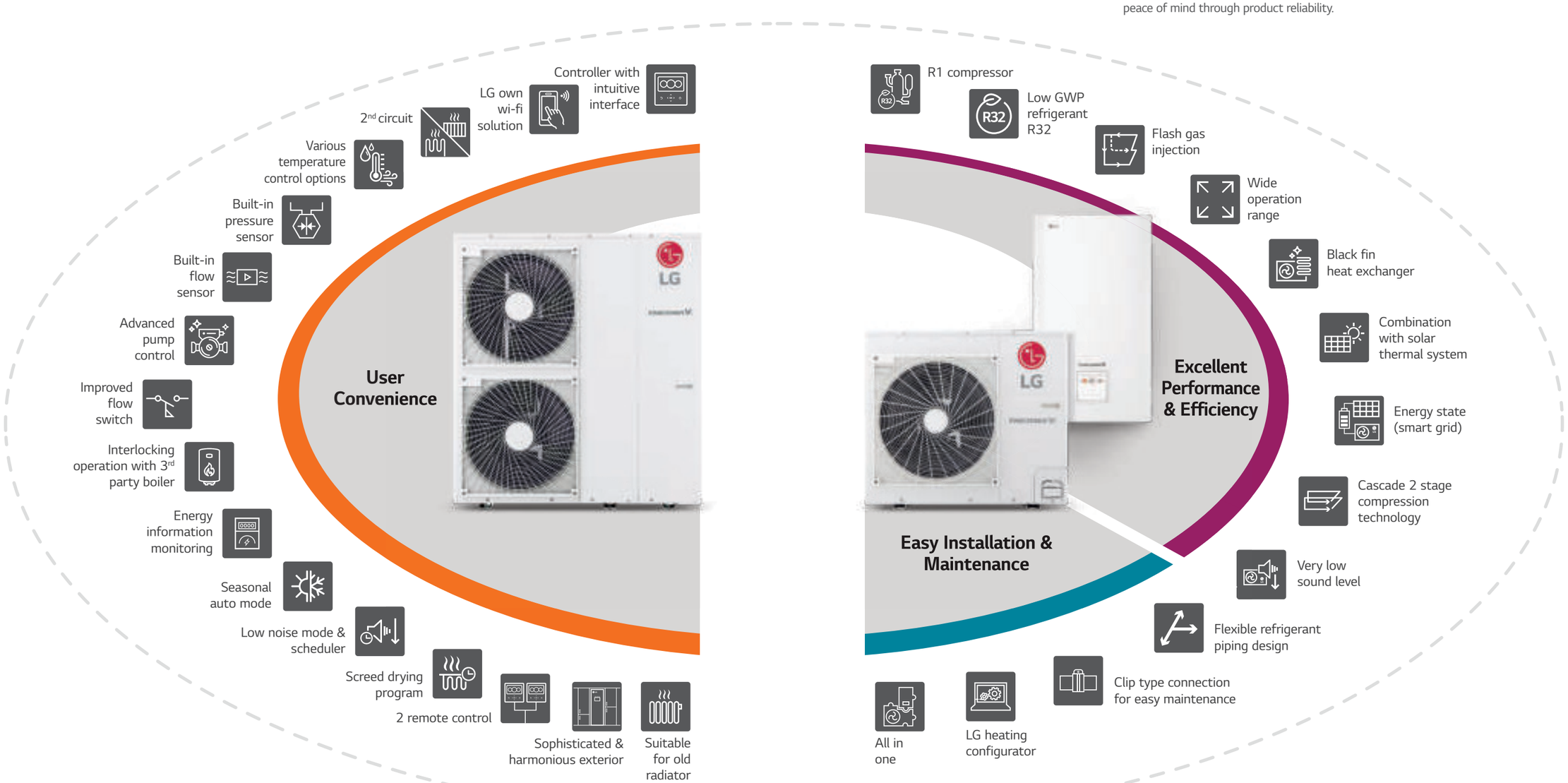
LG THERMA V is equipped with various user convenience functions, which allow for enhanced comfort and control. The text-based user-friendly interface on the remote control allows for optimized user intuition and the unit's wide connectivity also provide user control convenience.

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

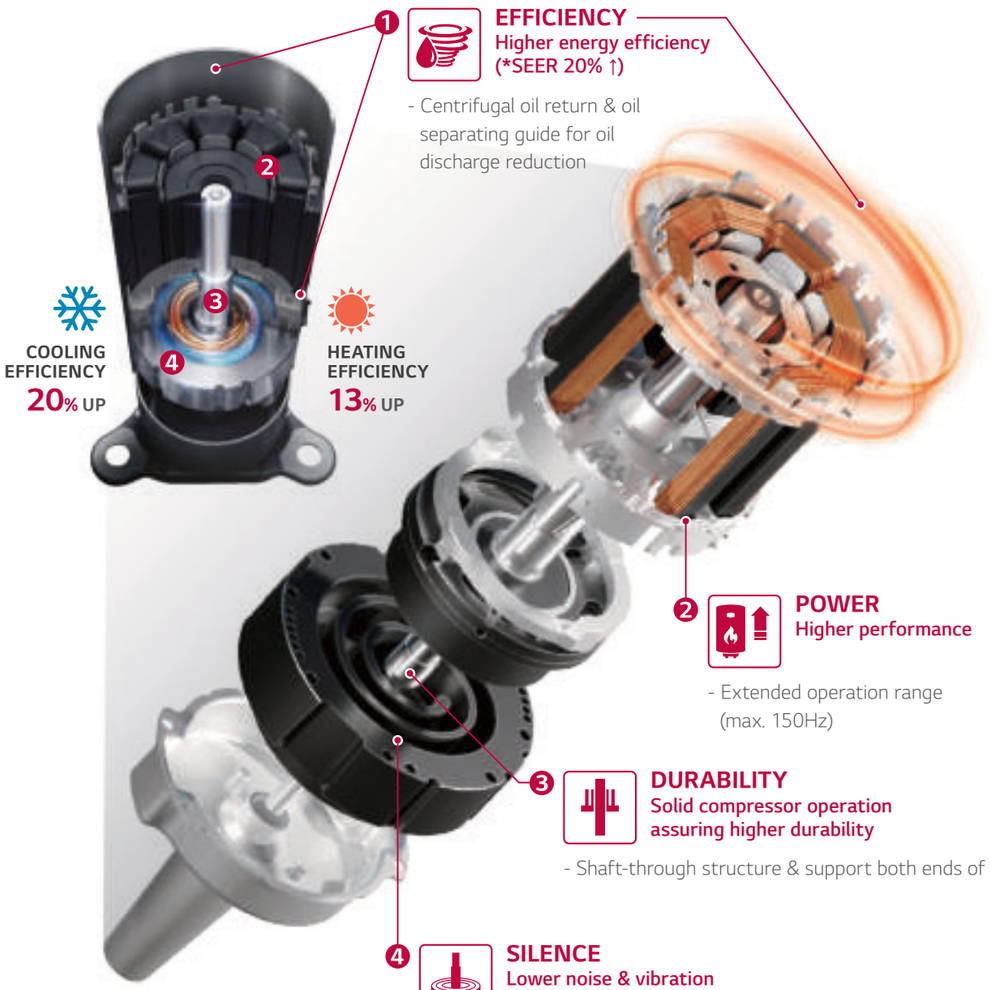
LG THERMA V offers installation and design flexibility to professional installers. The LG Heating Configurator also allows professionals to save time during commissioning. During maintenance, the clip type connection allows fast and easy disassembly of the components.



EXCELLENT PERFORMANCE & EFFICIENCY

R1 Compressor

* Applied model : R32 Series and High temp..



EFFICIENCY
Higher energy efficiency (*SEER 20% ↑)

- Centrifugal oil return & oil separating guide for oil discharge reduction

POWER
Higher performance

- Extended operation range (max. 150Hz)

DURABILITY
Solid compressor operation assuring higher durability

- Shaft-through structure & support both ends of shaft

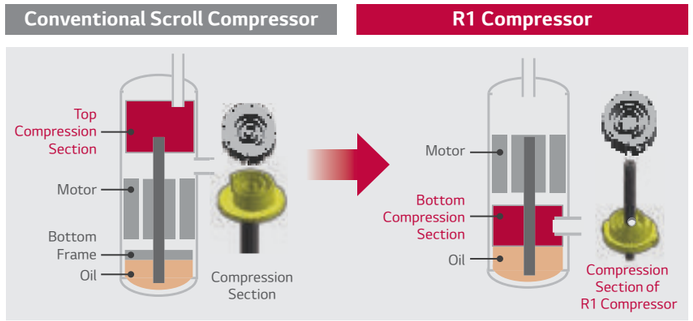
SILENCE
Lower noise & vibration

- Max. 4 dB(A) ↓
- Decreased weight (**20% ↓)
- Superior reliability
- Bottom compression & simple structure

R1 Compressor™

* LG Internal test result, based on single split 10kW cassette.
** LG Internal test result, based on conventional compressor. (rotary type GPT442M)
*** Max. operation range of R1 compressor is 135Hz for AWHP products.

The LG R1 Compressor offers enhanced efficiency and reliability. The R1's advanced technological components and functionality, as compared to the conventional scroll compressor, improve its operational range and the scroll's tilting motion.

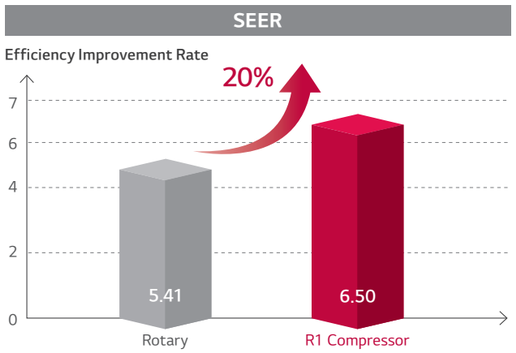


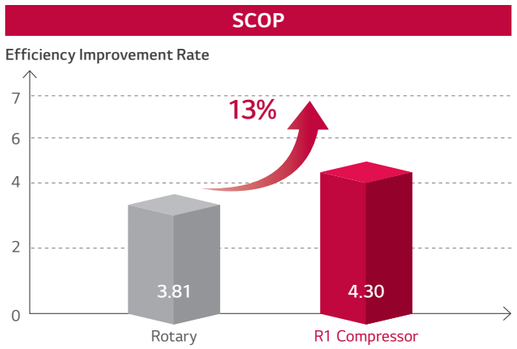
- Scroll compressor with simple structure
- High efficiency (low load at low speed/total efficiency)
- Low noise (high speed possible)
- Improved tilting motion of scroll
- 20% weight reduction (vs. conventional compressor)

* Applied models : R32 Monobloc, R32 Split, R32 IWT, R32 Hydrosplit, and High Temperature

Seasonal Energy Efficiency

SEER 20%, SCOP 13% improvement (vs. rotary)

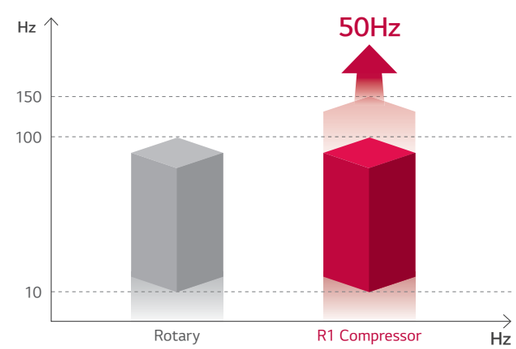




* LG Internal test result, based on single split 10kW CST.

Wide Operation Range

- Optimized for various cooling & Heat load operation
- World best compressor speed (up to 150Hz)
- Optimized for even low load operation (down to 10Hz) (efficiency increases/improved comfort)



EXCELLENT PERFORMANCE & EFFICIENCY

Low GWP Refrigerant R32

* Applied model : R32 Series

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	2088
Lower Amount of Gas Charge	Less Gas, 20%	High Gas
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.	

Note : Ensure the LG Electronics installation manuals are consulted for correct installation measures and safety precautions.

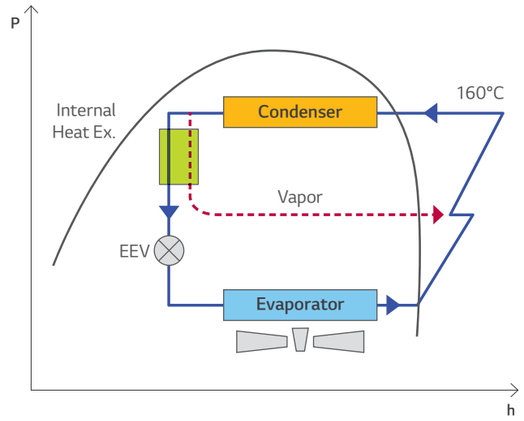
Flash Gas Injection

* Applied model : R32 Series

When applying R32 refrigerant to heat pump, it is very important to properly control the discharge temperature of the compressor. 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.

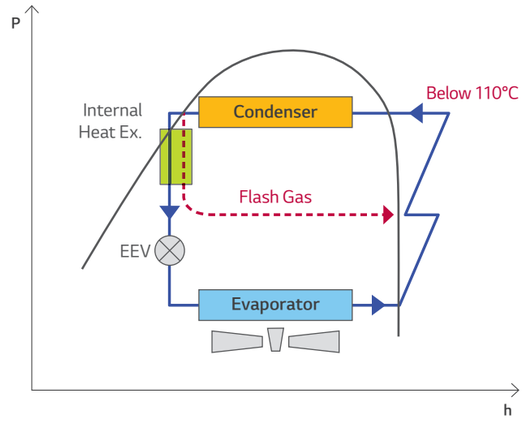
Vapor Injection

- Discharge temperature of compressor is very high (160°C)
- Failure of injection cycle and compressor operation under protection logic



Flash Gas Injection

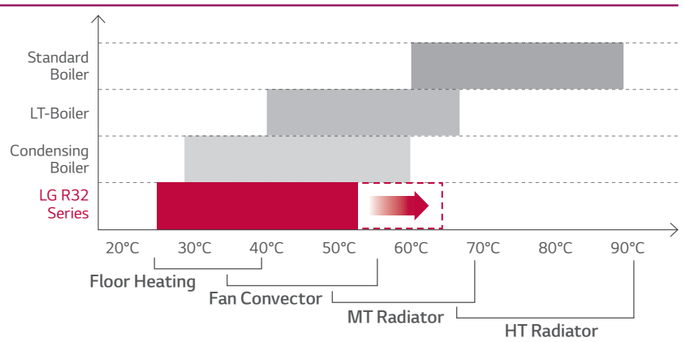
- Discharge temperature of compressor is below (110°C)
- Good operation of injection cycle



Wide Operation Range

* Applied model : R32 Series

With a Leaving Water Temperature (LWT) of up to 65°C, the THERMA V R32 series can integrate with a mid-temperature radiator, making this product line-up highly competitive for renovations as well as new build houses.



EXCELLENT PERFORMANCE & EFFICIENCY

Black Fin Heat Exchanger

* Applied model : R32 Series and High temp..

The THERMA V line-up includes a heat exchanger enhanced by black coating with enhanced epoxy resin for strong protection from various corrosive external conditions such as salt contamination and air pollution including factory fumes. This improvement in durability prolongs the product's lifespan and lowers both the operational and maintenance costs.

Longer lifespan, lower operation costs

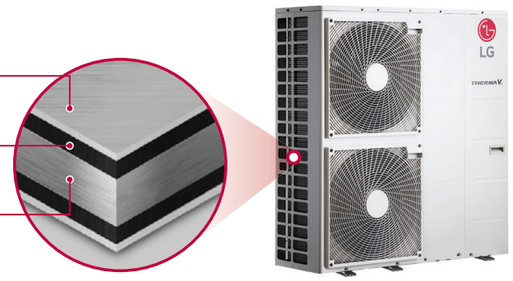
Strengthened corrosion resistant coating

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



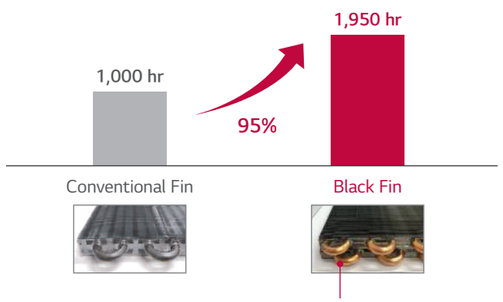
SST (Salt Spray Test)

• Test Process

Fog[1)] (35°C, 24hr) × Process Repeated

Test process is conducted according to ISO 9227.
1) Salty water concentration : NaCl aqueous solution (5%)

• Test Result (5% area of defects compared to initial)



100% copper material to prevent corrosion & refrigerant leakage

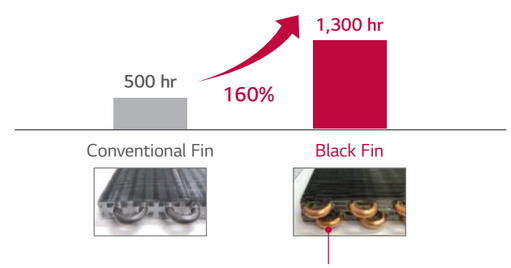
CCT (Cyclic Corrosion Test)

• Test Process

Fog[1)] (35°C, 2hr) → Dry (70°C, 2hr) → Wet[2)] (50°C, 2hr) × Process Repeated

Test process is conducted according to ISO 14933.
1) Salty water concentration : NaCl aqueous solution (5%)
2) Deionized water
※ Dry condition changed : 60°C, 4hr → 70°C, 2hr

• Test Result (5% area of defects compared to initial)

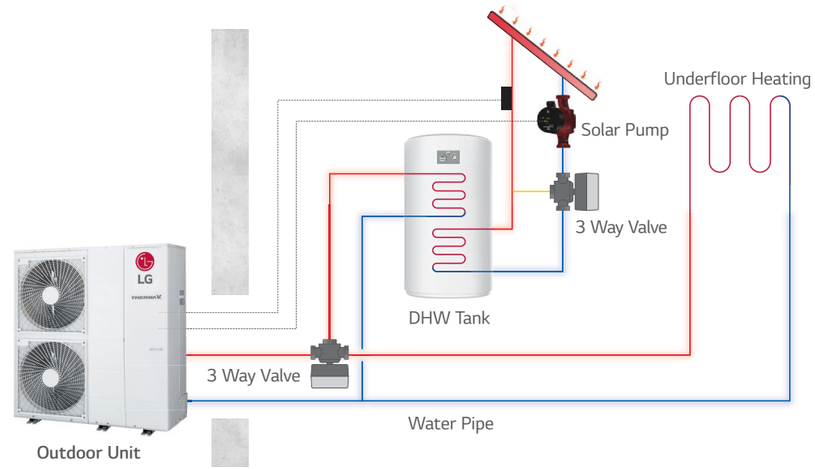


100% copper material to prevent corrosion & refrigerant leakage

Combination with Solar Thermal System

* Applied model : R32 Series, R410A Split Hydro Box

THERMA V can combine with the solar thermal system enabling water heating in the Domestic Hot Water (DHW) tank. It first measures the temperature difference between the solar collector and DHW tank and begins to heat up if the solar collector temperature is higher than the DHW tank.



* Mandatory accessory : Solar Thermal Kit (PHLLA) is required except for R32 Hydrosplit which needs PT-1000 type sensor (field supply).

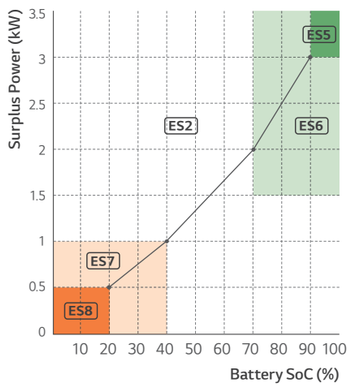
Energy State

* Applied model : R32 Hydrosplit, R32 Monobloc, R32 Silent Monobloc
R32 IWT, R32 split, R410 split and High Temp. models have limited energy state function (ES1 ~ ES4 only).
For more detail, please refer to the installation manual.

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
	Smart Grid (contact)		ESS (modbus)		
	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°C, DHW : +5°C)
ES4*	On Command				Changed target temperature higher (DHW : 80°C)
ES5**			On Command (step2)		Changed target temperature higher (heating : +5°C, cooling : -5°C, DHW : +30°C)
ES6**			On Recommend (step1)		Changed target temperature higher (heating : +2°C, cooling : -2°C, DHW : +10°C)
ES7**			Energy Saving		Changed target temperature lower (heating : -2°C, cooling : +2°C)
ES8**			Super Energy Saving		Changed target temperature lower (heating : -5°C, cooling : +5°C)

[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.

* 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.

USER CONVENIENCE

Controller with Intuitive Interface

* Applied model : R32 Series, R410A Split Hydro Box, High Temp.

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

Premium Design

- New modern design 4.3 inch color LCD display
- Capacitive touch button
  (especially on/off button turn on LED)

User Friendly Interface

- Information displayed with simple graphic, icon & text
- Navigation button, easy to use

Enhanced Energy Information with Simple Interface

- A clear view of instantaneous power consumption against target
- Accumulated power consumption and produced heat energy per week, month or year

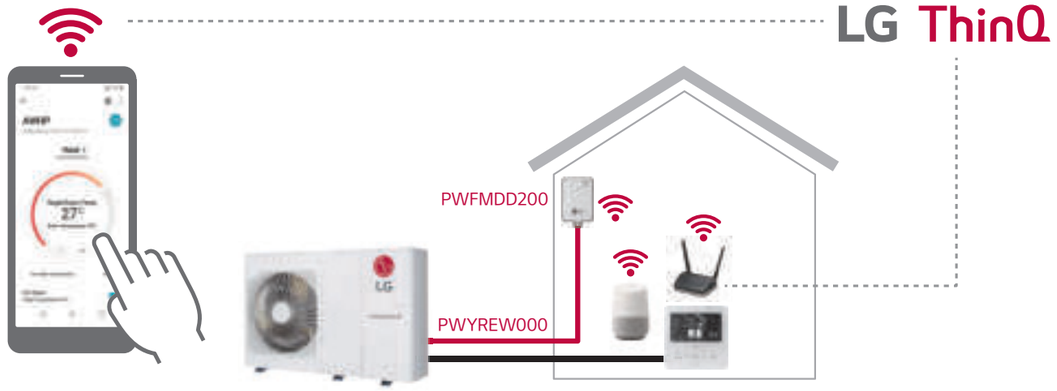
Convenient Functions

- Optimize schedule setting logic
  - Set the period, date, on/off time, operation mode, target temp. easy installation setting

LG Own Wi-Fi Solution

* Applied model : R32 Series, R410A Split Hydro Box, High Temp.

Access your THERMA V anytime from anywhere.



* Search "LG ThinQ" on Google market or App store, then download the app.
* Google home voice is supported in United Kingdom, France, Germany, Spain, Italy, Austria, Ireland and Portugal.
* Mandatory accessory : PWFMDD200 (LG Wi-Fi modem) and PWYREW000
  (10m extension connect cable in between THERMA V indoor and Wi-Fi modem)

App Store Google Play

Simple Operation by LG ThinQ

- Operation on/off
- Operation mode selection
- Current temperature
- Temperature setting
- On/off reservation Scheduling
- Energy monitoring
- ESS monitoring
- Silent mode reservation
- Holiday mode
- Quick DHW heating

Simple Operation by Google Voice

- Operation on/off
  (including DHW heating)
- Operation mode selection

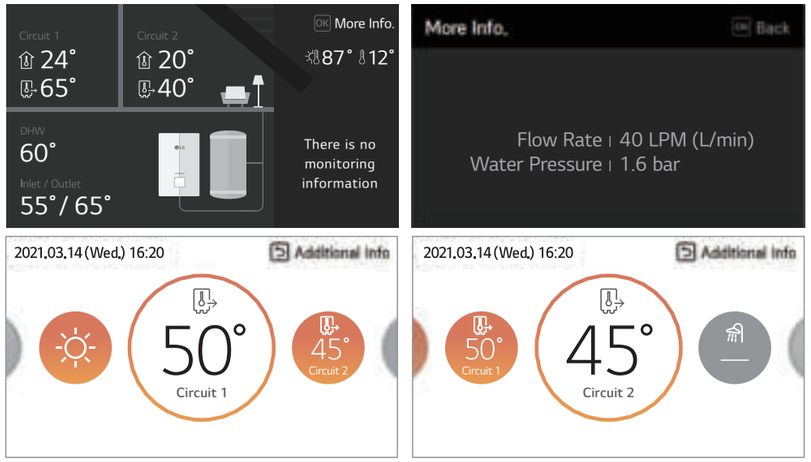
USER CONVENIENCE

2nd Circuit

* Applied model : R32 Series, R410A Split Hydro Box

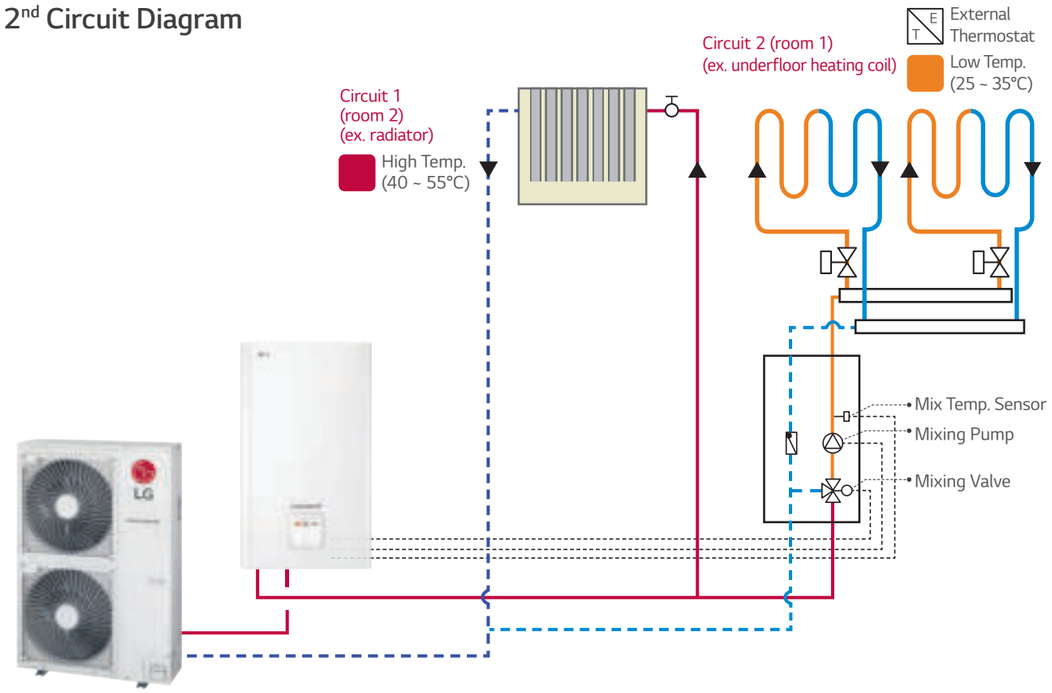
2 Zones (circuit 1/circuit 2) temperature control through separate heating circuits is possible with mixing valve kit.

2 Zones Temperature Control



Setting circuit 1 temperature　　Setting circuit 2 temperature

2nd Circuit Diagram



* The picture above is drawn based on Therma V R32 Hydrosplit.
* For products other than the R32 Hydrosplit, it is mandatory to consult with LG regional engineer for 2nd circuit system configuration before installing.

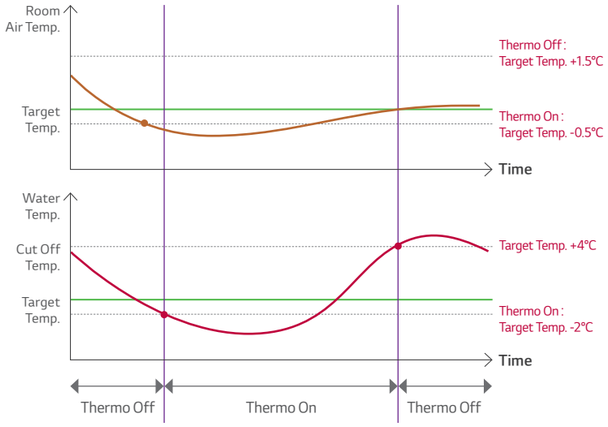
Various Temperature Control Options

* Applied model : R32 Series, R410A Split Hydro Box, High Temp.

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).

- Control based on leaving water temperature
- Control based on entering water temperature
- Control based on room air temperature
- Control based on room air and water temperature simultaneously

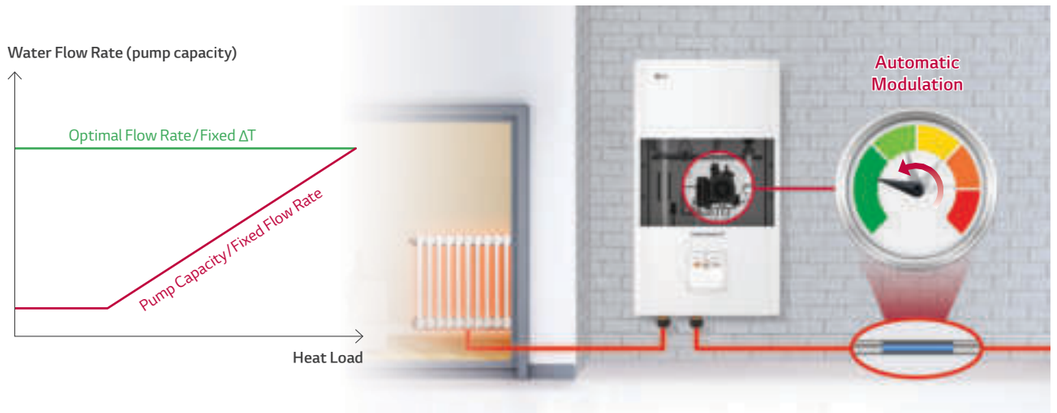
- Thermo On : When satisfied both room air temp condition and water temperature condition
- Thermo Off : When satisfied room air temp condition or water temperature condition



Advanced Pump Control Options

* Applied model : R32 Hydrosplit

Various pump control options are possible for the user's convenience. With the R32 Hydrosplit, the water flow rate can be changed as per heat load condition, therefore it makes more energy efficient operation during low load condition.



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. (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 temperature.	Yes

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

USER CONVENIENCE

Built-in Flow Sensor

* Applied model : R32 Hydrosplit, R32 IWT, R32 Split

Flow sensor provides actual flow rate information on the wired remote control display.

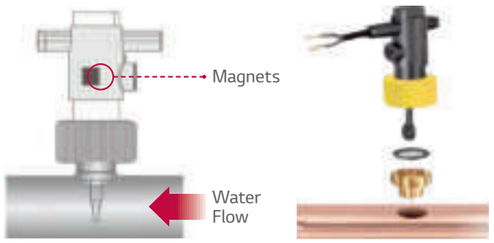
- Flow sensor type : Vortex
- Measuring duration : 1s

Improved Flow Switch

* Applied model : R32 Monobloc, R410A Split, R410A IWT, High Temp..

By applying the magnetic type of flow switch, the field trouble occurrence related to water flow switch will be decreased.

- No contact between sensing part (magnet) and water



Interlocking Operation with 3rd Party Boiler

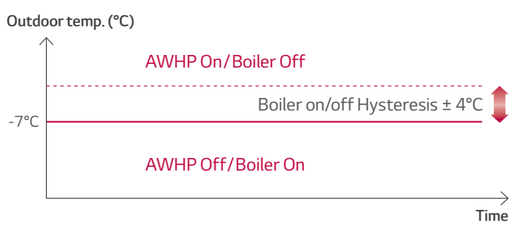
* Applied model : R32 Series, R410A Split Hydro Box

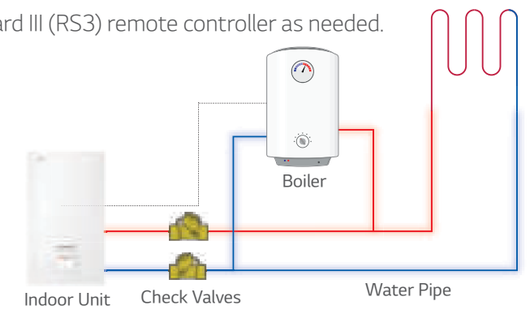
3rd Party boiler such as oil, gas or electric boiler can be activated automatically or manually by the THERMA V controller.

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°C, range : -25 ~ 15°C)
- Manual control mode :
  User can manually operate 3rd party boiler via Standard III (RS3) remote controller as needed.

Auto Control Mode



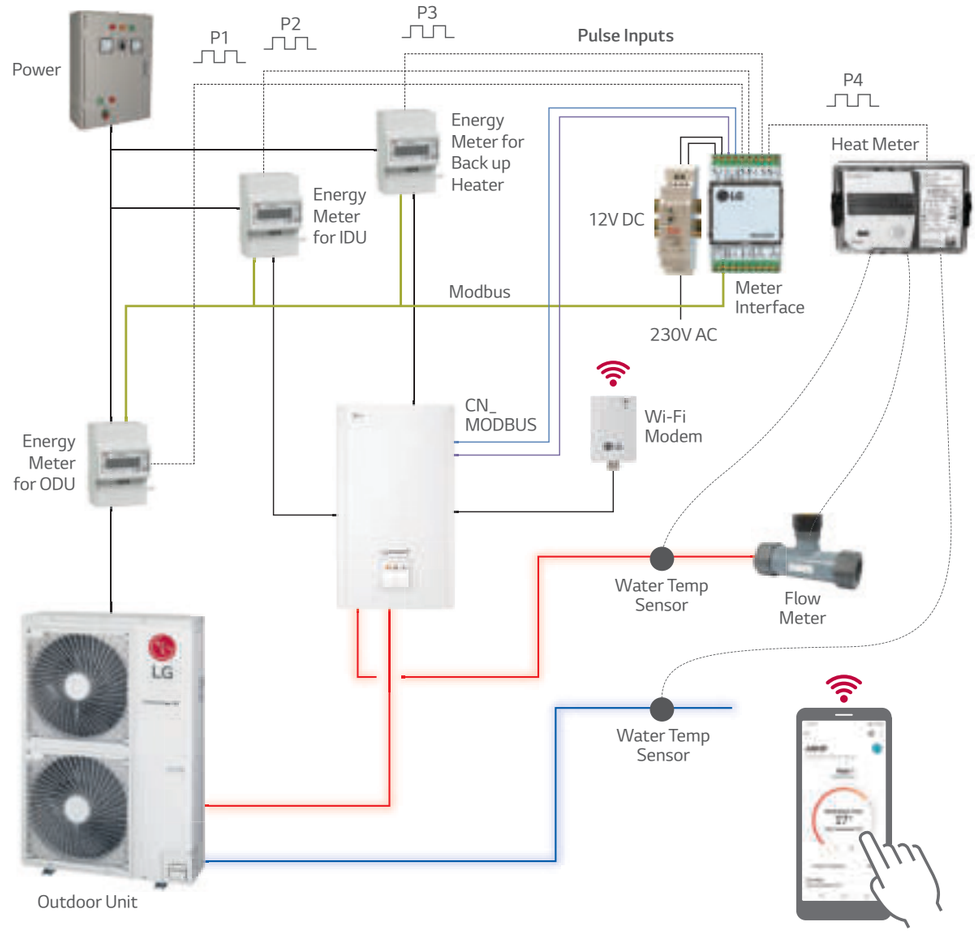


* 3rd Party boiler should have a water pump integrated with it.

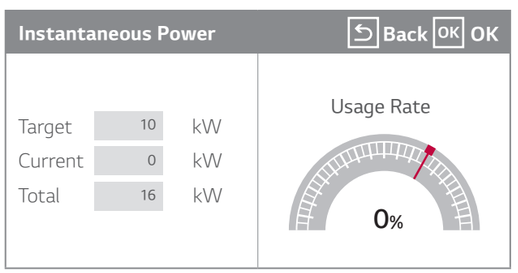
Energy Information Monitoring

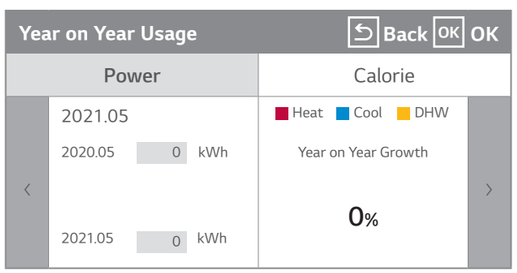
* Applied model : All Line-up except R410A IWT

Power consumption and heat provided by the THERMA V can be measured and monitored on the remote controller using meter interface.



* Mandatory accessory : PENKTH000 (meter Interface)





USER CONVENIENCE

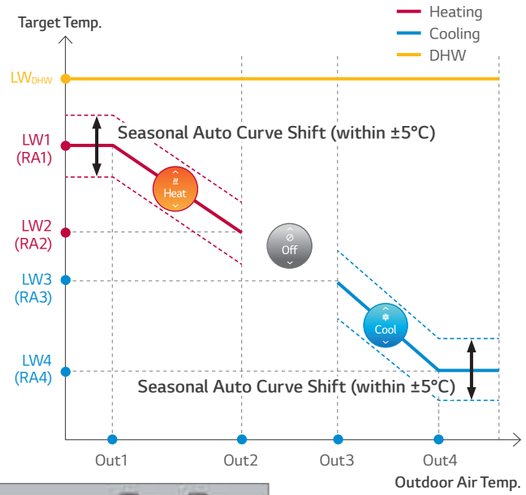
Seasonal Auto Mode

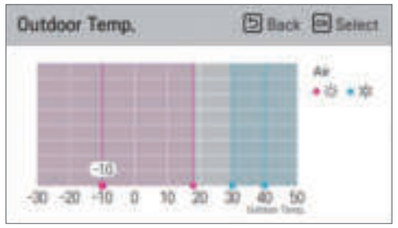
* Applied model : R32 Series, R410A Split Hydro Box
Detailed set values and ranges are differ by product.
For more detail, please refer to the installation manual for each product.

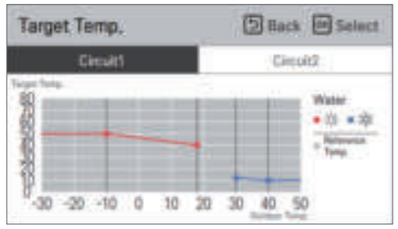
In this mode, the target temperature and operation mode will be changed automatically according to the outdoor temperature.

Setting	Description	Range (°C)	Default (°C)	
			Circuit 1	Circuit 2
Out1	Heating Lower Ambient Temp.	-25 ~ 35	-10	
Out2	Heating Higher Ambient Temp.		18	
Out3	Cooling Lower Ambient Temp.	10 ~ 46	30	
Out4	Cooling Higher Ambient Temp.		40	
LW1	Heating Higher Water Temp.	Use Heater : 15 ~ 65	50	35
LW2	Heating Lower Water Temp.	No Heater : 20 ~ 65	40	28
LW3	Cooling Higher Water Temp.	Use FCU : 5 ~ 27	12	18
LW4	Cooling Lower Water Temp.	No FCU : 16 ~ 27	10	16
RA1	Heating Higher Air Temp.	16 ~ 30°C 18 ~ 30°C	21	
RA2	Heating Lower Air Temp.		19	
RA3	Cooling Higher Air Temp.	18 ~ 30°C 18 ~ 30°C	21	
RA4	Cooling Lower Air Temp.		19	

* This table is for R32 Hydrosplit.





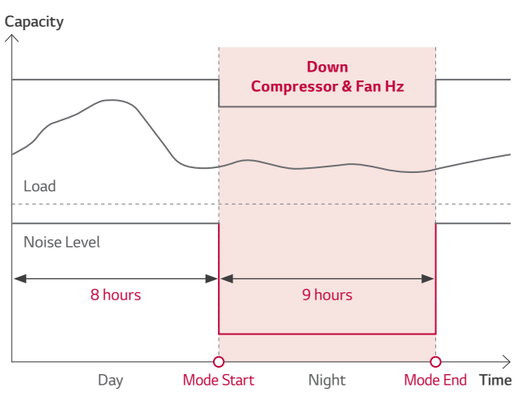


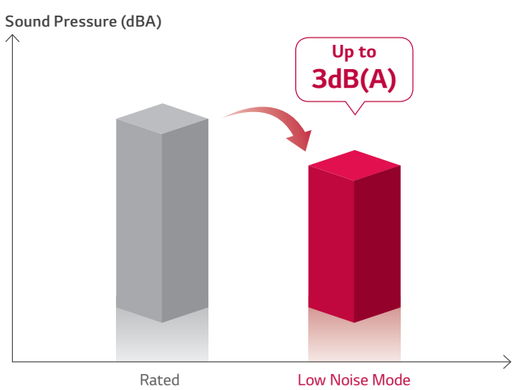
* The graphical seasonal auto mode setting is only possible with the R32 Hydrosplit.

Low Noise Mode & Scheduler

* Applied model : All Line-up except High Temp.

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.

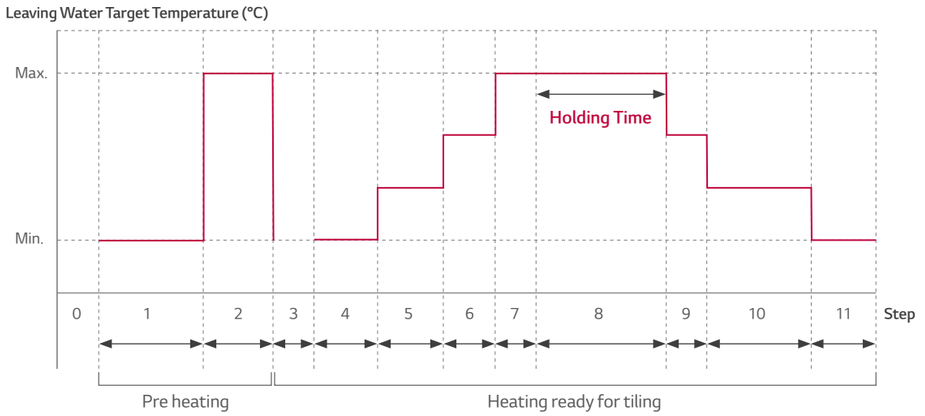




Screed Drying Program

* Applied model : R32 Series, R410A Split Hydro Box

THERMA V has an automatic program for drying out the screed of an underfloor heating system during the construction of a house.



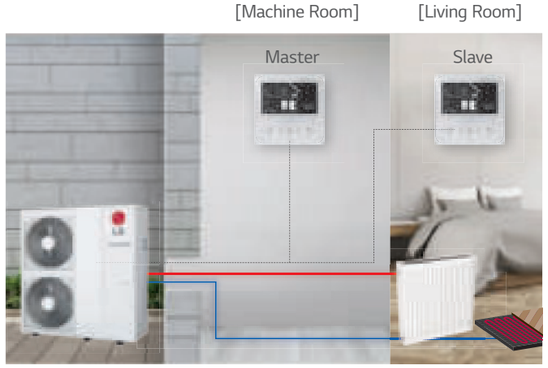
Step	1	2	3	4	5	6	7	8	9	10	11
Leaving Water Target Temperature (°C)	25	Max. T	Off	25	35	45	Max. T	Max. T	45	35	25
Duration (hours)	72	96	72	24	24	24	24	Holding Time	72	72	72

2 Remote Control

* Applied model : All Line-up except R410A IWT

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

System Diagram



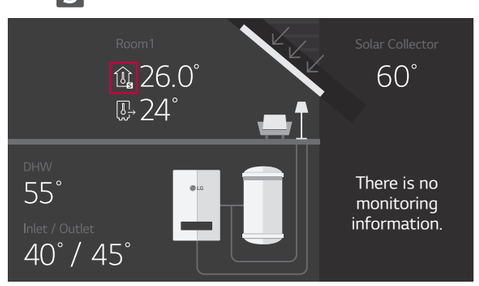
Outdoor Unit

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

Standard III (RS3) Controller Interface

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

: Room air temperature sensed by slave remote controller



EASY INSTALLATION & MAINTENANCE

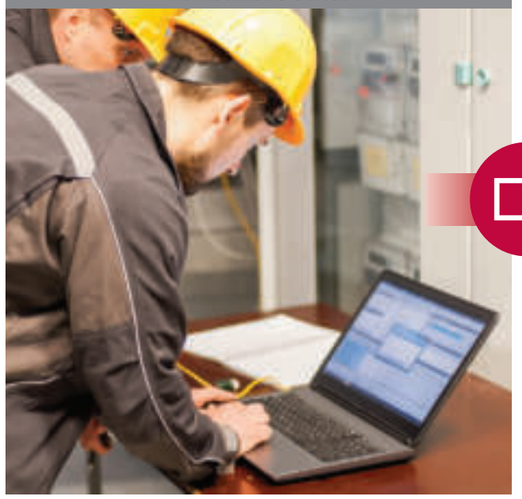
LG Heating Configurator

* Applied model : R32 Series, R410A Split Hydro Box
R32 IWT, R32 Hydrosplit will be supported within 2020.

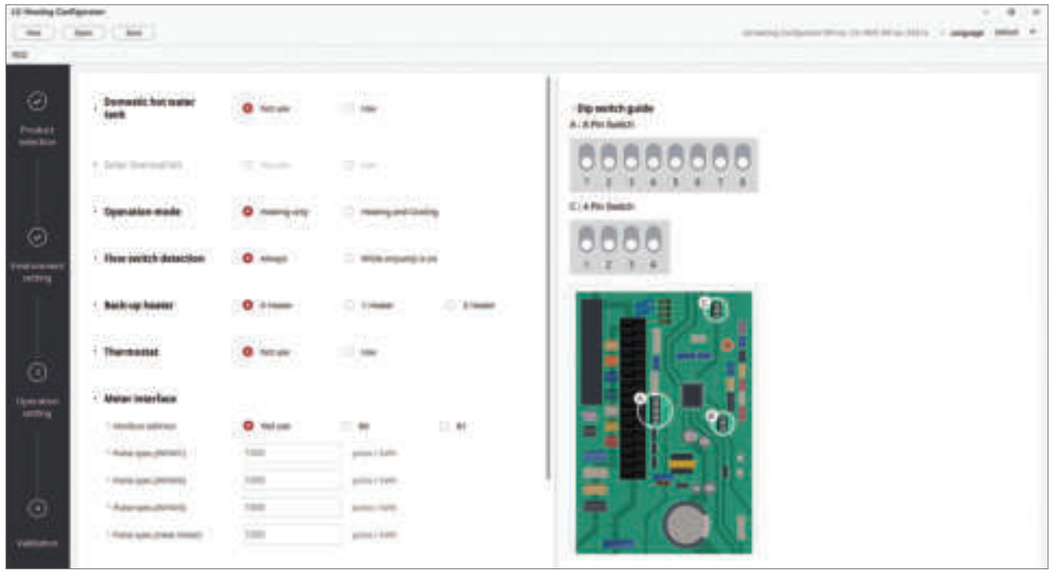
Easy Installation Setting and Commissioning

- 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.

At Installer's Office



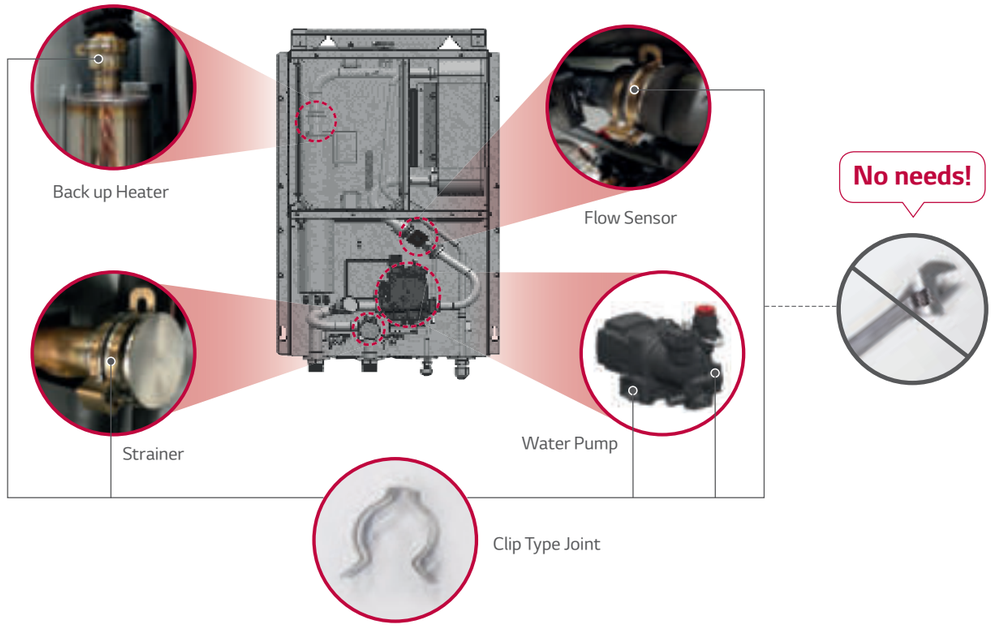
At User's Home



Clip Type Connection for Easy Maintenance

* Applied model : R32 Series, R410A Split Hydro Box

- Easy access to water pump and strainer (front panel)
- Clip type connection for components

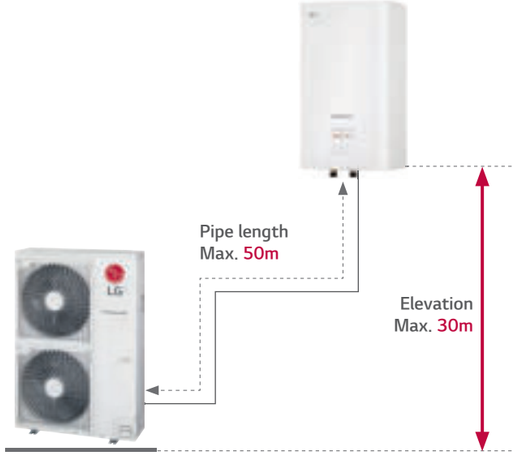


Flexible Refrigerant Piping Design

* Applied model : R32 IWT, R32 Split, R410A Split,
R410A IWT, High Temp.

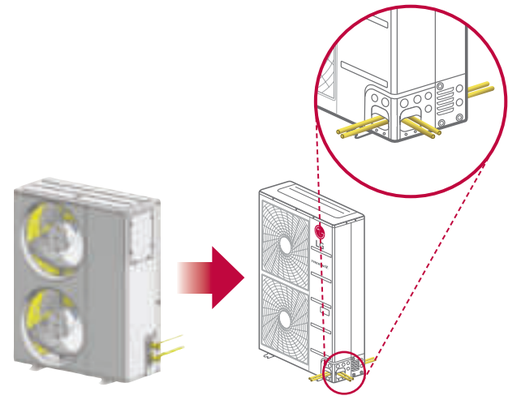
Long piping length and 3 Way piping enable flexible design and easy installation.

Piping Capabilities



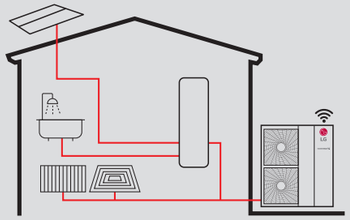
3 Way Piping

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



THERMA V™
PRODUCTS

R32 MONOBLOC



Excellent Performance & Efficiency

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

User Convenience

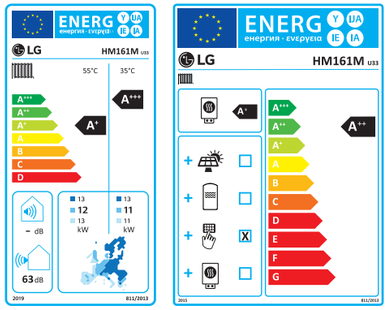
- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode

Easy Installation & Maintenance

- All in one
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 26 ~ 43.

Energy Labeling



* 16kW 1Ø model.
* A+++ to D scale.

Monobloc Concept

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.

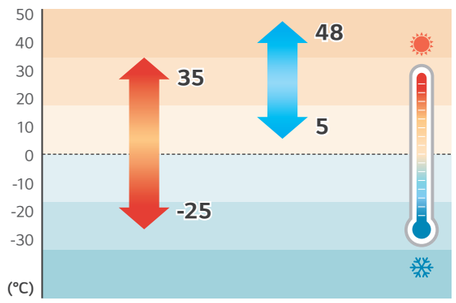
Capacity Range (Heating & Cooling)

R32 Monobloc

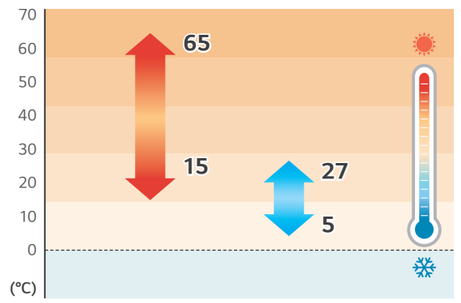
Capacity Range [kW]	5	7	9	12	14	16
Heating Capacity	(5.5)	(7.0)	(9.0)	(12.0)	(14.0)	(16.0)
Cooling Capacity	(5.5)	(7.0)	(9.0)	(12.0)	(14.0)	(16.0)

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature



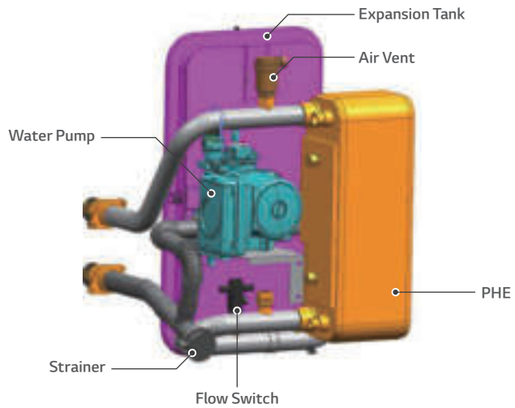
PRODUCT FEATURES

All in One Concept

THERMA V's all in one concept and reduce weight allow for quicker and easier installations.

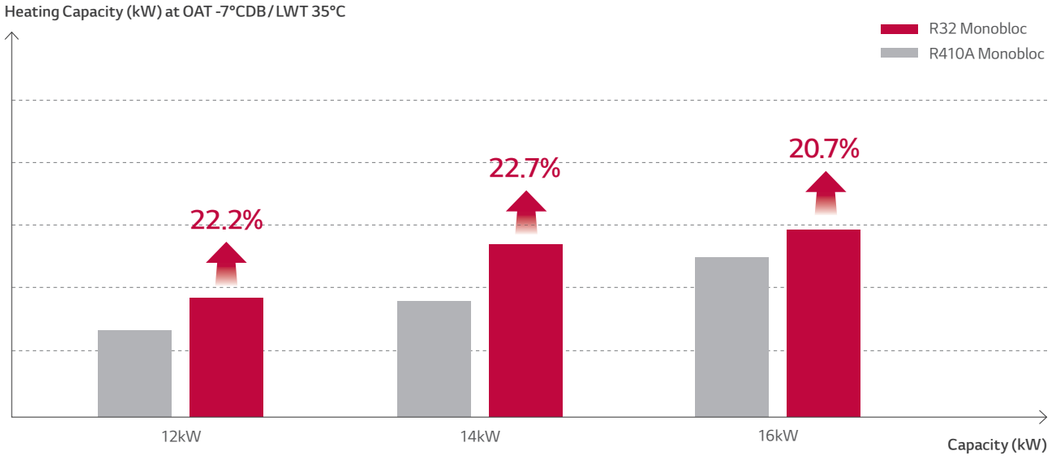
- LG provides fully packaged THERMA V Monobloc : additional hydronic components are included in the package
- Easier and quicker installation without refrigerant piping work

THERMA V R32 Monobloc



High Heating Performance even at Low Temperature

The R32 Monobloc provides excellent heating performance – especially at low ambient temperature. The heating capacity of THERMA V R32 Monobloc at low ambient temperature is 20% higher than the R410A Monobloc.

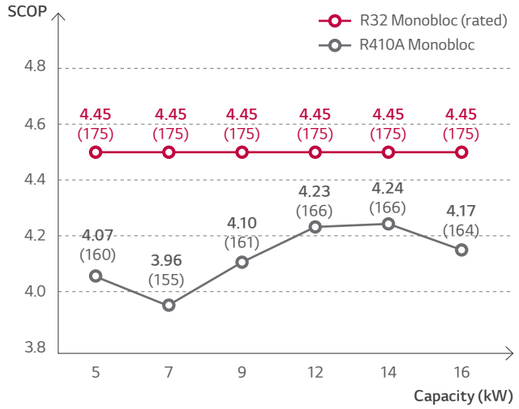


Note
1. LWT : Leaving Water Temperature, OAT : Outdoor Air Temperature

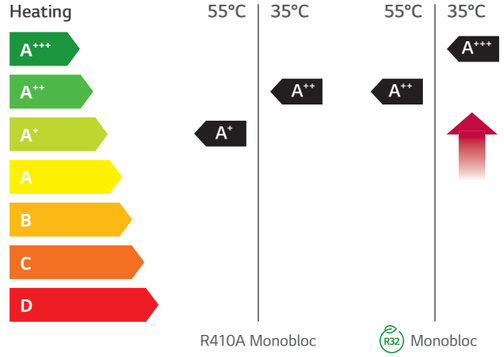
High Energy Efficiency

The energy label directive is a key factor in selecting a heating device in the European heating market. The R32 Monobloc type has an energy label rating (ErP) of A+++.

SCOP



ErP Energy Labeling

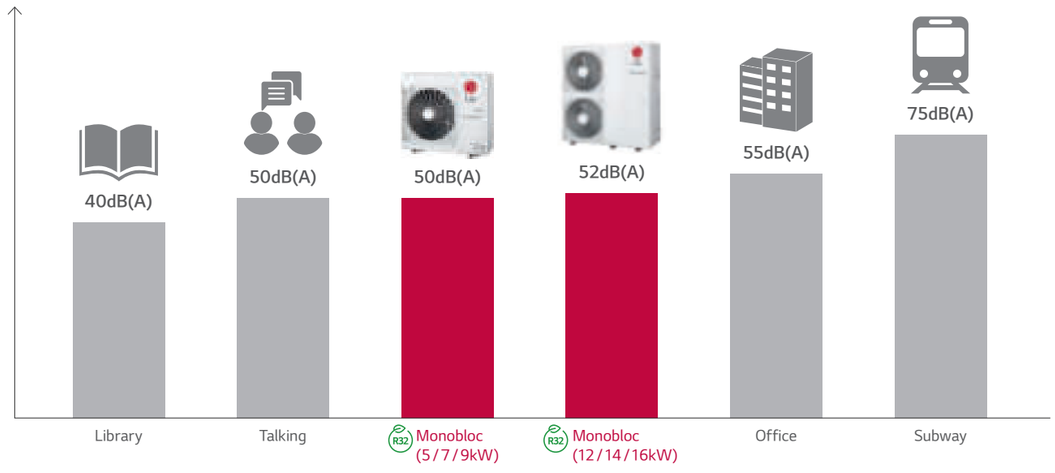


*Test Condition
Test procedure follows EN14825 (low temp.. average), based on the single phase model line-up.

Reduced Noise Level

THERMA V R32 Monobloc boasts reduced noise levels compared to previous generations as well as everyday environments.

Sound Pressure Level Comparison



PRODUCT SPECIFICATION

R32 Monobloc

HM051M U43
HM071M U43
HM091M U43

011-1W0243 EHPA for Austria, Switzerland and Germany

R1 Compressor™ Black Fin LG ThinQ

Features

- High energy efficiency (SCOP4.45 / A+++)
- Excellent performance at low ambient temperature (100% @ -7°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- R32 refrigerant with low GWP
- R1 scroll compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA certification / MCS / Eurovent certification

Model Line-up

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

Seasonal Energy

Description			Unit	HM051M U43	HM071M U43	HM091M U43
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	W/W	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 (DB)	LWT (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

Product Specification

Technical Specification				Unit	HM051M U43	HM071M U43	HM091M U43
Water Side	Operation Range (leaving water temperature)	Heating	Min. ~ Max.	°CDB	15 ~ 65		
		Cooling			5 ~ 27 (16 ~ 27)[2]		
		DHW[1]			15 ~ 80		
	Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 25.4 (1)		
			Outlet	mm (inch)	Male PT 25.4 (1)		
	Rated Water Flow Rate at LWT 35°C			LPM	15.81	20.12	25.87
Refrigerant Side	Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°CDB	-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-CO_2 eq		-	0.945		
Sound Power Level		Heating	Rated	dB(A)	60		
Sound Pressure Level (at 1m)		Heating	Rated	dB(A)	50		
Dimensions		Unit	W x H x D	mm	1,239 x 834 x 330		
Weight		Unit		kg	91.0		
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) DHW 58 ~ 80°C operating is available only when the booster heater is operating.
2) When fan coil unit not used.

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. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard.
   Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard.
   Therefore, these values can be increased owing to ambient conditions during operation.
4. Performances are accordance with EN14511 and reflect ErP testing conditions. Above gives the declared values at rated conditions acc. ErP regulation.
   For max. capacities, refer to performance data.
   • Rated running current : outdoor temp. 7°CDB / 6°CWB, LWT 35°C
5. This product contains fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operaion

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.

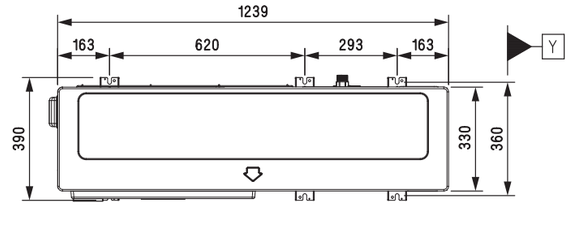
PRODUCT SPECIFICATION

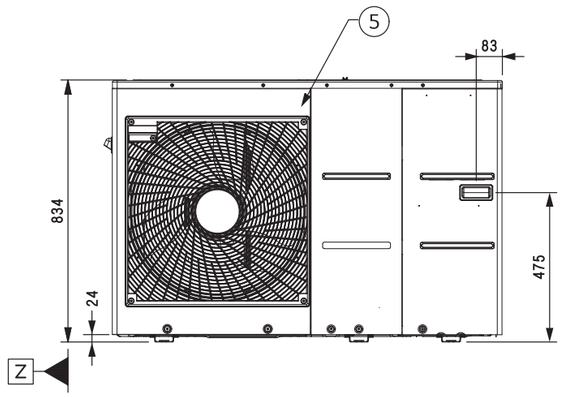
Drawings

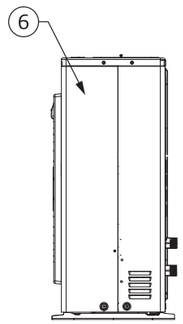
Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM051M U43	HM071M U43	HM091M U43

HM051M U43
HM071M U43
HM091M U43

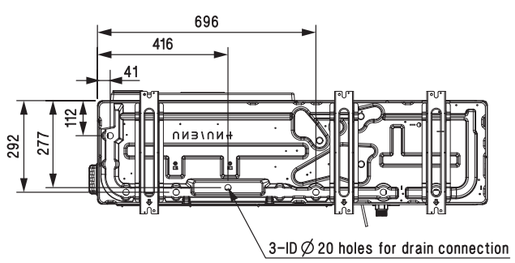
[Unit : mm]



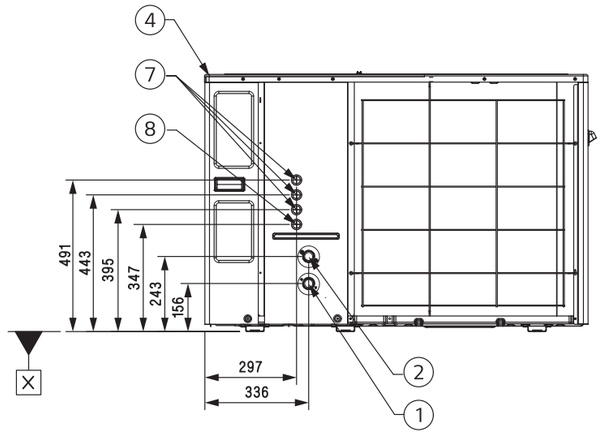


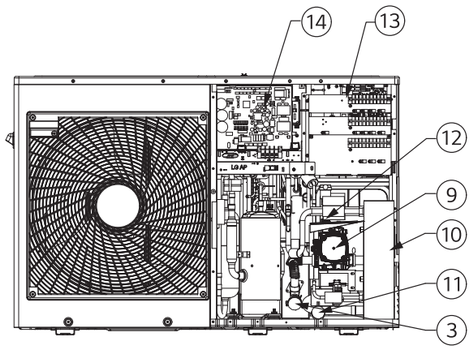


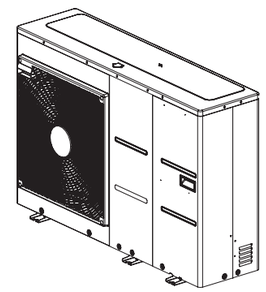
Side View



[Unit : mm]







3D View

No.	Part Name	Description
1	Entering Water Pipe	Male PT 1 inch
2	Leaving Water Pipe	Male PT 1 inch
3	Strainer	Filtering and stacking particles inside circulating water
4	Top Cover	-
5	Front Panel	-
6	Side Panel	-
7	Low Voltage	Accessory kit cables
8	Unit Power	Outdoor entry power cable
9	Water Pump	-
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gauge	Indicates circulating water pressure
12	Safety Valve	Open at water pressure 3bar
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, Switzerland and Germany

R1 Compressor™ Black Fin LG ThinQ

Features

- High energy efficiency (SCOP 4.45 / A+++)
- Excellent performance at low ambient temperature (100% @ -7°C)
- Wide operation range (ambient : -25 ~ 35°C/water side : 15 ~ 65°C)
- R32 refrigerant with low GWP
- R1 scroll compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK/EHPA[1)] certification/MCS/Eurovent certification

1) Approved model by EHPA : HM123M U33, HM143M U33, HM163M U33.

Model Line-up

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

Seasonal Energy

Description			Unit	HM121M U33 HM123M U33	HM141M U33 HM143M U33	HM161M U33 HM163M U33
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	W/W	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 (DB)	LWT (DB)	Unit	HM121M U33 HM123M U33	HM141M U33 HM143M U33	HM161M U33 HM163M U33
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

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.	°CDB	15 ~ 65					
		Cooling			5 ~ 27 (16 ~ 27)[2)]					
		DHW[1)]			15 ~ 80					
	Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 25.4 (1)					
			Outlet	mm (inch)	Male PT 25.4 (1)					
	Rated Water Flow Rate at LWT 35°C			LPM	34.50	40.25	46.00	34.50	40.25	46.00
Refrigerant Side	Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°CDB	-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 x 1,380 x 330					
Weight		Unit		kg	124.5					
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) DHW 58 ~ 80°C operating is available only when the booster heater is operating.
2) When fan coil unit not used.

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. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.
4. Performances are accordance with EN14511 and reflect ErP testing conditions. Above gives the declared values at rated conditions acc. ErP regulation. For max. capacities, refer to performance data.
   • Rated running current : outdoor temp. 7°CDB / 6°CWB, LWT 35°C
5. This product contains fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operaion

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.

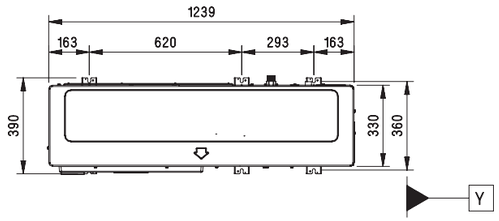
PRODUCT SPECIFICATION

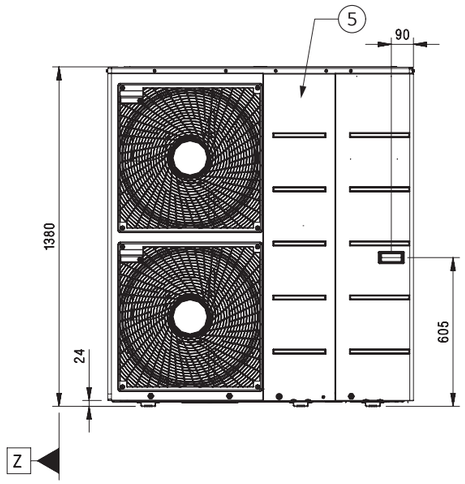
Drawings

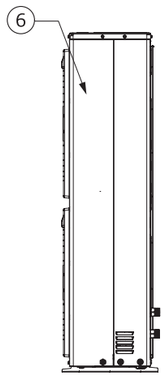
Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM121M U33	HM141M U33	HM161M U33
3 Phase Model 380 ~ 415V, 3Ø, 50Hz		HM123M U33	HM143M U33	HM163M U33

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

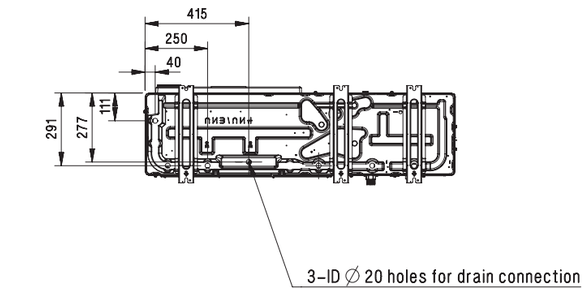
[Unit : mm]



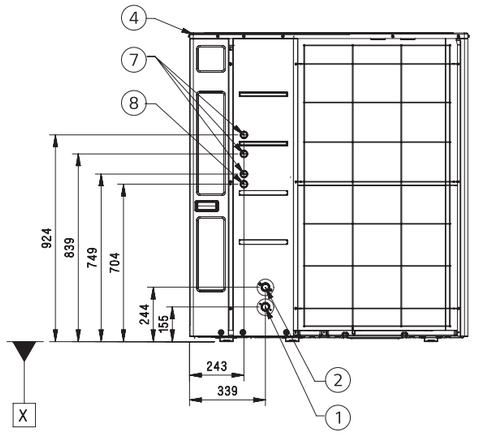


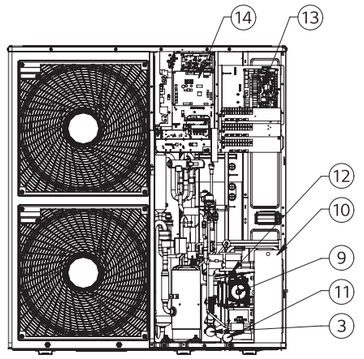


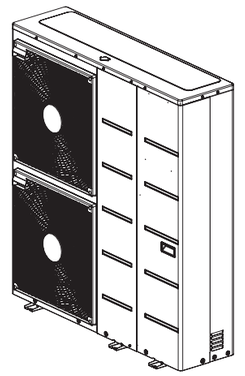
Side View



[Unit : mm]







3D View

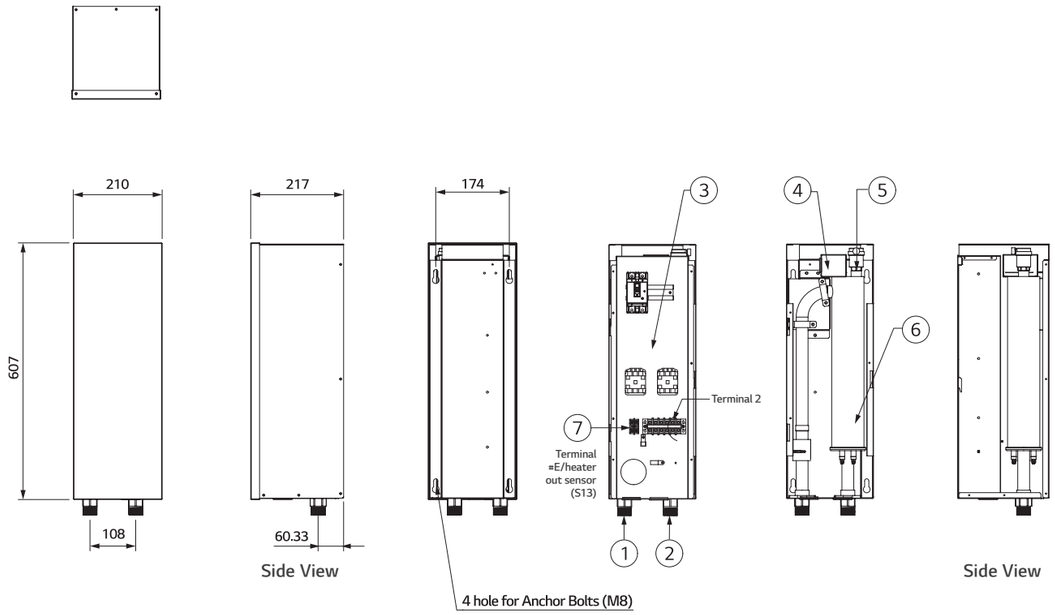
No.	Part Name	Description
1	Entering Water Pipe	Male PT 1 inch
2	Leaving Water Pipe	Male PT 1 inch
3	Strainer	Filtering and stacking particles inside circulating water
4	Top Cover	-
5	Front Panel	-
6	Side Panel	-
7	Low Voltage	Accessory kit cables
8	UNIT Power	Outdoor entry power cable
9	Water Pump	-
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gauge	Indicates circulating water pressure
12	Safety Valve	Open at water pressure 3bar
13	Indoor Control Box	Indoor PCB and terminal blocks
14	Outdoor Control Box	Outdoor PCB and terminal blocks

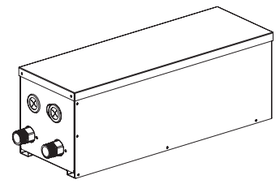
PRODUCT SPECIFICATION

Electric Back up Heater

HA031M E1
HA061M E1
HA063M E1

[Unit : mm]





3D View

Product Specification

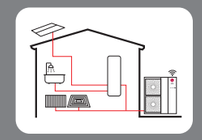
Electrical Specification		Unit	HA031M E1	HA061M E1	HA063M E1
Back up Heater	Type	-	Sheath		
	Number of Heating Coil	EA	1	2	3
	Capacity Combination	kW	3.0	3.0 + 3.0	2.0 + 2.0 + 2.0
	Operation	-	Automatic		
	Heating Steps	Step	1	2	1
	Power Supply	V, Ø, Hz	220 ~ 240, 1, 50		380 ~ 415, 3, 50
	Dimensions (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 2C	0.75 x 4C	0.75 x 2C

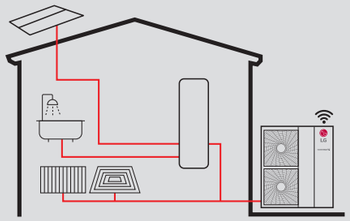
Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1 inch
2	Entering Water Pipe	Male PT 1 inch
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	Back up Heater Outlet Sensor (S13)	Connect to unit (heat pump)

THERMA V R32

R32 SILENT MONOBLOC





Excellent Performance & Efficiency

- Very low noise level
- R1 compressor
- R32 refrigerant
- Flash gas injection
- Wide operation range
- Black Fin heat exchanger
- Solar thermal
- Smart grid (energy state)

User Convenience

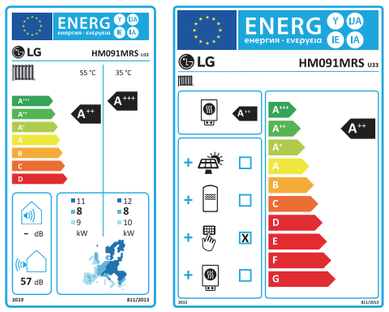
- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode

Easy Installation & Maintenance

- All in one
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 26 ~ 43.

Energy Labeling



* A+++ to D scale.

Silent Monobloc Concept

The LG THERMA V R32 Silent Monobloc is designed for lower noise levels than conventional Monobloc series while retaining its previous advantages; All in one with eco-conscious R32 refrigerant and LG's powerful yet stable R1 compressor. Thanks to its low noise level corresponding with DACH region noise regulations, THERMA V R32 Silent Monobloc offers maximized installation flexibility which allows installing within minimum safety space as 5m from neighboring houses. Moreover, the energy efficiency of THERMA V R32 Silent Monobloc is remarkably enhanced compared to conventional Monobloc as so it is recognized as an ultra-high efficient model.

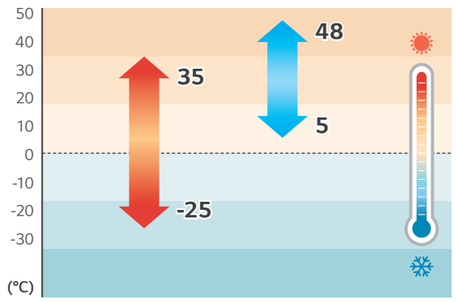
Capacity Range (Heating & Cooling)

R32 Silent Monobloc

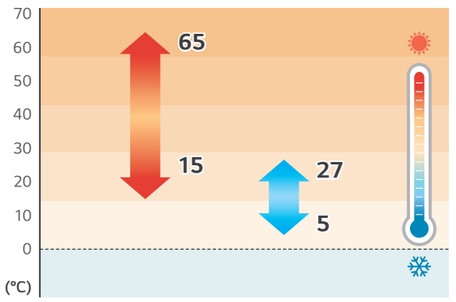
Capacity Range [kW]	9
Heating Capacity	(9.0)
Cooling Capacity	(9.0)

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature



PRODUCT FEATURES

Very Low Sound Level

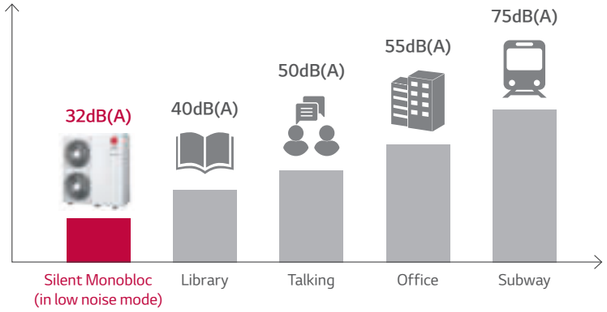
With a sound level that is quieter than a library, THERMA V Silent Monobloc operates at 32dB(A) in Low noise mode, creating a tranquil environment indoors and outdoors.

Low Noise Mode

54dB(A)
Sound Power Level

32dB(A)
Sound Pressure Level at 5m

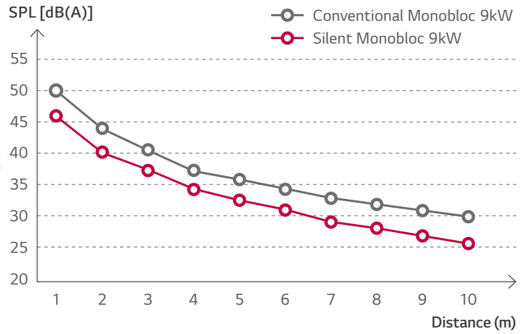
Sound Pressure Level Comparison



Installation Flexibility

THERMA V Silent Monobloc can be installed up to 4m (in low noise mode) from neighboring houses while complying with noise regulations.

• Sound Pressure based on the distance from the ODU



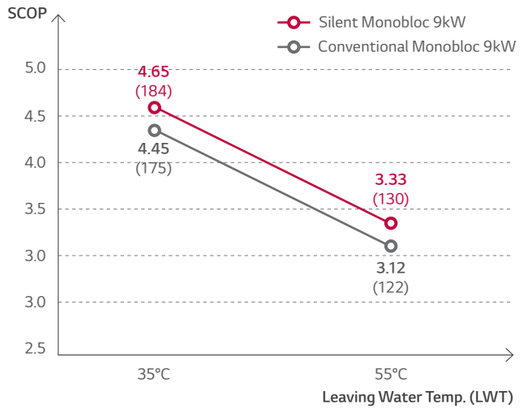
* Based on 9kW model with low noise mode.

Noise Regulation	Germany (TA Lärm)		Austria (ÖNORM S 5021)	
In Residential Area (rest area)	Day (06 ~ 22)	50dB(A)	Day (06 ~ 19)	45dB(A)
			Evening (19 ~ 22)	40dB(A)
	Night (22 ~ 06)	35dB(A)	Night (22 ~ 06)	35dB(A)

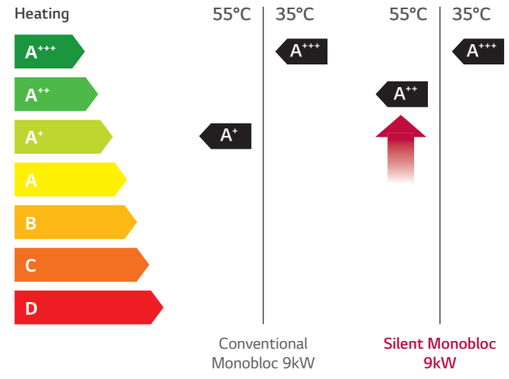
High Energy Efficiency

The energy label directive is a key factor of selecting heating device in Europe heating market.
THERMA V Silent Monobloc has an energy label rating A+++ for low temperature application and A++ for medium temperature application in ErP energy labeling regulation.

SCOP



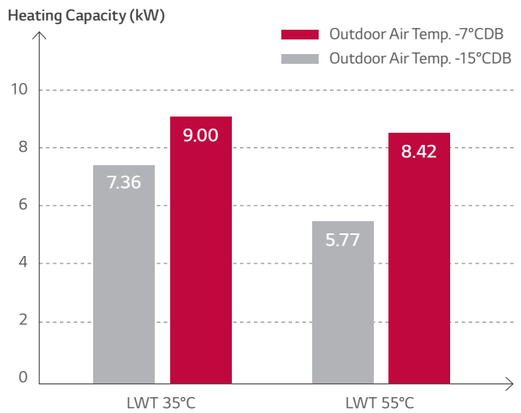
ErP Energy Labeling



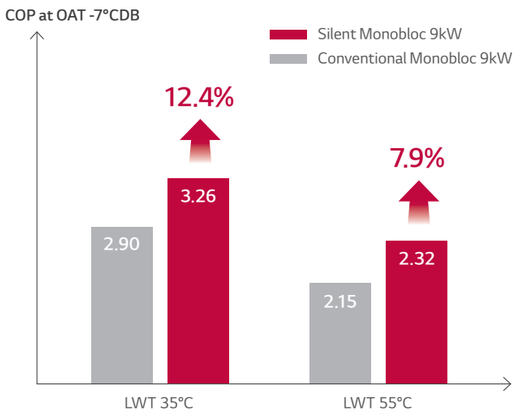
High Heating Performance even at Low Temperature

THERMA V Silent Monobloc provides excellent heating performance – especially at low ambient temperature. Heating Capacity at OAT -7°CDB & LWT 35°C is same as normal capacity[1)] and Heating Capacity at OAT -15°CDB & LWT 35°C is more than 80% of normal capacity.

Heating Capacity



COP



1) Normal : Outdoor air temperature 7°CDB / 6°CWB, Water outlet temperature 35°C

PRODUCT SPECIFICATION

R32 Silent Monobloc

HM091MRS U33

011-1W0191

EHPA for Austria, Switzerland and Germany

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

Features

- Very Low Sound Level (32dB(A) at 5m in low noise mode)
- High energy efficiency (SCOP 4.68 / A+++)
- Excellent performance at low ambient temperature (100% @ -7°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- R32 refrigerant with low GWP
- R1 scroll compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA certification / MCS / Eurovent certification

Model Line-up

Category	Unit	Model Name
		Capacity (kW)
		9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM091MRS U33

Seasonal Energy

Description			Unit	HM091MRS U33
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	W/W	4.68
		Seasonal Space Heating Efficiency (η_s)	%	184
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.33
		Seasonal Space Heating Efficiency (η_s)	%	130
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A++

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Unit	HM091MRS U33
Nominal Capacity	Heating	7°C	35°C	kW	9.00
		7°C	55°C		6.00
		2°C	35°C		8.00
	Cooling	35°C	18°C		9.00
		35°C	7°C		9.00
Nominal Power Input	Heating	7°C	35°C	kW	1.76
		7°C	55°C		2.14
		2°C	35°C		2.16
	Cooling	35°C	18°C		1.80
		35°C	7°C		3.00
COP	Heating	7°C	35°C	W/W	5.10
		7°C	55°C		2.80
		2°C	35°C		3.70
EER	Cooling	35°C	18°C	W/W	5.00
		35°C	7°C		3.00

Product Specification

Technical Specification				Unit	HM091MRS U33
Water Side	Operation Range (leaving water temperature)	Heating	Min. ~ Max.	°CDB	15 ~ 65
		Cooling			5 ~ 27 (16 ~ 27)[2]
		DHW[1]			15 ~ 80
	Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 25.4 (1)
			Outlet	mm (inch)	Male PT 25.4 (1)
	Rated Water Flow Rate at LWT 35°C			LPM	25.87
Refrigerant Side	Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°CDB	-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
Sound Power Level		Heating	Rated	dB(A)	57
			Low noise		54
Sound Pressure Level (at 5m)		Heating	Rated	dB(A)	35
			Low noise		32
Dimensions		Unit	W x H x D	mm	1,239 x 1,380 x 330
Weight		Unit		kg	115.5
Power Supply		Voltage, Phase, Frequency		V, Ø, Hz	220 ~ 240, 1, 50
		Rated Running Current	Heating	A	7.83
			Cooling	A	7.99
		Recommended Circuit Breaker		A	16
Wiring Connections		Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C

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

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. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard.
   Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard.
   Therefore, these values can be increased owing to ambient conditions during operation.
4. Performances are accordance with EN14511 and reflect ErP testing conditions. Above gives the declared values at rated conditions acc. ErP regulation.
   For max. capacities, refer to performance data.
   • Rated running current : outdoor temp. 7°CDB / 6°CWB, LWT 35°C
5. This product contains fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operaion

Maximum Heating Capacity (Including Defrost Effect)

HM091MRS 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	5.66	5.09	4.57	4.02	-	-	-	-
-20°C DB	6.61	6.50	5.61	4.89	4.32	-	-	-
-15°C DB	7.33	7.36	7.25	6.99	6.35	5.77	-	-
-7°C DB	9.00	9.00	9.00	9.00	9.00	8.42	-	-
-4°C DB	9.00	9.00	9.00	9.00	9.00	9.00	6.87	-
-2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	7.09	-
2°C DB	9.00	9.00	9.00	9.00	9.00	9.00	7.48	-
7°C DB	9.00	9.00	9.00	9.00	9.00	9.00	7.87	7.14
10°C DB	9.00	9.00	9.00	9.00	9.00	9.00	8.06	7.34
15°C DB	9.00	9.00	9.00	9.00	9.00	9.00	8.28	7.58
18°C DB	9.00	9.00	9.00	9.00	9.00	9.00	8.36	7.68
20°C DB	9.00	9.00	9.00	9.00	9.00	9.00	8.40	7.72
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	8.45	7.80

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.

Performance Table for Cooling Operation

Maximum Cooling Capacity

HM091MRS 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	8.50	9.31	10.12	10.66	11.47	12.00	12.54
20°C DB	8.70	9.19	9.67	9.99	10.48	10.80	11.13
30°C DB	8.90	9.06	9.22	9.33	9.49	9.60	9.71
35°C DB	9.00	9.00	9.00	9.00	9.00	9.00	9.00
40°C DB	9.10	9.02	8.94	8.89	8.81	8.76	8.71
45°C DB	9.20	9.04	8.89	8.78	8.63	8.52	8.42

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.

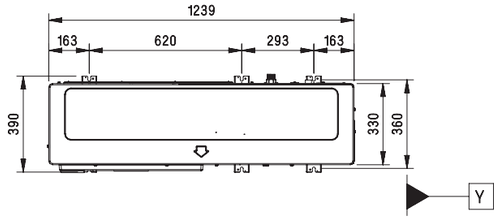
PRODUCT SPECIFICATION

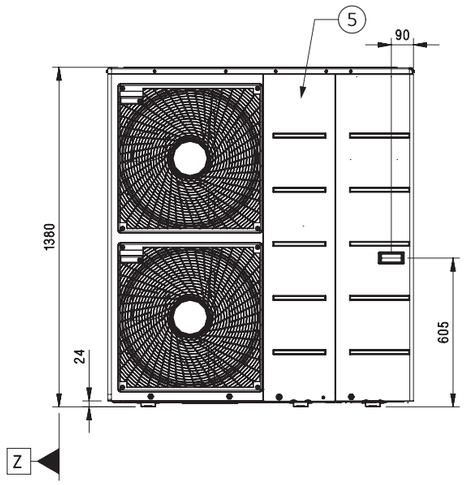
Drawings

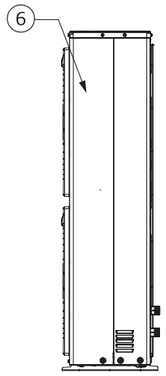
Category	Unit	Model Name
		Capacity (kW)
		9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM091MRS U33

HM091MRS U33

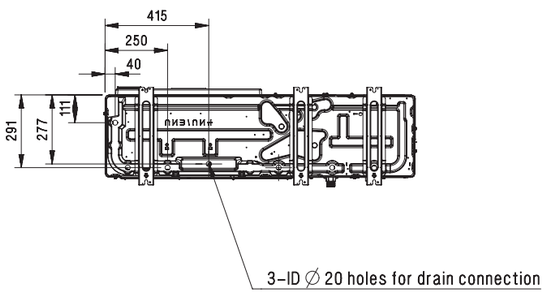
[Unit : mm]



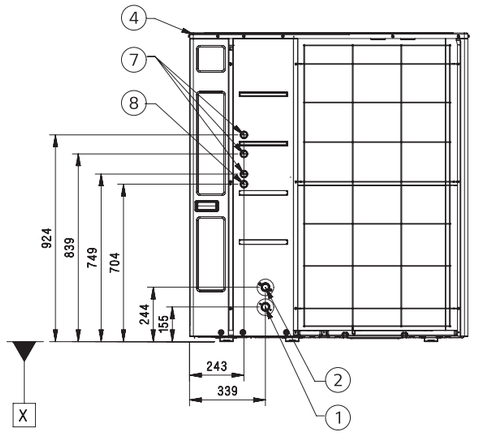


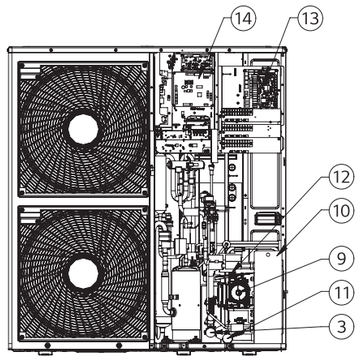


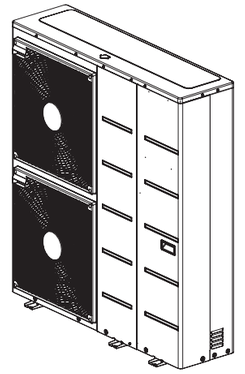
Side View



[Unit : mm]







3D View

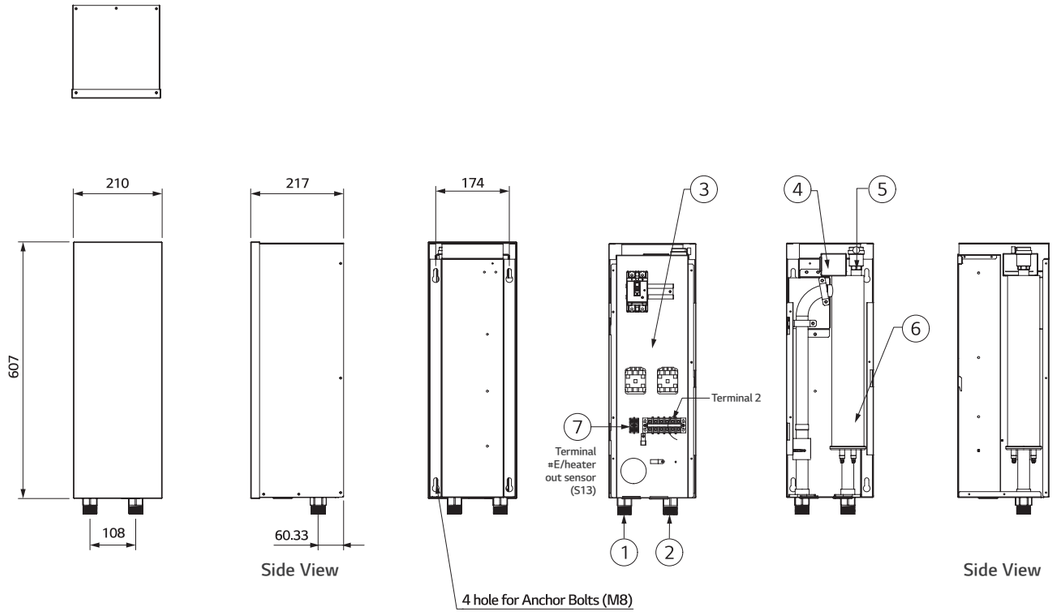
No.	Part Name	Description
1	Entering Water Pipe	Male PT 1 inch
2	Leaving Water Pipe	Male PT 1 inch
3	Strainer	Filtering and stacking particles inside circulating water
4	Top Cover	-
5	Front Panel	-
6	Side Panel	-
7	Low Voltage	Accessory kit cables
8	UNIT Power	Outdoor entry power cable
9	Water Pump	-
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gauge	Indicates circulating water pressure
12	Safety Valve	Open at water pressure 3bar
13	Indoor Control Box	Indoor PCB and terminal blocks
14	Outdoor Control Box	Outdoor PCB and terminal blocks

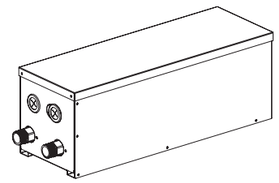
PRODUCT SPECIFICATION

Electric Back up Heater

HA031M E1
HA061M E1

[Unit : mm]





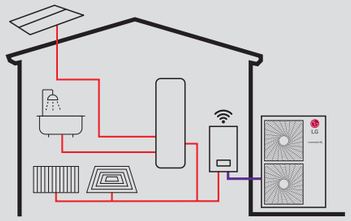
3D View

Product Specification

Electrical Specification		Unit	HA031M E1	HA061M E1
Back up Heater	Type	-	Sheath	
	Number of Heating Coil	EA	1	2
	Capacity Combination	kW	3.0	3.0 + 3.0
	Operation	-	Automatic	
	Heating Steps	Step	1	2
	Power Supply	V, Ø, Hz	220 ~ 240, 1, 50	
	Dimensions (W x H x D)	mm	210 x 607 x 217	
	Net Weight (unit)	kg	13.0	13.8
Wiring Connections	Power Supply Cable (included earth, H07RN-F)	mm^2 x cores	1.5 x 3C	4.0 x 3C
	Communication Cable (H07RN-F)	mm^2 x cores	0.75 x 2C	0.75 x 4C

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. And "Electric characteristics" chapter should be considered for electrical work and design. 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 inch
2	Entering Water Pipe	Male PT 1 inch
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	Back up Heater Outlet Sensor (S13)	Connect to unit (heat pump)



Excellent Performance & Efficiency

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

User Convenience

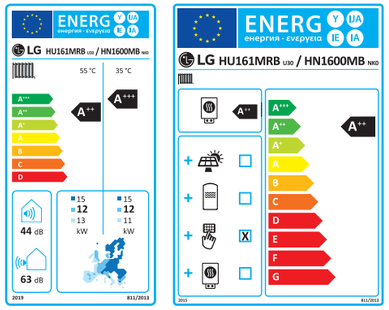
- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- Advanced pump control options
- Flow sensor
- Pressure sensor
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode

Easy Installation & Maintenance

- Hydrosplit
- LG heating configurator[1)]
- Clip connection

1) Will be supported within this year.
* Detailed description for each function is presented on page 26 ~ 43.

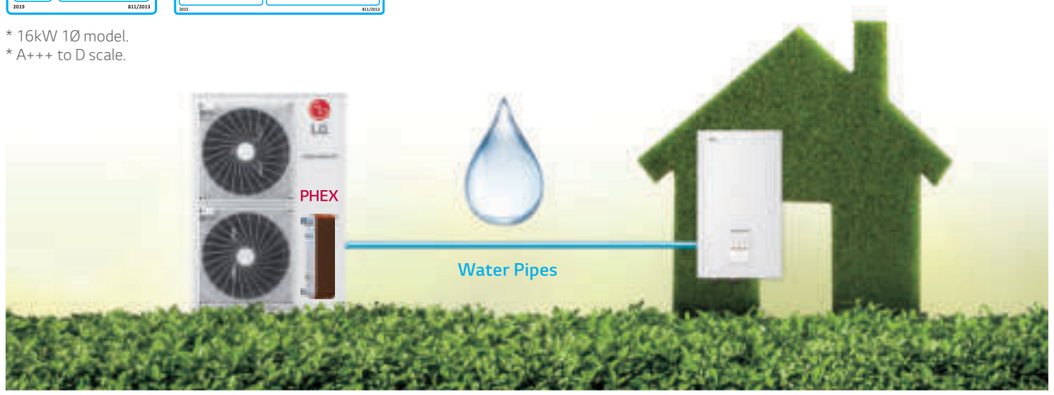
Energy Labeling



* 16kW 1Ø model.
* A+++ to D scale.

Hydrosplit Concept

With innovation and safety in mind, the LG THERMA V Hydrosplit separates the Indoor unit (IDU) and outdoor unit (ODU), connecting them through water pipes.
The unit's heat exchanger is located within the ODU, reducing the risk of indoor refrigerant leakage. Quick and easy installation is made possible by the IDU's built-in hydronic components such as water pump, expansion tank, and air vent as well as the fact that the electric wiring can be done in the same space as the IDU.



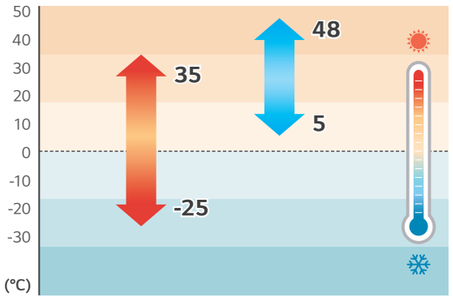
Capacity Range (Heating & Cooling)

R32 Hydrosplit

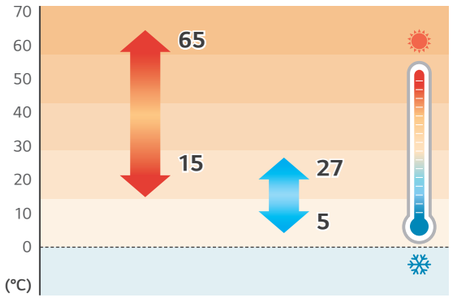
Capacity Range [kW]	12	14	16
Heating Capacity	● (12.0)	● (14.0)	● (16.0)
Cooling Capacity	● (12.0)	● (14.0)	● (16.0)

Operation Range (Heating & Cooling)

Ambient Temperature



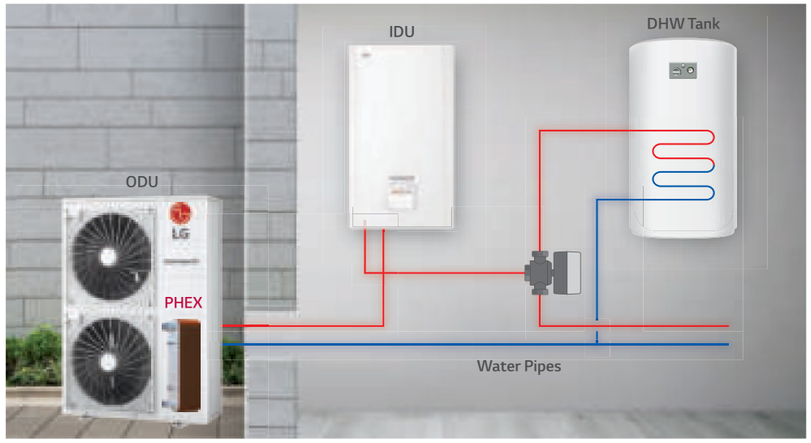
Leaving Water Temperature



PRODUCT FEATURES

Hydrosplit Concept

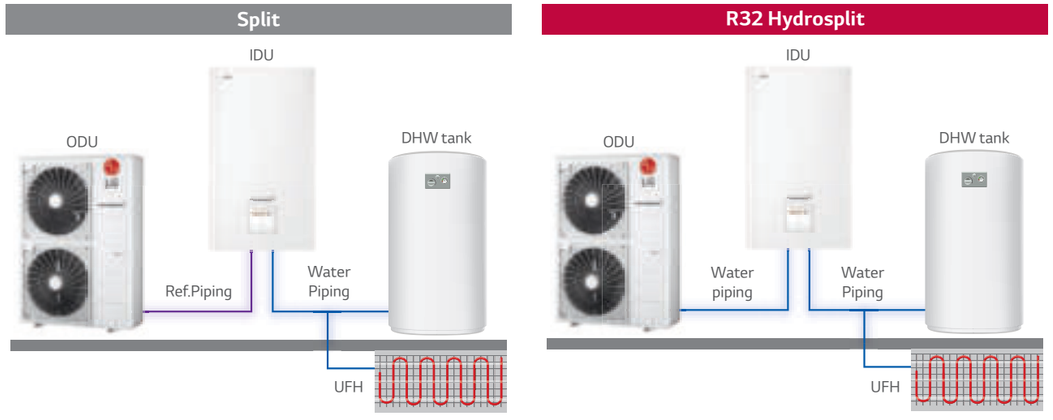
The THERMA V R32 Hydrosplit connects an IDU and ODU by water pipes due to the heat exchanger's location in the outdoor unit, thus reducing the risk of indoor refrigerant leakage.



* PHEX : Plate Heat Exchanger

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

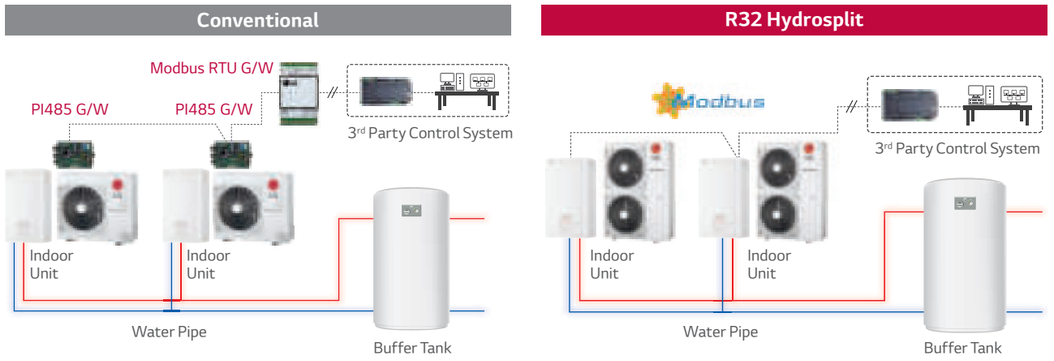
1) Total Ref. Amount 2.7kg
- Pre-Charged Ref. Amount : 2.1kg
- Additional Ref. Charge Amount for 30m : 0.6kg

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

No minimum floor area requirement

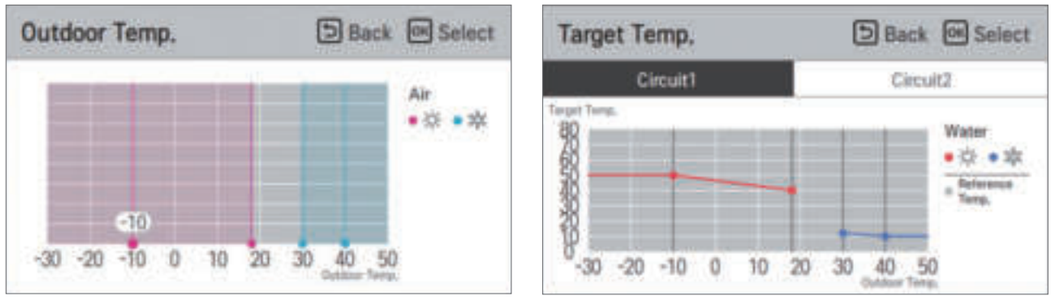
Modbus Communication

Considering the units in parallel installation, it is required to think how to control them.
The R32 Hydrosplit can be connected to 3rd party control system using Modbus protocol directly, without Modbus RTU gateway and PI485 gateway. Moreover, R32 Hydrosplit is able to support much more functions than conventional one using new Modbus memory map.



Visualized Seasonal Auto Mode Setting

In this mode, the target temperature and operation mode will be changed automatically according to the outdoor temperature. Moreover, now this function can be used in 2nd heating circuit and conveniently set using visualized graphic.



PRODUCT FEATURES

Advanced Pump Control Options

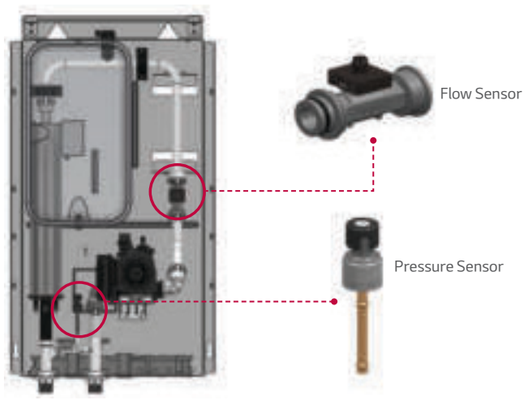
Various pump control options are possible for the user's convenience. With the R32 Hydrosplit, the water flow rate can be changed as per heat load condition, therefore it makes more energy efficient operation during low load condition.

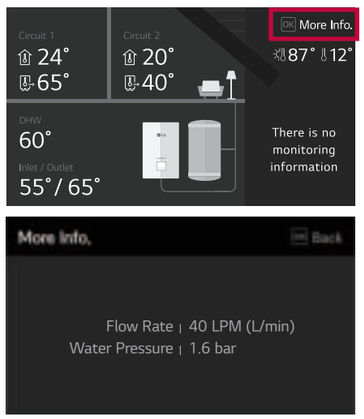
Options	Description	Water Flow Change as per load condition
Pump Capacity	It operates with the capacity set for the water pump. (range 10 ~ 100%)	No
Fixed Flow Rate	Automatically controlled to maintain the set flow rate. (range 17 ~ 46 LPM)	No
Fixed ΔT*	Automatically controlled to maintain the set ΔT. (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.

Water Circuit Monitoring

It is possible to monitor via remote controller not only temperature of water circuit but also flow rate and pressure. This information is not only useful to the installer during installation, but also helps to periodically clean the strainer.

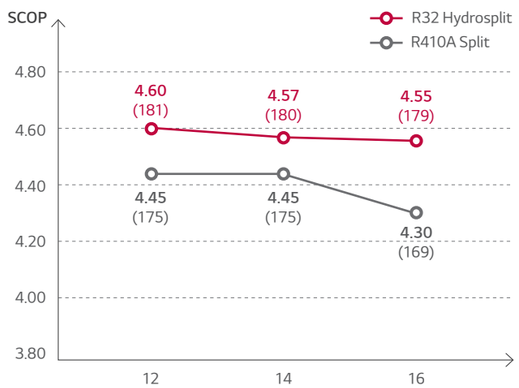




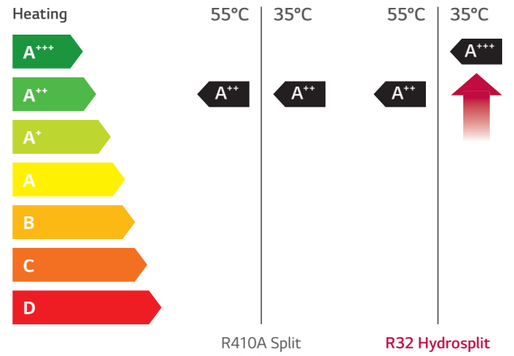
High Energy Efficiency

The energy label directive is a key factor in selecting a heating device in the European heating market. The R32 Hydrosplit has an energy label rating (ErP) for space heating of A+++.

SCOP



ErP Energy Labeling

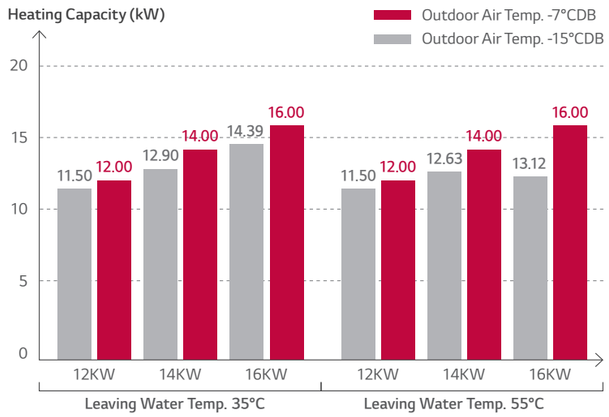


* Test Condition
Test procedure follows EN14825 (low temp. average). based on the single phase model line-up.

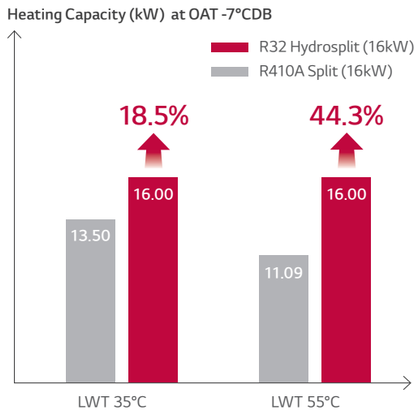
High Heating Performance even at Low Temperature

The R32 Hydrosplit provides excellent heating performance – especially at low ambient temperatures. Its heating capacity at OAT -7°CDB is the same as normal capacity and heating capacity at OAT -15°CDB reaches more than 90% of normal capacity[1]. The heating capacity of the R32 Hydrosplit is 18.5% higher at low ambient temperatures and 44.3% higher at mid ambient temperature than the R410A Split.

Heating Capacity of R32 Hydrosplit



Comparison with Previous Model



1) Normal : Outdoor air temperature 7°CDB / 6°CWB, Water outlet temperature 35°C

PRODUCT SPECIFICATION

R32 Hydrosplit

IDU
HN1600MB NK0
ODU
HU121MRB U30 / HU123MRB U30
HU141MRB U30 / HU143MRB U30
HU161MRB U30 / HU163MRB U30

011-1W0382 EHPA for Switzerland and Germany

R1 Compressor™ Black Fin LG ThinQ

Features

- Water pipes connects IDU & ODU
- High energy efficiency (SCOP up to 4.60 / A+++)
- Hydronic components built into IDU : water pump, expansion tank, air vent
- Excellent performance at low ambient temperature (100% @ -7°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
- Advanced water pump control (optimal flow rate, fixed capacity, fixed flow rate, fixed △T)
- Enhanced 2nd circuit control logic
- R32 refrigerant with low GWP
- R1 scroll compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA certification / MCS / Eurovent 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	HN1600MB NK0		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1600MB NK0		

Seasonal Energy

Description			Outdoor Unit	HU121MRB U30 HU123MRB U30	HU141MRB U30 HU143MRB U30	HU161MRB U30 HU163MRB U30
			Indoor Unit	HN1600MB NK0		
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 HU123MRB U30	HU141MRB U30 HU143MRB U30	HU161MRB U30 HU163MRB U30
				Indoor Unit	HN1600MB NK0		
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

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30	HU123MRB U30	HU123MRB U30	HU143MRB U30
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°CDB	-25 ~ 35					
	Cooling		°C	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 25.4(1)					
		Outlet	mm (inch)	Male PT 25.4(1)					
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 x 1,380 x 330					
Weight	Unit		kg	91.7					
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220 ~ 240, 1, 50			280 ~ 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. And "Electric characteristics" chapter should be considered for electrical work and design. 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 the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation. Sound pressure level is converted values from sound power level as per distance.
4. Performances are based on the following conditions (It is according to EN14511) : Interconnected pipe length is standard length and difference of elevation (outdoor ~ indoor unit) is 0m.
5. This product contains fluorinated greenhouse gases.
6. Strainer is accessory provided with the outdoor unit.

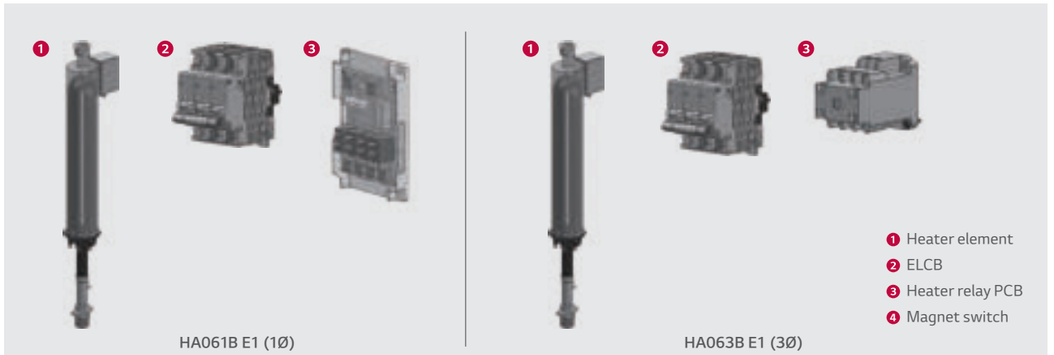
Product Specification (Indoor Unit)

Indoor Unit			Unit	HN1600MB NK0
Operation Range (leaving water)	Heating	Min. ~ Max.	°C	15 ~ 65
	Cooling	Min. ~ Max.	°C	5~27 (16~27) [2]
	DHW[1]	Min. ~ Max.	°C	15 ~ 80
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	Inlet	mm (inch)	Male PT 25.4(1)
		Outlet	mm (inch)	Male PT 25.4(1)
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	30.3

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

Accessory Parts (Optional Accessory)

Back up Heater[1)]



HA061B E1 (1Ø) HA063B E1 (3Ø)

Electrical Specification			HA061B E1	HA063B E1
Back up 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	2	2
	Power Supply	V, Ø, Hz	220 ~ 240, 1, 50	380 ~ 415, 3, 50
Wiring Connection	Power Cable (included earth, H07RN-F)	mm^2 x cores	4.0 x 3C	2.5 x 4C
	Communication Cable (included earth, H07RN-F)	mm^2 x cores	0.75 x 4C	0.75 x 2C

1) Available from November 2021

Accessory Parts (Separately Provided)

Strainer

Technical Specification		Details
Material	Body	Brass
	Mesh	STAINLESS STEEL (STS304)
Mesh Size		30
Connection		PF 1 inch

PRODUCT SPECIFICATION

Performance Table for Heating Operaion

Maximum Heating Capacity (Including Defrost Effect)

HU121MRB U30 + HN1600MB NK0 / HU123MRB U30 + HN1600MB NK0

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 + HN1600MB NK0 / HU143MRB U30 + HN1600MB NK0

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 + HN1600MB NK0 / HU163MRB U30 + HN1600MB NK0

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 + HN1600MB NK0 / HU123MRB U30 + HN1600MB NK0

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 + HN1600MB NK0 / HU143MRB U30 + HN1600MB NK0

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 + HN1600MB NK0 / HU163MRB U30 + HN1600MB NK0

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.

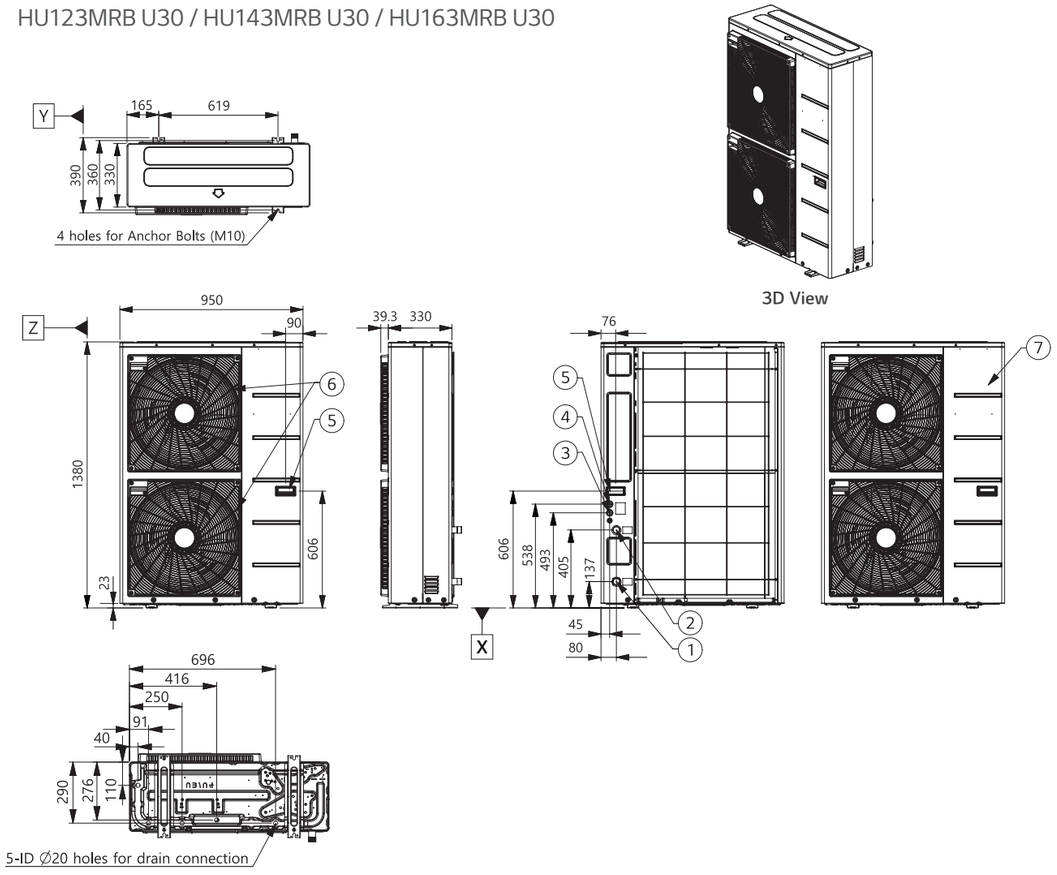
PRODUCT SPECIFICATION

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	HN1600MB NK0		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123MRB U30	HU143MRB U30	HU163MRB U30
	Indoor Unit	HN1600MB NK0		

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

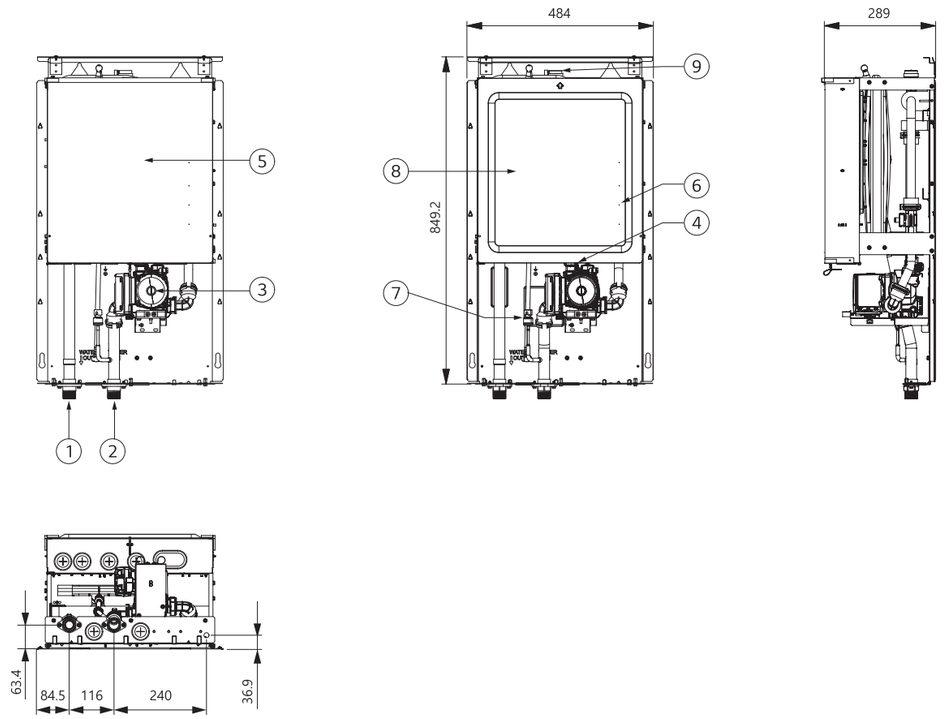
[Unit : mm]



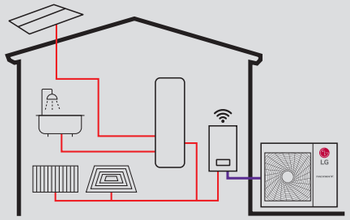
No.	Part Name	Description
1	Entering Water Pipe	Male PT 1 inch
2	Leaving Water Pipe	Male PT 1 inch
3	Unit Power	Power Cable Hole
4	Low Voltage	Communication Cable Hole
5	Handle	-
6	Air Outlet	-
7	Control Box	PCB and terminal blocks

HN1600MB NK0

[Unit : mm]



No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1 inch
2	Entering Water Pipe	Male PT 1 inch
3	Water Pump	GRUNDFOS UPML GEO 20-105 CHBL
4	Safety Valve	Open at water pressure 3 bar
5	Control Box	PCB and Terminal blocks
6	Flow Sensor	SIKA VVX20 5-80 LPM
7	Pressure Sensor	SENSATA 2HMP3-04W 0-2MPa
8	Expansion Tank	Absorbing volume change of heated water
9	Air Vent	Air purging when charging water



Excellent Performance & Efficiency

R1 compressor · R32 refrigerant · Flash gas injection · Wide operation range · Black Fin heat exchanger · Solar thermal · Smart grid (energy state)

User Convenience

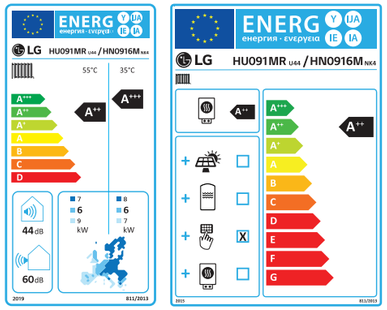
Intuitive interface · LG ThinQ · 2nd circuit · Various control options · Flow sensor · 3rd party boiler · Energy monitoring · Seasonal auto mode · Low noise mode

Easy Installation & Maintenance

LG heating configurator · Clip connection · Flexible piping design

* Detailed description for each function is presented on page 26 ~ 43.

Energy Labeling



* 9kW 1Ø model.
* A+++ to D scale.

Split Hydro Box Concept

The LG THERMA V R32 Split 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.

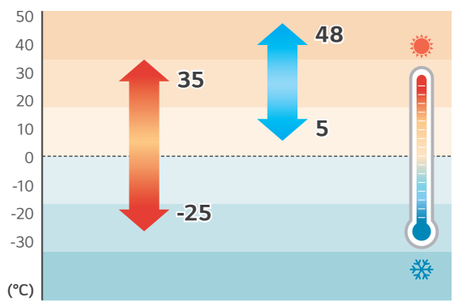
Capacity Range (Heating & Cooling)

R32 Split

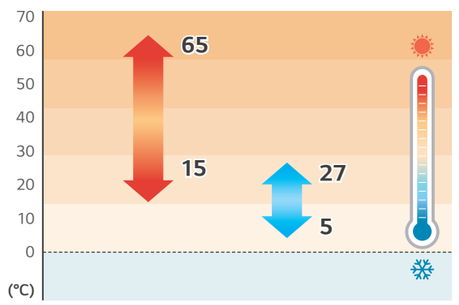
Capacity Range [kW]	5	7	9
Heating Capacity	(5.5)	(7.0)	(9.0)
Cooling Capacity	(5.5)	(7.0)	(9.0)

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature



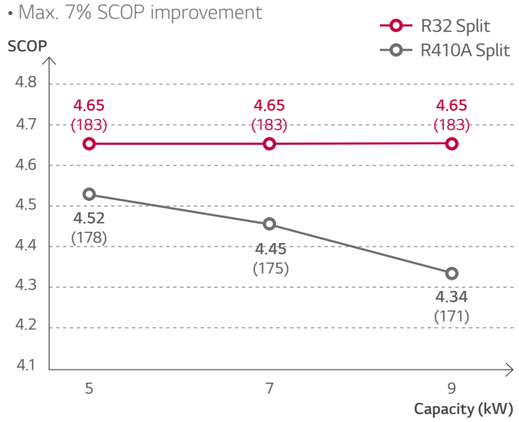
PRODUCT FEATURES

High Energy Efficiency

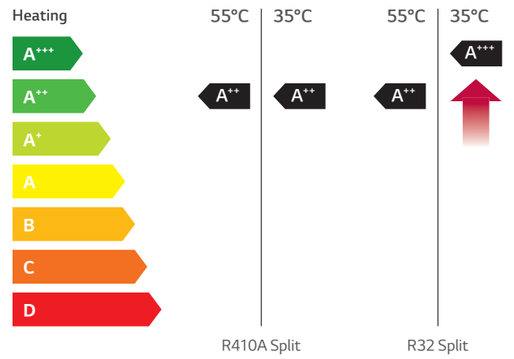
The energy label directive is a key factor in selecting a heating device in the European heating market.
The R32 Split type has an energy label rating (ErP) of A+++.

SCOP

• Max. 7% SCOP improvement



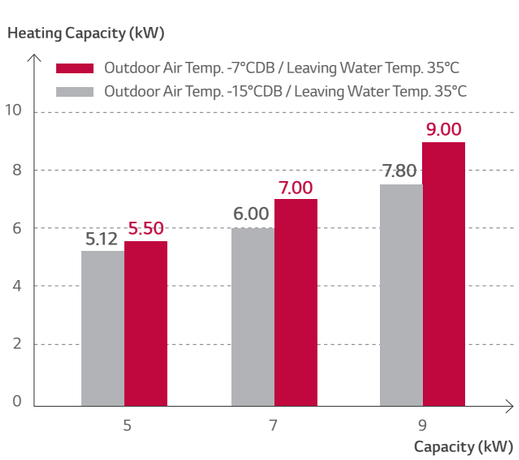
ErP Energy Labeling

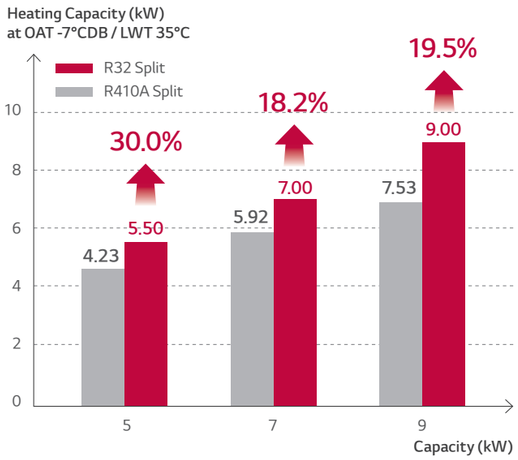


* Test Condition
Test procedure follows EN14825 (low temp average), based on the single phase model line-up

High Heating Performance even at Low Temperature

The R32 Split provides excellent heating performance – especially at low ambient temperatures.
Its heating capacity at OAT -7°CDB is the same as normal capacity and heating capacity at OAT -15°CDB reaches more than 85% of normal capacity. The heating capacity of the R32 Split at low ambient temperatures is 18% higher than the R410A Split.

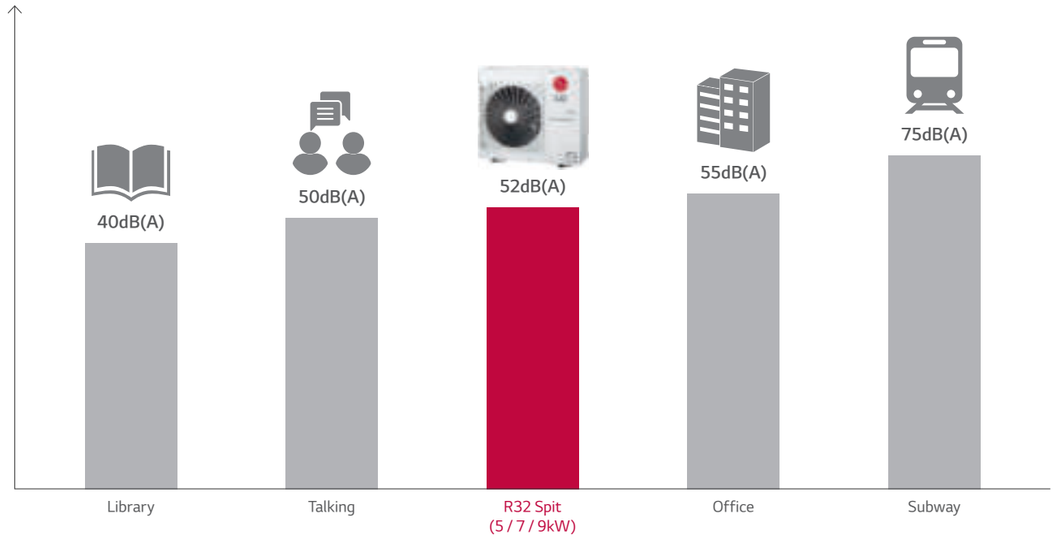




Reduced Noise Level

THERMA V R32 Split has a low noise level slightly higher than conversation.

Sound Pressure Level Comparison



PRODUCT SPECIFICATION

R32 Split

IDU
HN0916M NK4
ODU
HU051MR U44
HU071MR U44
HU091MR U44

011-1W0315 EHPA for Austria, Switzerland and Germany

R1 Compressor™ Black Fin LG ThinQ

Features

- High energy efficiency (SCOP 4.65 / A+++)
- Excellent performance at low ambient temperature (100% @ -7°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- R32 refrigerant with low GWP
- R1 scroll compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA certification / MCS / Eurovent certification

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	HN0916M NK4		

Seasonal Energy

Description			Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
			Indoor Unit	HN0916M NK4		
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	HN0916M NK4		
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		1.57	1.57	1.57
		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		3.50	3.50	3.50
		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.	°CDB	-25 ~ 35		
	Cooling		°C	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	Outer Diameter	Gas	mm (inch)	Ø15.88 (5/8)		
		Liquid	mm (inch)	Ø9.52 (3/8)		
	Length	Standard	m	5		
		Max.	m	50		
	Level Difference	Max.	m	30		
	Chargeless-Pipe Length		m	10		
	Additional Charging Volume		g/m	30		
Rated Water Flow Rate (at LWT 35°C)			LPM	15.81	20.12	25.87
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 x 834 x 330		
Weight	Unit		kg	60.0		
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. And "Electric characteristics" chapter should be considered for electrical work and design. 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 the reverberation rooms by ISO 9614 standard.
   Therefore, these values can be increased owing to ambient conditions during operation.
   Sound pressure level is converted values from sound power level as per distance.
4. Performances are based on the following conditions (It is according to EN14511) :
   Interconnected pipe length is standard length and difference of elevation (outdoor ~ indoor unit) is 0m.
5. This product contains fluorinated greenhouse gases.

Product Specification (Indoor Unit)

Technical Specification			Unit	HN0916M NK4
Operation Range (leaving water)	Heating	Min. ~ Max.	°CDB	15 ~ 65
	Cooling			5 ~ 27 (16 ~ 27)[2]
	DHW[1]			15 ~ 80
Flow Sensor	Type		-	Vortex
	Measuring Range	Min. ~ Max.	ℓ/min	5 ~ 80
	Flow (trigger point)	Min.	ℓ/min	7
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 25.4 (1)
		Outlet	mm (inch)	Male PT 25.4 (1)
	Refrigerant Circuit	Gas	mm (inch)	Ø15.88 (5/8)
		Liquid	mm (inch)	Ø9.52 (3/8)
Sound Power Level	Heating	Rated	dB(A)	44
Dimensions	Unit	W x H x D	mm	490 x 850 x 315
Weight	Unit		kg	40.5
Electrical Specification			**Unit**	**HN0916M NK4**
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm^2 x cores	0.75 x 4C
Back up Heater	Type		-	Sheath
	Number of Heating Coil		EA	2
	Capacity Combination		kW	3.0 + 3.0
	Operation		-	Automatic
	Heating Steps		Step	2
	Power Supply		V, Ø, Hz	220 ~ 240, 1, 50
	Rated Current		A	25.0
	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C

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

PRODUCT SPECIFICATION

Performance Table for Heating Operaion

Maximum Heating Capacity (Including Defrost Effect)

HU051MR U44 + HN0916M NK4

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 + HN0916M NK4

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 + HN0916M NK4

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 + HN0916M NK4

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 + HN0916M NK4

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 + HN0916M NK4

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.

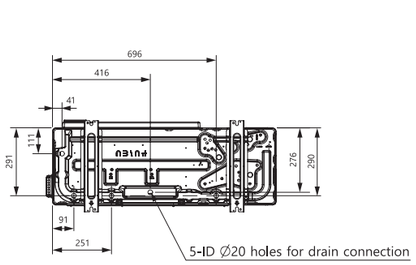
PRODUCT SPECIFICATION

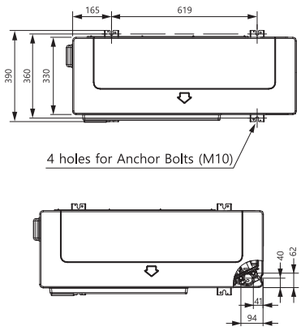
Drawings

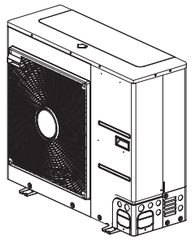
Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
	Indoor Unit	HN0916M NK4		

HU051MR U44 / HU071MR U44 / HU091MR U44

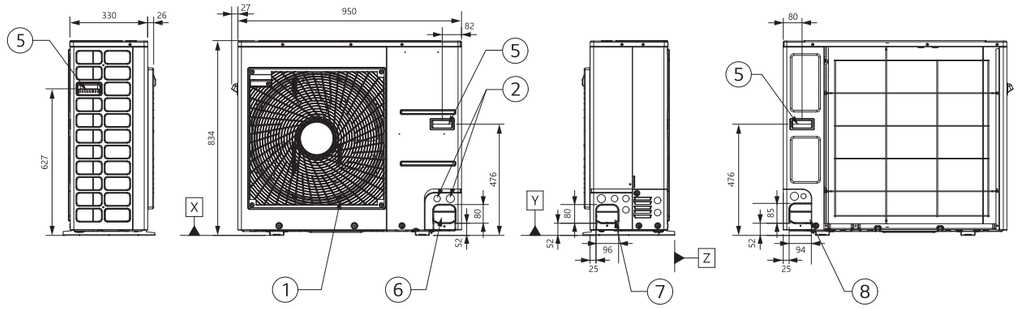
[Unit : mm]



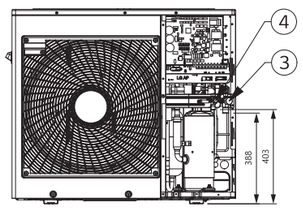




3D View



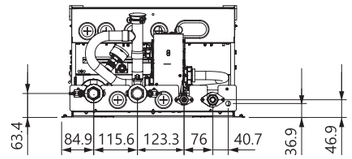
No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

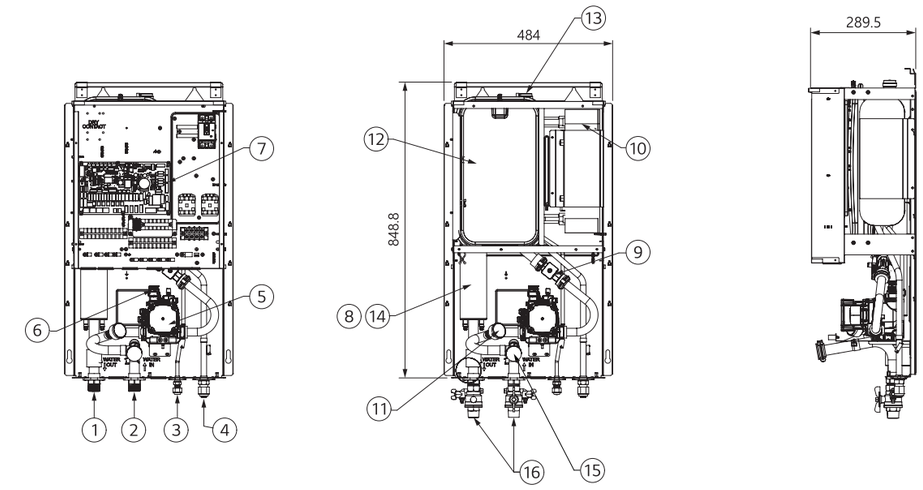


Piping Connection Port

HN0916M NK4

[Unit : mm]

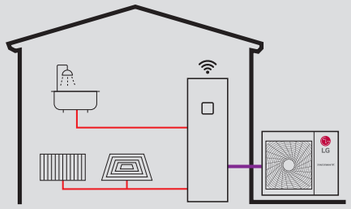




No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1 inch
2	Entering Water Pipe	Male PT 1 inch
3	Refrigerant Pipe	Ø9.52 (mm)
4	Refrigerant Pipe	Ø15.88 (mm)
5	Water Pump	GROUNDFOS UPM3K 20-75 CHBL
6	Safety Valve	Open at water pressure 3bar
7	Control Box	PCB and terminal blocks
8	Thermal Switch	Cut-off power input to electric heater at 90°C (manual return at 55°C)
9	Flow Sensor	SIKA VVX20 5-80LPM
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gage	Indicates circulating water pressure
12	Expansion Tank	Absorbing volume change of heated water
13	Air Vent	Air purging when charging water
14	Electric Heater	6kW
15	Strainer	Filtering and stacking particles inside circulating water
16	Shut-off Valve	To drain or to block water, when pipe connecting

THERMA V R32

R32 IWT (INTEGRATED WATER TANK)



Excellent Performance & Efficiency

R1 compressor · R32 refrigerant · Flash gas injection · Wide operation range · Black Fin heat exchanger · Smart grid (energy state)

User Convenience

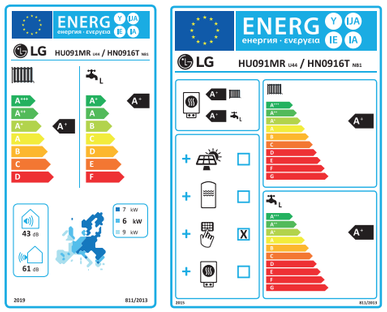
Harmonious Exterior · Intuitive interface · LG ThinQ · 2nd circuit · Various control options · Flow sensor · 3rd party boiler · Energy monitoring · Seasonal auto mode · Low noise mode

Easy Installation & Maintenance

All in one · LG heating configurator[1] · Flexible piping design

1) Will be supported within this year.
* Detailed description for each function is presented on page 26 ~ 43.

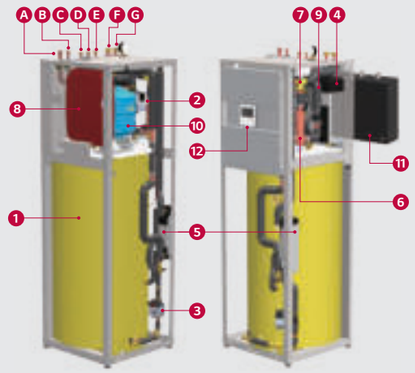
Energy Labeling



* 9kW 1Ø model.
* A+++ to D scale.

IWT (Integrated Water Tank) Concept

THERMA V R32 IWT, or integrated water tank, 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 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.



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. RS3 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

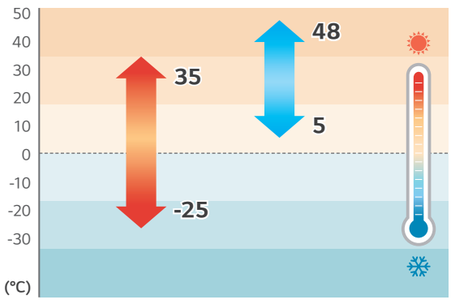
Capacity Range (Heating & Cooling)

R32 IWT

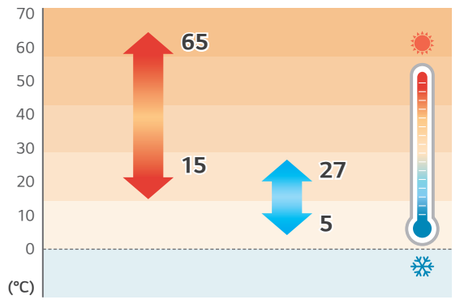
Capacity Range [kW]	5	7	9
Heating Capacity	● (5.5)	● (7.0)	● (9.0)
Cooling Capacity	● (5.5)	● (7.0)	● (9.0)

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature

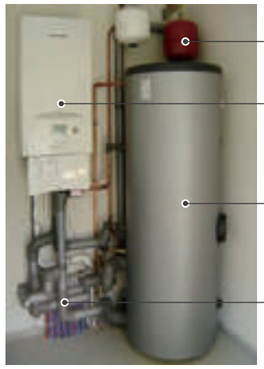


PRODUCT FEATURES

Save Space & Time

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

Conventional



- Enough rooms for product installation
- Need to secure the space for water tank
- More water piping work & more installation time

R32 IWT (Integrated Water Tank)

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)
- Integrable buffer tank (40ℓ) & expansion tank for DHW circuit (8ℓ) (optional)

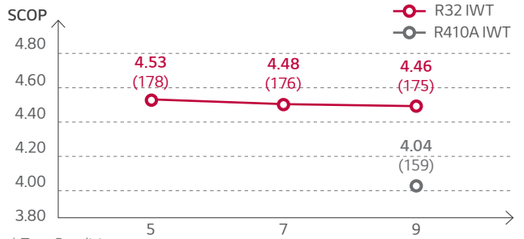
Sophisticated and Harmonious Exterior

The THERMA V R32 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.

High Energy Efficiency

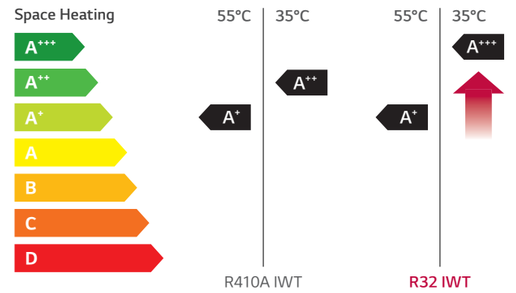
The energy label directive is a key factor in selecting a heating device in the European heating market. The R32 IWT has an energy label rating (ErP) for space heating of A+++. Furthermore, As all new buildings in EU countries to be nearly Zero-Energy Building (nZEB) by the end of 2020, Water Heating Efficiency is getting more important. The R32 IWT has an A+ water heating efficiency class at Declared load profile L.

SCOP

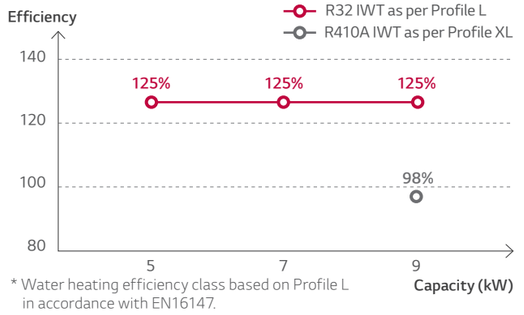


* Test Condition
Test procedure follows EN14825 (low temp average), based on the single phase model line-up.

ErP Energy Labeling

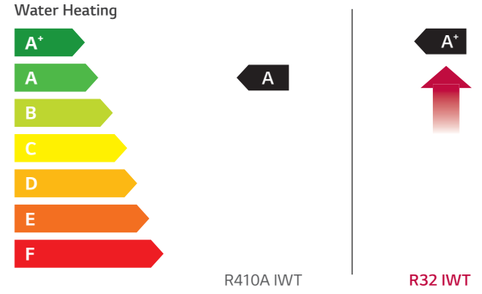


Water Heating Efficiency



* Water heating efficiency class based on Profile L in accordance with EN16147.

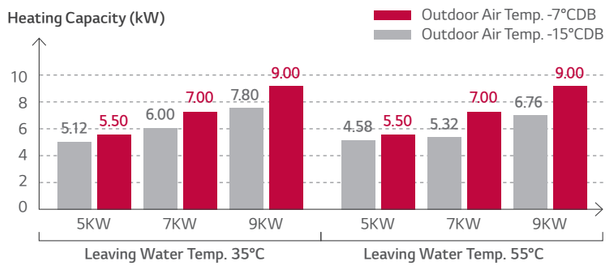
ErP Energy Labeling



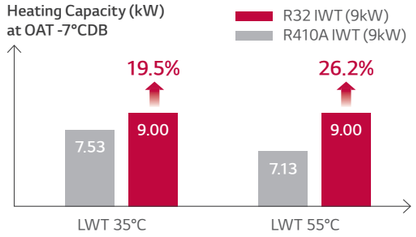
High Heating Performance even at Low Temperature

The R32 IWT provides excellent heating performance – especially at low ambient temperatures. Its heating capacity at OAT -7°CDB is the same as normal capacity and heating capacity at OAT -15°CDB reaches more than 85% of normal capacity. The heating capacity of the R32 IWT is 19.5% higher at low ambient temperatures and 26.2% higher at mid ambient temperatures than the R410A IWT.

Heating Capacity of R32 IWT



Comparison with Previous Model



PRODUCT SPECIFICATION

R32 IWT

IDU
HN0916T NB1
ODU
HU051MR U44
HU071MR U44
HU091MR U44

011-1W0382 EHPA for Switzerland and Germany

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

Features

- High energy efficiency (SCOP up to 4.52 / A+++ and water heating efficiency 125%)
- DHW tank (200ℓ) & hydronic component integration
- Integrable buffer tank (40ℓ) & expansion tank for DHW circuit (8ℓ) (optional)
- Excellent performance at low ambient temperature (100% @ -7°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- R32 refrigerant with low GWP
- R1 scroll compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA certification / Eurovent certification

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	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
		SOP_{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
		SOP_{DHW}	-	3.61	3.61	3.61
		Water Heating Efficiency Class	-	-	-	-
	Colder Climate	Declared Load Profile	-	L	L	L
		Water Heating Efficiency (η_{wh})	%	106	106	106
		SOP_{DHW}	-	2.44	2.44	2.44
		Water Heating Efficiency Class	-	-	-	-

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	W/W	4.60	4.40	4.10

PRODUCT SPECIFICATION

R32 IWT

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU051MR U44	HU071MR U44	HU091MR U44
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°CDB	-25 ~ 35		
	Cooling		°C	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	Outer Diameter	Gas	mm (inch)	Ø15.88 (5/8)		
		Liquid	mm (inch)	Ø9.52 (3/8)		
	Length	Standard	m	5		
		Max.	m	50		
	Level Difference	Max.	m	30		
	Chargeless-Pipe Length		m	10		
	Additional Charging Volume		g/m	30		
Rated Water Flow Rate (at LWT 35°C)			LPM	15.81	20.12	25.87
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 x 834 x 330		
Weight	Unit		kg	60.0		
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220 ~ 240, 1, 50		
	Rated Running Current	Heating	A	5.4	6.9	9.1
		Cooling	A	5.3	7.1	9.8
	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. And "Electric characteristics" chapter should be considered for electrical work and design. 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 the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation. Sound pressure level is converted values from sound power level as per distance.
4. Performances are based on the following conditions (It is according to EN14511) : Interconnected pipe length is standard length and difference of elevation (outdoor ~ indoor unit) is 0m.
5. This product contains fluorinated greenhouse gases.

Product Specification (Indoor Unit)

Description			Unit	HN0916T NB1
Operation Range (leaving water)	Heating	Min. ~ Max.	°C	15 ~ 65
	Cooling	Min. ~ Max.	°C	5 ~ 27 (16~27)[2]
	DHW[1]	Min. ~ Max.	°C	15 ~ 80
Flow Sensor	Measuring Range	Min. ~ Max.	ℓ/min	5 ~ 80
Safety Valve	Heating Circuit		bar	3
	DHW Circuit		bar	10
Expansion Vessel (heating circuit)	Volume		ℓ	12
Piping Connections	Refrigerant Circuit	Gas (outer diameter)	mm (inch)	Ø 15.88 (5/8)
		Liquid (outer diameter)	mm (inch)	Ø 9.52 (3/8)
	Water Circuit	Inlet	inch	G1" (Ø 22 mm) internal thread
		Outlet	inch	G1" (Ø 22 mm) internal thread
	DHW Tank Water Circuit	Cold Water Inlet	inch	G3/4" (Ø 19.75 mm) internal
		Hot Water Outlet	inch	G3/4" (Ø 19.75 mm) internal
		Re-circulation	inch	G3/4" (Ø 19.75 mm) internal
Domestic Hot Water Tank	Water Volume	Rated	ℓ	200
	Internal Thermal Protect Limit		°C	85
Sound Power Level			dB(A)	43
Dimensions (W x H x D)		Unit	mm	602 x 1,810 x 680
Weight (without water)		Unit	kg	140
Power Supply			V, Ø, Hz	220 ~ 240, 1, 50
Electric Heater	Capacity		kW	1Ø : 2 / 4 3Ø : 6
	Power Supply		V, Ø, Hz	220 ~ 240, 1, 50 / 380 ~ 415, 3, 50

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

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 IWT 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

PRODUCT SPECIFICATION

Performance Table for Heating Operaion

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.

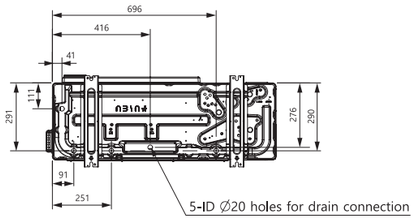
PRODUCT SPECIFICATION

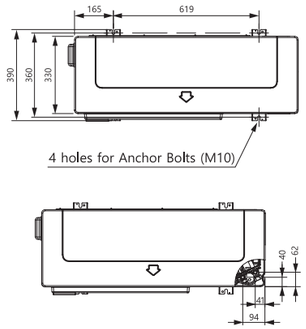
Drawings

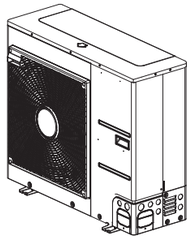
Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
	Indoor Unit	HN0916T NB1		

HU051MR U44 / HU071MR U44 / HU091MR U44

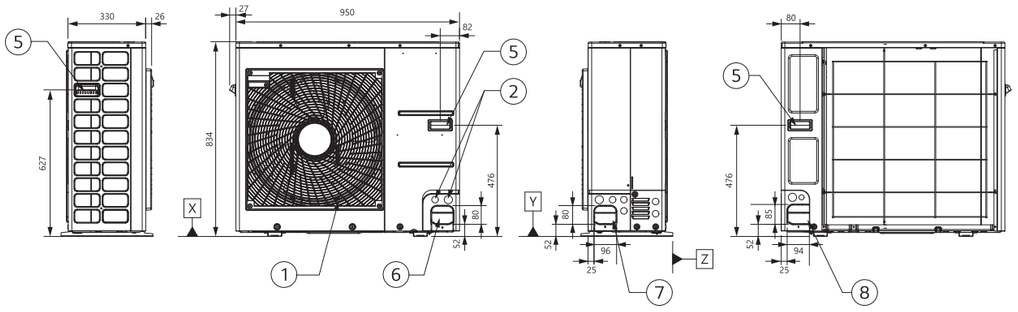
[Unit : mm]



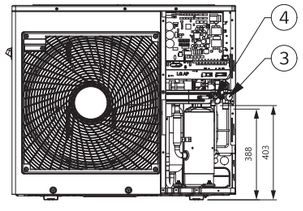




3D View



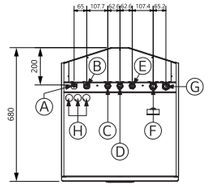
No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

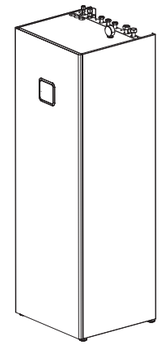


Piping Connection Port

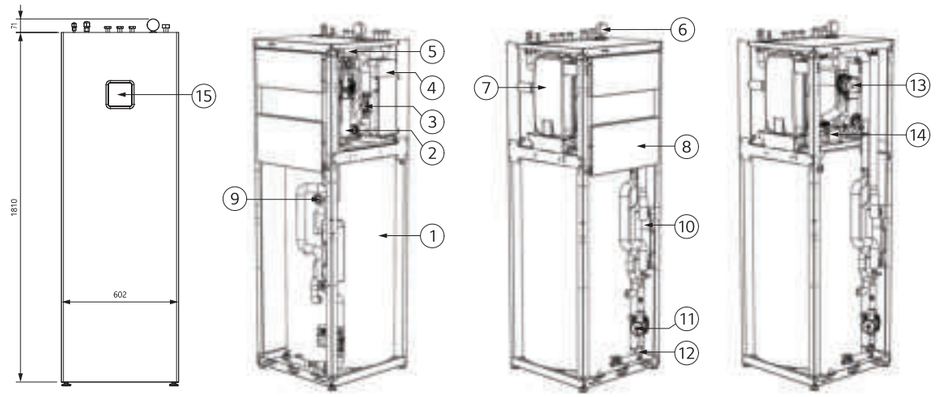
HN0916T NB1

[Unit : mm]



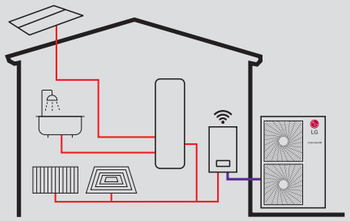


3D View



No.	Part Name	Description	No.	Description
1	DHW Tank	Domestic Hot Water Tank (200L)	A	G5/8'' Refrigerant Gas Pipe
2	Heater	Electric Back up Heater (6kW)	B	G3/8'' Refrigerant liquid Pipe
3	Flow Sensor	SIKA VVXC9SNBUC00252P	C	G3/4'' Domestic hot water outlet
4	Heat Exchanger	Plate-heat-exchanger (refrigerant / water)	D	G3/4'' Domestic cold water inlet
5	3 Way Valve	3 Way valve (DHW / heating)	E	G3/4'' DHW Re-circulation
6	Pressure Gauge	Pressure gauge	F	G1'' Heating circuit inlet
7	Expansion Vessel (12L)	Expansion vessel for Heating	G	G1'' Heating circuit outlet
8	Control Box	PCB and terminal blocks	H	Cable lead throughs
9	Magnesium Anode	To prevent corrosion		
10	Heat Exchanger	Plate-heat-exchanger (water / DHW)		
11	Water Pump	DHW Tank Charging Pump		
12	DHW Strainer	DHW Strainer		
13	Water Pump	Main circulation pump		
14	Bracket	For DHW Expansion vessel (accessory)		
15	Remote Controller	Built-in remote controller		

R410A SPLIT



Excellent Performance & Efficiency

- Twin rotary compressor
- R410A refrigerant
- Wide operation range (up to 57°C)
- Gold Fin heat exchanger
- Solar thermal
- Smart grid (energy state)

User Convenience

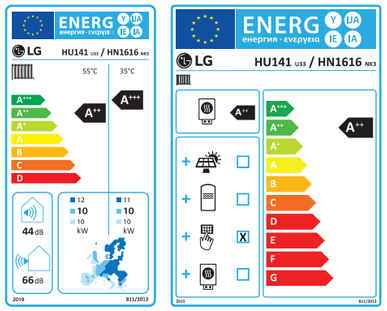
- Intuitive interface
- LG ThinQ
- 2nd circuit
- Various control options
- 3rd party boiler
- Energy monitoring
- Seasonal auto mode
- Low noise mode

Easy Installation & Maintenance

- LG heating configurator
- Clip connection
- Flexible piping design

* Detailed description for each function is presented on page 26 ~ 43.

Energy Labeling



* 14kW 1Ø model.
* A+++ to D scale.

Split Hydro Box Concept

The LG THERMA V R410A Split 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.

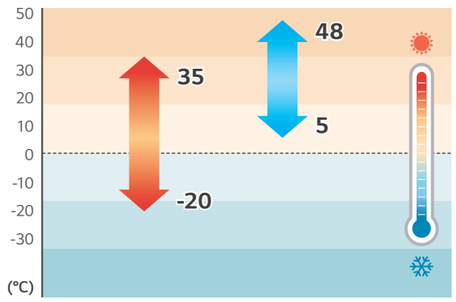
Capacity Range (Heating & Cooling)

R410A Split

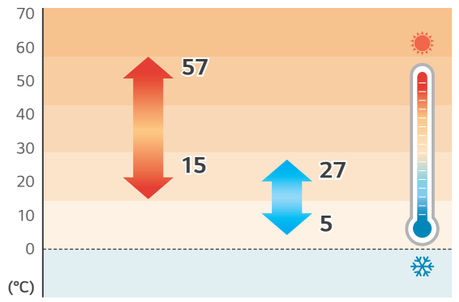
Capacity Range [kW]	12	14	16
Heating Capacity	(12.0)	(14.0)	(16.0)
Cooling Capacity	(10.4)	(12.0)	(13.0)

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature



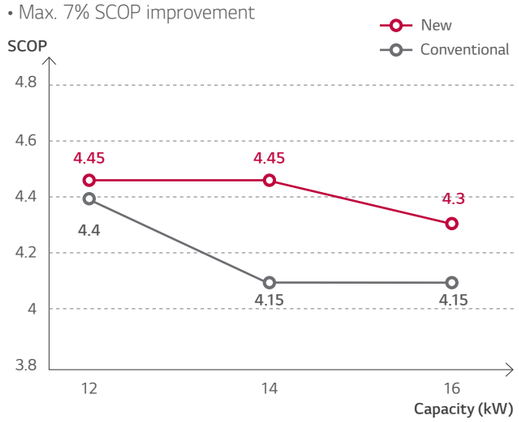
PRODUCT FEATURES

High Energy Efficiency

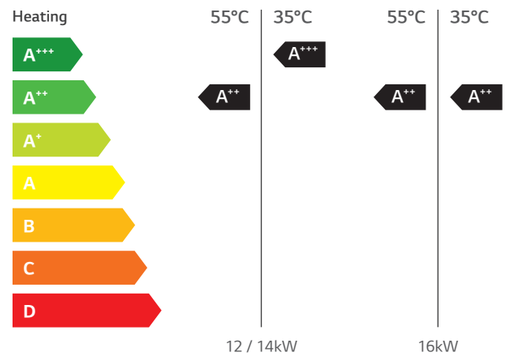
The energy label directive is a key factor in selecting a heating device in the European heating market.
The R410A Split type has an energy label rating (ErP) of A+++ except for 16kW model.

SCOP

• Max. 7% SCOP improvement



ErP Energy Labeling

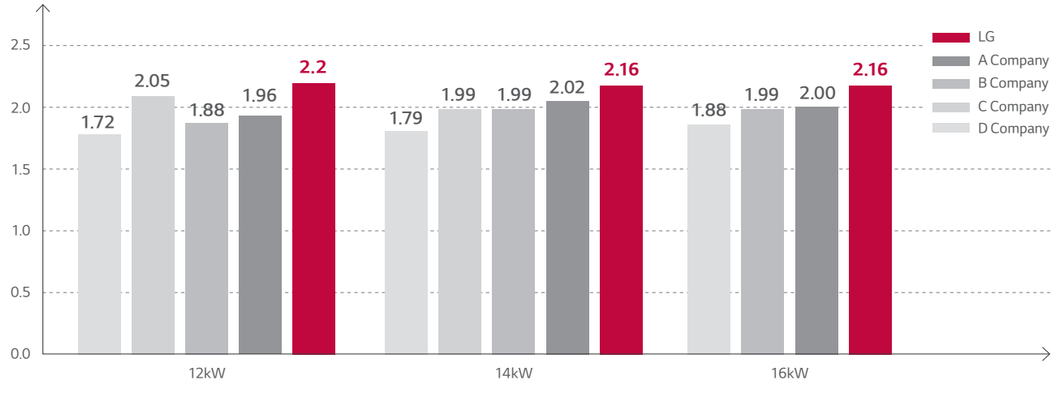


* Test Condition
Test procedure follows EN14825 (low temp average), based on the single phase model line-up.

Energy Efficiency at -2°C

Energy efficiency is higher than others. (condition : ambient temp. -2°C / leaving water temp. 55°C)

Heating COP (A -2 / W55)

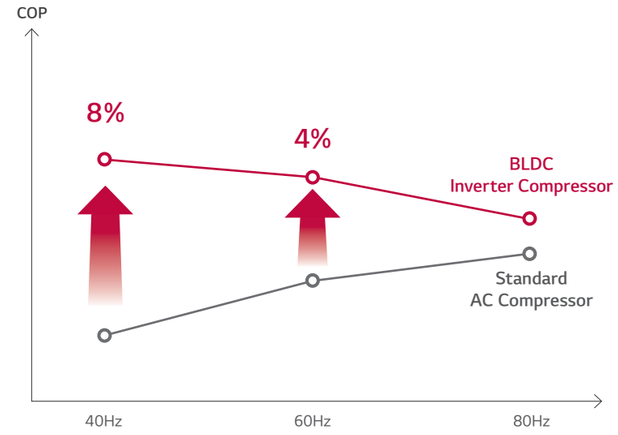


* Peak value/Split models

BLDC (Brushless Direct Current Motor) Compressor

THERMA V is equipped with a BLDC compressor that uses a strong neodymium magnet.
The compressor has improved efficiency compared to standard AC inverter product and it is optimized for seasonal efficiency.

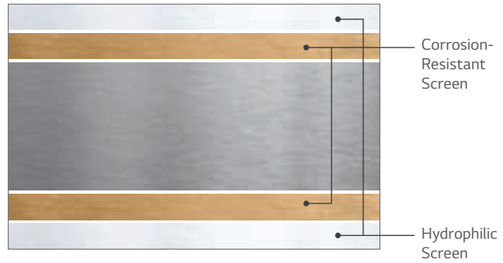
- Minimized oil circulation
- High efficiency motor
- Optimized compression
- Optimized vibration, noise
- High reliability



Corrosion Resistant Heat Exchanger

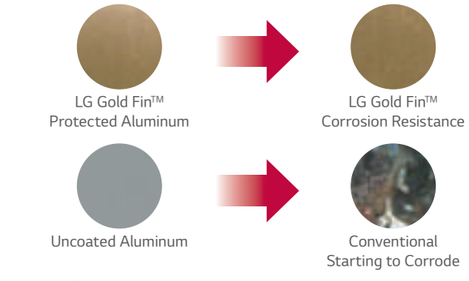
The outdoor heat exchanger is coated with a gold-coloured anti-corrosive epoxy treatment on the aluminum coil. This exhibits pre-eminent heat transfer properties of the coil for an extended period of time, whereas non-Gold Fin™ coils progressively lose efficiency due to surface corrosion. Gold Fin™ is extremely suitable for areas affected by high pollution and those exposed to salt water breeze.

Composition of Fin Screens



Aluminum Material

Salt Spray Test for 15 Days



• Gold Fin™ is long lasting and durable while enhancing the premium design aesthetic of the outdoor unit.

PRODUCT SPECIFICATION

R410A Split Hydro Box Type

IDU

HN1616 NK3
HN1639 NK3

ODU

HU121 U33
HU141 U33
HU161 U33
HU123 U33
HU143 U33
HU163 U33

011-1W0253 EHPA for Austria, Switzerland and Germany

R410A 57°C A+++ LG ThinQ

Features

- High energy efficiency (SCOP up to 4.45/A+++)
- Maximum 57°C LWT
- Intuitive interface
- LG ThinQ
- Gold Fin heat exchanger
- KEYMARK/EHPA[1)] certification/MCS/Eurovent certification

1) Approved model by EHPA : HU123 U33, HU143 U33, HU163 U33.

Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121 U33	HU141 U33	HU161 U33
	Indoor Unit	HN1616 NK3		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123 U33	HU143 U33	HU163 U33
	Indoor Unit	HN1639 NK3		

Seasonal Energy

Description			Outdoor Unit	HU121 U33	HU141 U33	HU161 U33
			Indoor Unit	HN1616 NK3		
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	W/W	4.45	4.45	4.30
		Seasonal Space Heating Efficiency (η_s)	%	175	175	169
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A++
	Average Climate Water Outlet 55°C	SCOP	-	3.32	3.32	3.32
		Seasonal Space Heating Efficiency (η_s)	%	130	130	130
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A++	A++	A++

Description			Outdoor Unit	HU123 U33	HU143 U33	HU163 U33
			Indoor Unit	HN1639 NK3		
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	W/W	4.45	4.45	4.30
		Seasonal Space Heating Efficiency (η_s)	%	175	175	169
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A++
	Average Climate Water Outlet 55°C	SCOP	-	3.32	3.32	3.32
		Seasonal Space Heating Efficiency (η_s)	%	130	130	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	HU121 U33	HU141 U33	HU161 U33
					HU123 U33	HU143 U33	HU163 U33
				Indoor Unit	HN1616 NK3		
					HN1639 NK3		
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		12.50	12.50	12.50
		2°C	35°C		10.33	10.83	11.95
	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	3.18	3.76
		7°C	55°C		4.94	4.94	4.94
		2°C	35°C		2.93	3.09	3.41
	Cooling	35°C	18°C		2.60	3.08	3.60
		35°C	7°C		2.66	3.03	3.30
COP	Heating	7°C	35°C	W/W	4.55	4.41	4.26
		7°C	55°C		2.53	2.53	2.53
		2°C	35°C		3.53	3.50	3.50
EER	Cooling	35°C	18°C	W/W	4.00	3.90	3.61
		35°C	7°C		2.98	2.81	2.70

PRODUCT SPECIFICATION

R410A Split

Product Specification (Outdoor Unit)

Description			Unit	HU121 U33	HU141 U33	HU161 U33	HU123 U33	HU143 U33	HU163 U33
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°CDB	-20 ~ 35					
	Cooling		°C	5 ~ 48					
Compressor	Quantity		EA	1					
	Type		-	Hermetic Sealed Twin Rotary					
Refrigerant	Type		-	R410A					
	GWP (global warming potential)		-	2,087.5					
	Precharged Amount		g	2,300					
	t-CO_2 eq		-	4.801					
Piping Connections	Outer Diameter	Gas	mm (inch)	Ø15.88 (5/8)					
		Liquid	mm (inch)	Ø9.52 (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	34.0	40.0	46.0	34.0	40.0	46.0
Sound Power Level	Heating	Rated	dB(A)	66					
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	58					
Dimensions	Unit	W x H x D	mm	950 x 1,380 x 330					
Weight	Unit		kg	94.0					
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. And "Electric characteristics" chapter should be considered for electrical work and design. 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 the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation. Sound pressure level is converted values from sound power level as per distance.
4. Performances are based on the following conditions (It is according to EN14511) : Interconnected pipe length is standard length and difference of elevation (outdoor ~ indoor unit) is 0m.
5. This product contains fluorinated greenhouse gases.

Product Specification (Indoor Unit)

Technical Specification			Unit	HN1616 NK3	HN1639 NK3
Operation Range (leaving water)	Heating	Min. ~ Max.	°CDB	15 ~ 57	
	Cooling			5 ~ 27 (16 ~ 27)[2]	
	DHW[1]			15 ~ 80	
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 25.4 (1)	
		Outlet	mm (inch)	Male PT 25.4 (1)	
	Refrigerant Circuit	Gas	mm (inch)	Ø15.88 (5/8)	
		Liquid	mm (inch)	Ø9.52 (3/8)	
Sound Power Level	Heating	Rated	dB(A)	44	
Dimensions	Unit	W x H x D	mm	490 x 850 x 315	
Weight	Unit		kg	42.2	45.0
Electrical Specification			**Unit**	**HN1616 NK3**	**HN1639 NK3**
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm^2 x cores	0.75 x 4C	
Back up Heater	Type		-	Sheath	Sheath
	Number of Heating Coil		EA	2	3
	Capacity Combination		kW	3.0 + 3.0	3.0 + 3.0 + 3.0
	Operation		-	Automatic	Automatic
	Heating Steps		Step	2	2
	Power Supply		V, Ø, Hz	220 ~ 240, 1, 50	220 ~ 240, 1, 50
	Rated Current		A	25.0	13.0
	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C	2.5 x 4C

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

PRODUCT SPECIFICATION

Performance Table for Heating Operaion

Maximum Heating Capacity (Including Defrost Effect)

HU121 U33 + HN1616 NK3 / HU123 U33 + HN1639 NK3

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	10.89	11.00	11.37	11.74	-	-
-15°C DB	10.89	11.00	11.37	11.74	10.99	-
-7°C DB	10.89	11.00	11.37	11.74	11.72	11.09
-4°C DB	10.66	10.77	11.17	11.58	11.83	11.35
-2°C DB	10.54	10.65	11.07	11.49	11.89	11.53
2°C DB	10.22	10.33	10.79	11.26	11.74	11.88
7°C DB	11.88	12.00	12.13	12.25	12.38	12.50
10°C DB	12.03	12.16	12.28	12.41	12.54	12.66
15°C DB	12.29	12.42	12.55	12.67	12.80	12.93
18°C DB	12.44	12.57	12.70	12.83	12.96	13.10

HU141 U33 + HN1616 NK3 / HU143 U33 + HN1639 NK3

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	12.24	11.92	11.61	11.08	-	-
-15°C DB	12.47	12.14	11.96	11.56	10.99	-
-7°C DB	12.83	12.50	12.31	12.12	11.72	11.09
-4°C DB	12.28	11.96	11.95	11.93	11.83	11.35
-2°C DB	12.01	11.70	11.79	11.85	11.89	11.53
2°C DB	11.12	10.83	11.20	11.53	11.82	11.88
7°C DB	14.38	14.00	13.63	13.25	12.88	12.50
10°C DB	14.66	14.28	13.90	13.52	13.13	12.75
15°C DB	15.15	14.75	14.36	13.96	13.57	13.17
18°C DB	15.44	15.03	14.63	14.23	13.83	13.42

HU161 U33 + HN1616 NK3 / HU163 U33 + HN1639 NK3

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	12.79	12.13	11.61	11.08	-	-
-15°C DB	13.35	12.65	12.12	11.56	10.99	-
-7°C DB	14.24	13.50	12.93	12.34	11.72	11.09
-4°C DB	13.73	13.02	12.67	12.27	11.83	11.35
-2°C DB	13.37	12.68	12.48	12.22	11.89	11.53
2°C DB	12.60	11.95	12.07	12.09	12.03	11.88
7°C DB	16.88	16.00	15.13	14.25	13.38	12.50
10°C DB	17.38	16.48	15.58	14.68	13.78	12.88
15°C DB	18.23	17.28	16.34	15.39	14.45	13.50
18°C DB	18.73	17.76	16.79	15.82	14.85	13.88

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

HU121 U33 + HN1616 NK3 / HU123 U33 + HN1639 NK3

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	9.73

HU141 U33 + HN1616 NK3 / HU143 U33 + HN1639 NK3

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

HU161 U33 + HN1616 NK3 / HU163 U33 + HN1639 NK3

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.

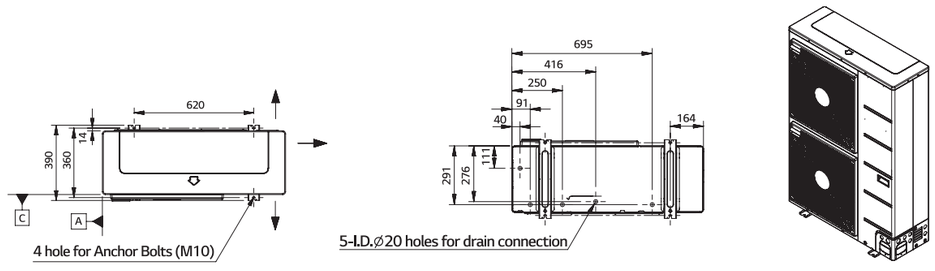
PRODUCT SPECIFICATION

Drawings

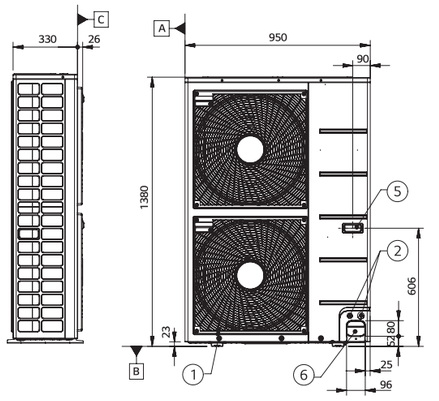
Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU121 U33	HU141 U33	HU161 U33
	Indoor Unit	HN1616 NK3		
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	HU123 U33	HU143 U33	HU163 U33
	Indoor Unit	HN1639 NK3		

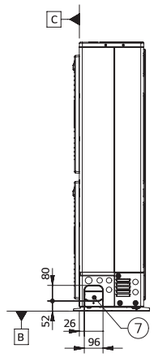
HU121 U33 / HU141 U33 / HU161 U33 / HU123 U33 / HU143 U33 / HU163 U33

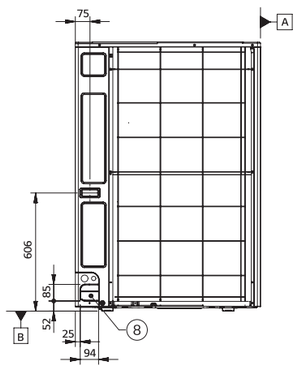
[Unit : mm]



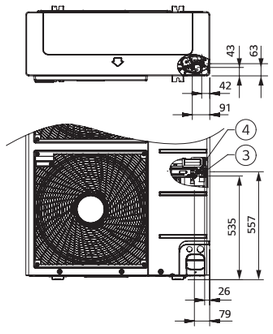
3D View







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)	-

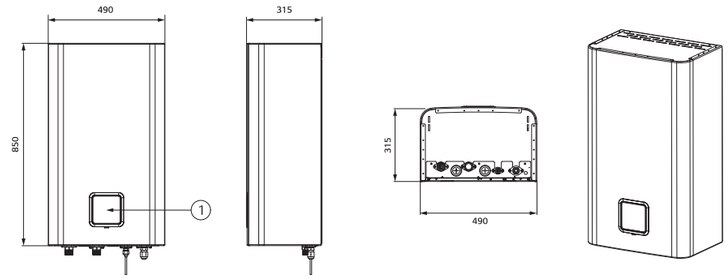


Piping Connection Port

HN1616 NK3 / HN1639 NK3

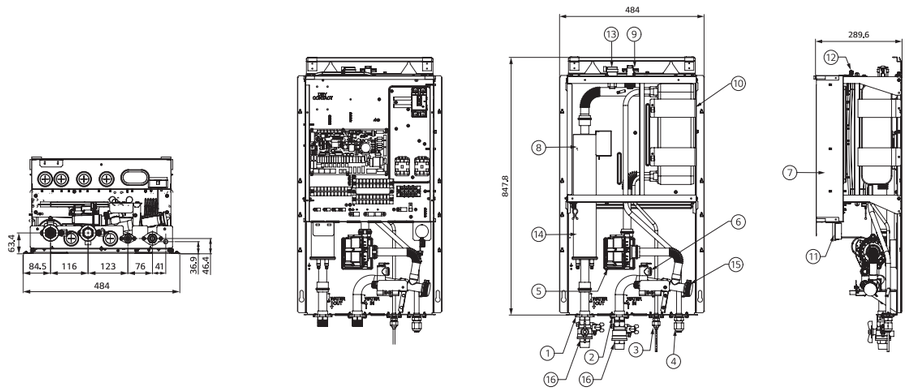
[Unit : mm]

External



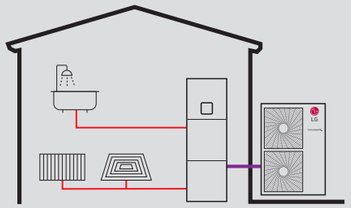
No.	Part Name	Description
1	Control Panel	Built-in remote controller

Internal



No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1 inch
2	Entering Water pipe	Male PT 1 inch
3	Refrigerant Pipe	Ø9.52 (mm)
4	Refrigerant Pipe	Ø15.88 (mm)
5	Water Pump	Max. head 9.5 / 7 / 6m
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 (manual return at 55°C)
9	Flow Switch	Minimum operation range at 15LPM
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gage	Indicates circulating water pressure
12	Expansion Tank	Absorbing volume change of heated water
13	Air Vent	Air purging when charging water
14	Electric Heater	Please refer to the below Page 'Model name and related information'
15	Strainer	Filtering and stacking particles inside circulating water
16	Shut-Off Valve	To drain or to block water, when pipe connecting

R410A IWT (INTEGRATED WATER TANK)



Excellent Performance & Efficiency

- Twin rotary compressor
- R410A refrigerant
- Wide operation range (up to 58°C)
- Gold Fin heat exchanger

User Convenience

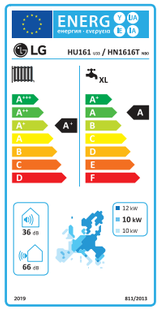
- Harmonious Exterior
- 2nd circuit
- 3rd party boiler
- Seasonal auto mode
- Low noise mode

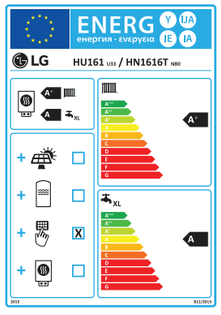
Easy Installation & Maintenance

- All in one
- Flexible piping design

* Detailed description for each function is presented on page 26 ~ 43.

Energy Labeling

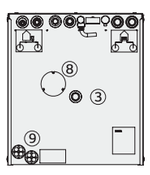


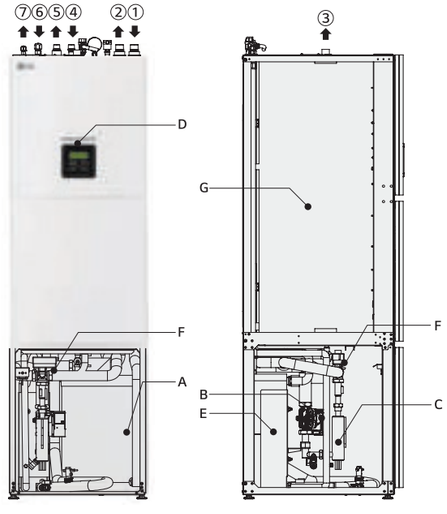


* 16kW 1Ø model.
* A+++ to D scale.

IWT (Integrated Water Tank) Concept

The LG THERMA V R410A IWT, or integrated water tank, is an integrated unit that indoor unit is combined with a domestic hot water tank while outdoor unit is separately located outside. THERMA V R410A IWT is more suitable for the house which has less indoor spaces because hydronic components such as DHW tank and buffer tank normally installed additionally are integrated as one unit.





Key Components

No.	Part Name	No.	Part Name
1	Heating / Cooling Inlet	A	Buffer Tank
2	Heating / Cooling Outlet	B	Circulating Pump
3	Warm Sanitary	C	Electric Flow Heater
4	DHW - Circulation	D	TT3000 Controller
5	Cold Sanitary Water - Supply	E	Condenser
6	Gas Pipe 5/8" - Refrigerant	F	3 Way Valve
7	Liquid Pipe 3/8" - Refrigerant	G	DHW Tank
8	Mg. Anode		
9	Wiring Connection		

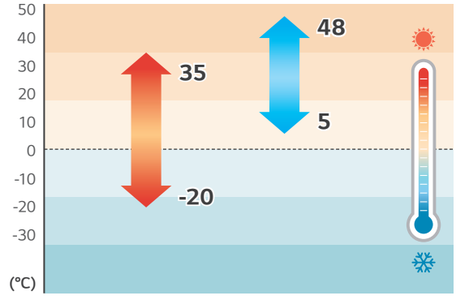
Capacity Range (Heating & Cooling)

R410A IWT

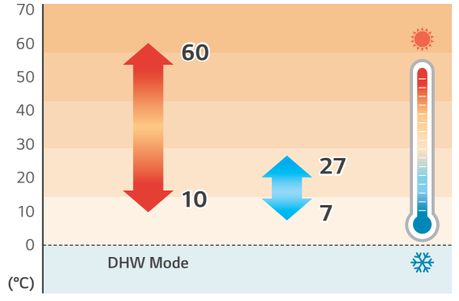
Capacity Range [kW]	9	12	14	16
Heating Capacity	(9.0)	(12.0)	(14.0)	(16.0)
Cooling Capacity	(9.0)	(10.4)	(11.0)	(12.0)

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature

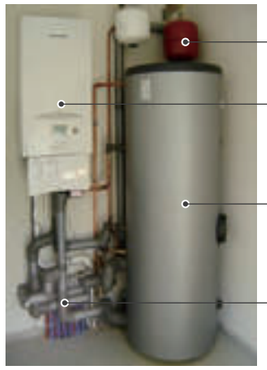


PRODUCT FEATURES

Save Space & Time

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

Conventional



- Enough rooms for product installation
- Need to secure the space for water tank
- More water piping work & more installation time

R410A IWT (Integrated Water Tank)

All in One

Small space for product installation
200 liter DHW tank with extra 40 liter

Less Water Piping Work

More easy & save time

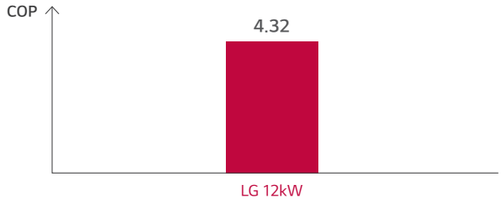
Sophisticated and Harmonious Exterior

THERMA V R410A IWT indoor unit is suitable to install in indoor space like utility room, kitchen, etc. thanks to the sophisticated & harmonious exterior with white color and modern design.

Space Heating Efficiency

The energy label directive is a key factor in selecting a heating device in the European heating market. The R410A IWT has an energy label rating (ErP) of A++.

* Test Condition
Ambient temp. 7°C / Leaving water temp. 35°C, based on 12kW set



Quiet Operation

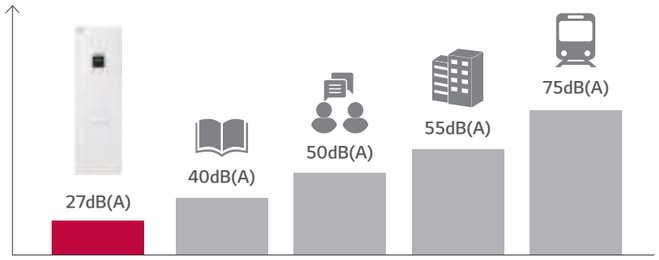
Due to quiet operation, it creates an atmosphere of calm and restfulness in case of indoor installation.

Operation Noise

- Sound power level : 36dB(A)
- Sound pressure level : 27dB(A)

Quiet operation.
Calm and restfulness indoor environment.

Sound Pressure Level Comparison

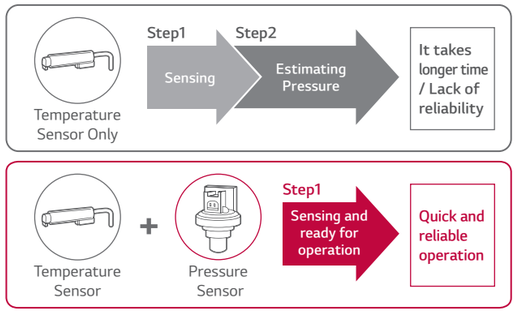


Temperature + Pressure Control & Quick Operating Response

Pressure control secures faster and more exact response than temperature control, so it reduces the time to reach the target water temperature by 44%.

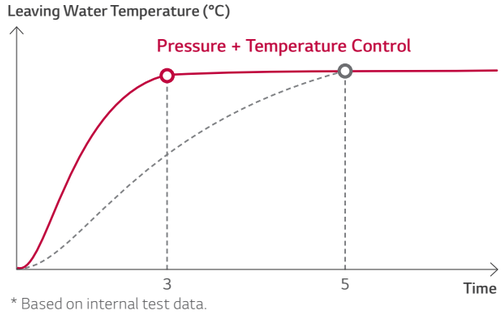
Faster and More Exact with Pressure Control

- Quick response due to sensing with ready for operation.
- Ensures to reach target performance point without failing to keep a reliable operation.



Quick Reaching to Target Temperature

- Pressure control takes up to 44% less time to reach the desired water temperature with a high level of accuracy and stability.



* Based on internal test data.

PRODUCT SPECIFICATION

R410A IWT

IDU

HN1616T NB0

ODU

HU091 U43
HU121 U33
HU141 U33
HU161 U33
HU123 U33
HU143 U33
HU163 U33

Mandatory accessory : PP485B00K.ENCXLEU

EHPA for Austria, Switzerland and Germany

R410A 58°C A++

Features

- Space (floor) heating efficiency with ErP A++[1] class
- Maximum 58°C LWT
- Gold Fin heat exchanger
- EHPA[2] certification

1) under average climate conditions for medium-temperature application
2) Approved model by EHPA : HU091 U43, HU123 U33, HU143 U33, HU163 U33

Model Line-up

Category	Unit	Model Name			
		Capacity (kW)			
		9.0	12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU091 U43	HU121 U33	HU141 U33	HU161 U33
	Indoor Unit	HN1616T NB0			
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	-	HU123 U33	HU143 U33	HU163 U33
	Indoor Unit	-	HN1616T NB0		

Note
1. PP485B00K. ENCXLEU is required for communication between outdoor unit and indoor unit. (install at outdoor unit)
2. Production of this product could be discontinued without prior notice considering manufacturer's circumstances.

Seasonal Energy

Description			Outdoor Unit	HU091 U43	HU121 U33 HU123 U33	HU141 U33 HU143 U33	HU161 U33 HU163 U33
			Indoor Unit	HN1616T NB0			
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	W/W	4.04	4.20	4.15	4.15
		Seasonal Space Heating Efficiency (η_s)	%	159	165	163	163
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A++	A++	A++	A++
	Average Climate Water Outlet 55°C	SCOP	-	2.88	3.00	3.00	3.00
		Seasonal Space Heating Efficiency (η_s)	%	112	117	117	117
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+	A+	A+	A+
Domestic Hot Water Efficiency acc. EN16147	General	Declared Load Profile	-	XL	XL	XL	XL
	Average Climate	Water Heating Efficiency (η_{wh})	%	98	89	89	89
		Water Heating Energy Eff. Class (A + to F scale)	-	A	A	A	A

Nominal Capacity and Nominal Power Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU091 U43	HU121 U33 HU123 U33	HU141 U33 HU143 U33	HU161 U33 HU163 U33
				Indoor Unit	HN1616T NB0			
Nominal Capacity	Heating	7°C	35°C	kW	9.00	12.00	14.00	16.00
		7°C	55°C		6.70	12.50	12.50	12.50
		2°C	35°C		7.30	9.81	10.37	11.45
	Cooling	35°C	18°C		9.00	10.40	11.00	12.00
		35°C	7°C		6.43	6.75	7.14	7.79
Nominal Power Input	Heating	7°C	35°C	kW	2.23	2.78	3.43	4.18
		7°C	55°C		2.79	4.89	4.89	4.89
		2°C	35°C		2.27	3.12	3.30	3.64
	Cooling	35°C	18°C		2.88	3.30	3.53	4.00
		35°C	7°C		2.76	3.20	3.42	3.87
COP	Heating	7°C	35°C	W/W	4.04	4.32	4.08	3.83
		7°C	55°C		2.40	2.56	2.56	2.56
		2°C	35°C		3.22	3.14	3.14	3.15
EER	Cooling	35°C	18°C	W/W	3.12	3.15	3.12	3.00
		35°C	7°C		2.33	2.11	2.09	2.01

Product Specification (Outdoor Unit)

Description			Unit	HU091 U43	HU121 U33	HU141 U33	HU161 U33	HU123 U33	HU143 U33	HU163 U33
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°CDB	-20 ~ 35						
	Cooling		°CDB	5 ~ 48						
Compressor	Quantity		EA	1						
	Type		-	Hermetic Sealed Twin Rotary						
Refrigerant	Type		-	R410A						
	GWP (global warming potential)		-	2,087.5						
	Precharged Amount[1]		g	1,800	2,300					
	t-CO_2 eq		-	3.758	4.801					
Piping Connections	Outer Diameter	Gas	mm (inch)	Ø15.88 (5/8)						
		Liquid	mm (inch)	Ø9.52 (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	26.0	34.0	40.0	46.0	34.0	40.0	46.0
Sound Power Level	Heating	Rated	dB(A)	65	66					
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	57	58					
Dimensions	Heating	Rated	mm	950 x 834 x 330	950 x 1,380 x 330					
Weight	Unit	W x H x D	kg	59.0	94.0					
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220 ~ 240, 1, 50				380 ~ 415, 3, 50		
	Rated Running Current	Heating	A	9.7	12.1	14.9	16.3	7.0	8.6	10.5
		Cooling	A	12.5	14.3	15.3	17.4	8.3	8.8	10.0
	Recommended Circuit Breaker		A	30	40			20		
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C	6.0 x 3C			2.5 x 5C		

1) After installation, additional refrigerant must be charged 800g for HU091 U43 and 1,200g for the others.

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. And "Electric characteristics" chapter should be considered for electrical work and design. 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 the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation. Sound pressure level is converted values from sound power level as per distance.
4. Performances are based on the following conditions (It is according to EN14511) : Interconnected pipe length is standard length and difference of elevation (outdoor ~ indoor unit) is 0m.
5. This product contains fluorinated greenhouse gases.

PRODUCT SPECIFICATION

R410A IWT

Product Specification (Indoor Unit)

Description			Unit	HN1616T NB0
Operation Range (leaving water)	Heating	Min. ~ Max.	°CDB	25 ~ 58
	Cooling		°CDB	7 ~ 25
	DHW		°CDB	10 ~ 60
DHW Tank	Type		-	Hydro module with integrated boiler
	Material		-	Enameled steel
	Water Volume	Rated	ℓ	200
	Internal Thermal Protect limit		°C	95
	Maximum Water Pressure Limit		bar	10
	Insulation	Material	-	Polyurethane foam
		Thickness	mm	50
		Heat loss (for 24hr)	kWh	1.67
Buffer Tank	Water Volume	Rated	ℓ	40
	Material		-	Steel powder coated
	Insulation Material		-	Closed cell foamed rubber
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 25.4 (1)
		Outlet	mm (inch)	Male PT 25.4 (1)
	DHW Tank Water Circuit	Cold Inlet	mm (inch)	Male PT 19.05 (3/4)
		Hot Outlet	mm (inch)	Male PT 25.4 (1)
		Recirculation	mm (inch)	Male PT 19.05 (3/4)
	Refrigerant Circuit	Gas	mm (inch)	Ø15.88 (5/8)
		Liquid	mm (inch)	Ø9.52 (3/8)
Sound Power Level	Heating	Rated	dB(A)	36
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	27
Dimensions	Unit	W x H x D	mm	607 x 2,079 x 725
Weight	Unit		kg	228
Electrical Specification			**Unit**	**HN1616T NB0**
Back up Heater (1) (1 phase)	Type		-	Sheath
	Number of Heating Coil		EA	1
	Capacity Combination		kW	2
	Operation		-	Automatic
	Heating Steps		Step	1
	Power Supply		V, Ø, Hz	230, 1, 50
	Rated Current		A	8.7
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C
Back up Heater (2) (1 phase)	Type		-	Sheath
	Number of Heating Coil		EA	2
	Capacity Combination		kW	2.0 + 2.0
	Operation		-	Automatic
	Heating Steps		Step	1
	Power Supply		V, Ø, Hz	230, 1, 50
	Rated Current		A	17.4
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C
Back up Heater (3) (3 phase)	Type		-	Sheath
	Number of Heating Coil		EA	3
	Capacity Combination		kW	2.0 + 2.0 + 2.0
	Operation		-	Automatic
	Heating Steps		Step	1
	Power Supply		V, Ø, Hz	400, 3, 50
	Rated Current		A	8.7
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	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 code. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard.
   Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard.
   Therefore, these values can be increased owing to ambient conditions during operation.
4. This is true for pipe connections of suitable dimensions and joint distance of up to 20m.
   Pipe dimensions and types of pumps must always be verified or determined by the designing engineer of electrical installations.
   Circulation pumps must be dimensioned in such a way so as to ensure rated voltage (see table) through the device.
5. The guideline about cable is taken into account laying B2 from the table A.52.4 – IEC 60364-5-52. The cable in the installation pipe is fixed to the wall.
6. The size of electrical heater and the fuses depend on the choice of the connection power.
7. Joint maximal load (circulation pumps, electronic valves ...) which can be connected to or powered by the internal unit, must not exceed the specified value. Higher consumed parts (i.e. pumps) should have their own supply.
8. This product contains fluorinated greenhouse gases.

Performance Table for Heating Operaion

Maximum Heating Capacity (Including Defrost Effect)

HU091 U43 + HN1616T NB0

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	7.00	6.58	6.24	5.89	-	-
-15°C DB	7.39	6.95	6.59	6.22	5.84	-
-7°C DB	8.01	7.53	7.44	7.33	7.24	7.13
-4°C DB	7.95	7.47	7.47	7.47	7.45	7.43
-2°C DB	7.89	7.42	7.48	7.54	7.60	7.64
2°C DB	7.77	7.30	7.50	7.69	7.87	8.04
7°C DB	9.58	9.00	8.89	8.78	8.66	8.55
10°C DB	9.82	9.23	9.09	8.95	8.81	8.67
15°C DB	10.22	9.61	9.43	9.24	9.06	8.88
18°C DB	10.46	9.84	9.63	9.42	9.21	9.00

U121 U33 + HN1616T NB0 / HU123 U33 + HN1616T NB0

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	10.29	10.39	10.72	10.61	-	-
-15°C DB	10.32	10.41	10.75	11.07	10.53	-
-7°C DB	10.34	10.44	10.51	10.78	10.57	10.63
-4°C DB	10.12	10.23	10.47	10.77	10.84	10.92
-2°C DB	10.01	10.11	10.42	10.73	10.96	11.12
2°C DB	9.71	9.81	10.23	10.65	11.08	11.51
7°C DB	11.88	12.00	12.00	12.00	12.00	12.00
10°C DB	12.38	12.51	12.55	12.59	12.63	12.67
15°C DB	13.23	13.37	13.47	13.58	13.68	13.79
18°C DB	13.73	13.88	14.03	14.17	14.32	14.46

HU141 U33 + HN1616T NB0 / HU143 U33 + HN1616T NB0

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	11.72	11.42	11.12	10.61	-	-
-15°C DB	11.94	11.63	11.46	11.07	10.53	-
-7°C DB	12.29	11.97	11.81	11.66	11.47	11.30
-4°C DB	11.76	11.45	11.54	11.61	11.65	11.73
-2°C DB	11.51	11.21	11.42	11.64	11.83	12.01
2°C DB	10.65	10.37	10.94	11.50	12.04	12.59
7°C DB	14.38	14.00	13.83	13.65	13.48	13.30
10°C DB	15.02	14.63	14.38	14.14	13.89	13.64
15°C DB	16.09	15.67	15.30	14.94	14.57	14.21
18°C DB	16.73	16.29	15.86	15.42	14.99	14.55

HU161 U33 + HN1616T NB0 / HU163 U33 + HN1616T NB0

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	12.25	11.61	11.12	10.61	-	-
-15°C DB	12.78	12.12	11.61	11.07	10.53	-
-7°C DB	13.64	12.93	12.55	12.16	11.75	11.33
-4°C DB	13.15	12.47	12.42	12.36	12.26	12.16
-2°C DB	12.81	12.14	12.32	12.47	12.61	12.71
2°C DB	12.07	11.45	12.08	12.67	13.26	13.82
7°C DB	16.88	16.00	15.80	15.60	15.40	15.20
10°C DB	17.79	16.87	16.51	16.14	15.78	15.42
15°C DB	19.31	18.31	17.68	17.05	16.41	15.78
18°C DB	20.22	19.17	18.38	17.59	16.79	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

Performance Table for Cooling Operation

Maximum Cooling Capacity

HU091 U43 + HN1616T NB0

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	9.00	9.33	9.66	9.88	10.21	10.75	-
30°C DB	9.00	9.11	9.22	9.29	9.40	9.89	-
35°C DB	9.00	9.00	9.00	9.00	9.00	9.47	9.94
40°C DB	7.80	8.13	8.45	8.67	9.00	9.25	9.49
45°C DB	6.60	7.25	7.91	8.35	9.00	9.02	9.04

U121 U33 + HN1616T NB0 / HU123 U33 + HN1616T NB0

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	10.40	10.51	10.63	10.71	10.82	11.51	-
30°C DB	10.40	10.44	10.48	10.50	10.54	11.21	-
35°C DB	10.40	10.40	10.40	10.40	10.40	11.07	11.73
40°C DB	9.73	9.91	10.09	10.22	10.40	10.99	11.57
45°C DB	9.06	9.42	9.79	10.03	10.40	10.91	11.41

HU141 U33 + HN1616T NB0 / HU143 U33 + HN1616T NB0

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	11.00	11.12	11.25	11.33	11.45	12.18	-
30°C DB	11.00	11.04	11.08	11.11	11.15	11.86	-
35°C DB	11.00	11.00	11.00	11.00	11.00	11.70	12.40
40°C DB	10.29	10.48	10.68	10.81	11.00	11.62	12.23
45°C DB	9.58	9.97	10.35	10.61	11.00	11.53	12.06

HU161 U33 + HN1616T NB0 / HU163 U33 + HN1616T NB0

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	12.00	12.13	12.27	12.36	12.49	13.29	-
30°C DB	12.00	12.04	12.09	12.12	12.16	12.94	-
35°C DB	12.00	12.00	12.00	12.00	12.00	12.77	13.53
40°C DB	11.23	11.44	11.65	11.79	12.00	12.68	13.35
45°C DB	10.45	10.87	11.30	11.58	12.00	12.58	13.16

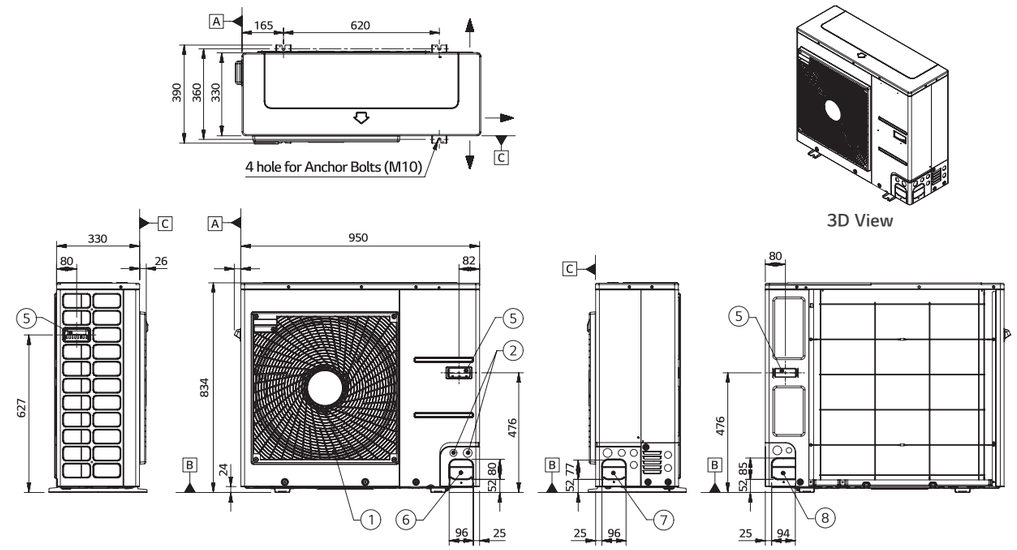
Note
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
   • Rated values are based on standard conditions and it can be 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.

Drawings

Category	Unit	Model Name			
		Capacity (kW)			
		9.0	12.0	14.0	16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU091 U43	HU121 U33	HU141 U33	HU161 U33
	Indoor Unit	HN1616T NB0			
3 Phase Model 380 ~ 415V, 3Ø, 50Hz	Outdoor Unit	-	HU123 U33	HU143 U33	HU163 U33
	Indoor Unit	-	HN1616T NB0		

HU091 U43

[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)	-

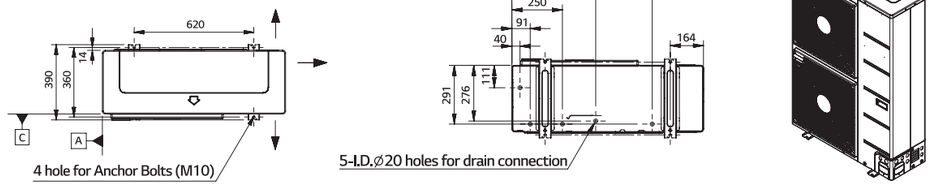
Piping Connection Port

PRODUCT SPECIFICATION

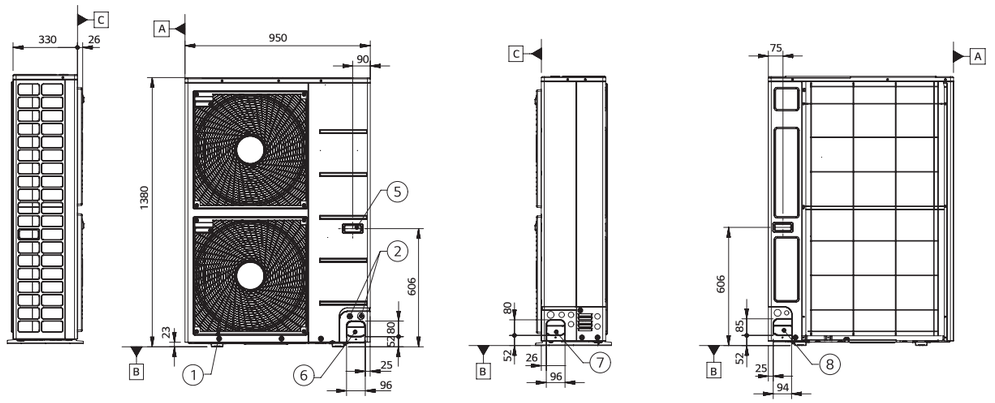
Drawings

HU121 U33 / HU141 U33 / HU161 U33 / HU123 U33 / HU143 U33 / HU163 U33

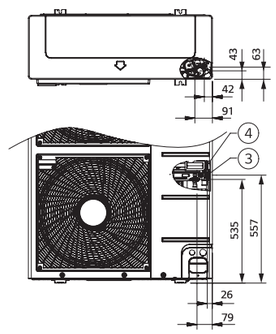
[Unit : mm]



3D View



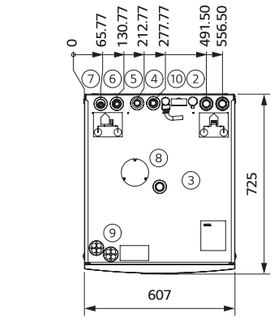
No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

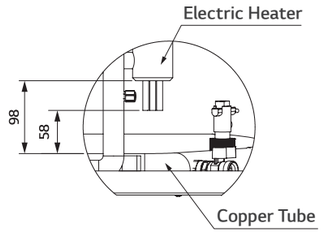


Piping Connection Port

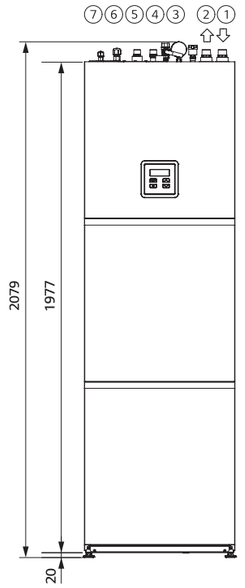
HN1616T NB0

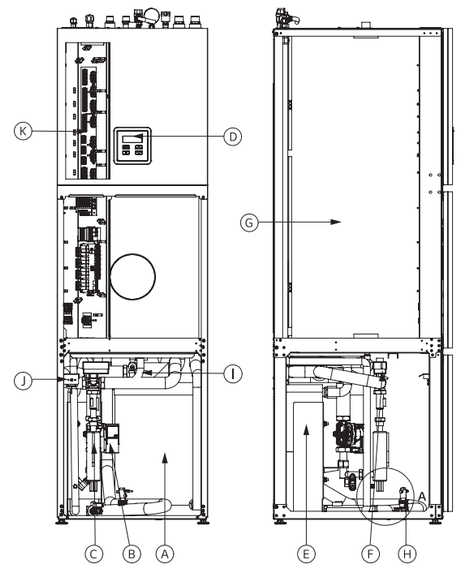
[Unit : mm]





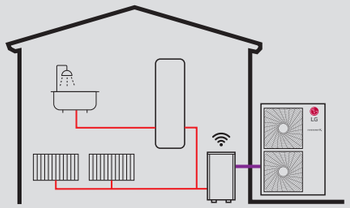
DETAILA
SCALE 1 : 5





No.	Part Name	No.	Part Name
1	Heating / Cooling Inlet	A	Buffer Tank
2	Heating / Cooling Outlet	B	Circulating Pump
3	Warm Sanitary	C	Electric Flow Heater
4	DHW - Circulation	D	TT3000 Controller
5	Cold Sanitary Water - Supply	E	Condenser
6	Gas Pipe 5/8” - Refrigerant	F	3 Way Valve
7	Liquid Pipe 3/8” - Refrigerant	G	DHW Tank
8	Mg. Anode	H	Flow Switch
9	Wiring Connection	I	Ball Valve
10	Safety Valve, Pressure Gauge, Air Vent	J	Safety Thermostat
		K	Wiring Connection

HIGH TEMPERATURE



Excellent Performance & Efficiency

- R1 compressor
- Cascade 2 stage compression
- Wide operation range (up to 80°C)
- Black Fin heat exchanger
- Smart grid (energy state)

User Convenience

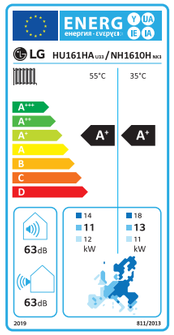
- Intuitive interface
- LG ThinQ
- Energy monitoring
- Seasonal auto mode
- Suitable for old radiator

Easy Installation & Maintenance

- Flexible piping design

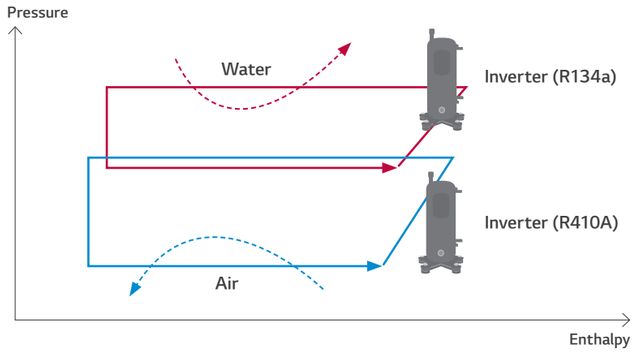
* Detailed description for each function is presented on page 26 ~ 43.

Energy Labeling



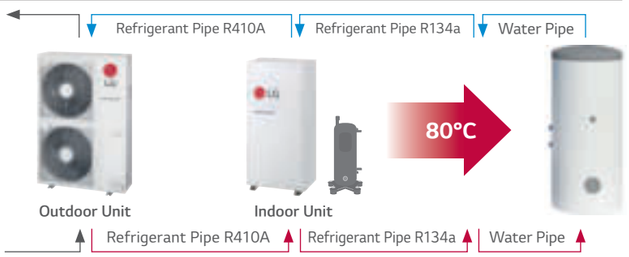
* 16kW 1Ø model.
* A+++ to D scale.

THERMA V High Temperature Cycle



High Temperature Concept

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.



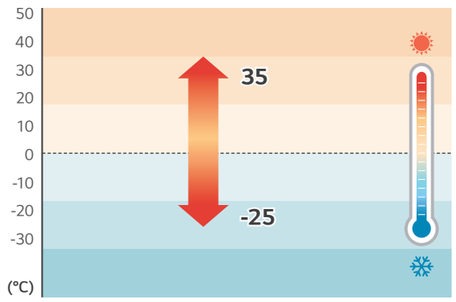
Capacity Range (Heating)

High Temperature Model

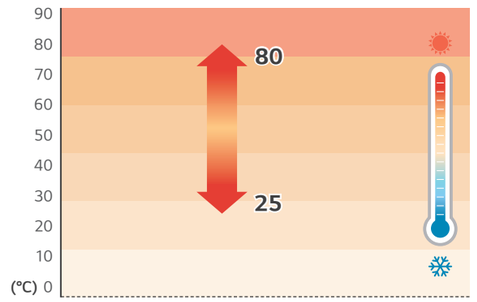
Capacity Range [kW]	16
Heating Capacity	● (16.0)

Operation Range (Heating)

Ambient Temperature



Leaving Water Temperature

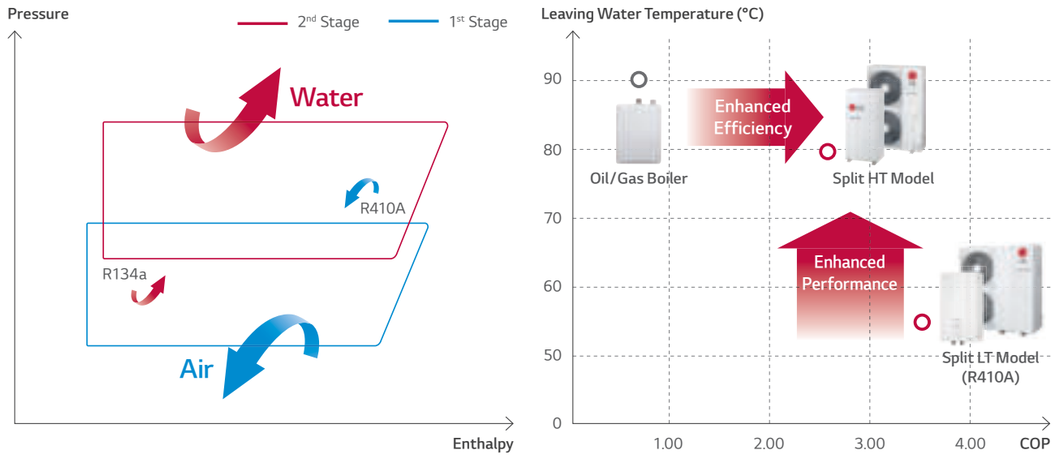


PRODUCT FEATURES

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



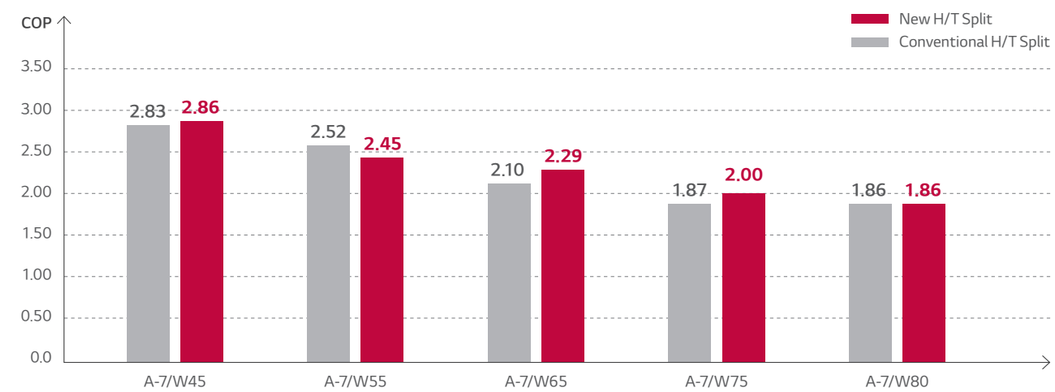
* Condition for HT model : Outdoor air temp. 18°C, Entering water temp. 70°C
* Condition for LT model : Outdoor air temp. 18°C, Entering water temp. 55°C

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

High Energy Efficiency

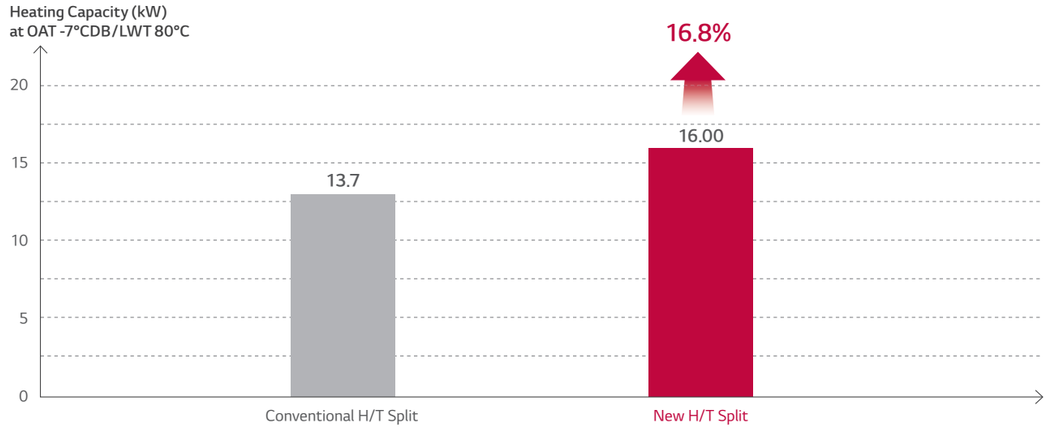
Through the application of an efficient compressor and optimally designed structure, the unit can provide optimized energy savings and therefore, lower operating cost for a faster return on investment.

Heating COP at -7°C Outdoor Temperature



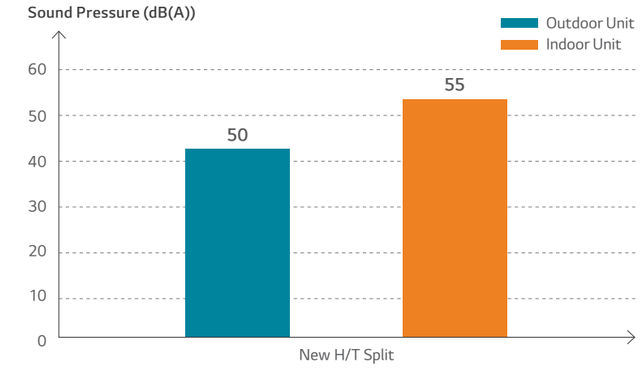
Excellent Performance at LAT

The new THERMA V High Temperature provides excellent heating performance – especially at low ambient temperature. Even at outside temperatures of -7°C and LWT of 80°C, New H/T Split is able to provide 16kW heating capacity improved by 16.8% compared to the previous models.



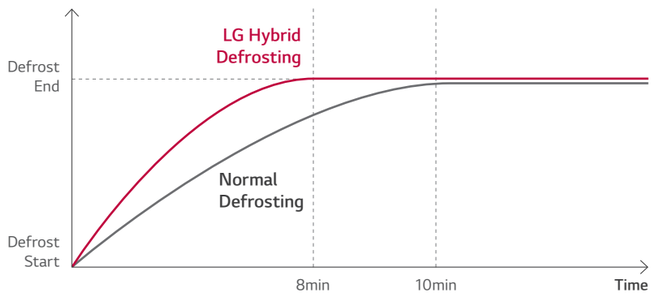
Low Noise Level

Due to the DC inverter's cutting edge technology, the operational noise level of both the indoor and outdoor units have been reduced for optimized comfort.



Quick Defrosting

Through the LG-patented R134a compressor controlling technology, the necessary time for the defrost operation has been minimized.



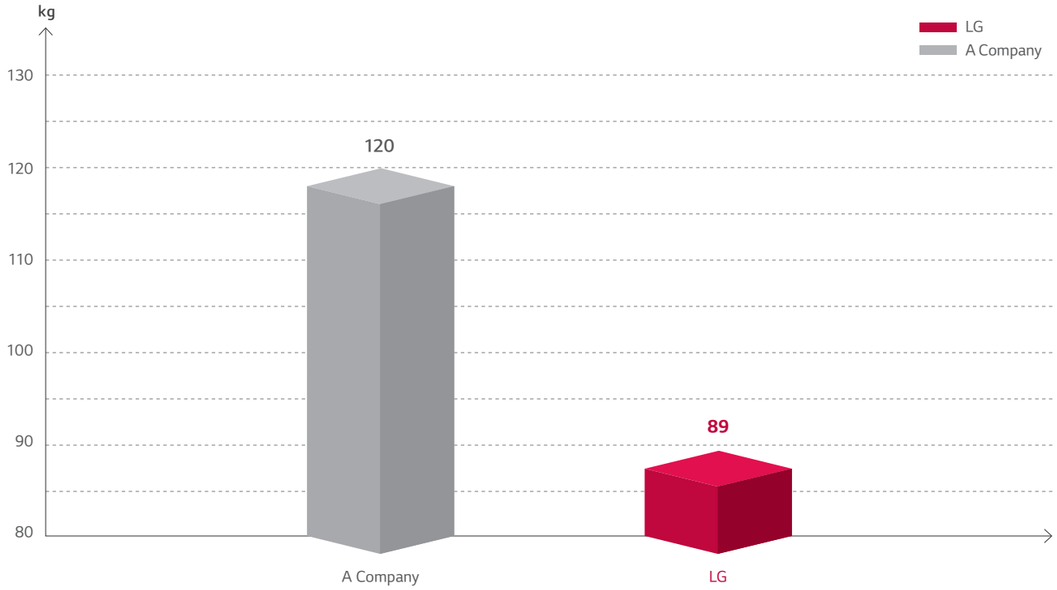
PRODUCT FEATURES

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.

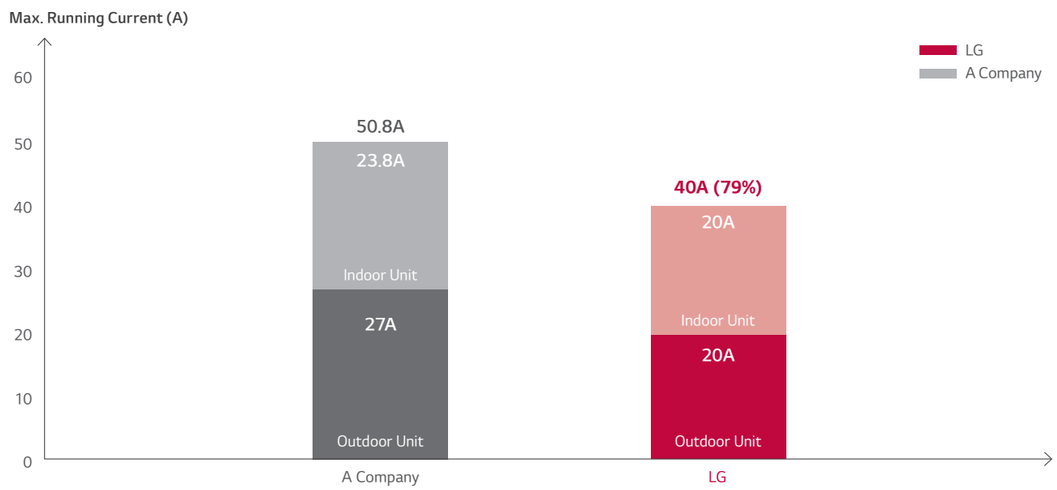
Light Weight

Light weight allows for easy installation.



Low Current Level

THERMA V High Temperature can be easily installed without any incurring any additional costs to the electrical connections.



PRODUCT SPECIFICATION

High Temperature

IDU

HN1610H NK3

ODU

HU161HA U33

011-1W0336

R1 Compressor™ Black Fin LG ThinQ

R410A/ R134a

80°C

Features

- High energy efficiency
- Maximum 80°C LWT
- Only for heating (no cooling)
- Suitable for old radiator
- Black Fin heat exchanger
- LG ThinQ
- Excellent performance at low ambient temperature (100% @ -7°C)
- Wide operation range (ambient : -25 ~ 35°C/water side : 25 ~ 80°C)
- Cascade 2 stage compression
- R1 scroll compressor (for outdoor unit)
- Efficient & flexible design
- 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 Indoor Unit	HU161HA U33 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 Indoor Unit	HU161HA U33 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)

Description			Unit	HU161HA U33
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°CDB	-25 ~ 35
Compressor	Quantity		EA	1
	Type		-	Hermetic Sealed Scroll
Refrigerant	Type		-	R410A
	GWP (global warming potential)		-	2087.5
	Precharged Amount		g	3,800
	t-CO_2 eq		-	7.933
Piping Connections	Outer Diameter	Gas	mm (inch)	Ø15.88 (5/8)
		Liquid	mm (inch)	Ø9.52 (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
Sound Power Level	Heating	Rated	dB(A)	63
Sound Pressure Level (at 1m)	Heating	Rated	-	55
Dimensions	Unit	W x H x D	mm	950 x 1,380 x 330
Weight	Unit		kg	89.0
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220 ~ 240, 1, 50
	Rated Running Current		A	11.9
	Recommended Circuit Breaker		A	20
Wiring Connections	Power Cable (included earth)		mm^2 x cores	4.0 x 3C (H07RN-F)

Product Specification (Indoor Unit)

Description			Unit	HN1610H NK3
Operation Range (leaving water)	Heating, DHW	Min. ~ Max.	°CDB	25 ~ 80
Compressor	Quantity		EA	1
	Type		-	Hermetic Sealed Twin Rotary
Refrigerant	Type		-	R134a
	GWP (global warming potential)		-	1430.0
	Precharged Amount		g	1,800
	t-CO_2 eq		-	2.574
Heat Exchanger	Water Circuit	Type	-	Brazed Plate HEX
		Water Volume	ℓ	1
	Refrigerant Circuit	Type	-	Brazed Plate HEX
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 25.4 (1)
		Outlet	mm (inch)	Male PT 25.4 (1)
	Refrigerant Circuit	Gas	mm (inch)	Ø15.88 (5/8)
		Liquid	mm (inch)	Ø9.52 (3/8)
Rated Water Flow Rate (at LWT 35°C)			LPM	46
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
Electrical Specification			**Unit**	**HN1610H NK3**
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220 ~ 240, 1, 50
	Rated Running Current		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			-	RS3
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 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. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Sound level values are measured at noise measuring chamber accordance with standard. Therefore, these values depend on the ambient conditions and values are normally higher in actual operation.
4. Performances are based on the following conditions (It is according to EN14511):
   - Heating : inlet/outlet water temp. 30°C / 35°C, outdoor temp. 7°CDB / 6°CWB
   - Interconnected pipe length is 5m and difference of elevation (outdoor ~ indoor unit) is 0m.
5. This product contains fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operaion

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.

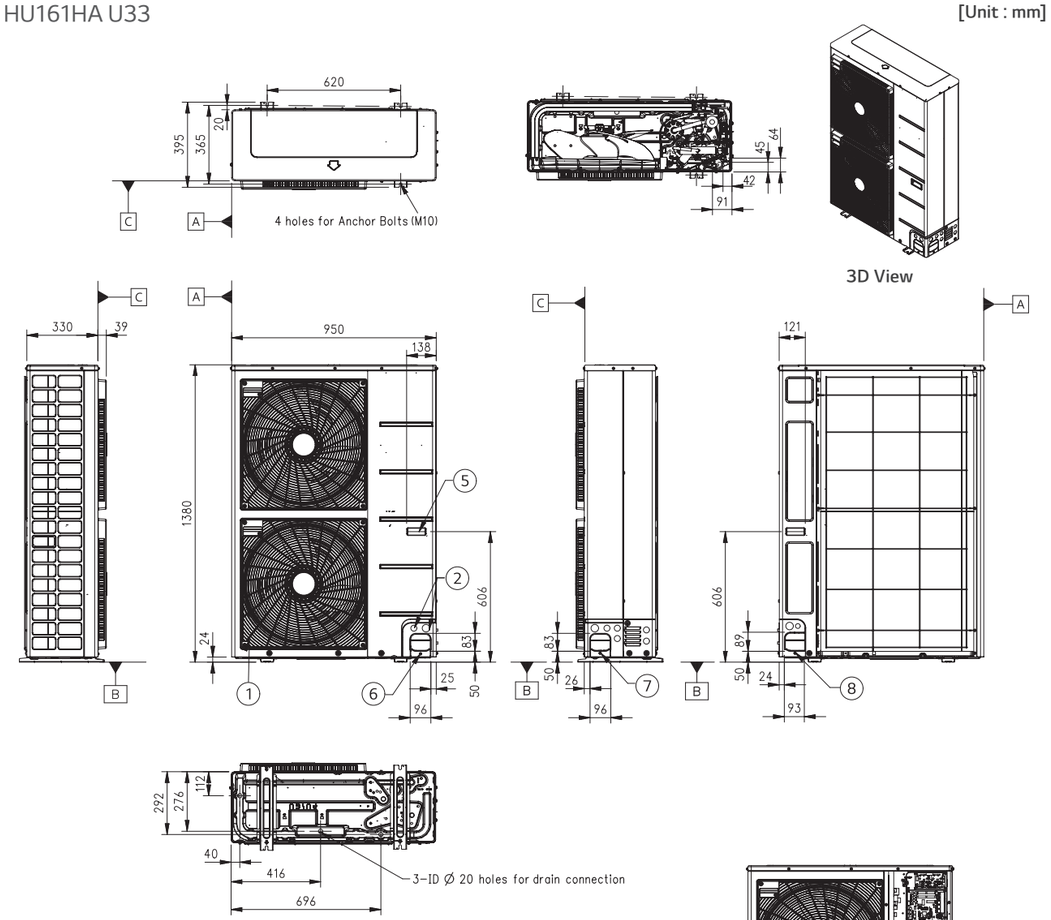
PRODUCT SPECIFICATION

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]

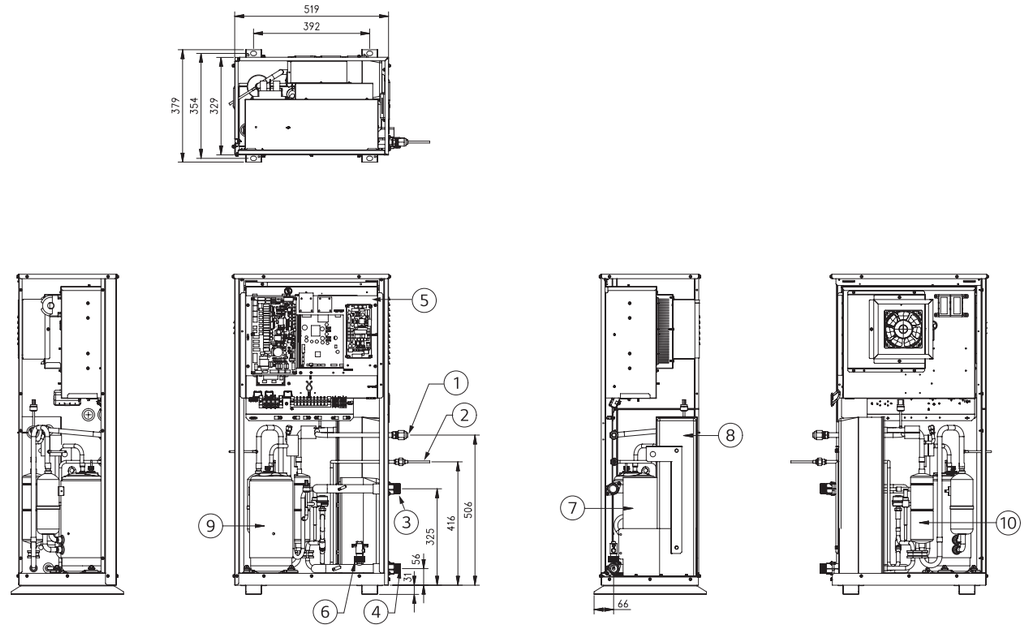


No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

Piping Connection Port

HN1610H NK3

[Unit : mm]



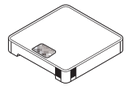
No.	Part Name	Description
1	Refrigerant Pipe	Ø9.52 (mm)
2	Refrigerant Pipe	Ø15.88 (mm)
3	Leaving Water Pipe	Male PT 25mm (1 inch)
4	Entering Water Pipe	Male PT 25mm (1 inch)
5	Control Box	PCB and terminal blocks
6	Flow Switch	Minimum operation range at 15LPM
7	Plate Heat Exchanger	Heat exchanger between refrigerant and water
8	Plate Heat Exchanger	Heat exchanger between refrigerant and refrigerant
9	Compressor	EPT525MBA
10	Accumulator	716 cc

THERMA V™
ACCESSORIES

ACCESSORIES

Accessories Provided by LG

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature
Sensors	Room Temperature Sensor	PQRSTA0		All except for R410A IWT	Room Temperature Based Control	To detect room air temperature for room temperature based control	• Max. wire length : 15m
	2nd Circuit Thermistor	PRSTAT5K10		All except for R410A IWT and High temp.	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 IWT and High temp. models	Domestic Hot Water Heating	To detect DHW tank temperature	• Included in PHLTA kit
Valves	3 Way Valve	OSHA-3V		All except for IWT models	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 IWT models	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 IWT and High temp. models			• Storage volume : 300L • Type : Internal double coil • Material : Stainless steel • Capacity of booster heater : 2.4kW
Installation Kits	Domestic Hot Water Tank Kit	PHLTA (1Ø, split)		All except for IWT and High temp. models	Domestic Hot Water Heating	To operate with DHW tank	• Parts included : DHW tank sensor (thermistor), Circuit breaker, Relay
		PHLTC (3Ø, split)					
		PHLTB (monobloc)					• Parts included : DHW tank sensor (thermistor), Circuit breaker, Relay, Multi harness
	Solar Thermal Kit	PHLLA		All except for IWT, Hydrosplit and High temp. models	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 and R32 Silent Monobloc (HA063M E1 is not applicable for R32 Silent Monobloc)	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
Vessel	Buffer Tank for Space Heating	OSHB-40KT		R32 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 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 except for R410A IWT	-	To extend wire between wired remote controller and indoor unit	• Length : 10m
	Extension Cable for Wi-Fi Modem	PWYREW000		All except for R410A IWT	Wi-Fi Control via LG ThinQ	To extend wire between WI-Fi modem and indoor unit	• Length : 10m
	2 Remote Control Wire	PZCWRC2		All except for R410A IWT model	2 Remote Control	To connect two remote controller on the one indoor unit	• Length : 0.25m
	Drain Pan	PHDPB		R32 Split, R410A Split	Cooling Operation	To collect condensed water in indoor unit when cooling operation	-
		PHDPC		R32 Hydrosplit			
	Cover Plate	PDC-HK10		R32 Hydrosplit, R32 Split, R32 IWT, R410A Split	-	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 except for R410A IWT model	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 except for R410A IWT model	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
Gateway	ACP Lonworks	PLNWKB000		All except for R410A IWT model	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

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature
Gateway	Modbus RTU Gateway	PMBUSB00A		All except for R410A IWT model	Centralized Control	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		All except for R410A IWT model		To communicate and control through the central controller (converting LG protocol to RS485 protocol)	• 1 for each outdoor unit • Power : Supplied by outdoor unit
	PI485 Gateway	PP485B00K		R410A IWT		To communicate between outdoor unit and IWT type indoor unit	• 1 for each outdoor unit • Power : Supplied by outdoor unit
Dry Contact	Simple Dry Contact	PDRYCB000		All except for R410A IWT model	-	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 except for R410A IWT model	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		All except for R410A IWT model	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
	2 Zone Valve Controller	PZNVVB200		All except for R410A IWT model	Zone Valve Control	To control individual zone valves with room temperature sensor or room thermostat	• Individual temperature setting possible. (to be set through wired remote control in room temperature input mode) • Room temperature detection (AI : 2 ports) • 3rd Party thermostat interlock input. (DI : 2 port) • Can read one DI or AI for each zone. • Maximum number of connections : Max. 4EA (expandable up to 8-zone) • Size (W x H x D) : 53.6 x 89.7 x 60.7 • Power : DC12V for module, AC24V for valve

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

Double Coil Single Coil

Domestic Hot Water Tank		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
- R32 Split Hydro Box (5, 7, 9kW) + OSHW-200F

Model	AWHP	R32 Split (5,7,9kW)	R32 Monobloc (5,7,9kW)	R32 Monobloc (12,14,16kW)	R32 Monobloc (5,7,9kW)
	IDU	HN0916M NK4	HM051M U43 HM071M U43 HM091M U43	HM121M U33 HM141M U33 HM161M U33	HM051M U43 HM071M U43 HM091M U43
	ODU	HU051MR U44 HU071MR U44 HU091MR U44			
	Tank	OSHW-200F AEU	OSHW-200F AEU	OSHW-200F AEU	OSHW-300F AEU
Declared Load Profile		L	L	L	XL
Average Climate	Grade	A+	A+	A	A+
	Efficiency	118%	122%	109%	134%
	Annual Energy Consumption	865kWh	839kWh	940kWh	1,254kWh
Energy Label