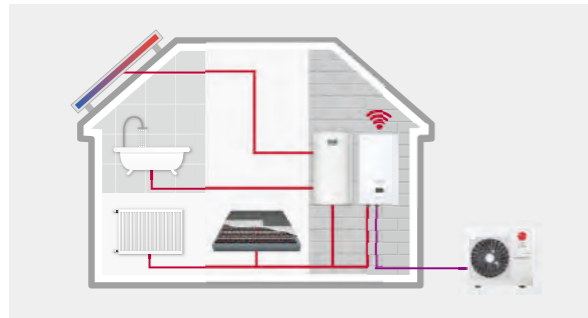
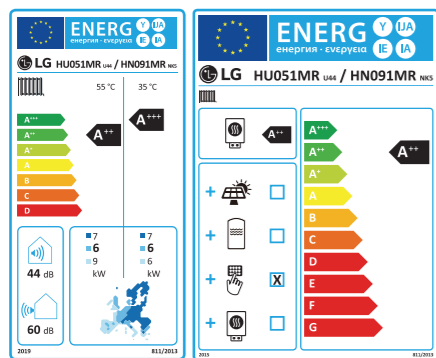




**THERMAV™**  
**FEATURES**



## Energy Label

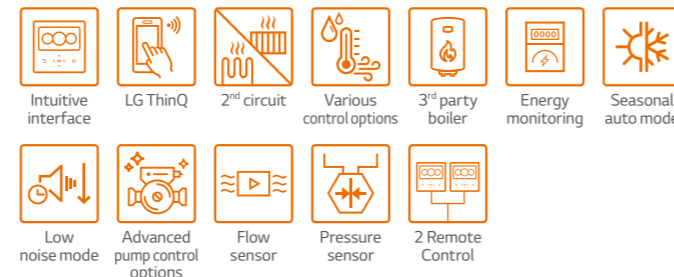


\* 5kW 10 model.  
\* A+++ to D scale.

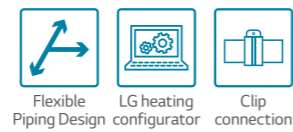
## Excellent Performance & Efficiency



## User Convenience



## Easy Installation & Maintenance



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



## R32 Split Hydro Box Introduction

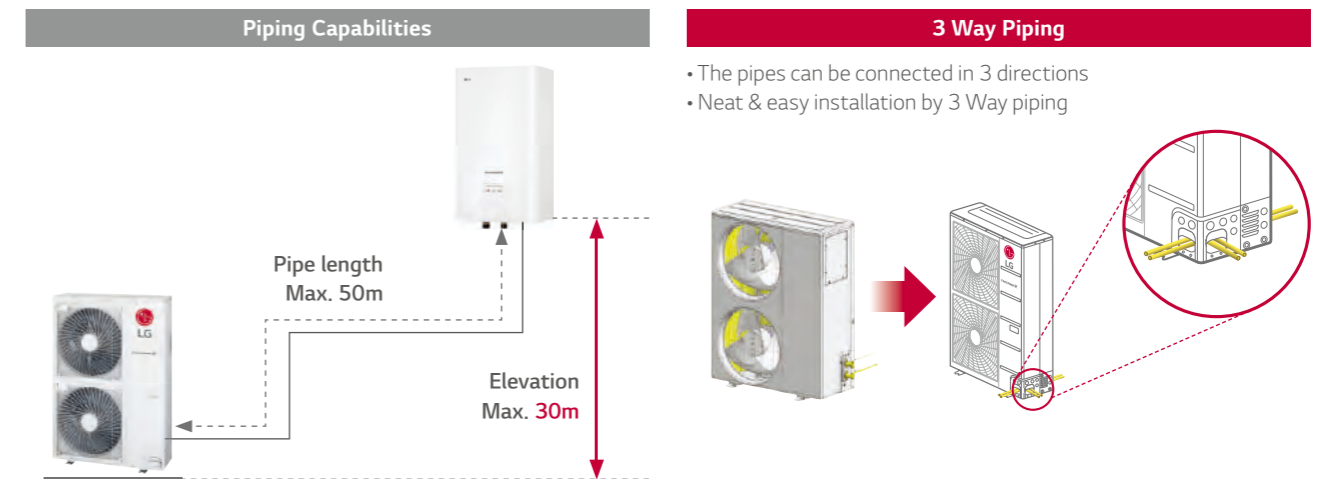
The LG THERMA V R32 Split Hydro Box is a hydro box type comprising a separate indoor and outdoor unit, which are connected by refrigerant piping. Hydronic components such as plate heat exchanger, expansion tank and water pump are located within the indoor unit, making the unit capable of withstanding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

## Key Components



## Flexible Refrigerant Piping Design

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



# PRODUCT SPECIFICATION

## R32 Split Hydro Box

### Indoor Unit

HN091MR NK5

### Outdoor Unit

HU051MR U44

HU071MR U44

HU091MR U44



### Features

- Refrigerant pipes connects IDU & ODU
- SCOP up to 4.65 (Average climate / Low temp. application) : A+++
- SCOP up to 3.23 (Average climate / Mid temp. application) : A++
- COP up to 4.90 (Outdoor air 7°C / Leaving water 35°C)
- 100% heating capacity at -7°C OAT (@ LWT 35°C)
- Wide operation range (ambient : -25 ~ 35°C / water side : 15 ~ 65°C)
- Built-in water flow & pressure sensors to monitor real-time water circuit
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / MCS / EUROVENT certification
- \* EHPA label under development

### Model Line-up

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

### Seasonal Energy

Description		Outdoor Unit		HU051MR U44	HU071MR U44	HU091MR U44
		Indoor Unit	HN091MR NK5			
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	-	4.65	4.65	4.65
		Seasonal Space Heating Efficiency (η <sub>s</sub> )	%	183	183	183
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	-	3.23	3.23	3.23
		Seasonal Space Heating Efficiency (η <sub>s</sub> )	%	126	126	126
		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			
				Indoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
Nominal Capacity	Heating	7°C	35°C	kW	5.50	7.00	9.00
		7°C	55°C		5.50	5.50	5.50
		2°C	35°C		3.30	4.20	5.40
	Cooling	35°C	18°C		5.50	7.00	9.00
		35°C	7°C		5.50	7.00	9.00
		7°C	35°C		1.12	1.43	1.94
Nominal Power Input	Heating	7°C	55°C	kW	2.04	2.04	2.04
		2°C	35°C		0.94	1.20	1.54
		35°C	18°C		1.20	1.56	2.14
	Cooling	35°C	7°C		1.96	2.59	3.46
		7°C	35°C		4.90	4.90	4.65
		2°C	35°C		2.70	2.70	2.70
COP	Heating	7°C	55°C	W/W	2.70	2.70	2.70
		2°C	35°C		3.52	3.51	3.50
		35°C	18°C		4.60	4.50	4.20
EER	Cooling	35°C	18°C	W/W	2.80	2.70	2.60
		35°C	7°C				

### Product Specification (Outdoor Unit)

Technical Specification		Unit	HU051MR U44	HU071MR U44	HU091MR U44	
Operation Range (outdoor temp.)	Heating	Min. - Max.	-25 ~ 35			
	Cooling		5 ~ 48			
Compressor	Quantity	EA	1			
	Type	-	Hermetic Sealed Scroll			
Refrigerant	Type	-	R32			
	GWP (global warming potential)	-	675			
	Precharged Amount	g	1,500			
	t-CO <sub>2</sub> eq	-	1.013			
Piping Connections	Outside Diameter	Gas	mm (inch)			
		Liquid	mm (inch)			
	Length	Standard	m			
		Max.	m			
	Level Difference	Max.	m			
	Chargeless-Pipe Length		m			
	Additional Charging Volume		g/m			
Rated Water Flow Rate (at LWT 35°C)		LPM	15.8	20.1	25.9	
Sound Power Level	Heating	Rated	dB(A)			
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)			
Dimensions	Unit	W x H x D	mm			
Weight	Unit		kg			
Exterior	Color / RAL Code		-			
	Voltage, Phase, Frequency		V, Ø, Hz			
Power Supply	Rated Running Current	Heating	5.0	6.3	8.6	
		Cooling	5.3	6.9	9.5	
	Recommended Circuit Breaker		A	16	20	25
	Wiring Connections	Power Supply Cable (included earth, H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C		

#### Note

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

### Product Specification (Indoor Unit)

Technical Specification		Unit	HN091MR NK5
Operation Range (leaving water)	Heating	Min. - Max.	15 ~ 65
	Cooling		5 ~ 27 (16 ~ 27) <sup>1)</sup>
	DHW		15 ~ 80 <sup>2)</sup>
Flow Sensor	Measuring Range	Min. - Max.	LPM
Water Pressure Sensor	Measuring Range	Min. - Max.	bar(G)
Expansion Vessel	Volume		ℓ
Safety Valve	Pressure Limit	Upper Limit	bar
	Type		-
Backup Heater	Number of Heating Coil		EA
	Capacity Combination		kW
	Heating Steps		Step
	Power Supply		V, Ø, Hz
	Rated Running Current		A
	Power Supply Cable (included earth, H07RN-F)		mm <sup>2</sup> x cores
	Piping Connections	Water Circuit	Inlet
Outlet			Inch
Refrigerant Circuit		Gas (outside diameter)	mm (Inch)
		Liquid (outside diameter)	mm (Inch)
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)	mm <sup>2</sup> x cores	0.75 x 4C
Sound Power Level	Heating	Rated	dB(A)
Dimensions	Unit	W x H x D	mm
Weight	Unit		kg
Exterior	Color / RAL Code		-

1) When fan coil unit not used.

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

# PRODUCT SPECIFICATION

## Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

### HU051MR U44 + HN091MR NK5

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

### HU071MR U44 + HN091MR NK5

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

### HU091MR U44 + HN091MR NK5

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

Note

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

## Performance Table for Cooling Operation

Maximum Cooling Capacity

### HU051MR U44 + HN091MR 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
10°C DB	6.42	6.95	7.49	7.85	8.39	8.75	9.11
20°C DB	6.05	6.37	6.70	6.91	7.23	7.45	7.66
30°C DB	5.68	5.79	5.90	5.97	6.08	6.15	6.22
35°C DB	5.50	5.50	5.50	5.50	5.50	5.50	5.50
40°C DB	5.32	5.34	5.35	5.37	5.38	5.40	5.41
45°C DB	5.13	5.17	5.21	5.23	5.27	5.29	5.32

### HU071MR U44 + HN091MR NK5

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

### HU091MR U44 + HN091MR NK5

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

Note

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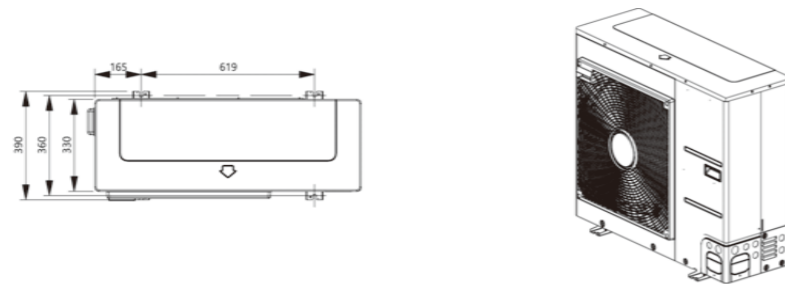
# PRODUCT SPECIFICATION

## Drawings

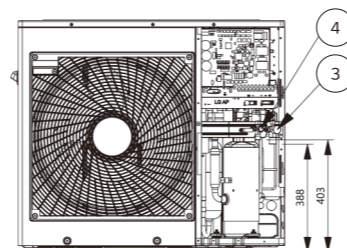
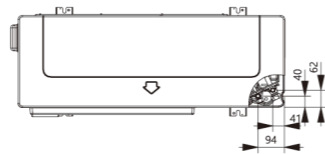
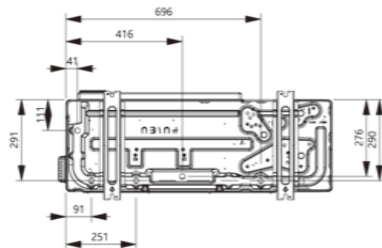
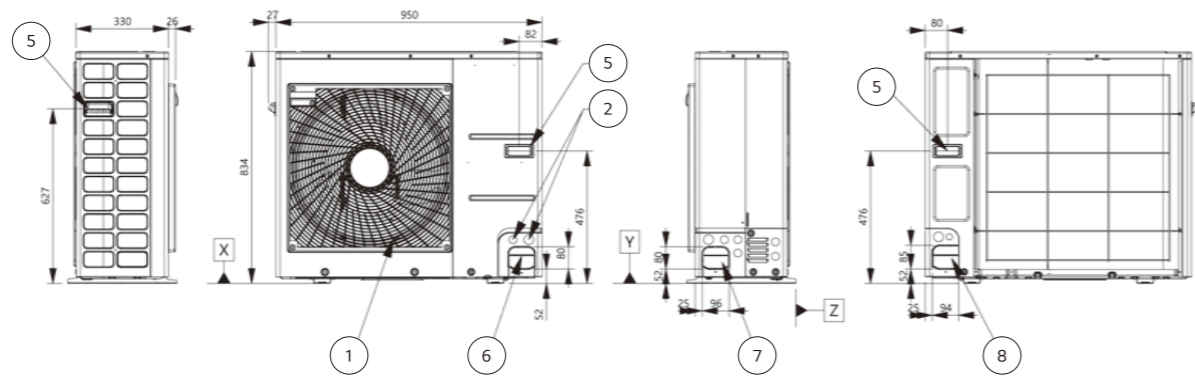
Category	Unit	Model Name		
		Capacity (kW)		
		5.5	7.0	9.0
1 Phase Model 220 - 240V, 1Ø, 50Hz	Outdoor Unit	HU051MR U44	HU071MR U44	HU091MR U44
	Indoor Unit	HN091MR NK5		

HU051MR U44 / HU071MR U44 / HU091MR U44

[Unit : mm]



3D View

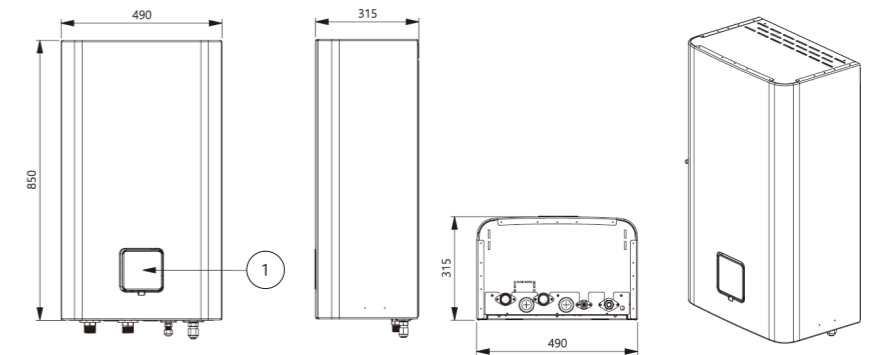


No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

HN091MR NK5

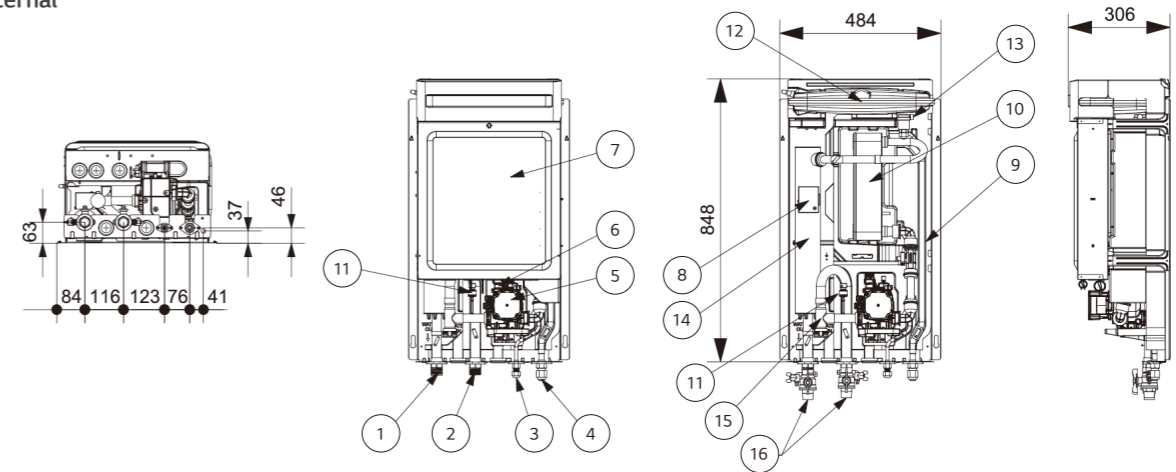
[Unit : mm]

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	GROUNDFOSS UPM3K 20-75 CHBL
6	Safety Valve	Open at water pressure 3bar
7	Control Box	PCB and terminal blocks
8	Thermal Switch	Cut-off power input to electric heater at 90°C
9	Flow Sensor	SIKA VVX20 5-80LPM
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Sensor	SENSATA 2HMP3-04W, 0-2MPa
12	Expansion Tank	Absorbing volume change of heated water
13	Air Vent	Air purging when charging water
14	Backup Heater	6kW
15	Strainer	Filtering and stacking particles inside circulating water
16	Shut-off Valve	To drain or to block water, when pipe connecting