

# PRODUCT SPECIFICATION

## R410A Split Hydro Box Type

### IDU

- HN1616 NK3
- HN1639 NK3

### ODU

- HU121 U33
- HU141 U33
- HU161 U33
- HU123 U33
- HU143 U33
- HU163 U33



## Features

- High energy efficiency (SCOP up to 4.45/A+++)
- Maximum 57°C LWT
- Intuitive interface
- LG ThinQ
- Gold Fin heat exchanger
- KEYMARK/EHPA<sup>1)</sup> certification/MCS/Eurovent certification

1) Approved model by EHPA: HU123 U33, HU143 U33, HU163 U33.

## Model Line-up

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 - 240V, 1Ø, 50Hz	Outdoor Unit	HU121 U33	HU141 U33	HU161 U33
	Indoor Unit	HN1616 NK3		
3 Phase Model 380 - 415V, 3Ø, 50Hz	Outdoor Unit	HU123 U33	HU143 U33	HU163 U33
	Indoor Unit	HN1639 NK3		

## Seasonal Energy

Description			Outdoor Unit	HU121 U33	HU141 U33	HU161 U33
			Indoor Unit	HN1616 NK3		
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	W/W	4.45	4.45	4.30
		Seasonal Space Heating Efficiency (η <sub>s</sub> )	%	175	175	169
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A++
	Average Climate Water Outlet 55°C	SCOP	-	3.32	3.32	3.32
		Seasonal Space Heating Efficiency (η <sub>s</sub> )	%	130	130	130
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A++	A++	A++

Description			Outdoor Unit	HU123 U33	HU143 U33	HU163 U33
			Indoor Unit	HN1639 NK3		
Space Heating (according to EN14825)	Average Climate Water Outlet 35°C	SCOP	W/W	4.45	4.45	4.30
		Seasonal Space Heating Efficiency (η <sub>s</sub> )	%	175	175	169
		Seasonal Space Heating Eff. Class (A+++ to D scale)	-	A+++	A+++	A++
	Average Climate Water Outlet 55°C	SCOP	-	3.32	3.32	3.32
		Seasonal Space Heating Efficiency (η <sub>s</sub> )	%	130	130	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	HU121 U33	HU141 U33	HU161 U33
					HU123 U33	HU143 U33	HU163 U33
					Indoor Unit		
					HN1616 NK3		
					HN1639 NK3		
Nominal Capacity	Heating	7°C	35°C	kW	12.00	14.00	16.00
		7°C	55°C		12.50	12.50	12.50
		2°C	35°C		10.33	10.83	11.95
	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	3.18	3.76
Nominal Power Input	Heating	7°C	55°C	kW	4.94	4.94	4.94
		2°C	35°C		2.93	3.09	3.41
		35°C	18°C		2.60	3.08	3.60
	Cooling	35°C	7°C		2.66	3.03	3.30
		7°C	35°C		4.55	4.41	4.26
		7°C	55°C		2.53	2.53	2.53
COP	Heating	2°C	35°C	W/W	3.53	3.50	3.50
		35°C	18°C		4.00	3.90	3.61
EER	Cooling	35°C	7°C	W/W	2.98	2.81	2.70

# PRODUCT SPECIFICATION

## R410A Split

### Product Specification (Outdoor Unit)

Description		Unit	HU121 U33	HU141 U33	HU161 U33	HU123 U33	HU143 U33	HU163 U33		
Operation Range (outdoor temp.)	Heating	Min. - Max. °CDB	-20 - 35							
	Cooling	°C	5 - 48							
Compressor	Quantity	EA	1							
	Type	-	Hermetic Sealed Twin Rotary							
Refrigerant	Type	-	R410A							
	GWP (global warming potential)	-	2,087.5							
	Precharged Amount	g	2,300							
	t-CO <sub>2</sub> eq	-	4,801							
Piping Connections	Outer Diameter	Gas	Ø15.88 (5/8)							
		Liquid	Ø9.52 (3/8)							
	Length	Standard	7.5							
		Max.	50							
	Level Difference	Max.	30							
	Chargeless-Pipe Length		7.5							
Additional Charging Volume		40								
Rated Water Flow Rate (at LWT 35°C)		LPM	34.0	40.0	46.0	34.0	40.0	46.0		
Sound Power Level	Heating	Rated	66							
Sound Pressure Level (at 1m)	Heating	Rated	58							
Dimensions	Unit	W x H x D	950 x 1,380 x 330							
Weight	Unit	kg	94.0							
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 <sup>2</sup> 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. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation. Sound pressure level is converted values from sound power level as per distance.
- Performances are based on the following conditions (It is according to EN14511):  
Interconnected pipe length is standard length and difference of elevation (outdoor - indoor unit) is 0m.
- This product contains fluorinated greenhouse gases.

### Product Specification (Indoor Unit)

Technical Specification		Unit	HN1616 NK3	HN1639 NK3
Operation Range (leaving water)	Heating	Min. - Max.	15 - 57	
	Cooling		5 - 27 (16 - 27) <sup>2)</sup>	
	DHW <sup>1)</sup>		15 - 80	
Piping Connections	Water Circuit	Inlet	mm (inch) Male PT 25.4 (1)	
		Outlet	mm (inch) Male PT 25.4 (1)	
	Refrigerant Circuit	Gas	mm (inch) Ø15.88 (5/8)	
		Liquid	mm (inch) Ø9.52 (3/8)	
Sound Power Level	Heating	Rated	dB(A) 44	
Dimensions	Unit	W x H x D	mm 490 x 850 x 315	
Weight	Unit	kg	42.2	45.0
Electrical Specification		Unit	HN1616 NK3	HN1639 NK3
Wiring Connections	Power and Communication Cable (included earth, H07RN-F)		mm <sup>2</sup> x cores 0.75 x 4C	
Back up Heater	Type	-	Sheath	Sheath
	Number of Heating Coil	EA	2	3
	Capacity Combination	kW	3.0 + 3.0	3.0 + 3.0 + 3.0
	Operation	-	Automatic	Automatic
	Heating Steps	Step	2	2
	Power Supply	V, Ø, Hz	220 - 240, 1, 50	220 - 240, 1, 50
	Rated Current	A	25.0	13.0
	Power Supply Cable (included earth, H07RN-F)	mm <sup>2</sup> x cores	4.0 x 3C	2.5 x 4C

- DHW 58 - 80°C operating is available only when the booster heater is operating.
- When fan coil unit not used.

# PRODUCT SPECIFICATION

## Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

HU121 U33 + HN1616 NK3 / HU123 U33 + HN1639 NK3

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	10.89	11.00	11.37	11.74	-	-
-15°C DB	10.89	11.00	11.37	11.74	10.99	-
-7°C DB	10.89	11.00	11.37	11.74	11.72	11.09
-4°C DB	10.66	10.77	11.17	11.58	11.83	11.35
-2°C DB	10.54	10.65	11.07	11.49	11.89	11.53
2°C DB	10.22	10.33	10.79	11.26	11.74	11.88
7°C DB	11.88	12.00	12.13	12.25	12.38	12.50
10°C DB	12.03	12.16	12.28	12.41	12.54	12.66
15°C DB	12.29	12.42	12.55	12.67	12.80	12.93
18°C DB	12.44	12.57	12.70	12.83	12.96	13.10

HU141 U33 + HN1616 NK3 / HU143 U33 + HN1639 NK3

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	12.24	11.92	11.61	11.08	-	-
-15°C DB	12.47	12.14	11.96	11.56	10.99	-
-7°C DB	12.83	12.50	12.31	12.12	11.72	11.09
-4°C DB	12.28	11.96	11.95	11.93	11.83	11.35
-2°C DB	12.01	11.70	11.79	11.85	11.89	11.53
2°C DB	11.12	10.83	11.20	11.53	11.82	11.88
7°C DB	14.38	14.00	13.63	13.25	12.88	12.50
10°C DB	14.66	14.28	13.90	13.52	13.13	12.75
15°C DB	15.15	14.75	14.36	13.96	13.57	13.17
18°C DB	15.44	15.03	14.63	14.23	13.83	13.42

HU161 U33 + HN1616 NK3 / HU163 U33 + HN1639 NK3

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	12.79	12.13	11.61	11.08	-	-
-15°C DB	13.35	12.65	12.12	11.56	10.99	-
-7°C DB	14.24	13.50	12.93	12.34	11.72	11.09
-4°C DB	13.73	13.02	12.67	12.27	11.83	11.35
-2°C DB	13.37	12.68	12.48	12.22	11.89	11.53
2°C DB	12.60	11.95	12.07	12.09	12.03	11.88
7°C DB	16.88	16.00	15.13	14.25	13.38	12.50
10°C DB	17.38	16.48	15.58	14.68	13.78	12.88
15°C DB	18.23	17.28	16.34	15.39	14.45	13.50
18°C DB	18.73	17.76	16.79	15.82	14.85	13.88

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

HU121 U33 + HN1616 NK3 / HU123 U33 + HN1639 NK3

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	9.73

HU141 U33 + HN1616 NK3 / HU143 U33 + HN1639 NK3

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

HU161 U33 + HN1616 NK3 / HU163 U33 + HN1639 NK3

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

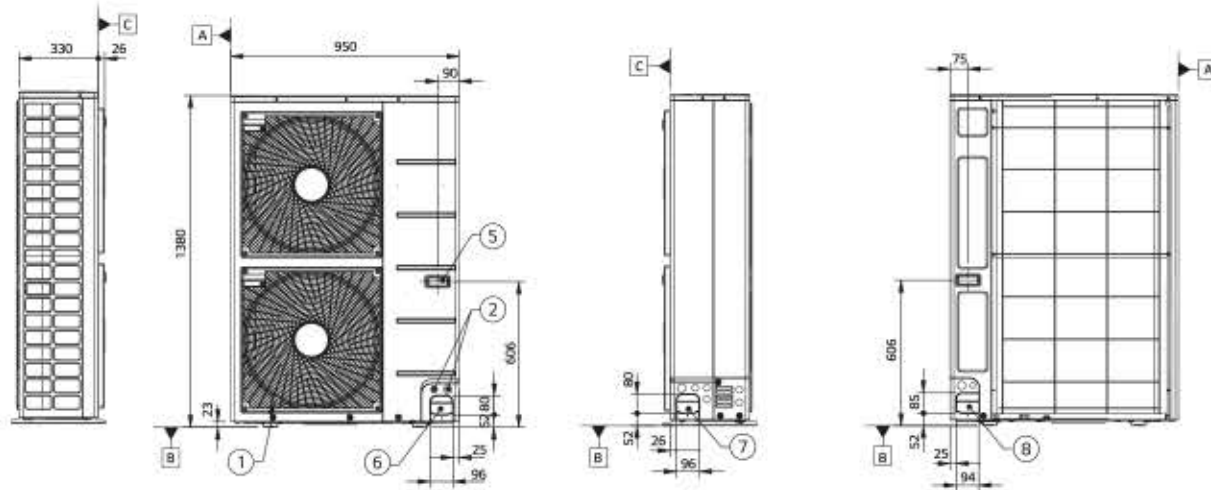
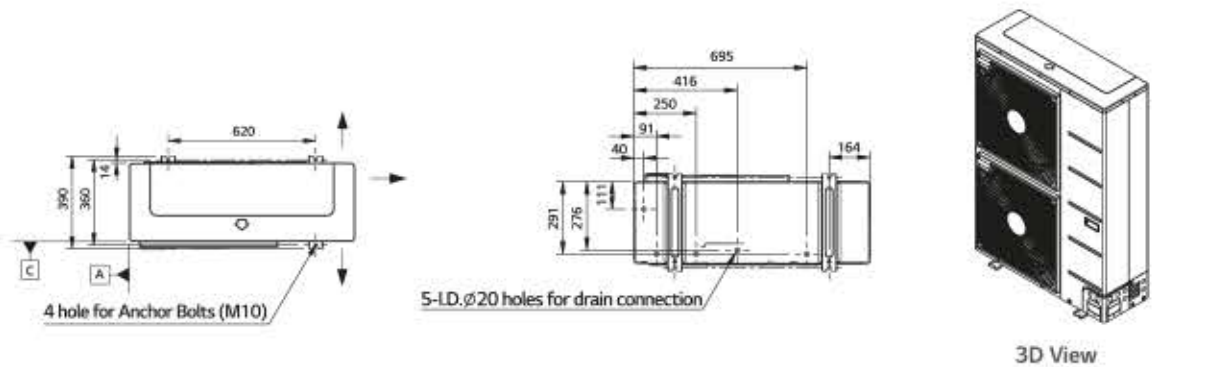
1. DB : Dry Bulb Temperature (°C), LWT : Leaving Water Temperature (°C), LPM : Liters Per Minute (l/min), TC : Total Capacity (kW)
2. Direct interpolation is permissible. Do not extrapolate.
3. Measuring procedure follows EN-14511.
  - Rated values are based on standard conditions and it can be found 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.

# PRODUCT SPECIFICATION

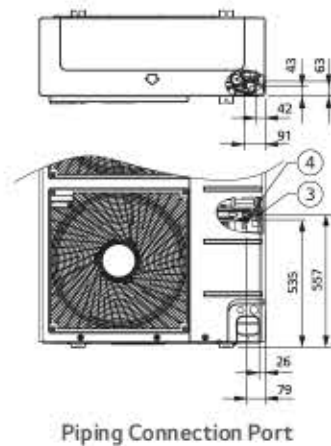
## Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 – 240V, 1Ø, 50Hz	Outdoor Unit	HU121 U33	HU141 U33	HU161 U33
	Indoor Unit		HN1616 NK3	
3 Phase Model 380 – 415V, 3Ø, 50Hz	Outdoor Unit	HU123 U33	HU143 U33	HU163 U33
	Indoor Unit		HN1639 NK3	

HU121 U33 / HU141 U33 / HU161 U33 / HU123 U33 / HU143 U33 / HU163 U33 [Unit : mm]

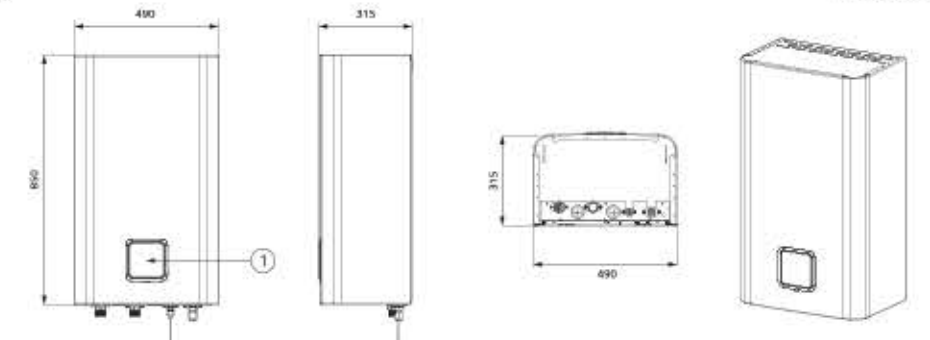


No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-



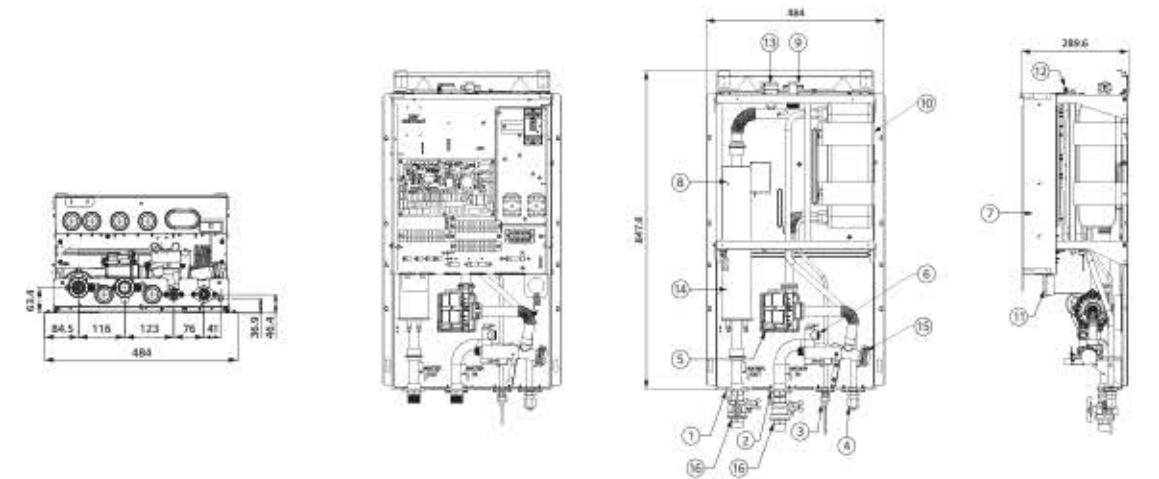
HN1616 NK3 / HN1639 NK3 [Unit : mm]

External



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

Internal



No.	Part Name	Description
1	Leaving Water Pipe	Male PT 1 inch
2	Entering Water pipe	Male PT 1 inch
3	Refrigerant Pipe	Ø9.52 (mm)
4	Refrigerant Pipe	Ø15.88 (mm)
5	Water Pump	Max. head 9.5 / 7 / 6m
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 (manual return at 55°C)
9	Flow Switch	Minimum operation range at 15LPM
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gage	Indicates circulating water pressure
12	Expansion Tank	Absorbing volume change of heated water
13	Air Vent	Air purging when charging water
14	Electric Heater	Please refer to the below Page 'Model name and related information'
15	Strainer	Filtering and stacking particles inside circulating water
16	Shut-Off Valve	To drain or to block water, when pipe connecting