PRODUCT SPECIFICATION

R32 Split Hydro Box

Heating Cooling DHW

Indoor Unit
HN091MR NK5
Outdoor Unit
HU051MR U44
HU071MR U44
HU091MR U44

011-1W0315

R1 Compressor™ Black Fin LG ThinQ

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℃ / Leaving water 35℃)
- 100% heating capacity at -7 ℃ OAT (@ LWT 35℃)
- 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_s)	%	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_s)	%	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	HU051MR U44	HU071MR U44	HU091MR U44
				Indoor Unit	HN091MR NK5		
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
Nominal Power Input	Heating	7°C	35°C	kW	1.12	1.43	1.94
		7°C	55°C		2.04	2.04	2.04
		2°C	35°C		0.94	1.20	1.54
	Cooling	35°C	18°C		1.20	1.56	2.14
		35°C	7°C		1.96	2.59	3.46
COP	Heating	7°C	35°C	W/W	4.90	4.90	4.65
		7°C	55°C		2.70	2.70	2.70
		2°C	35°C		3.52	3.51	3.50
EER	Cooling	35°C	18°C	W/W	4.60	4.50	4.20
		35°C	7°C		2.80	2.70	2.60

Product Specification (Outdoor Unit)

Technical Specification			Unit	HU051MR U44	HU071MR U44	HU091MR U44
Operation Range (outdoor temp.)	Heating	Min. ~ Max.	°C DB	-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_2 eq		-	1.013		
Piping Connections	Outside Diameter	Gas	mm (inch)	Φ 15.88 (5/8)		
		Liquid	mm (inch)	Φ 9.52 (3/8)		
	Length	Standard	m	5		
		Max.	m	50		
	Level Difference	Max.	m	30		
	Chargeless-Pipe Length		m	10		
	Additional Charging Volume		g/m	40		
Rated Water Flow Rate (at LWT 35°C)			LPM	15.8	20.1	25.9
Sound Power Level	Heating	Rated	dB(A)	60		
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	52		
Dimensions	Unit	W x H x D	mm	950 × 834 × 330		
Weight	Unit		kg	60.0		
Exterior	Color / RAL Code		-	Warm Gray / RAL 7044		
Power Supply	Voltage, Phase, Frequency		V, Ø, Hz	220-240, 1, 50		
	Rated Running Current	Heating	A	5.0	6.3	8.6
		Cooling	A	5.3	6.9	9.5
	Recommended Circuit Breaker		A	16	20	25
Wiring Connections	Power Supply Cable (included earth, H07RN-F)		mm^2 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 (Outdoor - Indoor Unit) is 0m.
5. This product contains Fluorinated greenhouse gases.

Product Specification (Indoor Unit)

Technical Specification			Unit	HN091MR NK5
Operation Range (leaving water)	Heating	Min. ~ Max.	°C DB	15 ~ 65
	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
	Number of Heating Coil		EA	2
	Capacity Combination		kW	3.0 + 3.0
	Heating Steps		Step	2
	Power Supply		V, Ø, Hz	220-240, 1, 50
	Rated Running Current		A	25.0
	Power Supply Cable (included earth, H07RN-F)		mm^2 x cores	4.0 x 3C
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)		mm2 x cores	0.75 x 4C
Sound Power Level	Heating	Rated	dB(A)	44
Dimensions	Unit	W × H × D	mm	490 × 850 × 315
Weight	Unit		kg	37.6
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.

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
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

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
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.

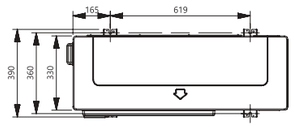
PRODUCT SPECIFICATION

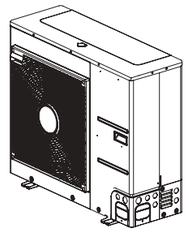
Drawings

Category	Unit	Model Name		
		Capacity (kW)		
		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		

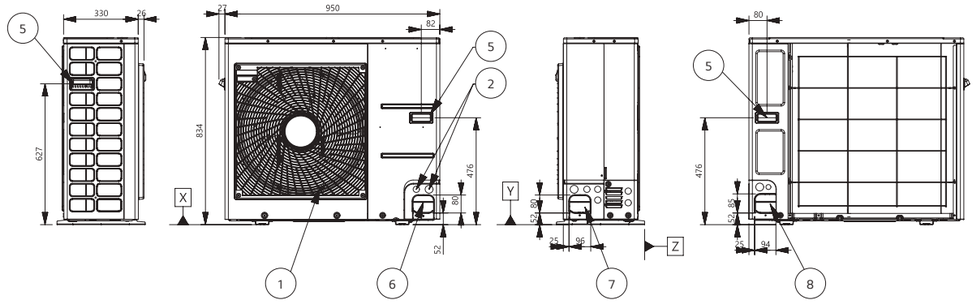
HU051MR U44 / HU071MR U44 / HU091MR U44

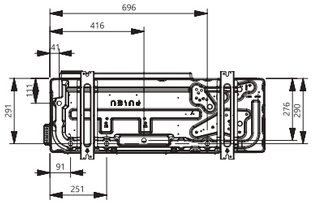
[Unit : mm]

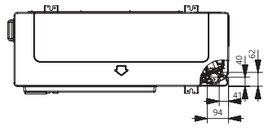


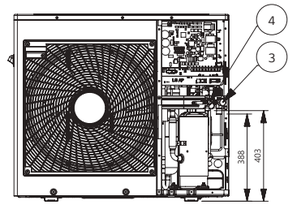


3D View







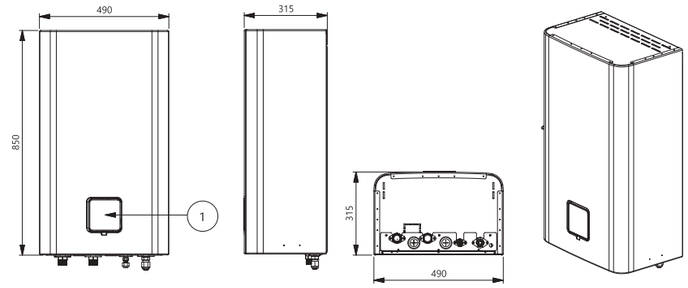


No.	Part Name	Description
1	Air Outlet	-
2	Power and Communication Cable Hole	-
3	Gas Pipe Connection	Flare joint
4	Liquid Pipe Connection	Flare joint
5	Handle	-
6	Pipe Routing Hole (front)	-
7	Pipe Routing Hole (side)	-
8	Pipe Routing Hole (back)	-

HN091MR NK5

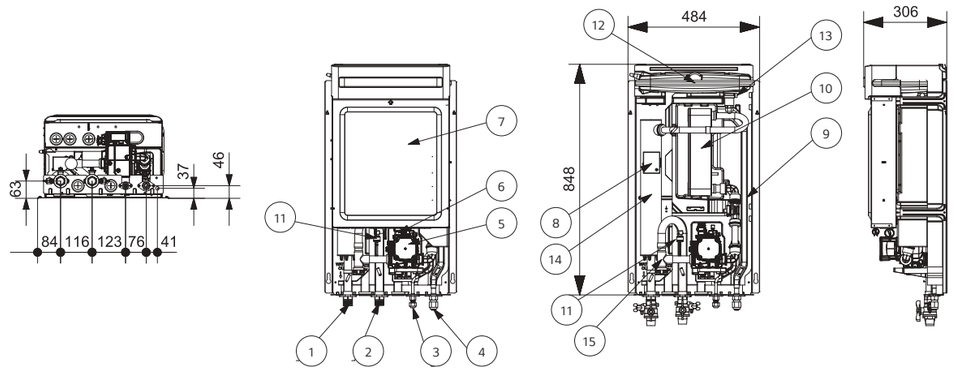
[Unit : mm]

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	GROUNDFOS 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