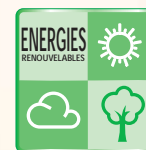


THERMAV™

Air-to-Water Heat Pump

New Heating system with new technology



LG Electronics

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Seoul 150-721, Korea
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<http://www.lge.com>

<http://www.lge.com/airconditioner>

Enjoy Comfortable & Economical Total Heating Solution with LG Therma V

Comfortable & Valuable my House

Why LG **THERMA V**™ ?



Total Heating Solution

Therma V can address problems of heating, hot water and cooling in summer, and the use of solar energy with one system. Therma V can provide total heating solution in couple with sanitary hot water tank and solar thermal panel. Also, when the Therma V is installed with a conventional boiler, the two systems can both be alternately used according to the temperature. When floor heating is conducted in a new house, warm air spreads gently across the house, making it comfortable, and enabling the use of broad space without necessitating radiators or FCU. Also, in the case of house renovation, the following diverse applications are possible according to the user's installation environment and needs.



Low Running Costs

Therma V uses free energy in air, and adopts the inverter technology. So, it is far more fuel-efficient compared to other heating devices and, thus, is very economical. When you use a gas or oil boiler, or an electric radiator, you can get exactly the same effect based on your input. However, Therma V, with the application of the same amount of energy, emits more than four energy items, which can be used. This is the strength of the Air to Water Heatpump to which LG inverter technology is applied. The price of electricity is stable relative to those of oil or gas, thus cutting more costs as the time passes.



Convenient & Reliable System

Therma V uses the Easy Controller to check detailed operational information and a change in temperature of the whole system. Scheduled operation is possible according to the user's needs. Also, Equipped with a knob attached to the Hydrokit and the external unit, Therma V is easy to install and carry. According to the user's circumstances and convenience, the system can be set for either water temperature or air temperature. In particular, Therma V's Controller provides the Emergency Operation function to enable the user to use it safely in the cold winter as well.



Comfort System

Therma V basically provides both heating and cooling solutions in the summer, making it usable throughout the four seasons. In summer, cold air can be blown from the fan coil unit, and indoor temperatures can be lowered to be cool through the underfloor pipe and radiator. Also, the installation of a Therma V will eliminate oil or gas tanks, making the house's surroundings neater and safer, enabling the use of more space, and avoiding refueling. When floor heating is applied, warm air spreads gently across the house, making it comfortable, and enabling the use of more space without necessitating radiators or FCU. The system can help blood circulation and metabolism, further boosting our health.

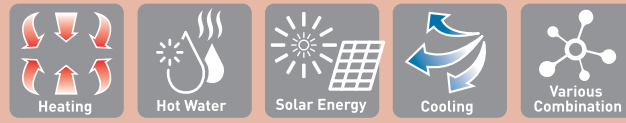


Clean & Ecological Energy

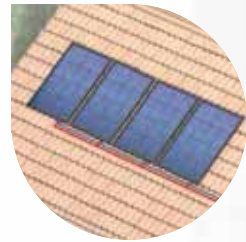
Therma V can provide a solution to the ever-worsening environment due to fossil energy. Therma V basically gets most of its energy from the clean air in the atmosphere, it has the advantage of discharging a far smaller amount of CO² compared to other fossil fuel heating systems. With a boiler, you may transpire up to 3,335kg of CO² a year, but with Therma V only 323kg of CO² are transpired. This reduces 90% of annual CO². Also, Therma V can be interconnected with 100% clean energy, Solar Thermal, thus reducing CO² emissions remarkably.

Total Heating Solution

When floor heating is conducted in a new house, warm air spreads gently across the house, making it comfortable, and enabling the use of broad space without necessitating radiators or FCU.



Solar Panel



Water heating



Radiator



Outdoor unit



Under floor heating



Fan coil unit



Low Running Costs

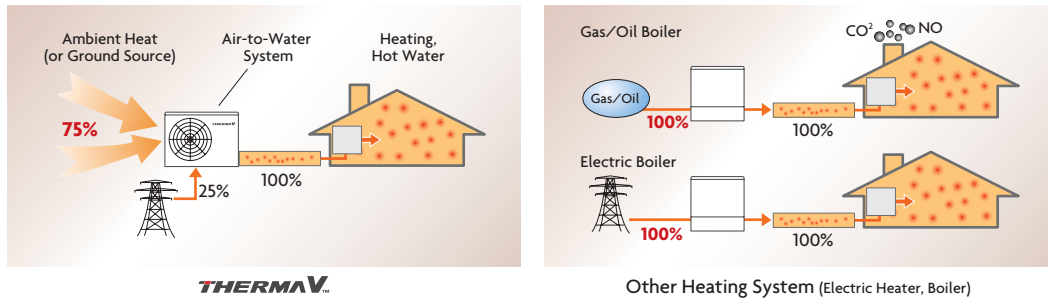


When you use a gas or oil boiler, or an electric radiator, you can get exactly the same effect based on your input. The price of electricity is stable relative to those of oil or gas, thus cutting more costs as the time passes.



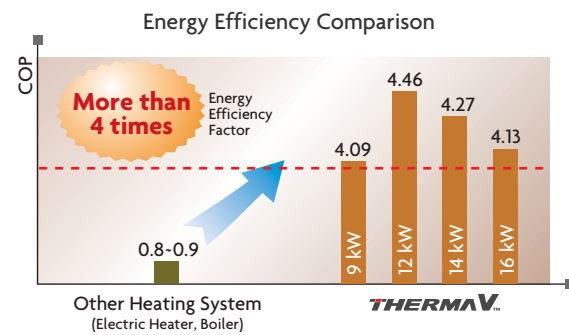
Cost effective LG AHP to a fossil fuel boiler

Therma V uses free energy in air, and adopts the inverter technology. So, it is far more fuel-efficient compared to other heating devices and, thus, is very economical.



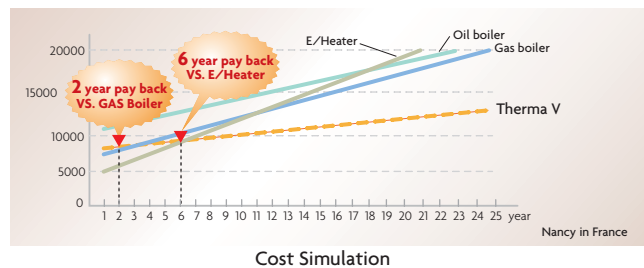
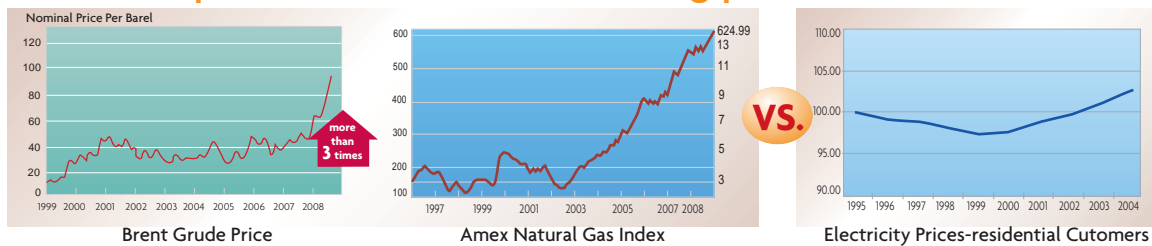
Best Heating Efficiency

Therma V, with the application of the same amount of energy, emits more than four energy items, which can be used. This is the strength of the Air to Water Heatpump to which LG inverter technology is applied.



Inverter Technology
The advancement of the inverter technology creates more quiet, economical and powerful air conditioning systems.

Cost comparison with other heating products



Convenient & Reliable System



Therma V uses the Easy Controller to check detailed operational information and a change in temperature of the whole system. Therma V is easy to install and carry.



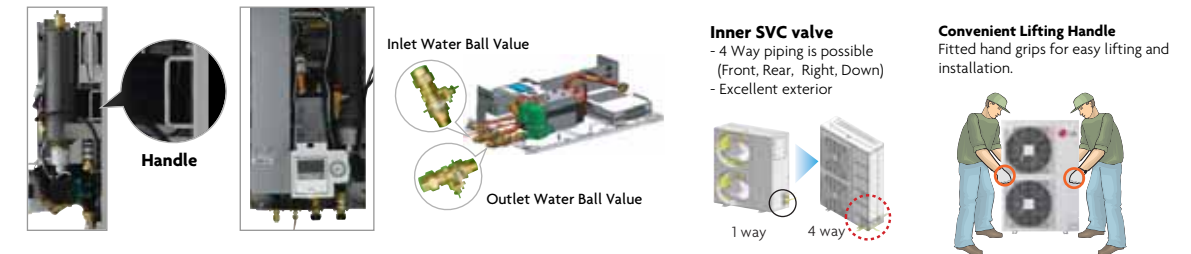
Easy Controller



- Various function with Easy Controller
- Can check indoor temperature, outflow water temperature, hot water temperature, and Solar Thermal temperature.
- Scheduling function can control weekly or holiday operation conveniently.
- When installing the product, the user can conveniently set the temperature at either the water temperature or the air temperature.

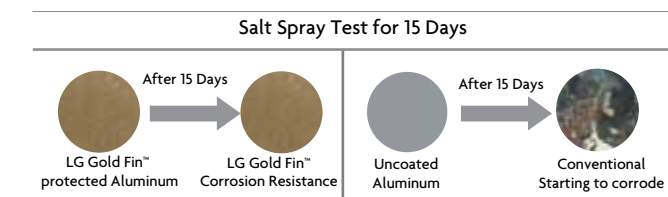
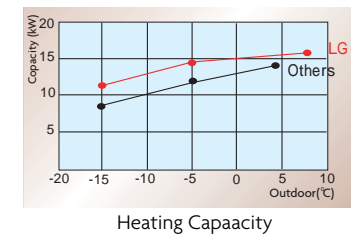
Easy to Handle & Easy to Install

Therma V features an outdoor and indoor unit, both are compact. The outdoor unit can be located discreetly outside new and existing residential buildings. The indoor unit can be installed in any convenient space, removing the need for a dedicated technical room.



Reliable Performance at lower temperature

Therma V provide reliable heating performance at lower temperature.



Emergency Operation

If a heater suddenly breaks down on a winter's night and you don't have any heating, you will be in big trouble.

In such a case, you can check what the problem is or the degree of the problem by looking at the information on the controller inside the Hydro Kit. If the problem is not too serious, the left warning light will come on, if the problem is serious, the right warning light will come on. At that time, you can turn on the Hydro Kit and carry out the emergency operation: if the left warning light comes on, operate it on a limited-use basis; if the right warning light comes on, start the back-up heater and provide heating at the minimum level and wait for the installer's customer service.



- Easy check system failure**
 - Level 1-2
- Emergency operation**
 - Level 2 case
 - Back up heater ON
 - Secure at least heating before A/S



Comfort System

When floor heating is applied, warm air spreads gently across the house, making it comfortable. The system can help blood circulation and metabolism, further boosting our health.



The System can be four season solution.

Therma V can function 365 days a year because it provides a heating solution in general and at the same time it also provides a cooling solution in summer.



Radiator



Underfloor Piping



FCU

Clean & Safe Solution

The installation of Therma V will eliminate oil or gas tanks, making the house's surroundings neater and safer, enabling the use of more space, and avoiding refueling.



Oil tank



Gas tank



Don't need refuel

VS.



Easy Turn ON/OFF

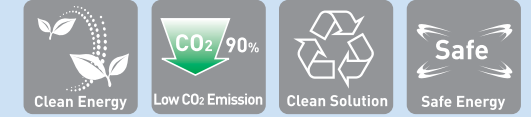
Strength for floor heating

When floor heating is applied, since radiators or FCU is not needed indoors, this produces a spacious indoor image, and a clean ambiance. Also, warm air spreads across the house, making it comfortable, and enabling the use of more space without necessitating radiators or FCU. Also, the system helps blood circulation and metabolism, boosting our health. Korea has long practiced floor heating, making the know-how particular, and earning an ISO certification for its floor heating system.



Clean & Ecological Energy

Therma V can provide a solution to the ever-worsening environment due to fossil energy. Therma V can be interconnected with 100% clean energy, Solar Thermal, thus reducing CO² emissions remarkably.



Reduce CO² Emission

When the system is connected to solar panels, CO² can be reduced more sharply.

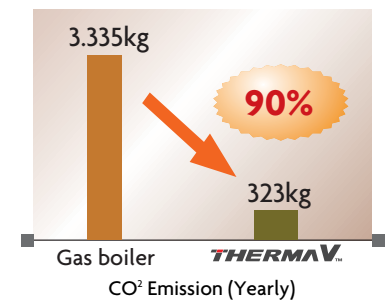
In addition, Therma V can significantly cut CO² emissions when being connected to solar thermal panel a completely pure energy source.



Solar Panel



Therma V



Eco Product Policy

LG Electronics has adopted a strict environmentally-friendly management policy, conforming to EU environment regulations such as WEEE and RoHS, improving our recycling activities, and eliminating hazardous substances from our products. LG Electronics operates an eco-friendly supply chain management system to prevent the use of hazardous substances such as *Pb, Cd, Hg, and others, conforming to international environmental standards. LG Electronics attaches environmental certificates to every product to enhance customer awareness. (* Pb = Lead, Cd = Cadmium, Hg = Mercury)



Model Line-up

Hydro-Box

Model: H09SNE H12SNE
H14SNE H16SNE



Outdoor Unit

Model: AHUW096A0

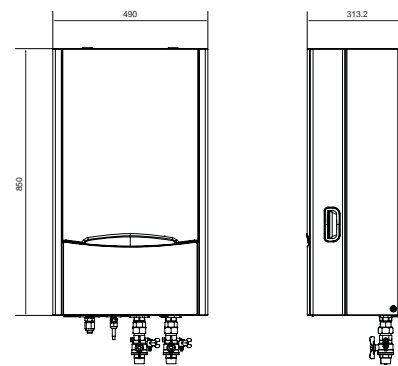


Model: AHUW126A0 AHUW146A0
AHUW166A0

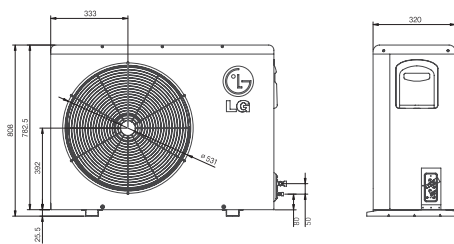


- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO² emissions
- Easy to install
- Total solution for year round comfort

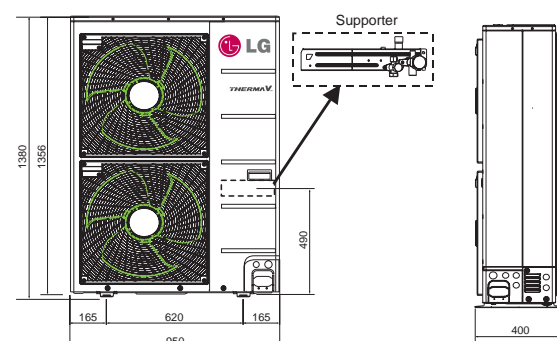
Dimensions



Dimensions



Dimensions



Specifications

Indoor Units		H09SNE	H12SNE	H14SNE	H16SNE
Combination Outdoor Units		AHUW096A0	AHUW126A0	AHUW146A0	AHUW166A0
Nominal Power Input	W	135	135	205	205
Nominal Running Current without Electric Heater	A	0.59	0.59	0.89	0.89
Operation Range (Min.-Max.)	Cooling(Fan coil unit)	°C	6 - 30	6 - 30	6 - 30
	Cooling(Under floor)	°C	16 - 30	16 - 30	16 - 30
Leaving Water Temperature	Heating(Fan coil unit or Radiator)	°C	15 - 55	15 - 55	15 - 55
	Heating(Under floor)	°C	15 - 55	15 - 55	15 - 55
Pump	Type	-	Canned type for hot water circulation		
	Steps of Speed	EA	2 (In Max. / Med. / Min., Min. step is not used)		
	Power Input	W	135	205	205
	Water Flowrate Limit	LPM	At least 9.5	At least 9.5	At least 15.5
Heat Exchanger	Type	-	Blazed Plate HEX	Blazed Plate HEX	Blazed Plate HEX
	Number of Plate	EA	46	60	60
	Quantity	EA	1	1	1
	Insulation Material	-	Polyethylene	Polyethylene	Polyethylene
Expansion Vessel	Volume liter		8	8	8
	Water Pressure(Max.)	bar	3	3	3
	Water Pressure(Pre)	bar	1.5	1.5	1.5
Strainer	Mesh Size	mm	2 x 1	2 x 1	2 x 1
	Material	-	Stainless Steel	Stainless Steel	Stainless Steel
Electric Heater	Type	-	Sheath	Sheath	Sheath
	Number of Heating Coil	EA	2	2	2
	Capacity Combination	kW	2 + 2	2 + 2	3 + 3
	Operation	-	Automatic	Automatic	Automatic
	Heating Steps	Step	2	2	2
	Power Supply	Ø / V/Hz	1 / 240 / 50	1 / 240 / 50	1 / 240 / 50
	Rated Current	A	16.7	16.7	25
	Maximum Current(MCA)	A	21	21	32
Water Circuit Safety	Valve	bar	3	3	3
	Entering Side Diameter	inch	Male PT 1	Male PT 1	Male PT 1
	Leaving Side Diameter	inch	Male PT 1	Male PT 1	Male PT 1
	Manometer	-	O	O	O
	Drain Valve / Fill Valve	-	O	O	O
	Shut Off Valve	-	O	O	O
	Air Vent	-	O	O	O
	Refrigerant Circuit	Gas Side Diameter	mm(inch)	15.88 (5/8)	15.88 (5/8)
	Liquid Side Diameter	mm(inch)	6.35 (1/4)	9.52 (3/8)	9.52 (3/8)
Dimensions	Unit(W x H x D)	mm	850 x 490 x 315	850 x 490 x 315	850 x 490 x 315
	Packed Unit(W x H x D)	mm	1032 x 563 x 375	1032 x 563 x 375	1032 x 563 x 375
Weight (Without water)	Unit	kg	52	53	54.5
	Packed Unit	kg	57	58	61.5
*Sanitary Water Tank (Field Supply)	Type	-	Indirect heating(+ Electric heater)		
	Heater Capacity	kW	Max. 3		
	Power Supply	Ø / V/Hz	1 / 230 / 50		
	Power Supply Type	-	Separated power source		
	Thermal Protector Range	°C	Max. 90		
	Relay Contactor	-	Needed		
	ELB	A	40		
	Sensor Adaptor Diameter	mm(inch)	12.7 (1/2)		
	Accessory Kit	-	LG Supply		

Note :
1. The specification may be subject to change without prior notice for purpose of improvement.
2. *: This information is given as a guideline about the connection of sanitary water tank

Specifications

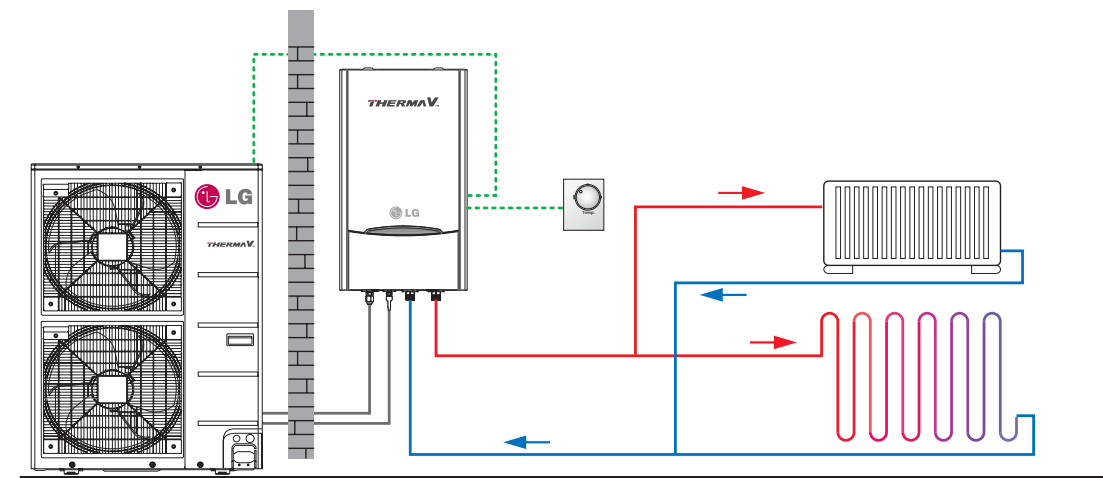
Outdoor Units		AHUW096A0	AHUW126A0	AHUW146A0	AHUW166A0	
Combination Indoor Units		H09SNE	H12SNE	H14SNE	H16SNE	
Power Supply	Ø / V / Hz	1 / 230 / 50	1 / 230 / 50	1 / 230 / 50	1 / 230 / 50	
Maximum Running Current	Cooling / Heating	A	24/24	32/32	32/32	
Wiring Connections	For Power Supply(Included Earth)	3	3	3	3	
(Number of wires)	For Connection withIndoor Unit (Included Earth)	4	4	4	4	
* Capacity	Cooling/Heating(Under floor)	kW	8.60/9.00	14.0/12.0	14.0/14.0	14.0/16.0
* Power Input	Cooling/Heating(Under floor)	kW	2.70/2.20	4.40/2.67	4.40/3.17	4.40/3.80
* EER	Cooling(Under floor)	W/W	3.19	3.18	3.18	3.18
* COP	Heating(Under floor)	W/W	4.10	4.50	4.42	4.20
** Capacity	Cooling(Fan coil unit)	kW	5.83	9.50	9.50	9.50
	Heating(Fan coil unit or Radiator)	kW	7.49	9.99	11.7	13.3
** Power Input	Cooling(Fan coil unit)	kW	2.24	3.65	3.65	3.65
	Heating(Fan coil unit or Radiator)	kW	2.30	2.79	3.41	4.01
** EER	Cooling(Fan coil unit)	W/W	2.60	2.60	2.60	2.60
** COP	Heating(Fan coil unit or Radiator)	W/W	3.26	3.58	3.43	3.32
Operation Range(Min.-Max.)	Cooling	°C DB	5-48	5-48	5-48	5-48
Outdoor Temperature	Heating	°C DB	-20-30	-20-30	-20-30	-20-30
Compressor	Type	-	Hermetic Motor	Hermetic Motor	Hermetic Motor	Hermetic Motor
	Quantity	EA	1	1	1	1
	Displacement	cm ³ /Rev.	24	42.4	42.4	42.4
	Capacity	kW	7.28	13.4 (at 57.5Hz)	13.4 (at 57.5Hz)	13.4 (at 57.5Hz)
Compressor Motor	Type/Quantity	-/EA	Brushless/1	Brushless/1	Brushless/1	Brushless/1
	Rated Output	W	1,700	3,000	3,000	3,000
Refrigerant	Type/Charge	-/g(oz)	R410A/1,800(63.5)	R410A/3,000(105.8)	R410A/3,000(105.8)	R410A/3,000(105.8)
	Control	-	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Refrigerant Oil	Type/Charged Volume	-/cc	FV50S/900	FV50S/1300	FV50S/1300	FV50S/1300
Heat Exchanger	Quantity /Rows /Columns	EA	1/2/36	2/2/32	2/2/32	2/2/32
	FPI	Fins/inch	18	17	17	17
Fan	Type/Quantity	-/EA	Propeller/1	Propeller/2	Propeller/2	Propeller/2
	Air Flow Rate	CMM(l/s)	58(967)	60(1,000)	60(1,000)	60(1,000)
Fan Motor	Quantity	-/EA	1	2	2	2
	Output	W	124	124	124	124
Sound Pressure Level	Cooling/Heating	dB(A)+3	51/53	54/55	55/57	55/57
Liquid Piping Connection	Type	-	Flare	Flare	Flare	Flare
	Outer Diameter	mm(inch)	6.35(1/4)	9.52(3/8)	9.52(3/8)	9.52(3/8)
Gas Piping Connection	Type	-	Flare	Flare	Flare	Flare
	Outer Diameter	mm(inch)	15.88(5/8)	15.88(5/8)	15.88(5/8)	15.88(5/8)
Piping Length	Minimum	m	3	3	3	3
(Outdoor Unit-Indoor Unit)	Standard	m	7.5	7.5	7.5	7.5
	Maximum	m	50	50	50	50
Height Difference (Outdoor Unit-Indoor Unit) Maximum		m	30	30	30	30
Additional Refrigerant Charge		g/m	35	40	60	60
Dimensions	Unit(W x H x D)	mm	870 x 800 x 320	950 x 1,355 x 330	950 x 1,355 x 330	950 x 1,355 x 330
	Packed Unit(W x H x D)	mm	1,022 x 870 x 437	1,140 x 1462 x 461	1,140 x 1462 x 461	1,140 x 1462 x 461
Weight	Unit	kg	56	105	105	105
	Packed Unit	kg	61	116	116	116

Note:

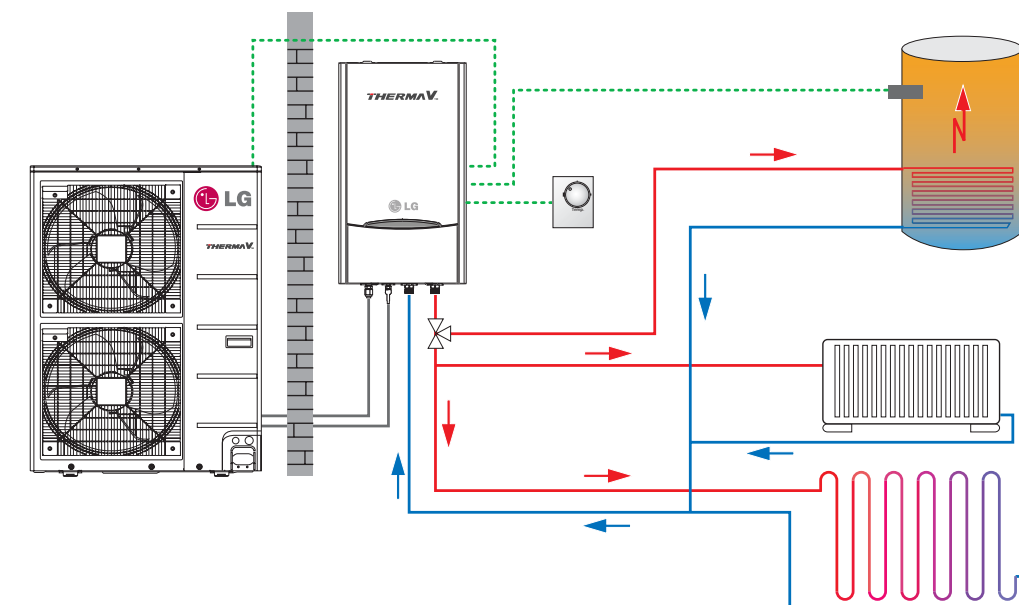
- Capacities and power inputs are based on the following conditions:
 *: Cooling conditions - Indoor Water Temperature 23°C/18°C; Outdoor Air Temperature 35°CDB
 Heating conditions - Indoor Water Temperature 30°C/35°C; Outdoor Air Temperature 7°CDB/6°CWB
 Standard piping length 7.5m
 **: Cooling conditions - Indoor Water Temperature 12°C/7°C; Outdoor Air Temperature 35°CDB
 Heating conditions - Indoor Water Temperature 40°C/45°C; Outdoor Air Temperature 7°CDB/6°CWB
 Standard piping length 7.5m
- Wiring cable size must comply with the applicable local and national code.
- The specification may be subject to change without prior notice for purpose of improvement.

Installation Diagram

Therma V + Radiator + Underfloor Heating

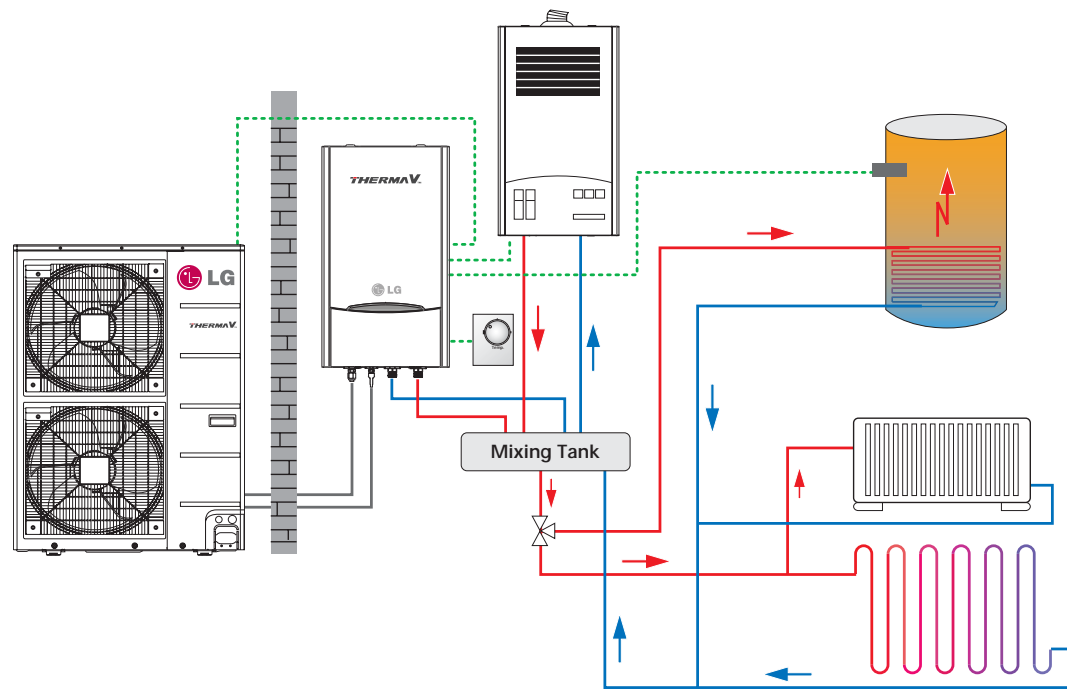


Therma V + Radiator + Underfloor Heating + Sanitary Tank

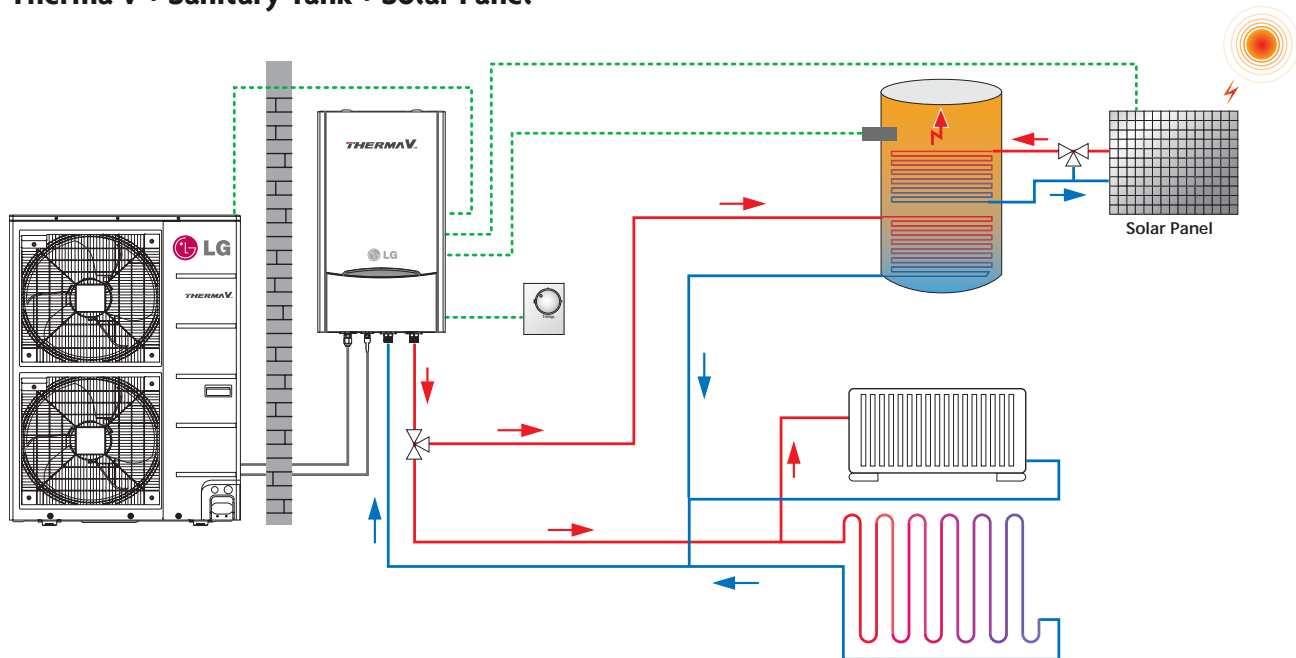


Installation Diagram

Therma V + Existing Boiler + Sanitary Tank



Therma V + Sanitary Tank + Solar Panel



Model Range

Hydro-Box

9 12 14 16 (kW)



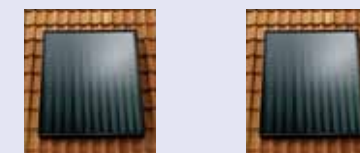
Outdoor Unit

9 12 14 16 (kW)



Solar Panel
(Option)

200 300 (m²)



Sanitary Tank
(Option)

200 300 (Liter)

