

PRODUCT SPECIFICATION

R410A Split Hydro Box

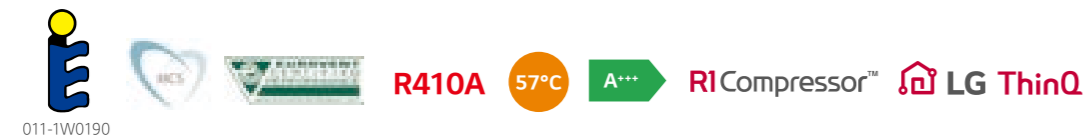


Indoor Unit

HN1616M NK5
HN1636M NK5

Outdoor Unit

HU121MA U33
HU141MA U33
HU161MA U33
HU123MA U33
HU143MA U33
HU163MA U33



Features

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

* EHPA label under development

Model Line-up

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

Seasonal Energy

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

Nominal Capacity and Nominal Power Input

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

PRODUCT SPECIFICATION

R410A Split Hydro Box

Product Specification (Outdoor Unit)

| Technical Specification | | | Unit | HU121MA U33 | HU141MA U33 | HU161MA U33 | HU123MA U33 | HU143MA U33 | HU163MA U33 |
|-------------------------------------|--|-------------------------|----------------|---------------|-------------|----------------|-------------|-------------|-------------|
| Operation Range (outdoor temp.) | Heating | Min. - Max. | °C DB | -25 ~ 35 | | | | | |
| | Cooling | | | | | | | | |
| Compressor | Quantity | 5 ~ 48 | | | | | | | |
| | Type | 1 | | | | | | | |
| Refrigerant | Type | Hermetic Sealed Scroll | | | | | | | |
| | GWP (global warming potential) | R410A | | | | | | | |
| | Precharged Amount | 2,088 | | | | | | | |
| | t-CO ₂ eq | g | | | | | | | |
| | | 2,500 | | | | | | | |
| Piping Connections | Outside Diameter | Gas | mm (inch) | Ø 15.88 (5/8) | | | | | |
| | | Liquid | mm (inch) | Ø 9.52 (3/8) | | | | | |
| | Length | Standard | m | 7.5 | | | | | |
| | | Max. | m | 50 | | | | | |
| | Level Difference | Max. | m | 30 | | | | | |
| | Chargeless-Pipe Length | | m | 7.5 | | | | | |
| | Additional Charging Volume | | g/m | 40 | | | | | |
| Rated Water Flow Rate (at LWT 35°C) | | LPM | 34.5 | 40.3 | 46.0 | 34.5 | 40.3 | 46.0 | |
| Sound Power Level | Heating | Rated | dB(A) | 63 | 64 | 65 | 63 | 64 | 65 |
| | Cooling | | | | | | | | |
| Sound Pressure Level (at 1m) | Heating | Rated | dB(A) | 55 | 56 | 57 | 55 | 56 | 57 |
| | Cooling | | | | | | | | |
| Dimensions | Unit | W x H x D | mm | | | | | | |
| Weight | Unit | kg | 84.8 | | | 85.4 | | | |
| Exterior | Color / RAL Code | - Warm Gray / RAL 7044 | | | | | | | |
| Power Supply | Voltage, Phase, Frequency | V, Ø, Hz | 220-240, 1, 50 | | | 380-415, 3, 50 | | | |
| | Rated Running Current | Heating | A | 11.5 | 13.8 | 16.3 | 6.6 | 8.0 | 9.4 |
| | | Cooling | A | 11.3 | 13.4 | 15.7 | 6.5 | 7.7 | 9.0 |
| | Recommended Circuit Breaker | A | 40 | | | 20 | | | |
| Wiring Connections | Power Supply Cable (included earth, H07RN-F) | mm ² x cores | 6.0 x 3C | | | 2.5 x 5C | | | |

Note

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. Especially the power cable and circuit breaker should be selected in accordance with that.
- Sound power level is measured on the rated condition in according with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
- Performances are based on the following conditions (It is according to EN14511):
 - Interconnected Pipe Length is standard length and difference of Elevation
- This product contains Fluorinated greenhouse gases. (Outdoor - Indoor Unit) is 0m.

Product Specification (Indoor Unit)

| Technical Specification | | | Unit | HN1616M NK5 | HN1636M NK5 | |
|---------------------------------|---|---------------------------|-----------|--|----------------|-----------------|
| Operation Range (leaving water) | Heating | Min. - Max. | °C DB | 15 ~ 57 | | |
| | Cooling | | | 5 ~ 27 (16 ~ 27) ¹⁾ | | |
| | DHW | | | 15 ~ 80 ²⁾ | | |
| Flow Sensor | Measuring Range | Min. - Max. | LPM | 5 ~ 80 | | |
| Water Pressure Sensor | Measuring Range | Min. - Max. | bar(G) | 0 ~ 20 | | |
| Expansion Vessel | Volume | | ℓ | 8 | | |
| Safety Valve | Pressure Limit | Upper Limit | bar | 3 | | |
| | | | | | | |
| Backup Heater | Type | | | Sheath | Sheath | |
| | Number of Heating Coil | | | EA | 2 | 3 |
| | Capacity Combination | | | kW | 3.0 + 3.0 | 2.0 + 2.0 + 2.0 |
| | Heating Steps | | | Step | 2 | 2 |
| | Power Supply | | | V, Ø, Hz | 220-240, 1, 50 | 380-415, 3, 50 |
| | Rated Running Current | | | A | 25.0 | 8.7 |
| | Power Supply Cable (included earth, H07RN-F) | | | mm ² x cores | 4.0 x 3C | 2.5 x 4C |
| Piping Connections | Water Circuit | Inlet | Inch | Male PT 1" according to ISO 7-1 (tapered pipe threads) | | |
| | | Outlet | Inch | Male PT 1" according to ISO 7-1 (tapered pipe threads) | | |
| | Refrigerant Circuit | Gas (outside diameter) | mm (Inch) | Ø 15.88 (5/8) | | |
| | | Liquid (outside diameter) | mm (Inch) | Ø 9.52 (3/8) | | |
| Wiring Connections | Power and Communication Cable (included earth, H07RN-F) | | | mm ² x cores | 0.75 x 4C | |
| Sound Power Level | Heating | Rated | dB(A) | 44 | | |
| Dimensions | Unit | W x H x D | mm | 490 x 850 x 315 | | |
| Weight | Unit | kg | | 40.0 | 41.0 | |
| Exterior | Color / RAL Code | - Noble White / RAL 9016 | | | | |

1) When fan coil unit not used.

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

Note

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. Especially the power cable and circuit breaker should be selected in accordance with that.
- Sound power level is measured on the rated condition in according with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
- This product contains Fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU121MA U33 + HN1616M NK5 / HU123MA U33 + HN1636M NK5

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

HU141MA U33 + HN1616M NK5 / HU143MA U33 + HN1636M NK5

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

HU161MA U33 + HN1616M NK5 / HU163MA U33 + HN1636M NK5

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

Note

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

Performance Table for Cooling Operation

Maximum Cooling Capacity

HU121MA U33 + HN1616M NK5 / HU123MA U33 + HN1636M NK5

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

HU141MA U33 + HN1616M NK5 / HU143MA U33 + HN1636M NK5

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

HU161MA U33 + HN1616M NK5 / HU163MA U33 + HN1636M NK5

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

Note

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

THERMA V™ R410A SPLIT HYDRO BOX

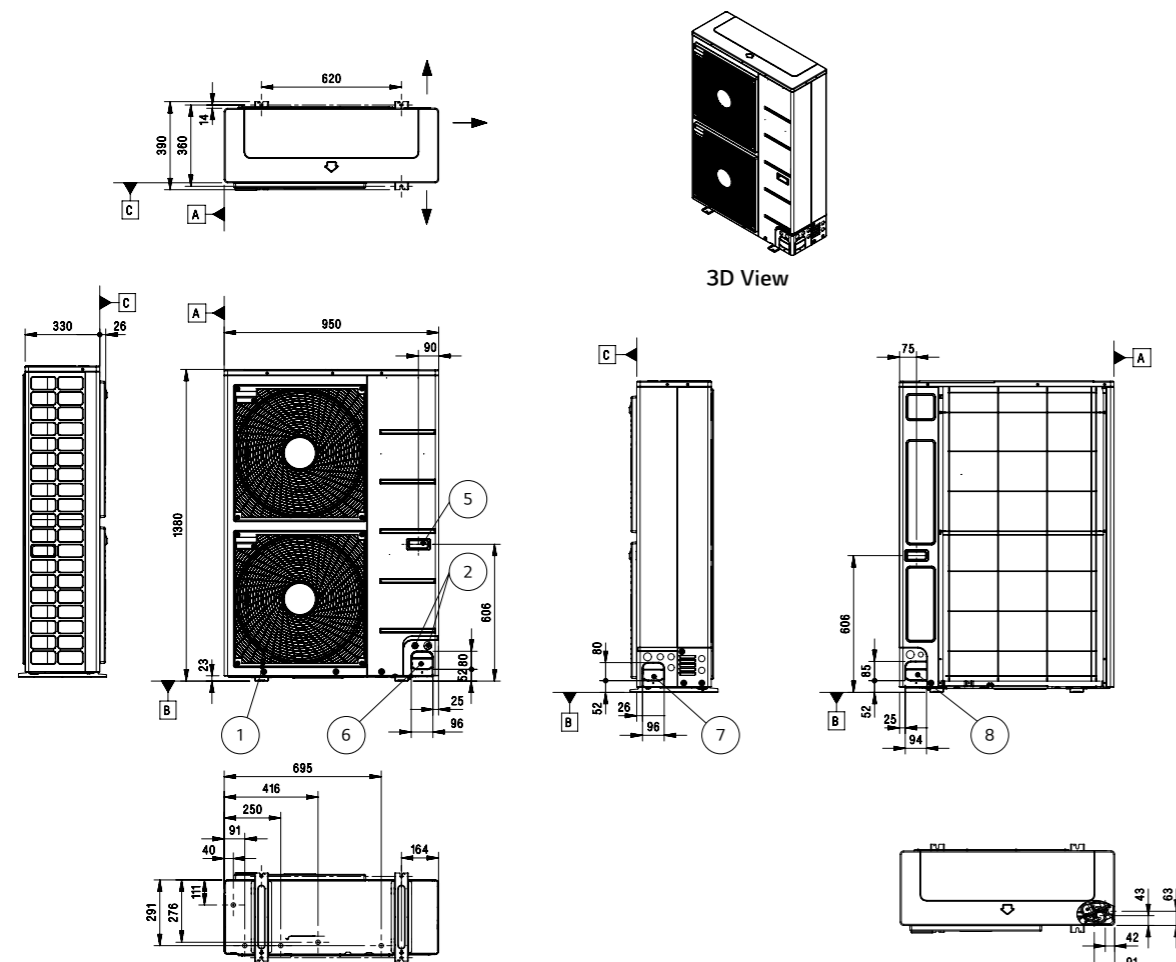
PRODUCT SPECIFICATION

Drawings

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

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

[Unit : mm]



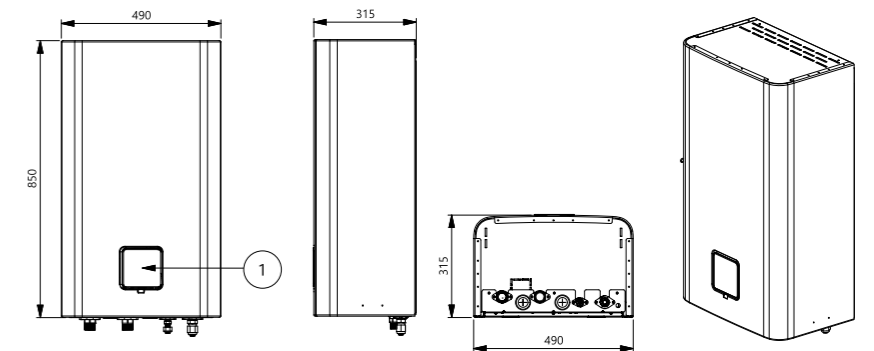
| No. | Part Name | Description |
|-----|------------------------------------|-------------|
| 1 | Air Outlet | - |
| 2 | Power and Communication Cable Hole | - |
| 3 | Gas Pipe Connection | Flare joint |
| 4 | Liquid Pipe Connection | Flare joint |
| 5 | Handle | - |
| 6 | Pipe Routing Hole (front)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

Piping Connection Port

HN1616M NK5 / HN1636M NK5

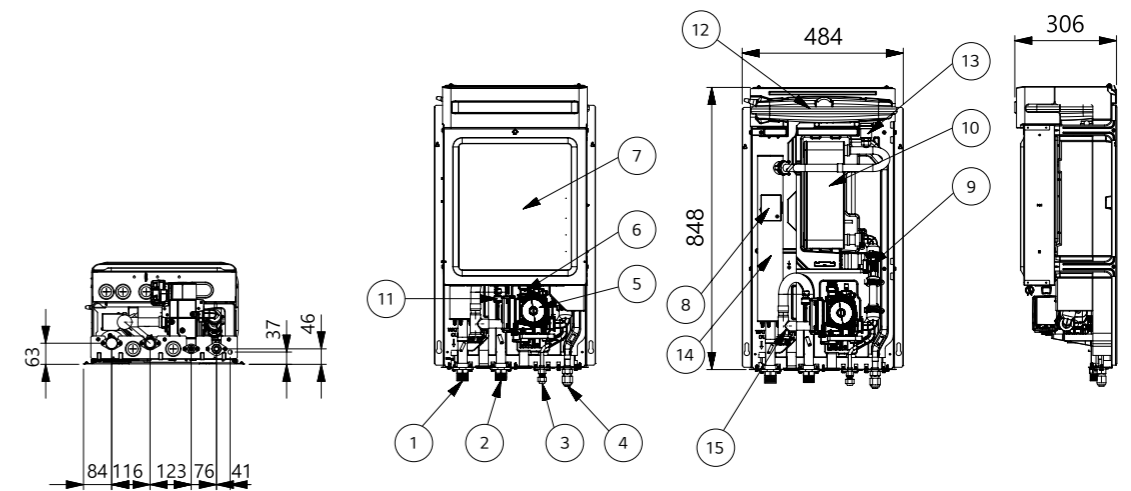
[Unit : mm]

External



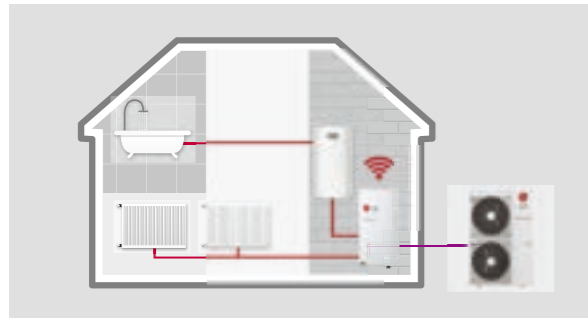
| No. | Part Name | Description |
|-----|---------------|----------------------------|
| 1 | Control Panel | Built-in remote controller |

Internal

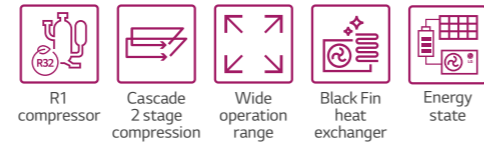


| No. | Part Name | Description |
|-----|---------------------------|---|
| 1 | Leaving Water Pipe | Male PT 1" according to ISO 7-1 (tapered pipe threads) |
| 2 | Entering Water pipe | Male PT 1" according to ISO 7-1 (tapered pipe threads) |
| 3 | Refrigerant Pipe (Liquid) | Ø9.52 (mm) |
| 4 | Refrigerant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

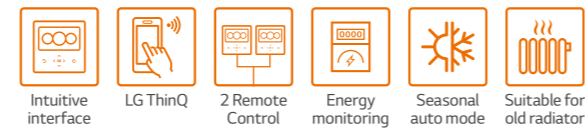
THERMA V™ HIGH TEMPERATURE



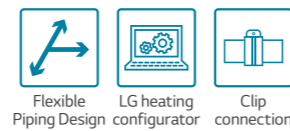
Excellent Performance & Efficiency



User Convenience

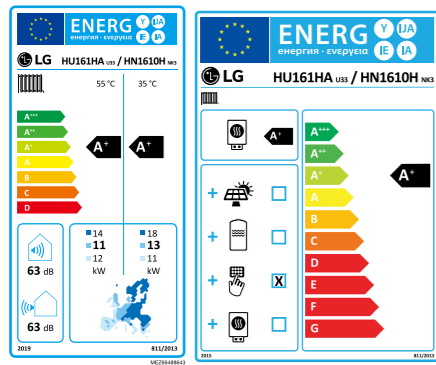


Easy Installation & Maintenance



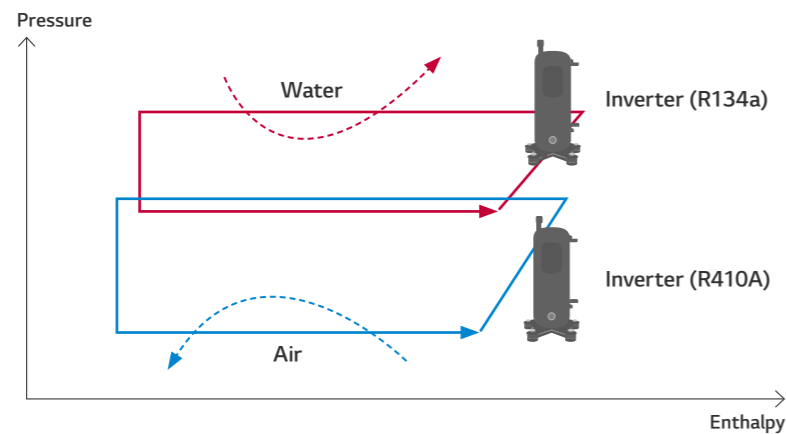
* Detailed description for each function is presented on page 28 - 33.

Energy Label



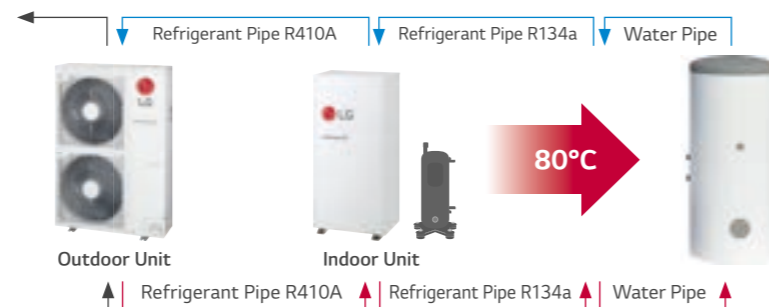
* 16kW 1Ø model.
* A+++ to D scale.

THERMA V High Temperature Cycle



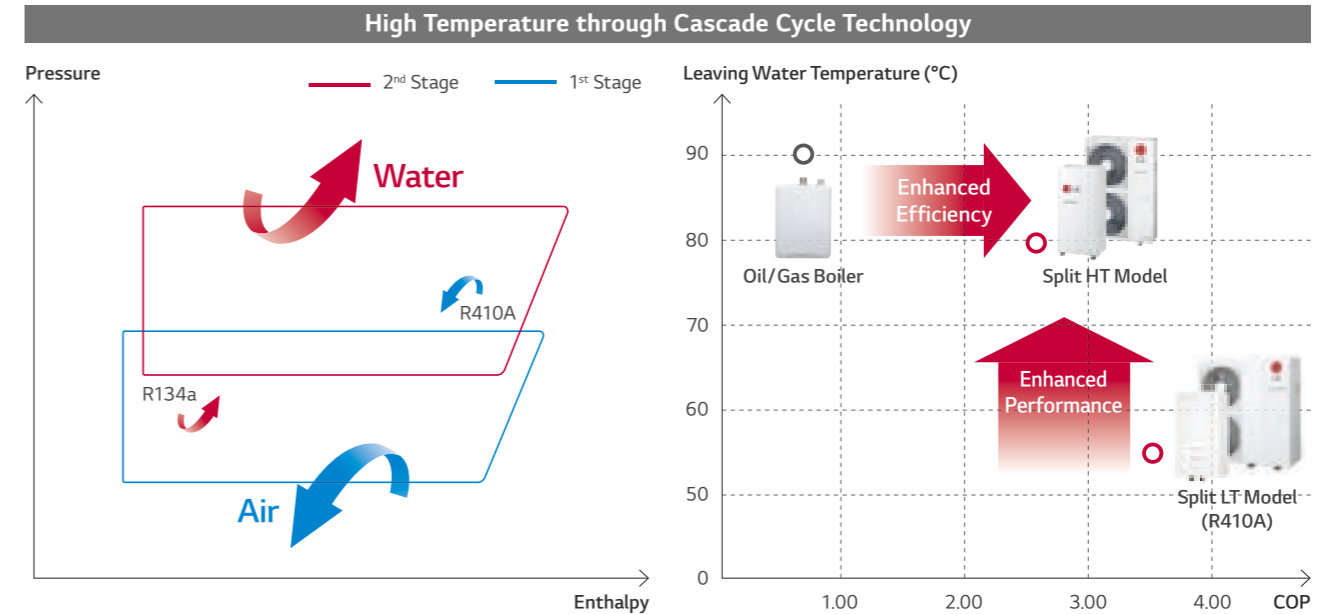
High Temperature Introduction

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



Cascade 2 Stage Compression Technology

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



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

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

Suitable for Old Radiator

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



PRODUCT SPECIFICATION

High Temperature



Indoor Unit

HN1610H NK3

Outdoor Unit

HU161HA U33



Features

- Maximum 80°C Leaving water temperature
- Cascade 2 stage compression
- Only for heating (no cooling)
- Suitable for old radiator
- SCOP up to 3.23 (Average climate / Low temp. application) : A+
- SCOP up to 3.01 (Average climate / Mid temp. application) : A+
- COP up to 3.27 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -7 °C OAT (@ LWT 35°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 25 ~ 80°C)
- R1 compressor (for outdoor unit)
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / MCS / EUROVENT certification

Model Line-up

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

Seasonal Energy

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

Nominal Capacity and Nominal Power Input

| Description | OAT (DB) | LWT (DB) | Outdoor Unit | | HU161HA U33 | |
|---------------------|----------|----------|--------------|-------------|-------------|--|
| | | | Indoor Unit | HN1610H NK3 | | |
| Nominal Capacity | Heating | 7°C | 35°C | kW | 16.00 | |
| | | 7°C | 55°C | | 14.00 | |
| | | 2°C | 35°C | | 16.00 | |
| Nominal Power Input | Heating | 7°C | 35°C | kW | 4.89 | |
| | | 7°C | 55°C | | 5.00 | |
| | | 2°C | 35°C | | 4.92 | |
| COP | Heating | 7°C | 35°C | W/W | 3.27 | |
| | | 7°C | 55°C | | 2.78 | |
| | | 2°C | 35°C | | 3.25 | |

Product Specification (Outdoor Unit)

| Technical Specification | | | Unit | HU161HA U33 |
|---------------------------------|---------------------------------|------------------------|------------------------------|-------------------------|
| Operation Range (outdoor temp.) | Heating | Min. ~ Max. | °C DB | -25 ~ 35 |
| | Quantity | | EA | 1 |
| Compressor | Type | | - | Hermetic Sealed Scroll |
| | Type | | - | R410A |
| Refrigerant | GWP (global warming potential) | | - | 2,088 |
| | Precharged Amount | | g | 3,800 |
| | t-CO ₂ eq | | - | 7,933 |
| Piping Connections | Outside Diameter | Gas | mm (inch) | Ø 15.88 (5/8) |
| | | Liquid | mm (inch) | Ø 9.52 (3/8) |
| | Length | Standard | m | 7.5 |
| | | Max. | m | 50 |
| | Level Difference | Max. | m | 30 |
| | | Chargeless-Pipe Length | m | 7.5 |
| | Additional Charging Volume | | g/m | 40 |
| Rated Water Flow Rate | at LWT 35 °C | | LPM | 46.0 |
| Sound Power Level | Heating | Rated | dB(A) | 63 |
| Sound Pressure Level (at 1m) | Heating | Rated | dB(A) | 55 |
| Dimensions | Unit | W x H x D | mm | 950 x 1,380 x 330 |
| Weight | Unit | | kg | 89.0 |
| Exterior | Color / RAL Code | | - | Warm Gray / RAL 7044 |
| | Voltage, Phase, Frequency | | V, Ø, Hz | 220-240, 1, 50 |
| Power Supply | Rated Running Current Heating | | A | 8.4 |
| | Recommended Circuit Breaker | | A | 20 |
| | Wiring Connections | | Power Cable (included earth) | mm ² x cores |

Product Specification (Indoor Unit)

| Technical Specification | | | Unit | HN1610H NK3 |
|---|---------------------------------|--------------------------------------|------------------------------|--|
| Operation Range (leaving water temp.) | Heating | Min. ~ Max. | °C DB | 25 ~ 80 |
| | Quantity | | EA | 1 |
| Compressor | Type | | - | Hermetic Sealed Twin Rotary |
| | Type | | - | R134a |
| Refrigerant | GWP (global warming potential) | | - | 1,430 |
| | Precharged Amount | | g | 1,800 |
| | t-CO ₂ eq | | - | 2,574 |
| Piping Connections | Water Circuit | Inlet | Inch | Male PT 1" according to ISO 7-1 (tapered pipe threads) |
| | | Outlet | Inch | Male PT 1" according to ISO 7-1 (tapered pipe threads) |
| | Refrigerant Circuit | Gas (outside diameter) | mm (Inch) | Ø15.88 (5/8) |
| | | Liquid (outside diameter) | mm (Inch) | Ø9.52 (3/8) |
| Rated Water Flow Rate (at LWT 35°C) | | | LPM | 46.0 |
| Sound Power Level | Heating | Rated | dB(A) | 58 / 63 ¹⁾ |
| Sound Pressure Level (at 1m) | Heating | Rated | dB(A) | 50 |
| Dimensions | Unit | W x H x D | mm | 520 x 1,080 x 330 |
| Weight | Unit | | kg | 84.0 |
| Exterior | Color / RAL Code | | - | Morning Gray / RAL 7030 |
| | Voltage, Phase, Frequency | | V, Ø, Hz | 220 ~ 240, 1, 50 |
| Power Supply | Rated Running Current Heating | | A | 9.8 |
| | Recommended Circuit Breaker | | A | 25 |
| | Wiring Connections | | Power Cable (included earth) | mm ² x cores |
| | | Communication Cable (included earth) | mm ² x cores | 1.0 ~ 1.5 x 2C (VCTF-SB) |
| Accessory Kit of the Indoor Unit | | | Unit | HN1610H NK3 |
| Remote Controller | | | - | Standard III |
| Water Tank Temperature Sensor with Holder | Sensor Size | | Ø | 7 |
| | Resistance | | kΩ | 5 |
| Strainer | Mesh Size / Material | | - | 28 mesh / Stainless Steel |

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

Note

- Due to our policy of innovation some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. Especially the power cable and circuit breaker should be selected in accordance with that.
- Sound power level is measured on the rated condition in according with ISO 9614 standard. Sound pressure level is converted from sound power level based on tonality penalty of 0dB and installation in free-field. Therefore, these values can be increased owing to ambient conditions during operation. Rated sound power level is according to the EN12102-1 under conditions of the EN14825.
- This product contains Fluorinated greenhouse gases.

PRODUCT SPECIFICATION

Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU161HA U33 + HN1610H NK3

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

Note

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



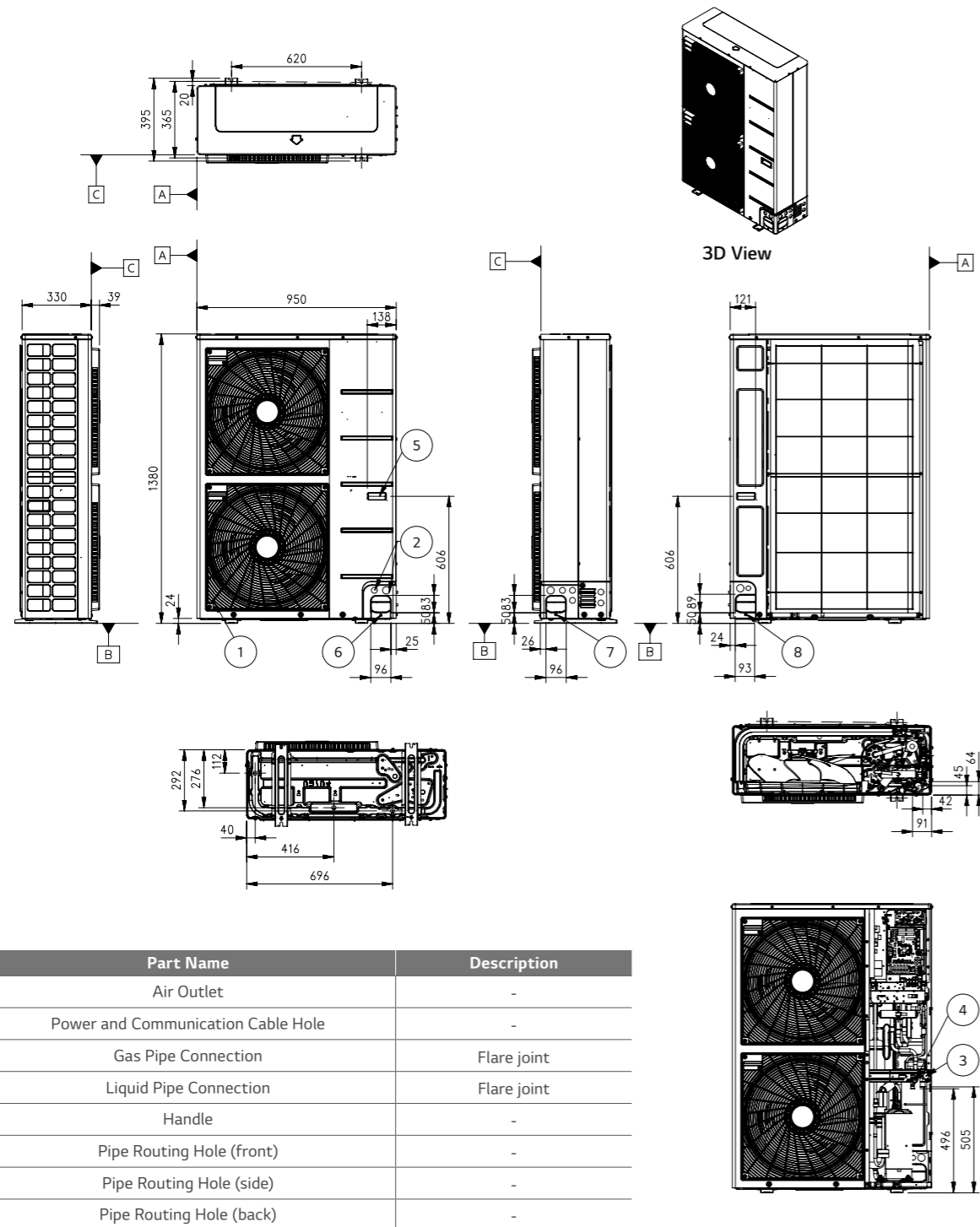
PRODUCT SPECIFICATION

Drawings

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

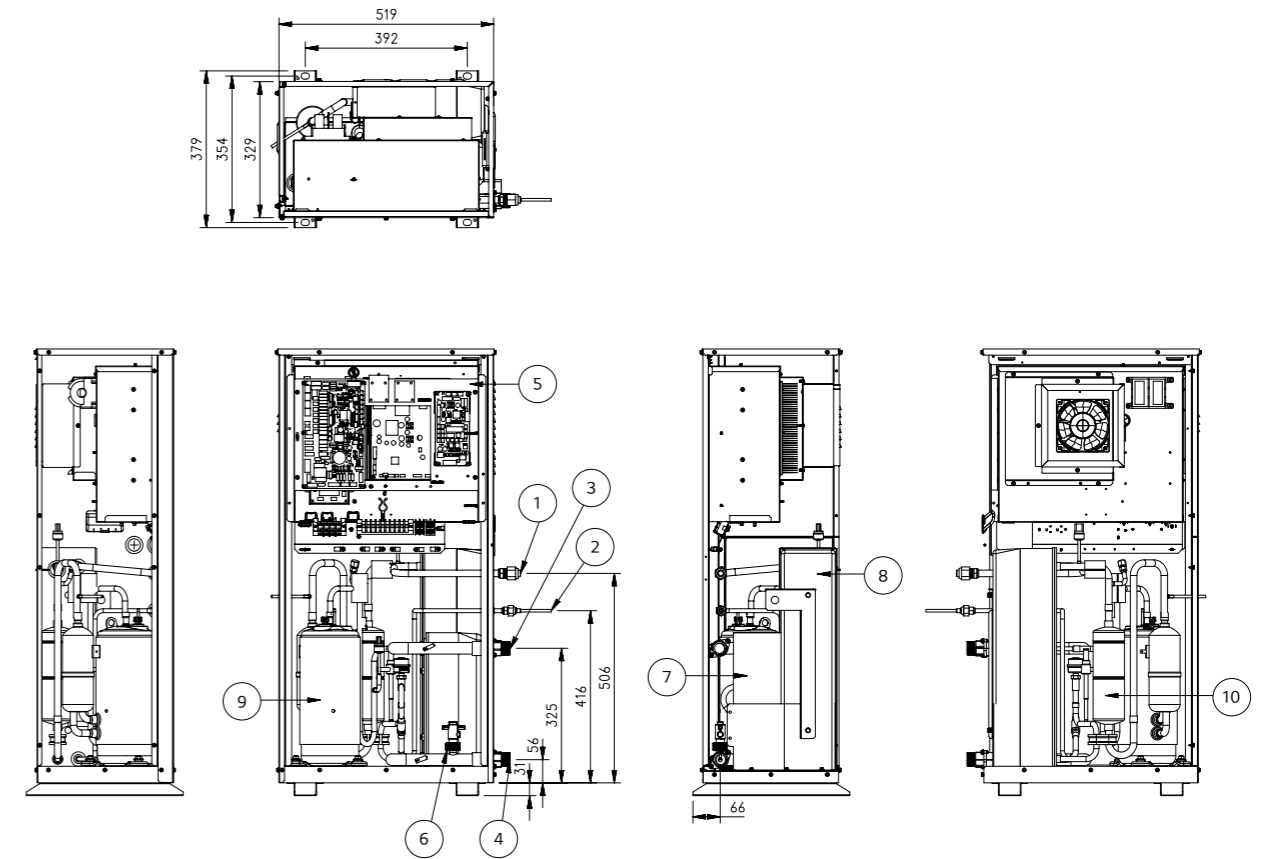
HU161HA U33

[Unit : mm]



HN1610H NK3

[Unit : mm]








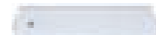

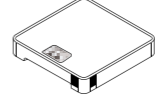




THERMAV™
ACCESSORIES




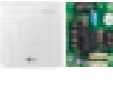



Accessories Provided by LG

| Category | Model Name | Model Number | Figure | Applicable Product | Relevant Function | Purpose | Feature |
|-------------------|--|-------------------------------------|---|---|--|---|--|
| Sensors | Room Temperature Sensor | PQRSTA0 |  | All Therma V products | Room Temperature Based Control | To detect room air temperature for room temperature based control | • Max. wire length : 15m |
| | Thermistor for 2 nd Circuit or E/Heater | PRSTAT5K10 |  | All except for High Temperature | 2 nd Circuit (mixing circuit) | To detect 2 nd circuit temperature when using 2 nd circuit function | • 5kΩ thermistor, 10m |
| | Domestic Hot Water Sensor | PHRSTA0 |  | All except for R32 Split IWT and R32 Hydrosplit IWT | Domestic Hot Water Heating | To detect DHW tank temperature | • Included in PHLTA kit |
| Valves | 3 Way Valve | OSHA-3V |  | All except for R32 Split IWT and R32 Hydrosplit IWT | Domestic Hot Water Heating | To divert water flow between space heating and DHW heating | • Size : DN 20 G 1" connection, male threaded |
| | Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 |  | Regardless of model | Domestic Hot Water Supply | To blend hot water with cold water for ensuring constant, safe shower and bath outlet temp. | • Size : 3/4" DN20 male threaded • Size : 1" DN25 male threaded |
| DHW Tanks | Domestic Hot Water Tank (single coil) | OSHW-200F OSHW-300F OSHW-500F |  | All except for R32 Split IWT and R32 Hydrosplit IWT | Domestic Hot Water Heating | To generate and store domestic hot water | • Storage volume : 200L, 300L, 500L • Type : Internal double coil • Material : Stainless steel • Capacity of booster heater : 2.4kW |
| | Domestic Hot Water Tank (double coil) | OSHW-300FD |  | All except for R32 Split IWT, R32 Hydrosplit IWT and High Temperature | | | • Storage volume : 300L • Type : Internal double coil • Material : Stainless steel • Capacity of booster heater : 2.4kW |
| Installation Kits | Domestic Hot Water Tank Kit | PHLTA |  | R32 Split Hydro Box, R410A Split Hydro Box, R32 Hydrosplit Hydro Box | Domestic Hot Water Heating | To operate with DHW tank | • Parts included : DHW tank sensor (thermistor), Circuit breaker, Relay |
| | | PHLTC | | R410A Split Hydro Box (HN1639 NK3, 3Ø only) | | | • Parts included : DHW tank sensor (thermistor), Circuit breaker, Relay, Multi harness |
| | | PHLTB | R32 Monobloc, R32 Monobloc S | | | | |
| | Solar Thermal Kit | PHLLA |  | R32 Monobloc, R410A Split Hydro Box (HN1639 NK3, 3Ø only) | Solar Thermal Heat Utilization | To operate with solar thermal system | • Length of thermistor : 12m • Size of tube connector (W x H x D) : 110 x 55 x 22 |

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

Accessories Provided by LG

| Category | Model Name | Model Number | Figure | Applicable Product | Relevant Function | Purpose | Feature |
|--------------------|-------------------------|--|---|-----------------------|---------------------|--|---|
| Remote Controller | Wired Remote Controller | PREMTW101 |  | All Therma V products | 2 Remote Control | To control AWHP using two remote controller (additional remote controller) | <ul style="list-style-type: none"> New modern design 4.3 inch color LCD display Information displayed with simple graphic, icon & text Built-in temperature sensor Size (W x H x D) : 120 x 120 x 16 Extension cable (PZCWRC1, 10m) and 2 remote cable (PZCWRC2, 0.25m) are included |
| Central Controller | AC Ez Touch | PACEZA000 |  | All Therma V products | Centralized Control | To control AWHP using LG central controller | <ul style="list-style-type: none"> 5 inch color display User-friendly control with iconographic interface (touch screen) Max. 32 unit control Total 200 schedule events (weekly / monthly / yearly / exception day) Operation history Remote controller lock (all, temp, mode) PC access supported (IPv6 supported) DI 1EA (emergency stop only) Size (W x H x D) : 137 x 121 x 25 |
| | AC Smart 5 | PACS4B000 (Smart 4) PACS5A000 (Smart 5) |  | | | | <ul style="list-style-type: none"> 10.2 inch color display User-friendly control with iconographic interface (touch screen) (Smart 4)_Max. IDU 32, (Smart 5)_Max. IDU 64 Total 100 schedule events (weekly / monthly / yearly / exception day) History / operation trend Interlock with 3rd party equipment (ACS IO, ACU IO module is needed) Error alarm by e-mail Remote controller lock (all, temp, mode) Map view (visual navigation) Web access supported with HTML5 (PC, smartphone, tablet) DI 2EA, DO 2EA BACnet IP/modbus TCP protocol support Size (W x H x D) : 253.2 x 167.7 x 28.9 |
| | ACP 5 | PACP4B000 (ACP4) PACP5A000 (ACP5) |  | | | | <ul style="list-style-type: none"> Web access controller Max. 128 unit control Total 100 schedule events (weekly / monthly / yearly / exception day) History / operation trend Interlock with 3rd party equipment (ACS IO, ACU IO module is needed) Error alarm by e-mail Remote controller lock (all, temp, mode) Map view (visual navigation) DI 10EA, DO 4EA BACnet IP/modbus TCP protocol support Size (W x H x D) : 270 x 155 x 65 |

| Category | Model Name | Model Number | Figure | Applicable Product | Relevant Function | Purpose | Feature |
|-------------|----------------------------|--------------|---|-----------------------|----------------------------|--|---|
| Gateway | ACP Lonworks | PLNWKB000 |  | All Therma V products | Centralized Control | To link with AWHP and other existing building control system | <ul style="list-style-type: none"> Web access controller Max. 64 unit control ACP function included Lonworks protocol support Size (W x H x D) : 270 x 155 x 65 |
| | Modbus RTU Gateway | PMBUSB00A |  | | | To communicate and control through the central controller (providing modbus RTU connection between AWHP and BMS) | <ul style="list-style-type: none"> Modbus RTU slave (RS485) / 9,600 bps Size (W x H x D) : 53.6 x 89.7 x 60.7 Max. 16 IDUs with single module / Max. 64 IDUs with 4 modules Power : DC 12V |
| | PI485 Gateway | PMNFP14A1 |  | | | To communicate and control through the central controller (converting LG protocol to RS485 protocol) | <ul style="list-style-type: none"> 1 for each outdoor unit Power : Supplied by outdoor unit |
| Dry Contact | Simple Dry Contact | PDRYCB000 |  | All Therma V products | - | To connect between the AWHP and external devices to control various functions | <ul style="list-style-type: none"> 1 Set per 1 unit 1 Input contact for turning on/off Input power : 220 - 240V 2 output contacts - Operation status - Error status |
| | Dry Contact for Thermostat | PDRYCB320 |  | | | | <ul style="list-style-type: none"> 1 Set per 1 unit Non voltage or 12 - 24V 8 digital input contacts for thermostat - On/off operation mode, DHW heating - Emergency mode, silent mode 2 Output contacts - Operation status - Error status |
| ETC | LG Wi-Fi Modem | PWFMDD200 |  | All Therma V products | Wi-Fi Control via LG ThinQ | To control AWHP via smartphone | <ul style="list-style-type: none"> Basic control function - On/off, operation mode, set temp - DHW heating and set temp Weekly on/off schedule Error status check Frequency : 2.4GHz IEEE 802.11b/g/n supported |
| | Meter Interface | PENKTH000 |  | | | Energy Monitoring | To measure production / consumption power |

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

LG Wi-Fi Modem

PWFMDD200 ENCXLEU

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

Simple operation for various functions.

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



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

Note

1. Functionality may be different according to each Indoor model.
2. User interface of application shall be revised for its design and contents improvement.
3. Application is optimized for smartphone use, so it may not be well functioning with tablet devices.
 - For the compatibility with indoor unit, please contact regional office.