

# flexoTHERM 230V

## Heat pump technical specification



- The flexoTHERM 230V heat pump is available in 5, 8 and 11kW models
- Connects to two different sources - ground or water
- One of the quietest heat pump ranges in the UK with Sound Safe System
- Green iQ for the highest energy efficiency

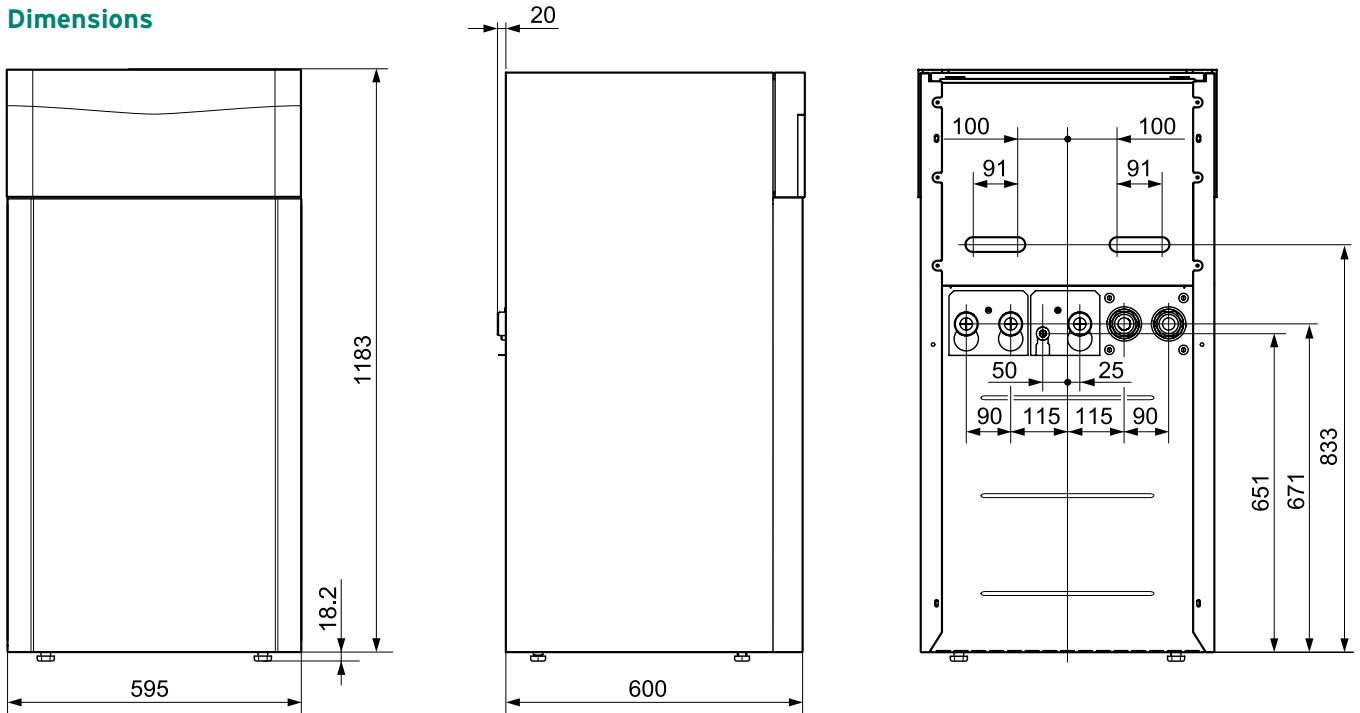


■ Heating ■ Hot water ■ Renewables

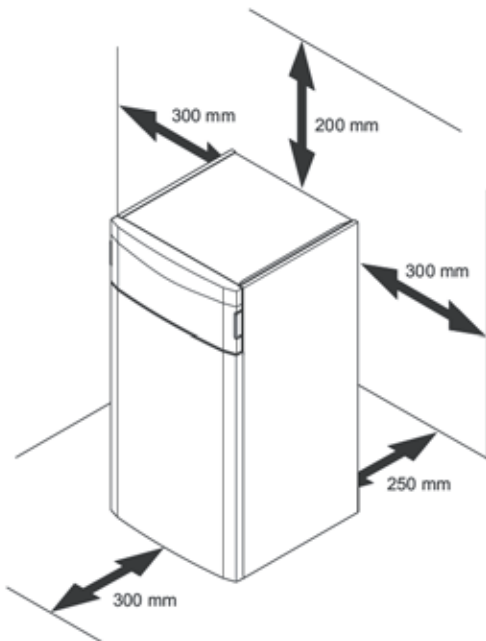


Because  **Vaillant** thinks ahead.

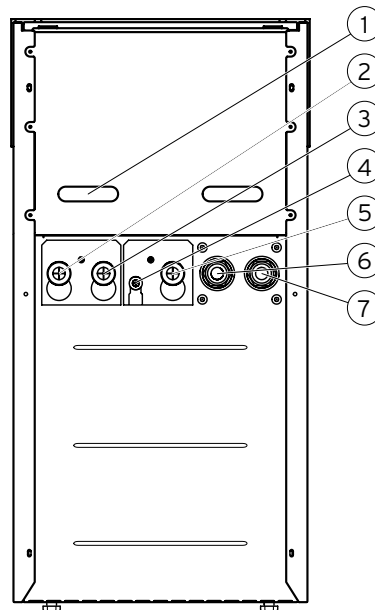
**Dimensions**



**Clearances**



**Connections**



Connections	
1	Recessed handles and cable duct
2	Heating flow
3	Heating return
4	Heating circuit diaphragm expansion tank connection
5	Hot water return
6	Connection: From the heat source to the heat pump (hot brine, A)
7	Connection: From the heat pump to the heat source (cold brine, B)

Dimensions	Unit	5kW 230 V	8kW 230 V	11kW 230 V
Product dimensions, height (without adjustable feet)	mm	1183		
Product dimensions, width	mm	595		
Product dimensions, depth	mm	600		
Weight, with packaging	kg	161	176	188
Weight, without packaging	kg	151	166	178
Weight, ready for operation	kg	157	173	185

Electrical data	Unit	5kW 230 V	8kW 230 V	11kW 230 V
Heating circuit / compressor	V/Hz	230 / 50		
Auxiliary heating	V/Hz	230 / 50		
Power factor		cos $\varphi$ = 0.9		
Required network impedance Z <sub>max</sub> with inrush current limiter	$\Omega$	0.42	0.14	0.15
Fuse characteristic, type C	A	20	25	32
Optional building earth leakage circuit breaker		RCCB type A (type A pulse current sensitive residual-current circuit breakers) or RCCB type B (type B universal current sensitive residual-current circuit breakers)		
Inrush current (with initial current limiter)	A	≤ 15	≤ 19	≤ 60
Measuring current for the compressor and electronics	A	16.6	23.8	29.6
Output levels for the auxiliary electric heater	kW	2.0 / 3.5 / 5.5	2.0 / 3.5 / 5.5	2.0 / 3.5 / 5.5
Minimum electrical power consumption of compressor	kW	1.40	2.10	2.60
Maximum electrical power consumption of compressor	kW	2.10	3.10	4.10
IP rating		IP 10B		
Energy-related Products at 35 °C	band	A+++*		
Energy-related Products at 55 °C	band	A+++*		
<b>Hydraulic connection</b>				
Heating flow / return	BSP male	G 1½"		
Heat source flow / return	BSP male	G 1½"		
Central heating water expansion vessel	BSP male	G ¾"		
Heating and brine right angle connections	mm	35		
<b>Heat source circuit / brine circuit</b>				
Volume of the brine circuit in the heat pump	l	2.5	3.1	3.6
Minimum pressure of brine fluid	bar	≥ 0.7		
Maximum pressure of brine fluid	bar	≤ 3.0		
<b>Heating circuit / building circuit</b>				
Water volume of the heating circuit in the heat pump	l	3.2	3.9	4.4
Minimum pressure	bar	≥ 0.7		
Maximum pressure	bar	≤ 3.0		
Minimum flow temperature heating	°C	25		
Maximum flow temperature heating with compressor	°C	65		
Maximum electrical power heating circuit pump	W	63		
<b>Refrigerant circuit</b>				
Refrigerant type		R 410 A		
Volume of refrigerant circuit in the heat pump	kg	1.50	2.40	2.50
Global warming potential (GWP) in accordance with EU No. 517/2014		2088		
CO <sub>2</sub> equivalent	t	3132	5011	5220
Global warming potential 100 (GWP <sub>100</sub> ) in accordance with EC No. 842/2006		1975		
Expansion valve type		Electronic		
Permissible pressure (relative)	bar	≤ 46.0		
Compressor type		EVI Scroll		
Oil type		Ester (EMKARATE RL32-3 MAF)		
Oil filling quantity	l	0.74	1.25	1.25

\*Reported efficiency when used with VRC 700 / VRC 700f controller

## Ground source technical specification

Heat source circuit / brine circuit	Unit	5kW 230 V	8kW 230 V	11kW 230 V
Minimum brine input temperature when heating	°C	-10		
Maximum brine input temperature when heating	°C	25		
Nominal flow rate $\Delta T$ 3K at B0/W35	l/h	1300	2110	2870
Minimum flow rate during continuous operation at the application limits	l/h	1190	1990	2570
Maximum flow rate during continuous operation at the application limits	l/h	1300	2110	2870
Maximum remaining feed head with $\Delta T$ 3K at B0/W35	bar	0.63	0.41	0.55
Electrical power for brine pump at B0/W35 $\Delta T$ 3K at 250 mbar	W	49	78	80
Brine fluid type		Ethylene glycol 30% volume		
Building circuit / heating circuit				
Nominal flow rate $\Delta T$ 5K	l/h	930	1450	1930
Maximum remaining feed head with $\Delta T$ 5K	bar	0.65	0.44	0.30
Nominal flow with $\Delta T$ 8K	l/h	600	930	1290
Maximum remaining feed head with $\Delta T$ 8K	bar	0.68	0.65	0.54
Minimum flow rate during continuous operation at the application limits	l/h	600	930	1290
Maximum flow rate during continuous operation at the application limits	l/h	930	1450	1930
Heating pump electrical power consumption for B0/W35 $\Delta T$ 3K with an external pressure loss of 250 mbar in the heating circuit	W	24	37	49
Heating output B0/W35 $\Delta T$ 5K	kW	5.30	8.90	11.20
Power consumption B0/W35 $\Delta T$ 5K	kW	1.13	1.75	2.24
Output figure B0/W35 $\Delta T$ 5K / coefficient of performance EN 14511		4.70	5.08	5.00
Heating output B0/W45 $\Delta T$ 5K	kW	5.30	8.80	11.20
Power consumption B0/W45 $\Delta T$ 5K	kW	1.51	2.32	2.95
Output figure B0/W45 $\Delta T$ 5K / coefficient of performance EN 14511		3.50	3.80	3.80
Heating output B0/W55 $\Delta T$ 8K	kW	5.40	9.00	11.40
Power consumption B0/W55 $\Delta T$ 8K	kW	1.80	2.73	3.56
Output figure B0/W55 $\Delta T$ 8K / coefficient of performance EN 14511		3.00	3.30	3.20
Sound power level B0/W35 EN 12102/EN 14511 $L_{w_i}$ in heating mode	dB(A)	43.8	45.6	48.5

## Water source technical specification

Heat source circuit / brine circuit	Unit	5kW 230 V	8kW 230 V	11kW 230 V
Heat source module		VWW 11/4 SI		
Nominal flow of groundwater at $\Delta T$ 3K with W10/W35	l/h	1300	2160	3100
Brine fluid type		Ethylene glycol 30% volume		
Building circuit / heating circuit				
Nominal flow at $\Delta T$ 5K	l/h	1025	1730	2270
Maximum remaining feed head with $\Delta T$ 5K	bar	0.80	2.19	4.22
Nominal flow at $\Delta T$ 8K	l/h	710	1120	1510
Maximum remaining feed head with $\Delta T$ 8K	bar	0.62	2.10	4.05
Minimum flow rate during continuous operation at the application limits	l/h	710	1120	1510
Maximum flow rate during continuous operation at the application limits	l/h	1025	1730	2270
Heating pump electrical power consumption for W10/W35 $\Delta T$ 5K with an external pressure loss of 250 mbar in the heating circuit	W	24	37	49
Heating output W10/W35 $\Delta T$ 5K	kW	6.40	10.00	12.90
Power consumption W10/W35 $\Delta T$ 5K	kW	1.33	1.92	2.53
Output figure W10/W35 $\Delta T$ 5K / coefficient of performance EN 14511		4.80	5.20	5.10
Heating output W10/W45 $\Delta T$ 5K	kW	6.30	10.10	12.90
Power consumption W10/W45 $\Delta T$ 5K	kW	1.70	2.46	3.23
Output figure W10/W45 $\Delta T$ 5K / coefficient of performance EN 14511		3.70	4.10	4.00
Heating output W10/W55 $\Delta T$ 8K	kW	6.30	10.30	13.30
Power consumption W10/W55 $\Delta T$ 8K	kW	2.10	2.94	4.03
Output figure W10/W55 $\Delta T$ 8K / coefficient of performance EN 14511		3.00	3.50	3.30
Sound power level W10/W35 EN 12102/EN 14511 $L_{w}$ in heating mode	dB(A)	43.3	46.9	50.0

## MCS SCoP performance table

flexoTHERM ground source heat pump	35°C	40°C	45°C	50°C	55°C
flexoTHERM 5kW 230V	4.67	4.15	3.64	3.50	3.36
flexoTHERM 8kW 230V	4.64	4.14	3.65	3.52	3.38
flexoTHERM 11kW 230V	4.73	4.23	3.73	3.61	3.49

flexoTHERM with fluoCOLLECT water source heat pump	35°C	40°C	45°C	50°C	55°C
flexoTHERM 5kW 230V	4.82	4.39	3.96	3.89	3.81
flexoTHERM 8kW 230V	5.10	4.59	4.08	3.96	3.83
flexoTHERM 11kW 230V	4.97	4.48	3.99	3.89	3.79

## flexoTHERM heat pumps

Description	Article number
flexoTHERM 5kW 230V	0020257358
flexoTHERM 8kW 230V	0020257359
flexoTHERM 11kW 230V	0020257360

NOTE: Article numbers include flexoTHERM, VR 10 sensor, right angle connection set, schematic and installation guide

## Accessories

Description	Article number
fluoCOLLECT up to 11kW (water source)	0010016719
Passive cooling module up to 11kW	0010016721
flexoTHERM straight connection	0020212715
Brine filling station	0020106265
Glycol discharge vessel	0020145563
18 litre brine expansion vessel (5-11kW)	302097
Expansion vessel bracket	0020173592
Heat pump brine de-airer	0020261123

## Controls

Description	Article number
Wired VRC 700 control unit	0020236291
Wired VRC 700 underfloor heating control pack	0020236292
Wired VRC 700 two zone pack and DHW	0020236293
Wired VRC 700 three zone pack and DHW	0020236294
Wired VRC 700 one zone pack and solar DHW	0020236295
Wired VRC 700 two zone pack and solar DHW	0020259834
Wireless VRC 700f control unit	0020259829
Wireless VRC 700f underfloor heating control pack	0020259830
Wireless VRC 700f two zone pack and DHW	0020259831
Wireless VRC 700f three zone pack and DHW	0020259832
Wireless VRC 700f one zone pack and solar DHW	0020259833
Wireless VRC 700f two zone pack and solar DHW	0020259835
VR 70 wiring centre	0020184844
VR 71 wiring centre	0020184847
Wired VR 91 programmable room thermostat	0020171334
Wireless VR 91f programmable room thermostat	0020231566
VR 40 multifunctional module 2-in-7	0020017744
VR 32 eBUS coupler	0020139895

### Sales Support

Vaillant products are available to purchase from reputable heating merchants in the UK. To find contact details for your nearest Vaillant sales representative:

**Telephone: 0345 602 0262**

### Technical Enquiries

For technical assistance:

**Telephone: 0330 100 3540**

**Email: [aftersales@vaillant.co.uk](mailto:aftersales@vaillant.co.uk)**

### General Enquiries

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**Email: [aftersales@vaillant.co.uk](mailto:aftersales@vaillant.co.uk)**

### Training Enquiries

Vaillant provide many different training courses. For more information:

**Telephone: 0345 601 8885**

**Email: [training.enquiriesuk@vaillant-group.com](mailto:training.enquiriesuk@vaillant-group.com)**

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