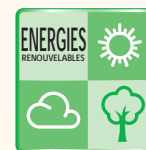


THERMAV™

Air-to-Water Heat Pump

New Heating system with new technology



LG Electronics

20 Yoido-dong, Youngdungpo-gu, Yoido P.O.Box 355
Seoul 150-721, Korea
Phone: 82-2-3777-1114 / Fax: 82-2-3777-5137/8

<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 **THERMAV**™ ?



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. ThermaV 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 outdoor 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 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 times energy, 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 relatively 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 handle 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.

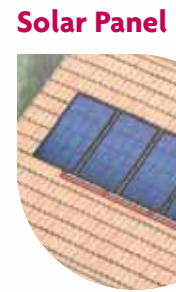


Clean & Ecological Energy

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.



Low Running Costs

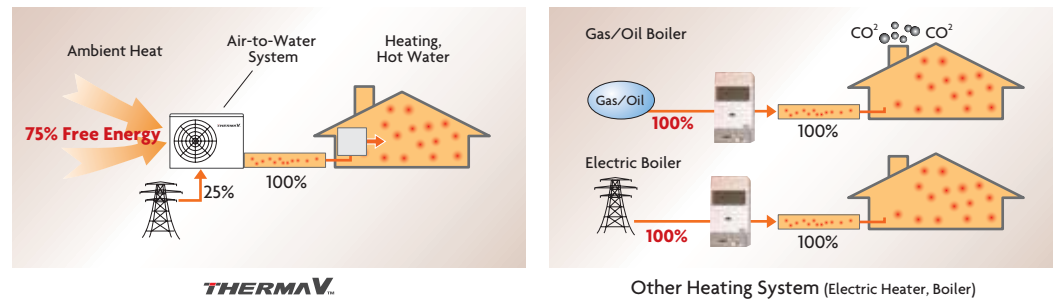


When you use a gas or oil boiler, or an electric radiator, you can get exactly the same effect based on your input. The price of electricity is stable relatively to those of oil or gas, thus cutting more costs as the time passes.



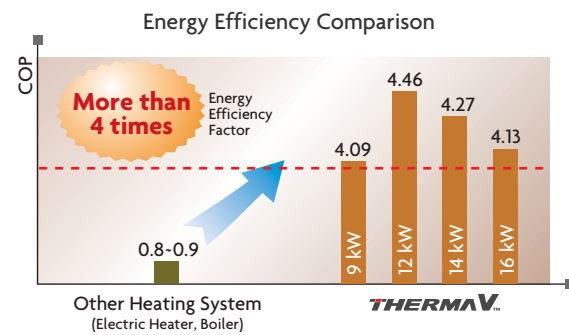
Cost effective LG AHP to a fossil fuel boiler

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.



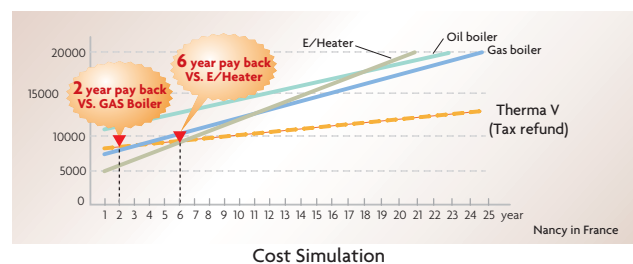
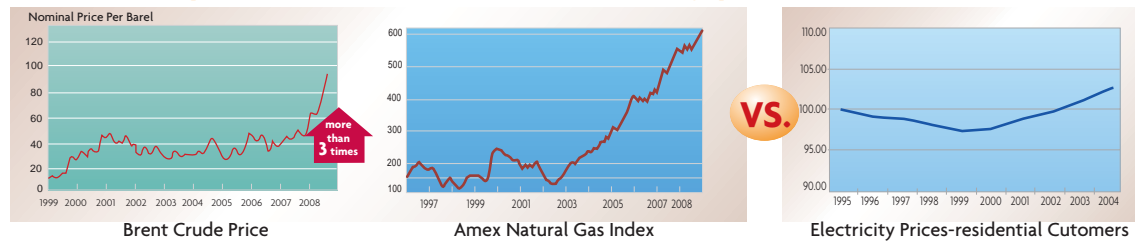
Best Heating Efficiency

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 inverter technology creates more quiet, economical and powerful heating performance.

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 by using twin ball valve and handles.



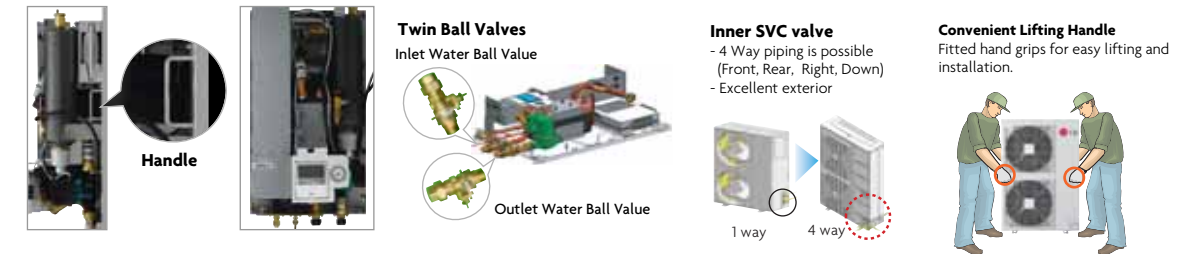
Easy Controller



- 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.

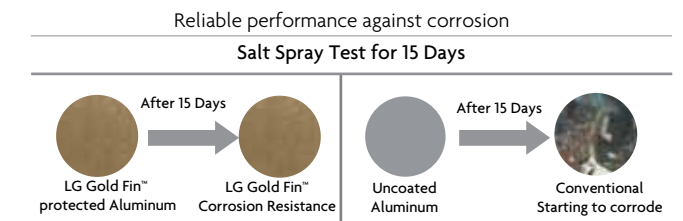
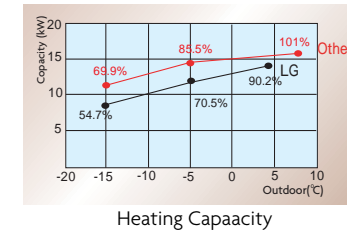
Easy to Handle & Easy to Install

Therma V outdoor and indoor unit, 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

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

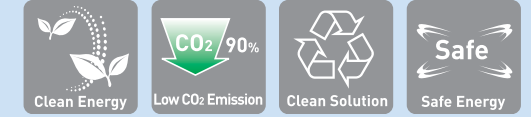
Strength for floor heating

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.

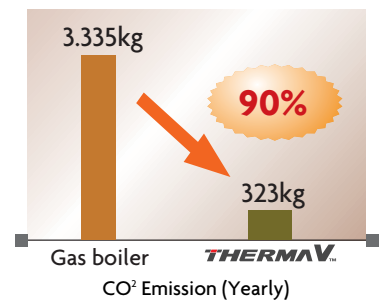
In addition, Therma V can significantly cut CO² emissions when being connected to solar thermal panel a completely pure energy source.



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)



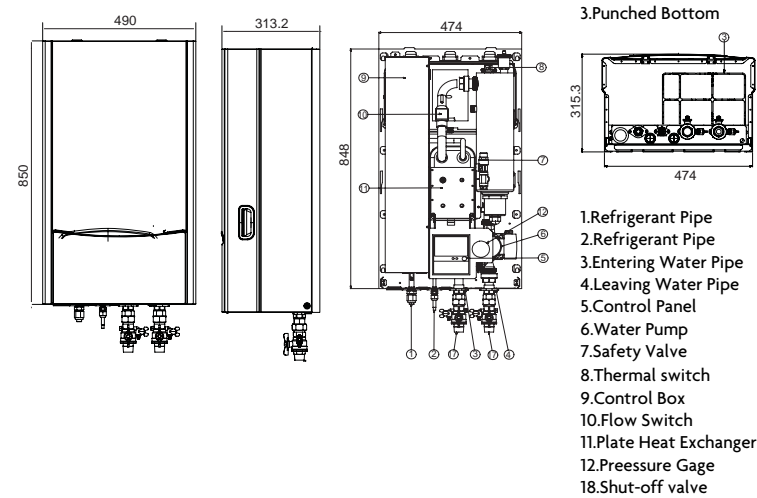
Model Line-up

Hydro-Box

Model: H09SNE H12SNE
H14SNE H16SNE



Dimensions

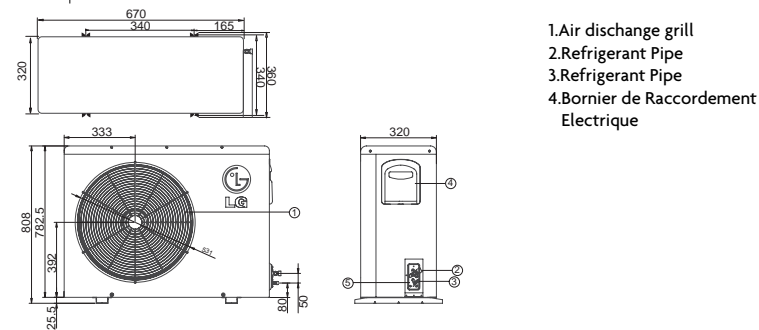


Outdoor Unit

Model: AHUW096A0



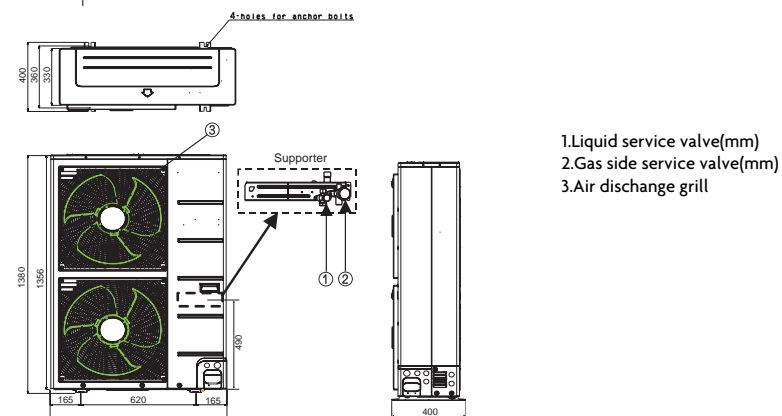
Dimensions



Model: AHUW126A0 AHUW146A0
AHUW166A0



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 | 6 - 30 |
| | Cooling(Under floor) | °C 16 - 30 | 16 - 30 | 16 - 30 | 16 - 30 |
| Leaving Water Temperature | Heating(Fan coil unit or Radiator) | °C 15 - 55 | 15 - 55 | 15 - 55 | 15 - 55 |
| | Heating(Under floor) | °C 15 - 55 | 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 |
| Heat Exchanger | Water Flowrate Limit | LPM | At least 9.5 | At least 9.5 | At least 15.5 |
| | Type | - | Blazed Plate HEX | Blazed Plate HEX | Blazed Plate HEX |
| | Number of Plate | EA | 46 | 60 | 60 |
| | Quantity | EA | 1 | 1 | 1 |
| Expansion Vessel | Insulation Material | - | Polyethylene | Polyethylene | Polyethylene |
| | Volume liter | | 8 | 8 | 8 |
| | Water Pressure(Max.) | bar | 3 | 3 | 3 |
| Strainer | Water Pressure(Pre) | bar | 1.5 | 1.5 | 1.5 |
| | Mesh Size | mm | 2 x 1 | 2 x 1 | 2 x 1 |
| Electric Heater | Material | - | Stainless Steel | Stainless Steel | Stainless Steel |
| | 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 |
| | Valve | bar | 3 | 3 | 3 |
| Water Circuit Safety | 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 |
| Refrigerant Circuit | Shut Off Valve | - | O | O | O |
| | Air Vent | - | O | O | O |
| Gas Side Diameter | mm(inch) | 15.88 (5/8) | 15.88 (5/8) | 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

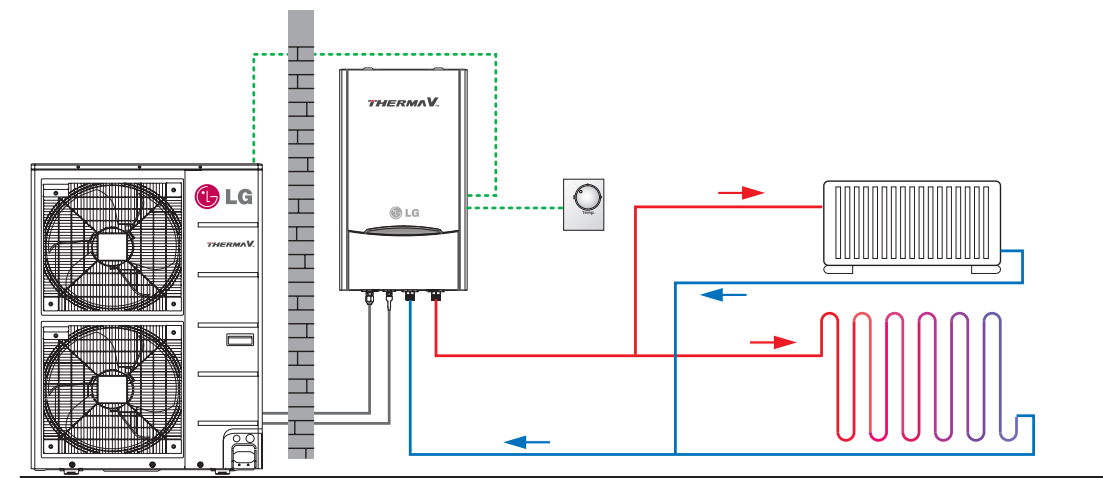
Specifications

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

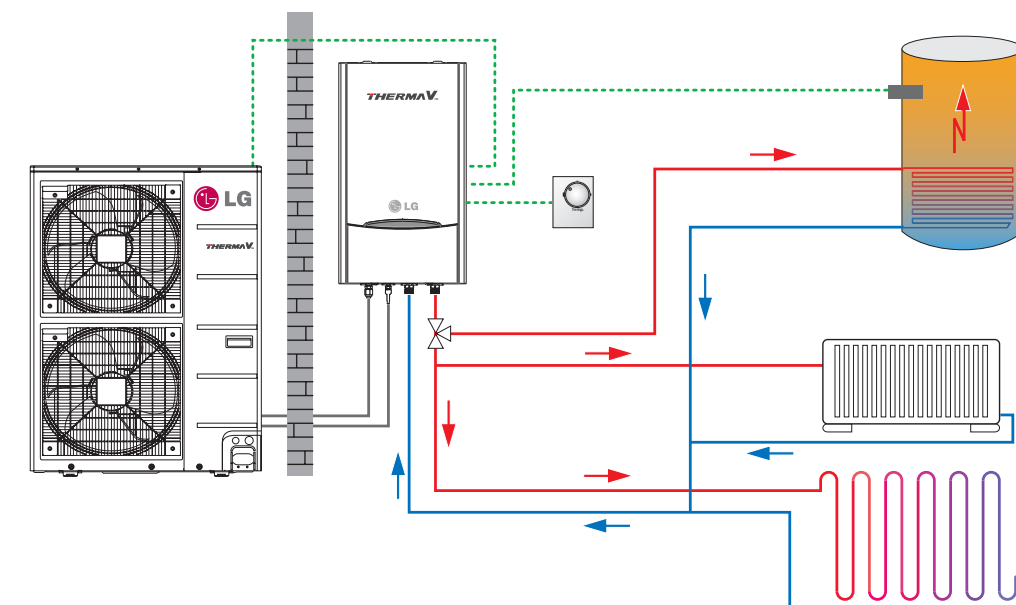
- Note:
- Capacities and power inputs are based on the following conditions:
 *: Cooling conditions - Indoor Water Temperature 23°C/18°C; Outdoor Air Temperature 35°CDB
 Heating conditions - Indoor Water Temperature 30°C/35°C; Outdoor Air Temperature 7°CDB/6°CWB
 Standard piping length 7.5m
 - : Cooling 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

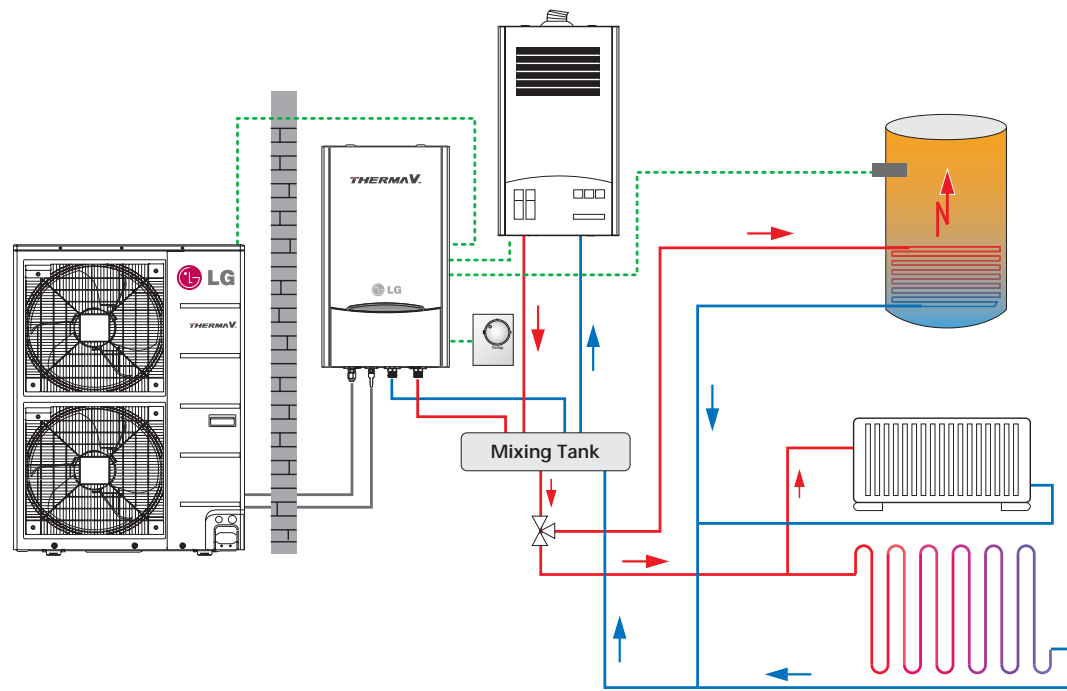


Therma V + Radiator + Underfloor Heating + Sanitary Tank

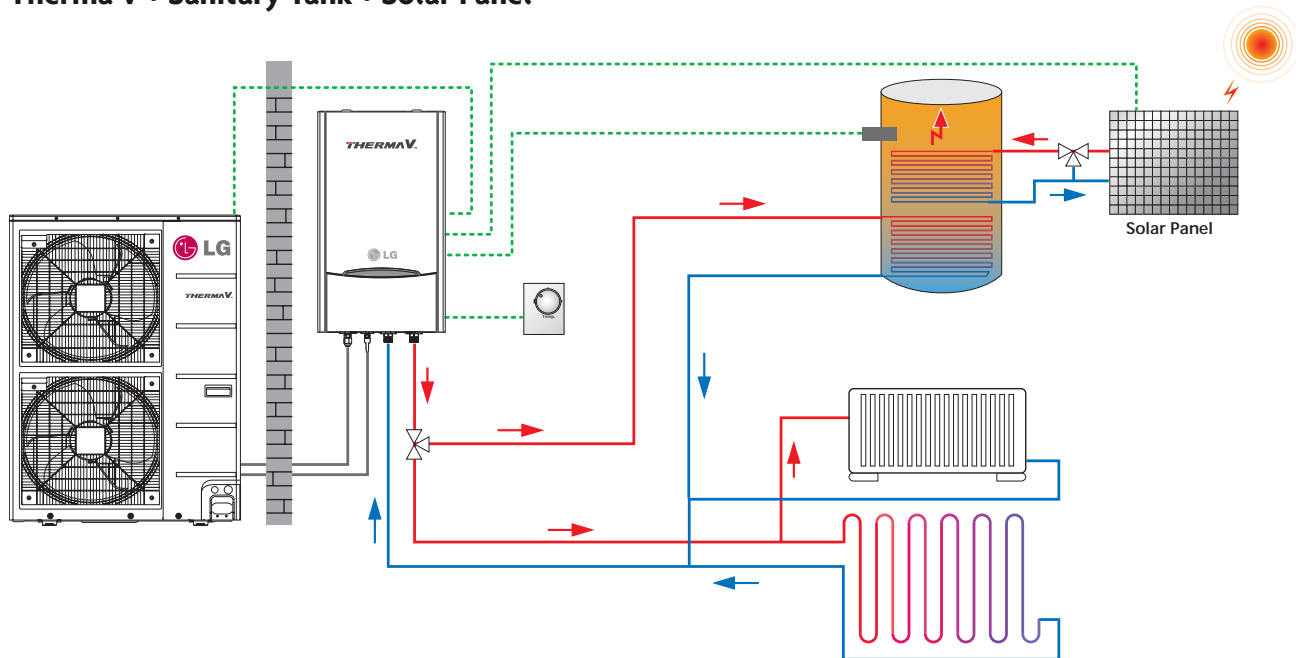


Installation Diagram

Therma V + Existing Boiler + Sanitary Tank



Therma V + Sanitary Tank + Solar Panel



Model Range

Hydro-Box

9 12 14 16 (kW)

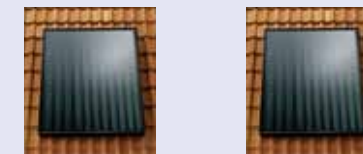


Outdoor Unit

9 12 14 16 (kW)



Solar Panel (Option)



Sanitary Tank (Option)

200 300 (Liter)

