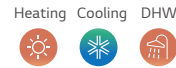


# PRODUCT SPECIFICATION

## R32 Monobloc



- HM121M U33
- HM141M U33
- HM161M U33
- HM123M U33
- HM143M U33
- HM163M U33



### Features

- All-in-one outdoor unit
- SCOP up to 4.45 (Average climate / Low temp. application) : A+++  
SCOP up to 3.12 (Average climate / Mid temp. application) : A+
- COP up to 4.50 (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)
- R32 refrigerant with reduced global warming potential (GWP)
- R1 compressor
- Black Fin heat exchanger
- LG ThinQ
- KEYMARK / EHPA (for Austria, 3Ø model only) / MCS / EUROVENT certification

\* EHPA (for Germany and Switzerland) under renewal of valid date

### Model Line-up

Capacity	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 - 240V, 1Ø, 50Hz	Monobloc Unit	HM121M U33	HM141M U33	HM161M U33
		HM123M U33	HM143M U33	HM163M U33
3 Phase Model 380 - 415V, 3Ø, 50Hz				

### Seasonal Energy

Description	Unit	HM121M U33 (1Ø)	HM141M U33 (1Ø)	HM161M U33 (1Ø)	
		HM123M U33 (3Ø)	HM143M U33 (3Ø)	HM163M U33 (3Ø)	
Space Heating (According to EN14825)	Average Climate Water Outlet 35°C	SCOP	4.45	4.45	4.45
		Seasonal Space Heating Efficiency (η <sub>s</sub> )	175	175	175
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	A+++	A+++	A+++
	Average Climate Water Outlet 55°C	SCOP	3.18	3.18	3.18
		Seasonal Space Heating Efficiency (η <sub>s</sub> )	124	124	124
		Seasonal Space Heating Eff. Class (A+++ to D Scale)	A+	A+	A+

### Nominal Capacity and Nominal Power Input

Description	OAT <sup>1)</sup> (DB)	LWT <sup>2)</sup> (DB)	Unit	HM121M U33 (1Ø)	HM141M U33 (1Ø)	HM161M U33 (1Ø)
				HM123M U33 (3Ø)	HM143M U33 (3Ø)	HM163M U33 (3Ø)
Nominal Capacity	Heating	7°C	35°C	12.00	14.00	16.00
		7°C	55°C	12.00	12.00	12.00
	Cooling	2°C	35°C	11.00	12.00	13.80
		35°C	18°C	12.00	14.00	16.00
Nominal Power Input	Heating	7°C	35°C	2.61	3.11	3.64
		7°C	55°C	4.29	4.29	4.29
	Cooling	2°C	35°C	3.13	3.42	3.94
		35°C	18°C	2.61	3.26	4.00
COP	Heating	7°C	35°C	4.60	4.50	4.40
		7°C	55°C	2.80	2.80	2.80
	Cooling	2°C	35°C	3.52	3.51	3.50
		35°C	18°C	4.60	4.30	4.00
EER	35°C	7°C	W/W	2.70	2.60	2.50

1) OAT : Outdoor Air Temperature  
2) LWT : Leaving Water Temperature

### Product Specification

Technical Specification		Unit	HM121M U33	HM141M U33	HM161M U33	HM123M U33	HM143M U33	HM163M U33	
Water Side	Operation Range (leaving water temperature)	Heating	15 ~ 65						
		Cooling	5 ~ 27 (16 ~ 27) <sup>1)</sup>						
		DHW	15 ~ 80 <sup>2)</sup>						
	Piping Connections	Water Inlet	Male PT 1" according to ISO 7-1 (tapered pipe threads)						
		Circuit Outlet	Male PT 1" according to ISO 7-1 (tapered pipe threads)						
	Rated Water Flow Rate at LWT 35°C		LPM	34.5	40.3	46.0	34.5	40.3	46.0
Refrigerant Side	Operation Range (outdoor temp.)	Heating	-25 ~ 35						
		Cooling	5 ~ 48						
	Compressor	Quantity	1						
		Type	Hermetic Sealed Scroll						
	Refrigerant	Type	R32						
		GWP (global warming potential)	675						
Precharged Amount		g							
	t-CO <sub>2</sub> eq	1.620							
Sound Power Level		Heating	63						
Sound Pressure Level (at 1m)		Heating	52						
Dimensions		Unit	W x H x D						
			mm						
Weight		Unit	kg						
			124.5						
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	11.6	13.8	16.1	3.8	4.6	5.4
		Cooling	A	11.6	14.4	17.7	3.8	4.8	5.9
	Recommended Circuit Breaker		A	40			16		
Wiring Connections		Power Supply Cable (included earth, H07RN-F)	mm <sup>2</sup> x cores	6.0 x 3C			4.0 x 5C		

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

#### 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 accordance with EN14511 and reflect ErP testing conditions. Above gives the declared values at rated conditions acc. ErP regulation.
  - Rated running current : Outdoor Temp. 7°C DB / 6°CWB, LWT 35°C
5. This product contains Fluorinated greenhouse gases.

# PRODUCT SPECIFICATION

## Performance Table for Heating Operation

Maximum Heating Capacity (Including Defrost Effect)

### HM121M U33 / HM123M U33

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	8.75	8.50	8.25	8.00	-	-	-	-
-20°C DB	10.13	10.00	9.88	9.75	9.63	-	-	-
-15°C DB	11.50	11.50	11.50	11.50	11.50	11.50	-	-
-7°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	-
-4°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
-2°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
2°C DB	12.00	12.00	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	12.00	12.00
10°C DB	12.00	12.00	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	12.00	12.00
18°C DB	12.00	12.00	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	12.00	12.00
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00

### HM141M U33 / HM143 U33

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	9.25	9.00	8.75	8.50	-	-	-	-
-20°C DB	10.63	10.50	10.38	10.25	10.13	-	-	-
-15°C DB	12.00	12.00	12.00	12.00	12.00	12.00	-	-
-7°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	-
-4°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
-2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
2°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
7°C DB	14.00	14.00	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	14.00	14.00
15°C DB	14.00	14.00	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	14.00	14.00
20°C DB	14.00	14.00	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	14.00	14.00

### HM161M U33 / HM163 U33

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	10.50	10.00	9.50	9.00	-	-	-	-
-20°C DB	12.30	11.75	11.44	11.13	10.75	-	-	-
-15°C DB	14.10	13.50	13.38	13.25	13.13	13.00	-	-
-7°C DB	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
-2°C DB	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
7°C DB	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
15°C DB	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
20°C DB	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

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

### HM121M U33 / HM123M U33

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	11.25	12.33	13.40	14.12	15.20	15.91	16.63
20°C DB	11.55	12.20	12.84	13.27	13.92	14.35	14.78
30°C DB	11.85	12.07	12.28	12.42	12.64	12.78	12.93
35°C DB	12.00	12.00	12.00	12.00	12.00	12.00	12.00
40°C DB	12.15	12.00	11.85	11.75	11.59	11.49	11.39
45°C DB	12.30	12.00	11.69	11.49	11.19	10.99	10.78

### HM141M U33 / HM143 U33

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	13.13	14.38	15.64	16.47	17.73	18.57	19.40
20°C DB	13.48	14.23	14.98	15.48	16.24	16.74	17.24
30°C DB	13.83	14.08	14.33	14.49	14.75	14.91	15.08
35°C DB	14.00	14.00	14.00	14.00	14.00	14.00	14.00
40°C DB	14.18	14.00	13.82	13.70	13.53	13.41	13.29
45°C DB	14.35	14.00	13.64	13.41	13.05	12.82	12.58

### HM161M U33 / HM163 U33

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	15.00	16.43	17.87	18.83	20.26	21.22	22.17
20°C DB	15.40	16.26	17.12	17.70	18.56	19.13	19.70
30°C DB	15.80	16.09	16.37	16.57	16.85	17.04	17.23
35°C DB	16.00	16.00	16.00	16.00	16.00	16.00	16.00
40°C DB	16.20	16.00	15.80	15.66	15.46	15.32	15.19
45°C DB	16.40	16.00	15.59	15.32	14.92	14.65	14.38

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.

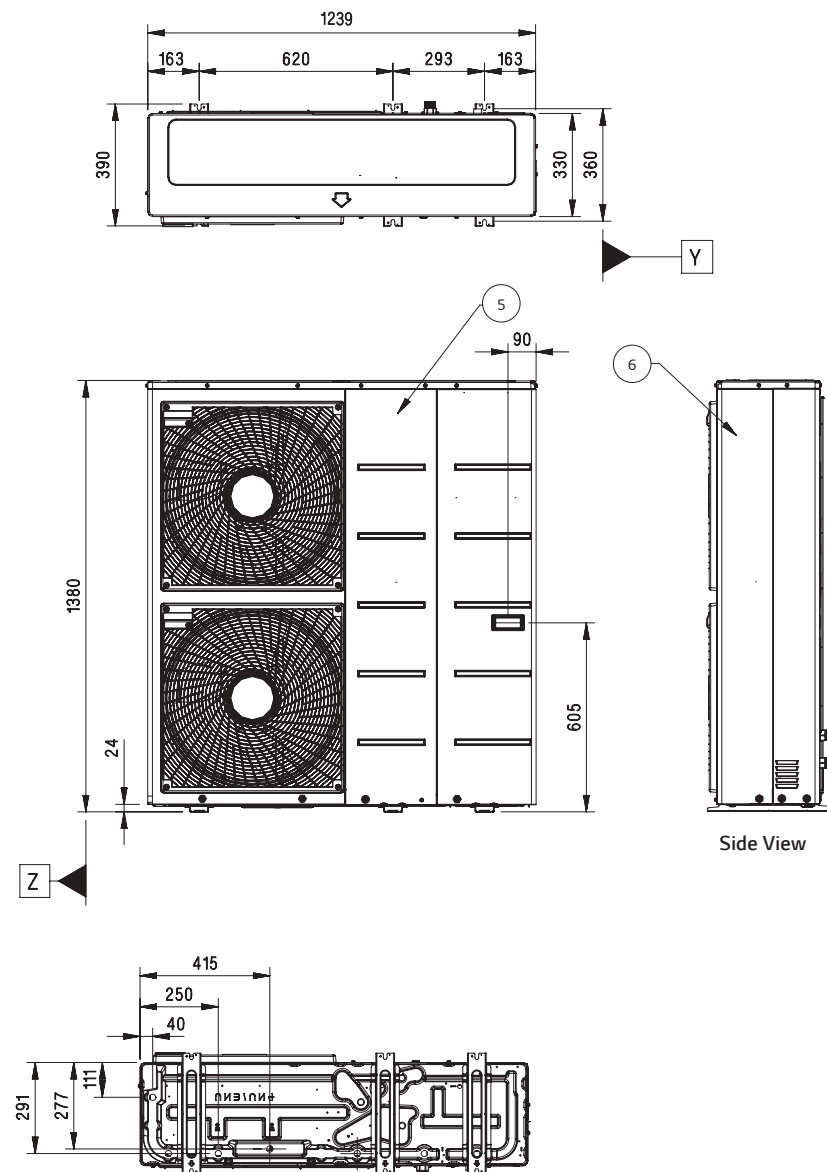
# PRODUCT SPECIFICATION

## Drawings

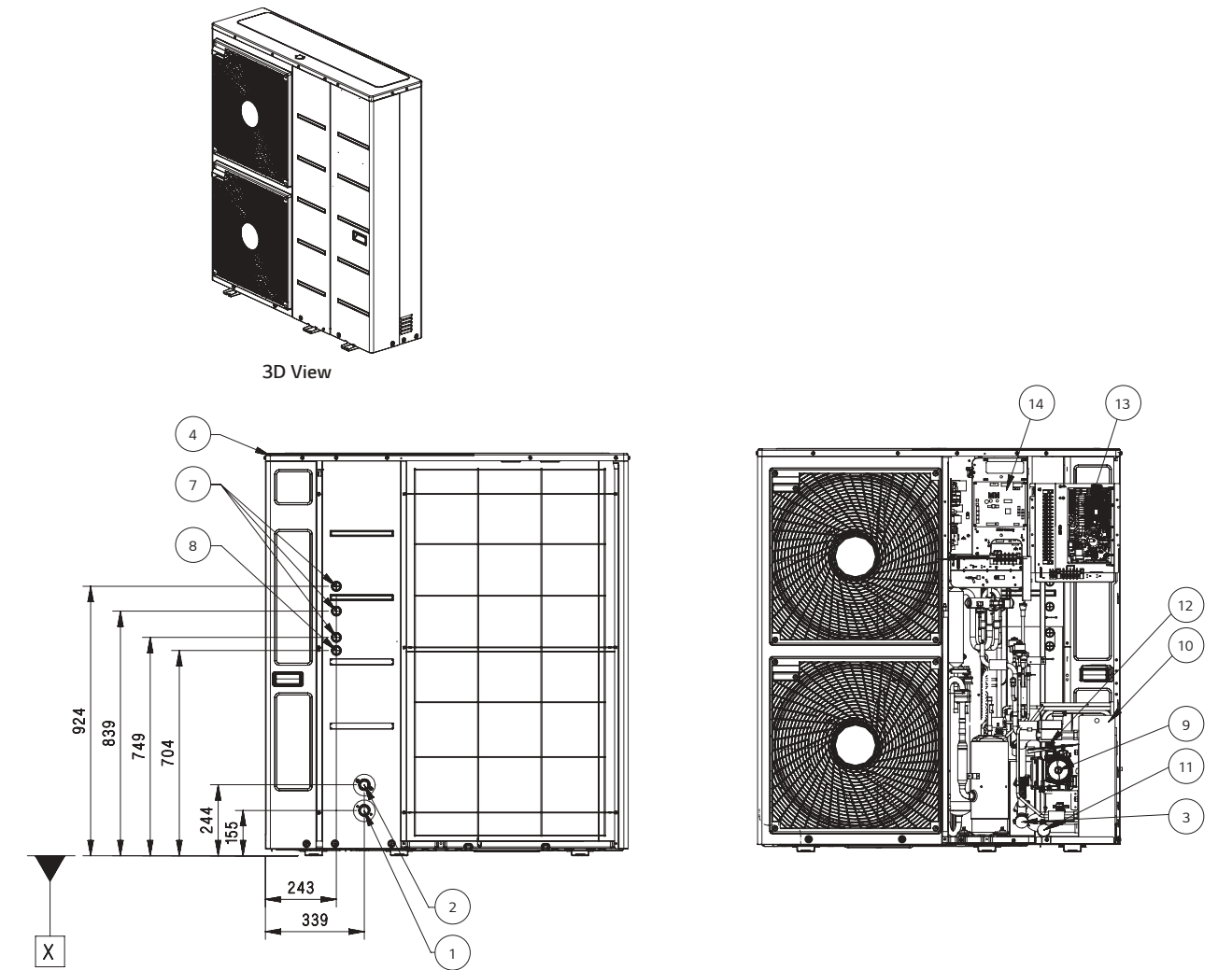
Category	Unit	Model Name		
		Capacity (kW)		
		12.0	14.0	16.0
1 Phase Model 220 - 240V, 1Ø, 50Hz	Monobloc Unit	HM121M U33	HM141M U33	HM161M U33
		HM123M U33	HM143M U33	HM163M U33

HM121M U33 / HM141M U33 / HM161M U33  
 HM123M U33 / HM143M U33 / HM163M U33

[Unit : mm]



[Unit : mm]



No.	Part Name	Description
1	Entering Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
2	Leaving Water Pipe	Male PT 1" according to ISO 7-1 (tapered pipe threads)
3	Strainer	Filtering and stacking particles inside circulating water
4	Top Cover	-
5	Front Panel	-
6	Side Panel	-
7	Low Voltage	Communication cable hole
8	UNIT Power	Power cable hole
9	Water Pump	GRUNDFOS UPML 20-105 CHBL
10	Plate Heat Exchanger	Heat exchange between refrigerant and water
11	Pressure Gauge	Indicates circulating water pressure
12	Safety Valve	Open at water pressure 3 bar
13	Indoor Control Box	Indoor PCB and terminal blocks
14	Outdoor Control Box	Outdoor PCB and terminal blocks