HEATING

MONOBLOC (MID TEMPERATURE)
SPLIT (HIGH TEMPERATURE)
DOMESTIC HOT WATER TANK
SPLIT (LOW TEMPERATURE)
SPLIT (DHW TANK INTEGRATED)
ACCESSORIES

WHAT IS THERMA V

What is LG THERMA V?

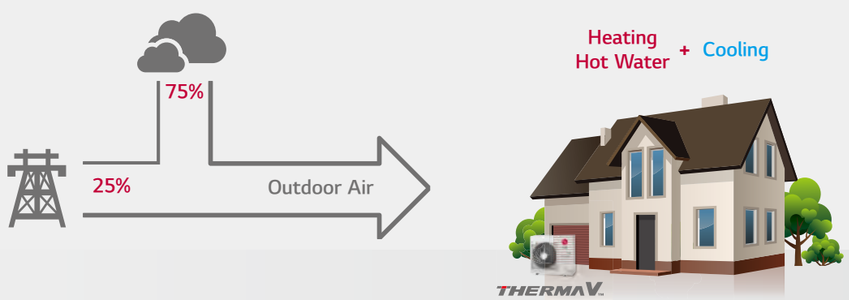
THERMA V is LG's Air to Water Heat Pump system, especially designed for new and renovated housings. It is an in-house design by LG's advanced heating technology consuming less energy.

THERMA V can be used as a multi-purpose heating Solution ranging from floor heating to hot water supply using various heat sources.

Energy Efficient Application

THERMA V offers the best solution for home heating and hot water supply with LG's inverter technology. It is 4 times more energy efficient than the traditional boiler system by absorbing energy from the outdoor environment.

- **AIR SOURCE**
  - Free energy
  - Green energy
  - Easy energy



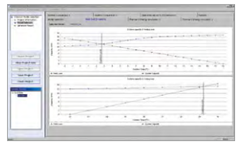
Optimal Application

Advanced model selection software enables designers to choose optimal THERMA V model based on the location and environmental factors.

- **Model selection screen**

- **Monthly energy simulation**

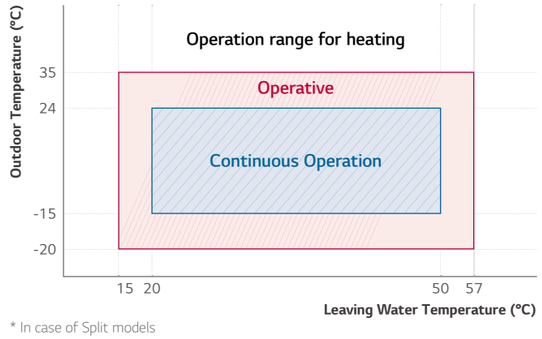
- **Heat load & heat pump capacity**



- **System comparison chart**

Reliable Application

Heating range for outdoor temperature is down to -20°C and leaving water temperature can reach max. 57°C



* In case of Split models

Various Application

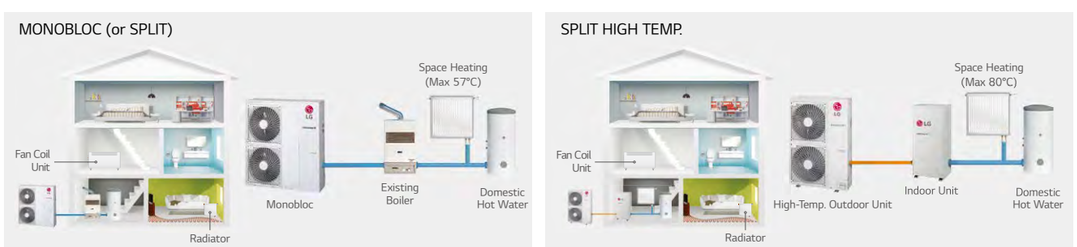
Various kinds of application is possible with THERMA V units including new house also renovation house.

- **New House**

  With low temp. monobloc & split model, heating and cooling can be ensured.

- **Renovation House**

  THERMA V can be connected to existing boiler system to optimize energy efficiency and heating capacity for renovation house.
  Also THERMA V High Temperature can provide equivalent water heating to a boiler of up to 80°C.



LINE-UP

THERMA V

TYPE	PHASE	1Ø	1Ø	1Ø	1Ø	1Ø	1Ø	3Ø	3Ø	3Ø
	KW	5	7	9	12	14	16	12	14	16
Monobloc Type R32 65°C A+++*	NEW 	● HM051M.U43	● HM071M.U43	● HM091M.U43						
	NEW 				● HM121M.U33	● HM141M.U33	● HM161M.U33	● HM123M.U33	● HM143M.U33	● HM163M.U33
Split Type R410A 57°C A+++*		● HN1616.NK3	● HN1616.NK3	● HN1616.NK3						
		● HU051.U43	● HU071.U43	● HU091.U43						
					● HN1616.NK3	● HN1616.NK3	● HN1616.NK3	● HN1639.NK3	● HN1639.NK3	● HN1639.NK3
					● HU121.U33	● HU141.U33	● HU161.U33	● HU123.U33	● HU143.U33	● HU163.U33

TYPE	PHASE	1Ø	1Ø	1Ø	1Ø	1Ø	1Ø	3Ø	3Ø	3Ø
	KW	5	7	9	12	14	16	12	14	16
Split DHW Tank Integrated Type R410A 57°C A++				● HN1616T.NB0						
				● HU091.U43						
					● HN1616T.NB0	● HN1616T.NB0	● HN1616T.NB0	● HN1616T.NB0	● HN1616T.NB0	● HN1616T.NB0
					● HU121.U33	● HU141.U33	● HU161.U33	● HU123.U33	● HU143.U33	● HU163.U33
Split High Temp. Type R134A 80°C A+ R410A							● HN1610H.NK2			
							● HU161H.U32			

* A+++ label is available from 26, Sep. 2019 and should be considered as A++ label until that time.

LG THERMA V

Why LG THERMA V?

The LG THERMA V is designed to provide reasonable benefits such as like energy saving, comforts, easy controls and services by applying the advanced technologies.

The LG Inverter Technology provides excellent energy efficiency with optimal components such as water pump, heat exchanger and fan motor. Moreover, the pressure control technology provides stable heating capacity at a low temperature and reaches target performance without difficulties.

Additionally, the amalgamated model where all-in-one features are combined such as gold-fin and users-oriented functions. This has resulted in boosting professional reputation and enhancing end-user's experience in the form of LG's full line-up from 5kW to 16kW in heating capacity.

MONOBLOC

THERMA V KEY FEATURES

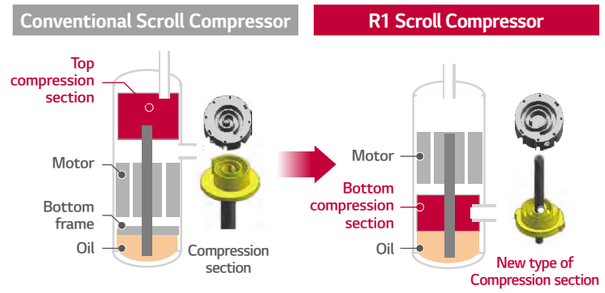
MONOBLOC

R1 Scroll Compressor

Revolutionary Scroll Compressor is applied for high-efficiency and reliability. This type of compressor is more advanced compressor compared to the conventional scroll compressor, especially tilting motion of scroll has been improved. Further, compressor operation range is improved compared to previous model.

• Revolutionary Scroll Compressor

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

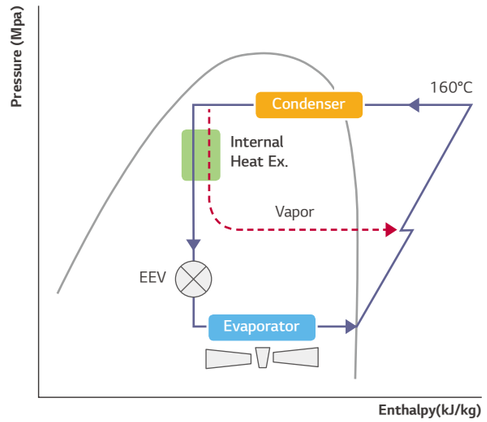


Flash Gas Injection

In case of R32 Refrigerant, it is very important to control discharge temperature of compressor properly. In the R32 Monobloc, Flash Gas Injection technology is applied to control discharge temperature of compressor efficiently. As a result of this technology, heating operation range is expanded and heating performance at low ambient temperature is enhanced.

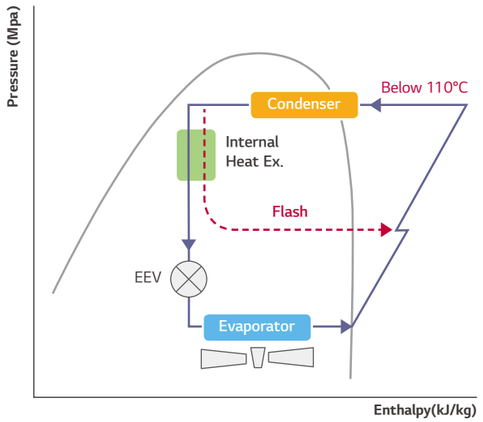
• Vapor Injection

- Discharge Temperature of Compressor is very high (160°C)
- Failure of Injection Cycle and compressor operation under protection logic



• Flash Gas Injection

- Discharge Temperature of Compressor is below 110°C
- Good Operation of Injection Cycle



MONOBLOC

Intuitive Interface

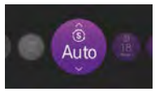
The R32 Monobloc system is upgraded with new remote controller.

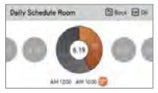
- **Premium Design**

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

- **User Friendly Interface**

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





- **More energy contents**

  Auto controlled by weather and time

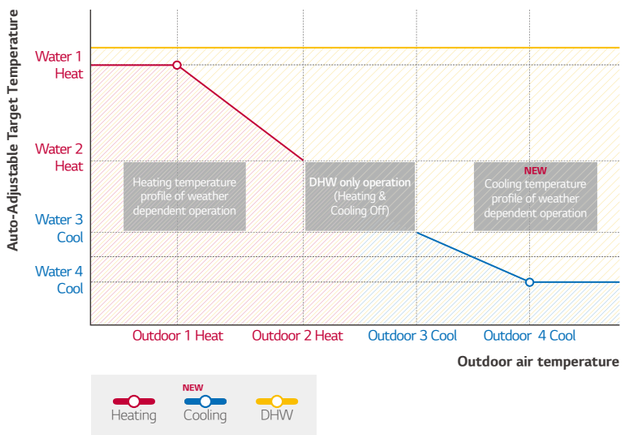
- **Convenient Functions**

  Optimize schedule setting logic
  • Set the period, date, on/off time, operation mode, target temp
  Easy installation setting (as-is : numeric code , to-be : word)

Seasonal Auto Mode

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

	Auto-Adjustable Target Temp.	Leaving Water Temp.	Outdoor Air Temp.	
Heating	Water 1 Heat	15 ~ 57	Outdoor 1 Heat	-15 ~ 24
	Water 2 Heat	15 ~ 57	Outdoor 2 Heat	-15 ~ 24
Cooling	Water 3 Cool	5 ~ 25	Outdoor 3 Cool	10 ~ 43
	Water 4 Cool	5 ~ 25	Outdoor 4 Cool	10 ~ 43

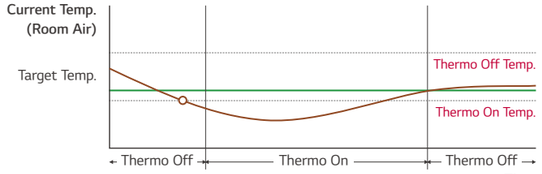


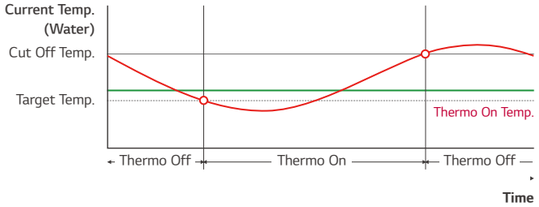
Various Temperature Control Options

Various Temperature Control Options are possible for the User's comfort and convenience. Especially for European life style where thermal comfort is preferred, Simultaneous Control of Room Air and Water Temp. function is added.

① Control of Leaving Water Temperature
② Control of Entering Water Temperature
③ Control of Room Air Temperature
④ Simultaneous Control of Room Air and Water Temp.

• Thermo On : When Satisfied both Room Air Temp. Condition and Water Temp. Condition
• Thermo Off : When Satisfied Room Air Temp. Condition or Water Temp. Condition





Ocean Black Fin

'Ocean Black Fin' heat exchanger is highly corrosion resistant, designed to perform in corrosive environment such as contaminated and humid conditions.

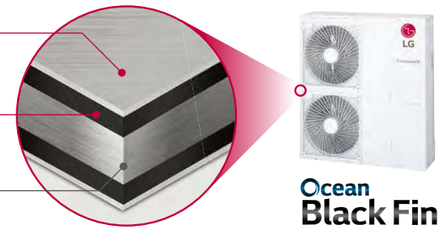
Longer Lifespan,
Lower Operational Costs

Strengthened corrosion resistant coating

Hydrophilic Film (Water Flow)
The Hydrophilic coating minimizes moisture buildup on the fin.

Epoxy Resin (Corrosion resistant)
The Black coating provides strong protection from corrosion

Aluminum Fin



Easy Installation

- **All-in-one Concept**

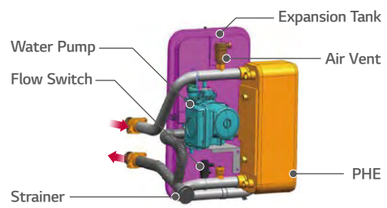
  - LG provides fully packaged THERMA V Monobloc that additional water side components are included in the package.
  - No need to work refrigerant piping, easier and quicker installation.

Water side Items included in the Monobloc

PHE
(Plate Heat Exchanger)

Expansion Tank

A-Class Water Pump



MONOBLOC

R32

HM051M.U43 / HM071M.U43 / HM091M.U43

011-1W0243

DESCRIPTION				UNIT	HM051M.U43	HM071M.U43	HM091M.U43
SEASONAL ENERGY							
Space Heating (According to EN14825)	Average Climate water outlet 35°C	SCOP			4.45	4.45	4.45
		Rated heat output (Prated)			6	6	6
		Seasonal space heating efficiency (ηs)		%	175	175	175
		Seasonal space heating eff. Class			A+++	A+++	A+++
		Annual energy consumption		kWh	2,551	2,668	2,784
	Average Climate water outlet 55°C	SCOP			3.12	3.12	3.12
		Rated heat output (Prated)			6	6	6
		Seasonal space heating efficiency (ηs)		%	122	122	122
		Seasonal space heating eff. Class			A+	A+	A+
		Annual energy consumption		kWh	3,638	3,638	3,638
PRODUCT SPECIFICATION							
		OAT	LWT				
Nominal Capacity	Heating	7°C	35°C	kW	5.50	7.00	9.00
		7°C	55°C	kW	5.50	5.50	5.50
		2°C	35°C	kW	3.30	4.20	5.40
	Cooling	35°C	18°C	kW	5.50	7.00	9.00
		35°C	7°C	kW	5.50	7.00	9.00
Nominal Power Input	Heating	7°C	35°C	kW	1.22	1.56	2.15
		7°C	55°C	kW	2.04	2.04	2.04
		2°C	35°C	kW	0.94	1.20	1.54
	Cooling	35°C	18°C	kW	1.20	1.56	2.14
		35°C	7°C	kW	1.96	2.59	3.46
COP	Heating	7°C	35°C	W/W	4.50	4.50	4.18
		7°C	55°C	W/W	2.70	2.70	2.70
		2°C	35°C	W/W	3.52	3.51	3.50
EER	Cooling	35°C	18°C	W/W	4.60	4.50	4.20
		35°C	7°C	W/W	2.80	2.70	2.60
Operation range	Heating	Water Side Min ~ Max (outlet)		°C	15 ~ 65		
		Air Side Min-Max		°C	-25 ~ 35		
	Cooling	Water Side Min ~ Max (outlet)		°C	5 ~ 27		
		Air Side Min-Max		°C	5 ~ 48		
	Domestic Hot Water	Water Side Min ~ Max (outlet)		°C	15 ~ 80		
Refrigerant	Type				R32		
	GWP (Global Warming Potential)				675		
	Charge			kg	1.4		
				tCO_2eq	0.95		
Compressor	Quantity			EA	1		
	Type				Scroll		
Water Flow Rate	Min.			LPM	15		
Piping Connections	Water	Inlet		mm(in)	Male PT 25(1)		
	Circuit	Outlet		mm(in)	Male PT 25(1)		
Dimensions	Unit	W x H x D		mm	1,239 x 834 x 330		
Net Weight	Unit			kg	91		
Sound Pressure Level (at 1m)	Heating	Rated		dBA	50		
Sound power level	Heating	Rated		dBA	60		
Power supply	Phase / Frequency / Voltage			Ø / Hz / V	1 / 50 / 220-240		
	Maximum Running Current			A	23		

Note
1. A+++ label is available from 26, Sep. 2019 and should be considered as A++ label until that time.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms by ISO 3741 standard. Therefore, these values can be increased owing to ambient conditions during operation.
5. Performances are accordance with EN14511. 6. This product contains Fluorinated greenhouse gases. 7. LWT : Leaving Water Temperature, OAT : Outdoor Air Temperature

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

011-1W0244

DESCRIPTION				UNIT	HM121M.U33	HM141M.U33	HM161M.U33	HM123M.U33	HM143M.U33	HM163M.U33
SEASONAL ENERGY										
Space Heating (According to EN14825)	Average Climate water outlet 35°C	SCOP			4.45	4.45	4.45	4.45	4.45	4.45
		Rated heat output (Prated)			10	11	11	10	11	11
		Seasonal space heating efficiency (ηs)		%	175	175	175	175	175	175
		Seasonal space heating eff. Class			A+++	A+++	A+++	A+++	A+++	A+++
		Annual energy consumption		kWh	4,642	4,875	5,103	4,642	4,875	5,103
	Average Climate water outlet 55°C	SCOP			3.18	3.18	3.18	3.18	3.18	3.18
		Rated heat output (Prated)			12	12	12	12	12	12
		Seasonal space heating efficiency (ηs)		%	124	124	124	124	124	124
		Seasonal space heating eff. Class			A+	A+	A+	A+	A+	A+
		Annual energy consumption		kWh	7,795	7,795	7,795	7,795	7,795	7,795
PRODUCT SPECIFICATION										
		OAT	LWT							
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00	12.00	14.00	16.00
		7°C	55°C	kW	12.00	12.00	12.00	12.00	12.00	12.00
		2°C	35°C	kW	11.00	12.00	13.80	11.00	12.00	13.80
	Cooling	35°C	18°C	kW	14.00	14.00	16.00	14.00	14.00	16.00
		35°C	7°C	kW	14.00	14.00	16.00	14.00	14.00	16.00
Nominal Power Input	Heating	7°C	35°C	kW	2.61	3.11	4.00	2.61	3.11	4.00
		7°C	55°C	kW	4.29	4.29	4.29	4.29	4.29	4.29
		2°C	35°C	kW	3.13	3.42	3.94	3.13	3.42	3.94
	Cooling	35°C	18°C	kW	3.04	3.26	4.00	3.04	3.26	4.00
		35°C	7°C	kW	5.19	5.38	6.40	5.19	5.38	6.40
COP	Heating	7°C	35°C	W/W	4.60	4.50	4.00	4.60	4.50	4.00
		7°C	55°C	W/W	2.80	2.80	2.80	2.80	2.80	2.80
		2°C	35°C	W/W	3.52	3.51	3.50	3.52	3.51	3.50
EER	Cooling	35°C	18°C	W/W	4.60	4.30	4.00	4.60	4.30	4.00
		35°C	7°C	W/W	2.70	2.60	2.50	2.70	2.60	2.50
Operation range	Heating	Water Side Min ~ Max (outlet)		°C	15 ~ 65			15 ~ 65		
		Air Side Min-Max		°C	-25 ~ 35			-25 ~ 35		
	Cooling	Water Side Min ~ Max (outlet)		°C	5 ~ 27			5 ~ 27		
		Air Side Min-Max		°C	5 ~ 48			5 ~ 48		
	Domestic Hot Water	Water Side Min ~ Max (outlet)		°C	15 ~ 80			15 ~ 80		
Refrigerant	Type				R32			R32		
	GWP (Global Warming Potential)				675			675		
	Charge			kg	2.4			2.4		
				tCO_2eq	1.62			1.62		
Compressor	Quantity			EA	1			1		
	Type				Scroll			Scroll		
Water Flow Rate	Min.			LPM	20			20		
Piping Connections	Water	Inlet		mm(in)	Male PT 25(1)			Male PT 25(1)		
	Circuit	Outlet		mm(in)	Male PT 25(1)			Male PT 25(1)		
Dimensions	Unit	W x H x D		mm	1,239 x 1,380 x 330			1,239 x 1,380 x 330		
Net Weight	Unit			kg	125			125		
Sound Pressure Level (at 1m)	Heating	Rated		dBA	52			52		
Sound power level	Heating	Rated		dBA	63			63		
Power supply	Phase / Frequency / Voltage			Ø / Hz / V	1 / 50 / 220-240			3 / 50 / 380-415		
	Maximum Running Current			A	35			15		

Note
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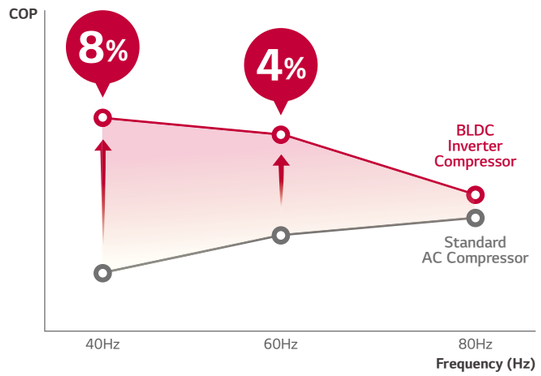
THERMA V KEY FEATURES

SPLIT

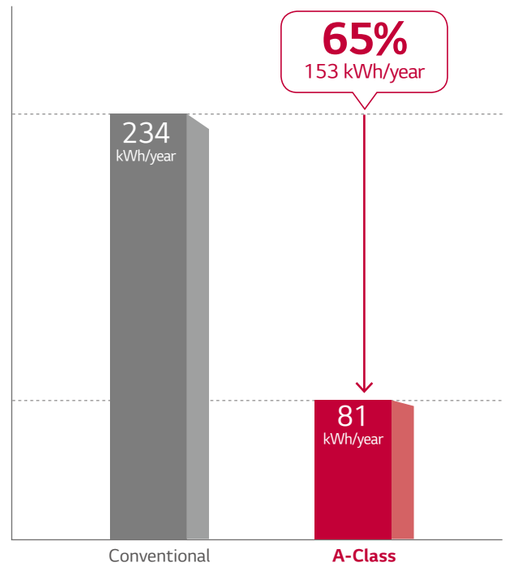
BLDC (Brushless Direct Current Motor) Compressor

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

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



Conventional	LG
Distributed Winding	Concentrated Winding

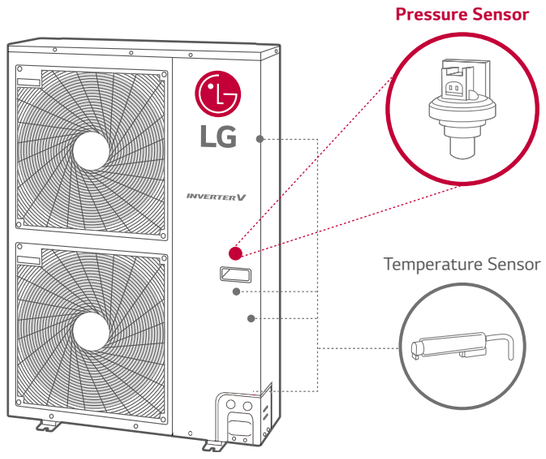


* Condition : 12 hours x 30 days x 5 month (estimated value)

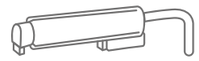
SPLIT

Reliability at Low Temperature

Pressure control reinforces heating performance by operating in stable condition at low ambient temperature.



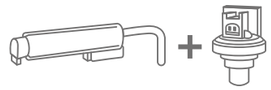
Temperature Control



Temperature Sensor Only

This algorithm is more likely to be affected by temperature change and it takes more time to calculate proper operation range of compressor to target point.

Pressure Control

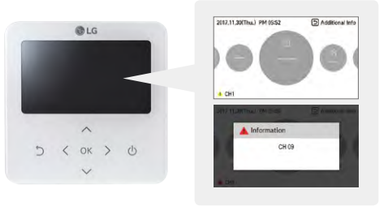


Temperature Sensor + Pressure Sensor

This ensures to reach target performance point without failing to keep a reliable operation.

Emergency Operation

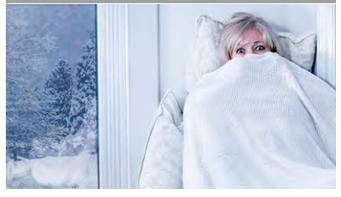
Even in case of sudden product error, THERMA V ensures stable heating operation by applying 2 steps of emergency control.



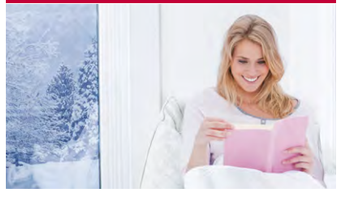
- In case of Minor Error
  (Mainly caused by sensor)
  - THERMA V – On
    Electric Heater – On/Off

- In case of Major Error
  (Mainly caused by cycle parts)
  - THERMA V – Off
    Electric Heater - On

Conventional



LG THERMA V



Easy Commissioning

• Pre-Installation Setting

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

Easy & Quick Maintence

• Data Logging

- The remote controller can store up to 50 history items, making it possible to easily identify cause of malfunctioning or faults using the history data and prompt solution

- Date and time
- Operation mode (Cooling, Heating, Hot Water, Auto)
- Setting temperature
- Inlet / Outlet temperature
- Room air temperature
- DHW (Operation status / Target temperature / current temperature)
- ODU operation status
- Error status & code

SPLIT

R410A

HN1616.NK3 / HU051.U43, HU071.U43, HU091.U43

011-1W0252

LG participates in the ECP programme for EUROVENT EURO-HP program.
Check ongoing validity of certification :
www.eurovent-certification.com

DESCRIPTION					ODU	HU051.U43	HU071.U43	HU091.U43
					IDU	HN1616.NK3		
SEASONAL ENERGY								
Space Heating (According to EN14825)	Average Climate water outlet 35°C	SCOP				4.52	4.45	4.34
		Rated heat output (Prated)				6	6	7
		Seasonal space heating efficiency (ηs)		%		178	175	171
		Seasonal space heating eff. Class				A+++	A+++	A++
		Annual energy consumption		kWh		2,512	2,783	3,093
	Average Climate water outlet 55°C	SCOP				3.23	3.23	3.23
		Rated heat output (Prated)				6	6	6
		Seasonal space heating efficiency (ηs)		%		126	126	126
		Seasonal space heating eff. Class				A++	A++	A++
		Annual energy consumption		kWh		3,581	3,581	3,581
PRODUCT SPECIFICATION								
		OAT	LWT					
Nominal Capacity	Heating	7°C	35°C	kW		5.00	7.00	9.00
		2°C	35°C	kW		4.30	5.97	7.30
		-2°C	50°C	kW		6.24	6.68	7.08
		-7°C	35°C	kW		4.23	5.88	7.53
	Cooling	35°C	18°C	kW		5.00	7.00	9.00
Nominal Power Input	Heating	7°C	35°C	kW		1.01	1.59	2.05
		2°C	35°C	kW		3.52	1.70	2.09
		-2°C	50°C	kW		3.20	3.34	3.54
		-7°C	35°C	kW		2.78	2.14	2.74
	Cooling	35°C	18°C	kW		1.09	1.56	2.37
COP	Heating	7°C	35°C	W/W		4.93	4.80	4.40
		2°C	35°C	W/W		3.52	3.51	3.50
		-2°C	50°C	W/W		1.95	2.00	2.00
		-7°C	35°C	W/W		2.78	2.75	2.75
EER	Cooling	35°C	18°C	W/W		4.60	4.50	3.80
Operation Range (Outdoor Air)	Heating	Min. ~ Max.		°C DB			-20 ~ 35	
	Cooling	Min. ~ Max.		°C DB			5 ~ 48	
Refrigerant	Type			-			R410A	
	GWP (Global Warming Potential)			-			2,088	
	Charge			kg			1.8	
				tCO_2eq			3.76	
	Chargeless Pipe Length			m			7.5	
	Additional Charging Volume			g/m			40	
Compressor	Quantity			EA			1	
	Type						Rotary	
Refrigerant Piping Connection	Outer Dia.	Liquid		mm(in)			Ø 9.52 (3/8)	
		Gas		mm(in)			Ø 15.88 (5/8)	
	Length	Min.		m			3	
		Standard		m			7.5	
		Max.		m			50	
	Level Difference (ODU ~ IDU)	Max.		m			30	
Dimensions	Unit	W x H x D		mm			950 x 834 x 330	
Weight	Unit			kg			59	
Sound Power Level	Heating	Rated		dB(A)			65	
Power Supply	Phase / Frequency / Voltage			Ø / Hz / V			1 / 50 / 220-240	
	Maximum Running Current			A			19.0	
	Recommended Circuit Breaker			A			30	

Note : 1. Due to our policy of innovation some specifications may be changed without notification.
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3. Sound Level Values are measured at Anechoic chamber. Therefore, these values depend on the ambient conditions and values are normally higher in actual operation.
4. Performances are based on that Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is Zero.
5. This product contains Fluorinated greenhouse gases. 6. LWT : Leaving Water Temperature, OAT : Outdoor Air Temperature

DESCRIPTION				UNIT	HN1616.NK3
Operation Range (Leaving Water)	Heating			°C	15 ~ 57
	Cooling	For Fan Coil Unit		°C	6 ~ 30
		For under floor		°C	16 ~ 30
Electric Heater	Power supply	Phase / Frequency / Voltage		Ø / Hz / V	1 / 50 / 220-240
	Number of Heating Coil			EA	2
	Capacity			kW	3 + 3
	Maximum Running Current			A	32
Water Flow Rate	Min.			LPM	15
Piping Connections	Water Circuit	Inlet		mm(in)	Male PT 25(1)
		Outlet		mm(in)	Male PT 25(1)
	Refrigerant Circuit	Gas		mm(in)	Ø 15.88 (5/8)
		Liquid		mm(in)	Ø 9.52 (3/8)
Dimensions	Body	W x H x D		mm	490 x 850 x 315
Net Weight	Body			kg	43
Sound power level	Heating	Rated		dBA	44

HN1616.NK3 / HU121.U33, HU141.U33, HU161.U33
HN1639.NK3 / HU123.U33, HU143.U33, HU163.U33

011-1W0253

LG participates in the ECP programme for EUROVENT EURO-HP program.
Check ongoing validity of certification :
www.eurovent-certification.com

DESCRIPTION					ODU	HU121.U33	HU141.U33	HU161.U33	HU123.U33	HU143.U33	HU163.U33
					IDU	HN1616.NK3	HN1616.NK3	HN1616.NK3	HN1639.NK3	HN1639.NK3	HN1639.NK3
SEASONAL ENERGY											
Space Heating (According to EN14825)	Average Climate water outlet 35°C	SCOP				4.45	4.45	4.30	4.45	4.45	4.30
		Rated heat output (Prated)				9	10	10	9	10	10
		Seasonal space heating efficiency (ηs)		%		175	175	169	175	175	169
		Seasonal space heating eff. Class				A+++	A+++	A++	A+++	A+++	A++
		Annual energy consumption		kWh		4,177	4,408	4,802	4,177	4,408	4,802
	Average Climate water outlet 55°C	SCOP				3.32	3.32	3.32	3.32	3.32	3.32
		Rated heat output (Prated)				10	10	10	10	10	10
		Seasonal space heating efficiency (ηs)		%		130	130	130	130	130	130
		Seasonal space heating eff. Class				A++	A++	A++	A++	A++	A++
		Annual energy consumption		kWh		6,154	6,154	6,154	6,154	6,154	6,154
PRODUCT SPECIFICATION											
		OAT	LWT								
Nominal Capacity	Heating	7°C	35°C	kW		12.00	14.00	16.00	12.00	14.00	16.00
		2°C	35°C	kW		10.33	10.83	11.95	10.33	10.83	11.95
		-2°C	50°C	kW		11.89	11.89	11.89	11.89	11.89	11.89
		-7°C	35°C	kW		11.00	12.50	13.50	11.00	12.50	13.50
	Cooling	35°C	18°C	kW		10.40	12.00	13.00	10.40	12.00	13.00
Nominal Power Input	Heating	7°C	35°C	kW		2.64	3.17	3.76	2.64	3.17	3.76
		2°C	35°C	kW		2.93	3.09	3.41	2.93	3.09	3.41
		-2°C	50°C	kW		5.25	5.25	5.25	5.25	5.25	5.25
		-7°C	35°C	kW		3.14	3.73	4.35	3.14	3.73	4.35
	Cooling	35°C	18°C	kW		2.60	3.08	3.60	2.60	3.08	3.60
COP	Heating	7°C	35°C	W/W		4.55	4.41	4.26	4.55	4.41	4.26
		2°C	35°C	W/W		3.52	3.51	3.50	3.52	3.51	3.50
		-2°C	50°C	W/W		2.27	2.27	2.27	2.27	2.27	2.27
		-7°C	35°C	W/W		3.50	3.35	3.10	3.50	3.35	3.10
EER	Cooling	35°C	18°C	W/W		4.00	3.90	3.61	4.00	3.90	3.61
Operation Range (Outdoor Air)	Heating	Min. ~ Max.		°C DB			5 ~ 48			5 ~ 48	
	Cooling	Min. ~ Max.		°C DB			-20 ~ 35			-20 ~ 35	
Refrigerant	Type			-			R410A			R410A	
	GWP (Global Warming Potential)			-			2,088			2,088	
	Charge			kg			2.3			2.3	
				tCO_2eq			4.8			4.8	
	Chargeless Pipe Length			m			7.5			7.5	
	Additional Charging Volume			g/m			40			40	
Compressor	Quantity			EA			1			1	
	Type						Rotary			Rotary	
Refrigerant Piping Connection	Outer Dia.	Liquid		mm(in)			Ø 9.52 (3/8)			Ø 9.52 (3/8)	
		Gas		mm(in)			Ø 15.88 (5/8)			Ø 15.88 (5/8)	
	Length	Min.		m			3			3	
		Standard		m			7.5			7.5	
		Max.		m			50			50	
	Level Difference (ODU ~ IDU)	Max.		m			30			30	
Dimensions	Unit	W x H x D		mm			950 x 1,380 x 330			950 x 1,380 x 330	
Weight	Unit			kg			94			94	
Sound Power Level	Heating	Rated		dB(A)			66			66	
Power Supply	Phase / Frequency / Voltage			Ø / Hz / V			1 / 50 / 220-240			3 / 50 / 380-415	
	Maximum Running Current			A			25			16	
	Recommended Circuit Breaker			A			40			20	

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3. Sound Level Values are measured at Anechoic chamber. Therefore, these values depend on the ambient conditions and values are normally higher in actual operation.
4. Performances are based on that Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is Zero.
5. This product contains Fluorinated greenhouse gases. 6. LWT : Leaving Water Temperature, OAT : Outdoor Air Temperature

DESCRIPTION				UNIT	HN1616.NK3	HN1639.NK3
Operation Range (Leaving Water)	Heating			°C	15 ~ 57	15 ~ 57
	Cooling	For Fan Coil Unit		°C	6 ~ 30	6 ~ 30
		For under floor		°C	16 ~ 30	16 ~ 30
Electric Heater	Power supply	Phase / Frequency / Voltage		Ø / Hz / V	1 / 50 / 220-240	3 / 50 / 380-415
	Number of Heating Coil			EA	2	3
	Capacity			kW	3 + 3	3 + 3 + 3
	Maximum Running Current			A	32	20
Water Flow Rate	Min.			LPM	15	15
Piping Connections	Water Circuit	Inlet		mm(in)	Male PT 25(1)	Male PT 25(1)
		Outlet		mm(in)	Male PT 25(1)	Male PT 25(1)
	Refrigerant Circuit	Gas		mm(in)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
		Liquid		mm(in)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
Dimensions	Body	W x H x D		mm	490 x 850 x 315	490 x 850 x 315
Net Weight	Body			kg	43	45
Sound power level	Heating	Rated		dBA	44	44

DHW TANK INTEGRATED

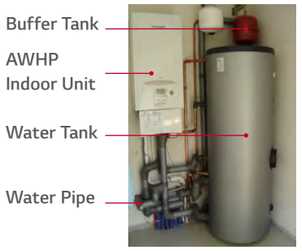
THERMA V KEY FEATURES

SPLIT DHW TANK INTEGRATED

Save space & Save time

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

Conventional



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

New (DHW tank integrated type)

All in one
Small space for product installation

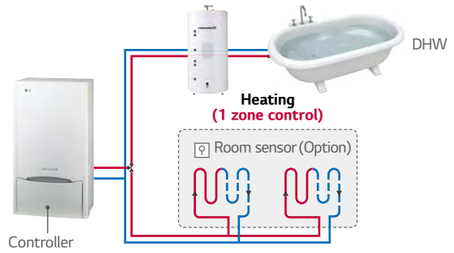
Less water piping work
More easy & Save time

2nd Heating Circuit

Possible heating individually through separate heating circuits with a controller and a mixing valve.

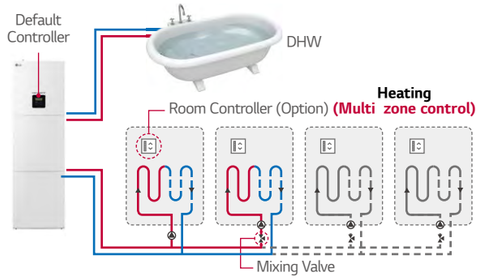
Conventional

Only 1 heating circuit not individually controllable



New

Basically 2 heating circuits with individual control



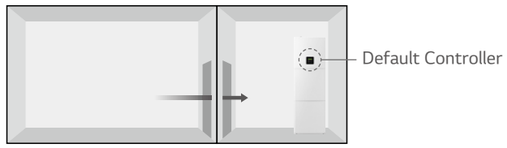
With the circuit extension module, **max 4 heating circuits** to control individually (Optional)

Controller for convenient control

Easy & convenient setting room temperature!

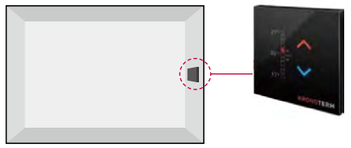
Default controller installed

Must move to control



Option controller installed

It is not required to move it once it has been set up in your room.



Room controller
Thermostat without display Basic settings of room temperature

(Optional Accessory: OSHI-REMT01.ENCXLEU)

SPLIT DHW TANK INTEGRATED

R410A

HN1616T.NBO

DESCRIPTION			UNIT	HN1616T.NB0		
PRODUCT SPECIFICATION						
Operation Range (Leaving Water)	Heating		℃	25 ~ 58		
	Cooling		℃	7 ~ 25		
	Domestic Hot Water		℃	10 ~ 60		
Electric Heater	Power supply	Phase / Frequency / Voltage	Ø / Hz / V	1 / 50 / 220-240	1 / 50 / 220-240	3 / 50 / 380-415
	Number of Heating Coil		EA	1	2	3
	Capacity		kW	2	2 + 2	2 + 2 + 2
	Maximum Running Current		A	11.1	19.9	11.1
	Recommended Circuit Breaker		A	16	20	16
Water Flow Rate	Min.		LPM	13		
Piping Connections	Water Circuit	Inlet	mm(in)	Male PT 25(1)		
		Outlet	mm(in)	Male PT 25(1)		
	Refrigerant Circuit	Gas	mm(in)	Ø 15.88 (5/8)		
		Liquid	mm(in)	Ø 9.52 (3/8)		
	DHW Tank Water Circuit	Cold Inlet	mm(in)	Male PT 19.05 (3/4		
		Hot Outlet	mm(in)	Male PT 25 (1)		
		Recirculation	mm(in)	Male PT 19.05 (3/4)		
DHW Tank	Type			Hydro module with integrated boiler		
	Material		-	Enameled steel		
	Water Volume	Rated	ℓ	200		
	Internal Thermal Protect limit		℃	95		
	Maximum water pressure limit		bar	10		
	Insulation	Material	-	Polyurethane foam		
		Thickness		50		
		Heat loss (for 24hr)	kWh	1.67		
Buffer Tank	Water Volume	Rated	ℓ	40		
	Material		-	Steel powder coated		
	Insulation Material		-	Closed cell foamed rubber		
Dimensions	Body	W x H x D	mm	607 × 2,079 × 725		
Net Weight	Body		kg	228		
Sound power level	Heating	Rated	dBA	36		

Notes
1. Indoor unit is include integrated electrical heater

HN1616T.NBO / HU091.U43, HU121.U33, HU141.U33, HU161.U33, HU123.U33, HU143.U33, HU163.U33

011-1W0253

SPLIT (OUTDOOR)					ODU	HU091.U43	HU121.U33	HU141.U33	HU161.U33	HU123.U33	HU143.U33	HU163.U33
					IDU	HN1616T.NB0						
PRODUCT SPECIFICATION												
		OAT	LWT									
Nominal Capacity	Heating	7℃	35℃	kW		9.0	12.0	14.0	16.0	12.0	14.0	16.0
	Cooling	35℃	18℃	kW		9.0	10.4	11.0	12.0	10.4	11.0	12.0
Nominal Power Input	Heating	7℃	35℃	kW		2.23	2.78	3.43	4.18	2.78	3.43	4.18
	Cooling	35℃	18℃	kW		2.88	3.30	3.53	4.00	3.30	3.53	4.00
COP	Heating	7℃	35℃	W/W		4.04	4.32	4.08	3.83	4.32	4.08	3.83
EER	Cooling	35℃	18℃	W/W		3.12	3.15	3.12	3.00	3.15	3.12	3.00
Operation Range (Outdoor Air)	Heating	Min. ~ Max.		℃ DB		-20 ~ 35						
	Cooling	Min. ~ Max.		℃ DB		5 ~ 48						
Refrigerant	Type			-		R410A						
	GWP (Global Warming Potential)			-		2,088						
	Charge			kg		1.8	2.3	2.3	2.3	2.3	2.3	2.3
				tCO_2eq		3.76	4.8	4.8	4.8	4.8	4.8	4.8
	Chargeless Pipe Length			m		7.5						
	Additional Charging Volume			g/m		40						
Compressor	Quantity			EA		1						
	Type					Rotary						
Refrigerant Piping Connection	Outer Dia.	Liquid		mm(in)		Ø 9.52 (3/8)						
		Gas		mm(in)		Ø 15.88 (5/8)						
	Length	Min.		m		3						
		Standard		m		7.5						
		Max.		m		50						
	Level Difference (ODU ~ IDU)	Max.		m		30						
Dimensions	Unit	W x H x D		mm		950 x 834 x 330	950 x 1,380 x 330	950 x 1,380 x 330	950 x 1,380 x 330	950 x 1,380 x 330	950 x 1,380 x 330	950 x 1,380 x 330
Weight	Unit			kg		59	94	94	94	94	94	94
Sound Power Level	Heating	Rated		dB(A)		65	66	66	66	66	66	66
Power Supply	Phase / Frequency / Voltage			Ø / Hz / V		1 / 50 / 220-240	1 / 50 / 220-240	1 / 50 / 220-240	1 / 50 / 220-240	3 / 50 / 380-415	3 / 50 / 380-415	3 / 50 / 380-415
	Maximum Running Current			A		19	25	25	25	16.1	16.1	16.1
	Recommended Circuit Breaker			A		30	40	40	40	20	20	20
Modbus Converter (*Required purchase separately)	Type			-		Gateway PI485						
	Model			-		PP485B00K						
SEASONAL ENERGY												
Space heating	Average climate water outlet 55℃ (A++ to G Scale)	General	SCOP			2.88	3	3	3	3	3	3
			η_s (Seasonal space heating efficiency)	%		112	117	117	117	117	117	117
			Seasonal space heating eff. Class			A+	A+	A+	A+	A+	A+	A+
	Average climate water outlet 35℃ (A++ to G Scale)	General	SCOP			4.04	4.2	4.15	4.15	4.2	4.15	4.15
			η_s (Seasonal space heating efficiency)	%		159	165	163	163	165	163	163
			Seasonal space heating eff. Class			A++	A++	A++	A++	A++	A++	A++
Domestic Hot Water Heating	General	Declared load profile				XL	XL	XL	XL	XL	XL	XL
	Average climate (A to G Scale)	η_{wh} (water heating efficiency)		%		98	89	89	89	89	89	89
		Water heating energy efficiency class				A	A	A	A	A	A	A

Note
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4. Performances are based on that Interconnected Pipe Length is standard length and difference of Elevation (Outdoor ~ Indoor Unit) is Zero.
5. This product contains Fluorinated greenhouse gases.
6. LWT : Leaving Water Temperature, OAT : Outdoor Air Temperature

DHW TANK INTEGRATED

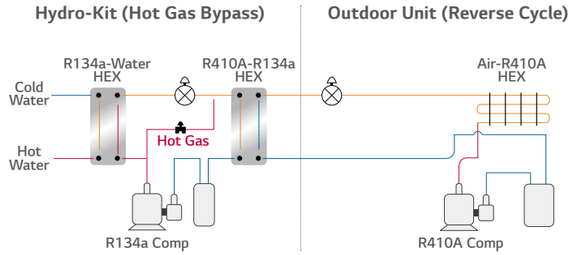
THERMA V KEY FEATURES

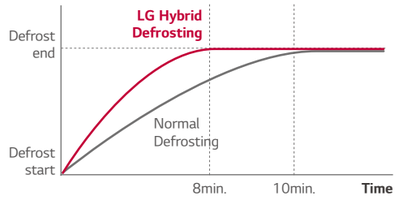
HIGH TEMPERATURE

Quick Defrosting

Through R134A compressor controlling technology, necessary time for defrost operation has been minimized effectively. (LG Patent)

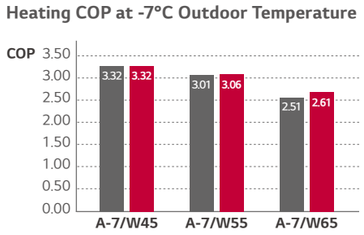
As compared to normal reverse cycle defrost, 25% reduction in defrost time, and 10% increase of integrated heating capacity is achieved using hybrid defrosting.

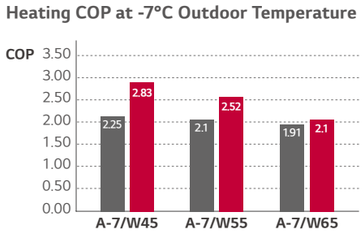




Higher Energy Efficiency

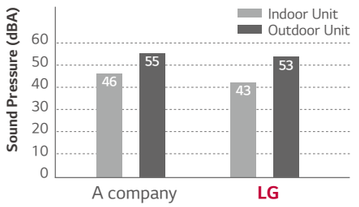
By applying efficient compressor and optimally designed structure, the more energy saving, the lower operating cost make sooner return on initial investment.





Low Noise Level

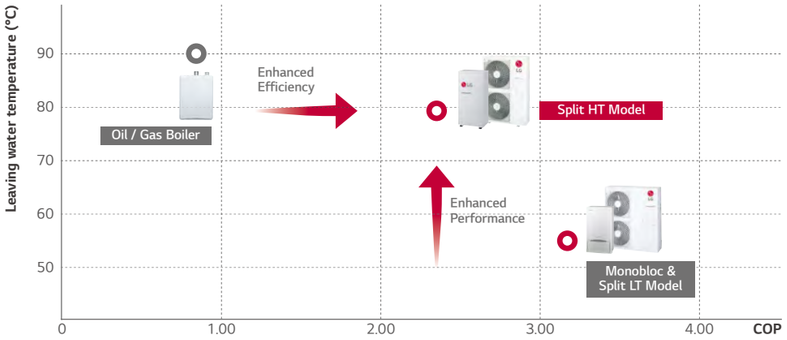
Through cutting edge technology for DC inverter compressor, operating noise level of indoor & outdoor unit has been reduced and serves more comfort.



HIGH TEMPERATURE

Enhanced Efficiency & Performance

THERMA V high temp. can produce Max. 80°C hot water with high efficiency (Max. COP 4.06 at 24°C ODT & 40/45 EWT/LWT) through cascade 2 stage compression technology.

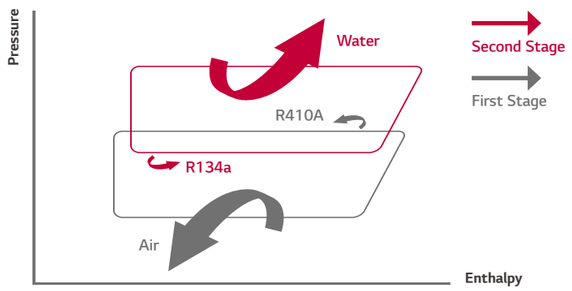


* Condition for HT model :
Outdoor air temp. 18°C, entering water temp. 70°C
* Condition for LT model :
Outdoor air temp. 18°C, entering water temp. 50°C

Cascade 2 Stage Compression Technology

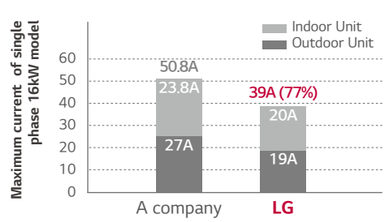
Max. 80°C hot water can be generated through Cascade R410A to R134a BLDC compressor technology and is applicable for existing old boiler heating system which demands hot water supply.

High temperature through Cascade cycle technology



Low Maximum Current Level

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



HIGH TEMPERATURE

R410A

HN1610H.NK2
HU161H.U32

LG participates in the ECP programme for EUROVENT EURO-HP program.
Check ongoing validity of certification :
www.eurovent-certification.com

Product Specification

DESCRIPTION				OUTDOOR UNIT / INDOOR UNIT	HU161H.U32 / HN1610H.NK2
		OAT	LWT		
Nominal Capacity	Heating	7℃	65℃	kW	16.00
Nominal Power Input	Heating	7℃	65℃	kW	6.13
COP	Heating	7℃	65℃	W/W	2.61
Operation Range (Outdoor Air)	Heating	Min. ~ Max.		°C DB	-20 ~ 35
	Cooling	Min. ~ Max.		°C DB	N/A
Refrigerant	Type			-	R410A
	GWP (Global Warming Potential)			-	2,088
	Charge			kg	3.5
				tCO_2eq	7.3
	Chargeless Pipe Length			m	10
	Additional Charging Volume			g/m	60
Compressor	Quantity			EA	1
	Type				Rotary
Refrigerant Piping Connection	Outer Dia.	Liquid		mm(in)	Ø 9.52 (3/8)
		Gas		mm(in)	Ø 15.88 (5/8)
	Length	Min.		m	5
		Standard		m	7.5
		Max.		m	50
	Level Difference (ODU ~ IDU)	Max.		m	30
Dimensions	Unit	W x H x D		mm	950 x 1,380 x 330
Weight	Unit			kg	105
Sound Power Level	Heating	Rated		dB(A)	5
Power Supply	Phase / Frequency / Voltage			Φ / Hz / V	1 / 50 / 220-240
	Maximum Running Current			A	19
	Recommended Circuit Breaker			A	25

Note :
1. Capacities and power inputs are based on the following conditions:
   - Piping Length : Interconnected Pipe Length = 7.5m
   - Difference Limit of Elevation (Outdoor ~ Indoor Unit) is Zero.
2. Wiring cable size must comply with the applicable local and national codes.
3. Due to our policy of innovation some specifications may be changed without notification.
4. Sound Level Values are measured at Anechoic chamber. Therefore, these values can be increased owing to ambient conditions during operation.
5. This product contains Fluorinated Greenhouse Gases.
6. LWT : Leaving Water Temperature, OAT : Outdoor Air Temperature

Indoor Unit Specification

DESCRIPTION			UNIT	HN1610H.NK2
Operation Range(Leaving Water)	Heating		℃	25 ~ 80
Refrigerant	Type			R134a
	GWP (Global Warming Potential)		-	1,430
	Charge		kg	2.3
			tCO_2eq	3.3
Compressor	Quantity		EA	1
	Type			Rotary
Water Flow Rate	Min.		LPM	15
Piping Connections	Water Circuit	Inlet	mm(in)	Male PT 25(1)
		Outlet	mm(in)	Male PT 25(1)
	Refrigerant Circuit	Gas	mm(in)	Ø 15.88 (5/8)
		Liquid	mm(in)	Ø 9.52 (3/8)
Dimensions	Body	W x H x D	mm	520 x 1,080 x 330
Net Weight	Body		kg	94
Sound Pressure Level	Heating	Rated	dB(A)	43
Power Supply	Phase / Frequency / Voltage		Φ / Hz / V	1 / 50 / 220-240
	Maximum Running Current		A	
	Recommended Circuit Breaker		A	25

Note :
1. Wiring cable size must comply with the applicable local and national codes.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber. Therefore, these values can be increased owing to ambient conditions during operation.
4. This product contains Fluorinated Greenhouse Gases (R134a).

ACCESSORIES

THERMA V SPECIFICATION

ELECTRIC BACK UP HEATER

HA031M.E1
HA061M.E1

Electrical Specification			HM031M.E1	HA061M.E1
Backup Heater	Type		Sheath	Sheath
	Number of Heating Coil	EA	1	2
	Capacity Combination	kW	3.0	3.0 + 3.0
	Operation		Automatic	Automatic
	Heating Steps	Step	1	2
	Power Supply	V, Ø, Hz	220-240, 1, 50	220-240,1,50
	Maximum Current	A	12.0	24.0
Wiring Connections	Power Cable (included Earth, H07RN-F)	No. x mm^2	3 x 1.5	3 x 4.0
	Communication Cable (H07RN-F)	No. x mm^2	4 x 0.75	4 x 0.75

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

THERMA V SPECIFICATION

DOMESTIC HOT WATER TANK

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

Double Coil Single Coil

Domestic Hot Water Tank – Double Coil

DOMESTIC HOT WATER TANK			OSHW-200F	OSHW-300F	OSHW-500F	OSHW-300FD
PRODUCT SPECIFICATION						
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	Φ / V / Hz	1 / 230 / 50(60)	1 / 230 / 50(60)	1 / 230 / 50(60)	1 / 230 / 50(60)
	Adjustable Thermostat	℃	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	℃	90	90	90	90
	Coil Surface	m2	2.3	3.1	4.8	3.1+0.97
Water Connections	Heat Pump Inlet	inch	1 BSP Female	1 BSP Female	1 1/4 BSP Female	3/4 BSP Female (Upper Coil)
	Heat Pump Outlet	inch	1 BSP Female	1 BSP Female	1 1/4 BSP Female	3/4 BSP Female (Upper Coil)
	Solar Inlet	inch	-	-	-	1 BSP Female (Lower Coil)
	Solar Outlet	inch	-	-	-	1 BSP Female (Lower Coil)
	City Water Inlet	inch	3/4 BSP Male	3/4 BSP Male	1 BSP Male	3/4 BSP Male
	Hot Water Outlet	inch	3/4 BSP Female	1 BSP Female	1 BSP Female	1 BSP Female
Energy Efficiency Class			B	B	B	B
Standing Heat Loss		W	61	70	83	70
MANDATORY ACCESSORIES						
Domestic Hot Water Tank Installation Kit			PHLTA/PHLTB/PHLTC	PHLTA/PHLTB/PHLTC	PHLTA/PHLTB/PHLTC	PHLTA/PHLTB/PHLTC
OPTIONAL ACCESSORIES						
Mixing Valve (3/4" dn20)			OSHA-MV	OSHA-MV	OSHA-MV	OSHA-MV
Mixing Valve (1"dn25)			OSHA-MV1	OSHA-MV1	OSHA-MV1	OSHA-MV1
3-Way Valve			OSHA-3V	OSHA-3V	OSHA-3V	OSHA-3V

THERMA V SPECIFICATION

LG Wi-Fi MODEM

Control LG THERMA V via using the internet devices as Android or iOS bases smartphones

PWFMDD200

Features

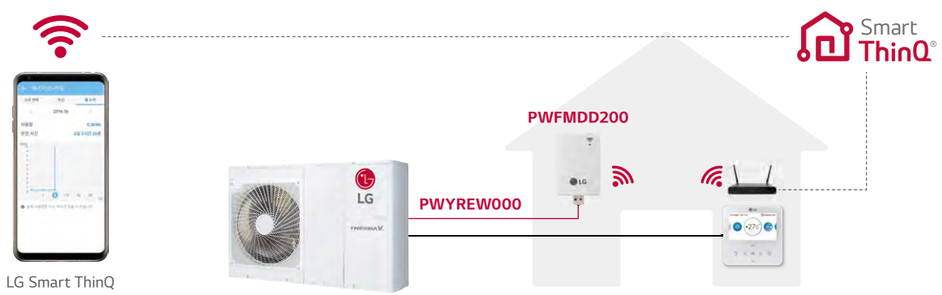
- Access LG THERMA V anytime and from anywhere with Wi-Fi equipped device
- LG's exclusive Home Appliances control app(SmartThinQ) is available
- Simple operation for various functions
  - On/Off - Operation Mode - Current/Set Temperature

MODEL NAME	PWFMDD200
Size (W x H x D, mm)	48 x 68 x 14
Interfaceable Products	THERMA V Split Indoor unit
Connection Type	Indoor unit 1:1
Communication Frequency	2.4 GHz
Wireless Standards	IEEE 802.11b/g/n
Mobile Application	LG Smart ThinQ (Android v4.1(Jellybean) or higher, iPhone iOS 9.0 or higher)
Optional Extension Cable	PWYREW000 (10m extension)

* Functionality may be different according to each IDU model (Monobloc and Split only available)
* User interface of application shall be revised for its design and contents improvement
* Application is optimized for smartphone use, so it may not be well functioning with tablet devices
1) Vane Control may not be possible according to the type of Indoor unit
2) For the compatibility with Indoor unit, please contact regional office

Download on the App Store GET IT ON Google Play

Overview



* Search "LG Smart ThinQ" on Google market or Appstore then download the app.
* Internet service with Wi-Fi connection has to be available

ACCESSORIES

Accessories Provided by LG

ACCESSORY	FEATURE
Domestic Hot Water Tank	 OSHW-200F 200 LITRES OSHW-300F 300 LITRES OSHW-500F 500 LITRES Single Coil  OSHW-300FD 300 LITRES Double Coil  OSHA-3V 3-Way Valve  OSHA-MV OSHA-MV1 Mixing Valve
Domestic Hot Water Tank Kit	• **PHLTA (1Ø, Split)** • **PHLTC (3Ø, Split)** • **PHLTB (Monobloc)** **Features** Easy to install the domestic hot water for monobloc. There is a MCCB to protect the product. Dimension (mm) (H x W x D) : 250 x 170 x 110 Weight (kg) : 2.1 To extend THERMA V functionality in generating domestic hot water. * PHLTA, PHLTC is required only when you want to use the electric heater function at the sanitary tank. If not, it's not necessary. THERMA V indoor unit it self already has electric heater(back up heating) function. * The sensor (PHRSTA0) can be purchased separately in case of using other brand's Domestic tank.  **PHLTA / PHLTC**  **PHLTB**
Remote Temperature Sensor	• **PQRSTA0** **Features** It can help to detect the exact room temperature. Applied to ceiling cassette, ceiling concealed duct, AWHP and Hydro Kit. **Parts Included** Remote temperature sensor / Extension cable (15m) / Manual 
Solar Thermal Kit	• **PHLLA** **Features** To interface solar-thermal system with THERMA V and double coil Domestic tank. Installed at the water pipe, between Domestic tank and solar-thermal system. Dimension (mm) (H x W x D) : 110 x 55 x 22 
Dry Contact	• **PDRYCB000** **Features** For connection with boiler (Bivalent scene) 
Drain Pan	• **PHDPB** **Features** Collects condensate water (When dropping to the base is not possible) and drains the water to a pipe 

Recommended Optional Accessories

NO.	ACCESSORY	PICTURE	PURPOSE	SPECIFICATION
1	Domestic Hot Water Tank		Store and provide hot water for sanitation	Volume : 200 - 400 l Enameld or stainless-steel tank / Insulating foam (e.g. PUR - polyurethane) heat-exchanger surface ≥ 3 m²
2	3-Way-Valve		Switch between heating and domestic hot water circuit	230V AC SPDT (Single Pole Double Throw) / opening time 30 - 90 sec / final position switch Internal leakage rate < 0,1%
3	Electrical Tank Heater		Supports heating of domestic hot water, when heat pump is blocked or capacity is limited	2 - 6 kW Connector dimension suitable for DHW tank
4	Buffer Tank		Prevents cycling, when water volume is low and / or heating demand is low; secures enough heat for defrosting cycle	Insulating foam (e.g. PUR - polyurethane) Volume : 100 - 200 l (Installation in series with heat pump) 500 ~ 1,000 l (Installation in parallel with heat pump)
5	Bypass Valve		Ensures minimum water flow rate, when flow through heating circuits is limited due to closed valves	Dimensioning according manufacturer adjustable opening pressure
6	2-Way-Valve		Blocks heating circuits, that are not suitable for cooling during cooling operation	230V AC NO or NC type final position switch
7	Expansion Vessel		Absorption of pressure differences in the heating circuits due to temperature increase / decrease of the water	Dimensioning on-site required
8	Strainer		Protects plate-heat-exchanger from blocking particles	1inch / 25.4mm, Mesh size ~ 1 x 1mm for HM03M1.U42 only (other models are included)
9	Heating Cable		Prevents the condensate pan and the drainage pipe from icing	Thermostatic control depending on outdoor temperature All models do have electric heating cable for prevent frost from condensing water at the condensing pan except 3kW capacity.
10	Antifreeze		Prevents the heating water from freezing, when heat pump is out of order	Monoethyleneglycole Concentration according to lowest possible outdoor temperature
11	Noise Damper		Prevents that structure-born noise is transported via the water piping	EPDM; Operating temperature according climate region (at least -10 ~ + 90°C)
12	Anti-Noise Sockets		Prevents that structure-born noise is transported to the base or to the brackets	Dimensioning on-site required
13	Thermostat		When thermostatic room temperature control is preferred by costumer	230V AC When heat pumps operates in heating and cooling mode : thermostat with mode selection
14	Refrigerant Tubes		Pre-fabricated double-pipe to connect split indoor and outdoor unit	Diameter : Please refer to Specification
15	Water Tubes		Pre-fabricated double-pipe to connect monobloc outdoor unit with heating system	When heat pump is used for cooling : diffusion-resistant tubes
16	Bushing Sleeve		Protecting the building against pressing water coming through the duct of the heating tubes	Dimensioning on-site required
17	Insulation Material		Mandatory when heat pump is used for cooling; prevents condensate water on cold pipes and assemblies	Diffusion-resistant

LG LATS THERMA V

THERMA V Selection Program

LATS THERMA V simulates quick and easy result of THERMA V's economic benefits. By specifying a number of parameters, this program shows annual energy cost compared with conventional heating system and CO_2 annual amount, monthly energy amount and cost, total amount of thermal energy in kWh as the outside temperature.