2020 LG THERMA V

PRODUCT CATALOGUE

LG
Life's Good

LG THERMA V
PRODUCT CATALOGUE
2020



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Life's Good

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THERMA V PRODUCTS

MONOBLOC

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R32 SILENT MONOBLOC 054

SPLIT – WALL HUNG

R32 SPLIT HYDRO BOX 064
R410A SPLIT HYDRO BOX 072

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R410A SPLIT IWT 082

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R410A-R134a SPLIT HIGH TEMPERATURE 092

THERMA V ACCESSORIES

ACCESSORIES 104

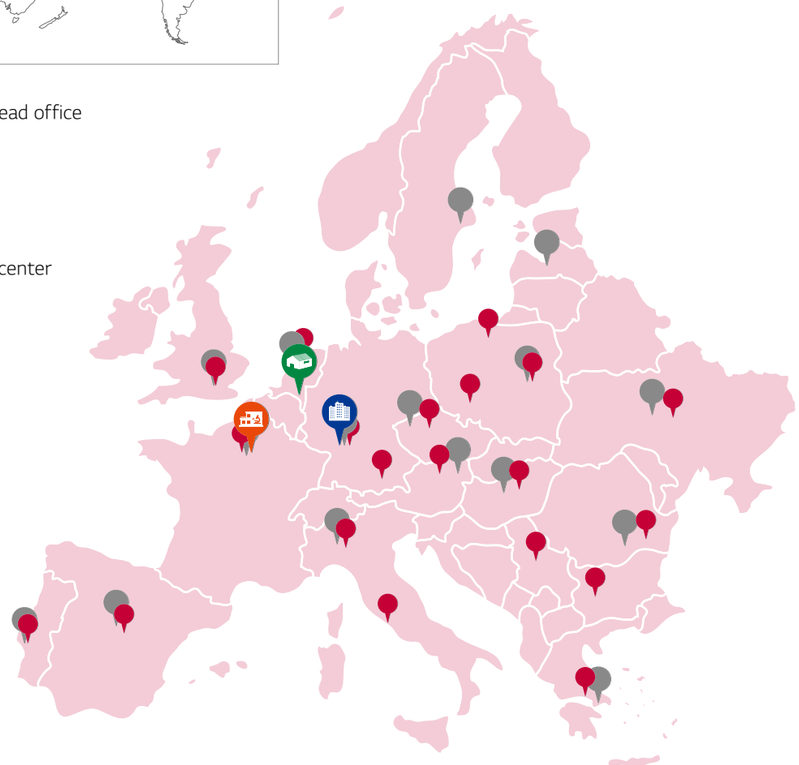
LG AS A TRUSTED PARTNER

Europe Business Infrastructure

Most of LG's heat pump products are manufactured in Korea to ensure high quality production.
The highest quality LG provides will be enough to satisfy your customers. In addition, 16 sales offices and 20 academies in Europe are committed to assuring a solid support for your business success.
Our highly competitive products produced in Korea are delivered through the European distribution center, ensuring a stable supply of products.

Through our energy lab in Europe, LG is developing heat pump technology that is optimized for European climate and weather, along with continuous product performance verification.





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

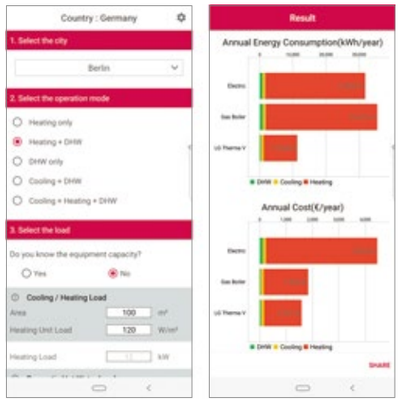
Engineering Tools

LG provides a variety of software to support THERMA V for all customers including designer, installer, even end user.

1. LG THERMA V SELECTOR

LG THERMA V Selector is a mobile application for designer/installer as well as end users providing various simulation.
In quick energy simulation, it shows the energy consumption, energy cost and CO_2 emission values that can be reduced compared to conventional heating systems using the minimum input values.
In Model selection & energy simulation, quick and accurate model selection is possible using detailed input values such as desired system configuration, required heating and DHW load and it is possible to calculate the payback, faster energy simulation, cost comparison.
In addition, through sound simulation, it is possible to easily calculate the sound level value generated according to the installed distance.

* LG THERMA V Selector is available from Google App store.



2. LATS THERMA V

LATS THERMA V is a PC based model selection program of LG THERMA V products, enabling an accurate and quick selection on the best model suitable to each house. 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.



3. LGMV

LGMV (Monitoring View) is a useful engineering tool that is able to monitor real-time refrigerant cycle of THERMA V.
It helps installers to perform effectively start-up and commissioning after THERMA V installation.
Also LGMV helps service engineers to figure out the causes of errors and solve the problem faster.



HEAT PUMP TECHNOLOGY

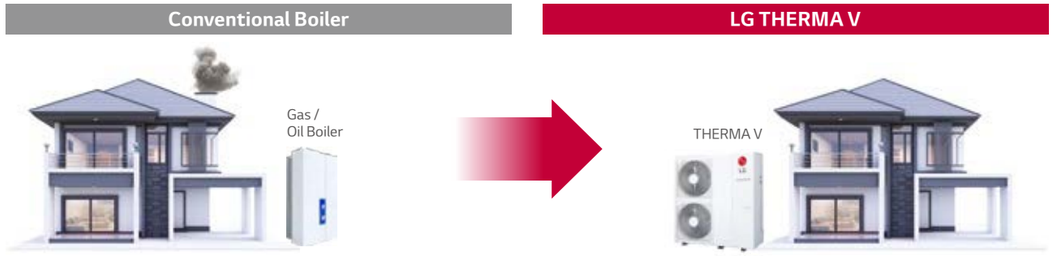
LG is a true leader of heat pump technology.

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 Heat Pump System?

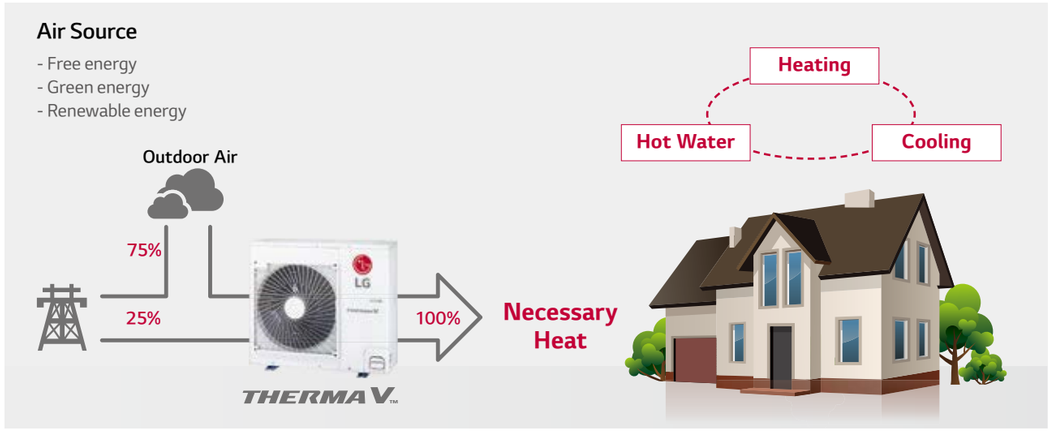
Modernized Technology : Replacing Conventional Boiler

For a long time, conventional heating systems have been used gas, oil, or 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.

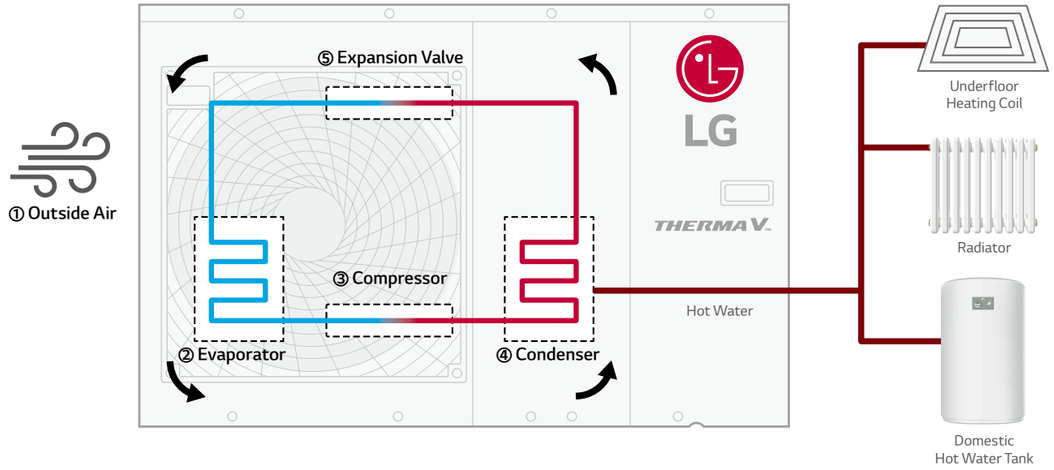


Renewable Technology : Utilizing Renewable Energy

The heat pump is a device that transforms energy from the air, ground and water to useful heat.
This transformation is done via the refrigerant cycle. In other words, it refers to a technique for pumping heat from renewable energy resources such as air or water. The energy required to produce the necessary heat compared to boilers using conventional fossil fuels such as gas and oil is one in every four quarters and the remaining three quarters are utilized in renewable energy such as water and air.



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 the heat energy from air side, it changes from liquid to vapor phase.

③ Compressor
The vaporized refrigerant flow into compressor. The electric energy to operate the compressor is converted to heat and added to the refrigerant.

④ Condenser
High temperature refrigerant gas flows into the heat exchanger and convey heat energy to water by heat exchange between refrigerant and water.

⑤ Expansion Valve
High pressure liquid refrigerant flow through the expansion valve to restore the refrigerant to original condition.

The Green Choice for Smart Customers : THERMA V™

Expecting Ultimate Heating Energy Efficiency, Performance and User Convenience

If you think yourself as smart consumer, you might have faced with some struggles on which AWHP system you should have to choose. The key when choosing would utterly be if it performs well and easily controllable while meeting the strengthened environmental regulations. And considering environmental regulations have been tightened year after year, it's anything but easy for smart consumers – especially for those who are living in Europe – to keep up with the strengthened F-Gas regulations which newly apply across the Europe region since January 1, 2015.

For those who are seeking to meet this tightened regulations, refrigerant R32 takes center stage for the new smart solution as it has much less global warming potential (GWP) than the current refrigerant, R410A. And to live up to smart consumers' needs that energy efficiency comes along with high performance, LG can give smart consumers the crystal clear solution with the THERMA V R32 Products that fulfills the high standard of regulations while bringing additional benefits through increased levels of efficiency and performance.



- 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

THERMA V™

WHAT IS LG THERMA V?

LG'S Advanced Heating Technology

THERMA V is LG's air to water heat pump system, especially designed for the modernized houses (New and renovated houses). THERMA V can be used as a multi-purpose solution for space heating, cooling and hot water. Even more remarkable thing is LG's advanced heating technology, market leading technology that can minimize energy consumption than any solution in the market.



Space Heating

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

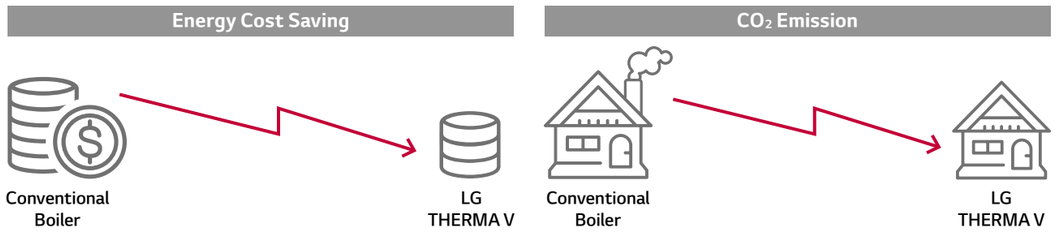
Domestic Hot Water

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

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 House Owner

- Energy saving by utilizing renewable energy and high efficient equipment
- Multiple solution providing space heating and cooling, DHW supply
- Reusability existing heating installation with radiator, boiler, etc
- Economic support by incentive program
- Lower investment cost
- Energy monitoring and remote control

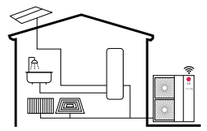
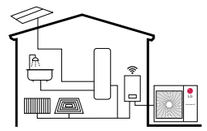
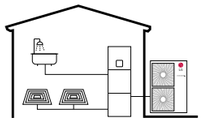
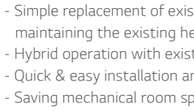
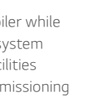
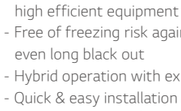
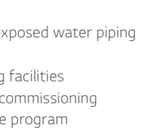
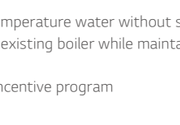
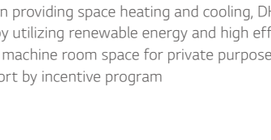
For Installer & Designer

- Time saving by quick & easy installation and commissioning
- Excellent heating performance even at low ambient temperature
- Less man power for carrying (2 people)
- Low repair cost and less breakdowns with durable parts
- Same controller interface for all LG products. (Need to less training)

For End-User

- Multiple solution providing space heating and cooling, DHW supply
- Energy saving by utilizing renewable energy and high efficient equipment
- Simple to use especially for senior people
- Higher comfort by user-friendly controller
- Higher reliability by durable parts and less breakdowns
- Reduce the noise level with low noise mode operation
- Confidence for the green and sustainable solution (High efficiency)

LG AIR TO WATER HEAT PUMP SOLUTION OVERVIEW

		Monobloc		Split		Split	
		-	Silent	Wall Hung		Floor Standing	IWT
							
Line-up		R32 Monobloc	R32 Silent Monobloc	R32 Split	R410A Split	R410A-R134a Split High Temperature	R410A Split IWT
		1Ø : 5/7/9/12/14/16kW 3Ø : 12/14/16kW	1Ø : 9kW	1Ø : 5/7/9kW	1Ø : 12/14/16kW 3Ø : 12/14/16kW	1Ø : 16kW	1Ø : 9/12/14/16kW 3Ø : 12/14/16kW
							
Application		Heating, Cooling and DHW		Heating, Cooling and DHW		Heating and DHW	Heating, Cooling and DHW
Energy Label Space Heating 35°C LWT		A+++	A+++	A+++	A+++	A+	A++
Operation Range	Outdoor Air	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C	-20 ~ 35°C	-25 ~ 35°C	-20 ~ 35°C
	Leaving Water	15 ~ 65°C	15 ~ 65°C	15 ~ 65°C	15 ~ 57°C	25 ~ 80°C	25 ~ 58°C
Customer Needs	Designer & Installer	- Space heating and cooling, domestic hot water, pool heating - Using existing facilities for conventional boiler - Saving installation and commissioning time - No Indoor Unit		- Space heating and cooling, domestic hot water, pool heating - Using existing facilities for conventional boiler - Minimized Wiring works - Eliminating the freezing risk at exposed water piping		- Space heating, domestic hot water - Using existing facilities (Old radiators) - Solution for poor insulated or old house - High DHW temperature to meet sanitary water regulation	- Space heating and cooling, domestic hot water - Saving installation time - Where mechanical room is very limited
	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 - 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 - Easy and intuitive controls - Remote Control by smartphone - Quiet operation	- Low operation cost - Reliable operation and long lifetime - Necessity to install indoor unit in living space due to Insufficient machine room space - Quiet operation
LG Approach		- All in one concept (No refrigerant piping work) - High energy efficiency - High corrosion resistance heat exchanger - New interface (RS3 remote controller) - Interlocking operation with 3rd party boiler - LG own Wi-Fi control solution (LG ThinQ) - Easy commissioning by PC tool (LG heating configurator) - Low noise mode operation with schedule setting - THERMA V Silent Monobloc		- High energy efficiency - High corrosion resistance heat exchanger - New interface (RS3 remote controller) - Interlocking operation with 3rd party boiler - LG own Wi-Fi control solution (LG ThinQ) - Easy commissioning by PC tool (LG heating configurator) - Placing hydronic components and water piping in the mechanical room - Low noise mode operation with schedule setting		- Max 80°C LWT by Cascade 2 stage compression (R410A - R134a) - Suitable for old radiator - High energy efficiency - High corrosion resistance heat exchanger - New interface (RS3 remote controller) - LG own Wi-Fi control solution (LG ThinQ) - Low noise mode operation with schedule setting	- All in one concept (Integrated DHW tank with indoor unit) - High energy efficiency - High corrosion resistance heat exchanger - Sophisticated and harmonious exterior of indoor unit - Placing hydronic components and water piping in the mechanical room - Low noise mode operation with schedule setting
Benefit		- Multiple solution providing space heating and cooling, DHW supply - Energy saving by utilizing renewable energy and high efficient equipment - Simple replacement of existing boiler while maintaining the existing heating system - Hybrid operation with existing facilities - Quick & easy installation and commissioning - Saving mechanical room space - Economic support by incentive program		- Multiple solution providing space heating and cooling, DHW supply - Energy saving by utilizing renewable energy and high efficient equipment - Free of freezing risk against exposed water piping even long black out - Hybrid operation with existing facilities - Quick & easy installation and commissioning - Economic support by incentive program		- Multiple solution providing space heating and cooling, DHW supply - Energy saving by utilizing renewable energy and high efficient equipment - Obtaining 80°C high temperature water without supplementary heater - Simple replacement of existing boiler while maintaining the existing radiators - Economic support by incentive program	- Multiple solution providing space heating and cooling, DHW supply - Energy saving by utilizing renewable energy and high efficient equipment - Use of valuable machine room space for private purpose - Economic support by incentive program

LINE UP OVERVIEW

Type		Refrigerant	Line-up	Capacity(kW)	5	7	9	12	14	16
Monobloc	-	R32	R32 Monobloc	1Ø 230V	HM051M U43	HM071M U43	HM091M U43	HM121M U33	HM141M U33	HM161M U33
				3Ø 400V				HM123M U33	HM143M U33	HM163M U33
	Silent		R32 Silent Monobloc	1Ø 230V			NEW HM091MRS U33			
Split	Wall Hung	R32	R32 Split	1Ø 230V	HN0916M NK4	HN0916M NK4	HN0916M NK4			
					HU051MR U44	HU071MR U44	HU091MR U44			
		R410A	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
	IWT	R410A	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
	Floor Standing	R410A + R134a	High Temperature	1Ø 230V						HN1610H NK3
										HU161HA U33

LINE UP INTRODUCTION



THERMA V R32 Monobloc

Monobloc is a fully packaged piece of equipment, where the indoor and outdoor units are combined as one module. Therefore, there is no need for refrigerant piping work since Monobloc unit located outside is connected only to water piping. Further, hydronic components such as plate heat exchanger, expansion tank and water pump are included in the package.

LG's THERMA V R32 Monobloc is designed to guarantee incomparable customer values including unbeatable energy efficiency, the ultimate in convenience, and easy controls by applying the advanced technologies. As it applies the low Global Warming Potential (GWP) R32 refrigerant and LG's exclusive R1 compressor to help it provide the powerful and high efficient heating. Furthermore, Thanks to a Wi-Fi modem and LG's smartphone app, LG ThinQ, users can monitor and remotely control compatible LG products, and access the vast majority of functions.



THERMA V Silent Monobloc

LG's 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.



THERMA V R32 Split

Split is a hydro box type which is that the indoor unit and outdoor unit are separated. Between two units are connected by refrigerant piping only, thus hydronic components such as plate heat exchanger, expansion tank and water pump are located inside of the indoor unit. For that reason, it is easy to withstand freezing issues regardless of outside ambient temperature.

LG's THERMA V R32 Split designed specifically for the new and renovated housing markets is LG's highly-efficient product that can deliver effective space heating and hot water supply, as it applies the low Global Warming Potential (GWP) R32 refrigerant and LG's exclusive R1 compressor to help it provide the powerful and high efficient heating. Furthermore, Thanks to a Wi-Fi modem and LG's smartphone app, LG ThinQ, users can monitor and remotely control compatible LG products and access the vast majority of functions.



THERMA V R410A Split

Split is a hydro box type which is that the indoor unit and outdoor unit are separated. Between two units are connected by refrigerant piping only, thus hydronic components such as plate heat exchanger, expansion tank and water pump are located inside of the indoor unit. For that reason, it is easy to withstand freezing issues regardless of outside ambient temperature.

LG's THERMA V R410A Split is designed for the benefit of the users and installers who want to apply with large capacity in colder climate conditions. As it has maximized energy efficiency (A++) in the mid-temperature ranges which leads to optimize and reduce operating costs.



THERMA V IWT

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



THERMA V High Temp

THERMA V high temperature is a kind of split type that consists of an indoor unit and an outdoor unit. Thanks to the cascade 2 stage compression technology, it can supply such high leaving water temperature - 80°C with high energy efficiency.

LG's THERMA V high temperature is suitable for houses which have poor insulation or existing old radiator or have to meet sanitary water regulation which requires high water temperature.

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 function which are able to use it more easily and comfortably. The RS3 remote controller allows the user to control intuitively since it has a text based user friendly interface. A wide connectivity and lots of control options also provide user control convenience.

Excellent Performance & Efficiency

LG THERMA V provides world-class energy efficiency by adopting LG's revolutionary technology such as R1 compressor, black fin heat exchanger. LG has been achieved a high heating performance even extremely cold weather condition 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 the installers. Installer also can minimize the spending time to perform commissioning by using LG heating configurator. Even during maintenance, the clip type connection allows fast and easy disassemble of the components.



EXCELLENT PERFORMANCE & EFFICIENCY

R1 Compressor

* Applied model : R32 Series



Shaft-through structure & Support both ends of shaft

- Solid compressor operation assuring higher durability

Extended operation range (Max 150Hz)

- Higher heating performance

Centrifugal oil return & Oil separating guide for oil discharge reduction

- Higher energy efficiency (*SEER 20% ↑)

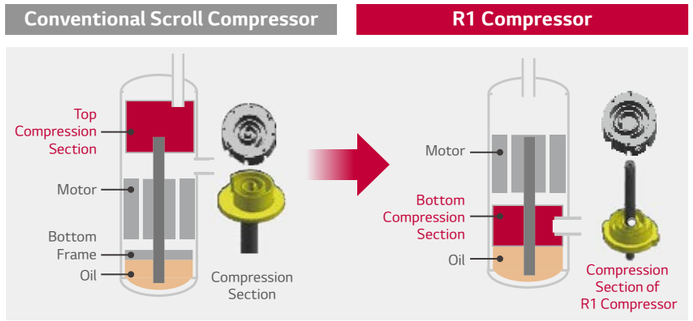
Bottom compression & Simple structure

- Lower noise & vibration (**Max 4dB(A) ↓)
- Less weight (**20% ↓)
- Superior reliability

R1 Compressor™

* LG Internal test result, Based on single split 10kW cassette.
** LG Internal test result, Based on conventional compressor. (Rotary type GPT442M)

R1 Compressor is applied for high efficiency and reliability. This compressor is more advanced compared to the conventional one. Especially tilting motion of scroll has been improved. Further, the operation range is improved compared to the conventional type.

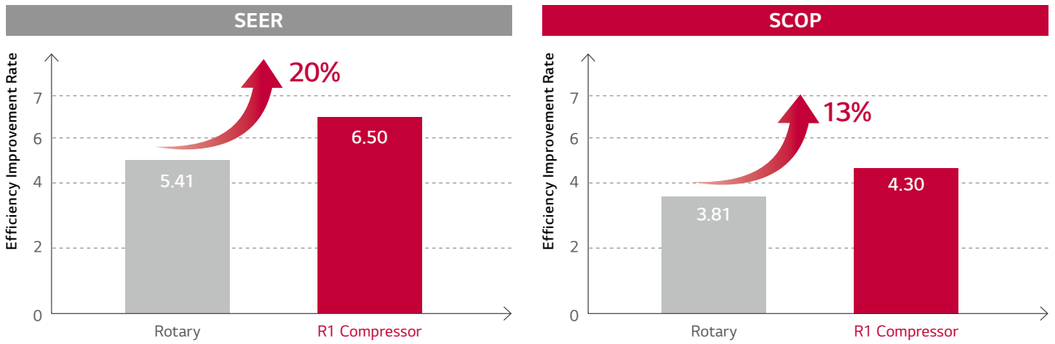


- Scroll compressor with simple structure.
- High efficiency.
  (Low load at low speed / Total efficiency)
- Low noise.
  (High speed possible)
- Improved tilting motion of scroll.
- 20% weight reduction.
  (vs. Conventional compressor)

* Applied models : R32 Monobloc (5 ~ 16kW), R32 split (5 ~ 9kW)

Seasonal Energy Efficiency

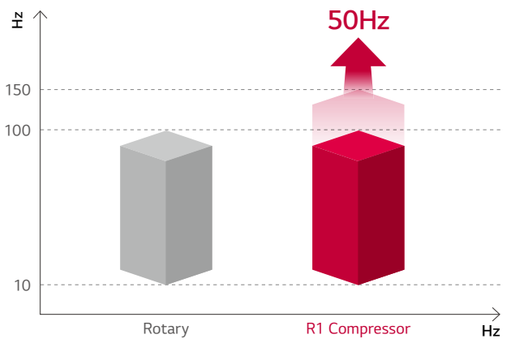
SEER 20%, SCOP 13% improvement. (vs. Rotary)



* 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 potential hazard of global warming. Furthermore, R32 refrigerant is easy to recycle thanks to single composition.

Description	R32	R410A
GWP Global Warming Potential	675	2088
Less Amount Gas Charge		
More System Performance	R32 systems also use less refrigerant per kilowatt of capacity delivered.	
Easy Refrigerant Recycle	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.	

Flash Gas Injection

* Applied model : R32 Series

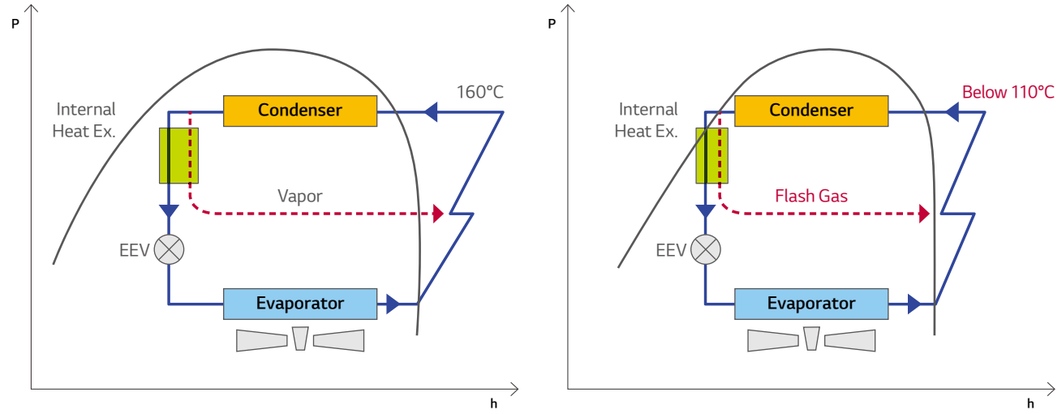
In case of R32 refrigerant, it is very important to control discharge temperature of compressor properly. In the R32 Monobloc, flash gas injection technology is applied to control discharge temperature of compressor efficiently. As a result of this technology, heating operation range is expanded and 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

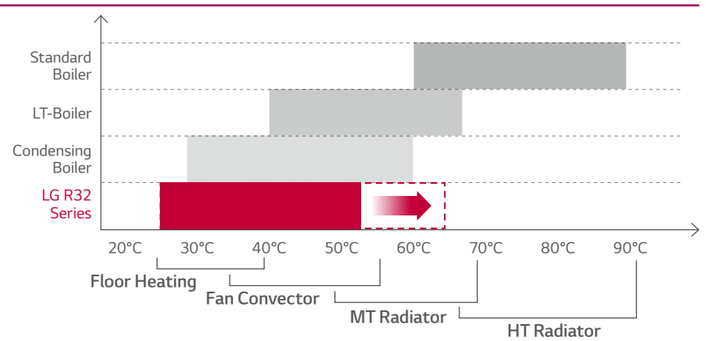
- Discharge temperature of compressor is below. (110°C)
- Good operation of injection cycle.



Wide Operation Range

* Applied model : R32 Series

Thanks to the Leaving Water Temperature (LWT) up to 65°C, temperature range requiring mid temperature radiator can be fully covered by THERMA V R32 Series. As a result, they have high competitiveness for replacement case as well as new house.



EXCELLENT PERFORMANCE & EFFICIENCY

Black Fin

* Applied model : R32 Series

The black coating with enhanced epoxy resin is applied for strong protection from various corrosive external conditions such as salt contamination and air pollution including fumes from factories.
This improvement in durability prolongs the product's lifespan and lowers both the operational and maintenance costs.

Longer Lifespan, Lower Operational Costs

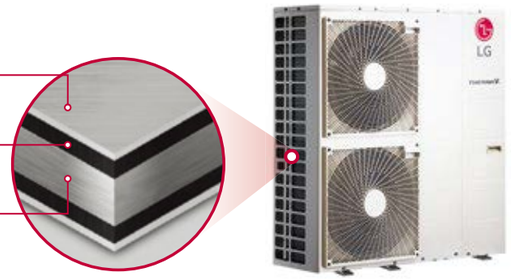
Strengthened corrosion resistant coating

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



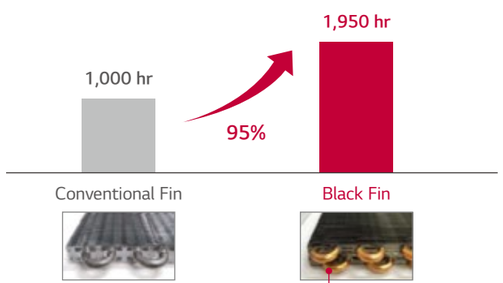
SST (Salt Spray Test)

• 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

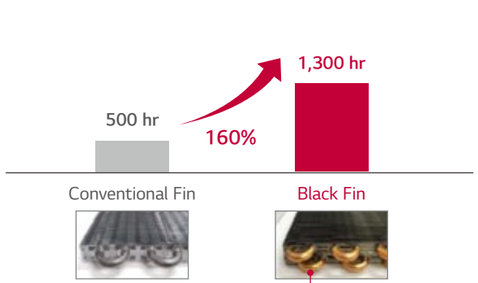
CCT (Cyclic Corrosion Test)

• Test Process

Fog1[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)

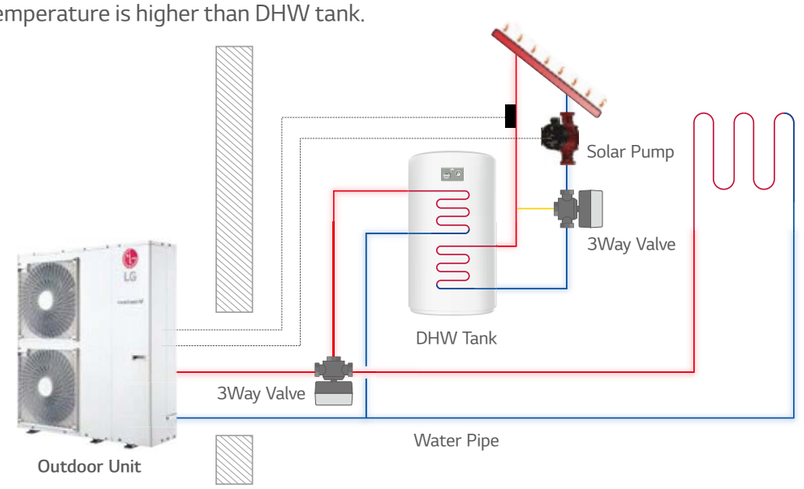


100% copper material to prevent corrosion & refrigerant leakage

Combination with Solar Thermal System

* Applied model : R32 Series, R410A Split Hydro Box

THERMA V can combine with the Solar thermal system enabling heats up DHW tank. It measures the temperature difference between the solar collector and DHW tank, then it starts heat up if the solar collector temperature is higher than DHW tank.



* Mandatory accessory : Solar Thermal Kit (PHLLA)

Energy State

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

THERMA V is operated automatically according to the power supply status signals received from power supplying companies. This function can respond to European countries' special tariff for heat pump application on smart grids.

Energy States	Contact States			Power Supply Status	Operating Mode
		TB_SG1	TB_SG2		
ES1	1 : 0	●			**[Switch-off command, Utility lock]** Deactivates the heat pump to avoid peak load. The maximum blocking time depends on the power supply company. (Frost protection available)
ES2	0 : 0				**[Normal Operation]** The heat pump works at maximum efficiency.
ES3	0 : 1		●		**[Switch-on recommendation]** The switch-on recommendation and set value of target temperature is increased. (Heating +2°C / DHW +5°C)
ES4	1 : 1	●	●		**[Switch-on command]** Switch-on command. The set value of DHW temperature is set to 80°C and electric heaters can be activated.
ES5	The contact signal of 0 : 1 and 1 : 1 is designated ES3 and ES4 respectively as a default. But ES3 (0 : 1) and ES4 (1 : 1) can be changed to ES5 ~ ES8 in installer setting. And the offset values of heating, cooling and DHW are changeable.				The set value of target temperature is changed. (Heating +5°C / Cooling -5°C / DHW +30°C)
ES6					The set value of target temperature is changed. (Heating +2°C / Cooling -2°C / DHW +10°C)
ES7					The set value of target temperature is changed. (Heating -2°C / Cooling +2°C)
ES8					The set value of target temperature is changed. (Heating -5°C / Cooling +5°C)

USER CONVENIENCE

Controller with Intuitive Interface

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

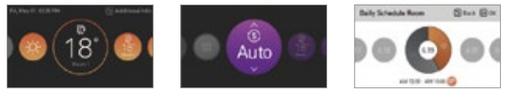
THERMA V is equipped with new remote controller which supports various functions.

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

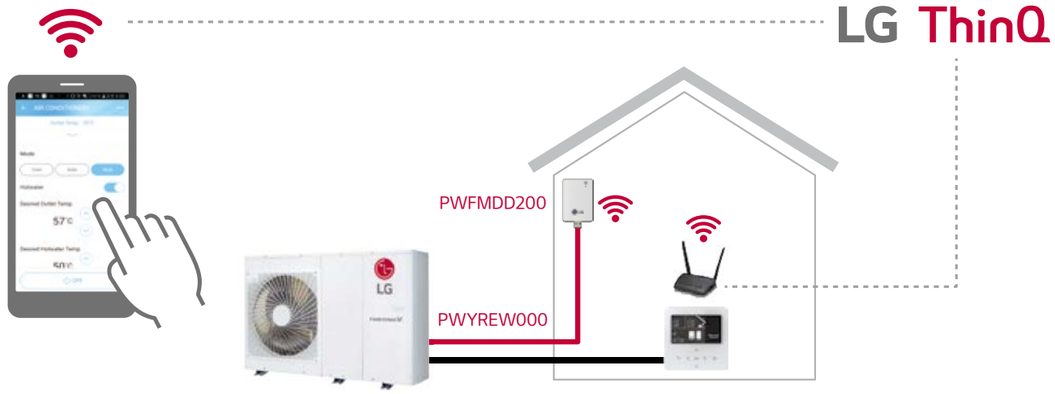
- Optimize schedule setting logic.
  - Set the period, date, On/Off time, operation mode, target temp easy installation setting.



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.

Simple Operation for Various Functions

- On/Off
- Operation mode selection
- Current temperature
- Set temperature
- On/Off reservation
- Energy monitoring

Mandatory accessory :
PWFMDD200 (LG Wi-Fi modem) and
PWYREW000 (10m extension connect cable
in between THERMA V indoor and Wi-Fi modem)



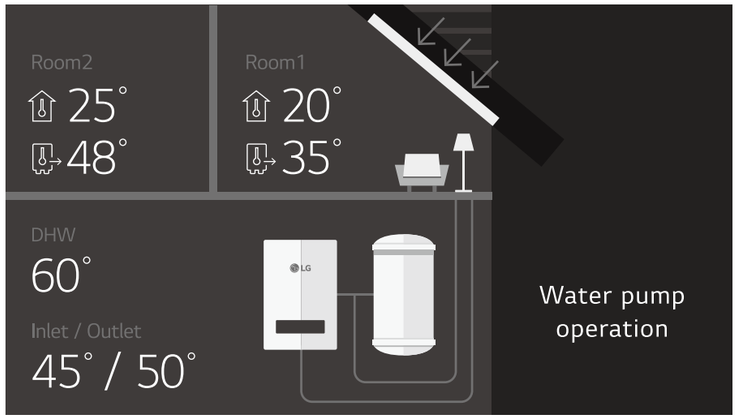
USER CONVENIENCE

2nd Circuit

* Applied model : R32 Series, R410A Split Hydro Box

2 Zones (Add / Main zone) temperature control through separate heating circuits is possible with mixing valve kit.

2 Zones Temperature Control



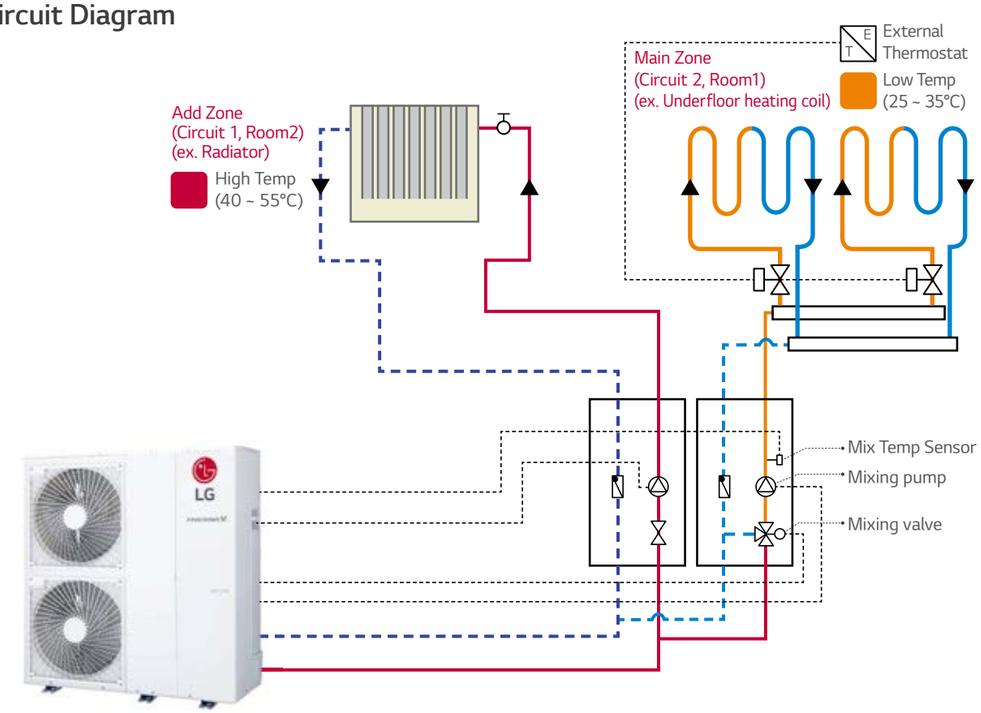


Setting Add Zone Temp



Setting Main Zone Temp

2nd Circuit Diagram



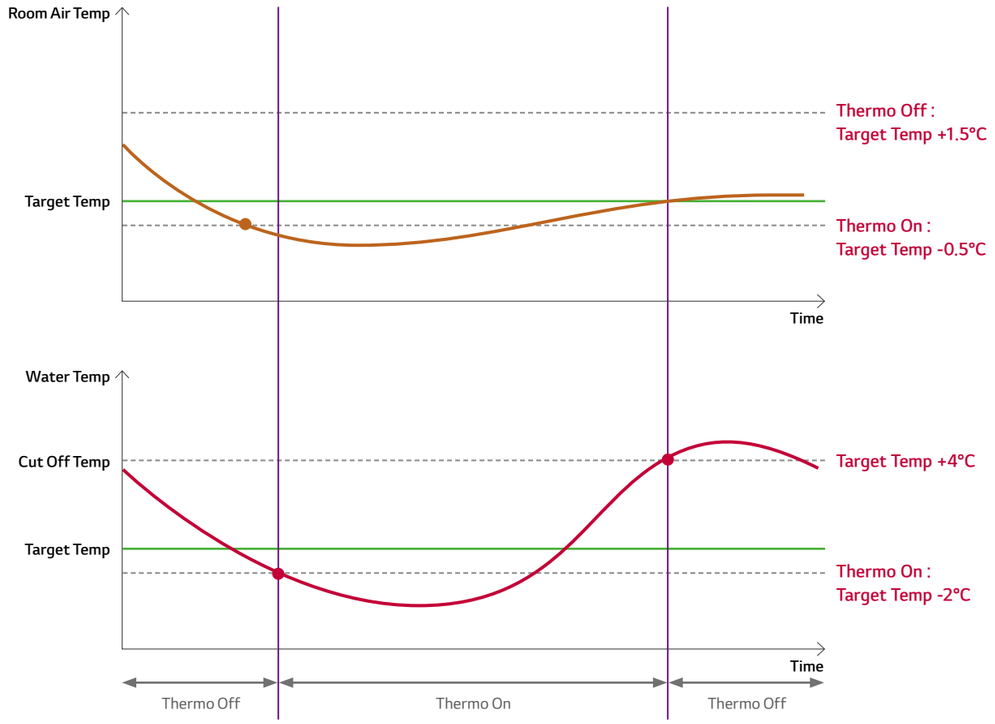
Various Temperature Control Options

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

Various temperature control options are possible for the user's comfort and convenience.
Especially for European life style where thermal comfort is preferred, simultaneous control option is newly added. (Room air + 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 temp condition
- Thermo Off : When satisfied room air temp condition or water temp condition



USER CONVENIENCE

Built-in Flow Sensor

* Applied model : R32 Split

Flow sensor provides the actual flow rate information in a display of wired remote controller.

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

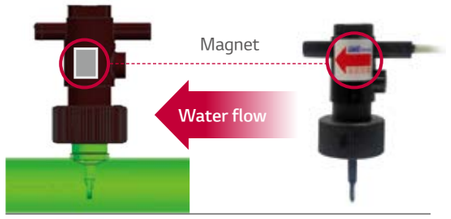


Improved Flow Switch

* Applied model : All Line-up except R32 Split

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

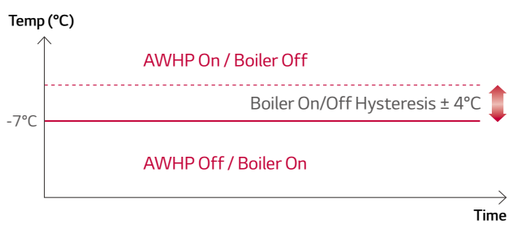
* Applied model : R32 Series, R410A Split Hydro Box

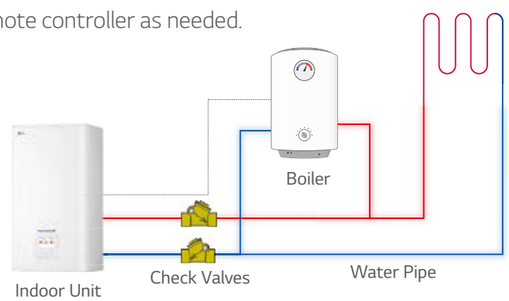
3rd Party boiler can be activated by the R32 Split controller as an auxiliary equipment of AHWP.

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 RS3 remote controller as needed.

Auto Control Mode



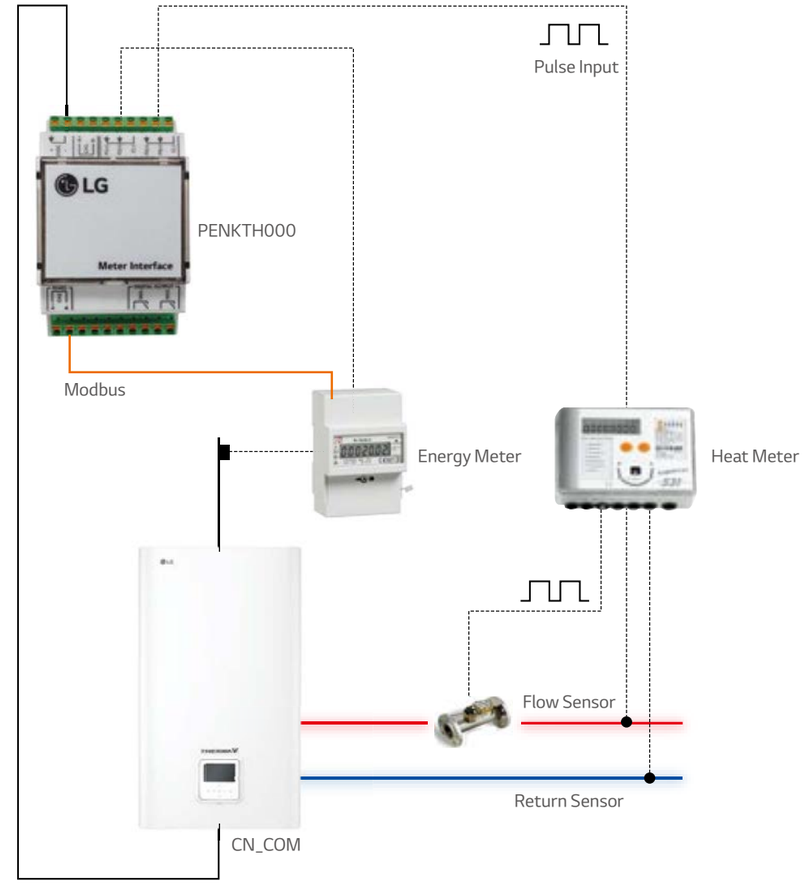


* 3rd party boiler should have a water pump integrated with it.

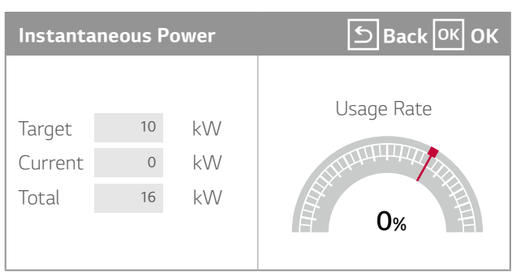
Energy Information Monitoring

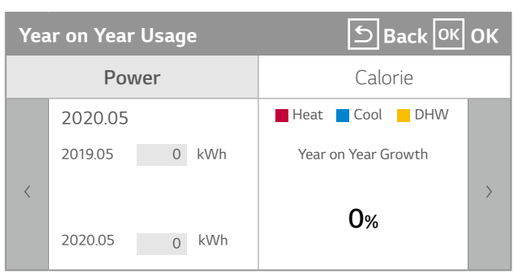
* Applied model : All Line-up except R410A IWT

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



* Mandatory accessory : PENKTH000 (Meter Interface)





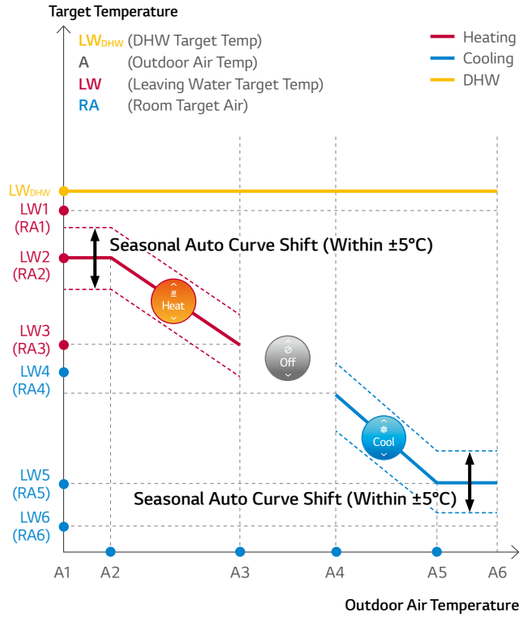
USER CONVENIENCE

Seasonal Auto Mode

* Applied model : R32 Series, R410A Split Hydro Box

In this mode, the target temperature will vary according to the outdoor temperature automatically.
This mode adds the cooling season function to the conventional weather dependent operation mode.

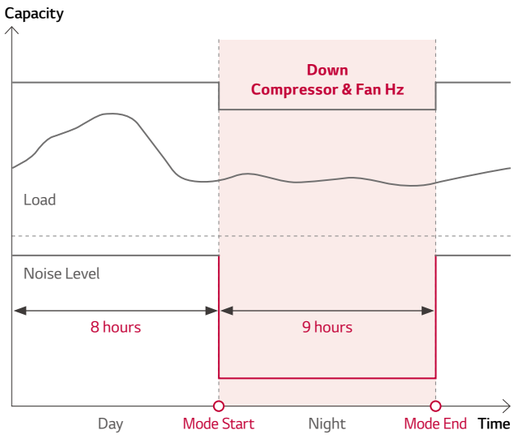
Setting	Description	R410A Product Range	R410A Product Default	R32 Product Range	R32 Product Default
A1	Lowest Ambient Temp	Fix	-15°C	Fix	-25°C
A2	Heating Lower Ambient Temp	-15 ~ 24°C	-10°C	-25 ~ 35°C	-10°C
A3	Heating Higher Ambient Temp	-15 ~ 24°C	16°C	-25 ~ 35°C	16°C
A4	Cooling Lower Ambient Temp	10 ~ 43°C	30°C	10 ~ 46°C	30°C
A5	Cooling Higher Ambient Temp	10 ~ 43°C	40°C	10 ~ 46°C	40°C
A6	Highest Ambient Temp	Fix	43°C	Fix	46°C
LW1	Heating Highest Water Temp	15 ~ 57°C	57°C	15 ~ 65°C	65°C
LW2	Heating Higher Water Temp	15 ~ 57°C	35°C	15 ~ 65°C	35°C
LW3	Heating Lower Water Temp	15 ~ 57°C	28°C	15 ~ 65°C	28°C
LW4	Cooling Higher Water Temp	5 ~ 25°C	20°C	5 ~ 27°C	20°C
LW5	Cooling Lower Water Temp	5 ~ 25°C	16°C	5 ~ 27°C	18°C
LW6	Cooling Lowest Water Temp	5 ~ 25°C	16°C	5 ~ 27°C	18°C
RA1	Heating Highest Air Temp	16 ~ 30°C	30°C	16 ~ 30°C	30°C
RA2	Heating Higher Air Temp	16 ~ 30°C	30°C	16 ~ 30°C	30°C
RA3	Heating Lower Air Temp	16 ~ 30°C	26°C	16 ~ 30°C	26°C
RA4	Cooling Higher Air Temp	18 ~ 30°C	22°C	16 ~ 30°C	22°C
RA5	Cooling Lower Air Temp	18 ~ 30°C	18°C	16 ~ 30°C	18°C
RA6	Cooling Lowest Air Temp	18 ~ 30°C	18°C	16 ~ 30°C	18°C

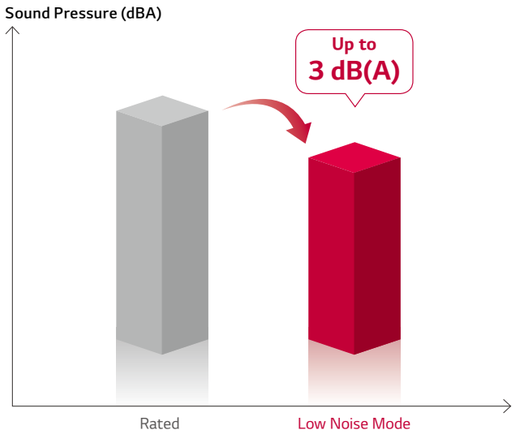


Low Noise Mode & Scheduler

* Applied model : All Line-up except High Temp

Low Noise mode operation can reduce the noise level by remote controller and users can set the weekly On / Off schedule.

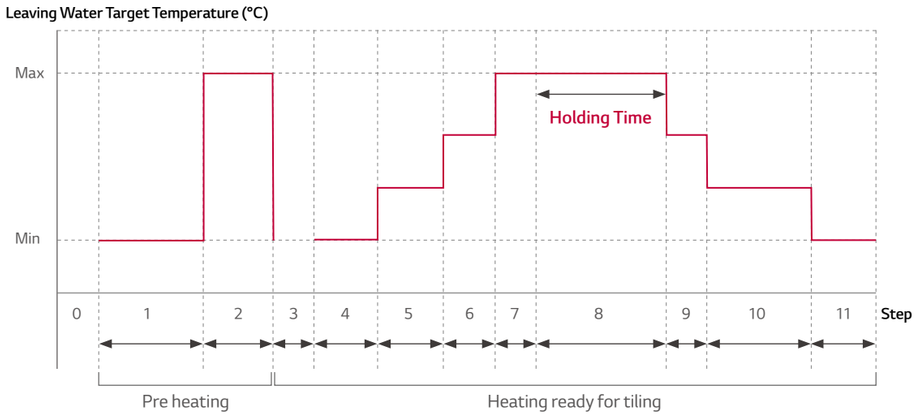




Screed Drying Program

* 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.



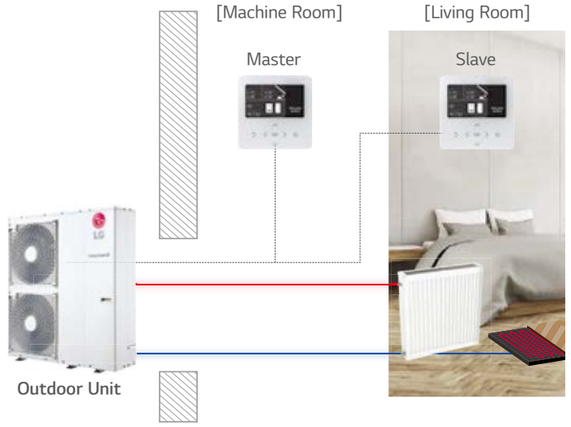
Step	1	2	3	4	5	6	7	8	9	10	11
Leaving Water Target Temperature (°C)	25	Max T	Off	25	35	45	Max T	Max T	45	35	35
Duration (Hours)	72	96	72	24	24	24	24	Holding Time	72	72	72

2 Remote Control

* Applied model : All Line-up except R410A IWT

Convenient control by installing additional RS3 at living room.

System Diagram

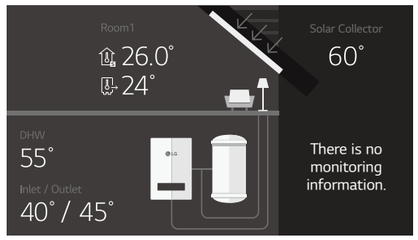


* Master is for the installation setting.
* Slave is for user setting.

RS3 UI

- THERMA V is operating based the room where slave RS3 is installed.

: Room air temperature sensed by slave RS3 remote controller



EASY INSTALLATION & MAINTENANCE

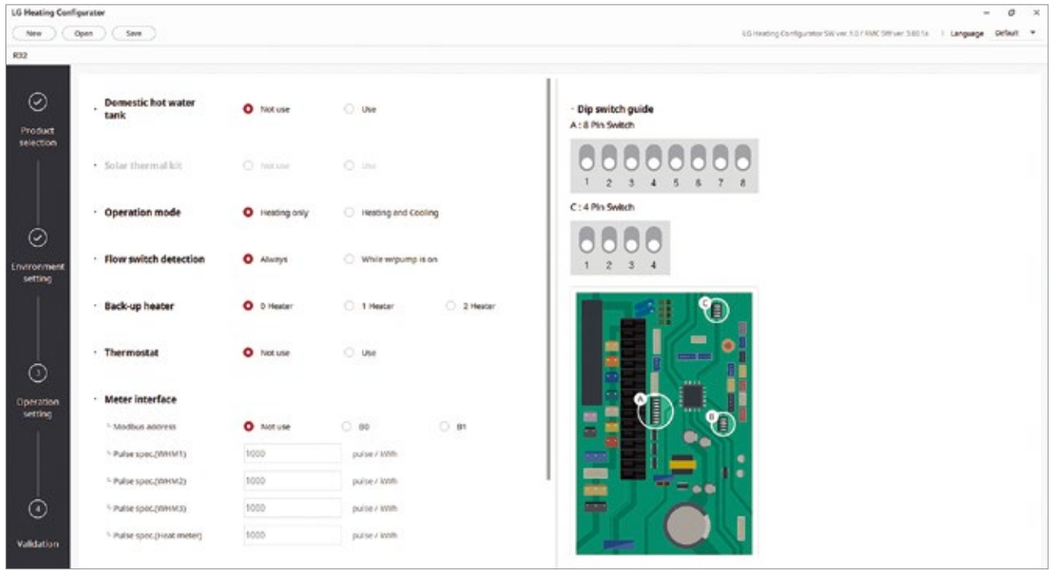
LG Heating Configurator

* Applied model : R32 Series, R410A Split Hydro Box

Easy Installation Setting and Commissioning

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

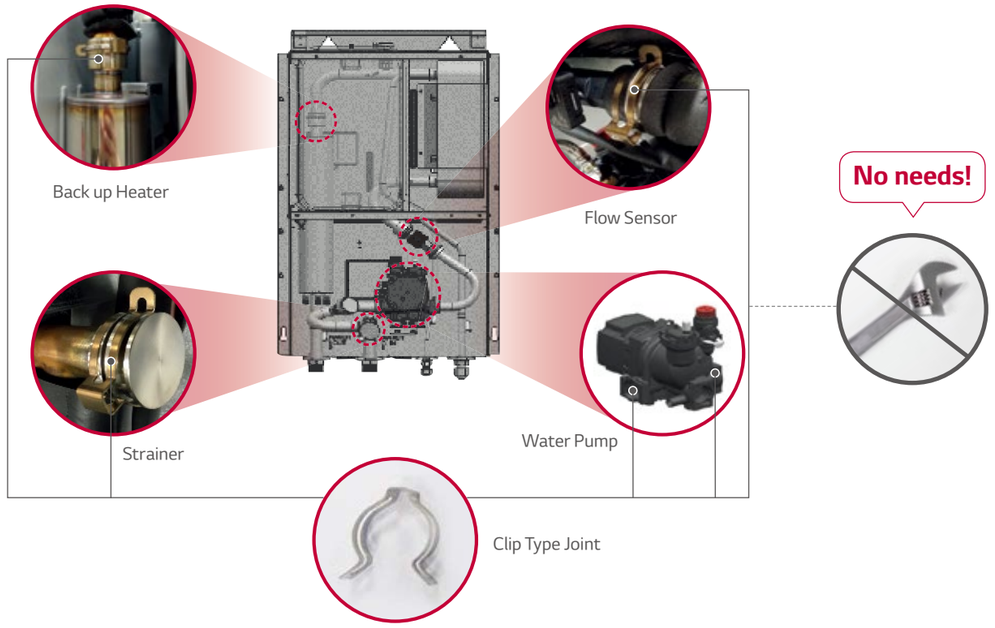




Clip Type Connection for Easy Maintenance

* Applied model : R32 Series, R410A Split Hydro Box

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

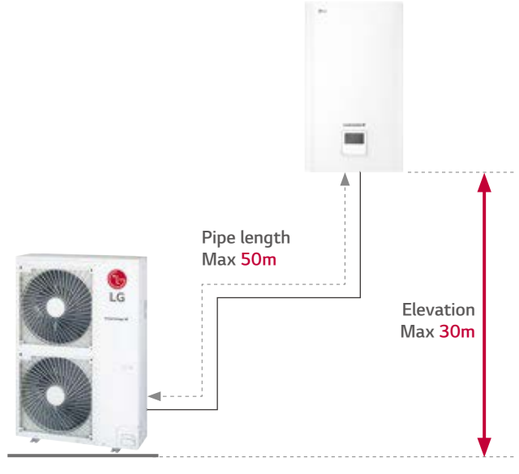


Flexible Refrigerant Piping Design

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

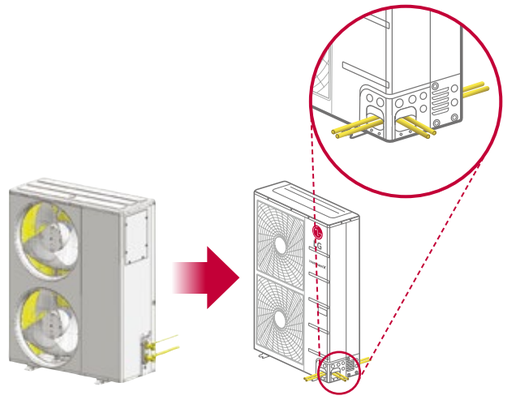
Long piping length and 3way piping enable flexible design and easy installation.

Piping Capabilities

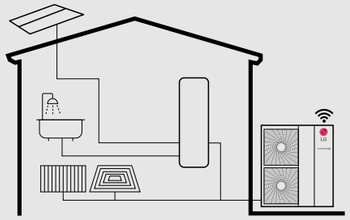


3Way Piping

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



THERMA V™
PRODUCTS



Excellent Performance & Efficiency

R1 compressor · R32 refrigerant · Flash gas injection · Wide operation range · Black fin · 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

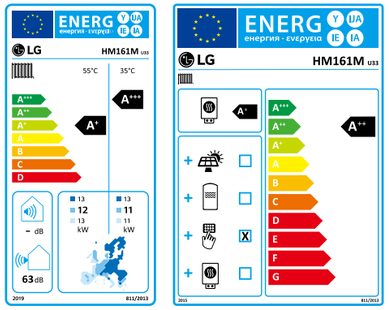
Easy Installation & Maintenance

All in one · LG heating configurator · Clip connection

* Detailed description for each function is presented on page 22 ~ 37.



Energy Labeling



* 16kW 1Ø model.
* A+++ to D scale.

Monobloc Concept

Monobloc is a fully packaged piece of equipment, where the indoor and outdoor units are combined as one module. Therefore, there is no need for refrigerant piping work since Monobloc unit located outside is connected only to water piping. Further, hydronic components such as plate heat exchanger, expansion tank and water pump are included in the package.



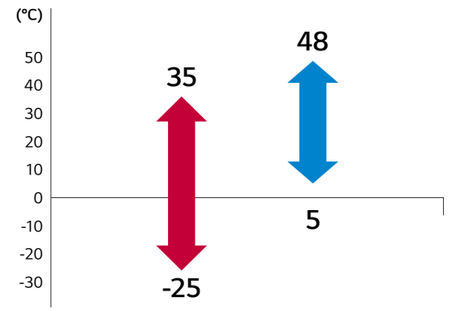
Capacity Range (Heating & Cooling)

Monobloc

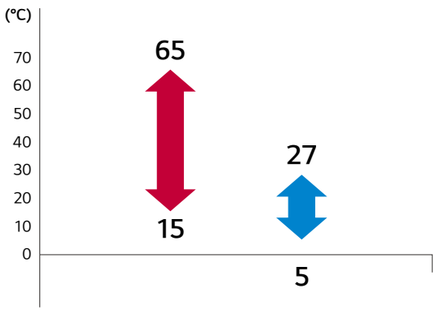
Capacity Range [kW]	5	6	7	8	9	10	11	12	13	14	15	16	17
Heating Capacity	●		●		●			●		●		●	
Cooling Capacity	●		●		●			●		●		●	

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature



PRODUCT FEATURES

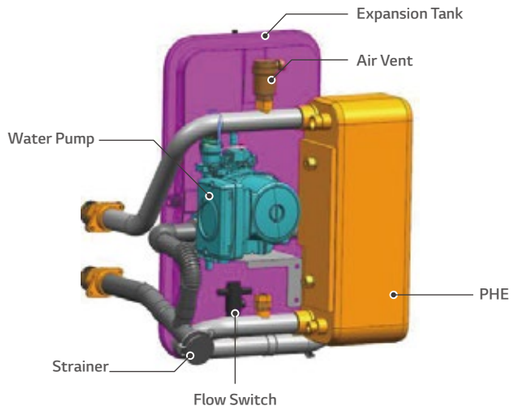
All in One Concept

Thanks to all in one concept and reduced weight, easier & quicker installation is possible.

- LG provides fully packaged THERMA V Monobloc that additional water side components are included in the package.
- No need to work refrigerant piping, easier and quicker installation.

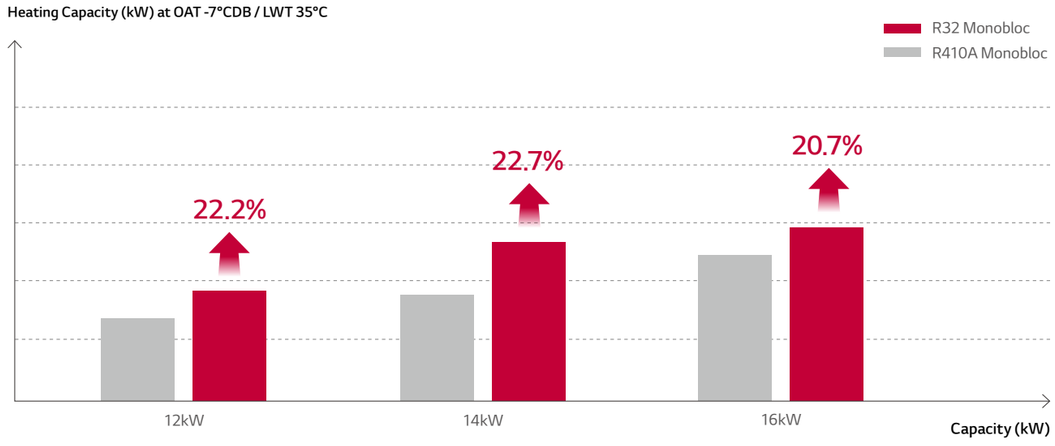


THERMA V R32 Monobloc



High Heating Performance even at Low Temperature

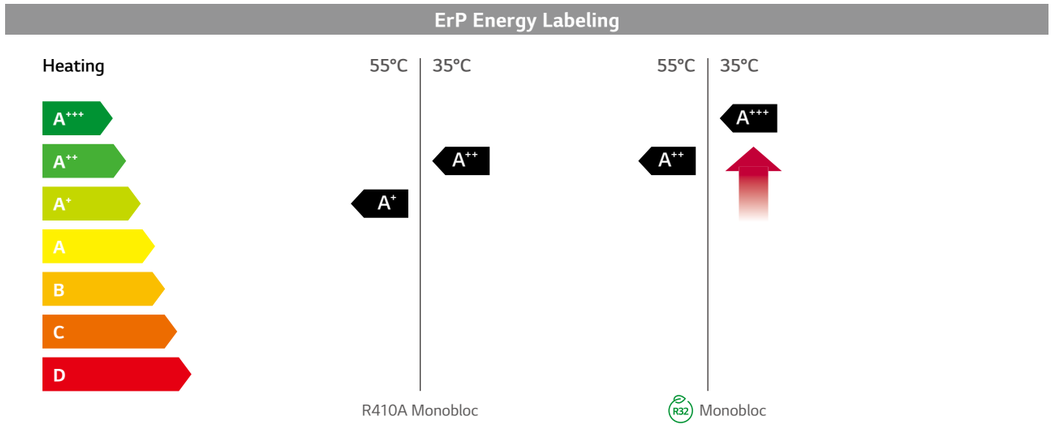
The R32 Monobloc provides excellent heating performance – especially at low ambient temperature. Heating capacity of R32 Monobloc at low ambient temperature is improved more than 20% compared to R410A Monobloc.



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

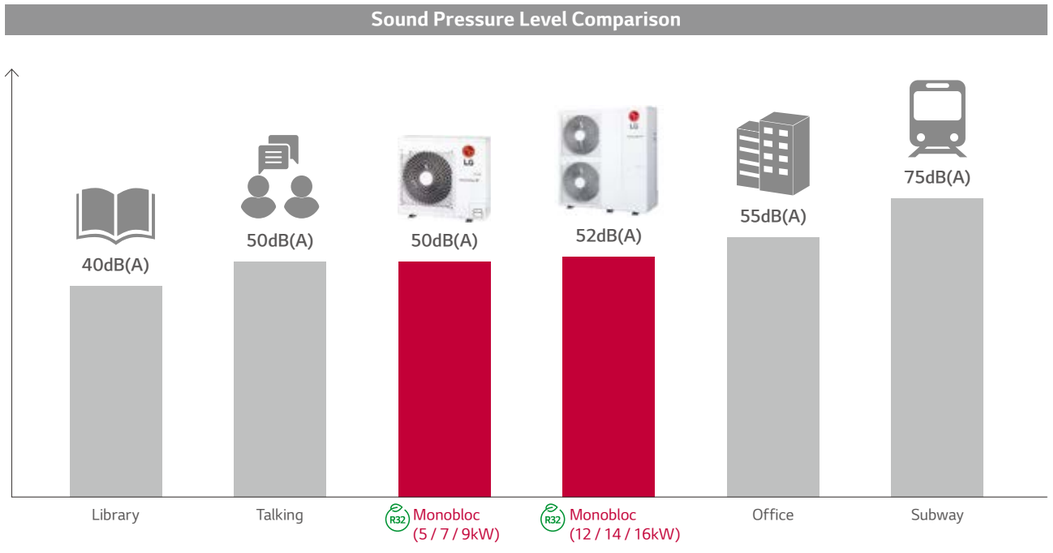
High Energy Efficiency

The energy label directive is a key factor of selecting heating device in Europe heating market.
The R32 Monobloc type has an energy label rating over A+++ in ErP energy labeling regulation.



Reduced Noise Level

The R32 Monobloc reduces noise level compared to previous models.



PRODUCT SPECIFICATION

Monobloc

HM051M U43
HM071M U43
HM091M U43



011-1W0243

EHPA for Austria, Switzerland and Germany

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
- Corrosion resistance black fin
- 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
		Rated Heat Output (P_{rated})	kW	5	6	6
		Seasonal Space Heating Efficiency (η_s)	%	175	175	175
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
		Annual Energy Consumption	kWh	2,551	2,668	2,784
	Average Climate Water Outlet 55°C	SCOP	-	3.12	3.12	3.12
		Rated Heat Output (P_{rated})	kW	5	5	5
		Seasonal Space Heating Efficiency (η_s)	%	122	122	122
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+	A+	A+
		Annual Energy Consumption	kWh	3,638	3,638	3,638

Nominal Capacity and Nominal 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	04.5	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			ℓ/min	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		
		Maximum Running Current		A	14.2	15.7	23.0
		Recommended Circuit Breaker		A	16	20	25
Wiring Connections		Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3		

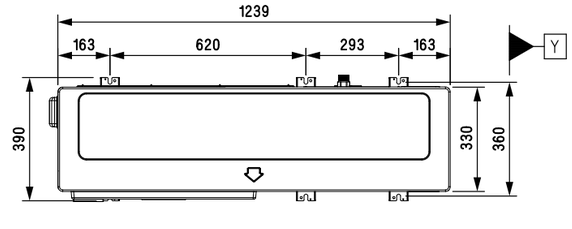
1) DHW 58 ~ 80°C Operating is available only when the booster heater is operating.
2) When fan coil unit not used.

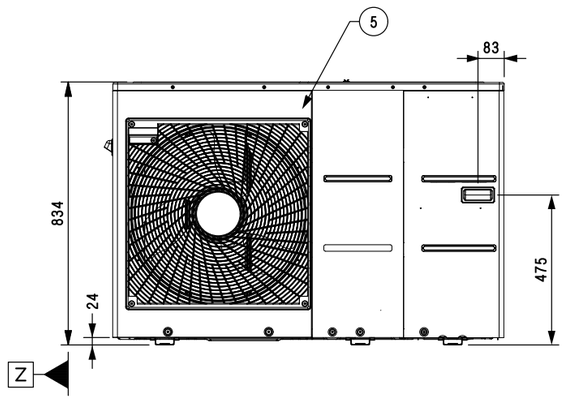
Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit 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 3741 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.

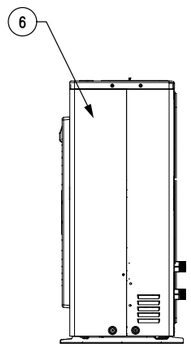
PRODUCT SPECIFICATION

Drawings

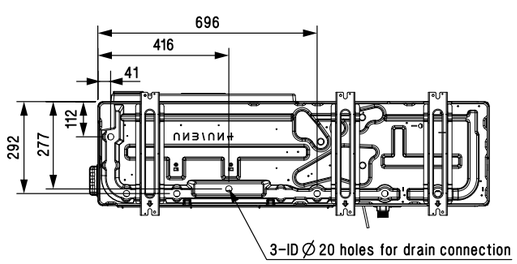
Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM051M U43	HM071M U43	HM091M U43







Side View



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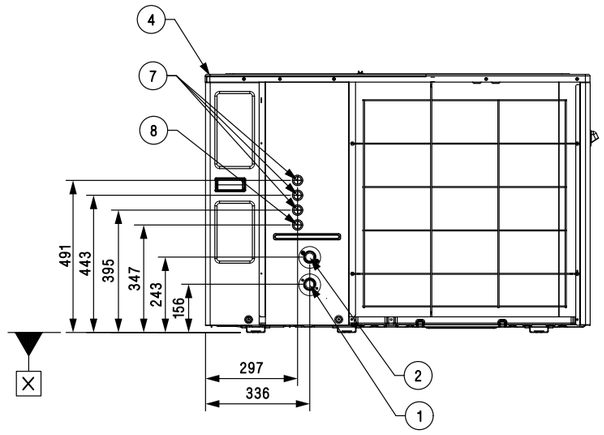
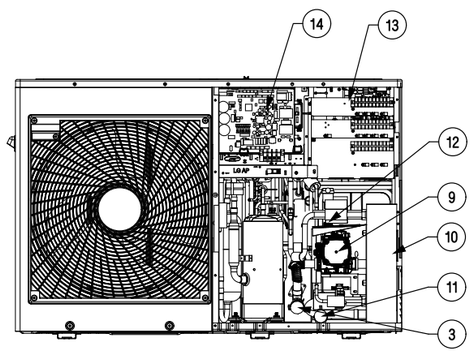




3D View

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

Monobloc

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



011-1W0244 EHPA for Austria, Switzerland and Germany

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
- Corrosion resistance black fin
- LG ThinQ
- KEYMARK / EHPA certification / MCS / Eurovent certification

Note
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
		Rated Heat Output (P_{rated})	kW	10	11	11
		Seasonal Space Heating Efficiency (η_s)	%	175	175	175
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
		Annual Energy Consumption	kWh	4,642	4,875	5,103
	Average Climate Water Outlet 55°C	SCOP	-	3.18	3.18	3.18
		Rated Heat Output (P_{rated})	kW	12	12	12
		Seasonal Space Heating Efficiency (η_s)	%	124	124	124
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+	A+	A+
		Annual Energy Consumption	kWh	7,795	7,795	7,795

Nominal Capacity and Nominal 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			ℓ/min	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		
		Maximum Running Current		A	33.0	34.0	35.0	12.0	12.5	13.0
		Recommended Circuit Breaker		A	40			16		
Wiring Connections		Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	6.0 x 3			4.0 x 5		

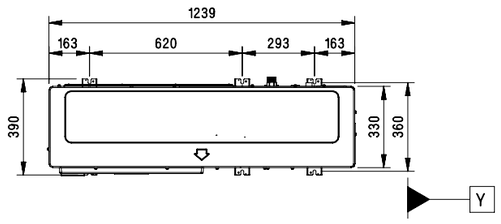
1) DHW 58 ~ 80°C Operating is available only when the booster heater is operating.
2) When fan coil unit not used.

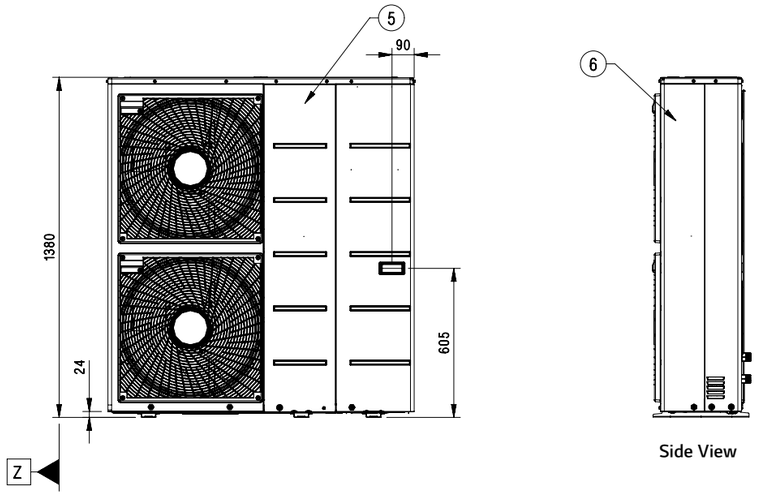
Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit 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 3741 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.

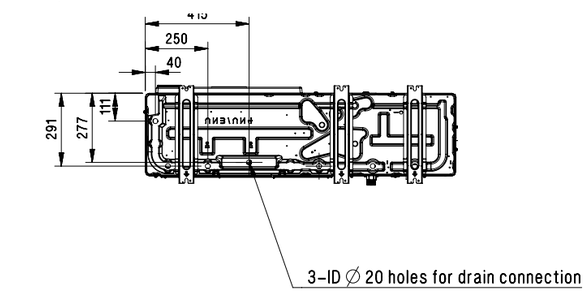
PRODUCT SPECIFICATION

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







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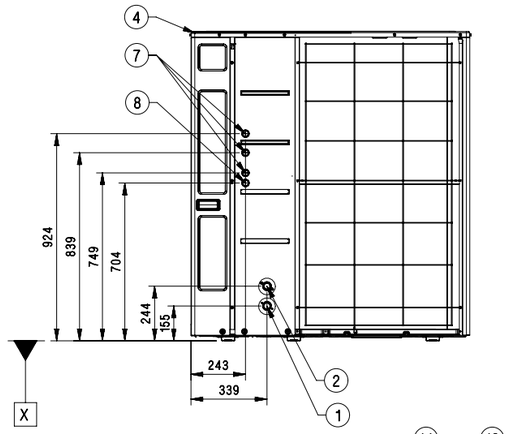
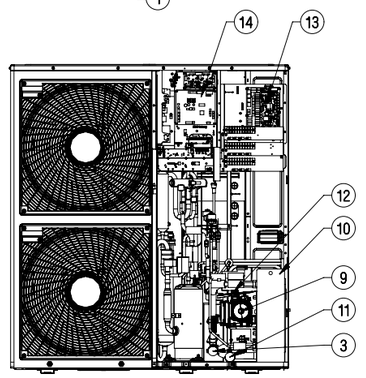
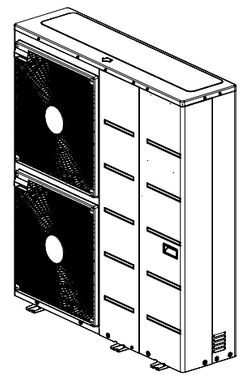






3D View

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

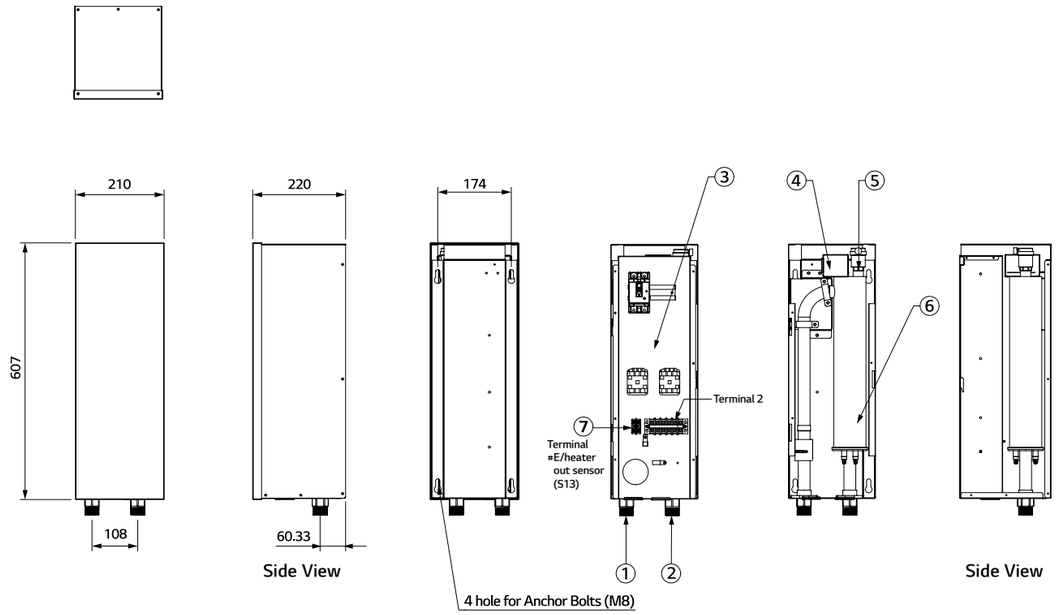
PRODUCT SPECIFICATION

Electric Back up Heater

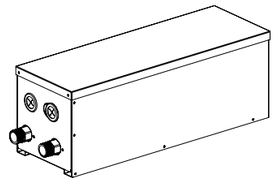
HA031M E1
HA061M E1
HA063M E1



[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
	Maximum Current	A	12.0	24.0	8.7
	Dimensions (W x H x D)	mm	210 x 607 x 220		
	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 3	4.0 x 3	2.5 x 4
	Communication Cable (H07RN-F)	mm^2 x cores	0.75 x 2	0.75 x 4	0.75 x 2

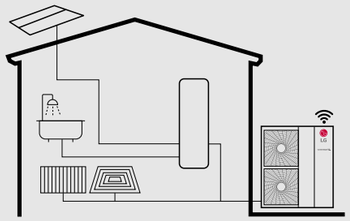
Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit 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	Backup Heater Outlet Sensor (S13)	Connect to unit (Heat pump)

NEW

THERMA V R32

SILENT MONOBLOC



Excellent Performance & Efficiency

- Very low noise level
- R1 compressor
- R32 refrigerant
- Flash gas injection
- Wide operation range
- Black fin
- 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

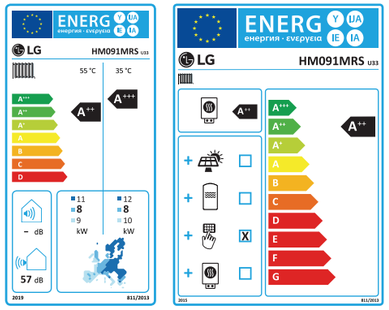
Easy Installation & Maintenance

- All in one
- LG heating configurator
- Clip connection

* Detailed description for each function is presented on page 22 ~ 37.



Energy Labeling



* A+++ to D scale.

Silent Monobloc Concept

LG's 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.



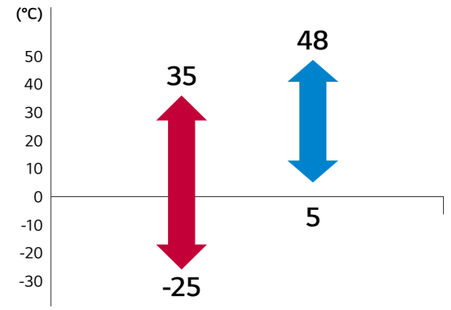
Capacity Range (Heating & Cooling)

Monobloc

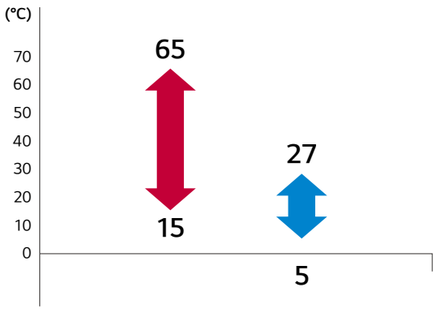
Capacity Range [kW]	5	6	7	8	9	10	11	12	13	14	15	16	17
Heating Capacity					●								
Cooling Capacity					●								

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.

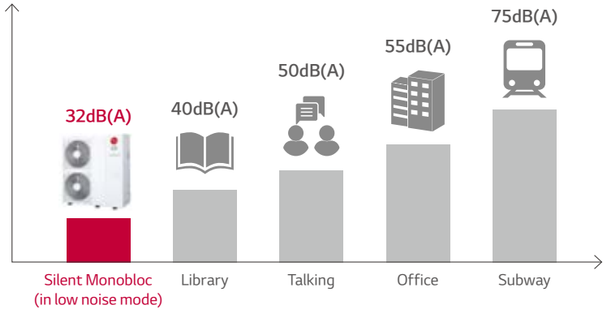
Low Noise Mode



54dB(A)
Sound Power Level

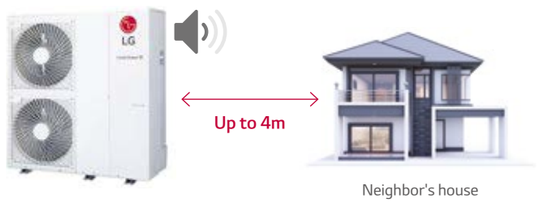
32dB(A)
Sound Pressure Level at 5m

Sound Pressure Level Comparison

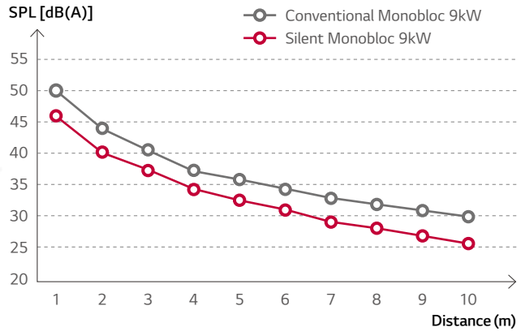


Installation Flexibility

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



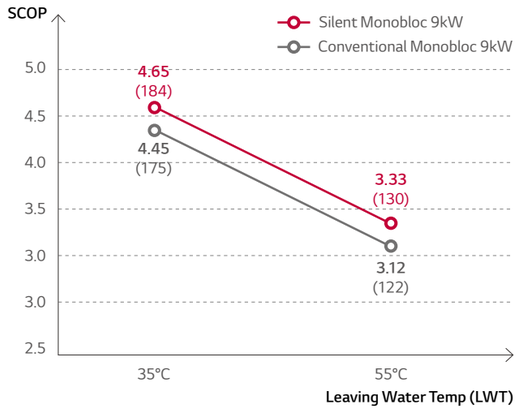
* Based on 9kW model with low noise mode

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)

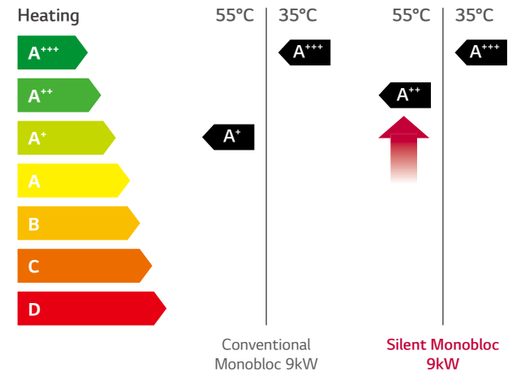
High Energy Efficiency

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



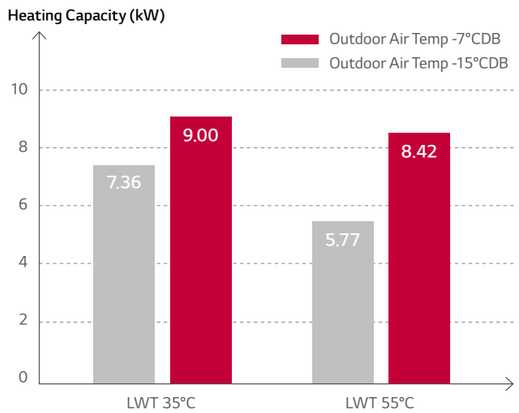
ErP Energy Labeling



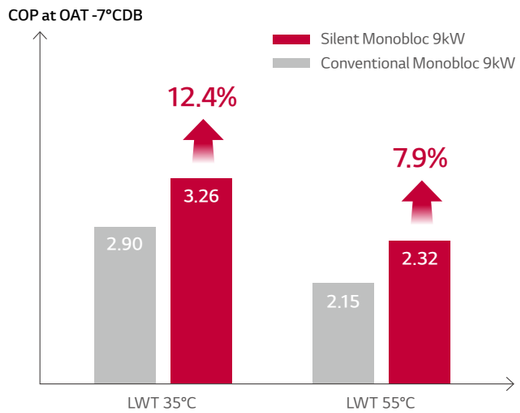
High Heating Performance even at Low Temperature

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

Silent Monobloc

HM091MRS U33



011-1W0191

EHPA for Austria, Switzerland and Germany

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
- Corrosion resistance black fin
- 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
		Rated Heat Output (P_{rated})	kW	8
		Seasonal Space Heating Efficiency (η_s)	%	184
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++
		Annual Energy Consumption	kWh	3,533
	Average Climate Water Outlet 55°C	SCOP	-	3.33
		Rated Heat Output (P_{rated})	kW	8
		Seasonal Space Heating Efficiency (η_s)	%	130
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++
		Annual Energy Consumption	kWh	4,971

Nominal Capacity and Nominal 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			ℓ/min	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 1m)		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
		Maximum Running Current		A	15.0
		Recommended Circuit Breaker		A	16
Wiring Connections		Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3

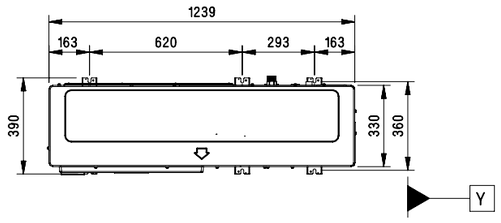
1) DHW 58 ~ 80°C Operating is available only when the booster heater is operating.
2) When fan coil unit not used.

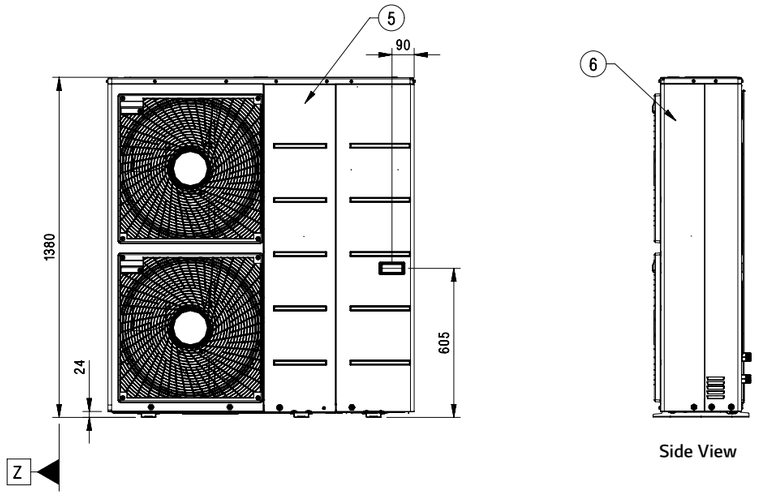
Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit 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 3741 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.

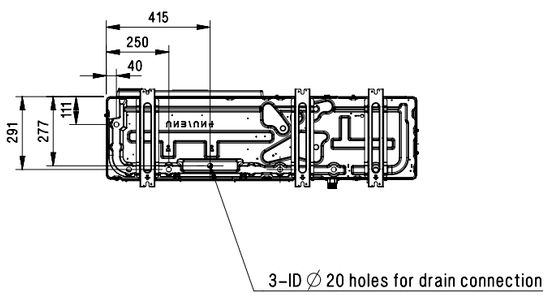
PRODUCT SPECIFICATION

Drawings

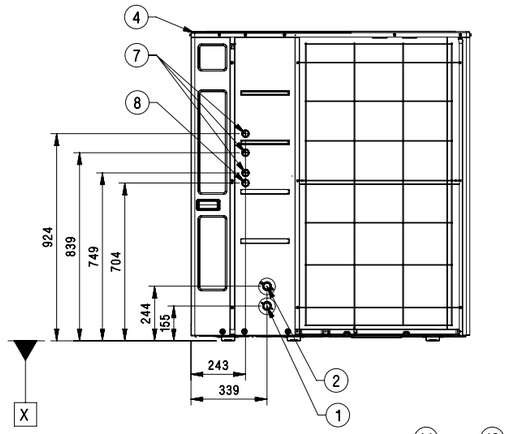
Category	Unit	Model Name
		Capacity (kW)
		9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Monobloc Unit	HM091MRS U33

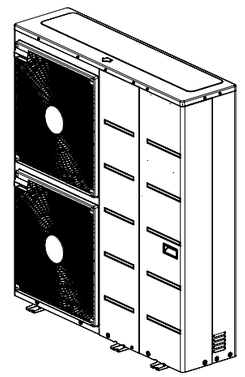






[Unit : mm]





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

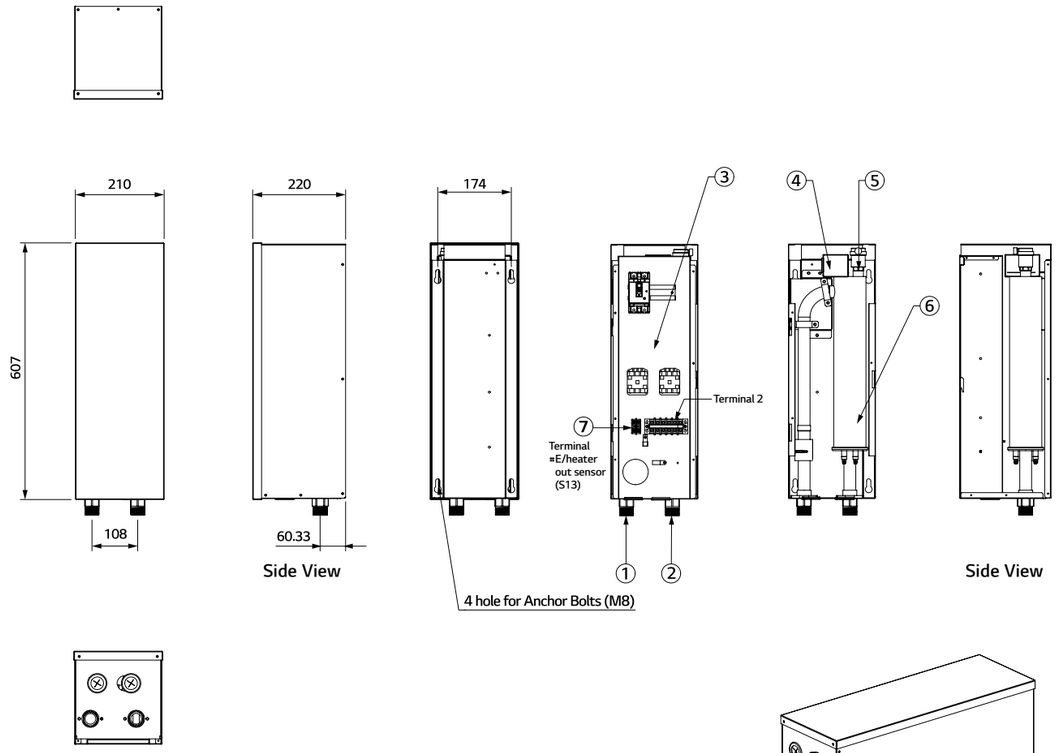
PRODUCT SPECIFICATION

Electric Back up Heater

HA031M E1
HA061M E1



[Unit : mm]



3D View

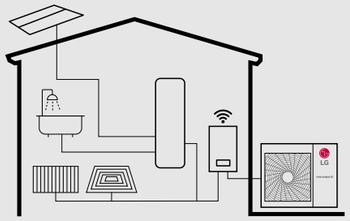
Product Specification

Electrical Specification		Unit	HA031M E1	HA063M 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	
	Maximum Current	A	12.0	24.0
	Dimensions (W x H x D)	mm	210 x 607 x 220	
	Net Weight (Unit)	kg	13.0	13.8
Wiring Connections	Power Supply Cable (Included Earth, H07RN-F)	mm^2 x cores	1.5 x 3	4.0 x 3
	Communication Cable (H07RN-F)	mm^2 x cores	0.75 x 2	0.75 x 4

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	Backup Heater Outlet Sensor (S13)	Connect to unit (heat pump)

SPLIT HYDRO BOX TYPE



Excellent Performance & Efficiency

- R1 compressor
- R32 refrigerant
- Flash gas injection
- Wide operation range
- Black fin
- Solar thermal
- 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

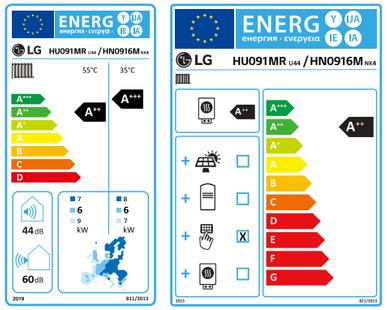
Easy Installation & Maintenance

- LG heating configurator
- Clip connection
- Flexible piping design

* Detailed description for each function is presented on page 22 ~ 37.



Energy Labeling



* 9kW 1Ø model.
* A+++ to D scale.

Split Hydro Box Concept

Split is a hydro box type which is that the indoor unit and outdoor unit are separated. Between two units are connected by refrigerant piping only, thus hydronic components such as plate heat exchanger, expansion tank and water pump are located inside of the indoor unit. For that reason, it is easy to withstand freezing issues regardless of outside ambient temperature.



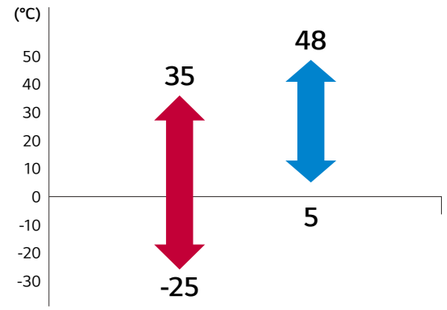
Capacity Range (Heating & Cooling)

Split Hydro Box Type

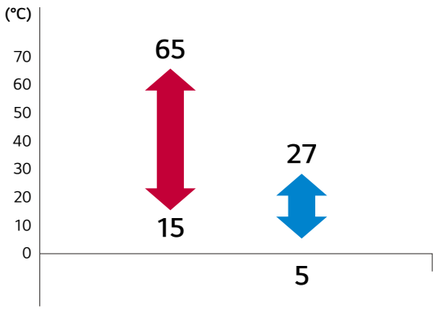
Capacity Range [kW]	5	6	7	8	9	10	11	12	13	14	15	16	17
Heating Capacity	●		●		●								
Cooling Capacity	●		●		●								

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature

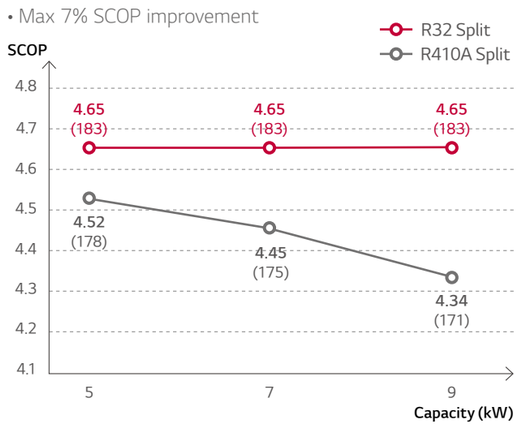


PRODUCT FEATURES

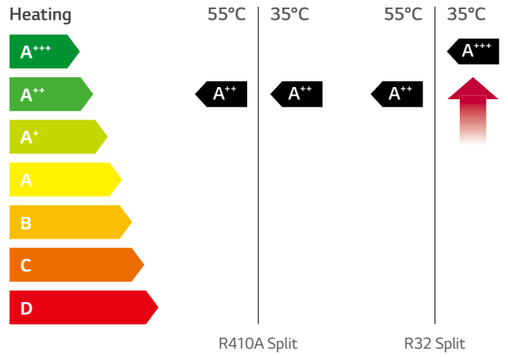
High Energy Efficiency

The energy label directive is a key factor of selecting heating device in Europe heating market.
The R32 Split type has an energy label rating A+++ in ErP energy labeling regulation.

SCOP[2)]



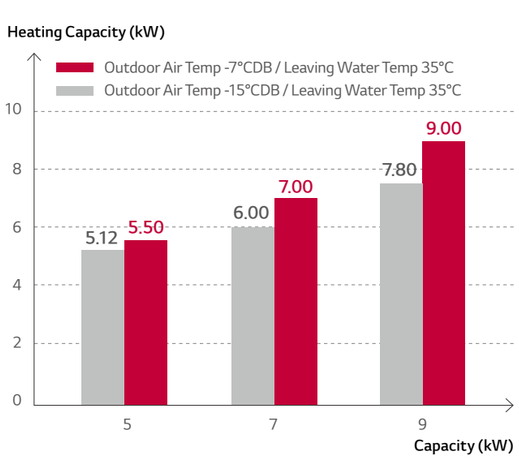
ErP Energy Labeling

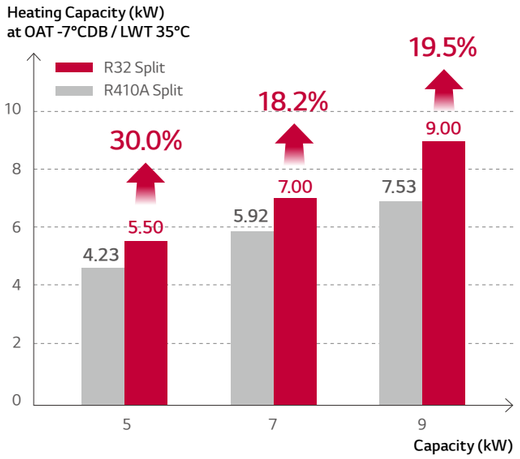


* Test Condition
Test procedure follows EN14825 (Low Temp average),
Based on the single phase model line up.

High Heating Performance even at Low Temperature

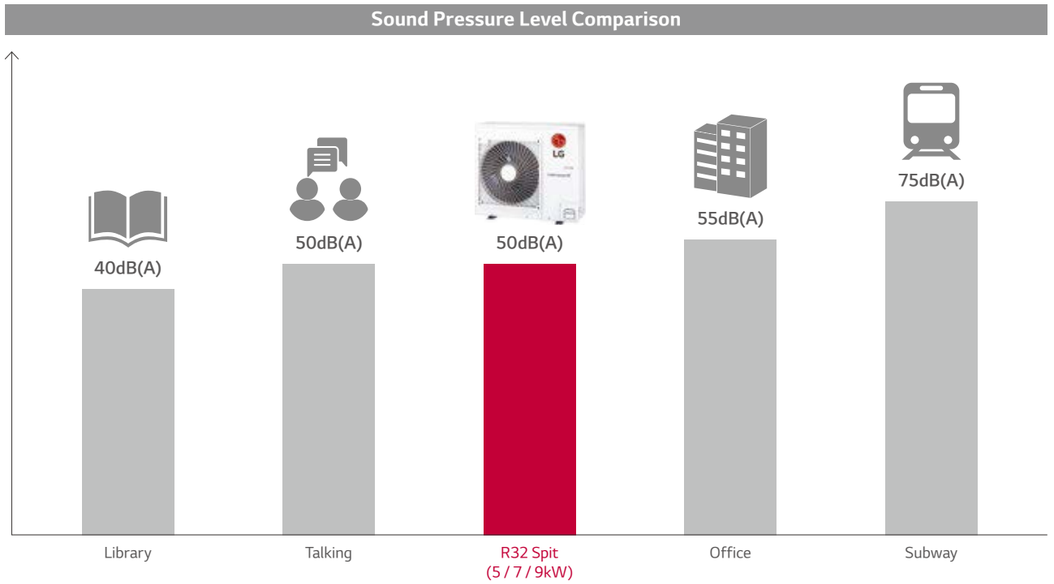
The R32 Split provides excellent heating performance – especially at low ambient temperature. Heating capacity at OAT -7°CDB is same as normal capacity and heating capacity at OAT -15°CDB is more than 85% of normal capacity. Heating capacity of R32 Split at low ambient temperature is improved more than 18% compared to R410A Split.





Reduced Noise Level

The R32 Split has a noise level as low as the conversation.



PRODUCT SPECIFICATION

Split Hydro Box Type

IDU
HN0916M NK4
ODU
HU051MR U44
HU071MR U44
HU091MR U44



011-1W0315 EHPA for Austria, Switzerland and Germany

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
- Corrosion resistance black fin
- 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
		Rated Heat Output (P_{rated})	kW	6	6	6
		Seasonal Space Heating Efficiency (η_s)	%	183	183	183
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
		Annual Energy Consumption	kWh	2,444	2,552	2,669
	Average Climate Water Outlet 55°C	SCOP	-	3.23	3.23	3.23
		Rated Heat Output (P_{rated})	kW	6	6	6
		Seasonal Space Heating Efficiency (η_s)	%	126	126	126
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++
		Annual Energy Consumption	kWh	3,843	3,843	3,843

Nominal Capacity and Nominal 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 (Leaving Water)	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)			ℓ/min	15.81	20.12	25.87
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	950 x 834 x 330		
Weight	Unit		kg	60.0		
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220 ~ 240, 1, 50		
	Maximum Running Current		A	14.2	15.7	23.0
	Recommended Circuit Breaker		A	16	20	25
Wiring Connections	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3		

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 3741 standard.
   Therefore, these values can be increased owing to ambient conditions during operation.
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 4
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
	Maximum Current		A	32.0
	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3

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

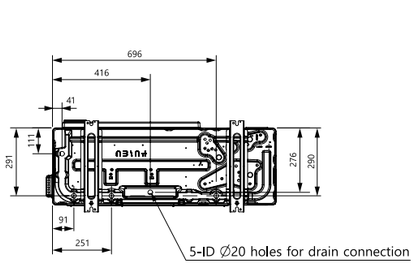
PRODUCT SPECIFICATION

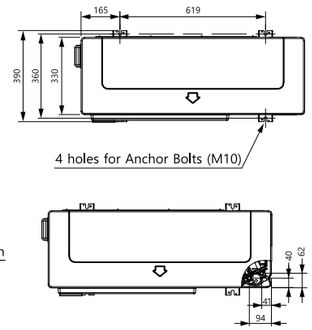
Drawings

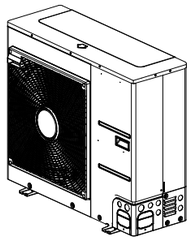
Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
	Indoor Unit	HN0916M NK4		

HU051MR U44 / HU071MR U44 / HU091MR U44

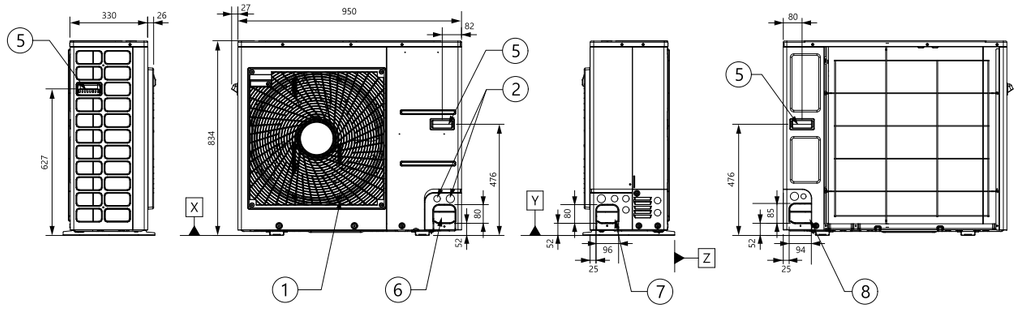
[Unit : mm]



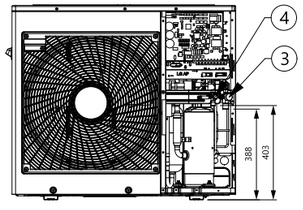




3D View

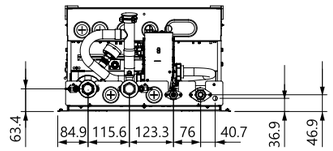


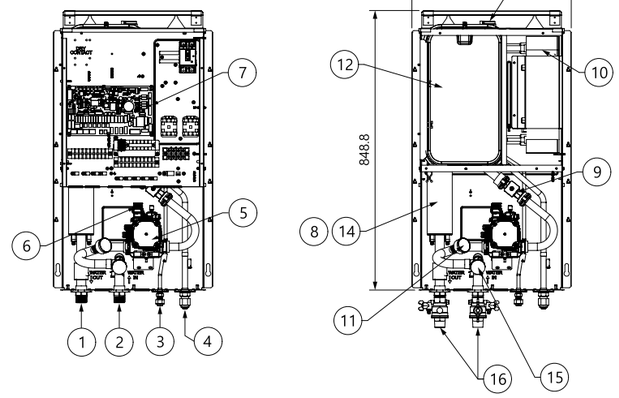
No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (Front)	-
7	Pipe Routing Hole (Side)	-
8	Pipe Routing Hole (Back)	-



Piping Connection Port

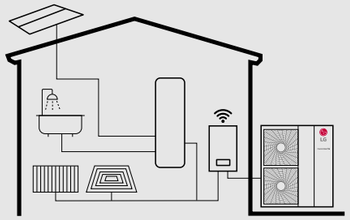
[Unit : mm]





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

SPLIT HYDRO BOX TYPE



Excellent Performance & Efficiency

- Twin rotary compressor
- R410A refrigerant
- Wide operation range (up to 57°C)
- Gold fin
- 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

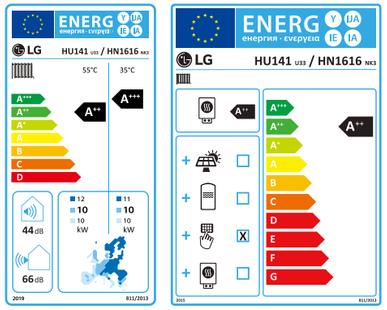
Easy Installation & Maintenance

- LG heating configurator
- Clip connection
- Flexible piping design

* Detailed description for each function is presented on page 22 ~ 37.



Energy Labeling



* 14kW 1Ø model.
* A+++ to D scale.

Split Hydro Box Concept

Split is a hydro box type which is that the indoor unit and outdoor unit are separated. Between two units are connected by refrigerant piping only, thus hydronic components such as plate heat exchanger, expansion tank and water pump are located inside of the indoor unit. For that reason, it is easy to withstand freezing issues regardless of outside ambient temperature.





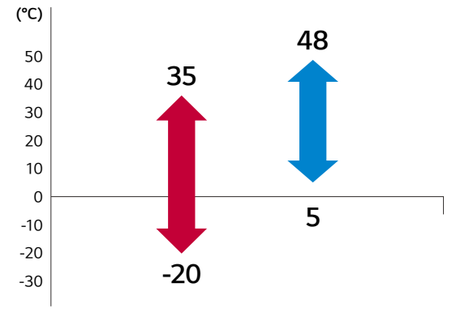
Capacity Range (Heating & Cooling)

Split Hydro Box Type

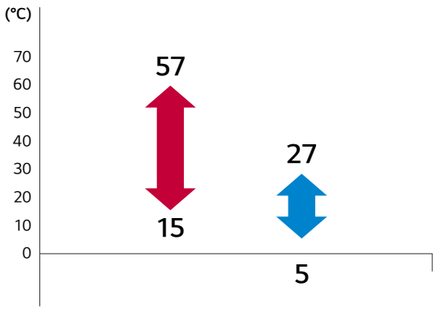
Capacity Range [kW]	6	8	10	11	12	13	14	15	16	17
Heating Capacity					●		●		●	
Cooling Capacity			●		●	●				

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature



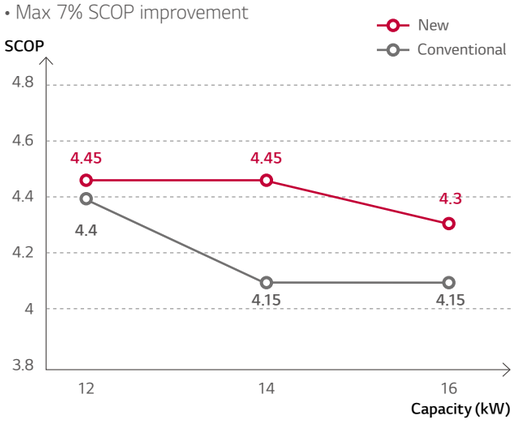
PRODUCT FEATURES

High Energy Efficiency

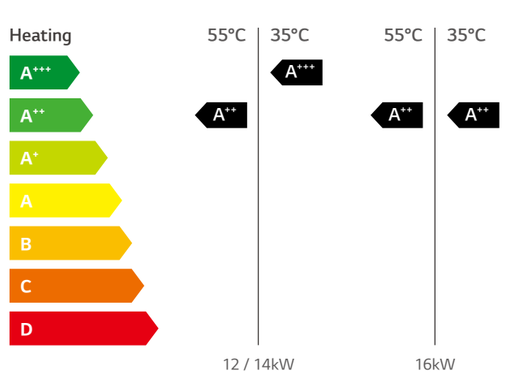
The energy label directive is a key factor of selecting heating device in Europe heating market.
THERMA V Split type has an energy label rating over A+++ in ErP energy labeling regulation.

SCOP

• Max 7% SCOP improvement



ErP Energy Labeling

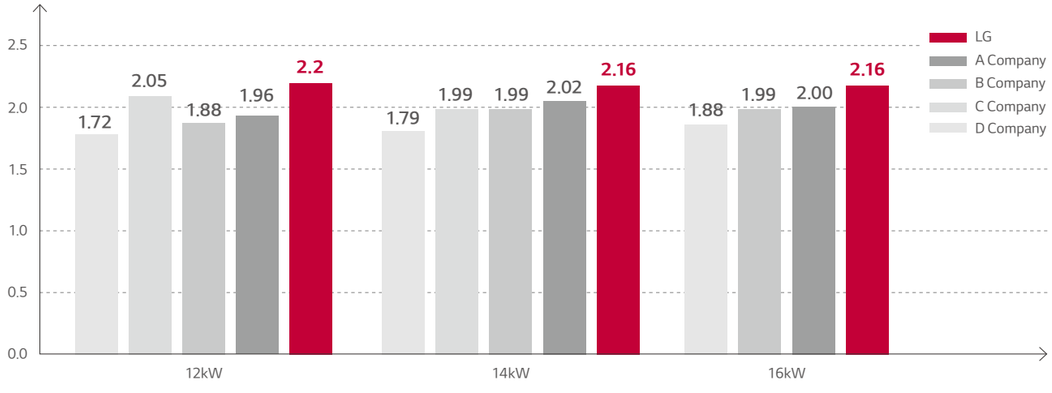


* Test Condition
Test procedure follows EN14825 (Low temp average), Based on the single phase model line up.

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)

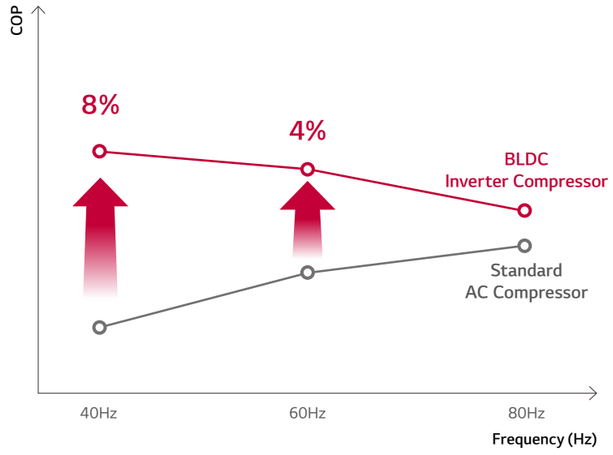


* Peak value / Split models

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

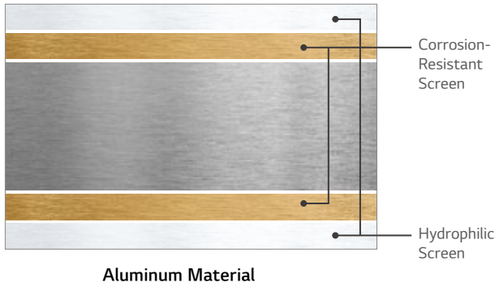




Corrosion Resistant Heat Exchanger

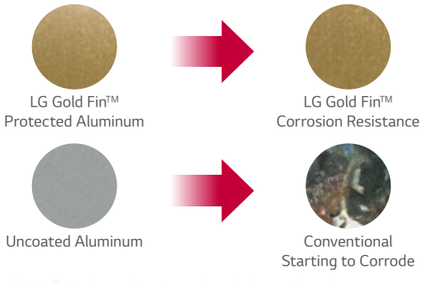
Outdoor heat exchanger is coated with a gold-colored anti-corrosive epoxy treatment on the aluminum coil, to prevent corrosion. This exhibits pre-eminent heat transfer properties of the coil for a lengthy period, whereas non-Gold Fin™ coils progressively lose efficiency due to surface corrosion. Gold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

Composition of Fin Screens



Aluminum Material

Salt Spray Test for 15 Days



• Gold Fin™ is long lasting, durable and makes the outdoor unit look prestigious.

PRODUCT SPECIFICATION

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
- Maximum 57°C LWT
- Intuitive interface
- LG ThinQ
- Corrosion resistant heat exchanger (Gold Fin)
- KEYMARK / EHPA certification / MCS / Eurovent certification

Note
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	4.3
		Rated Heat Output (P_{rated})	kW	9	10	10
		Seasonal Space Heating Efficiency (η_s)	%	175	175	169
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A++
		Annual Energy Consumption	kWh	4,177	4,408	4,802
	Average Climate Water Outlet 55°C	SCOP	-	3.32	3.32	3.32
		Rated Heat Output (P_{rated})	kW	10	10	10
		Seasonal Space Heating Efficiency (η_s)	%	130	130	130
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++
		Annual Energy Consumption	kWh	6,154	6,154	6,154

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	4.3
		Rated Heat Output (P_{rated})	kW	9	10	10
		Seasonal Space Heating Efficiency (η_s)	%	175	175	169
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A++
		Annual Energy Consumption	kWh	4,179	4,410	4,804
	Average Climate Water Outlet 55°C	SCOP	-	3.32	3.32	3.32
		Rated Heat Output (P_{rated})	kW	10	10	10
		Seasonal Space Heating Efficiency (η_s)	%	130	130	130
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++
		Annual Energy Consumption	kWh	6,156	6,156	6,156

Nominal Capacity and Nominal 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

Split Hydro Box Type

Product Specification (Outdoor Unit)

Description			Unit	HU121 U33	HU141 U33	HU161 U33	HU123 U33	HU143 U33	HU163 U33
Operation Range (Leaving Water)	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)			ℓ/min	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		
	Maximum Running Current		A	25.0			16.1		
	Recommended Circuit Breaker		A	40			20		
Wiring Connections	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	6.0 x 3			2.5 x 5		

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 3741 standard. Therefore, these values can be increased owing to ambient conditions during operation.
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 4	
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
	Maximum Current		A	32.0	16.3
	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3	2.5 x 4

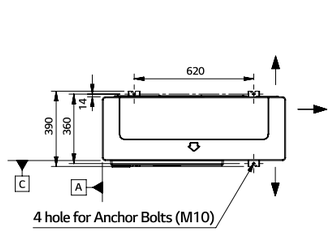
1) DHW 58 ~ 80°C Operating is available only when the booster heater is operating.
2) When fan coil unit not used.

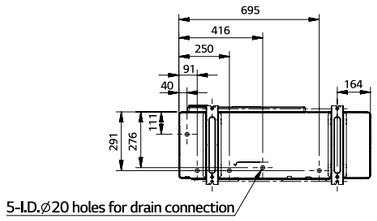
PRODUCT SPECIFICATION

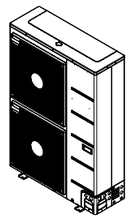
Drawings

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		

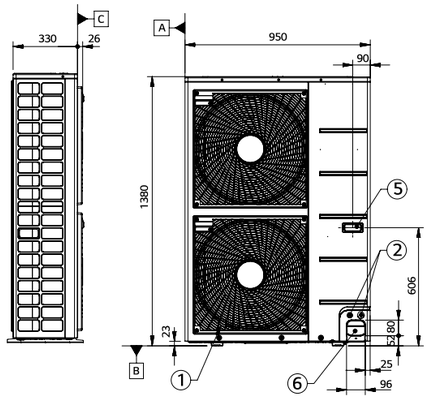
HU121 U33 / HU141 U33 / HU161 U33 / HU123 U33 / HU143 U33 / HU163 U33 [Unit : mm]

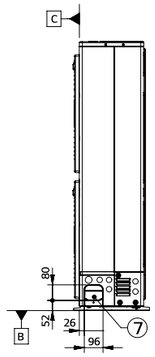


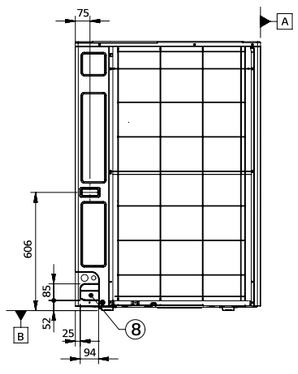


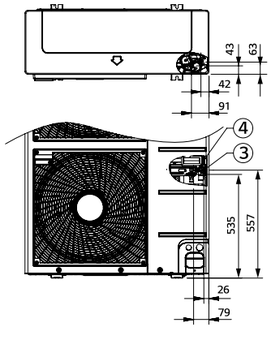


3D View







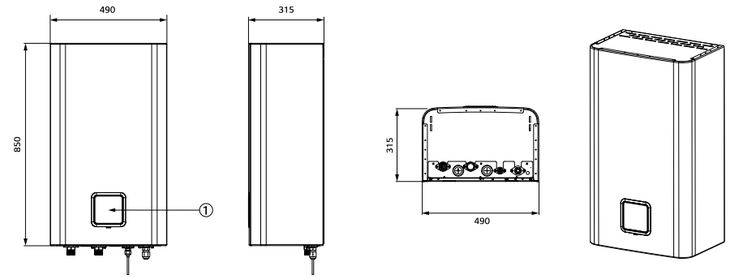


Piping Connection Port

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)	-

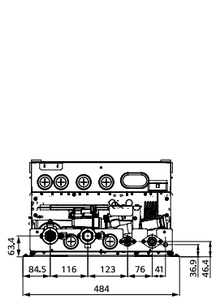
HN1616 NK3 / HN1639 NK3 [Unit : mm]

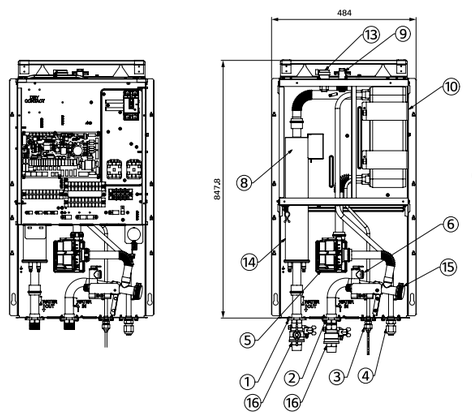
External

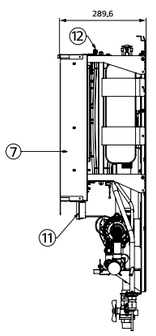


No.	Part Name	Description
1	Control Panel	Built-in remote controller

Internal

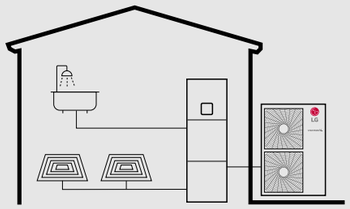






No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1 inch
2	Entering Water pipe	Male PT 1 inch
3	Refrigerant Pipe	Ø9.52 (mm)
4	Refrigerant Pipe	Ø15.88 (mm)
5	Water Pump	Max head 9.5 / 7 / 6m
6	Safety Valve	Open at water pressure 3bar
7	Control Box	PCB and terminal blocks
8	Thermal Switch	Cut-off 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

SPLIT DHW TANK INTEGRATED TYPE



Excellent Performance & Efficiency

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

User Convenience

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

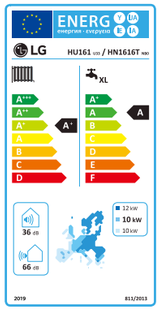
Easy Installation & Maintenance

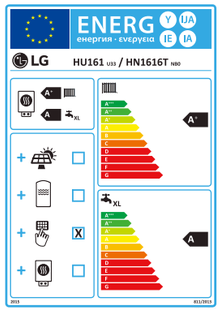
- All in one
- Flexible piping design

* Detailed description for each function is presented on page 22 ~ 37.



Energy Labeling

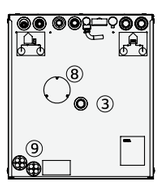


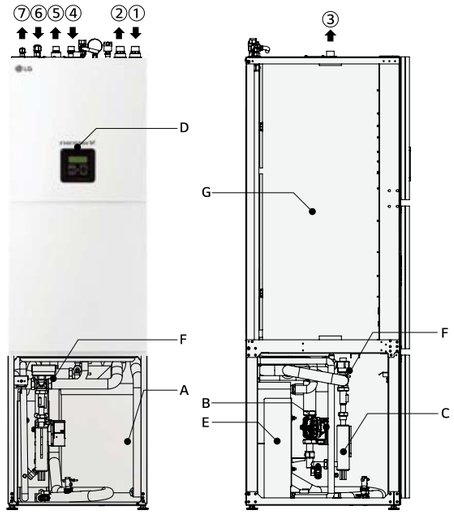


* 16kW 1Ø model.
* A+++ to D scale.

Split DHW Tank Integrated Concept

IWT (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 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	3Way Valve
7	Liquid Pipe 3/8" - Refrigerant	G	DHW Tank
8	Mg. Anode		
9	Wiring Connection		

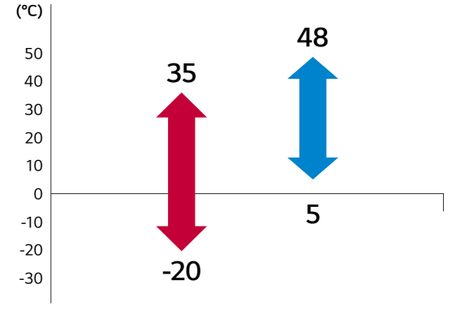
Capacity Range (Heating & Cooling)

Split DHW Tank Integrated Type

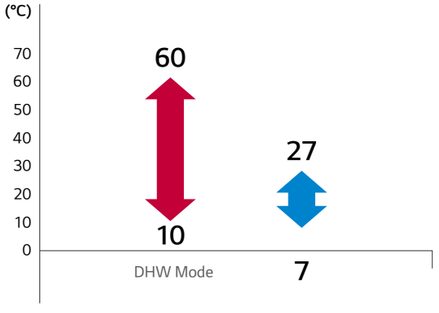
Capacity Range [kW]	5	6	7	8	9	10	11	12	13	14	15	16	17
Heating Capacity					●			●		●		●	
Cooling Capacity					●	●	●	●					

Operation Range (Heating & Cooling)

Ambient Temperature



Leaving Water Temperature

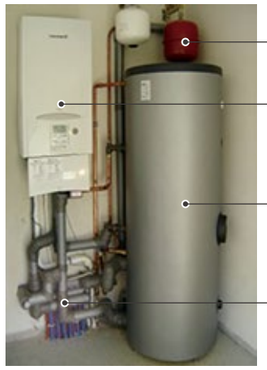


PRODUCT FEATURES

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.

New (DHW Tank Integrated Type)



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

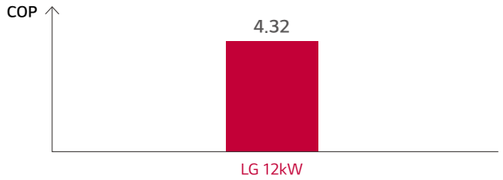
THERMA V Split IWT indoor unit is suitable to install in indoor space like utility room, kitchen, etc. thanks to the sophisticated & harmonious exterior with white color and modern design.



Space Heating Efficiency

The energy label directive is a key factor of selecting heating device in Europe heating market.
THERMA V split DHW tank integrated type has an energy label rating A++ in ErP energy labeling regulation.

* 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.

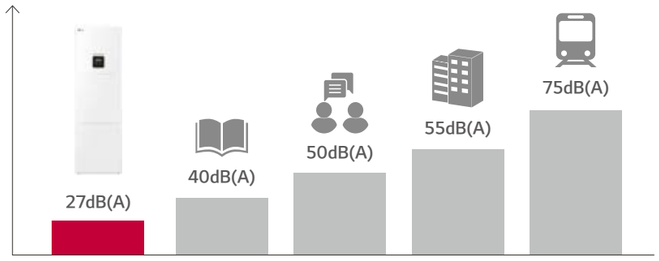
Operation Noise

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

Quiet operation.
Calm and restfulness indoor environment.



Sound Pressure Level Comparison

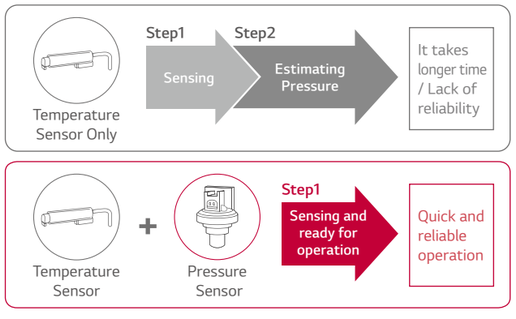


Temperature + Pressure Control & Quick Operating Response

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

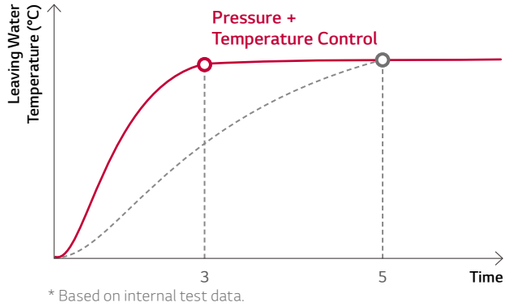
Faster and More Exact with Pressure Control

- 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

Split DHW Tank Integrated Type

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
- Corrosion resistant heat exchanger (Gold Fin)
- EHPA 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)

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
		Rated Heat Output (P_{rated})	kW	7	10	10	11
		Seasonal Space Heating Efficiency (η_s)	%	159	165	163	163
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++	A++
		Annual Energy Consumption	kWh	3,321	4,820	5,183	5,376
	Average Climate Water Outlet 55°C	SCOP	-	2.88	3.00	3.00	3.00
		Rated Heat Output (P_{rated})	kW	6	10	10	10
		Seasonal Space Heating Efficiency (η_s)	%	112	117	117	117
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+	A+	A+	A+
		Annual Energy Consumption	kWh	4,020	6,755	6,755	6,755
Domestic Hot Water Heating	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
		Annual Energy Consumption	kWh	1,710	1,881	1,881	1,881

Nominal Capacity and Nominal 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 (Leaving Water)	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)				ℓ/min	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		
	Maximum Running Current			A	19.0	25.0			16.1		
	Recommended Circuit Breaker			A	30	40			20		
Wiring Connections	Power Supply Cable (Included Earth, H07RN-F)			mm^2 x cores	4.0 x 3	6.0 x 3			2.5 x 5		

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 3741 standard. Therefore, these values can be increased owing to ambient conditions during operation.
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

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
	Maximum Current		A	11.1
Wiring Connections	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3
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
	Maximum Current		A	19.9
Wiring Connections	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	4.0 x 3
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
	Maximum Current		A	11.1
Wiring Connections	Power Supply Cable (Included Earth, H07RN-F)		mm^2 x cores	2.5 x 5

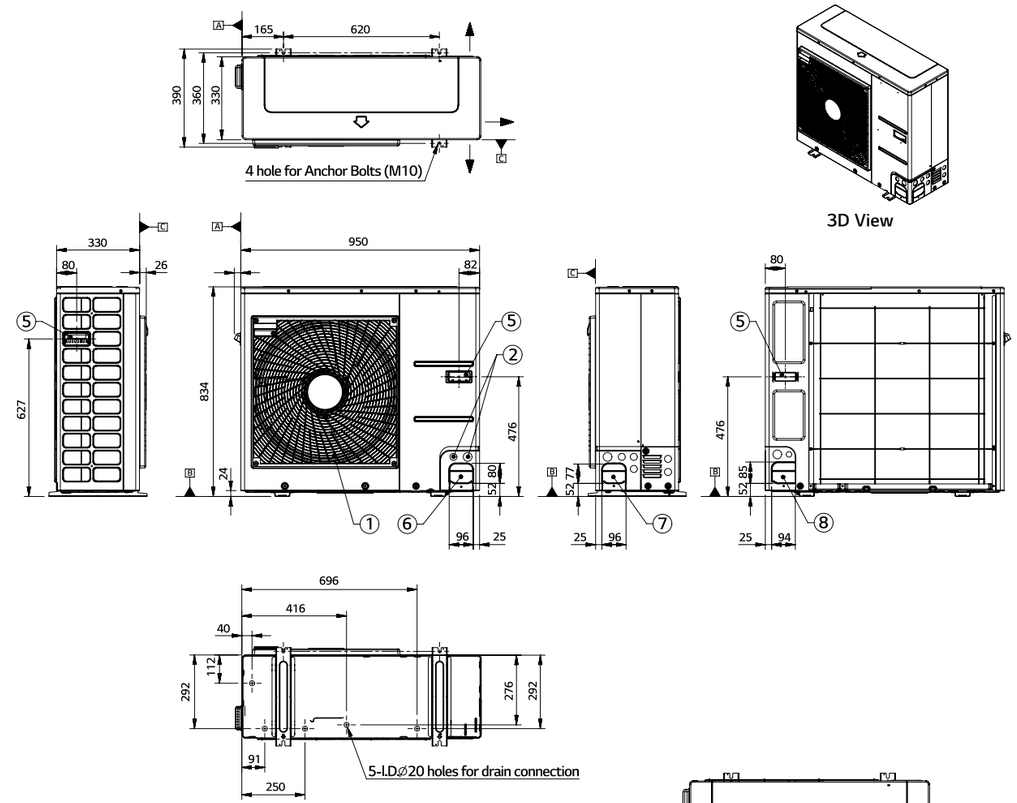
Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national code. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit 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 3741 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.

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]



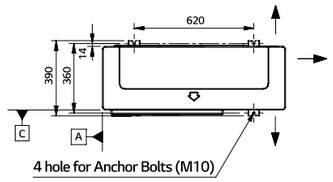
No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (Front)	-
7	Pipe Routing Hole (Side)	-
8	Pipe Routing Hole (Back)	-

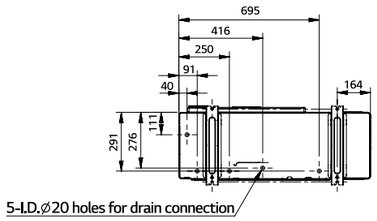
Piping Connection Port

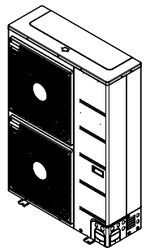
PRODUCT SPECIFICATION

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

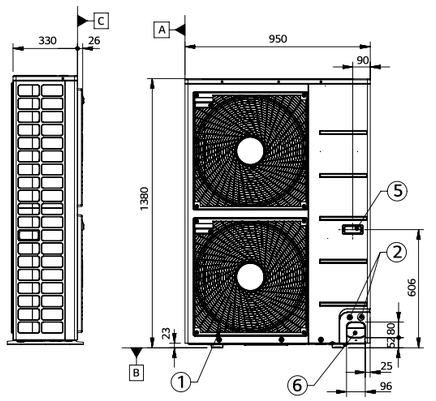
[Unit : mm]

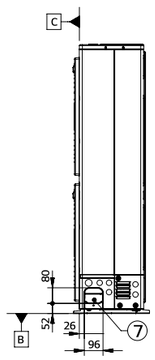


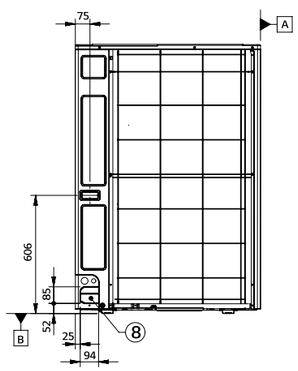




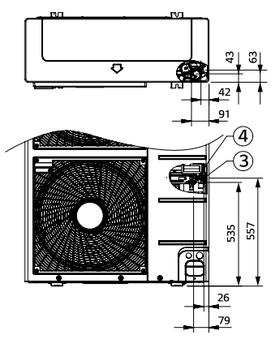
3D View







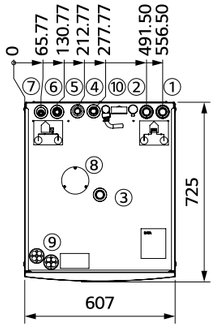
No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (Front)	-
7	Pipe Routing Hole (Side)	-
8	Pipe Routing Hole (Back)	-

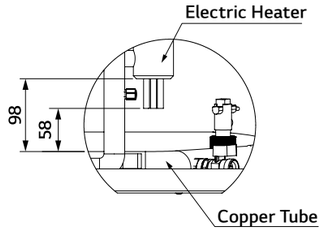


Piping Connection Port

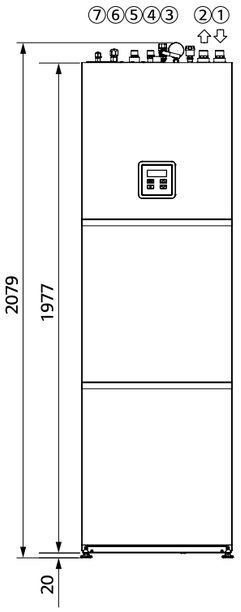
HN1616T NB0

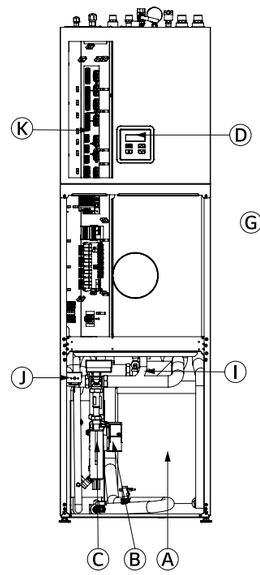
[Unit : mm]

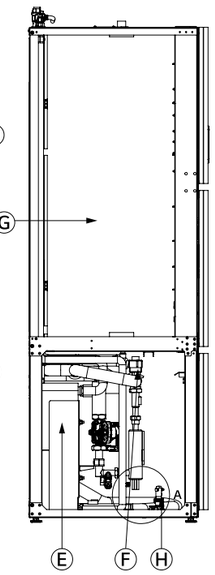




DETAILA
SCALE 1 : 5



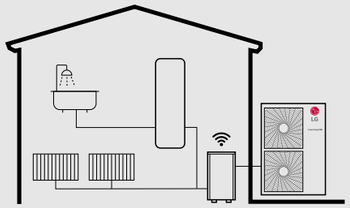




No.	Part Name	No.	Part Name
1	Heating / Cooling Inlet	A	Buffer Tank
2	Heating / Cooling Outlet	B	Circulating Pump
3	Warm Sanitary	C	Electric Flow Heater
4	DHW - Circulation	D	TT3000 Controller
5	Cold Sanitary Water - Supply	E	Condenser
6	Gas Pipe 5/8" - Refrigerant	F	3Way Valve
7	Liquid Pipe 3/8" - Refrigerant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

THERMA V

SPLIT HIGH TEMPERATURE



Excellent Performance & Efficiency

- Cascade 2 stage compression
- Wide operation range (up to 80°C)
- Black fin
- Energy state

User Convenience

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

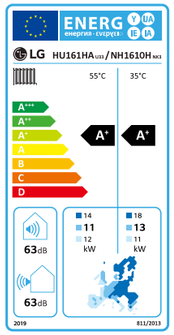
Easy Installation & Maintenance

- Flexible piping design

* Detailed description for each function is presented on page 22 ~ 37.

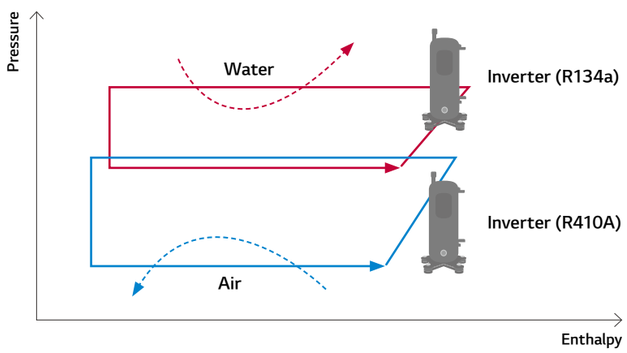


Energy Labeling



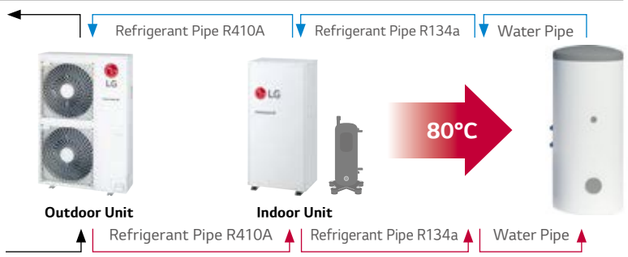
* 16kW 1Ø model.
* A+++ to D scale.

THERMA V High Temperature Cycle



High Temperature Concept

THERMA V high temperature is a kind of split type that consists of an indoor unit and an outdoor unit.
Thanks to the cascade 2 stage compression technology, it can supply such high leaving water temperature - 80°C with high energy efficiency.

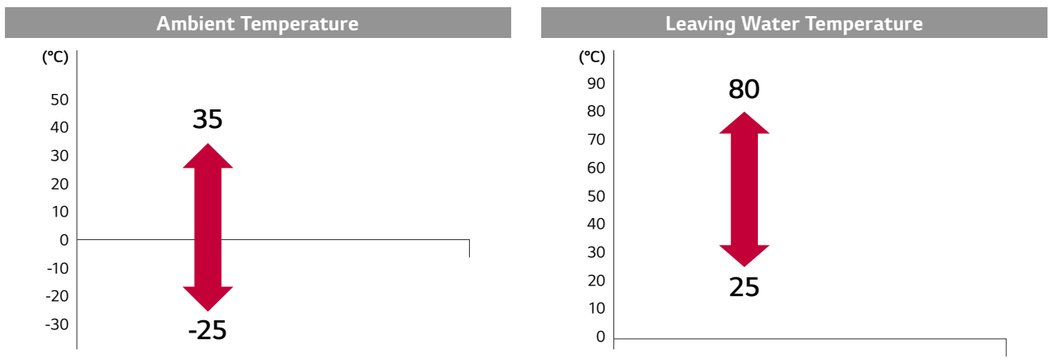


Capacity Range (Heating)

High Temperature Model

Capacity Range [kW]	5	6	7	8	9	10	11	12	13	14	15	16	17
Heating Capacity												●	

Operation Range (Heating & Cooling)

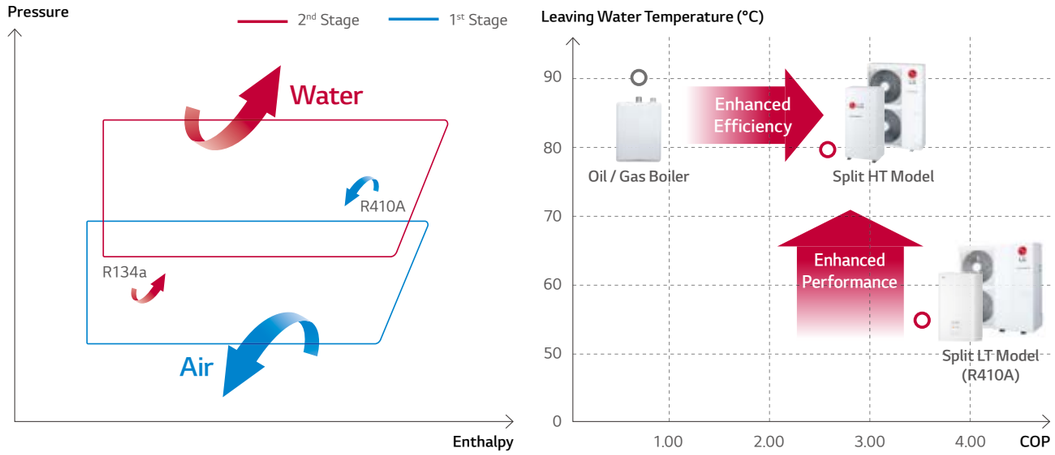


PRODUCT FEATURES

Cascade 2 Stage Compression Technology

THERMA V high temp can produce Max 80°C hot water with high efficiency through cascade 2 stage compression (R410A to R134a) technology in order to replace simply an existing old boiler heating system which demands hot water supply.

High Temperature through Cascade Cycle Technology



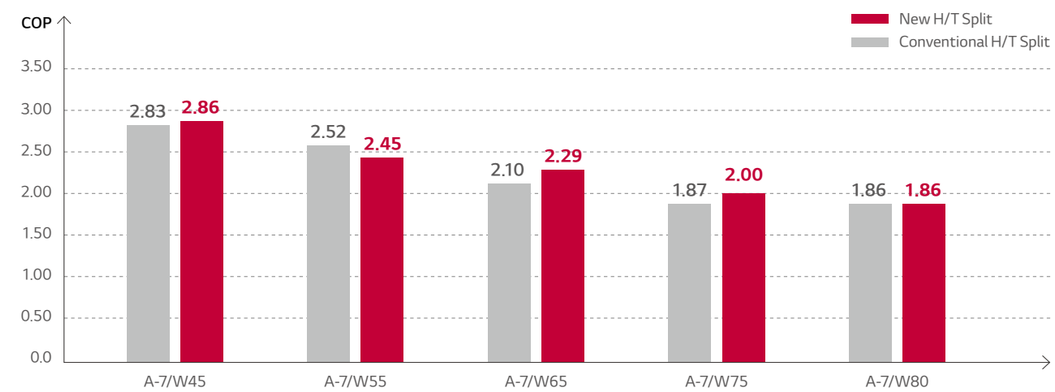
* Condition for HT model : Outdoor air temp 18°C, Entering water temp 70°C
* Condition for LT model : Outdoor air temp 18°C, Entering water temp 55°C

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

High Energy Efficiency

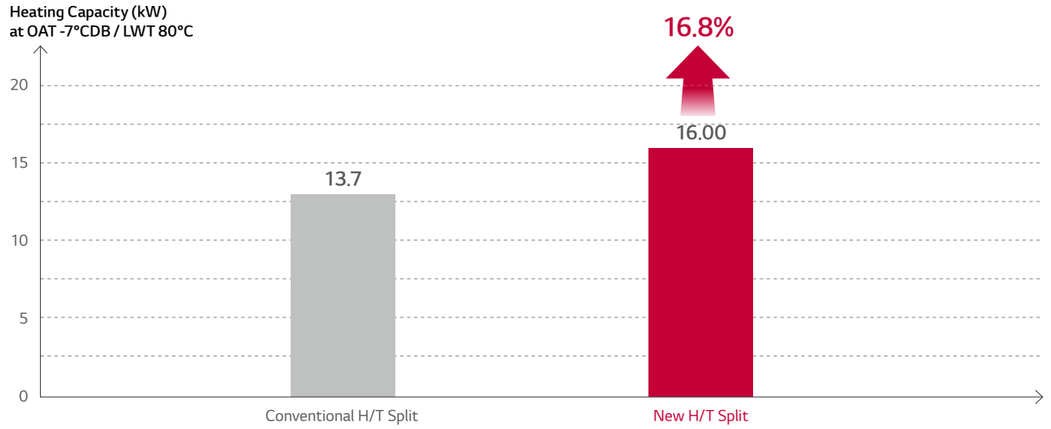
By applying efficient compressor and optimally designed structure, the more energy saving, the lower operating cost make sooner return on initial investment.

Heating COP at -7°C Outdoor Temperature



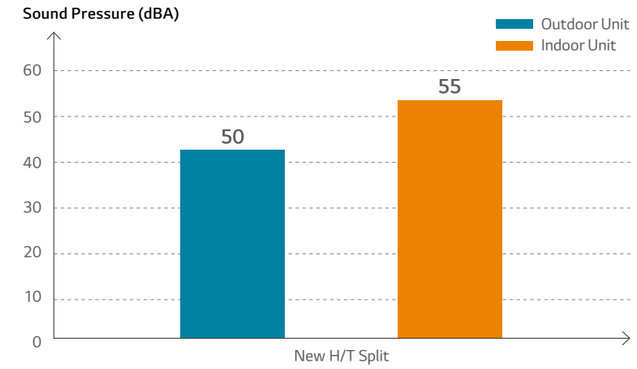
Excellent Performance at LAT

New H/T Split 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.



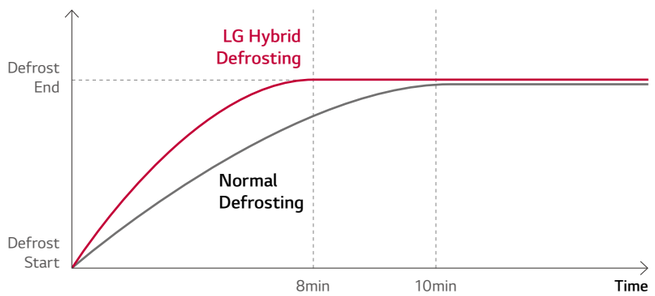
Low Noise Level

Through cutting edge technology for DC inverter compressor, operating noise level of indoor & outdoor unit has been reduced and serves more comfort.



Quick Defrosting

Through R134a compressor controlling technology, necessary time for defrost operation has been minimized effectively.
(LG Patent)



PRODUCT FEATURES

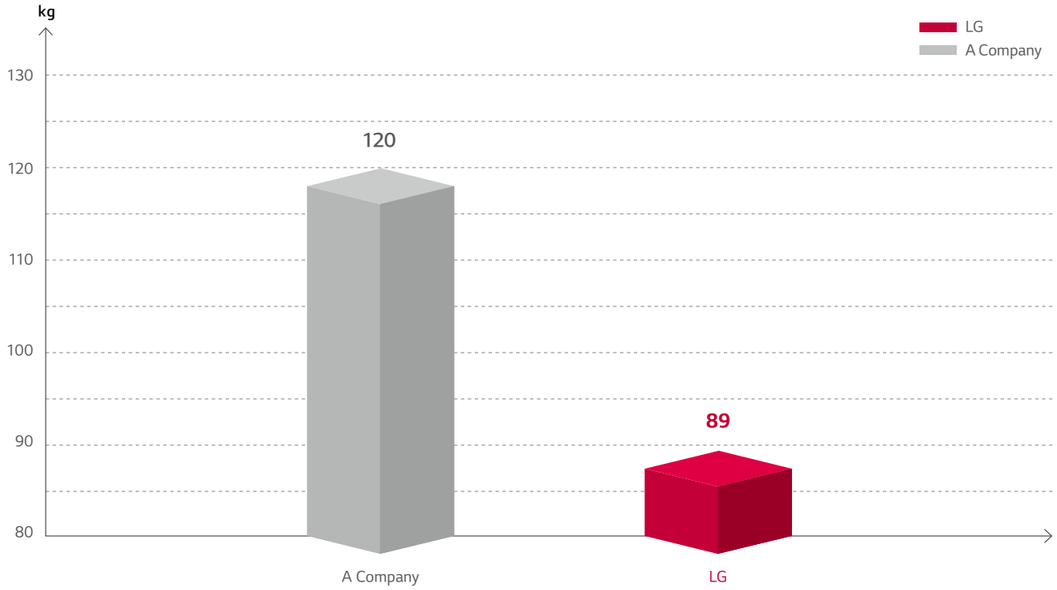
Suitable for Old Radiator

THERMA V high temperature is suitable for houses which have poor insulation or existing old radiator, or have to meet sanitary water regulation which needs high water temperature.



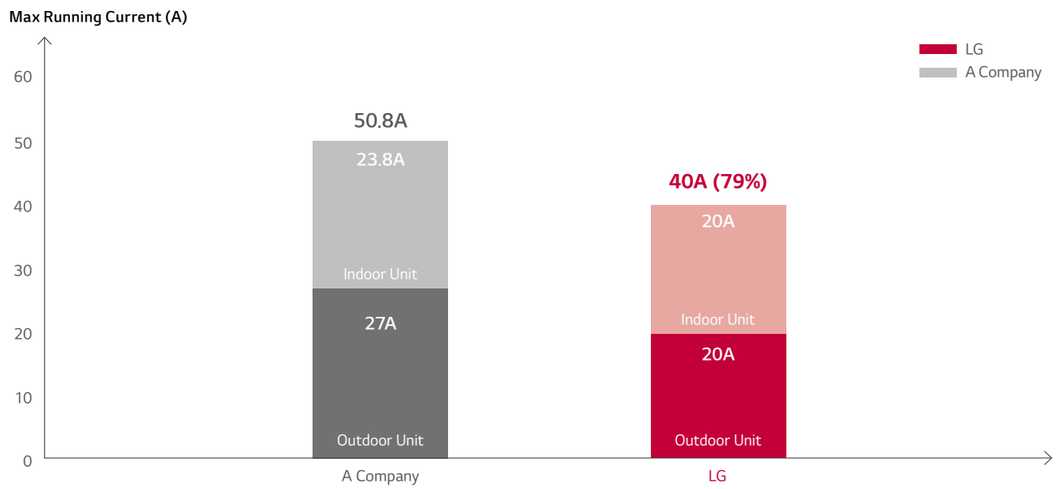
Light Weight

Lighter weight enables easy installation work.



Low Current Level

LG high temperature THERMA V can be easily installed without any incurring any additional costs to the electric connections.



PRODUCT SPECIFICATION

Split High Temperature

IDU
HN1610H NK3
ODU
HU161HA U33

011-1W0336

R410A 80°C



Features

- Higher energy efficiency
- Cascade 2 stage compression
- Maximum 80°C LWT
- Suitable for old radiator
- Only for heating (No cooling)
- Quick defrosting
- 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	HU161HA U33
			Indoor Unit	HN1610H NK3
Space Heating (According to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	3.23
		Rated Heat Output (P_{rated})	kW	13
		Seasonal Space Heating Efficiency (η_s)	%	126
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+
		Annual Energy Consumption	kWh	8,618
	Average Climate Water Outlet 55°C	SCOP	-	3.01
		Rated Heat Output (P_{rated})	kW	11
		Seasonal Space Heating Efficiency (η_s)	%	117
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+
		Annual Energy Consumption	kWh	7,424

Nominal Capacity and Nominal Input

Description		OAT (DB)	LWT (DB)	Outdoor Unit	HU161HA U33
				Indoor Unit	HN1610H NK3
Nominal Capacity	Heating	7°C	35°C	kW	16.00
		7°C	55°C		14.00
		2°C	35°C		16.00
Norminal 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
	Maximum Running Current		A	18.9
	Recommended Circuit Breaker		A	20
Wiring Connections	Power Cable (Included Earth)		mm^2 x cores	4.0 x 3 (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)			ℓ/min	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
	Maximum Running Current		A	20.2
	Recommended Circuit Breaker		A	25
Wiring Connections	Power Cable (Included Earth)		mm^2 x cores	4.0 x 3 (H07RN-F)
	Communication Cable (Included Earth)		mm^2 x cores	1.0 ~ 1.5 x 2 (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.

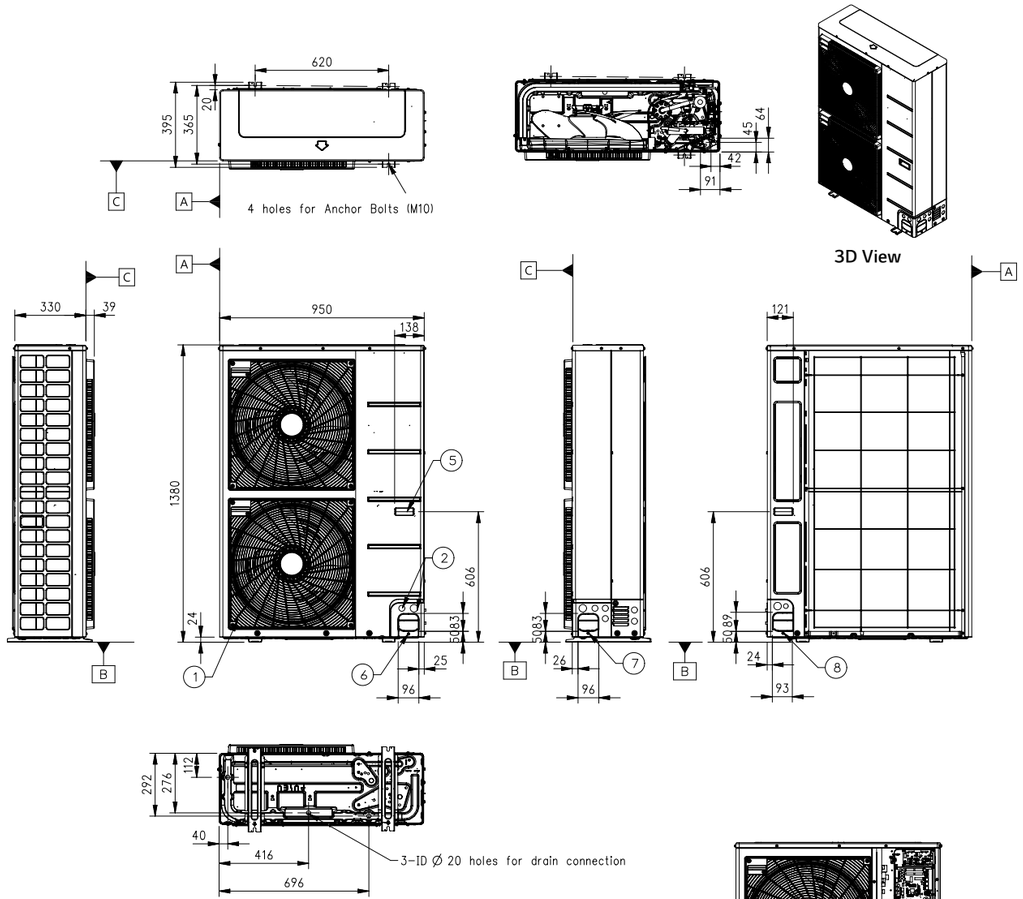
PRODUCT SPECIFICATION

Drawings

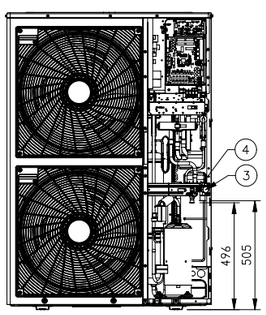
Category	Unit	Model Name
		Capacity (kW)
		16.0
1 Phase Model 220 ~ 240V, 1Ø, 50Hz	Outdoor Unit	HU161HA U33
	Indoor Unit	HN1610H NK3

HU161HA U33

[Unit : mm]



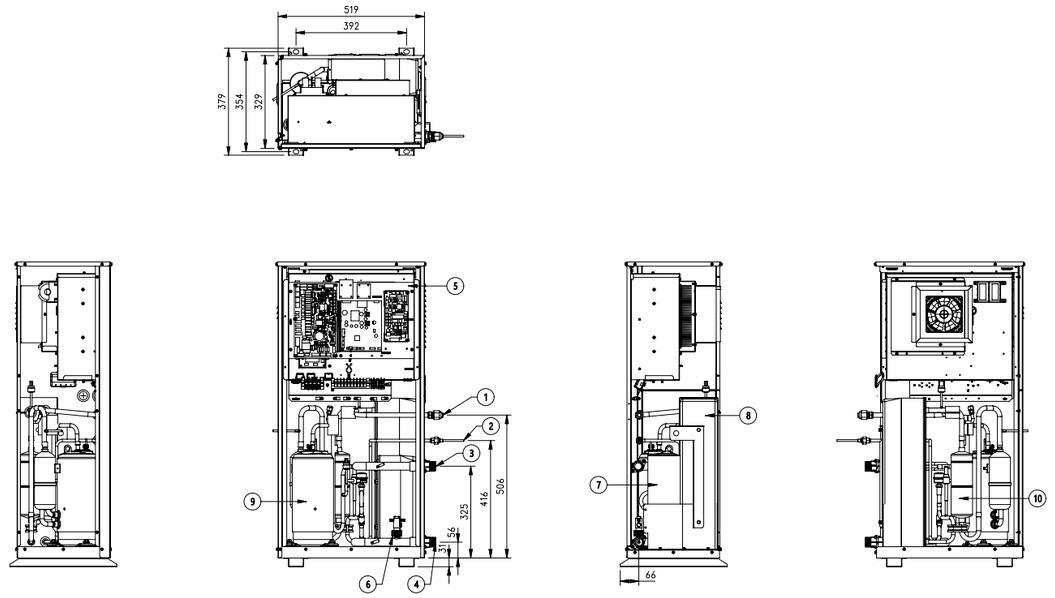
No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (Front)	-
7	Pipe Routing Hole (Side)	-
8	Pipe Routing Hole (Back)	-



Piping Connection Port

HN1610H NK3

[Unit : mm]



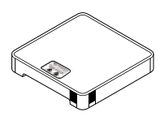
No.	Part Name	Description
1	Refrigerant Pipe	Ø9.52 (mm)
2	Refrigerant Pipe	Ø15.88 (mm)
3	Leaving Water Pipe	Male PT 25mm (1 inch)
4	Entering Water Pipe	Male PT 25mm (1 inch)
5	Control Box	PCB and terminal blocks
6	Flow Switch	Minimum operation range at 15LPM
7	Plate Heat Cxchanger	Heat exchanger between refrigerant and water
8	Plate Heat Cxchanger	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	Relevant Function	Purpose	Feature
Sensors	Room Temperature Sensor	PQRSTA0		Room Temperature Based Control	To detect room air temperature for room temperature based control	• Max wire length : 15m
	2nd Circuit Thermistor	PRSTAT5K10		2nd Circuit	To detect 2nd circuit temperature when using 2nd circuit function	• 5kΩ thermistor, 10m
	Domestic Hot Water Sensor	PHRSTA0		Domestic Hot Water Heating	To detect DHW tank temperature	• Included in PHLTA kit
Valves	3Way Valve	OSHA-3V		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		Domestic Hot Water Supply	To blend hot water with cold water for ensuring constant, safe shower and bath outlet temperature, preventing scalding.	• Size : 3/4" DN20 male threaded
		OSHA-MV1				• Size : 1" DN25 male threaded
Tanks	Domestic Hot Water Tank (Single Coil)	OSHW-200F		Domestic Hot Water Heating	To generate and store domestic hot water	• Storage volume : 200L, 300L, 500L • Type : Internal single coil • Material : Stainless steel • Capacity of booster heater : 2.4kW
		OSHW-300F				
		OSHW-500F				
	Domestic Hot Water Tank (Double Coil)	OSHW-300FD				• 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)		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		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	Relevant Function	Purpose	Feature
Installation Kits	Electric Back up heater (for Monobloc)	HA031M E1		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 220 • 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 220 • 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 220 • Power : 380 ~ 415V, 3Ø
ETC	Extension wire for wire remote controller	PZCWRC1		-	To extend wire between wired remote controller and indoor unit	• Length : 10m
	Extension cable for Wi-Fi Modem	PWYREW000		Wi-Fi Control via LG ThinQ	To extend wire between WI-Fi modem and indoor unit	• Length : 10m
	2-Remo Control Wire	PZCWRC2		2-Remote Control	To connect two remote controller on the one indoor unit	• Length : 0.25m • Service part
	Drain pan (for Split IDU)	PHDPB		Cooling Operation	To collect condensed water in indoor unit when cooling operation	-
	Cover plate (for Split IDU)	PDC-HK10		-	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	Relevant Function	Purpose	Feature
Remote Controller	Wired Remote Controller	PREMTW101		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-remo cable (PZCWRC2, 0.25m) are included.
Central Controller	AC Ez Touch	PACEZA000		Centralized Control	To control AWHP using LG central controller	• 5 inch color display • User-friendly control with iconographic interface (Touch screen) • Max 64 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	PACS5A000				• 10.2 inch color display • User-friendly control with iconographic interface (Touch screen) • 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) • 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	PACP5A000				• Web access controller • Max 256 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		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

Category	Model Name	Model Number	Figure	Relevant Function	Purpose	Feature
Gateway	Modbus RTU	PMBUSB00A		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 (for Mono & Split)	PMNFP14A1[1]			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 (for IWT type)	PP485B00K[2]			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		-	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	NEW PDRYCB320[3]	 			• 1 Set per 1 unit • Non voltage or 12 ~ 24V • 1 Analog input for set point • 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		Wi-Fi Control via LG ThinQ	To control AWHP via smartphone	• Basic control function - On/Off, Operation mode, Set temp - DHW heating and Set temp • Weekly On/Off schedule • Error status check • Frequency : 2.4GHz • IEEE 802.11b/g/n supported
	Meter Interface	PENKTH000		Energy Monitoring	To measure production / Consumption power	• Energy meter interface to monitor Electricity and Heat energy - Max 3 watt - hour meter - Max 1 heat meter - Pulse width : 40ms ~ 100ms • Modbus RTU comm. with THERMA V - 2 wire RS485 / 9600bps • Power : DC 12V • Size (W x H x D) : 54 x 90 x 61
	2 Zone Valve Controller	PZNVVB200		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.
2. PI485 Gateway (for IWT type, PP485B00K) is required for communication between outdoor unit and indoor unit. (Install at outdoor unit)
3. Available from April 2020.

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
- Energy monitoring



Model Name	PWFMDD200
Size (mm)	46 x 68 x 14
Interfaceable Products	THERMA V Split & Monobloc
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. (Split and Monobloc available)
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
3Way 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		