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THERMA V







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# **LG THERMA V PRODUCT CATALOGUE** 2021 - 2022



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# **LG BUSINESS PARTNERSHIP & PRE-SALES/ENGINEERING TOOLS**

### **European Business Infrastructure**

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

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

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



LG BUSINESS HEAT PUMP THERMA V **PARTNERSHIP &** TECHNOLOGY INTRODUCTION PRE-SALES/ ENGINEERING TOOLS

## **Pre-sales/Engineering Tools**

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

### 1. LG THERMA V SELECTOR

The LG THERMA V Selector is a mobile application for designers, installers and end users, which provide various real-life simulations. An energy simulation can quickly indicate energy consumption and cost as well as CO<sub>2</sub> emission values that can be vastly reduced from conventional heating systems using minimal input values. With both model selection and energy simulation tools, quick and accurate selection is made possible with detailed input values such as desired system configuration, required heating and domestic hot water (DHW) load, which will calculate payback, result in a faster energy simulation and generate cost comparisons. Sound level can also be calculated through simulations based on the installation environment.

### 2. LATS THERMA V

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

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

### 3. LGMV

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

\* LGMV is available on the LG Partner portal.

LG THERMA V

WHAT IS

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## THERMA V. **THERMA V SELECTOR**



## How to install?

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

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



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



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LG BUSINESS HEAT PUMP PARTNERSHIP & TECHNOLOGY PRE-SALES/ ENGINEERING TOOLS

THERMA V WHAT IS INTRODUCTION LG THERMA V

### Simulation Mode



## **Model Selection & Energy Simulation**

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

City selection Building area inpu Operation mode s	n - Operation period selection input - Model type selection ode selection			
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+ Country Austria		•	+ Country : Austria	•
1. Input the city and build			4. Select the period	
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	14.1	100	inter case in	
2. Select the operation ma			5. Select the model type	
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· Damy - Hamy - Do		_	Manufilm: (834) Manu	- Stars (61)
3. Input the load		4	Contraction Design	10.4
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8 - O=		_	6. Select the load design condition	A
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(Intel Local)	2.0			

LG AIR TO WATER HEAT PUMP SOLUTION OVERVIEW

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to provide energy simulation of heat pump water heater compared to electric heater based

Users can see the annual energy consumption, cost, and CO<sub>2</sub> emission with several input,

is to provide more information about model, energy simulation and payback simulation. Users can select or input more information about site or design condition, then can see the suitable model, annual energy consumption, cost, CO<sub>2</sub> emission, and payback result.

- Design condition input
- System selection to be compared

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5. Select the load design of	ondition.
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7. Select the system to con	-
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- Costs input for systems - Searching model that meets criteria

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MONOBLOC

## THERMA V. **THERMA V SELECTOR**

### **Result & Report**

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

#### Result



#### Report

- Cover page



- Site information & design condition - Product specification

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- Drawings



LG BUSINESS HEAT PUMP THERMA V PARTNERSHIP & TECHNOLOGY INTRODUCTION PRE-SALES/ ENGINEERING TOOLS

### Sound Simulation

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





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

LG THERMA V

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# **HEAT PUMP TECHNOLOGY**

## LG Electronics leads the way in heat pump technology

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

# What is a Heat Pump System?

## Modern Technology to Replace Conventional Boilers

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



## Modern Technology for Renewable Energy

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

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



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

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## How do Air to Water Heat Pumps Work?



#### ① Outside Air

Heat is extracted from the outside air.

#### ② Evaporator

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

#### ③ Compressor

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

RMA V

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#### ④ Condenser

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

#### (5) Expansion Valve

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

# THERMA V. INTRODUCTION

## The Green Choice: THERMA V.

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

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

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



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

WATER HEATER

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HYDROSPLIT

# THERMA V. WHAT IS LG THERMA V?

## LG's Advanced Heating Technology

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



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

various types of houses.



an optimized solution for this.

hot water provided by boilers.

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WHAT IS LG THERM

## **Benefits of LG THERMA V**



### For Homeowners

- like radiator, boiler, etc.

### For Installers & Designers



#### For End-users

- Multiple solutions with space heating, cooling and DHW supply
- Low repair cost and high reliability with durable equipment
- Various user convenient functions
- No disturbing to neighbors with low noise
- Remote connectivity for control and monitoring via LG ThinQ

IA	V	

LG AIR TO WATER HEAT PUMP SOLUTION OVERVIEW

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- Energy saving by utilizing renewable energy and high efficiency equipment - Multiple solutions with space heating, cooling and DHW supply - Economic support through domestic renewable heat incentive programme - Save investment cost thanks to the compatibility with existing heating system

- Save valuable machine room space with the small footprint

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

- Energy saving by utilizing renewable energy and high efficiency equipment

- Convenient control by user-friendly remote controller

# LG AIR TO WATER HEAT PUMP **SOLUTION OVERVIEW**

		Monobloc		Hydrosplit	
			-	Hydro Box (Wall hung)	IWT (Integrated Water Tank)
		R32 Monobloc S	R32 Monobloc	R32 Hydrosplit Hydro Box	R32 Hydrosplit IWT
		1Ø : 5/7/9/12/14/16 kW 3Ø : 12/14/16 kW	1Ø : 5/7/9/12/14/16 kW 3Ø : 12/14/16 kW	1Ø : 12/14/16 kW 3Ø : 12/14/16 kW	10 : 12/14/16 kW 30 : 12/14/16 kW
Line-up		0 0	0 0	. 0	0
Application		Heating, Coo	ling and DHW	Heating, Cooling and DHW	Heating, Cooling and DHW
Energy Label		Space Heating	Space Heating DHW Heating 35°C A* 55°C A* 1) A* 5/7/9 kW 2) A* 5/7/9 kW	Space Heating Space Keating	Space Heating Heating 35°C A*** 55°C A** Profile L A*
Operation Range	Outdoor Air	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C
(heating)	Leaving Water	15 ~ 65°C	15 ~ 65°C	15 ~ 65°C	15 ~ 65°C
Customer	Designer & Installer	<ul> <li>Don't want refrigerant pipin</li> <li>Using existing facilities (Con</li> <li>Saving installation and com</li> <li>(All-in-one &amp; No ref. piping</li> <li>No indoor unit (No space for</li> </ul>	ig work iventional boiler) missioning time work) r IDU)	- Saving installation and commissioning time (No ref. piping work)	<ul> <li>Saving installation and commissioning time (All-in-one &amp; No ref. piping work)</li> <li>Where mechanical room is very limited</li> <li>Saving installation space for buffer tank and expansion tank</li> </ul>
Needs	End-User	- Don't want to take the potential risk of refrigerant leak - Easy and intuitive controls - Reliable operation and long lifetime -		Low operation cost - Quiet i Remote control by smartphone Control integration between boiler and THERMA V	- Neressity to install indoor unit in living space
					due to Insufficient machine room space
LG Approach		<ul> <li>No refrigerant piping work</li> <li>New interface (standard III f</li> <li>Interlocking operation with</li> </ul>	- Remote controller) - 3 <sup>rd</sup> party boiler -	High energy efficiency - Low n LG ThinQ Wi-Fi Control solution - High c Easy commissioning by PC tool (LG heating configu	pise mode operation with schedule setting orrosion resistance heat exchanger irator)
		- All in one concept		- Hydrosplit concept	<ul> <li>All in one concept (Integrated DHW tank with indoor unit)</li> <li>Hydrosplit concept</li> <li>Sophisticated and harmonious exterior of indoor unit</li> <li>Provides an option to integrate buffer tank and DHW expansion tank into indoor units</li> </ul>
Benefit		- Multiple solution (heating, c - Energy saving by utilizing re - Economic support by incent - Simple replacement of exist	ooling and DHW supply) newable energy and high effici ive program ing boiler while maintaining the	- Free of potential risk ent equipment - Quick & easy installat - Hybrid operation wit e existing heating system	or refrigerant leak ion and commissioning n existing facilities
		- Saving mechanical room spa	ice		- Use of valuable machine room space for private purpose

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Split Water H								
Hydro Box	(Wall hung)	IWT (Integrated Water Tank)	Floor standing	Water Heater				
R32 Split Hydro Box	R410A Split Hydro Box	R32 Split IWT	High Temperature	Heat Pump Water Heater				
1Ø : 5/7/9 kW	1Ø : 12/14/16 kW 3Ø : 12/14/16 kW	1Ø : 5/7/9 kW	1Ø : 16 kW	1Ø:200/270L				
0	0	0	0					
Heating, Coo	ling and DHW	Heating, Cooling and DHW	Heating and DHW	DHW				
Space Heating	35°C A*** Space Heating 55°C A**	Space Heating Space Heating HWW Heating	35°C A* Space Heating 55°C A*	DHW Heating				
-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35°C	-25 ~ 35℃	-5 ~ 48°C				
15 ~ 65°C	15 ~ 57℃	15 ~ 65°C	25 ~ 80°C	35 ~ 65°C				
- Eliminating the potential freezing	ng risk at exposed water piping			<ul> <li>Using less installation space in the machine room and storage room</li> </ul>				
- Using existing facilities (Conven	tional boiler)	Saving installation and commissioning time (All-in-one)     Where mechanical room is very limited     Saving installation space for buffer tank and expansion tank     Using existing facilities (Conventional boiler)     Saving installation and commissioning time old house     High DHW temperate sanitary water regula		- Short installation time - Convenience to check the operation - Convenient maintenance				
<ul> <li>Don't want to take the potentia</li> <li>Quiet operation</li> <li>Remote control by smartphone</li> </ul>	l freezing risk at exposed water pip	- Low operation cost - Easy and intuitive contro - Reliable operation and lo	ols ng lifetime	- Low operation cost - Sufficient warm water - Quite operation - Easy control				
- Control integration between bo	iler and THERMA V	- Necessity to install indoor unit in living space due to Insufficient machine room space - Control integration between boiler and THERMA V	- Using existing facilities (Old radiators)					
- High energy efficiency - New interface (standard III Rem - High corrosion resistance heat e	- Low no ote controller) - LG Thin exchanger - Easy co	se mode operation with schedule setting Q Wi-Fi Control solution mmissioning by PC tool (LG heating configurat	or)	- Stylish design - Top class energy efficiency - Powerful heating performance - Low noise operation - Smart control				
<ul> <li>Placing hydronic components in water piping in the mechanical - Interlocking operation with 3<sup>rd</sup> p</li> </ul>	to indoor unit and room barty boiler	<ul> <li>All in one concept (Integrated DHW tank with indoor unit)</li> <li>Sophisticated and harmonious exterior of indoor unit</li> <li>Provides an option to integrate buffer tank and DHW expansion tank into indoor units</li> <li>Interlocking operation with 3rd party boiler</li> </ul>	- Max. 80°C LWT by Cascade 2 stage compression (R410A - R134a) - Suitable for old radiator					
<ul> <li>Free of potential freezing risk ag</li> <li>Energy saving by utilizing renew</li> <li>Quick &amp; easy installation and co</li> <li>Economic support by incentive p</li> </ul>	gainst exposed water piping even la able energy and high efficient equi mmissioning program	, ong black out pment	1	<ul> <li>Interior with stylish design</li> <li>Energy saving with inverter technology</li> <li>Faster and warmer water heating</li> <li>Low noise</li> <li>Smart control with Wi-Fi by LG ThinQ</li> </ul>				
- Multiple solution (heating, cooli - Hybrid operation with existing f	ng and DHW supply) acilities	<ul> <li>Multiple solution (heating, cooling and DHW supply)</li> <li>Hybrid operation with existing facilities</li> <li>Use of valuable machine room space for private purpose</li> </ul>	Multiple solution (heating and DHW supply)     Obtaining 80°C high LWT without supplementary heater     Simple replacement of existing boiler	- Quick and easy installation - Easy check and monitoring - LG compressor with 10 years warranty				

LG AIR TO WATER HEAT PUMP SOLUTION OVERVIEW

THERMA V LINE-UP OVERVIEW

THERMA V LINE-UP INTRODUCTION

MONOBLOC

# THERMA V. **LINE-UP OVERVIEW**

Refrigerant	Ту	'nре	Line-up	Unit	Power Supply <sup>1)</sup>	Appearance	5 kW	7 kW
			R32	<b>C</b> .	1Ø / 230V	100	HM051MR U44	HM071MR U44
	Mon	oblac	P.38	Set	3Ø / 400V			
	IVIOII	ODIOC	R32 Monobloc	Set	1Ø / 230V	<b>n</b> 1	HM051M U43	HM071M U43
		1	P.54	500	3Ø / 400V			
			022	Outdoor	1Ø / 230V			
		Hydro Box	Hydrosplit Hydro Box	Unit	3Ø / 400V			
	R32 IWT		P.70	Indoor Unit	Common			
R32			Outdoor	1Ø / 230V				
		IWT Hy	R32 Hydrosplit IWT	Unit	3Ø / 400V			
			P.80	Indoor Unit	Common			
		Hydro Box	dro ox P.90	Outdoor Unit	10 / 2201/	0	HU051MR U44	HU071MR U44
				Indoor Unit	1072300		HN091MR NK5	
		IWT	R32 Split IWT P.98	Outdoor Unit	10/2201	0	HU051MR U44	HU071MR U44
				Indoor Unit	2300	HN0916T NB1		6T NB1
	Calit			Outdoor Unit	10/2201			
D4104	Spire	Hydro	R410A Split	Indoor Unit	1072300			
R410A		В́ох	P.108	Outdoor Unit	29 / 400 /			
				Indoor Unit	3U / 400V			
R410A +		Floor	High Temperature P.118	Outdoor Unit				
R134a	:	standing Te		1Ø / 230V Indoor Unit				

• LG BUSINESS HEAT PUMP PARTNERSHIP & TECHNOLOGY PRE-SALES/ ENGINEERING

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9 kW	Appearance	12 kW	14 kW	16 kW
HM091MR U44	0 '	HM121MR U34	HM141MR U34	HM161MR U34
	0	HM123MR U34	HM143MR U34	HM163MR U34
HM091M U43	0 '	HM121M U33	HM141M U33	HM161M U33
	0	HM123M U33	HM143M U33	HM163M U33
	0'	HU121MRB U30	HU141MRB U30	HU161MRB U30
	0	HU123MRB U30	HU143MRB U30	HU163MRB U30
			HN1600MC NK1	
	0'	HU121MRB U30	HU141MRB U30	HU161MRB U30
	0	HU123MRB U30	HU143MRB U30	HU163MRB U30
	2		HN1616Y NB1	
HU091MR U44				
HN091MR NK5				
HU091MR U44				
HN0916T NB1				
	0	HU121MA U33	HU141MA U33	HU161MA U33
			HN1616M NK5	
	0	HU123MA U33	HU143MA U33	HU163MA U33
			HN1636M NK5	
	0			HU161HA U33
				HN1610H NK3

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

Refrigerant	Туре	Power Supply	Appearance	200 L	270 L
R134a	Heat Pump Water Heater	101/2301/		WH20S	
	P.126	1072300			WH27S

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

LG AIR TO WATER HEAT PUMP SOLUTION OVERVIEW

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## THERMA V. **LINE-UP INTRODUCTION**



#### THERMA V R32 Monobloc S

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

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

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

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



#### THERMA V R32 Monobloc

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

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

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



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

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

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

MONOBLOC

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THERMA V LINE-UP OVERVIEW

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### THERMA V R32 Hydrosplit Hydro Box

The LG THERMA V Hydrosplit series separates the Indoor unit (IDU) and outdoor unit (ODU), connecting them via water pipes.

The unit's heat exchanger is located within the ODU, reducing the risk of indoor refrigerant leakage.

THERMA V R32 Hydrosplit Hydro Box is a solution providing space heating, cooling and DHW supply with high installation flexibility thanks to the characteristic of being a wall mounted type. Since the indoor unit is installed on the wall rather than on the floor, space in the machine room is not wasted, and the light weight enables quick installation. Also, it has good maintainability because the indoor unit is located in the machine room.

## THERMA V. **LINE-UP INTRODUCTION**



### THERMA V R32 Split Hydro Box

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

optional Wi-Fi modem and with LG's smartphone app, LG ThinQ, users can monitor and remotely control compatible LG products.

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

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



#### **THERMA V R32 Split IWT**

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

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

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

LG BUSINESS HEAT PUMP PARTNERSHIP & TECHNOLOGY PRE-SALES/ ENGINEERING TOOLS

THERMA V INTRODUCTION

WHAT IS LG THERMA V



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

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



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

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

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

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

LG AIR TO WATER HEAT PUMP SOLUTION OVERVIEW

THERMA V LINE-UP OVERVIEW

THERMA V LINE-UP INTRODUCTION

### THERMA V R410A Split Hydro Box

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

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

## THERMA V. **LINE-UP INTRODUCTION**

HEAT PUMP LG BUSINESS PARTNERSHIP & TECHNOLOGY PRE-SALES/ ENGINEERING

TOOLS

THERMA V INTRODUCTION

WHAT IS LG THERMA V

verter Compresso

G Desi

art Contro

#### What is a Heat Pump Water Heater?

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



100% Electricity/Gas

75% Ambient Air Energy + 25% Electricity

#### \* LG Inverter Technology

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

Power Consumption Change	1			Premium Interior design
kWh	Energy Saving	Non- Inverter Dual		Hygiene & Durable Tank — • Anti-Legionella • Permanent Sacrifice Rod • 10 Year Warranty
	V V V V	e		

#### Flexible Installation Locations









Laundry Room

Storage Room

Bathroom

Bathroom

\* Actual product appearance may differ from the above simulated scene.

Garage

LG AIR TO WATER HEAT PUMP SOLUTION OVERVIEW

THERMA V LINE-UP OVERVIEW

THERMA V LINE-UP INTRODUCTION





Garage

THERMA V FEATURES

HYDROSPLIT

SPLIT

WATER HEATER

THERMA V. FEATURES



## THERMAV **FEATURE OVERVIEW**

### LG THERMA V's Unique Features

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



#### **User Convenience**

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

#### **Excellent Performance & Efficiency**

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



#### Easy Installation & Maintenance

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

Wide operation range



Black fin heat exchanger



Combination with solar thermal system



Energy state



Cascade 2 stage compression technology



Very low sound level

Flexible refrigerant piping design

INTRODUCTION

WATER HEATER

## THERMA V. **EXCELLENT PERFORMANCE & EFFICIENCY**

## R1Compressor<sup>™</sup> LG's Revolutionary Technology

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



#### 0 0 0 0 **Black Fin Heat Exchanger**

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



#### 1.7 **Flash Gas Injection**

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



ġ. **Direct Modbus Communication** 

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



## Eco-Conscious with R32 Refrigerant

#### Background

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



#### <del>الله</del>ې **Combination with Solar Thermal System**

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



## **Energy State**

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

Fnerav	Signal Mode (S	mart Grid)	Modbus Mo	de (ESS)	_
States	Operation Mode	Power Supply Status	Operation Mode	Battery Charged Status	Oper
ES1	Operation Off				Forced off to a
ES2	Normal		Normal		Normal
ES3*	On Recommend				Changed target to (heating : +2°
ES4*	On Command				Changed target to (DHW
ES5**			On Command (step2)		Changed target to (heating : +5°C, cooling
ES6**			On Recommend (step1)		Changed target to (heating : +2°C, cooling
ES7**			Energy Saving		Changed target t (heating : -2°C
ES8**			Super Energy Saving		Changed target t (heating : -5°C

\* Contact signal designated ES3 and ES4 can be changed to ES5 - ES8. \*\* Offset values of heating, cooling and DHW are changeable.

\*\*\* THERMA V can connect not only ESS but also 3rd party controller through Modbus, in that case, ES1 to ES8 are used.

#### **Comparison & Benefit**

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

Descript	ion	R32	R410A			
	Low Global Warming Potential (GWP)	675 1)	20881)			
	Lower Amount of Gas Charge		% 2) High			
îĭÍ	Higher System Performance	R32 systems also u per kilowatt of ca	use less refrigerant apacity delivered.			
0	Simple Refrigerant Recyclability	Single component	Mixture R32 50% / R125 50%			
アン	High Capacity	High refrigerant compression rates lead to high capacity as compared to existing refrigera R22 and R410A.				

\* 1) Source : Global Warming Potential Values (2007, AR4)

2) This ratio is general for helping understanding, It may differ depending on the each product.

		[A	rea o	ofen	ergy	stat	te fo	or E	ss]	
Operation	<b>ver (kW)</b>								Ē	55
ff to avoid peak load	S Po							/		
rmal operation	urplu				ES2		/		ES	5
rget temperature higher  : +2°C, DHW : +5°C)	0 <sub>2</sub>					/	/			
rget temperature higher DHW : 80°C)	1.5				/					
rget temperature higher cooling : -5°C, DHW : +30°C)	1			/	/					
arget temperature higher cooling : -2°C, DHW : +10°C)	0.5	l	ES7							
rget temperature lower : -2°C, cooling : +2°C)		ES8	ו							
rget temperature lower : -5°C, cooling : +5°C)	0	10	20 3	30 4	0 50	60	70	80	90	10
		C · Ctot	to of C	haraa			Bat	tery	SOC	(%)

SoC : State of Charge
 Surplus Power (SP) = PV Power – Load Power

Area of Energy State for ESS can be adjusted by ESS.

## THERMA V. **USER CONVENIENCE**

## LG ThinQ Seamless Connectivity

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

? Mandatory accessory PWFMDD200 (LG Wi-Fi Modem) PWYREW000 (10m extension connect cable in between THERMA V and LG Wi-Fi Modem) could be required depends on installation condition. \* Search "LG ThinQ" on Google playstore or App store, then

download the app. Google home voice is supported in United Kingdom, France, Germany, Spain, Italy, Austria, Ireland, Portugal.

## **Intuitive Control**

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



• Premium design (4.3 inch color LCD)

• User friendly interface (simple graphic, icon & text)

Convenient functions (easy schedule setting & installer setting)

• Energy monitoring without meter interface (estimated power consumption)

\* Instant power consumption and cumulative power consumption

## Various Temperature Control Options

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

Option 1 : Control based on leaving water temperature

Option 2 : Control based on entering water temperature

Option 3 : Control based on room air temperature Option 4 : Control based on room air and water temperature simultaneously

## **Advanced Pump Control Options**

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

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

 $\Delta T$  = temperature difference between inlet and outlet water temperature.



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

2<sup>nd</sup> Circuit Diagram



#### **\$** Interlocking Operation with 3rd Party Boiler

needed.

Outdoor temp. (°C)



#### ₩ Water Circuit Monitoring ≋⊳≋

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





LG ThinQ

Black Elseler



PWFMDD200

PWYRFW000

be conveniently set using visualized graphics.

Outdoor Temp

**Seasonal Auto Mode** 

Bank Biebert

.....

The operation mode and target temperature will be changed according

to the outdoor temperature automatically. Moreover, this function can

Target Terry



INTRODUCTION



#### Available information on the screen

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

HYDROSPLIT

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## THERMAV. **USER CONVENIENCE**

#### 0000 (\$ **Energy Monitoring**

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





#### ¶¶ Low Noise Mode & Scheduler

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



#### **DHW Recirculation Pump**

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



## 2 Remote Control

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

#### System Diagram



\* Slave is for user setting.

#### • THERMA V is operating based the room where slave controller is installed. 115 Room air temperature sensed by slave remote controller 60° û**,** 26.0° ₽-24° There is no 55 monitoring information. 40° / 45°

Standard III Controller Interface

## THERMA V. **EASY INSTALLATION & MAINTENANCE**

#### **\$** LG Heating Configurator

#### Easy Installation Setting and Commissioning

- Based on installation site information, installers can prepare presetting with the LG heating configurator and save data into a memory card from the office.





#### **Clip Type Connection for Easy Maintenance**

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





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

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THERMA V.M PRODUCTS



## THERMA V. R32 R32 MONOBLOC S



## **Energy Label**



**Excellent Performance & Efficiency** 



#### Easy Installation & Maintenance



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

\* 16kW 1Ø model. \* A+++ to D scale.

## **R32 Monobloc S Introduction**

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

## **Key Components**





### Monobloc Concept

R32 Monobloc S is an all-in-one concept and reduced weight allows for quicker and easier installations.Additional hydronic components are included in the package

• Easier and quicker installation without refrigerant piping work

![](_page_19_Figure_18.jpeg)

## **Reduced Noise Level**

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

![](_page_19_Figure_21.jpeg)

![](_page_19_Figure_22.jpeg)

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

![](_page_19_Picture_25.jpeg)

Austria	Switzerland	Netherlands
(06:00 ~ 19:00)	40 dB (A) (07:00 ~ 19:00)	45 dB (A) (07:00 ~ 19:00)
(19:00 ~ 22:00)	-	-
(22:00 ~ 06:00)	35 dB (A) (19:00 ~ 07:00)	40 dB (A) (19:00 ~ 07:00)

## THERMA V. 🕅 MONOBLOC S

# **PRODUCT SPECIFICATION**

### R32 Monobloc S

HM051MR U44 HM071MR U44 HM091MR U44

![](_page_20_Picture_4.jpeg)

🔅 🗱 😭

R1Compressor<sup>™</sup> Black Fin û LG ThinQ R32 EHPA for

#### Features

R

011-1W0471

#### • All-in-one outdoor unit

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

\* EHPA (for Austria and Switzerland) label under development

### Model Line-up

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

#### Seasonal Energy

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

### Nominal Capacity and Nominal Power Input

Description		OAT <sup>1)</sup> (DB)	LWT <sup>2)</sup> (DB)	Unit	HM051MR U44	HM071MR U44	HM091MR U44
		7°C	35°C		5.50	7.00	9.00
	Heating	7°C	55°C		5.50	5.50	5.50
Nominal Capacity		2°C	35°C	kW	4.40	5.60	6.80
	Cooling	35°C	18°C		5.50	7.00	9.00
	Cooling	35°C	7°C		5.50	7.00	9.00
	Heating	7°C	35°C		1.17	1.49	1.96
		7°C	55°C		2.04	2.04	2.04
Nominal Power Input		2°C	35°C	kW	1.22	1.58	1.94
	Cooling	35°C	18°C		1.17	1.56	2.14
	Cooling	35°C	7°C		1.67	2.19	2.90
		7°C	35°C		4.70	4.70	4.60
COP	Heating	7°C	55°C	W/W	2.70	2.70	2.70
		2°C	35°C		3.60	3.55	3.50
FER	Cooling	35°C	18°C	10//10/	4.70	4.50	4.20
EEK	Cooling	35°C	7°C	00/00	3.30	3.20	3.10

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

### **Product Specification**

Technical Spe	cification			Unit	HM051MR U44	HM071MR U44	HM091MR U44	
	Operation Range	Heating				15 ~ 65		
	(leaving water	Cooling	Min. ~ Max.	°C DB	5 ~ 27 (16 ~ 27) <sup>1)</sup>			
Mator Cida	temperature)	DHW				15 ~ 80 <sup>2)</sup>		
Water Side	Piping Connections	Water Circuit	Inlet	Inch	Male PT 1" accor	Male PT 1" according to ISO 7-1 (tapered pipe threads)		
	Piping Connections	vvaler Circuit	Outlet	Inch	Male PT 1" accor	ding to ISO 7-1 (tape	red pipe threads)	
	Rated Water Flow Rate a	t LWT 35°C		LPM	15.8	20.1	25.9	
	Operation Range	Heating	Min Max			-25 ~ 35		
(outdoor temperature)		Cooling	IVIIII ~ IVIdX	CDB	5 ~ 48			
Refrigerant		Quantity		EA		1		
		Туре		-	ŀ	lermetic Sealed Scro	ll	
Side		Туре		-	R32			
	Refrigerant	GWP (Global Warming Potential)		-	675			
		Precharged Amount		g		1,400		
		t-CO2 eq		-	0.945			
Sound Dower L	aval	Rated				57		
Sound Power Lo	evei	Heating	Low Noise Mode	UD(A)	54 55		5	
C 10		11	Rated		35			
Sound Pressure	e Level (at Tm)	Heating	Low Noise Mode	dB(A)	32	3	3	
Dimensions		Unit	W×H×D	mm		1,239 × 834 × 330		
Weight		Unit		kg		89.0		
Exterior		Color / RAL Cod	e	-	V	/arm Gray / RAL 704	4	
		Voltage, Phase,	Frequency	V, Ø, Hz		220-240, 1, 50		
Power Supply		Rated Running	Heating	A	5.2	6.6	8.7	
		Current	Cooling	A	5.2	6.9	9.5	
		Recommended	Circuit Breaker	A	16	20	25	
Wiring Connections		Power Supply C (included earth	able , H07RN-F)	mm <sup>2</sup> x cores	4.0 × 3C			

1) When fan coil unit not used.

2) DHW 58~80°C Operating is available only when the booster heater is operating. Note

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

	-		
-	-		

SPLIT

WATER HEATER

## THERMA V. (R32) MONOBLOC S

## **PRODUCT SPECIFICATION**

### **Performance Table for Heating Operation**

#### Maximum Heating Capacity (Including Defrost Effect)

#### HM051MR U44

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

#### HM071MR U44

Outdoor	LWT 30 °C	LWT 35 °C	LWT 40 °C	LWT 45 °C	LWT 50 °C	LWT 55 °C	LWT 60 °C	LWT 65 °C
Temperature	тс	TC						
-25°C DB	5.85	5.85	5.85	5.85	-	-	-	-
-20°C DB	6.43	6.43	6.43	6.43	6.10	-	-	-
-15°C DB	7.00	7.00	7.00	7.00	6.65	6.65	-	-
-7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	-
-4°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
-2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
2°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
7°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
10°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
15°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
18°C DB	7.00	7.00	7.00	7.00	7.00 7.00		7.00	7.00
20°C DB	3 7.00 7.00		7.00	7.00	7.00	7.00	7.00	7.00
35°C DB	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

#### HM091MR U44

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

#### Note

DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (*l*/min), TC : Total Capacity (kW)
 Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Neasuring procedure rollows EN-14511.
Rated values are based on standard conditions and it can be found on specifications.
Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

### Performance Table for Cooling Operation

Maximum Cooling Capacity

#### HM051MR U44

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

#### HM071MR U44

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

#### HM091MR U44

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# **PRODUCT SPECIFICATION**

## Drawings

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

1239 620 163 293 104 ..... = FÚ 390 360 330 0 11.00 He.I 1.0 ► Y

![](_page_22_Figure_5.jpeg)

![](_page_22_Figure_6.jpeg)

![](_page_22_Figure_8.jpeg)

![](_page_22_Figure_9.jpeg)

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

INTRODUCTION

THERMA V FEATURES

HYDROSPLIT

SPLIT

WATER HEATER

## THERMA V. 🕅 MONOBLOC S

## **PRODUCT SPECIFICATION**

**R32** 

### R32 Monobloc S

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

![](_page_23_Picture_4.jpeg)

🔅 🐝 😭

R 011-1W0470 EHPA for Germany

R1Compressor<sup>™</sup> Black Fin û LG Thin0

### Features

• All-in-one outdoor unit

(30 model only)

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

### Model Line-up

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

### Seasonal Energy

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

### Nominal Capacity and Nominal Power Input

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

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

### **Product Specification**

Technical S	Specification			Unit	HM121MR U34	HM141MR U34	HM161MR U34	HM123MR U34	HM143MR U34	HM163MR U34	
	Operation Range	Heating					15 -	- 65			
	(leaving water	Cooling	Min. ~ Max.	°C DB	5 ~ 27 (16 ~ 27) <sup>1)</sup>						
Water	temperature)	DHW					15 ~	80 <sup>2)</sup>			
Side	Piping	Water	Inlet	Inch		Male PT 1" ac	cording to ISC	) 7-1 (tapered	pipe threads)		
	Connections	Circuit	Outlet	Inch		Male PT 1" according to ISO 7-1 (tapered pipe threads)					
	Rated Water Flor	w Rate at LWT 35	i°C	LPM	34.5	40.3	46.0	34.5	40.3	46.0	
	Operation Range	Heating	Min Maria				-25	~ 35			
	(outdoor temp.)	Cooling	IVIIII. ~ IVIdX.	CDB			5 ~	48			
	Compressor	Quantity		EA							
Refrigerant	Compressor	Туре		-			Hermetic S	ealed Scroll			
Side		Туре		-			R	32			
	Refrigerant	GWP (global war	ning potential)	-			6	75			
		Precharged Amo	unt	g	2,000						
		t-CO <sub>2</sub> eq		-	1.350						
Sound Dow	ar Louiol	Heating	Rated	dP(A)	60	6	1	60	6	1	
Sound Form	er Level	Heating	Low Noise Mode	UD(A)	56	57		56	57		
Sound Droce	ura l aval (at 1m)	Heating	Rated	dP(A)	38	3	9	38	39		
Jound Press	are Level (at TIII)	Heating	Low Noise Mode	UD(A)	34	3	5	34	3	5	
Dimensions		Unit	WxHxD	mm			1,239 x 1,	380 x 330			
Weight		Unit		kg			11	8.6			
Exterior		Color / RAL Coo	le	-			Warm Gray	/ RAL 7044			
		Voltage, Phase,	Frequency	V, Ø, Hz		220-240, 1, 50	)	3	880-415, 3, 50	)	
Dowor Supp	dv.	Rated Running	Heating	A	10.9	12.9	15.1	3.6	4.3	5.0	
Fower Supp	ity .	Current	Cooling	A	11.2	14.4	17.7	3.7	4.8	5.9	
Recommended Circuit Breaker		A	40 16		16						
Wiring Conr	nections	Power Supply C (included earth,	able H07RN-F)	mm <sup>2</sup> x cores	6.0 x 3C			4.0 x 5C			

1) When fan coil unit not used.

2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note

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

	-		
ų			

SPLIT

WATER HEATER

## **PRODUCT SPECIFICATION**

### **Performance Table for Heating Operation**

#### Maximum Heating Capacity (Including Defrost Effect)

#### HM121MR U34 / HM123MR U34

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

#### HM141MR U34 / HM143MR U34

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

#### HM161MR U34 / HM163MR U34

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

### Performance Table for Cooling Operation

#### Maximum Cooling Capacity

#### HM121MR U34 / HM123MR U34

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

#### HM141MR U34 / HM143MR U34

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

#### HM161MR U34 / HM163MR U34

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
 Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

THERMA V. (R32) MONOBLOC S

# **PRODUCT SPECIFICATION**

## Drawings

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

HM121MR U34 / HM141MR U34 / HM161MR U34 HM123MR U34 / HM143MR U34 / HM163MR U34 [Unit : mm]

![](_page_25_Figure_6.jpeg)

![](_page_25_Figure_7.jpeg)

Side View

![](_page_25_Figure_9.jpeg)

![](_page_25_Figure_10.jpeg)

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

![](_page_25_Picture_20.jpeg)

![](_page_26_Picture_0.jpeg)

## **PRODUCT SPECIFICATION**

## Electric Backup Heater

HA031M E1 HA061M E1 HA063M E1

![](_page_26_Picture_4.jpeg)

![](_page_26_Figure_5.jpeg)

![](_page_26_Figure_6.jpeg)

Part Name

Leaving Water Pipe

Entering Water Pipe

Control Box

Thermal switch

Air vent

Electric Heater

Backup heater outlet sensor(SI3)

No.

1

2

3

4

5

6

7

<b>Backup Heater S</b>	Specification
------------------------	---------------

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

![](_page_26_Figure_14.jpeg)

Description
Male PT 1" according to ISO 7-1 (tapered pipe threads)
Male PT 1" according to ISO 7-1 (tapered pipe threads)
Circuit breaker, Magnetic switch, Terminal blocks
Cut-off power input to E/heater at 90°C
Air purging when charging water
Refer the related information
Connect to unit (heat pump)

WATER HEATER

SPLIT

HYDROSPLIT

INTRODUCTION

THERMA V FEATURES

Note 1. Due to our policy of innovation some specifications may be changed without notification.

<sup>2.</sup> Wiring cable size must comply with the applicable local and national codes.

Especially the power cable and circuit breaker should be selected in accordance with that.

# **R32 MONOBLOC**

![](_page_27_Figure_1.jpeg)

## **Energy Label**

![](_page_27_Picture_3.jpeg)

**Excellent Performance & Efficiency** 

![](_page_27_Figure_5.jpeg)

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

\* 16kW 1Ø model. \* A+++ to D scale.

**R32 Monobloc Introduction** 

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

## **Key Components**

![](_page_27_Figure_10.jpeg)

![](_page_27_Picture_11.jpeg)

## Monobloc Concept

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

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

![](_page_27_Figure_16.jpeg)

HYDROSPLIT

SPLIT

WATER HEATER

# **PRODUCT SPECIFICATION**

### R32 Monobloc

HM051M U43 HM071M U43 HM091M U43

![](_page_28_Picture_4.jpeg)

\*

![](_page_28_Figure_5.jpeg)

### Features

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

### Model Line-up

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

### Nominal Capacity and Nominal Power Input

Description		OAT <sup>1)</sup> (DB)	LWT <sup>2)</sup> (DB)	Unit	HM051M U43	HM071M U43	HM091M U43
		7°C	35°C		5.50	7.00	9.00
	Heating	7℃	55°C		5.50	5.50	5.50
Nominal Capacity		2°C	35°C	kW	3.30	4.20	5.40
	Cooling	35°C	18°C		5.50	7.00	9.00
	Cooling	35°C	7°C		5.50	7.00	9.00
	Heating	7°C	35°C		1.22	1.56	2.15
		7°C	55°C	kW	2.04	2.04	2.04
Nominal Power Input		2°C	35°C		0.94	1.20	1.54
	Caslina	35°C	18°C		1.20	1.56	2.14
	Cooling	35°C	7°C		1.96	2.59	3.46
		7°C	35°C		4.50	4.50	4.18
COP	Heating	7°C	55°C	W/W	2.70	2.70	2.70
		2°C	35°C		3.52	3.51	3.50
CED	Cooling	35°C	18°C	10//10/	4.60	4.50	4.20
EER	Cooling	35°C	7°C	VV/VV	2.80	2.70	2.60

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

### **Product Specification**

Technical Spe	cification			Unit	HM051M U43	HM071M U43	HM091M U43
	Operation Range	Heating				15 ~ 65	
	(leaving water	Cooling	Min. ~ Max.	°C DB		5 ~ 27 (16 ~ 27) <sup>1)</sup>	
Water Side	temperature)	DHW				15 ~ 80 <sup>2)</sup>	
Piping Connections	Dining Connections	Mator Circuit	Inlet	Inch	Male PT 1" accore	ding to ISO 7-1 (tape	red pipe threads)
	Piping Connections	water Circuit	Outlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)		
	Rated Water Flow Rate at	t LWT 35°C		LPM	15.8	20.1	25.9
	Operation Range	Heating	Min Max			-25 ~ 35	
	(outdoor temperature)		IVIIII ~ IVIdX	-C DB		5 ~ 48	
	Comproscor	Quantity		EA		1	
Refrigerant Side	Compressor	Туре		-	Hermetic Sealed Scroll		
	Refrigerant	Туре		-	R32		
		GWP (Global Warming Potential)		-		675	
		Precharged Amount		g	1,400		
		t-CO2 eq		-	0.945		
Sound Power L	evel	Heating	Rated	dB(A)		60	
Sound Pressure	e Level (at 1m)	Heating	Rated	dB(A)		50	
Dimensions		Unit	W×H×D	mm		1,239 × 834 × 330	
Weight		Unit		kg		88.0	
Exterior		Color / RAL Cod	e	-	V	/arm Gray / RAL 704	4
		Voltage, Phase,	Frequency	V, Ø, Hz		220-240, 1, 50	
Power Supply		Rated Running	Heating	A	5.4	6.9	9.6
Fower Supply		Current	Cooling	A	5.3	6.9	9.5
		Recommended	Circuit Breaker	А	16	20	25
Wiring Connect	tions	Power Supply Cable (included earth, H07RN-F)		mm <sup>2</sup> x cores	4.0 x 3C		

1) When fan coil unit not used.

2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note

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

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SPLIT

WATER HEATER

## **PRODUCT SPECIFICATION**

## **Performance Table for Heating Operation**

#### Maximum Heating Capacity (Including Defrost Effect)

#### HM051M U43

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

#### HM071M U43

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

#### HM091M U43

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

#### Note

DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (*l*/min), TC : Total Capacity (kW)
 Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Neasuring procedure rollows EN-14511.
Rated values are based on standard conditions and it can be found on specifications.
Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

### Performance Table for Cooling Operation

Maximum Cooling Capacity

#### HM051M U43

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

#### HM071M U43

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

#### HM091M U43

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# **PRODUCT SPECIFICATION**

## Drawings

![](_page_30_Figure_3.jpeg)

[Unit : mm]

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HM051M U43 HM071M U43 HM091M U43

![](_page_30_Figure_5.jpeg)

![](_page_30_Figure_6.jpeg)

![](_page_30_Figure_7.jpeg)

![](_page_30_Figure_8.jpeg)

![](_page_30_Figure_9.jpeg)

![](_page_30_Figure_10.jpeg)

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

#### [Unit : mm]

HYDROSPLIT

![](_page_30_Picture_17.jpeg)

SPLIT

# **PRODUCT SPECIFICATION**

### R32 Monobloc

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

![](_page_31_Picture_4.jpeg)

🔅 🐝 😭

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

R1Compressor<sup>®</sup> Black Fin Di LG ThinQ R32

### Features

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

### Model Line-up

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

### Seasonal Energy

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

### Nominal Capacity and Nominal Power Input

Description		OAT <sup>1)</sup>	LWT <sup>2)</sup>	11-:*	HM121M U33 (1Ø)	HM141M U33 (1Ø)	HM161M U33 (1Ø)
Description		(DB)	(DB)	Unit	HM123M U33 (3Ø)	HM143M U33 (3Ø)	HM163M U33 (3Ø)
		7°C	35°C		12.00	14.00	16.00
	Heating	7°C	55°C		12.00	12.00	12.00
Nominal Capacity		2°C	35°C	kW	11.00	12.00	13.80
	Cooling	35°C	18°C		12.00	14.00	16.00
	Cooling	35°C	7°C		12.00	14.00	16.00
	Heating	7°C	35°C	kW	2.61	3.11	3.64
		7°C	55°C		4.29	4.29	4.29
Nominal Power Input		2°C	35°C		3.13	3.42	3.94
	Castina	35°C	18°C		2.61	3.26	4.00
	Cooling	35°C	7°C		4.44	5.38	6.40
		7°C	35°C		4.60	4.50	4.40
COP	Heating	7°C	55°C	W/W	2.80	2.80	2.80
		2°C	35°C		3.52	3.51	3.50
EED	Cooling	35°C	18°C	10//10/	4.60	4.30	4.00
EEK	Cooling	35°C	7°C	00/00	2.70	2.60	2.50

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

### **Product Specification**

Technical S	Specification			Unit	HM121M U33	HM141M U33	HM161M U33	HM123M U33	HM143M U33	HM163M U33		
	Operation Range	Heating			15 ~ 65							
	(leaving water	Cooling	Min. ~ Max.	°C DB	DB 5 ~ 27 (16 ~ 27) <sup>1)</sup>							
Water	temperature)	DHW					15 ~	802)				
Side	Piping	Water	Inlet	Inch		Male PT 1" according to ISO 7-1 (tapered pipe threads)						
	Connections	Circuit	Outlet	Inch		Male PT 1" ac	cording to ISC	) 7-1 (tapered	pipe threads)	pe threads)		
	Rated Water Flo	w Rate at LWT 35	5°C	LPM	34.5	40.3	46.0	34.5	40.3	46.0		
	Operation Range	Heating	Min Max				-25	~ 35				
	(outdoor temp.)	Cooling	IVIIII. ~ IVIdX.	CDB			5 ~	48				
	Comproscor	Quantity		EA				1				
Refrigerant	Compressor	Туре		-			Hermetic S	ealed Scroll				
Side		Туре		-		R32						
	Defrigerent	GWP (global war	ming potential)	-			6	75				
	Rerrigerant	Precharged Amo	unt	g			2,4	100				
		t-CO <sub>2</sub> eq		-	1.620							
Sound Powe	er Level	Heating	Rated	dB(A)	63							
Sound Press	sure Level (at 1m)	Heating	Rated	dB(A)	52							
Dimensions		Unit	WxHxD	mm			1,239 × 8	34 × 330				
Weight		Unit		kg			12	4.5				
Exterior		Color / RAL Co	le	-			Warm Gray	/ RAL 7044				
		Voltage, Phase,	Frequency	V, Ø, Hz	2	220-240, 1, 50	)	3	380-415, 3, 50	)		
Douvor Cupr		Rated Running	Heating	A	11.6	13.8	16.1	3.8	4.6	5.4		
Power Supp	лу	Current	Cooling	A	11.6	14.4	17.7	3.8	4.8	5.9		
		Recommended C	ircuit Breaker	A		40			16			
Wiring Con	nections	Power Supply C (included earth	able H07RN-F)	mm <sup>2</sup> x cores		6.0 x 3C			4.0 x 5C			

1) When fan coil unit not used.

2) DHW 58~80°C Operating is available only when the booster heater is operating. Note

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

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SPLIT

WATER HEATER

## **PRODUCT SPECIFICATION**

## **Performance Table for Heating Operation**

#### Maximum Heating Capacity (Including Defrost Effect)

#### HM121M U33 / HM123M U33

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

#### HM141M U33 / HM143 U33

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

#### HM161M U33 / HM163 U33

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

DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (*l*/min), TC : Total Capacity (kW)
 Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
 Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

### Performance Table for Cooling Operation

Maximum Cooling Capacity

#### HM121M U33 / HM123M U33

	11117 790	LWT 109C	110/7 1290		LWT 109C		11/07 2290
Outdoor			LWII3°C	LVVI 15°C			
Temperature	TC	TC	TC	TC	TC	TC	TC
10°C DB	11.25	12.33	13.40	14.12	15.20	15.91	16.63
20°C DB	11.55	12.20	12.84	13.27	13.92	14.35	14.78
30°C DB	11.85	12.07	12.28	12.42	12.64	12.78	12.93
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
40°C DB	12.15	12.00	11.85	11.75	11.59	11.49	11.39
45°C DB	12.30	12.00	11.69	11.49	11.19	10.99	10.78

#### HM141M U33 / HM143 U33

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

#### HM161M U33 / HM163 U33

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
 Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# **PRODUCT SPECIFICATION**

## Drawings

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

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

[Unit : mm]

![](_page_33_Figure_6.jpeg)

![](_page_33_Figure_7.jpeg)

![](_page_33_Picture_8.jpeg)

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

#### [Unit : mm]

1	_	_	_
-	_	_	4
			1

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![](_page_33_Picture_20.jpeg)

![](_page_34_Picture_0.jpeg)

## **PRODUCT SPECIFICATION**

## **Electric Backup Heater**

HA031M E1 HA061M E1 HA063M E1

![](_page_34_Picture_4.jpeg)

![](_page_34_Figure_5.jpeg)

![](_page_34_Figure_6.jpeg)

### **Product Specification**

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

Side View

![](_page_34_Figure_15.jpeg)

### [Unit : mm]

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Part Nam No. Leaving Water Pipe 1 2 Entering Water Pipe 3 Control Box 4 Thermal Switch 5 Air Vent 6 Electric Heater 7 Backup Heater Outlet Sensor (S13)

Note 1. Due to our policy of innovation some specifications may be changed without notification.

<sup>2.</sup> Wiring cable size must comply with the applicable local and national codes.

Especially the power cable and circuit breaker should be selected in accordance with that.

# THERMAV. <sup>®32</sup> R32 HYDROSPLIT HYDRO BOX

![](_page_35_Picture_1.jpeg)

## **Energy Label**

![](_page_35_Picture_3.jpeg)

**Excellent Performance & Efficiency** 

![](_page_35_Figure_5.jpeg)

#### Easy Installation & Maintenance

![](_page_35_Figure_7.jpeg)

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

\* 16kW 3Ø model. \* A+++ to D scale.

## R32 Hydrosplit Hydro Box Introduction

The LG THERMA V Hydrosplit series separates the Indoor unit (IDU) and outdoor unit (ODU), connecting them via water pipes. The unit's heat exchanger is located within the ODU, reducing the risk of indoor refrigerant leakage. THERMA V R32 Hydrosplit Hydro Box is a solution providing space heating and cooling with high installation flexibility thanks to the characteristic of being a wall mounted type.

## **Key Components**

![](_page_35_Figure_13.jpeg)

## Hydrosplit Concept

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

![](_page_35_Picture_16.jpeg)

## No Risk of Indoor Refrigerant Leakage

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

![](_page_35_Figure_19.jpeg)

![](_page_35_Picture_22.jpeg)

MONOBLOC

THERMA V FEATURES
# THERMA V. 82 HYDROSPLIT HYDRO BOX **PRODUCT SPECIFICATION**

# R32 Hydrosplit Hydro Box

Indoor Unit

HN1600MC NK1

Outdoor Unit

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



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### Features

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

\* Only the outdoor units are registered in EHPA certification.

## Model Line-up

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

### Seasonal Energy

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

### Nominal Capacity and Nominal Power Input

				Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)			
Description		OAT (DB)	LWT (DB)		HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)			
				Indoor Unit		HN1600MC NK1				
		7°C	35°C		12.00	14.00	16.00			
	Heating	7°C	55°C		11.00	11.50	12.00			
Nominal Capacity		2°C	35°C	kW	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			
	Heating	7°C	35°C	kW	2.38	2.86	3.33			
		7°C	55°C		3.79	4.04	4.29			
Nominal Power Input		2°C	35°C		3.01	3.31	3.83			
i olici iliput	Cooling	35°C	18°C		2.53	3.26	4.00			
	Cooling	35°C	7℃		4.44	5.38	6.40			
		7°C	35°C		5.04	4.89	4.80			
COP	Heating	7°C	55°C	W/W	2.90	2.85	2.80			
		2°C	35°C		3.65	3.63	3.60			
EED	Cooling	35°C	18°C	10//10/	4.75	4.30	4.00			
EER	Cooling	35°C	7℃	VV/VV	2.70	2.60	2.50			

INTRODUCTION

# THERMA V. 🕲 HYDROSPLIT HYDRO BOX **PRODUCT SPECIFICATION**

# R32 Hydrosplit Hydro Box

### Product Specification (Outdoor Unit)

Technical Specificatio	n		Unit	HU121MRB U30	HU141MRB U30	HU161MRB U30	HU123MRB U30	HU143MRB U30	HU163MRB U30	
Operation Range	Heating	Min Max				-25	~ 35			
(outdoor temp.)	Cooling	IVIIII. ~ IVIAX.	CDB			5 ~	48			
Comprossor	Quantity	EA			1					
Compressor	Туре		-			Hermetic S	ealed Scroll			
	Туре		- R32							
Pofrigorant	GWP (global warming potential)		-			67	75			
Reingerand	Precharged Amount		g			2,1	00			
	t-CO <sub>2</sub> eq	-			1.4	18				
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)						
Piping Connections	Water Circuit	Outlet	mm (inch)		Male PT 1" according to ISO 7-1 (tapered pipe threads)					
Rated Water Flow Rate (	(at LWT 35°C)		LPM	34.5	40.3	46.0	34.5	40.3	46.0	
Sound Power Level	Heating	Rated	dB(A)	61	62	63	61	62	63	
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	53	54	55	53	54	55	
Dimensions	Unit	WxHxD	mm			950 × 1,3	80 × 330			
Weight	Unit		kg			91	.7			
Exterior	Color / RAL Code		-			Warm Gray	/ RAL 7044			
	Voltage, Phase, Frequ	lency	V, Ø, Hz		220-240, 1, 5	D		380-415, 3, 50	)	
Power Supply	Rated	Heating	A	10.6	12.7	14.8	3.5	4.2	4.9	
Power Supply	Running Current	Cooling	A	11.2	14.4	17.7	3.7	4.8	5.9	
	Recommended Circui	t Breaker	A		40		16			
Wiring Connections	Power Supply Cable (includ	ed earth. H07RN-F)	mm <sup>2</sup> x cores		6.0 x 3C			2.5 x 5C		

Note

1. Due to our policy of innovation some specifications may be changed without notification.

2. Wiring cable size must comply with the applicable local and national codes.

Especially the power cable and circuit breaker should be selected in accordance with that. 3. Sound power level is measured on the rated condition in according with ISO 9614 standard.

Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.

4. Performances are based on the following conditions (It is according to EN14511):

• Interconnected Pipe Length is standard length and difference of Elevation

5. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is Om.

## Product Specification (Indoor Unit)

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

1) When fan coil unit not used.

2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note

1. Due to our policy of innovation some specifications may be changed without notification.

2. Wiring cable size must comply with the applicable local and national codes.

Especially the power cable and circuit breaker should be selected in accordance with that.

3. Sound power level is measured on the rated condition in according with ISO 9614 standard.

Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.

4. This product contains Fluorinated greenhouse gases.

# Accessory Parts (Optional Accessory)

**Backup Heater** 



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

# Accessory Parts (Separately Provided)

#### Strainer



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

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# THERMA V. 🕲 HYDROSPLIT HYDRO BOX **PRODUCT SPECIFICATION**

# **Performance Table for Heating Operation**

#### Maximum Heating Capacity (Including Defrost Effect)

#### HU121MRB U30 / HU123MRB U30 + HN1600MC NK1

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

#### HU141MRB U30 / HU143MRB U30 + HN1600MC NK1

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

#### HU161MRB U30 / HU163MRB U30 + HN1600MC NK1

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

• Rated values are based on standard conditions and it can be found on specifications.

• Alted values are based on standard conditions and recarrise round on specifications.
• Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
• In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# Performance Table for Cooling Operation

#### Maximum Cooling Capacity

#### HU121MRB U30 / HU123MRB U30 + HN1600MC NK1

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

#### HU141MRB U30 / HU143MRB U30 + HN1600MC NK1

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

#### HU161MRB U30 / HU163MRB U30 + HN1600MC NK1

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

• Rated values are based on standard conditions and it can be found on specifications. Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# THERMA V. R32 HYDROSPLIT HYDRO BOX

# **PRODUCT SPECIFICATION**

# Drawings

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

HU121MRB U30 / HU141MRB U30 / HU161MRB U30 HU123MRB U30 / HU143MRB U30 / HU163MRB U30 [Unit : mm]



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



No.	Part Name	
1	Control Panel	

Internal





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

# THERMAV. (32) R32 HYDROSPLIT IWT



# **Energy Label**



### Excellent Performance & Efficiency





\* Detailed description for each function is presented on page 28  $\sim$  35.

\* 16kW 3Ø model. \* A+++ to D scale.

# R32 Hydrosplit IWT Introduction

The LG THERMA V Hydrosplit series separates the Indoor unit (IDU) and outdoor unit (ODU), connecting them via water pipes. The unit's heat exchanger is located within the ODU, reducing the risk of indoor refrigerant leakage. THERMA V R32 Hydrosplit IWT is a domestic hot water supply, space heating and cooling solution that conveniently combines an indoor hot water tank with a separate outdoor unit.

# **Key Components**



- 1 DHW storage tank (200*l*)
- 2 Main water pump
- 3 Water pump for DHW charging
- 4 Plate heat exchanger for DHW (water / DHW)
- **5** Electric heater (Max. 6kW)
- 6 3-way diverting valve
- Expansion vessel for heating (12*l*)
- 8 Flow sensor
- 9 Water pressure sensor
- Expansion vessel for DHW (8l, option)
- 1 Buffer tank (40ℓ, option)
- 2 Standard III Remote controller (attached on the front panel)
- A Inlet pipe from outdoor unit (female G1")
- Outlet pipe to outdoor unit (female G1")
- **O** Domestic hot water outlet pipe (female G3/4")
- Domestic cold water outlet pipe (female G3/4")
- B DHW recirculation pipe (female G3/4")
- B Heating circuit inlet pipe (female G1")
- G Heating circuit outlet pipe (female G1")

# Hydrosplit Concept

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



# Sophisticated and Harmonious Exterior

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





SPLIT

WATER HEATER

ACCESSORIES



# Save Space and Time

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



# **PRODUCT SPECIFICATION**

# R32 Hydrosplit IWT (Integrated Water Tank)

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#### Indoor Unit HN1616Y NB1

Outdoor Unit HN121MRB U30 / HU123MRB U30 HN141MRB U30 / HU143MRB U30 HN161MRB U30 / HU163MRB U30



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**C** RICompressor<sup>™</sup> Black Fin û LG ThinQ R32 011-1W0466 EHPA for Austria

### Features

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

• KEYMARK / EHPA (for Germany, Austria) / EUROVENT certification

\* Only the outdoor units are registered in EHPA certification.

### Model Line-up

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

### Seasonal Energy

			Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)
Description	Description			HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)
				HN1616Y NB1		
	Average	SCOP	-	4.60	4.57	4.55
Space	Climate Water	Seasonal Space Heating Efficiency (ŋs)	%	181	180	179
Heating	Outlet 35°C	Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A+++	A+++	A+++
(According	Average	SCOP	-	3.50	3.47	3.45
to EN14825)	Climate Water Outlet 55°C	Seasonal Space Heating Efficiency (ŋs)	%	137	136	135
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	A++	A++	A++
		Declared Load Profile	-	L	L	L
	Average	Water Heating Efficiency (ŋwɨ)	%	120	120	120
	Climate	SCOP <sub>DHW</sub>	-	2.74	2.74	2.74
Domestic		Water Heating Eff. Class	-	A+	A+	A+
Hot Water		Declared Load Profile	-	L	L	L
(According to EN16147)	VVarmer	Water Heating Efficiency (ŋwɨ)	%	151	151	151
	Cumate	SCOP <sub>DHW</sub>	-	3.43	3.43	3.43
	C.11.	Declared Load Profile	-	L	L	L
	Climate	Water Heating Efficiency (ŋwн)	%	101	101	101
	Cumace	SCOP <sub>DHW</sub>	-	2.34	2.34	2.34

### Nominal Capacity and Nominal Power Input

Description				Outdoor Unit	HU121MRB U30 (1Ø)	HU141MRB U30 (1Ø)	HU161MRB U30 (1Ø)	
		OAT (DB)	LWT (DB)	Outdoor Onit	HU123MRB U30 (3Ø)	HU143MRB U30 (3Ø)	HU163MRB U30 (3Ø)	
				Indoor Unit	HN1616Y NB1			
		7°C	35°C		12.00	14.00	16.00	
	Heating	7°C	55°C		11.00	11.50	12.00	
Nominal Capacity		2°C	35°C	kW	11.00	12.00	13.80	
	Cooling	35°C	18°C		12.00	14.00	16.00	
	Cooling	35°C	7°C		12.00	14.00	16.00	
	Heating	7°C	35°C	kW	2.38	2.86	3.33	
		7°C	55°C		3.79	4.04	4.29	
Nominal Power Input		2°C	35°C		3.01	3.31	3.83	
r ower input	Cooling	35°C	18°C		2.53	3.26	4.00	
		35°C	7°C		4.44	5.38	6.40	
		7°C	35°C		5.04	4.89	4.80	
СОР	Heating	7°C	55°C	W/W	2.90	2.85	2.80	
		2°C	35°C		3.65	3.63	3.60	
EED	Cooling	35°C	18°C	10//10/	4.75	4.30	4.00	
EER	Cooling	35°C	7°C	00700	2.70	2.60	2.50	

INTRODUCTION

SPLIT

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# **PRODUCT SPECIFICATION**

# R32 Hydrosplit IWT (Integrated Water Tank)

### Product Specification (Outdoor Unit)

Technical Specification				HU121MRB U30	HU141MRB U30	HU161MRB U30	HU123MRB U30	HU143MRB U30	HU163MRB U30	
Operation Range	Heating Min Max			-25 ~ 35						
(outdoor temp.)	Cooling IVIII. ~ IVIAX.		CDB	5 ~ 48						
Compressor	Quantity		EA							
Compressor	Туре		-			Hermetic S	ealed Scroll			
	Туре		-			R	32			
Pofrigorant	GWP (global warming	g potential)	-			6	75			
Kenngerant	Precharged Amount		g			2,1	00			
	t-CO <sub>2</sub> eq		-			1.4	18			
Piping Connections	Water Circuit	Inlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)						
Fiping connections		Outlet	mm (inch)	Male PT 1" according to ISO 7-1 (tapered pipe threads)						
Rated Water Flow Rate (	(at LWT 35°C)		LPM	34.5	40.3	46.0	34.5	40.3	46.0	
Sound Power Level	Heating	Rated	dB(A)	61	62	63	61	62	63	
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	53	54	55	53	54	55	
Dimensions	Unit	WxHxD	mm	950 × 1,380 × 330						
Weight	: Unit		kg	91.7						
Exterior	Color / RAL Code	-	Warm Gray / RAL 7044							
Power Supply	Voltage, Phase, Frequ	iency	V, Ø, Hz		220-240, 1, 5	0		<u>380-415, 3, 50</u>	)	
	Rated	Heating	A	10.6	12.7	14.8	3.5	4.2	4.9	
	Running Current	Cooling	A	11.2	14.4	17.7	3.7	4.8	5.9	
	Recommended Circui	t Breaker	A		40		16			
Wiring Connections	Power Supply Cable (includ	mm <sup>2</sup> x cores	6.0 x 3C			2.5 x 5C				

### Product Specification (Indoor Unit)

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

1) When fan coil unit not used.

2) DHW 58~80°C Operating is available only when the booster heater is operating.

3) The capacity of electric heater can be adjusted by wiring.

Note

1. Due to our policy of innovation some specifications may be changed without notification.

2. Wiring cable size must comply with the applicable local and national codes.

Especially the power cable and circuit breaker should be selected in accordance with that. 3. Sound power level is measured on the rated condition in according with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of OdB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.

4. Performances are based on the following conditions (It is according to EN14511):

Interconnected Pipe Length is standard length and difference of Elevation

5. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is Om.

# Accessory Parts (Optional Accessory)

Weight (w/o water)

### Buffer Tank for Space Heating



Buffer tank for space heating Water Volume Dimensions (W x H x D)

Product

backside of the indoor unit.

## **Expansion Vessel for DHW**



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

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

# Accessory Parts (Separately Provided)

Shut-off valve (1EA)



Strainer



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

As an optional accessory, the installer can install a standard 40<sup>1</sup> buffer tank for space heating. Fitting seamlessly into the main casing, it can be attached on the

Unit	OSHB-40KT.AEU
l	40
mm	518 x 560 x 175
kg	24

### Shut-off valve with strainer (1EA)



# **Performance Table for Heating Operation**

#### Maximum Heating Capacity (Including Defrost Effect)

#### HU121MRB U30 / HU123MRB U30 + HN1616Y NB1

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

#### HU141MRB U30 / HU143MRB U30 + HN1616Y NB1

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

#### HU161MRB U30 / HU163MRB U30 + HN1616Y NB1

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

• Rated values are based on standard conditions and it can be found on specifications.

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• Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
• In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# Performance Table for Cooling Operation

#### Maximum Cooling Capacity

#### HU121MRB U30 / HU123MRB U30 + HN1616Y NB1

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

#### HU141MRB U30 / HU143MRB U30 + HN1616Y NB1

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

#### HU161MRB U30 / HU163MRB U30 + HN1616Y NB1

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
 Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# **PRODUCT SPECIFICATION**

# Drawings

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

HU121MRB U30 / HU141MRB U30 / HU161MRB U30 HU123MRB U30 / HU143MRB U30 / HU163MRB U30 [Unit : mm]





3D View



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

#### HN1616Y NB1



No.	Part Name	Description	No.	Part Name	Part Name
1	Domestic hot water tank	200 L	А	Inlet pipe from outdoor unit	Female G1"
2	Electric heater	Max 6 kW	В	Outlet pipe to outdoor unit	Female G1"
3	Flow Sensor	SIKA VVX20 5-80 LPM	С	Domestic hot water outlet pipe	Female G3/4"
4	3 Way valve	Heating / DHW circuit	D	Domestic cold water inlet pipe	Female G3/4"
5	Water pressure sensor	SENSATA 2HMP	Е	Domestic re-circulation pipe	Female G3/4"
6	Expansion vessel	12 L for heating circuit	F	Heating circuit inlet pipe	Female G1"
7	Magnesium anode	To prevent corrosion	G	Heating circuit outlet pipe	Female G1"
8	DHW tank sensor	Temperature sensor	Н	Electrical conduits	For electric wiring
9	Plate heat exchanger	Heat exchange (Water / DHW tank)	1	Control panel	Built-in remote controller
10	DHW water pump	WILO ZRS 15/6-3			
11	Strainer For DHW tank	Filtering and stacking particles			
12	Main water pump	GRUNDFOS UPML 25-105 130 PWM A			
13	Expansion vessel	8 L For DHW circuit (Accessory)			
14	Control box	PCB and terminal blocks			
15	Air vent	Air purging when charging water			
16	Drain cock	Valve for water draining			
17	Electrical conduits	For electric wiring			

INTRODUCTION

THERMA V FEATURES

MONOBLOC

SPLIT

WATER HEATER

ACCESSORIES

# THERMAV. (R2) R32 SPLIT HYDRO BOX



# **Energy Label**



Excellent Performance & Efficiency



#### Easy Installation & Maintenance



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

\* 5kW 1Ø model. \* A+++ to D scale.

# **R32 Split Hydro Box Introduction**

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

# **Key Components**



R1 compressor
 Black Fin heat exchanger (ref/air)





# **Flexible Refrigerant Piping Design**

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



#### 3 Way Piping

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



# THERMA V. 82 SPLIT HYDRO BOX **PRODUCT SPECIFICATION**

# R32 Split Hydro Box





• R1 compressor

• LG ThinQ

• Black Fin heat exchanger

\* EHPA label under development

KEYMARK / MCS / EUROVENT certification

### 011-1W0315

Features • Refrigerant pipes connects IDU & ODU

- SCOP up to 4.65 (Average climate / Low temp. application): A+++
- SCOP up to 3.23 (Average climate / Mid temp. application) : A++
- COP up to 4.90 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -7 ℃ OAT (@ LWT 35℃)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)

### Model Line-up

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

### Seasonal Energy

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

### Nominal Capacity and Nominal Power Input

Description				Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44	
Description		UAT (DB)		Indoor Unit		HN091MR NK5		
		7°C	35°C		5.50	7.00	9.00	
	Heating	7°C	55°C		5.50	5.50	5.50	
Nominal Capacity		2°C	35°C	kW	3.30	4.20	5.40	
	Cooling	35°C	18°C		5.50	7.00	9.00	
	Cooling	35°C	7°C		5.50	7.00	9.00	
		7°C	35°C	kW	1.12	1.43	1.94	
Maninal	Heating	7°C	55°C		2.04	2.04	2.04	
Nominal Power Input		2°C	35°C		0.94	1.20	1.54	
rower input	Castina	35°C	18°C		1.20	1.56	2.14	
	Cooling	35°C	7°C		1.96	2.59	3.46	
		7°C	35°C		4.90	4.90	4.65	
COP	Heating	7°C	55°C	W/W	2.70	2.70	2.70	
		2°C	35°C		3.52	3.51	3.50	
EED	Castina	35°C	18°C	W/W	4.60	4.50	4.20	
LER	Cooling	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	Heating	Min Max			-25 ~ 35	
(outdoor temp.)	Cooling	IVIIII. ~ IVIdX.	CDB		5 ~ 48	
Compressor	Quantity		EA		1	
Compressor	Туре		-	Hermetic Sealed Scroll		
	Туре		-	R32		
Pofrigorant	GWP (global warming pote	ential)	-	675		
Reifigerand	Precharged Amount		g	1,500		
	t-CO <sub>2</sub> eq		-		1.013	
	Outcido Diamator	Gas	mm (inch)		Φ 15.88 (5/8)	
	Outside Diameter	Liquid	mm (inch)		Φ 9.52 (3/8)	
Diping	Length	Standard	m	5		
Connections	Length	Max.	m	50		
connections	Level Difference	Max.	m		30	
	Chargeless-Pipe Length		m		10	
	Additional Charging Volum	e	g/m	40		
Rated Water Flow Rate (a	at LWT 35°C)		LPM	15.8	20.1	25.9
Sound Power Level	Heating	Rated	dB(A)		60	
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)		52	
Dimensions	Unit	WxHxD	mm		950 × 834 × 330	
Weight	Unit		kg		60.0	
Exterior	Color / RAL Code		-	V	/arm Gray / RAL 704	14
	Voltage, Phase, Frequency		V, Ø, Hz		220-240, 1, 50	
Power Supply	Pated Pupping Current	Heating	A	5.0	6.3	8.6
Power Supply	Rated Running Current	Cooling	A	5.3	6.9	9.5
	Recommended Circuit Breaker		A	16	20	25
Wiring Connections	Power Supply Cable (includ	ed earth, H07RN-F)	mm <sup>2</sup> x cores		4.0 x 3C	

Note

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

# Product Specification (Indoor Unit)

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

When fan coil unit not used.

2) DHW 58~80°C Operating is available only when the booster heater is operating.

INTRODUCTION	
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# THERMA V. (R32) SPLIT HYDRO BOX **PRODUCT SPECIFICATION**

# **Performance Table for Heating Operation**

### Maximum Heating Capacity (Including Defrost Effect)

#### HU051MR U44 + HN091MR NK5

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

#### HU071MR U44 + HN091MR NK5

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

#### HU091MR U44 + HN091MR NK5

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

3. Measuring procedure follows EN-14511.
Rated values are based on standard conditions and it can be found on specifications.
Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# Performance Table for Cooling Operation

Maximum Cooling Capacity

#### HU051MR U44 + HN091MR NK5

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

#### HU071MR U44 + HN091MR NK5

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

#### HU091MR U44 + HN091MR NK5

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
 Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# **PRODUCT SPECIFICATION**

# Drawings



#### 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)	-





No.	Part Name	
1	Control Panel	

Internal



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

#### Description

Built-in remote controller



# INTRODUCTION

THERMA V FEATURES

# *THERMA* V. <sup>®32</sup> R32 SPLIT IWT



# Energy Label



Excellent Performance & Efficiency





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

\* 9kW 1Ø model. \* A+++ to D scale.

# R32 Split IWT Introduction

THERMA V R32 Split IWT is a domestic hot water supply, space heating and cooling solution that conveniently combines an indoor hot water tank with a separate outdoor unit. THERMA V R32 Split IWT is the perfect space-saving solution for residential applications because hydronic components like the Domestic Hot Water (DHW) and buffer tanks, which are typically installed separately, are fully integrated.

# Key Components



- **1** DHW storage tank (200*l*)
- 2 Main water pump
- 3 Water pump for DHW charging
- **4** Main plate heat exchanger (ref. / water)
- S Plate heat exchanger for DHW (water / DHW)
- 6 Back up electric heater (max. 6kW)
- 3 Way diverting valve
- 8 Expansion vessel for heating (12*l*)
- 9 Flow sensor
- Expansion vessel for DHW (8l, option)
- Buffer tank (40l, option)
- (2) Standard III Remote controller (attached on the front panel)
- A 5/8" Refrigerant gas pipe
- **B** 3/8" Refrigerant liquid pipe
- G G3/4" Domestic hot water outlet
- **O** G3/4" Domestic cold water inlet
- G3/4" DHW Re-circulation
- G1" Heating circuit inlet
- G G1" Heating circuit outlet



# Sophisticated and Harmonious Exterior

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





# Save Space and Time

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



# INTRODUCTION



# **PRODUCT SPECIFICATION**

# R32 Split IWT (Integrated Water Tank)

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



🔅 🎇 😭

R1Compressor<sup>™</sup> Black Fin D LG ThinO A+++ **R32** 011-1W0407 EHPA for Germany Austria

### Features

- Refrigerant pipes connects IDU & ODU
- SCOP up to 4.52 (Average climate / Low temp. application) : A+++
- SCOP up to 3.03 (Average climate / Mid temp. application) : A+
- SCOP<sub>DHW</sub> 2.89 (water heating efficiency 120%, profile L): A+
- COP up to 4.50 (Outdoor air 7°C / Leaving water 35°C)
- DHW tank (2001) & hydronic component integration
- Integrable buffer tank (40*l*) & expansion tank for DHW circuit (8*l*) (optional)
- 100% heating capacity at -7°C OAT (@ LWT 35°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ

• KEYMARK / EHPA (for Germany, Austria) / EUROVENT certification

### Model Line-up

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

### Seasonal Energy

<b>D</b>			Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
Description	1		Indoor Unit		HN0916T NB1	
	Average	SCOP	-	4.52	4.47	4.45
	Climate Water	Seasonal Space Heating Efficiency (ŋs)	%	178	176	175
Heating	Outlet 35°C	Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A+++
(according	Average	SCOP	-	3.01	3.00	3.03
LU EIV 14025)	Climate Water	Seasonal Space Heating Efficiency (ŋs)	%	117	117	118
Outlet 55°C Seas	Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+	A+	A+	
		Declared Load Profile	-	L	L	L
	Average	Water Heating Efficiency (η <sub>WH</sub> )	%	125	125	125
	Climate	SCOP <sub>DHW</sub>	-	2.89	2.89	2.89
Domestic		Water Heating Efficiency Class	-	A+	A+	A+
Hot Water		Declared Load Profile	-	L	L	L
acc.	Warmer Climate	Water Heating Efficiency (η <sub>WH</sub> )	%	156	156	156
EN16147		SCOP <sub>DHW</sub>	-	3.61	3.61	3.61
		Declared Load Profile	-	L	L	L
	Colder Climate	Water Heating Efficiency <sub>(nwh)</sub>	%	106	106	106
		SCOP <sub>DHW</sub>	-	2.44	2.44	2.44

### Nominal Capacity and Nominal Power Input

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

# **PRODUCT SPECIFICATION**

# R32 Split IWT (Integrated Water Tank)

### Product Specification (Outdoor Unit)

Technical Specification			Unit	HU051MR U44	HU071MR U44	HU091MR U44		
Operation Range	Heating	N.4. N.4.	0C DD		-25 ~ 35			
(outdoor temp.)	Cooling	iviin. ~ iviax.	CDB		5 ~ 48			
Compressor	Quantity	EA		1				
Compressor		-	Hermetic Sealed Scroll					
	Туре		-		R32			
Refrigerant	GWP (global warming pote	ential)	-		675			
Reingerant	Precharged Amount		g		1,500			
	t-CO <sub>2</sub> eq		-	1.013				
	Outcido Diamotor	Gas	mm (inch)		Ø 15.88 (5/8)			
	Outside Diameter	Liquid	mm (inch)		Ø 9.52 (3/8)			
Diping	Longth	Standard	m	5				
Connections	Length	Max.	m	50				
Connections	Level Difference	m		30				
	Chargeless-Pipe Length	m	10					
	Additional Charging Volum	e	g/m	40				
Rated Water Flow Rate (a	at LWT 35°C)		LPM	15.8	20.1	25.9		
Sound Power Level	Heating	Rated	dB(A)	60	6	1		
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	52	5	3		
Dimensions	Unit	WxHxD	mm		950 × 834 × 330			
Weight	Unit		kg		60.0			
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044				
	Voltage, Phase, Frequency		V, Ø, Hz		220-240, 1, 50			
Power Supply	Pated Pupping Current	Heating	A	5.0	6.3	8.6		
Fower Supply	Rated Running Current	Cooling	A	5.3	6.9	9.5		
	Recommended Circuit Brea	aker	A	16	20	25		
Wiring Connections	Power Supply Cable (includ	ed earth, H07RN-F)	mm <sup>2</sup> x cores		4.0 x 3C			

Note

2. Wiring cable size must comply with the applicable local and national codes.

Especially the power cable and circuit breaker should be selected in accordance with that.

- 3. Sound power level is measured on the rated condition in according with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
- 4. Performances are based on the following conditions (It is according to EN14511):

Interconnected Pipe Length is standard length and difference of Elevation
 S. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is Om.

## Product Specification (Indoor Unit)

Technical Specificatio			Unit			
Technical Specification			Unit			
Operation Range	Cooling	Min Max		10~00 E 27 (16 27) <sup>1</sup>		
(leaving water)	DUW	IVIIII. ~ IVIAX.	CDD	5~2/(10~2/) <sup>7</sup>		
Demostic List Mater	DHVV		0	15 ~ 80"		
Domestic Hot vvater	Volume	·	l	200		
Iank	Internal Inermal Protect L	IMIT	-0	85		
Flow Sensor	Measuring Range Min. ~ Max.		LPIM	5~80		
Water Pressure Sensor	Measuring Range Min. ~ Max.		bar(G)	0 ~ 20		
Expansion Vessel (Heating Circuit)	Volume		l	12		
Safatu Valua	Heating Circuit	Upper Limit	bar	3		
Salety valve	DHW Circuit	Upper Limit	bar	10		
	Туре		-	Sheath		
	Number of Heating Coil		EA	1/2/3		
Electric Heater	Capacity combination		kW	2.0 / 2.0 + 2.0 / 2.0 + 2.0 + 2.0		
(Case 1 / Case 2 /	Heating Step		Step	1		
Case 3) <sup>3)</sup>	Power Supply		V, Ø, Hz	220-240, 1, 50 / 220-240, 1, 50 / 380-415, 3, 50		
	Power Supply Cable (Includ	ed Earth, H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C / 4.0 x 3C / 2.5 x 5C		
	Rated Running Current		A	8.7 / 17.4 / 8.7		
	Pofrigorant Circuit	Gas (outside diameter)	mm (inch)	Ø 15.88 (5/8)		
	Refrigerant Circuit	Liquid (outside diameter)	mm (inch)	Ø 9.52 (3/8)		
	Water Circuit	Inlet	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)		
Piping Connections	vvaler circuit	Outlet	Inch	Female G 1" according to ISO 228-1 (parallel pipe threads)		
		Cold Inlet	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)		
	DHW Tank Water Circuit	Hot Outlet	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)		
Recirculation		Recirculation	Inch	Female G 3/4" according to ISO 228-1 (parallel pipe threads)		
Wiring Connections	Power and Communication Ca	able(included earth, H07RN-F)	mm <sup>2</sup> x cores	0.75 x 4C		
Sound Power Level	Heating	Rated	dB(A)	43		
Dimensions	Unit	W×H×D	mm	601 × 1,812 × 685		
Weight	Unit		kg	140.0		
Exterior	Color / RAL Code		-	White / RAL 9002		

# Accessory Parts (Optional Accessory)

### Buffer Tank for Space Heating



space heating. Fitting seamle backside of the indoor unit.

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

### Expansion Vessel for DHW



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

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

# Accessory Parts (Separately Provided)

Shut-off valve (1EA)



1) When fan coil unit not used.

2) DHW 58-80°C Operating is available only when the booster heater is operating.

3) The capacity of electric heater can be adjusted by wiring.

As an optional accessory, the installer can install a standard  $40\ell$  buffer tank for space heating. Fitting seamlessly into the main casing, it can be attached on the

Shut-off valve with strainer (1EA)



THERMA V FEATURES

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

# **PRODUCT SPECIFICATION**

# **Performance Table for Heating Operation**

### Maximum Heating Capacity (Including Defrost Effect)

#### HU051MR U44 + HN0916T NB1

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

#### HU071MR U44 + HN0916T NB1

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

#### HU091MR U44 + HN0916T NB1

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# Performance Table for Cooling Operation

### Maximum Cooling Capacity

#### HU051MR U44 + HN0916T NB1

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

#### HU071MR U44 + HN0916T NB1

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

#### HU091MR U44 + HN0916T NB1

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

Rated values are based on standard conditions and it can be found on specifications.
 Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# **PRODUCT SPECIFICATION**

# Drawings

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

#### HU051MR U44 / HU071MR U44 / HU091MR U44

111







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)	-



[Unit : mm]



HN0916T NB1





No.	Part Name	Description
1	DHW Tank	Domestic Hot Water Tank (200L)
2	Electric Heater	Max. 6kW
3	Flow Sensor	SIKA VVXC9SNBUC00252P
4	Heat Exchanger	Plate-heat-exchanger (refrigerant/water
5	3 Way Valve	3 Way valve (DHW/heating)
6	Pressure Gauge	Pressure gauge
7	Expansion Vessel (12L)	Expansion vessel for Heating
8	Control Box	PCB and terminal blocks
9	Magnesium Anode	To prevent corrosion
10	Heat Exchanger	Plate-heat-exchanger (water/DHW)
11	DHW Water Pump	WILO ZRS 15/6-3 KU
12	DHW Strainer	Filtering and stacking particles
13	Main Water Pump	WILO Para KU 25-130/8-75/12 iPWM1
14	Bracket	For DHW Expansion vessel (accessory)
15	Remote Controller	Built-in remote controller
	No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	No.Part Name1DHW Tank2Electric Heater3Flow Sensor4Heat Exchanger53 Way Valve6Pressure Gauge7Expansion Vessel (12L)8Control Box9Magnesium Anode10Heat Exchanger11DHW Water Pump12DHW Strainer13Main Water Pump14Bracket15Remote Controller

INTRODUCTION THERMA V FEATURES

MONOBLOC

HYDROSPLIT

# THERMA V. **R410A SPLIT HYDRO BOX**



# **Energy Label**



**Excellent Performance & Efficiency** 



#### Easy Installation & Maintenance



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

\* 16kW 1Ø model. \* A+++ to D scale.

# **R410A Split Hydro Box Introduction**

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

# **Key Components**





# **Flexible Refrigerant Piping Design**

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



### **3 Way Piping**

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



# THERMA V. R410A SPLIT HYDRO BOX **PRODUCT SPECIFICATION**

# R410A Split Hydro Box

\* \* 1





### Features

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

## Model Line-up

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

## Seasonal Energy

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

### Nominal Capacity and Nominal Power Input

			Outdoor Unit		HU121MA U33 (1Ø) HU123MA U33 (3Ø)	HU141MA U33 (1Ø) HU143MA U33 (3Ø)	HU161MA U33 (1Ø) HU163MA U33 (3Ø)
Description	Description		LWI (DB)	Indoor		HN1616M NK5 (1Ø)	
				Unit		HN1636M NK5 (3Ø)	
		7°C	35°C		12.00	14.00	16.00
	Heating	7°C	55°C		11.00	11.50	12.00
Nominal Capacity		2°C	35°C	kW	11.00	12.00	13.80
	Cooling	35°C	18°C		10.40	12.00	13.00
	Cooling	35°C	7°C		7.94	8.50	8.92
	Heating	7°C	35°C	kW	2.64	3.17	3.76
		7°C	55°C		4.31	4.51	4.71
Nominal Power Input		2°C	35°C		3.04	3.32	3.83
i owei niput	Cooling	35°C	18°C		2.60	3.08	3.60
	Cooling	35°C	7°C		2.66	3.02	2.53
		7°C	35°C		4.55	4.41	4.26
СОР	Heating	7°C	55°C	W/W	2.55	2.55	2.55
		2°C	35°C		3.62	3.61	3.60
EED	Cooling	35°C	18°C	10//10/	4.00	3.90	3.61
LER	Cooling	35°C	7°C	VV/ VV	2.98	2.81	3.53

# **PRODUCT SPECIFICATION**

# R410A Split Hydro Box

# Product Specification (Outdoor Unit)

Technical Specific	cation		Unit	HU121MA U33	HU141MA U33	HU161MA U33	HU123MA U33	HU143MA U33	HU163MA U33	
Operation Range	Heating	Ndin Marr				-25	- 35			
(outdoor temp.)	Cooling	win. ~ wax.	CDB	5 ~ 48						
Compressor	Quantity		EA			1				
Compressor	Туре		-			Hermetic S	ealed Scroll			
	Туре		-	R410A						
Pofrigorant	GWP (global warming potential)		-	2,088						
Reingerant	Precharged Amount		g			2,5	00			
	t-CO <sub>2</sub> eq		-			5.2	19			
	Outside Gas		mm (inch)			Ø 15.8	3 (5/8)			
	Diameter	Liquid	mm (inch)		Ø 9.52 (3/8)					
<b>D</b>	Longth	Standard	m	7.5						
Connections –	Length	Max.	m	50						
	Level Difference	Max.	m			3	0			
	Chargeless-Pipe Length		m	7.5						
	Additional Charg	jing Volume	g/m	40						
Rated Water Flow	Rate (at LWT 35	°C)	LPM	34.5	40.3	46.0	34.5	40.3	46.0	
Sound Power Level	Heating	Rated	dB(A)	63	64	65	63	64	65	
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	55	56	57	55	56	57	
Dimensions	Unit	W×H×D	mm			950 x 1,3	80 x 330			
Weight	Unit		kg		84.8			85.4		
Exterior	Color / RAL Cod	e	-			Warm Gray	/ RAL 7044			
	Voltage, Phase,	Frequency	V, Ø, Hz		220-240, 1, 50	)		380-415, 3, 50	)	
Power Supply	Rated Running	Heating	A	11.5	13.8	16.3	6.6	8.0	9.4	
	Current	Cooling	A	11.3	13.4	15.7	6.5	7.7	9.0	
	Recommended C	ircuit Breaker	A		40			20		
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm <sup>2</sup> x cores	6.0 x 3C			2.5 x 5C			

Note

1. Due to our policy of innovation some specifications may be changed without notification.

2. Wiring cable size must comply with the applicable local and national codes.

Especially the power cable and circuit breaker should be selected in accordance with that. 3. Sound power level is measured on the rated condition in according with ISO 9614 standard.

Sound pressure level is converted from sound power level based on tonality penalty of OdB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation.

Rated sound power level is according to the EN12102-1 under conditions of the EN14825.

4. Performance's are based on the following conditions (It is according to EN14511):

• Interconnected Pipe Length is standard length and difference of Elevation

5. This product contains Fluorinated greenhouse gases. (Outdoor ~ Indoor Unit) is Om.

# Product Specification (Indoor Unit)

Technical Specification	R. C.		Unit	HN1616M NK5	HN1636M NK5	
	Heating			15 -	- 57	
Operation Range (leaving water)	Cooling	Min. ~ Max.	°C DB	5 ~ 27 (16 ~ 27) <sup>1)</sup>		
(leaving water)	DHW			15 ~	80 <sup>2)</sup>	
Flow Sensor	Measuring Range	Min. ~ Max.	LPM	5 ~	80	
Water Pressure Sensor	Measuring Range	Min. ~ Max.	bar(G)	0 ~	20	
Expansion Vessel	Volume		l	5	3	
Safety Valve	Pressure Limit	Upper Limit	bar		3	
	Туре		-	Sheath	Sheath	
	Number of Heating Coil		EA	2	3	
	Capacity Combination		kW	3.0 + 3.0	2.0 + 2.0 + 2.0	
Backup Heater	Heating Steps		Step	2	2	
	Power Supply		V, Ø, Hz	220-240, 1, 50	380-415, 3, 50	
	Rated Running Current		А	25.0	8.7	
	Power Supply Cable (included earth	mm <sup>2</sup> x cores	4.0 x 3C	2.5 x 4C		
	Water Circuit	Inlet	Inch	Male PT 1" according to ISO 7-1 (tapered pipe threads)		
Piping Connections	Water Circuit	Outlet Inch Male PT 1 (tape		Male PT 1" acco (tapered pi	rding to ISO 7-1 pe threads)	
	Pofrigorant Circuit	Gas (outside diameter)	mm (Inch)	Ø 15.8	8 (5/8)	
		Liquid (outside diameter)	mm (Inch)	Ø 9.52	2 (3/8)	
Wiring Connections	Power and Communication Cable (	included earth, H07RN-F)	mm <sup>2</sup> x cores	0.75	x 4C	
Sound Power Level	Heating	Rated	dB(A)	4	4	
Dimensions	Unit	mm	490 × 85	50 × 315		
Weight	Unit		kg	40.0	41.0	
Exterior	Color / RAL Code		-	Noble White	e / RAL 9016	

1) When fan coil unit not used.

2) DHW 58~80°C Operating is available only when the booster heater is operating.

Note

1. Due to our policy of innovation some specifications may be changed without notification. 2. Wiring cable size must comply with the applicable local and national codes.

Especially the power cable and circuit breaker should be selected in accordance with that. 3. Sound power level is measured on the rated condition in according with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of OdB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under

conditions of the EN14825. 4. This product contains Fluorinated greenhouse gases.

WATER HEATER

# THERMA V. R410A SPLIT HYDRO BOX

# **PRODUCT SPECIFICATION**

# **Performance Table for Heating Operation**

#### Maximum Heating Capacity (Including Defrost Effect)

#### HU121MA U33 + HN1616M NK5 / HU123MA U33 + HN1636M NK5

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

#### HU141MA U33 + HN1616M NK5 / HU143MA U33 + HN1636M NK5

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

#### HU161MA U33 + HN1616M NK5 / HU163MA U33 + HN1636M NK5

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

• Rated values are based on standard conditions and it can be found on specifications.

Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# **Performance Table for Cooling Operation**

#### Maximum Cooling Capacity

#### HU121MA U33 + HN1616M NK5 / HU123MA U33 + HN1636M NK5

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

#### HU141MA U33 + HN1616M NK5 / HU143MA U33 + HN1636M NK5

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

### HU161MA U33 + HN1616M NK5 / HU163MA U33 + HN1636M NK5

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

1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)

Direct interpolation is permissible. Do not extrapolate.
 Measuring procedure follows EN-14511.

• Rated values are based on standard conditions and it can be found on specifications. Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed.
 In accordance with the test standard (or nations), the rating will vary slightly.

4. The shaded areas are not guaranteed continuous operation.

# THERMA V. R410A SPLIT HYDRO BOX

# **PRODUCT SPECIFICATION**

# Drawings

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

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





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)	-

3D View

C-4



[Unit : mm]



HN1616M NK5 / HN1636M NK5 External



Internal



-

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





#### [Unit : mm]



Description

Built-in remote controller

MONOBLOC

# THERMAV. HIGH TEMPERATURE



# **Energy Label**



**Excellent Performance & Efficiency** 



#### Easy Installation & Maintenance



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

\* 16kW 1Ø model. \* A+++ to D scale.

# THERMA V High Temperature Cycle



# **High Temperature Introduction**

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



# Cascade 2 Stage Compression Technology

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



\* 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

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

# Suitable for Old Radiator

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



#### C

# INTRODUCTION

MONOBLOC

WATER HEATER

ACCESSORIES



# THERMAV... HIGH TEMPERATURE

# **PRODUCT SPECIFICATION**

# **High Temperature**

LG



T 1 1 1 C 1 C 1			11.5	
Technical Specification			Unit	HU161HA U33
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-25 ~ 35
Compressor	Quantity		EA	1
Compressor	Туре		-	Hermetic Sealed Scroll
	Туре		-	R410A
Pofrigorant	GWP (global warming p	otential)	-	2,088
Kenigeranc	Precharged Amount		g	3,800
	t-CO <sub>2</sub> eq		-	7.933
	Outcido Diamotor	Gas	mm (inch)	Ø 15.88 (5/8)
	Outside Diameter	Liquid	mm (inch)	Ø 9.52 (3/8)
Dining	Longth	Standard	m	7.5
Connections	Length	Max.	m	50
connections	Level Difference	Max.	m	30
	Chargeless-Pipe Length	1	m	7.5
	Additional Charging Volume		g/m	40
Rated Water Flow Rate	at LWT 35 °C		LPM	46.0
Sound Power Level	Heating	Rated	dB(A)	63
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	55
Dimensions	Unit	WxHxD	mm	950 × 1,380 × 330
Weight	Unit		kg	89.0
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044
	Voltage, Phase, Frequer	тсу	V, Ø, Hz	220-240, 1, 50
Power Supply	Rated Running Current	Heating	A	8.4
	Recommended Circuit B	Breaker	A	20
Wiring Connections	Power Cable (included e	earth)	mm <sup>2</sup> x cores	4.0 x 3C

### Product Specification (Indoor Unit)

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

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

Note

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

conditions of the EN14825. 4. This product contains Fluorinated greenhouse gases.

Outdoor Unit	
HU161HA U33	





-



• R1 compressor (for outdoor unit)

• KEYMARK / MCS / EUROVENT certification

• Black Fin heat exchanger

• LG ThinQ

### Features

Indoor Unit HN1610H NK3

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

### Model Line-up

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

### Seasonal Energy

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

### Nominal Capacity and Nominal Power Input

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

# THERMAV... HIGH TEMPERATURE

# **PRODUCT SPECIFICATION**

# Performance Table for Heating Operation

### Maximum Heating Capacity (Including Defrost Effect)

#### HU161HA U33 + HN1610H NK3

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

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



# THERMAV... HIGH TEMPERATURE

# **PRODUCT SPECIFICATION**

# Drawings



### HU161HA U33





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)	-



3D View

121

24

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[Unit : mm]

HN1610H NK3





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



HYDROSPLIT





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THERMA V. HEAT PUMP WATER HEATER

# **PRODUCT FEATURES**

# **Stylish Design**

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



Perfect Matching with Various Spaces



# **Top Class Energy Efficiency**

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



Energy Saving

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

#### Average Estimated Energy Consumption Saving Per Year



\* Simulation Data on Daily Electricity Consumption, based on EU Climate Condition (Average, 15°C). \* Data is based on LG Internal Simulation.

\* The data is depending on the experimental condition and is changeable according to the usage environment

# THERMA V. HEAT PUMP WATER HEATER **PRODUCT FEATURES**

# **Powerful Heating Performance**

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



#### Fast & Powerful Water Heating

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

\* The data is based on LG internal test and simulation.

% The data is depending on the experimental condition and is changeable according to the usage environment

#### Continuous Operation

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



# Low Noise Operation comfortable environment even in indoor installation scenes.



Low Noise Operation

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



WATER HEATER

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



#### Through BLDC Motor and DUAL Inverter Compressor, noise is reduced to 53 dB(A) (sound power) and provides a

INTRODUCTION

# **PRODUCT FEATURES**

# Various Operation Mode

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



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	Button	Display Screen	Description
		Heat Pump	To select the Heat Pump mode.
	Mada	Auto	To select the Auto mode.
	Mode	Turbo	To select the Turbo mode.
		Vacation	To select the Vacation mode.
Heat Pump Schedule Auto Vacation	-	Schedule	Set Schedule mode only in LG ThinQ application.
	-	Anti Legionella	To select the Anti Legionella mode.
② Display Screen	Set	-	To set the desired water temperature.
Mode	$\bigcirc \bigtriangledown$	188	To adjust the desired water temperature.
Wi-Fi (3s) 'F/'C (3s)	Wi-Fi (3s)	((:-	To enable the Wi-Fi pairing.
(Set) (V)	Reset Filter (3s)	Ŕ	To reset the filter alarm.
Reset Filter (3s) Water Temp (3s)	°F/°C (3s)	°F °C	To change unit between °F and °C.
<ul><li>Button</li></ul>	Water Temp (3s)	188	To display the current water temperature for 5 seconds.

# **Smart Control**

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



Embedded Wi-Fi

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

#### Smart Diagnosis

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

#### Easy Check & Monitoring

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







# THERMAN. HEAT PUMP WATER HEATER PRODUCT FEATURES

# DUAL Inverter Compressor

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



#### Varied-Speed Dual Rotary

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

#### Product Reliability Improvement

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

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

WARRANT

#### **Benefit & Verification**

#### **Reliable Air Conditioner**

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





% Long Term Accelerated-Reliability test LG's unique testing method with reinforced operating condition for a product life assurance to test and determine the product life cycle in a short period of time by accelerating the life cycle. % High Marginal Test

Test method to secure durability in various adverse conditions that may occur in the field by performing comp reliability test against higher pressure and temperature than the designed range of pressure and temperature which the comp operates in.

\* Verification obtained from TUV Rheinland for 10-year product life cycle.

# **Quick & Easy Installation**

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



#### 10 Year Warranty

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



\* Other Parts warranty may vary according to After Sales Service condition





# THERMA V. HEAT PUMP WATER HEATER

# **PRODUCT SPECIFICATION**

### **Product Specification**

Sales Model			WH20S
Factory Model			R5TT20F-SA1
Capacity	Volume (Nominal)		200L
Energy Efficiency 1)	COP (7°C / 15°C)		3.30 / 3.50
Energy Consumption	Annual Energy Consumption (7°C / 15°C)	kWh	756 / 709
Load Profile			Large
D I	Upper Element Wattage (230V)	kW	2
Power Input	Lower Element Wattage (230V)	kW	2
Energy Efficiency Class (7°C / 15	5°C)	-	A+ / A+
Power Supply		V, Ø, Hz	230 / 1 / 50
Available Voltage Range		V	195 ~ 265
Operating Mode			Turbo / Auto / Heat Pump / Vacation
	H/M	m³/min	6.7 / 4.4
Air Flow Rate	H/M	CFM	236.6 / 155.4
Sound Pressure Level	Auto	dB(A)+3	38
Sound Power Level		dB(A)	55
Dimensions	Net (W x H x D)	mm	580 x 1,625 x 582
Weight	Net	kg	100
Nominal insulation thickness	Min. / Max.	mm	40 / 80
Heat Pump Operation Range	Min. / Max.	°C DB	-5 / 48
Exterior Color Code		-	Luxury Silver
	Туре	-	Inverter Twin Rotary
<u> </u>	Warranty	Year	10
Compressor	Manufacturer	-	LG Electronics
	Motor Output	W	43
	High Side	-	2.0MPa / 290 PSI
Design Pressure (System)	Low Side	-	0.9MPa / 130.5 PSI
Max. Working Pressure (Water T	ānk)	-	150 PSI (1034 kPa)
Circuit Breaker		A	15
Condensate water connection	I.D	mm	19, 12.7
V40 (Mixed water at 40°C)		L	260
	Туре	-	R134a
D. ( )	Pre Charge	kg	0.650
Refrigerant	GWP		1, 430
	t-CO₂ eq		0.930
Defrost Method		-	Reverse Cycle
Anode			ICCP
T&P Relief Valve		-	Yes
Water Connection Location		-	side
Water Connection Size		inch	G ¾ M
Digital Display		-	Yes
Wi-Fi (LG ThinQ) <sup>2)</sup>		-	Yes
Tank Warranty			10

1) Water Heater Energy Efficiency (At Auto mode)

2) ThinQ Main Function

- Operation mode (Auto. Heatpump, Turbo, Vacation, Schedule), Temperature setting Monitoring hot water Temperature
Maintenance point Alarm (Filter, Anode Rod, etc.)

\* This product contains Fluorinated greenhouse gases (R134a).

\* GWP : Global warming potential

\* t-CO<sub>2</sub>eq: F-gas(kg)\*GWP/1000
 \* Specification, design and feature are subject to change without prior notice.

### **Product Specification**

Sales Model			WH27S
Factory Model			R5TT27F-SA0
Capacity	Volume (Nominal)		270L
Energy Efficiency 1)	COP (7°C / 15°C)		3.45 / 3.85
Energy Consumption	Annual Energy Consumption (7°C / 15°C)	kWh	712 / 646
Load Profile			Large
Device leavet	Upper Element Wattage (230V)	kW	2
Power Input	Lower Element Wattage (230V)	kW	2
Energy Efficiency Class (7°C / 1	5°C)	-	A+ / A++ <sup>2)</sup>
Power Supply		V, Ø, Hz	230 / 1 / 50
Available Voltage Range		V	195 ~ 265
Operating Mode			Turbo / Auto / Heat Pump / Vacation
	H/M	m³/min	6.7 / 4.4
AIr Flow Rate	H/M	CFM	236.6 / 155.4
Sound Pressure Level	Auto	dB(A)+3	38
Sound Power Level		dB(A)	55
Dimensions	Net (W x H x D)	mm	580 x 2,008 x 582
Weight	Net	kg	119
Nominal insulation thickness	Min. / Max.	mm	40 / 80
Heat Pump Operation Range	Min. / Max.	°C DB	-5 / 48
Exterior Color Code		-	Luxury Silver
	Туре	-	Inverter Twin Rotary
C	Warranty	Year	10
Compressor	Manufacturer	-	LG Electronics
	Motor Output	W	43
	High Side	-	2.0MPa / 290 PSI
Design Pressure (System)	Low Side	-	0.9MPa / 130.5 PSI
Max. Working Pressure (Water	Tank)	-	150 PSI (1034 kPa)
Circuit Breaker		A	15
Condensate water connection	I.D	mm	19, 12.7
V40 (Mixed water at 40°C)		L	360
	Туре	-	R134a
D.C.	Pre Charge	kg	0.750
Retrigerant	GWP		1,430
	t-CO <sub>2</sub> eq		1.073
Defrost Method		-	Reverse Cycle
Anode			ICCP
T&P Relief Valve		-	Yes
Water Connection Location		-	side
Water Connection Size		inch	G ¾ M
Digital Display		-	Yes
Wi-Fi (LG ThinQ) 2)		-	Yes
Tank Warranty		Year	10

Water Heater Energy Efficiency (At Auto mode)
 Energy Label marked A+ and more than COP 3.75 in EU Standard is A++

3) ThinQ Main Function

- Operation mode (Auto. Heatpump, Turbo, Vacation, Schedule), Temperature setting

- Monitoring hot water Temperature

- Maintenance point Alarm (Filter, Anode Rod, etc.)

\* This product contains Fluorinated greenhouse gases (R134a).

\* GWP : Global warming potential

% t-CO2eq : F-gas(kg)\*GWP/1000

\* Specification, design and feature are subject to change without prior notice.

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THERMA V FEATURES

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ACCESSORIES

# THERMAV. ACCESSORIES

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# Accessories Provided by LG

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature	
	Room Temperature Sensor	PQRSTA0	9	All Therma V products	Room Temperature Based Control	To detect room air temperature for room temperature based control	• Max. wire length : 15m	
Sensors	Thermistor for 2 <sup>nd</sup> Circuit or E/Heater	PRSTAT5K10	.O	All except for High Temperature	2 <sup>nd</sup> Circuit (mixing circuit)	To detect 2 <sup>nd</sup> circuit temperature when using 2 <sup>nd</sup> circuit function	• 5kΩ thermistor, 10m	
	Domestic Hot Water Sensor	PHRSTAO		All except for R32 Split IWT and R32 Hydrosplit IWT	Domestic Hot Water Heating	To detect DHW tank temperature	• Included in PHLTA kit	
	3 Way Valve	OSHA-3V		All except for R32 Split IWT and R32 Hydrosplit IWT	Domestic Hot Water Heating	To divert water flow between space heating and DHW heating	• Size : DN 20 G 1" connection, male threaded	
Valves	Thermostatic Mixing Valve	OSHA-MV OSHA-MV1		Regardless of model	Domestic Hot Water Supply	To blend hot water with cold water for ensuring constant, safe shower and bath outlet temp.	Size : 3/4" DN20 male threaded     Size : 1" DN25 male threaded	
		05HW/200E					- Storago volumo -	
DHW	Domestic Hot Water Tank (single coil)	OSHW-200F OSHW-500F		All except for R32 Split IWT and R32 Hydrosplit IWT	Domestic	To generate and	<ul> <li>2001, 300L, 500L</li> <li>Type: Internal double coil</li> <li>Material: Stainless steel</li> <li>Capacity of booster heater: 2.4kW</li> </ul>	
Tanks	Domestic Hot Water Tank (double coil)	OSHW-300FD		All except for R32 Split IWT, R32 Hydrosplit IWT and High Temperature	Hot Water Heating	store domestic hot water	<ul> <li>Storage volume : 300L</li> <li>Type : Internal double coil</li> <li>Material : Stainless steel</li> <li>Capacity of booster heater : 2.4kW</li> </ul>	
	Domestic	PHLTA		R32 Split Hydro Box, R410A Split Hydro Box, R32 Hydrosplit Hydro Box R410A Split Hydro Box (HN1639 NK3, 20 och)	Domestic	To operate with	• Parts included : DHW tank sensor (thermistor), Circuit breaker, Relay	
Installation Kits	Tank Kit	PHLTB	THERMAY.	R32 Monobloc, R32 Monobloc S	Heating	DHW tank	• Parts included : DHW tank sensor (thermistor), Circuit breaker, Relay, Multi harness	
	Solar Thermal Kit	PHLLA	0	R32 Monobloc, R410A Split Hydro Box (HN1639 NK3, 3Ø only)	Solar Thermal Heat Utilization	To operate with solar thermal system	<ul> <li>Length of thermistor: 12m</li> <li>Size of tube connector (W x H x D): 110 x 55 x 22</li> </ul>	

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature
	HA031M E1		øu				Heater capacity: 3kW     Number of heating coil: 1EA (3.0kW)     Size (W x H x D): 210 x 607 x 217     Power: 220 ~ 240V, 1Ø
		HA061M E1		R32 Monobloc, R32 Monobloc S	Capacity Back Up & Emergency Operation	To supplement insufficient capacity	<ul> <li>Heater capacity: 6kW</li> <li>Number of heating coil: 2EA (3.0 + 3.0kW)</li> <li>Size (W x H x D): 210 x 607 x 217</li> <li>Power: 220 ~ 240V, 1Ø</li> </ul>
Installation Kits	Electric Back Up Heater	HA063M E1					<ul> <li>Heater capacity : 6kW</li> <li>Number of heating coil : 3EA (2.0 + 2.0 + 2.0kW)</li> <li>Size (W x H x D) : 210 x 607 x 217</li> <li>Power : 380 ~ 415V, 3Ø</li> </ul>
		HA061C E1		R32 Hydrosplit Hydro Box	Capacity Back Up & Emergency	To supplement insufficient	<ul> <li>Heater capacity: 6 kW</li> <li>Number of heating coil: 2EA (3.0 + 3.0kW)</li> <li>Power: 220-240 V, 10</li> </ul>
		HA063C E1		(HN1600MC NK1)	Operation	capacity	<ul> <li>Heater capacity: 6 kW</li> <li>Number of heating coil: 3EA (2.0 + 2.0 + 2.0kW)</li> <li>Power: 220-240 V, 30</li> </ul>
	Buffer Tank for Space Heating	OSHB-40KT		R32 Split IWT and R32 Hydrosplit IWT	-	To provide the buffer volume of water to the heating circuit	• Volume : 40L • Size (W x H x D) : 518 x 560 x 175
Vessel	Expansion Vessel for DHW	OSHE-12KT		R32 Split IWT and R32 Hydrosplit IWT	-	To absorb the volume changes by temperature of water for the DHW circuit	<ul> <li>Volume : 8L</li> <li>Connection : 3/4"</li> <li>Max. pressure : 10 bar</li> <li>Size (W x H x D) : 416 x 238 x 502</li> </ul>
	Extension Wire for Wired Remote Controller	PZCWRC1		All Therma V products	-	To extend wire between wired remote controller and indoor unit	• Length : 10m
	Extension Cable for Wi-Fi Modem	PWYREW000		All Therma V products	Wi-Fi Control via LG ThinQ	To extend wire between WI-Fi modem and indoor unit	• Length : 10m
	2 Remote Control Wire	PZCWRC2	and a	All Therma V products	2 Remote Control	To connect two remote controller on the one indoor unit	• Length : 0.25m
ETC		PHDPB		R32 Split Hydro Box (HN0916M NK4), R410A Split Hydro Box (HN1616 NK3 / HN1639 NK3)	Coolina	To collect condensed water in	
	Drain Pan	РНОРС		R32 Hydrosplit, R32 Split Hydro Box (HN091MR NK5), R410A Split Hydro Box (HN1616M NK5 / HN1636M NK5)	Operation	indoor unit when cooling operation	-
	Cover Plate	PDC-HK10		R32 Hydrosplit Hydro Box, R32 Hydrosplit IWT, R32 Split Hydro Box , R32 Split IWT, R410A Split Hydro Box	-	To fill the blank space of the indoor unit front panel when the remote controller is relocated indoors.	-

# THERMA V.

# ACCESSORIES

# Accessories Provided by LG

Category	Model Name	Model Number	Figure	Applicable Product	Relevant Function	Purpose	Feature		Category	Model Name	Model Number	Figure	Applicable Product
Remote Controller	Wired Remote Controller	PREMTW101		All Therma V products	2 Remote Control	To control AWHP using two remote controller (additional remote controller)	<ul> <li>New modern design 4.3 inch color LCD display</li> <li>Information displayed with simple graphic, icon &amp; text</li> <li>Built-in temperature sensor</li> <li>Size (W x H x D) : 120 x 120 x 16</li> <li>Extension cable (PZCWRC1, 10m) and 2 remote cable (PZCWRC2, 0.25m) are included</li> </ul>			ACP Lonworks	PLNWKB000		_
	AC Ez Touch	PACEZA000					<ul> <li>5 inch color display</li> <li>User-friendly control with iconographic interface (touch screen)</li> <li>Max. 32 unit control</li> <li>Total 200 schedule events (weekly/ monthly/wearly/excention day)</li> </ul>		Gateway	Modbus RTU Gateway	PMBUSB00A	아이 동국 () 동국	All Therma V products
		FACEZAUUU	0 L6				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			PI485 Gateway for Therma V	PP485A00T		
							<ul> <li>10.2 inch color display</li> <li>User-friendly control with iconographic interface (touch screen)</li> <li>(Smart 4)_Max. IDU 32, (Smart 5)_Max. IDU 64</li> <li>Total 100 schedule events (weekly/ monthly/yearly/exception day)</li> <li>History/operation trend</li> </ul>			Simple Dry Contact	PDRYCB000		
Central Controller	AC Smart 5	PACS4B000 (Smart 4) PACS5A000 (Smart 5)	CS4B000 mart 4) CS5A000 mart 5) All Therma V Centralized AWHP usin products Control LG central controller	To control AWHP using LG central controller	<ul> <li>Interlock with 3<sup>rd</sup> party equipment (ACS IO, ACU IO module is needed)</li> <li>Error alarm by e-mail</li> <li>Remote controller lock (all, temp, mode)</li> <li>Map view (visual navigation)</li> <li>Web access supported with HTML5 (PC, smartphone, tablet)</li> <li>DI 2EA, DO 2EA</li> <li>BACnet IP/ modbus TCP protocol support</li> </ul>	Dry Contact	Dry Contact for Thermostat	PDRYCB320		All Therma V products			
		PACP4B000					<ul> <li>Web access controller</li> <li>Max. 128 unit control</li> <li>Total 100 schedule events (weekly/monthly/yearly/exception day)</li> <li>History/operation trend</li> <li>Interlock with 3<sup>rd</sup> party equipment (ACS IO, ACU IO module is needed)</li> </ul>		ETC	LG Wi-Fi Modem	PWFMDD200	ere ere	All Therma V
	ACP 5	(ACP4) PACP5A000 (ACP5)					<ul> <li>Error alarm by e-mail</li> <li>Remote controller lock (all, temp, mode)</li> <li>Map view (visual navigation)</li> <li>DI 10EA, DO 4EA</li> <li>BACnet IP/modbus TCP protocol support</li> <li>Size (W x H x D): 270 x 155 x 65</li> </ul>			Meter Interface	PENKTH000		products

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

Relevant Function	Purpose	Feature			
	To link with AWHP and other existing building control system	Web access controller     Max. 64 unit control     ACP function included     Lonworks protocol support     Size (W x H x D): 270 x 155 x 65			
Centralized Control	To communicate and control through the central controller (providing modbus RTU connection between AWHP and BMS)	<ul> <li>Modbus RTU slave (RS485) / 9,600 bps</li> <li>Size (W x H x D) : 53.6 x 89.7 x 60.7</li> <li>Max. 16 IDUs with single module / Max. 64 IDUs with 4 modules</li> <li>Power : DC 12V</li> </ul>			
	To communicate and control through the central controller (converting LG protocol to RS485 protocol)	• 1 for each outdoor unit • Power : Supplied by outdoor unit			
-	To connect between the AWHP and external devices to control various functions	<ul> <li>1 Set per 1 unit</li> <li>1 Input contact for turning on/off</li> <li>Input power : 220 ~ 240V</li> <li>2 output contacts <ul> <li>Operation status</li> <li>Error status</li> </ul> </li> <li>1 Set per 1 unit <ul> <li>Non voltage or 12 ~ 24V</li> <li>8 digital input contacts for thermostat <ul> <li>On/off, operation mode, DHW heating</li> <li>Emergency mode, silent mode</li> <li>2 Output contacts <ul> <li>Operation status</li> <li>Error status</li> </ul> </li> </ul></li></ul></li></ul>			
Wi-Fi Control via LG ThinQ	To control AWHP via smartphone	<ul> <li>Basic control function <ul> <li>On/off, operation mode, set temp</li> <li>DHW heating and set temp</li> </ul> </li> <li>Weekly on/off schedule</li> <li>Error status check</li> <li>Frequency : 2.4GHz</li> <li>IEEE 802.11b/g/n supported</li> </ul>			
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			

INTRODUCTION THERMA V FEATURES MONOBLOC

HYDROSPLIT

SPLIT

WATER HEATER
## THERMAV...

### LG Wi-Fi Modem

#### PWFMDD200 ENCXLEU

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

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

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

Domestic Hot Water Tank

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

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LG

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Technical Specification		Unit	OSHW-200F	OSHW-300F	OSHW-500F	OSHW-300FD
General Characteristics	Water Volume	l	200	300	500	300
	Diameter	mm	640	640	640	640
	Height	mm	1,350	1,850	1,900	1,850
	Empty Weight	Kg	61	100	146	106
	Tank Materials	-	STS : F18	STS : F18	STS : F18	STS : F18
	Color	-	Grey	Grey	Grey	Grey
Specification of Electric Back up	Additional Electric Heater	W	2,400	2,400	2,400	2,400
	Power Supply	V, Ø, Hz	230, 1, 50 (60)	230, 1, 50 (60)	230, 1, 50 (60)	230, 1, 50 (60)
	Adjustable Thermostat	°C	0 ~ 90	0 ~ 90	0 ~ 90	0 ~ 90
Specification of Heat Exchanger	Exchanger Type	-	Single	Single	Single	Double
	Material Exchanger	-	STS : F18	STS : F18	STS : F18	STS : F18
	Maximum Water Temp.	°C	90	90	90	90
	Coil Surface	m <sup>2</sup>	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	3⁄4 BSP female	1 BSP female	1 BSP female	1 BSP female
Energy Efficiency Class (A+ to F scale)		-	В	В	В	В
Standing Heat Loss		W	61	70	83	70

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

Note

1. Functionality may be different according to each Indoor model.

2. User interface of application shall be revised for its design and contents improvement.

3. Application is optimized for smartphone use, so it may not be well functioning with tablet devices.

- For the compatibility with indoor unit, please contact regional office.



MONOBLOC



Single Coil

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Double Coil

# THERMAV...

### 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



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

