

# MONOBLOC HEAT PUMPS

## MAIN FEATURES



(Standard)  
Touch-screen control panel

- Monobloc Air/Water heat pump with new-generation DC Inverter technology.
- Equipped with the heating, cooling and domestic hot water production functions.
- Single-phase version with 6-8 kW heating capacity.
- Single/three-phase version with 10-12-14-16 kW heating capacity.
- Achieves very high efficiency levels in heating mode, up to 5 COP.
- Its integrated structure, which includes all the hydraulic components, ensures easy installation and, consequently, savings on the relative costs.
- It uses R32, a refrigerant with low impact on global warming and ozone layer, characterised by high energy efficiency and a 30% lower charge compared to R410A.
- The vapour-injection compressor, thanks to its special technology, guarantees exceptional performances and a wide operating range.
- The leaving water temperature range is 20 °C-65 °C: this means that the heat pump can be used with radiant floor systems, fan coil units and also medium-temperature radiators.
- The DC brushless axial fans are designed to ensure aerodynamic optimisation: they guarantee low noise levels coupled with high efficiency and a high air flow rate.
- It is equipped with a heating element on the base to prevent ice build-up during winter operation.
- It is equipped with an electronic expansion valve.




Internal copper groove	Quiet mode	Weekly timer	Heating down to low temperatures	Door control	Full protection	Timer	Child lock	Wide operating range	Wide voltage range	Auto diagnosis	Low-voltage start-up
Auto restart memory	Intelligent defrosting	°C / °F switching	Long-distance monitoring	Exch. condenser gold fin treatment	-25°C Min. outdoor temp. heating	+35°C Max. outdoor temp. heating	-15°C Min. outdoor temp. cooling	+48°C Max. outdoor temp. cooling	-25°C Min. outdoor temp. DHW	+45°C Max. outdoor temp. DHW	60°C Max. output temp. DHW

**A+++** Heating mode 35 °C

**A++** Heating mode 55 °C

**A** DHW

# THE RANGE

	Model	Code	⚡		Rated capacity according to EN14511 (kW)	
			1PH	3PH	 Heating (1)	 Cooling (2)
	AG4HP061PH	398600069	●		6.0	6.5
	AG4HP081PH	398600071	●		8.2	8.3
	AG4HP101PH	398600072	●		10.2	10.2
	AG4HP121PH	398600073	●		12.0	12.0
	AG4HP141PH	398600074	●		14.2	13.7
	AG4HP161PH	398600075	●		15.7	15.5
	AG4HP103PH	398600076		●	10.2	10.2
	AG4HP123PH	398600077		●	12.0	12.0
	AG4HP143PH	398600078		●	14.2	13.9
	AG4HP163PH	398600079		●	15.7	15.4

(1) Water temperature 30 °C/35 °C, outdoor air temperature 7 °C D.B./6 °C W.B.

(2) Water temperature 23 °C/18 °C, outdoor air temperature 3.5 °C

## INCLUDED ACCESSORIES

Ambient air temperature sensor
DHW temperature sensor
Additional system water temperature sensor
Y-shaped filter
Remote control panel

# TECHNICAL DATA 6 kW

Model				AG4HP061PH				
Matchable units for domestic hot water production (DHW)				200/300 liters external tank with diverting valve				
				Cooling	Heating			
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	6.50	6.00		
			Rated electrical power input	kW <sub>el</sub>	1.27	1.11		
			EER/COP		5.10	5.40		
	Performance according to EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	5.70	6.80	
				Rated electrical power input	kW <sub>el</sub>	1.65	1.66	
				EER/COP		3.45	4.10	
COMFORT IN ENVIRONMENT	Performance according to Ecodesign (ERP) EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	6			
			Seasonal energy efficiency η <sub>s</sub>	%	199			
			Energy efficiency class		A+++			
	Performance according to Ecodesign (ERP) EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	5		
				Seasonal energy efficiency η <sub>s</sub>	%	135		
				Energy efficiency class		A++		
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL			
			Energy efficiency class		A+			
			ERP efficiency	%	127			
Unit operation data			Maximum delivery water temperature	°C	Up to 65			
			Outdoor temperature range (heating)	°C	-25/+35			
			Outdoor temperature range (cooling)	°C	-15/+48			
			Nominal water flow rate	m <sup>3</sup> /h	at 35 °C		1.03	
					at 45 °C		1.01	
					at 55 °C		0.97	
					at 7 °C		0.84	
					at 18 °C		1.12	
			Minimum efficient water volume of the system	liters	40			
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50			
			Maximum electricity consumption	A	25			
			Sound pressure level (cooling mode)	dB(A)	56			
			Sound pressure level (heating mode)	dB(A)	58			
Components and dimensions			Expansion vessel	liters	2			
			Maximum circulator pump head	kPa	(see H/Q graphs)			
			Hydraulic connections	inches	G1"			
			Safety valve	bar	3			
			Weight	kg	90			
			Dimensions (H/W/D)	mm	733/1150/372			
			Compressor type		Twin Rotary with vapour injection			
Refrigerant			Type and GWP		R32/675 kg CO <sub>2</sub> eq			
			Quantity	kg	0.95			

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.  
These products must be fitted by qualified staff pursuant to Regulations (EU) 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

## CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

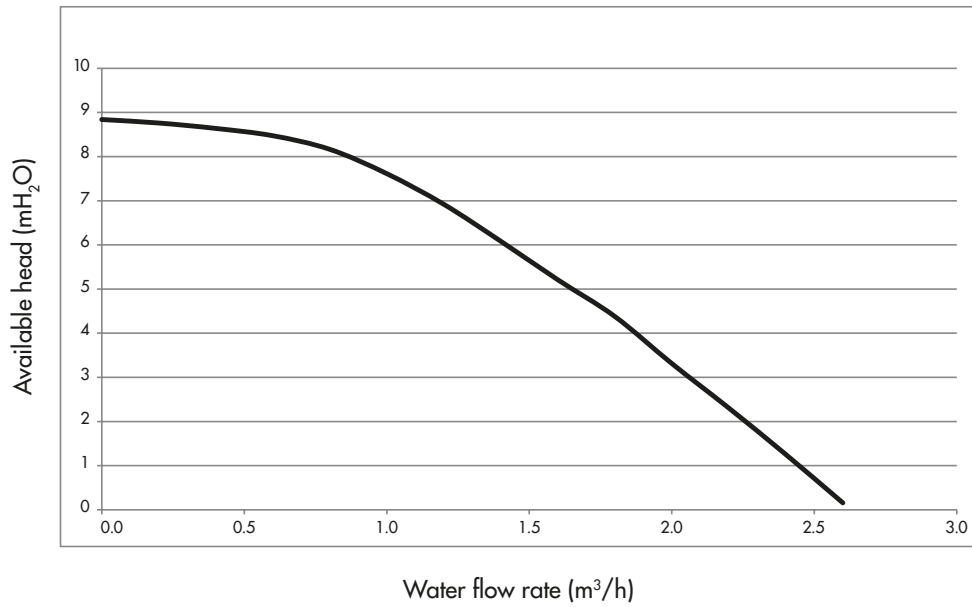
LWT [°C]	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP061PH)																	
	10		15		20		25		30		35		40		45		48	
	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	5.25	6.31	5.00	5.69	4.79	5.11	6.16	4.52	5.87	3.97	5.70	3.45	3.13	2.99	2.27	2.37	2.08	1.92
8	5.42	6.53	5.16	5.89	4.94	5.28	6.35	4.68	6.06	4.11	5.88	3.57	3.23	3.09	2.34	2.45	2.15	1.99
9	5.59	6.75	5.32	6.09	5.09	5.46	6.55	4.83	6.25	4.24	6.06	3.69	3.33	3.20	2.41	2.53	2.21	2.06
10	5.75	6.97	5.48	6.28	5.25	5.64	6.75	4.99	6.43	4.38	6.25	3.81	3.43	3.30	2.49	2.61	2.28	2.12
11	5.92	7.19	5.64	6.48	5.40	5.81	6.94	5.15	6.62	4.52	6.43	3.93	3.53	3.40	2.56	2.70	2.35	2.19
12	6.09	7.41	5.80	6.68	5.55	5.99	7.14	5.30	6.81	4.65	6.61	4.05	3.63	3.50	2.63	2.78	2.41	2.26
13	6.26	7.62	5.96	6.87	5.71	6.17	7.34	5.46	7.00	4.79	6.79	4.17	3.73	3.61	2.70	2.86	2.48	2.32
14	6.43	7.84	6.12	7.07	5.86	6.34	7.53	5.61	7.19	4.93	6.98	4.28	3.83	3.71	2.78	2.94	2.54	2.39
15	6.59	8.06	6.28	7.27	6.01	6.52	7.73	5.77	7.37	5.06	7.16	4.40	3.93	3.81	2.85	3.02	2.61	2.46
18	7.07	8.71	6.73	7.86	6.44	7.05	8.29	6.24	7.90	5.48	6.50	5.10	4.21	4.12	3.05	3.27	2.80	2.66
20	7.43	9.14	7.08	8.24	6.78	7.39	8.72	6.54	8.31	5.74	6.87	5.00	4.43	4.33	3.21	3.43	2.94	2.79
23	7.91	9.80	7.53	8.83	7.21	7.92	9.27	7.01	8.84	6.16	7.35	5.35	4.71	4.64	3.42	3.64	3.13	2.99
25	8.21	10.23	7.82	9.22	7.49	8.27	9.63	7.32	9.18	6.43	7.64	5.59	4.89	4.84	3.55	3.84	3.25	3.12

LWT [°C]	HEATING - Dry bulb outdoor air temperature in °C																											
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	2.31	2.24	2.48	2.64	2.97	3.04	3.25	3.56	3.58	3.96	4.02	4.52	4.35	5.02	5.94	6.60	6.12	6.77	6.84	7.36	5.88	7.82	6.44	8.28	5.36	8.66	5.80	8.99
30	2.37	2.06	2.53	2.42	3.03	2.79	3.30	3.27	3.63	3.64	4.07	4.15	4.40	4.60	6.00	6.06	6.18	6.21	6.90	6.76	5.92	7.18	6.49	7.60	5.40	7.95	5.83	8.26
35	2.37	1.84	2.53	2.16	3.03	2.49	3.30	2.92	3.63	3.25	4.07	3.71	4.40	4.11	6.00	5.41	6.18	5.55	6.90	6.03	5.92	6.41	6.49	6.79	5.40	7.10	5.83	7.37
40	2.37	1.62	2.53	1.90	3.03	2.19	3.30	2.57	3.63	2.86	4.07	3.26	4.40	3.62	6.00	4.76	6.18	4.88	6.90	5.31	5.92	5.64	6.49	5.97	5.40	6.25	5.83	6.49
45	2.37	1.47	2.53	1.73	3.03	1.99	3.30	2.34	3.63	2.60	4.07	2.96	4.40	3.29	6.80	4.10	6.18	4.44	6.90	4.83	5.92	5.13	6.49	5.43	5.40	5.68	5.83	5.90
50			2.48	1.56	2.97	1.79	3.25	2.10	3.58	2.34	4.02	2.67	4.35	2.96	5.94	3.90	6.12	3.99	6.84	4.34	5.88	4.62	6.44	4.89	5.36	5.11	5.77	5.31
55					2.97	1.57	3.25	1.84	3.58	2.04	4.02	2.33	4.35	2.59	5.80	3.15	6.12	3.49	6.84	3.80	5.88	4.04	6.44	4.28	5.36	4.47	5.77	4.64
60									3.52	1.82	3.96	2.08	4.29	2.30	5.88	3.03	6.06	3.11	6.76	3.38	5.80	3.59	6.36	3.80	5.29	3.98	5.72	4.13
65															5.82	2.71	5.99	2.77	6.69	3.02	5.74	3.21						

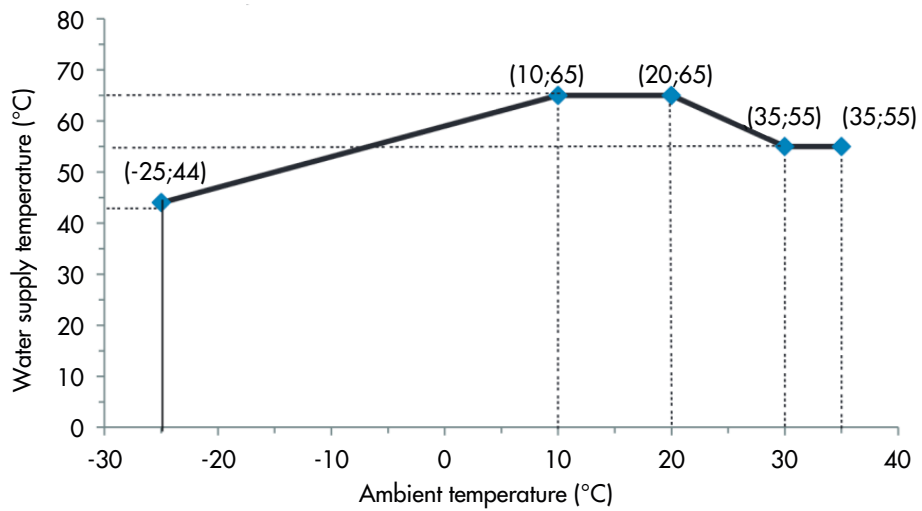
**LWT:** Leaving water temperature  
**Qh:** Heating capacity  
**COP:** Coefficient of performance

**LWT:** Leaving water temperature  
**Qc:** Cooling capacity  
**EER:** Energy efficiency ratio

## FLOW RATE CURVES FOR 6 kW

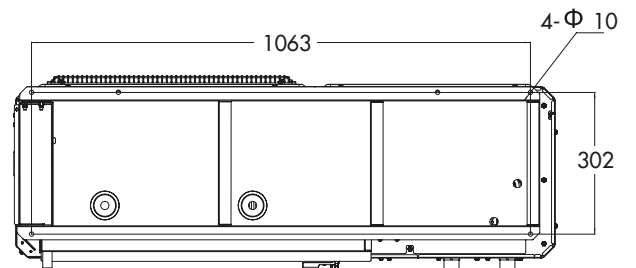
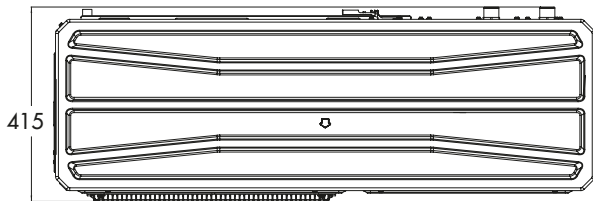
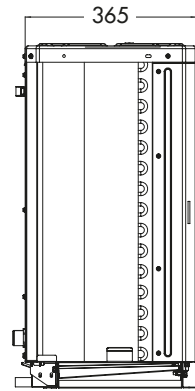
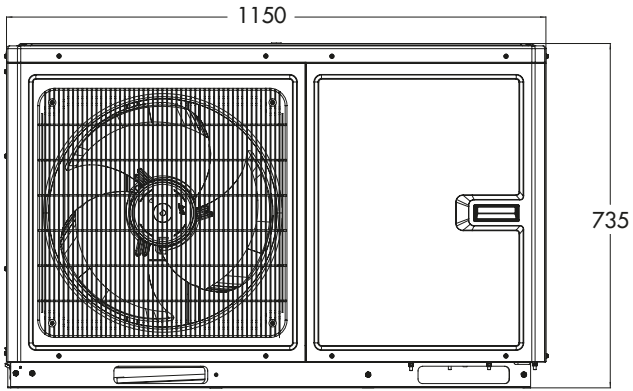


## MAXIMUM TEMPERATURE IN HEATING 6 kW

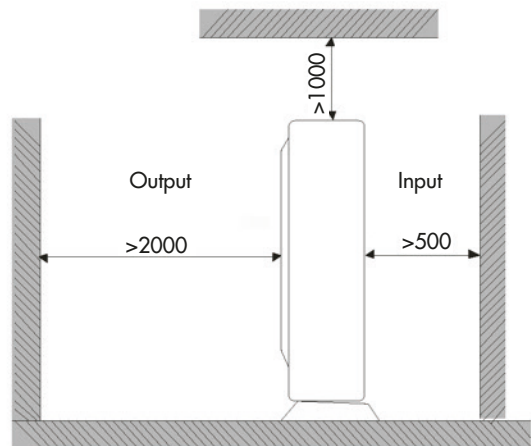
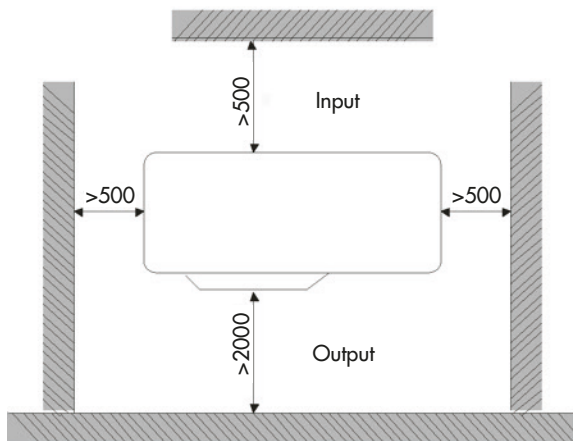


# DIMENSIONAL DRAWINGS 6 kW

HEAT PUMPS



# SPACE REQUIRED FOR INSTALLATION 6 kW



# TECHNICAL DATA FOR 8-10-12-14-16 kW

Model				AG4HP081PH				
Matchable units for domestic hot water production (DHW)				200/300 liters external tank with diverting valve				
				Cooling	Heating			
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	8.30	8.20		
			Rated electrical power input	kW <sub>el</sub>	1.56	1.54		
			EER/COP		5.32	5.32		
	Performance according to EN 14511	Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	7.40	8.30		
			Rated electrical power input	kW <sub>el</sub>	2.00	1.90		
			EER/COP		3.70	4.36		
COMFORT IN ENVIRONMENT	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	8			
			Seasonal energy efficiency η <sub>s</sub>	%	187			
			Energy efficiency class		A+++			
	Performance according to Ecodesign (ERP) EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	9			
			Seasonal energy efficiency η <sub>s</sub>	%	146			
			Energy efficiency class		A++			
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL			
			Energy efficiency class		A			
			ERP efficiency	%	123			
Unit operation data			Maximum delivery water temperature	°C	Up to 65			
			Outdoor temperature range (heating)	°C	-25/+35			
			Outdoor temperature range (cooling)	°C	-15/+48			
			Nominal water flow rate	m <sup>3</sup> /h	at 35 °C		1.41	
					at 45 °C		1.40	
					at 55 °C		1.34	
					at 7 °C		0.98	
					at 18 °C		1.43	
			Minimum efficient water volume of the system	liters	40			
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50			
			Maximum electricity consumption	A	25			
Sound pressure level (cooling mode)	dB(A)	60						
Sound pressure level (heating mode)	dB(A)	62						
Components and dimensions			Expansion vessel	liters	3			
			Maximum circulator pump head	kPa	(see H/Q graphs)			
			Hydraulic connections	inches	G1"			
			Safety valve	bar	3			
			Weight	kg	120			
			Dimensions (H/W/D)	mm	878/1206/445			
			Compressor type		Twin Rotary with vapour injection			
Refrigerant			Type and GWP		R32/675 kg CO <sub>2</sub> eq			
			Quantity	kg	1.6			

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.  
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LWT [°C]	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP081PH)																	
	10		15		20		25		30		35		40		45		48	
	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	9.25	6.77	8.81	6.11	8.44	5.48	7.99	4.85	7.62	4.26	7.40	3.70	5.15	3.07	4.70	2.37	3.73	1.98
8	9.55	7.01	9.09	6.32	8.71	5.67	8.25	5.02	7.87	4.40	7.64	3.83	5.32	3.18	4.85	2.45	3.85	2.05
9	9.84	7.24	9.37	6.53	8.98	5.86	8.50	5.18	8.11	4.55	7.87	3.96	5.48	3.28	5.01	2.53	3.97	2.11
10	10.14	7.48	9.65	6.74	9.25	6.05	8.76	5.35	8.35	4.70	8.11	4.08	5.65	3.39	5.16	2.61	4.09	2.18
11	10.43	7.71	9.93	6.95	9.52	6.23	9.01	5.52	8.60	4.84	8.35	4.21	5.81	3.50	5.31	2.70	4.21	2.25
12	10.73	7.94	10.21	7.16	9.79	6.42	9.27	5.69	8.84	4.99	8.58	4.34	5.98	3.60	5.46	2.78	4.33	2.32
13	11.03	8.18	10.50	7.37	10.06	6.61	9.53	5.85	9.09	5.14	8.82	4.47	6.14	3.71	5.61	2.86	4.45	2.39
14	11.32	8.41	10.78	7.58	10.33	6.80	9.78	6.02	9.33	5.28	9.06	4.60	6.31	3.81	5.76	2.94	4.57	2.45
15	11.62	8.64	11.06	7.79	10.60	6.99	10.04	6.19	9.57	5.43	9.29	4.72	6.47	3.92	5.91	3.02	4.69	2.52
18	12.45	9.34	11.85	8.42	11.35	7.56	10.76	6.69	10.26	5.87	8.30	5.32	6.93	4.24	6.33	3.27	5.03	2.73
20	13.10	9.80	12.47	8.84	11.95	7.93	11.32	7.02	10.79	6.16	10.48	5.36	7.30	4.45	6.66	3.43	5.29	2.86
23	13.93	10.51	13.26	9.47	12.70	8.50	12.04	7.52	11.48	6.60	11.14	5.74	7.76	4.76	7.08	3.67	5.62	3.07
25	14.47	10.97	13.77	9.89	13.19	8.87	12.50	7.85	11.92	6.90	11.57	6.00	8.06	4.98	7.36	3.84	5.84	3.20

LWT [°C]	HEATING - Dry bulb outdoor air temperature in °C																											
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	4.73	2.17	4.95	2.56	6.27	2.94	6.49	3.45	7.15	3.84	7.48	4.26	8.10	4.73	8.12	6.49	8.36	6.65	9.35	7.24	8.75	6.48	9.59	6.86	8.94	8.92	9.66	9.26
30	4.84	2.00	5.06	2.35	6.38	2.70	6.60	3.17	7.26	3.52	7.59	3.91	8.20	4.34	8.20	5.96	8.45	6.11	9.43	6.64	8.82	5.95	9.66	6.30	9.00	8.18	9.72	8.50
35	4.84	1.78	5.06	2.10	6.38	2.41	6.60	2.83	7.26	3.14	7.59	3.49	8.20	3.88	8.20	5.32	8.45	5.45	9.43	5.93	8.82	5.31	9.66	5.62	9.00	7.31	9.72	7.59
40	4.84	1.57	5.06	1.84	6.38	2.12	6.60	2.49	7.26	2.77	7.59	3.07	8.20	3.41	8.20	4.68	8.45	4.80	9.43	5.22	8.82	4.67	9.66	4.95	9.00	6.43	9.72	6.68
45	4.84	1.43	5.06	1.68	6.38	1.93	6.60	2.26	7.26	2.52	7.59	2.79	8.20	3.10	8.30	4.36	8.45	4.36	9.43	4.75	8.82	4.25	9.66	4.50	9.00	5.85	9.72	6.07
50			4.95	1.51	6.27	1.74	6.49	2.04	7.15	2.26	7.48	2.52	8.10	2.79	8.12	3.83	8.36	3.93	9.35	4.27	8.75	3.82	9.59	4.05	8.94	5.26	9.62	5.46
55					6.27	1.52	6.49	1.78	7.15	1.98	7.48	2.20	8.10	2.44	7.81	3.20	8.36	3.44	9.35	3.74	8.75	3.34	9.59	3.54	8.94	4.60	9.62	4.78
60									7.04	1.76	7.38	1.96	8.00	2.17	8.04	2.98	8.28	3.05	9.24	3.32	8.64	2.97	9.47	3.15	8.82	4.09	9.53	4.25
65															7.95	2.66	8.19	2.73	9.15	2.97	8.56	2.65						

LWT: Leaving water temperature  
Qh: Heating capacity  
COP: Coefficient of performance

LWT: Leaving water temperature  
Qc: Cooling capacity  
EER: Energy efficiency ratio



# TECHNICAL DATA FOR 8-10-12-14-16 kW

Model				AG4HP101PH		AG4HP103PH			
Matchable units for domestic hot water production (DHW)				200/300 liters external tank with diverting valve		200/300 liters external tank with diverting valve			
				Cooling	Heating	Cooling	Heating		
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	10.20	10.20	10.20	10.20	
			Rated electrical power input	kW <sub>el</sub>	2.00	2.02	2.13	2.06	
			EER/COP		5.10	5.05	4.79	4.95	
	Performance according to Ecodesign (ERP) EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Rated capacity	kW	9.00	10.20	9.10	10.20
				Rated electrical power input	kW <sub>el</sub>	2.65	2.50	2.80	2.60
				EER/COP		3.40	4.08	3.25	3.92
COMFORT IN ENVIRONMENT	Performance according to Ecodesign (ERP) EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	9		9		
			Seasonal energy efficiency η <sub>s</sub>	%	178		190		
			Energy efficiency class		A+++		A+++		
	Performance according to Ecodesign (ERP) EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Air +35 °C - Water 12/7 °C Air +7 °C - Water 40/45 °C	Design thermal load (P <sub>design,h</sub> )	kW	10		10	
				Seasonal energy efficiency η <sub>s</sub>	%	136		141	
				Energy efficiency class		A++		A++	
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL		XL		
			Energy efficiency class		A		A		
			ERP efficiency	%	123		123		
Unit operation data			Maximum delivery water temperature	°C	Up to 65		Up to 65		
			Outdoor temperature range (heating)	°C	-25/+35		-25/+35		
			Outdoor temperature range (cooling)	°C	-15/+48		-15/+48		
			Nominal water flow rate	m <sup>3</sup> /h	at 35 °C	1.75	at 35 °C	1.75	
					at 45 °C	1.74	at 45 °C	1.74	
					at 55 °C	1.67	at 55 °C	1.67	
					at 7 °C	1.24	at 7 °C	1.24	
					at 18 °C	1.75	at 18 °C	1.75	
			Minimum efficient water volume of the system	liters	80		80		
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50		400/3/50		
			Maximum electricity consumption	A	25		9		
		Sound pressure level (cooling mode)	dB(A)	60		57			
		Sound pressure level (heating mode)	dB(A)	62		60			
Components and dimensions			Expansion vessel	liters	3		3		
			Maximum circulator pump head	kPa	(see H/Q graphs)		(see H/Q graphs)		
			Hydraulic connections	inches	G1"		G1"		
			Safety valve	bar	3		3		
			Weight	kg	120		134		
			Dimensions (H/W/D)	mm	878/1206/445		878/1206/445		
			Compressor type		Twin Rotary with vapour injection		Twin Rotary with vapour injection		
Refrigerant			Type and GWP		R32/675 kg CO <sub>2</sub> eq		R32/675 kg CO <sub>2</sub> eq		
			Quantity	kg	1.6		1.6		

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.  
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

PRELIMINARY data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

## CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

LWT [°C]	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP101PH)																	
	10		15		20		25		30		35		40		45		48	
	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	11.25	6.22	10.71	5.61	10.26	5.03	9.72	4.45	9.27	3.91	9.00	3.40	5.65	3.07	5.16	2.37	3.87	1.98
8	11.61	6.44	11.05	5.81	10.59	5.21	10.03	4.61	9.57	4.05	9.29	3.52	5.83	3.18	5.32	2.45	4.00	2.05
9	11.97	6.65	11.40	6.00	10.92	5.38	10.34	4.76	9.86	4.18	9.58	3.64	6.01	3.28	5.49	2.53	4.12	2.11
10	12.33	6.87	11.74	6.19	11.24	5.56	10.65	4.92	10.16	4.32	9.86	3.75	6.19	3.39	5.65	2.61	4.24	2.18
11	12.69	7.08	12.08	6.39	11.57	5.73	10.96	5.07	10.46	4.45	10.15	3.87	6.37	3.50	5.82	2.70	4.37	2.25
12	13.05	7.30	12.42	6.58	11.90	5.90	11.28	5.22	10.75	4.59	10.44	3.99	6.55	3.60	5.98	2.78	4.49	2.32
13	13.41	7.51	12.77	6.77	12.23	6.08	11.59	5.38	11.05	4.72	10.73	4.11	6.73	3.71	6.15	2.86	4.62	2.39
14	13.77	7.73	13.11	6.97	12.56	6.25	11.90	5.53	11.35	4.86	11.02	4.22	6.91	3.81	6.31	2.94	4.74	2.45
15	14.13	7.94	13.45	7.16	12.89	6.42	12.21	5.69	11.64	4.99	11.30	4.34	7.09	3.92	6.48	3.02	4.86	2.52
18	15.14	8.59	14.42	7.74	13.81	6.94	13.08	6.15	12.48	5.40	10.20	5.10	7.60	4.24	6.94	3.27	5.21	2.73
20	15.93	9.01	15.17	8.12	14.53	7.29	13.76	6.45	13.13	5.66	12.74	4.92	8.00	4.45	7.30	3.43	5.48	2.86
23	16.94	9.65	16.13	8.70	15.45	7.81	14.64	6.91	13.96	6.07	13.55	5.28	8.51	4.76	7.77	3.67	5.83	3.07
25	17.60	10.08	16.75	9.09	16.05	8.15	15.20	7.22	14.50	6.34	14.08	5.51	8.83	4.98	8.07	3.84	6.06	3.20

LWT [°C]	HEATING - Dry bulb outdoor air temperature in °C																											
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	5.07	2.03	5.31	2.39	6.73	2.75	6.96	3.23	7.67	3.59	8.03	4.38	8.69	4.86	10.10	6.16	10.40	6.32	11.63	6.87	9.25	7.95	10.14	8.42	9.69	8.92	10.47	9.26
30	5.19	1.87	5.43	2.20	6.84	2.52	7.08	2.96	7.79	3.29	8.14	4.02	8.80	4.46	10.20	5.66	10.51	5.80	11.73	6.31	9.32	7.30	10.21	7.73	9.75	8.18	10.53	8.50
35	5.19	1.67	5.43	1.96	6.84	2.25	7.08	2.65	7.79	2.94	8.14	3.59	8.80	3.98	10.20	5.05	10.51	5.18	11.73	5.63	9.32	6.52	10.21	6.90	9.75	7.31	10.53	7.59
40	5.19	1.47	5.43	1.72	6.84	1.98	7.08	2.33	7.79	2.59	8.14	3.16	8.80	3.50	10.20	4.44	10.51	4.56	11.73	4.96	9.32	5.74	10.21	6.07	9.75	6.43	10.53	6.68
45	5.19	1.33	5.43	1.57	6.84	1.80	7.08	2.12	7.79	2.35	8.14	2.87	8.80	3.19	10.20	4.08	10.51	4.14	11.73	4.50	9.32	5.21	10.21	5.52	9.75	5.85	10.53	6.07
50			5.31	1.41	6.73	1.62	6.96	1.91	7.67	2.12	8.03	2.58	8.69	2.87	10.10	3.64	10.40	3.73	11.63	4.05	9.25	4.69	10.14	4.97	9.69	5.26	10.42	5.46
55					6.73	1.42	6.96	1.67	7.67	1.85	8.03	2.26	8.69	2.51	10.30	3.12	10.40	3.26	11.63	3.55	9.25	4.11	10.14	4.35	9.69	4.60	10.42	4.78
60									7.55	1.65	7.92	2.01	8.58	2.23	10.00	2.83	10.30	2.90	11.50	3.15	9.14	3.65	10.01	3.87	9.56	4.09	10.32	4.25
65															9.89	2.53	10.19	2.59	11.38	2.82	9.04	3.26						

LWT [°C]	HEATING - Dry bulb outdoor air temperature in °C - (AG4HP103PH)																											
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	5.07	2.05	5.31	2.42	6.73	2.78	6.96	3.26	7.67	3.62	8.03	4.17	8.69	4.63	10.10	6.04	10.40	6.19	11.63	6.73	9.25	7.45	10.14	7.89	9.69	8.34	10.47	8.66
30	5.19	1.88	5.43	2.22	6.84	2.55	7.08	2.99	7.79	3.33	8.14	3.83	8.80	4.25	10.20	5.54	10.51	5.68	11.73	6.18	9.32	6.84	10.21	7.24	9.75	7.66	10.53	7.95
35	5.19	1.68	5.43	1.98	6.84	2.28	7.08	2.67	7.79	2.97	8.14	3.42	8.80	3.79	10.20	4.95	10.51	5.07	11.73	5.52	9.32	6.10	10.21	6.46	9.75	6.84	10.53	7.10
40	5.19	1.48	5.43	1.74	6.84	2.00	7.08	2.35	7.79	2.61	8.14	3.01	8.80	3.34	10.20	4.36	10.51	4.46	11.73	4.86	9.32	5.37	10.21	5.69	9.75	6.02	10.53	6.25
45	5.19	1.35	5.43	1.58	6.84	1.82	7.08	2.14	7.79	2.38	8.14	2.73	8.80	3.03	10.20	3.92	10.51	4.06	11.73	4.42	9.32	4.88	10.21	5.17	9.75	5.47	10.53	5.68
50			5.31	1.43	6.73	1.64	6.96	1.92	7.67	2.14	8.03	2.46	8.69	2.73	10.10	3.56	10.40	3.65	11.63	3.97	9.25	4.39	10.14	4.65	9.69	4.92	10.42	5.11
55					6.73	1.43	6.96	1.68	7.67	1.87	8.03	2.15	8.69	2.39	10.30	3.05	10.40	3.20	11.63	3.48	9.25	3.84	10.14	4.07	9.69	4.31	10.42	4.47
60									7.55	1.66	7.92	1.91	8.58	2.12	10.00	2.77	10.30	2.84	11.50	3.09	9.14	3.42	10.01	3.62	9.56	3.83	10.32	3.98
65															9.89	2.48	10.19	2.54	11.38	2.76	9.04	3.05						

LWT [°C]	COOLING - Dry bulb outdoor air temperature in °C																	
	10		15		20		25		30		35		40		45		48	
	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	11.25	5.89	10.71	5.31	10.26	4.77	9.72	4.22	9.27	3.70	9.10	3.25	5.65	2.81	5.16	2.16	3.87	1.93
8	11.61	6.10	11.05	5.50	10.59	4.93	10.03	4.37	9.57	3.83	9.29	3.33	5.83	2.90	5.32	2.24	4.00	2.00
9	11.97	6.30	11.40	5.68	10.92	5.10	10.34	4.51	9.86	3.96	9.58	3.44	6.01	3.00	5.49	2.31	4.12	2.06
10	12.33	6.51	11.74	5.87	11.24	5.26	10.65	4.66	10.16	4.09	9.86	3.55	6.19	3.10	5.65	2.39	4.24	2.13
11	12.69	6.71	12.08	6.05	11.57	5.43	10.96	4.80	10.46	4.22	10.15	3.67	6.37	3.19	5.82	2.46	4.37	2.20
12	13.05	6.91	12.42	6.23	11.90	5.59	11.28	4.95	10.75	4.34	10.44	3.78	6.55	3.29	5.98	2.54	4.49	2.26
13	13.41	7.12	12.77	6.42	12.23	5.75	11.59	5.09	11.05	4.47	10.73	3.89	6.73	3.39	6.15	2.61	4.62	2.33
14	13.77	7.32	13.11	6.60	12.56	5.92	11.90	5.24	11.35	4.60	11.02	4.00	6.91	3.48	6.31	2.69	4.74	2.40
15	14.13	7.52	13.45	6.78	12.89	6.08	12.21	5.38	11.64	4.73	11.30	4.11	7.09	3.58	6.48	2.76	4.86	2.46
18	15.14	8.13	14.42	7.33	13.81	6.58	13.08	5.82	12.48	5.11	10.20	4.79	7.60	3.87	6.94	2.99	5.21	2.66
20	15.93	8.53	15.17	7.69	14.53	6.90	13.76	6.11	13.13	5.36	12.74	4.66	8.00	4.06	7.30	3.13	5.48	2.79
23	16.94	9.14	16.13	8.24	15.45	7.39	14.64	6.54	13.96	5.75	13.55	5.00	8.51	4.35	7.77	3.36	5.83	2.99
25	17.60	9.55	16.75	8.61	16.05	7.72	15.20	6.84	14.50	6.00	14.08	5.22	8.83	4.55	8.07	3.51	6.06	3.13

LWT: Leaving water temperature  
Qh: Heating capacity  
COP: Coefficient of performance

LWT: Leaving water temperature  
Qc: Cooling capacity  
EER: Energy efficiency ratio

# TECHNICAL DATA FOR 8-10-12-14-16 kW

Model				AG4HP121PH		AG4HP123PH			
Matchable units for domestic hot water production (DHW)				200/300 liters external tank with diverting valve		200/300 liters external tank with diverting valve			
				Cooling	Heating	Cooling	Heating		
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	12.00	12.00	12.00	12.00	
			Rated electrical power input	kW <sub>el</sub>	2.45	2.43	2.61	2.49	
			EER/COP		4.90	4.94	4.60	4.82	
	Performance according to EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Rated capacity	kW	11.10	13.00	11.10	13.00	
			Rated electrical power input	kW <sub>el</sub>	3.58	3.45	3.58	3.45	
			EER/COP		3.10	3.77	3.10	3.77	
Performance according to Ecodesign (ERP) EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	12		12			
		Seasonal energy efficiency η <sub>s</sub>	%	188		180			
		Energy efficiency class		A+++		A+++			
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL		XL		
			Energy efficiency class		A		A		
			ERP efficiency	%	110		110		
Unit operation data			Maximum delivery water temperature	°C	Up to 65		Up to 65		
			Outdoor temperature range (heating)	°C	-25/+35		-25/+35		
			Outdoor temperature range (cooling)	°C	-15/+48		-15/+48		
			Nominal water flow rate	m <sup>3</sup> /h	at 35 °C		2.06	at 35 °C	2.06
					at 45 °C		2.06	at 45 °C	2.06
					at 55 °C		1.98	at 55 °C	1.98
					at 7 °C		1.49	at 7 °C	1.49
					at 18 °C		2.06	at 18 °C	2.06
			Minimum efficient water volume of the system	liters	80		80		
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50		400/3/50		
			Maximum electricity consumption	A	29		11.5		
			Sound pressure level (cooling mode)	dB(A)	61		61		
			Sound pressure level (heating mode)	dB(A)	63		63		
Components and dimensions			Expansion vessel	liters	3		3		
			Maximum circulator pump head	kPa	(see H/Q graphs)		(see H/Q graphs)		
			Hydraulic connections	inches	G1"		G1"		
			Safety valve	bar	3		3		
			Weight	kg	138		144		
			Dimensions (H/W/D)	mm	878/1206/445		878/1206/445		
			Compressor type		Twin Rotary with vapour injection		Twin Rotary with vapour injection		
Refrigerant			Type and GWP		R32/675 kg CO <sub>2</sub> eq		R32/675 kg CO <sub>2</sub> eq		
			Quantity	kg	2.2 kg		2.2 kg		

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.  
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

## CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

LWT [°C]	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP121PH)																	
	10		15		20		25		30		35		40		45		48	
	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	11.88	5.67	11.31	5.12	10.83	4.59	10.26	4.06	9.79	3.57	11.10	3.10	8.19	2.95	6.72	2.37	6.16	1.92
8	12.26	5.87	11.67	5.29	11.18	4.75	10.59	4.20	10.10	3.69	11.46	3.21	8.45	3.05	6.94	2.45	6.36	1.99
9	12.64	6.07	12.03	5.47	11.52	4.91	10.92	4.34	10.41	3.81	11.81	3.32	8.71	3.15	7.15	2.53	6.55	2.06
10	13.02	6.26	12.39	5.65	11.87	5.07	11.24	4.48	10.72	3.94	12.17	3.42	8.97	3.25	7.37	2.61	6.75	2.12
11	13.40	6.46	12.75	5.82	12.22	5.22	11.57	4.62	11.04	4.06	12.52	3.53	9.24	3.35	7.58	2.70	6.95	2.19
12	13.78	6.65	13.11	6.00	12.56	5.38	11.90	4.76	11.35	4.18	12.88	3.64	9.50	3.46	7.80	2.78	7.15	2.26
13	14.16	6.85	13.48	6.18	12.91	5.54	12.23	4.90	11.66	4.30	13.23	3.74	9.76	3.56	8.01	2.86	7.34	2.32
14	14.54	7.05	13.84	6.35	13.26	5.70	12.56	5.04	11.98	4.43	13.59	3.85	10.02	3.66	8.23	2.94	7.54	2.39
15	14.92	7.24	14.20	6.53	13.60	5.86	12.89	5.18	12.29	4.55	13.94	3.96	10.28	3.76	8.44	3.02	7.74	2.46
18	15.98	7.83	15.22	7.06	14.58	6.33	13.81	5.60	13.17	4.92	12.00	4.90	11.02	4.07	9.05	3.27	8.29	2.66
20	16.82	8.21	16.01	7.41	15.34	6.64	14.53	5.88	13.86	5.16	15.72	4.49	11.59	4.27	9.52	3.43	8.72	2.79
23	17.88	8.80	17.03	7.94	16.31	7.12	15.45	6.30	14.74	5.53	16.72	4.81	12.33	4.57	10.12	3.67	9.28	2.99
25	18.57	9.19	17.68	8.29	16.94	7.43	16.05	6.58	15.30	5.78	17.36	5.02	12.81	4.77	10.51	3.84	9.63	3.12

LWT [°C]	HEATING - Dry bulb outdoor air temperature in °C																											
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	5.80	2.03	6.21	2.39	7.45	2.74	8.14	3.22	8.97	3.58	10.07	4.09	10.90	4.53	11.88	6.03	12.24	6.18	13.68	6.72	11.25	7.60	12.33	8.05	11.92	8.57	12.88	8.89
30	5.93	1.86	6.35	2.19	7.59	2.52	8.28	2.96	9.11	3.29	10.21	3.75	11.04	4.16	12.00	5.53	12.36	5.67	13.80	6.17	11.34	6.98	12.42	7.39	12.00	7.86	12.96	8.16
35	5.93	1.66	6.35	1.96	7.59	2.25	8.28	2.64	9.11	2.93	10.21	3.35	11.04	3.72	12.00	4.94	12.36	5.06	13.80	5.51	11.34	6.23	12.42	6.60	12.00	7.02	12.96	7.29
40	5.93	1.46	6.35	1.72	7.59	1.98	8.28	2.32	9.11	2.58	10.21	2.95	11.04	3.27	12.00	4.35	12.36	4.46	13.80	4.85	11.34	5.49	12.42	5.81	12.00	6.18	12.96	6.42
45	5.93	1.33	6.35	1.56	7.59	1.80	8.28	2.11	9.11	2.35	10.21	2.68	11.04	2.97	13.00	3.77	12.36	4.05	13.80	4.41	11.34	4.99	12.42	5.28	12.00	5.62	12.96	5.83
50			6.21	1.41	7.45	1.62	8.14	1.90	8.97	2.11	10.07	2.41	10.90	2.68	11.88	3.56	12.24	3.65	13.68	3.97	11.25	4.49	12.33	4.75	11.92	5.06	12.83	5.25
55					7.45	1.42	8.14	1.66	8.97	1.85	10.07	2.11	10.90	2.34	12.00	3.05	12.24	3.19	13.68	3.47	11.25	3.93	12.33	4.16	11.92	4.42	12.83	4.59
60							8.83	1.64	9.94	1.88	10.76	2.08	11.76	2.77	12.11	2.84	13.52	3.08	11.11	3.49	12.17	3.70	11.76	3.93	12.70	4.08		
65															11.64	2.47	11.99	2.53	13.39	2.75	11.00	3.12						

LWT [°C]	HEATING - Dry bulb outdoor air temperature in °C - (AG4HP123PH)																											
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	5.80	1.95	6.21	2.29	7.45	2.63	8.14	3.09	8.97	3.43	10.07	3.92	10.90	4.35	11.88	5.88	12.24	6.03	13.68	6.56	11.25	7.30	12.33	7.73	11.92	8.22	12.88	8.53
30	5.93	1.79	6.35	2.10	7.59	2.42	8.28	2.84	9.11	3.15	10.21	3.60	11.04	3.99	12.00	5.40	12.36	5.53	13.80	6.02	11.34	6.70	12.42	7.10	12.00	7.54	12.96	7.83
35	5.93	1.59	6.35	1.88	7.59	2.16	8.28	2.53	9.11	2.81	10.21	3.21	11.04	3.56	12.00	4.82	12.36	4.94	13.80	5.37	11.34	5.98	12.42	6.34	12.00	6.73	12.96	6.99
40	5.93	1.40	6.35	1.65	7.59	1.90	8.28	2.23	9.11	2.48	10.21	2.83	11.04	3.14	12.00	4.24	12.36	4.35	13.80	4.73	11.34	5.27	12.42	5.58	12.00	5.93	12.96	6.15
45	5.93	1.28	6.35	1.50	7.59	1.73	8.28	2.03	9.11	2.25	10.21	2.57	11.04	2.85	13.00	3.77	12.36	3.95	13.80	4.30	11.34	4.79	12.42	5.07	12.00	5.39	12.96	5.59
50			6.21	1.35	7.45	1.55	8.14	1.82	8.97	2.03	10.07	2.31	10.90	2.57	11.88	3.47	12.24	3.56	13.68	3.87	11.25	4.31	12.33	4.56	11.92	4.85	12.83	5.03
55					7.45	1.36	8.14	1.60	8.97	1.77	10.07	2.02	10.90	2.25	12.00	2.91	12.24	3.11	13.68	3.39	11.25	3.77	12.33	3.99	11.92	4.24	12.83	4.40
60							8.83	1.58	9.94	1.80	10.76	2.00	11.76	2.70	12.11	2.77	13.52	3.01	11.11	3.35	12.17	3.55	11.76	3.77	12.70	3.92		
65															11.64	2.41	11.99	2.47	13.39	2.69	11.00	2.99						

LWT [°C]	COOLING - Dry bulb outdoor air temperature in °C																	
	10		15		20		25		30		35		40		45		48	
	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	11.88	5.67	11.31	5.12	10.83	4.59	10.26	4.06	9.79	3.57	11.10	3.10	8.19	2.80	6.72	2.25	6.16	1.83
8	12.26	5.87	11.67	5.29	11.18	4.75	10.59	4.20	10.10	3.69	11.46	3.21	8.45	2.89	6.94	2.33	6.36	1.89
9	12.64	6.07	12.03	5.47	11.52	4.91	10.92	4.34	10.41	3.81	11.81	3.32	8.71	2.99	7.15	2.41	6.55	1.96
10	13.02	6.26	12.39	5.65	11.87	5.07	11.24	4.48	10.72	3.94	12.17	3.42	8.97	3.09	7.37	2.49	6.75	2.02
11	13.40	6.46	12.75	5.82	12.22	5.22	11.57	4.62	11.04	4.06	12.52	3.53	9.24	3.18	7.58	2.56	6.95	2.08
12	13.78	6.65	13.11	6.00	12.56	5.38	11.90	4.76	11.35	4.18	12.88	3.64	9.50	3.28	7.80	2.64	7.15	2.15
13	14.16	6.85	13.48	6.18	12.91	5.54	12.23	4.90	11.66	4.30	13.23	3.74	9.76	3.38	8.01	2.72	7.34	2.21
14	14.54	7.05	13.84	6.35	13.26	5.70	12.56	5.04	11.98	4.43	13.59	3.85	10.02	3.47	8.23	2.80	7.54	2.27
15	14.92	7.24	14.20	6.53	13.60	5.86	12.89	5.18	12.29	4.55	13.94	3.96	10.28	3.57	8.44	2.88	7.74	2.34
18	15.98	7.83	15.22	7.06	14.58	6.33	13.81	5.60	13.17	4.92	12.00	4.60	11.02	3.86	9.05	3.11	8.29	2.53
20	16.82	8.21	16.01	7.41	15.34	6.64	14.53	5.88	13.86	5.16	15.72	4.49	11.59	4.05	9.52	3.26	8.72	2.65
23	17.88	8.80	17.03	7.94	16.31	7.12	15.45	6.30	14.74	5.53	16.72	4.81	12.33	4.34	10.12	3.50	9.28	2.84
25	18.57	9.19	17.68	8.29	16.94	7.43	16.05	6.58	15.30	5.78	17.36	5.02	12.81	4.53	10.51	3.65	9.63	2.97

LWT: Leaving water temperature  
Qh: Heating capacity  
COP: Coefficient of performance

LWT: Leaving water temperature  
Qc: Cooling capacity  
EER: Energy efficiency ratio

# TECHNICAL DATA FOR 8-10-12-14-16 kW

Model				AG4HP141PH		AG4HP143PH		
Matchable units for domestic hot water production (DHW)				200/300 liters external tank with diverting valve		200/300 liters external tank with diverting valve		
				Cooling	Heating	Cooling	Heating	
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	13.7	14.20	13.90	14.20
			Rated electrical power input	kW <sub>el</sub>	3.00	2.99	3.32	3.09
			EER/COP		4.57	4.75	4.19	4.60
	Performance according to EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Rated capacity	kW	13.30	14.20	13.30	14.20
			Rated electrical power input	kW <sub>el</sub>	4.75	3.84	4.75	3.84
			EER/COP		2.80	3.70	2.80	3.70
COMFORT IN ENVIRONMENT	Performance according to Ecodesign (ERP) EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	13		13	
			Seasonal energy efficiency η <sub>s</sub>	%	185		179	
			Energy efficiency class		A+++		A+++	
	Performance according to EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	13		13	
			Seasonal energy efficiency η <sub>s</sub>	%	145		138	
			Energy efficiency class		A++		A++	
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL		XL	
			Energy efficiency class		A		A	
			ERP efficiency	%	110		110	
Unit operation data			Maximum delivery water temperature	°C	Up to 65		Up to 65	
			Outdoor temperature range (heating)	°C	-25/+35		-25/+35	
			Outdoor temperature range (cooling)	°C	-15/+48		-15/+48	
			Nominal water flow rate	m <sup>3</sup> /h	at 35 °C	2.44	at 35 °C	2.44
					at 45 °C	2.42	at 45 °C	2.42
					at 55 °C	2.32	at 55 °C	2.32
					at 7 °C	1.64	at 7 °C	1.64
					at 18 °C	2.36	at 18 °C	2.36
			Minimum efficient water volume of the system	liters	80		80	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50		400/3/50	
			Maximum electricity consumption	A	30		12	
		Sound pressure level (cooling mode)	dB(A)	61		61		
		Sound pressure level (heating mode)	dB(A)	63		63		
Components and dimensions			Expansion vessel	liters	3		3	
			Maximum circulator pump head	kPa	(see H/Q graphs)		(see H/Q graphs)	
			Hydraulic connections	inches	G1"		G1"	
			Safety valve	bar	3		3	
			Weight	kg	138		144	
			Dimensions (H/W/D)	mm	878/1206/445		878/1206/445	
			Compressor type		Twin Rotary with vapour injection		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO <sub>2</sub> eq		R32/675 kg CO <sub>2</sub> eq	
			Quantity	kg	2.2		2.2	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.  
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

## CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

LWT [°C]	COOLING - Dry bulb outdoor air temperature in °C - (AG4HP141PH)																	
	10		15		20		25		30		35		40		45		48	
	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	12.69	5.12	12.08	4.62	11.57	4.14	10.96	3.67	10.45	3.22	13.30	2.80	8.42	2.95	6.80	2.37	6.24	1.92
8	13.09	5.30	12.47	4.78	11.94	4.29	11.31	3.80	10.79	3.33	13.73	2.90	8.69	3.05	7.02	2.45	6.44	1.99
9	13.50	5.48	12.85	4.94	12.31	4.43	11.66	3.92	11.12	3.44	14.15	2.99	8.96	3.15	7.24	2.53	6.64	2.06
10	13.91	5.66	13.24	5.10	12.68	4.57	12.01	4.05	11.46	3.55	14.58	3.09	9.23	3.25	7.46	2.61	6.84	2.12
11	14.31	5.83	13.62	5.26	13.05	4.72	12.37	4.18	11.79	3.67	15.00	3.19	9.50	3.35	7.67	2.70	7.04	2.19
12	14.72	6.01	14.01	5.42	13.42	4.86	12.72	4.30	12.13	3.78	15.43	3.28	9.77	3.46	7.89	2.78	7.23	2.26
13	15.12	6.19	14.40	5.58	13.79	5.00	13.07	4.43	12.46	3.89	15.85	3.38	10.04	3.56	8.11	2.86	7.43	2.32
14	15.53	6.36	14.78	5.74	14.16	5.15	13.42	4.56	12.80	4.00	16.28	3.48	10.31	3.66	8.33	2.94	7.63	2.39
15	15.94	6.54	15.17	5.90	14.53	5.29	13.77	4.68	13.13	4.11	16.70	3.57	10.58	3.76	8.55	3.02	7.83	2.46
18	17.08	7.07	16.26	6.38	15.57	5.72	14.75	5.06	14.07	4.44	13.70	4.57	11.34	4.07	9.16	3.27	8.40	2.66
20	17.97	7.42	17.10	6.69	16.38	6.00	15.52	5.31	14.80	4.66	18.83	4.05	11.93	4.27	9.63	3.43	8.83	2.79
23	19.11	7.95	18.19	7.17	17.43	6.43	16.51	5.69	15.74	5.00	20.03	4.34	12.68	4.57	10.25	3.67	9.39	2.99
25	19.84	8.30	18.89	7.49	18.10	6.72	17.14	5.94	16.35	5.22	20.80	4.54	13.17	4.77	10.64	3.84	9.75	3.12

LWT [°C]	HEATING - Dry bulb outdoor air temperature in °C																											
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	6.22	2.01	6.66	2.37	7.99	2.72	8.73	3.20	9.62	3.55	10.80	4.05	11.69	4.50	14.06	5.80	14.48	5.94	16.19	6.46	11.50	7.60	12.60	8.05	12.22	8.53	13.20	8.86
30	6.36	1.85	6.81	2.17	8.14	2.50	8.88	2.93	9.77	3.26	10.95	3.72	11.84	4.13	14.20	5.32	14.63	5.45	16.33	5.93	11.59	6.98	12.70	7.39	12.30	7.83	13.28	8.13
35	6.36	1.65	6.81	1.94	8.14	2.23	8.88	2.62	9.77	2.91	10.95	3.32	11.84	3.69	14.20	4.75	14.63	4.87	16.33	5.30	11.59	6.23	12.70	6.60	12.30	6.99	13.28	7.26
40	6.36	1.45	6.81	1.71	8.14	1.96	8.88	2.30	9.77	2.56	10.95	2.92	11.84	3.24	14.20	4.18	14.63	4.28	16.33	4.66	11.59	5.49	12.70	5.81	12.30	6.16	13.28	6.39
45	6.36	1.32	6.81	1.55	8.14	1.78	8.88	2.10	9.77	2.33	10.95	2.66	11.84	2.95	14.20	3.70	14.63	3.90	16.33	4.24	11.59	4.99	12.70	5.28	12.30	5.60	13.28	5.81
50			6.66	1.40	7.99	1.61	8.73	1.89	9.62	2.10	10.80	2.39	11.69	2.65	14.06	3.42	14.48	3.51	16.19	3.81	11.50	4.49	12.60	4.75	12.22	5.04	13.15	5.23
55					7.99	1.41	8.73	1.65	9.62	1.83	10.80	2.09	11.69	2.32	13.80	2.95	14.48	3.07	16.19	3.34	11.50	3.93	12.60	4.16	12.22	4.41	13.15	4.58
60							9.47	1.63	10.66	1.86	11.54	2.06			13.92	2.66	14.33	2.73	16.00	2.97	11.36	3.49	12.44	3.70	12.05	3.92	13.02	4.07
65															13.77	2.38	14.19	2.43	15.84	2.65	11.24	3.12						

LWT [°C]	HEATING - Dry bulb outdoor air temperature in °C - (AG4HP143PH)																											
	-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25	6.22	1.93	6.66	2.27	7.99	2.61	8.73	3.06	9.62	3.40	10.80	3.89	11.69	4.31	14.06	5.61	14.48	5.75	16.19	6.26	11.50	7.30	12.60	7.73	12.22	8.18	13.20	8.50
30	6.36	1.77	6.81	2.08	8.14	2.40	8.88	2.81	9.77	3.12	10.95	3.57	11.84	3.96	14.20	5.15	14.63	5.28	16.33	5.74	11.59	6.70	12.70	7.10	12.30	7.51	13.28	7.80
35	6.36	1.58	6.81	1.86	8.14	2.14	8.88	2.51	9.77	2.79	10.95	3.19	11.84	3.53	14.20	4.60	14.63	4.72	16.33	5.13	11.59	5.98	12.70	6.34	12.30	6.71	13.28	6.96
40	6.36	1.39	6.81	1.64	8.14	1.88	8.88	2.21	9.77	2.46	10.95	2.80	11.84	3.11	14.20	4.05	14.63	4.15	16.33	4.51	11.59	5.27	12.70	5.58	12.30	5.90	13.28	6.13
45	6.36	1.26	6.81	1.49	8.14	1.71	8.88	2.01	9.77	2.23	10.95	2.55	11.84	2.83	14.20	3.70	14.63	3.77	16.33	4.10	11.59	4.79	12.70	5.07	12.30	5.37	13.28	5.57
50			6.66	1.34	7.99	1.54	8.73	1.81	9.62	2.01	10.80	2.29	11.69	2.54	14.06	3.31	14.48	3.39	16.19	3.69	11.50	4.31	12.60	4.56	12.22	4.83	13.15	5.01
55					7.99	1.35	8.73	1.58	9.62	1.76	10.80	2.01	11.69	2.23	13.80	2.85	14.48	2.97	16.19	3.23	11.50	3.77	12.60	3.99	12.22	4.23	13.15	4.39
60							9.47	1.56	10.66	1.78	11.54	1.98			13.92	2.58	14.33	2.64	16.00	2.87	11.36	3.35	12.44	3.55	12.05	3.76	13.02	3.90
65															13.77	2.30	14.19	2.36	15.84	2.56	11.24	2.99						

LWT [°C]	COOLING - Dry bulb outdoor air temperature in °C																	
	10		15		20		25		30		35		40		45		48	
	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7	12.69	5.12	12.08	4.62	11.57	4.14	10.96	3.67	10.45	3.22	13.30	2.80	8.42	2.80	6.80	2.25	6.24	1.83
8	13.09	5.30	12.47	4.78	11.94	4.29	11.31	3.80	10.79	3.33	13.73	2.90	8.69	2.89	7.02	2.33	6.44	1.89
9	13.50	5.48	12.85	4.94	12.31	4.43	11.66	3.92	11.12	3.44	14.15	2.99	8.96	2.99	7.24	2.41	6.64	1.96
10	13.91	5.66	13.24	5.10	12.68	4.57	12.01	4.05	11.46	3.55	14.58	3.09	9.23	3.09	7.46	2.49	6.84	2.02
11	14.31	5.83	13.62	5.26	13.05	4.72	12.37	4.18	11.79	3.67	15.00	3.19	9.50	3.18	7.67	2.56	7.04	2.08
12	14.72	6.01	14.01	5.42	13.42	4.86	12.72	4.30	12.13	3.78	15.43	3.28	9.77	3.28	7.89	2.64	7.23	2.15
13	15.12	6.19	14.40	5.58	13.79	5.00	13.07	4.43	12.46	3.89	15.85	3.38	10.04	3.38	8.11	2.72	7.43	2.21
14	15.53	6.36	14.78	5.74	14.16	5.15	13.42	4.56	12.80	4.00	16.28	3.48	10.31	3.47	8.33	2.80	7.63	2.27
15	15.94	6.54	15.17	5.90	14.53	5.29	13.77	4.68	13.13	4.11	16.70	3.57	10.58	3.57	8.55	2.88	7.83	2.34
18	17.08	7.07	16.26	6.38	15.57	5.72	14.75	5.06	14.07	4.44	13.90	4.19	11.34	3.86	9.16	3.11	8.40	2.53
20	17.97	7.42	17.10	6.69	16.38	6.00	15.52	5.31	14.80	4.66	18.83	4.05	11.93	4.05	9.63	3.26	8.83	2.65
23	19.11	7.95	18.19	7.17	17.43	6.43	16.51	5.69	15.74	5.00	20.03	4.34	12.68	4.34	10.25	3.50	9.39	2.84
25	19.84	8.30	18.89	7.49	18.10	6.72	17.14	5.94	16.35	5.22	20.80	4.54	13.17	4.53	10.64	3.65	9.75	2.97

LWT: Leaving water temperature  
Qh: Heating capacity  
COP: Coefficient of performance

LWT: Leaving water temperature  
Qc: Cooling capacity  
EER: Energy efficiency ratio

# TECHNICAL DATA FOR 8-10-12-14-16 kW

Model				AG4HP161PH		AG4HP163PH		
Matchable units for domestic hot water production (DHW)				200/300 liters external tank with diverting valve		200/300 liters external tank with diverting valve		
				Cooling	Heating	Cooling	Heating	
COMFORT IN ENVIRONMENT	Performance according to EN 14511	Air +35 °C - Water 23/18 °C Air +7 °C - Water 30/35 °C	Rated capacity	kW	15.50	15.70	15.40	15.70
			Rated electrical power input	kW <sub>el</sub>	3.60	3.45	4.05	3.57
			EER/COP		4.31	4.55	3.80	4.40
	Performance according to EN 14825	LOW TEMPERATURE (35 °C) AVERAGE climate	Rated capacity	kW	13.80	16.20	13.80	16.20
			Rated electrical power input	kW <sub>el</sub>	5.09	4.49	5.09	4.49
			EER/COP		2.71	3.61	2.71	3.61
COMFORT IN ENVIRONMENT	Performance according to Ecodesign (ERP) EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	14		13	
			Seasonal energy efficiency $\eta_s$	%	184		179	
			Energy efficiency class		A+++		A+++	
	Performance according to EN 14825	MEDIUM TEMPERATURE (55 °C) AVERAGE climate	Design thermal load (P <sub>design,h</sub> )	kW	14		14	
			Seasonal energy efficiency $\eta_s$	%	144		138	
			Energy efficiency class		A++		A++	
DHW	DHW performance according to EN 16147	With 300 liters tank and diverting valve AVERAGE climate	Load profile		XL		XL	
			Energy efficiency class		A		A	
			ERP efficiency	%	110		110	
Unit operation data			Maximum delivery water temperature	°C	Up to 65		Up to 65	
			Outdoor temperature range (heating)	°C	-25/+35		-25/+35	
			Outdoor temperature range (cooling)	°C	-15/+48		-15/+48	
			Nominal water flow rate	m <sup>3</sup> /h	at 35 °C	2.70	at 35 °C	2.70
					at 45 °C	2.69	at 45 °C	2.69
					at 55 °C	2.58	at 55 °C	2.58
					at 7 °C	1.86	at 7 °C	1.86
					at 18 °C	2.67	at 18 °C	2.67
			Minimum efficient water volume of the system	liters	80		80	
			Power supply (Voltage/Phases/Frequency)	V/Ph/Hz	230/1/50		400/3/50	
			Maximum electricity consumption	A	30		12.5	
		Sound pressure level (cooling mode)	dB(A)	61		61		
		Sound pressure level (heating mode)	dB(A)	63		63		
Components and dimensions			Expansion vessel	liters	3		3	
			Maximum circulator pump head	kPa	(see H/Q graphs)		(see H/Q graphs)	
			Hydraulic connections	inches	G1"		G1"	
			Safety valve	bar	3		3	
			Weight	kg	138		144	
			Dimensions (H/W/D)	mm	878/1206/445		878/1206/445	
			Compressor type		Twin Rotary with vapour injection		Twin Rotary with vapour injection	
Refrigerant			Type and GWP		R32/675 kg CO <sub>2</sub> eq		R32/675 kg CO <sub>2</sub> eq	
			Quantity	kg	2.2		2.2	

The equipments described in this catalogue contain HFC R32-type fluorinated greenhouse gases.  
These products must be fitted by qualified staff pursuant to European regulations 303/2008 and 517/2014.

Data declared in accordance with REGULATION (EU) No. 811/2013 of 18 February 2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar devices, packages of combination heater, temperature control and solar devices, and with COMMISSION REGULATION (EU) No. 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters.

## CAPACITY AND EFFICIENCY DATA IN RELATION TO THE OUTDOOR TEMPERATURE ACCORDING TO THE EN14511-3:2018 STANDARD

		COOLING - Dry bulb outdoor air temperature in °C - (AG4HP161PH)																	
		10		15		20		25		30		35		40		45		48	
LWT [°C]		Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7		13.49	4.96	12.84	4.47	12.30	4.01	11.65	3.55	11.11	3.12	13.80	2.71	9.02	2.95	7.14	2.37	6.55	1.92
8		13.92	5.13	13.25	4.63	12.69	4.15	12.03	3.67	11.47	3.23	14.24	2.80	9.30	3.05	7.37	2.45	6.75	1.99
9		14.35	5.30	13.66	4.78	13.09	4.29	12.40	3.80	11.82	3.33	14.68	2.90	9.59	3.15	7.60	2.53	6.96	2.06
10		14.78	5.48	14.07	4.94	13.48	4.43	12.77	3.92	12.18	3.44	15.12	2.99	9.88	3.25	7.83	2.61	7.17	2.12
11		15.21	5.65	14.48	5.09	13.88	4.57	13.14	4.04	12.54	3.55	15.57	3.09	10.17	3.35	8.05	2.70	7.38	2.19
12		15.65	5.82	14.89	5.25	14.27	4.70	13.52	4.16	12.89	3.66	16.01	3.18	10.46	3.46	8.28	2.78	7.59	2.26
13		16.08	5.99	15.31	5.40	14.66	4.84	13.89	4.29	13.25	3.76	16.45	3.27	10.75	3.56	8.51	2.86	7.80	2.32
14		16.51	6.16	15.72	5.55	15.06	4.98	14.26	4.41	13.60	3.87	16.89	3.37	11.04	3.66	8.74	2.94	8.01	2.39
15		16.94	6.33	16.13	5.71	15.45	5.12	14.64	4.53	13.96	3.98	17.33	3.46	11.32	3.76	8.97	3.02	8.22	2.46
18		18.15	6.84	17.28	6.17	16.56	5.53	15.69	4.90	14.96	4.30	18.50	3.81	12.14	4.07	9.61	3.27	8.81	2.66
20		19.10	7.18	18.18	6.47	17.42	5.81	16.50	5.14	15.74	4.51	19.54	3.92	12.77	4.27	10.11	3.43	9.27	2.79
23		20.31	7.69	19.34	6.94	18.52	6.22	17.55	5.51	16.74	4.84	20.78	4.20	13.58	4.57	10.75	3.67	9.86	2.99
25		21.09	8.04	20.08	7.25	19.24	6.50	18.23	5.75	17.38	5.05	21.58	4.39	14.10	4.77	11.17	3.84	10.24	3.12

		HEATING - Dry bulb outdoor air temperature in °C																											
		-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]		Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25		6.64	2.00	7.11	2.35	8.53	2.70	9.32	3.18	10.27	3.53	11.53	4.03	12.48	4.47	15.54	5.55	16.01	5.69	17.90	6.19	11.75	7.53	12.88	7.98	13.11	8.42	14.17	8.74
30		6.79	1.84	7.27	2.16	8.69	2.48	9.48	2.92	10.43	3.24	11.69	3.70	12.64	4.10	15.70	5.10	16.17	5.22	18.06	5.68	11.84	6.91	12.97	7.32	13.20	7.73	14.26	8.03
35		6.79	1.64	7.27	1.93	8.69	2.22	9.48	2.60	10.43	2.89	11.69	3.30	12.64	3.66	15.70	4.55	16.17	4.66	18.06	5.07	11.84	6.17	12.97	6.54	13.20	6.90	14.26	7.17
40		6.79	1.44	7.27	1.70	8.69	1.95	9.48	2.29	10.43	2.54	11.69	2.91	12.64	3.22	15.70	4.00	16.17	4.10	18.06	4.46	11.84	5.43	12.97	5.75	13.20	6.08	14.26	6.31
45		6.79	1.31	7.27	1.54	8.69	1.77	9.48	2.08	10.43	2.31	11.69	2.64	12.64	2.93	16.20	3.61	16.17	3.73	18.06	4.06	11.84	4.94	12.97	5.23	13.20	5.52	14.26	5.73
50				7.11	1.39	8.53	1.60	9.32	1.87	10.27	2.08	11.53	2.38	12.48	2.64	15.54	3.28	16.01	3.36	17.90	3.65	11.75	4.45	12.88	4.71	13.11	4.97	14.11	5.16
55						8.53	1.40	9.32	1.64	10.27	1.82	11.53	2.08	12.48	2.31	15.40	2.90	16.01	2.94	17.90	3.20	11.75	3.89	12.88	4.12	13.11	4.35	14.11	4.52
60										10.11	1.62	11.38	1.85	12.32	2.05	15.39	2.55	15.85	2.61	17.69	2.84	11.61	3.46	12.71	3.66	12.94	3.87	13.97	4.01
65																15.23	2.28	15.69	2.33	17.51	2.54	11.49	3.09						

		HEATING - Dry bulb outdoor air temperature in °C - (AG4HP163PH)																											
		-25		-20		-15		-10		-7		-2		2		7		10		15		20		25		30		35	
LWT [°C]		Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP	Qh [kW]	COP
25		6.64	1.92	7.11	2.25	8.53	2.59	9.32	3.04	10.27	3.38	11.53	3.86	12.48	4.28	15.54	5.37	16.01	5.50	17.90	5.99	11.75	7.23	12.88	7.66	13.11	8.07	14.17	8.38
30		6.79	1.76	7.27	2.07	8.69	2.38	9.48	2.79	10.43	3.10	11.69	3.54	12.64	3.93	15.70	4.93	16.17	5.05	18.06	5.49	11.84	6.64	12.97	7.03	13.20	7.41	14.26	7.69
35		6.79	1.57	7.27	1.85	8.69	2.13	9.48	2.49	10.43	2.77	11.69	3.16	12.64	3.51	15.70	4.40	16.17	4.51	18.06	4.91	11.84	5.93	12.97	6.28	13.20	6.62	14.26	6.87
40		6.79	1.38	7.27	1.63	8.69	1.87	9.48	2.20	10.43	2.44	11.69	2.78	12.64	3.09	15.70	3.87	16.17	3.97	18.06	4.32	11.84	5.21	12.97	5.52	13.20	5.82	14.26	6.05
45		6.79	1.26	7.27	1.48	8.69	1.70	9.48	2.00	10.43	2.22	11.69	2.53	12.64	2.81	16.20	3.61	16.17	3.61	18.06	3.92	11.84	4.74	12.97	5.02	13.20	5.29	14.26	5.50
50				7.11	1.33	8.53	1.53	9.32	1.80	10.27	2.00	11.53	2.28	12.48	2.53	15.54	3.17	16.01	3.25	17.90	3.53	11.75	4.27	12.88	4.52	13.11	4.76	14.11	4.95
55						8.53	1.34	9.32	1.57	10.27	1.75	11.53	1.99	12.48	2.21	15.40	2.75	16.01	2.84	17.90	3.09	11.75	3.73	12.88	3.95	13.11	4.17	14.11	4.33
60										10.11	1.55	11.38	1.77	12.32	1.97	15.39	2.46	15.85	2.53	17.69	2.75	11.61	3.32	12.71	3.51	12.94	3.71	13.97	3.85
65																15.23	2.20	15.69	2.26	17.51	2.45	11.49	2.96						

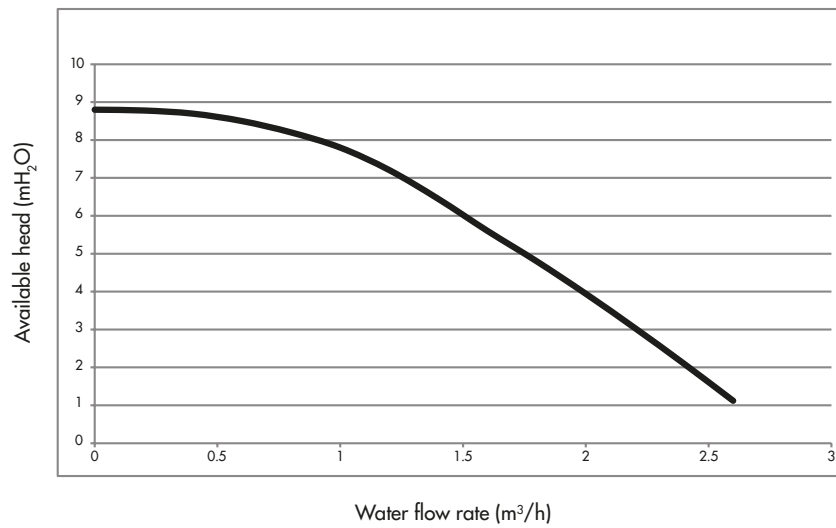
		COOLING - Dry bulb outdoor air temperature in °C																	
		10		15		20		25		30		35		40		45		48	
LWT [°C]		Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER	Qc [kW]	EER
7		13.49	4.96	12.84	4.47	12.30	4.01	11.65	3.55	11.11	3.12	13.80	2.71	9.02	2.25	7.14	1.73	6.55	1.41
8		13.92	5.13	13.25	4.63	12.69	4.15	12.03	3.67	11.47	3.23	14.24	2.80	9.30	2.33	7.37	1.80	6.75	1.46
9		14.35	5.30	13.66	4.78	13.09	4.29	12.40	3.80	11.82	3.33	14.68	2.90	9.59	2.41	7.60	1.85	6.96	1.51
10		14.78	5.48	14.07	4.94	13.48	4.43	12.77	3.92	12.18	3.44	15.12	2.99	9.88	2.48	7.83	1.91	7.17	1.56
11		15.21	5.65	14.48	5.09	13.88	4.57	13.14	4.04	12.54	3.55	15.57	3.09	10.17	2.56	8.05	1.97	7.38	1.60
12		15.65	5.82	14.89	5.25	14.27	4.70	13.52	4.16	12.89	3.66	16.01	3.18	10.46	2.64	8.28	2.03	7.59	1.65
13		16.08	5.99	15.31	5.40	14.66	4.84	13.89	4.29	13.25	3.76	16.45	3.27	10.75	2.72	8.51	2.09	7.80	1.70
14		16.51	6.16	15.72	5.55	15.06	4.98	14.26	4.41	13.60	3.87	16.89	3.37	11.04	2.79	8.74	2.15	8.01	1.75
15		16.94	6.33	16.13	5.71	15.45	5.12	14.64	4.53	13.96	3.98	17.33	3.46	11.32	2.87	8.97	2.21	8.22	1.80
18		18.15	6.84	17.28	6.17	16.56	5.53	15.69	4.90	14.96	4.30	18.50	3.80	12.14	3.10	9.61	2.39	8.81	1.94
20		19.10	7.18	18.18	6.47	17.42	5.81	16.50	5.14	15.74	4.51	19.54	3.92	12.77	3.26	10.11	2.51	9.27	2.04
23		20.31	7.69	19.34	6.94	18.52	6.22	17.55	5.51	16.74	4.84	20.78	4.20	13.58	3.49	10.75	2.69	9.86	2.19
25		21.09	8.04	20.08	7.25	19.24	6.50	18.23	5.75	17.38	5.05	21.58	4.39	14.10	3.64	11.17	2.81	10.24	2.28

LWT: Leaving water temperature  
Qh: Heating capacity  
COP: Coefficient of performance

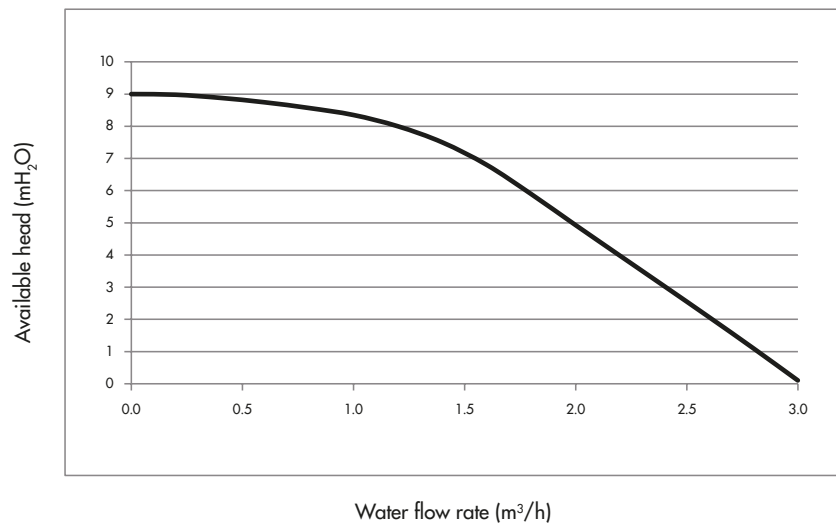
LWT: Leaving water temperature  
Qc: Cooling capacity  
EER: Energy efficiency ratio



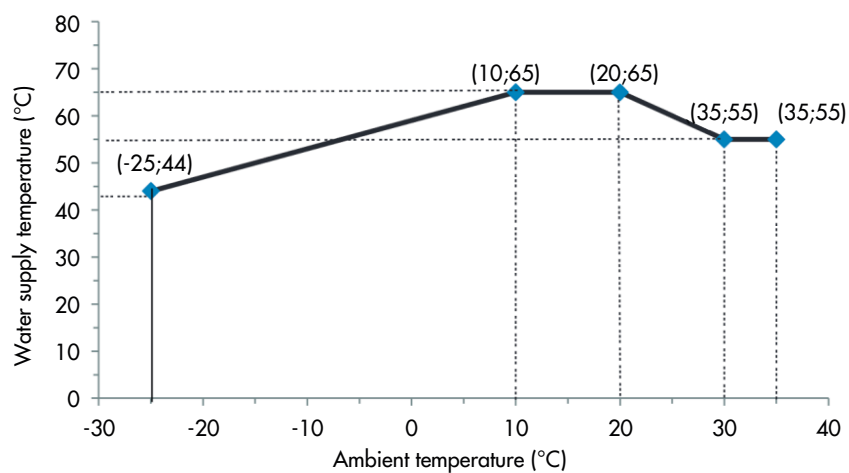
## FLOW RATE CURVES FOR 8-10 kW



## FLOW RATE CURVES FOR 12-14-16 kW

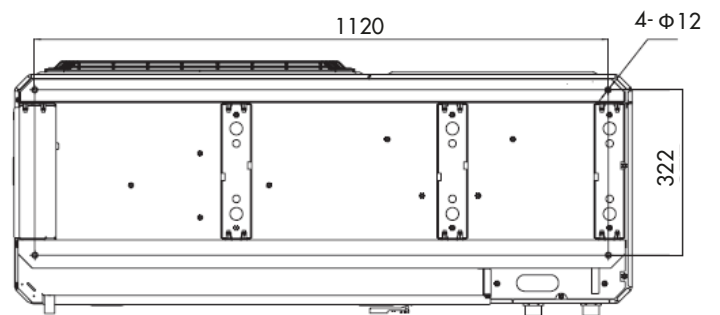
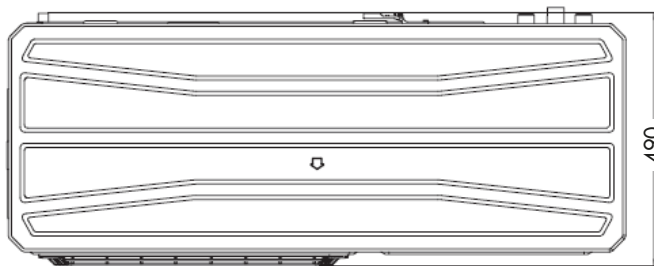
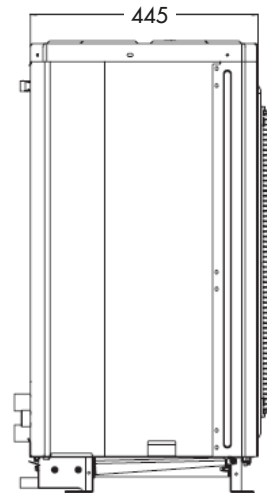
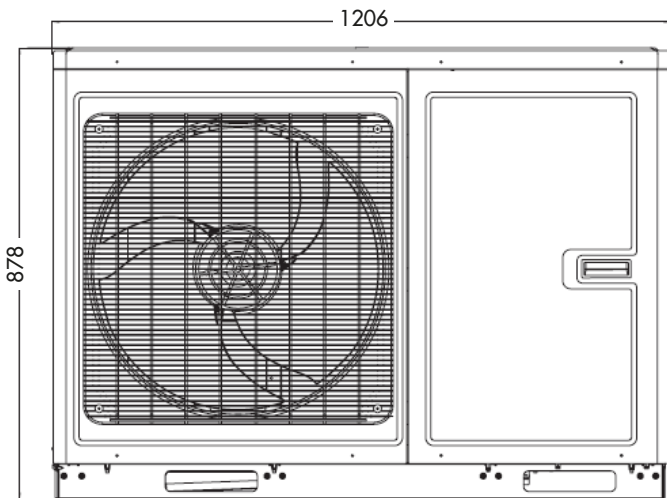


## MAXIMUM TEMPERATURE IN HEATING 8-10-12-14-16 kW

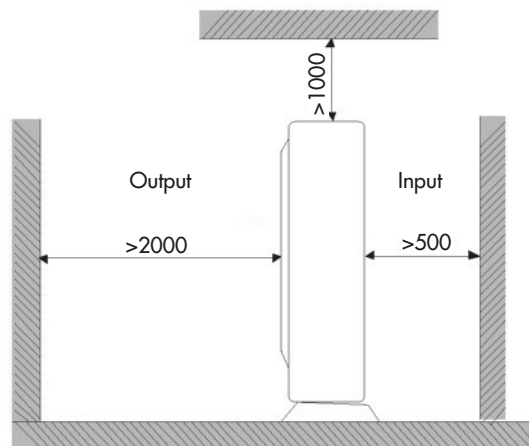
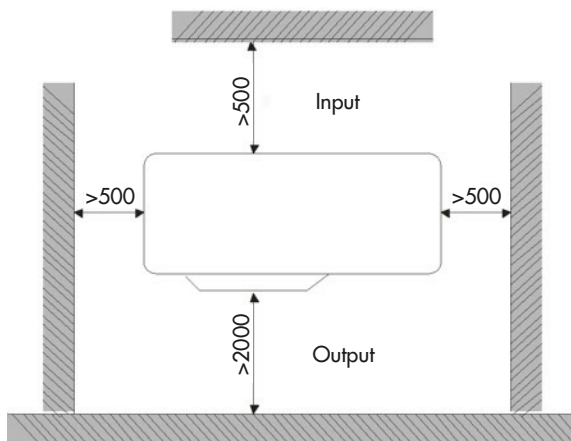


# DIMENSIONAL DRAWINGS 8-10-12-14-16 kW

HEAT PUMPS



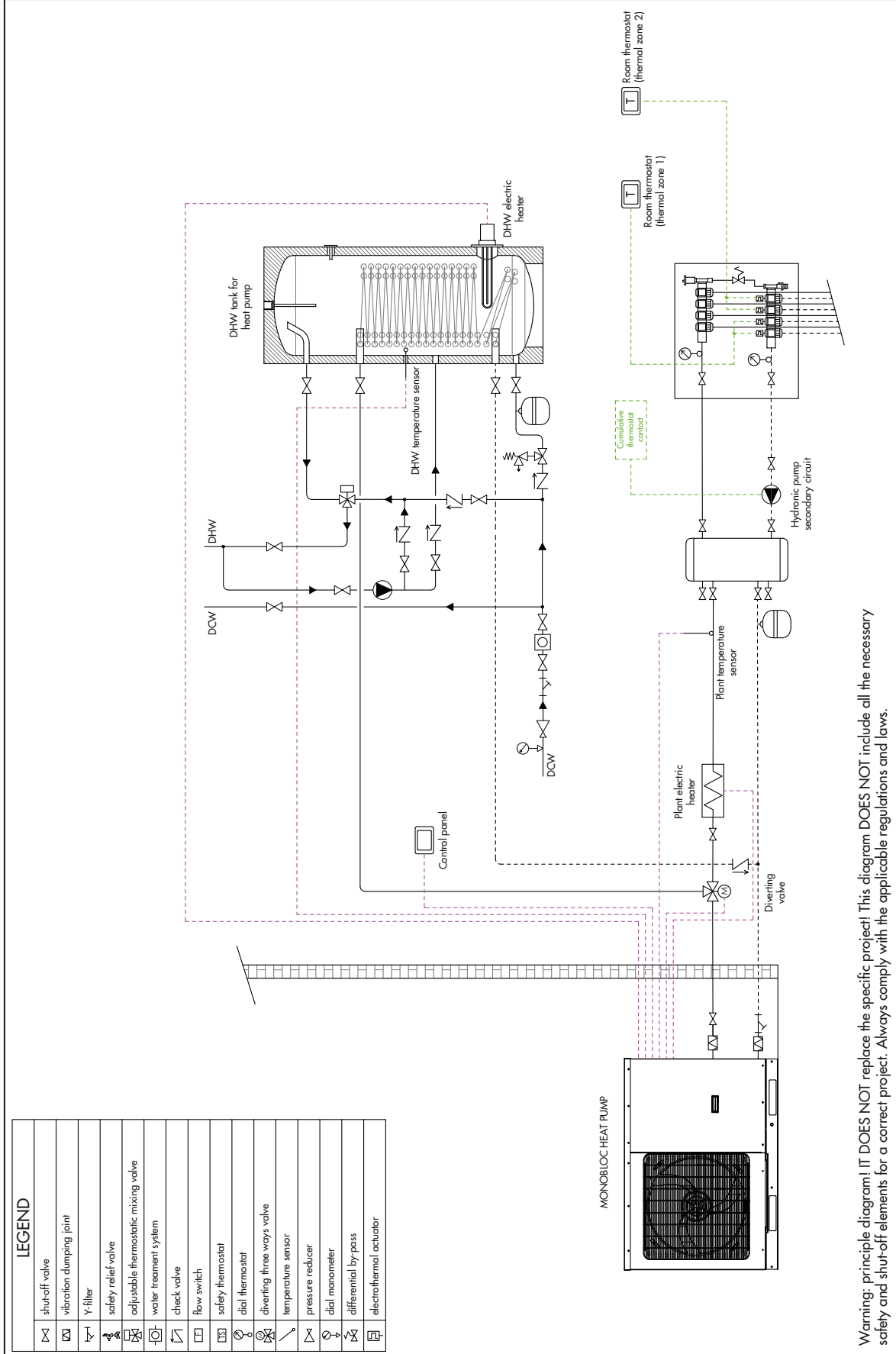
# SPACE REQUIRED FOR INSTALLATION 8-10-12-14-16 kW



# INSTALLATION EXAMPLES

## EXAMPLE 1

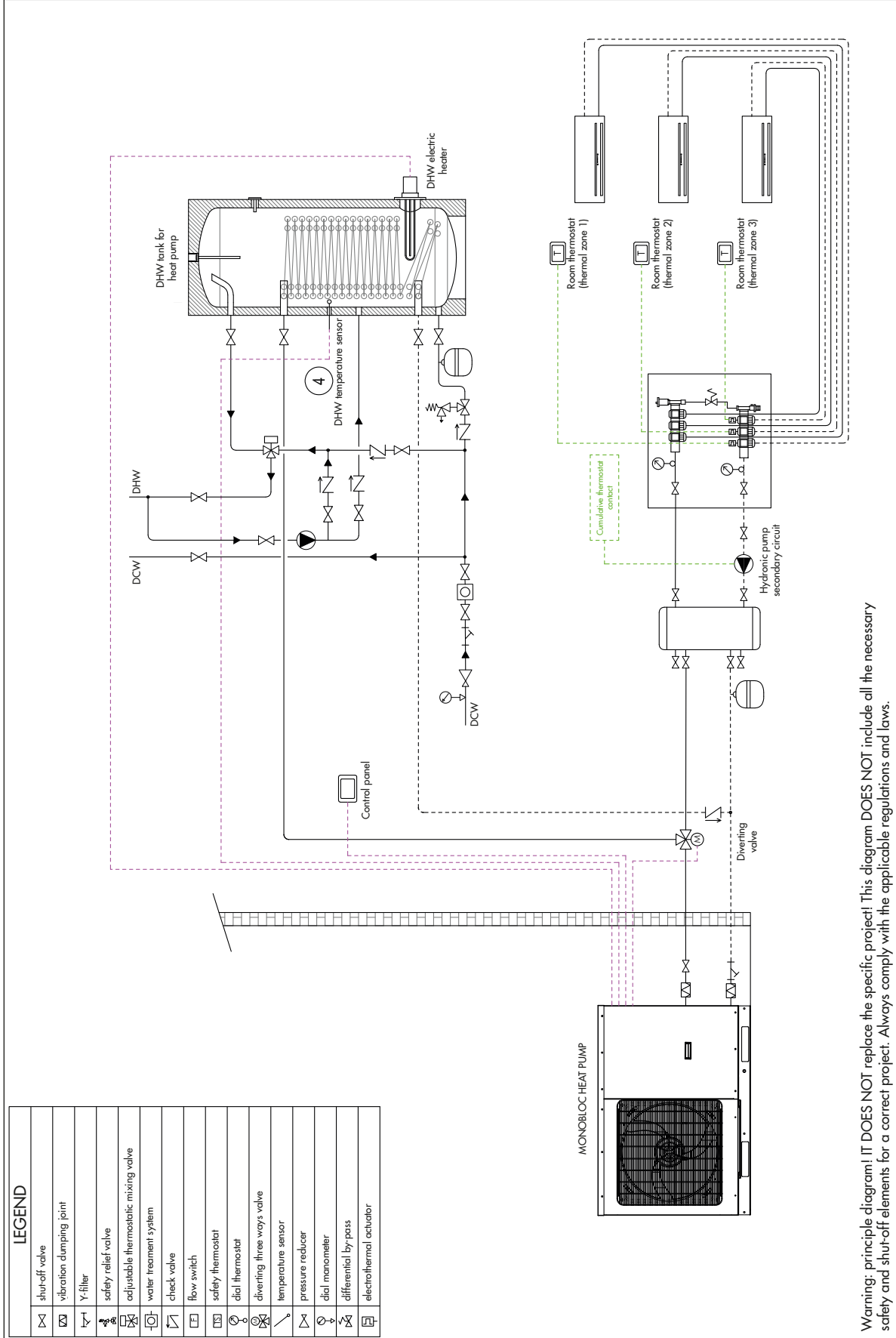
### Radiant heating and DHW with three-way valve and tank



# INSTALLATION EXAMPLES

## EXAMPLE 2

Heating (cooling) with fan coil units and DHW with three-way valve and tank

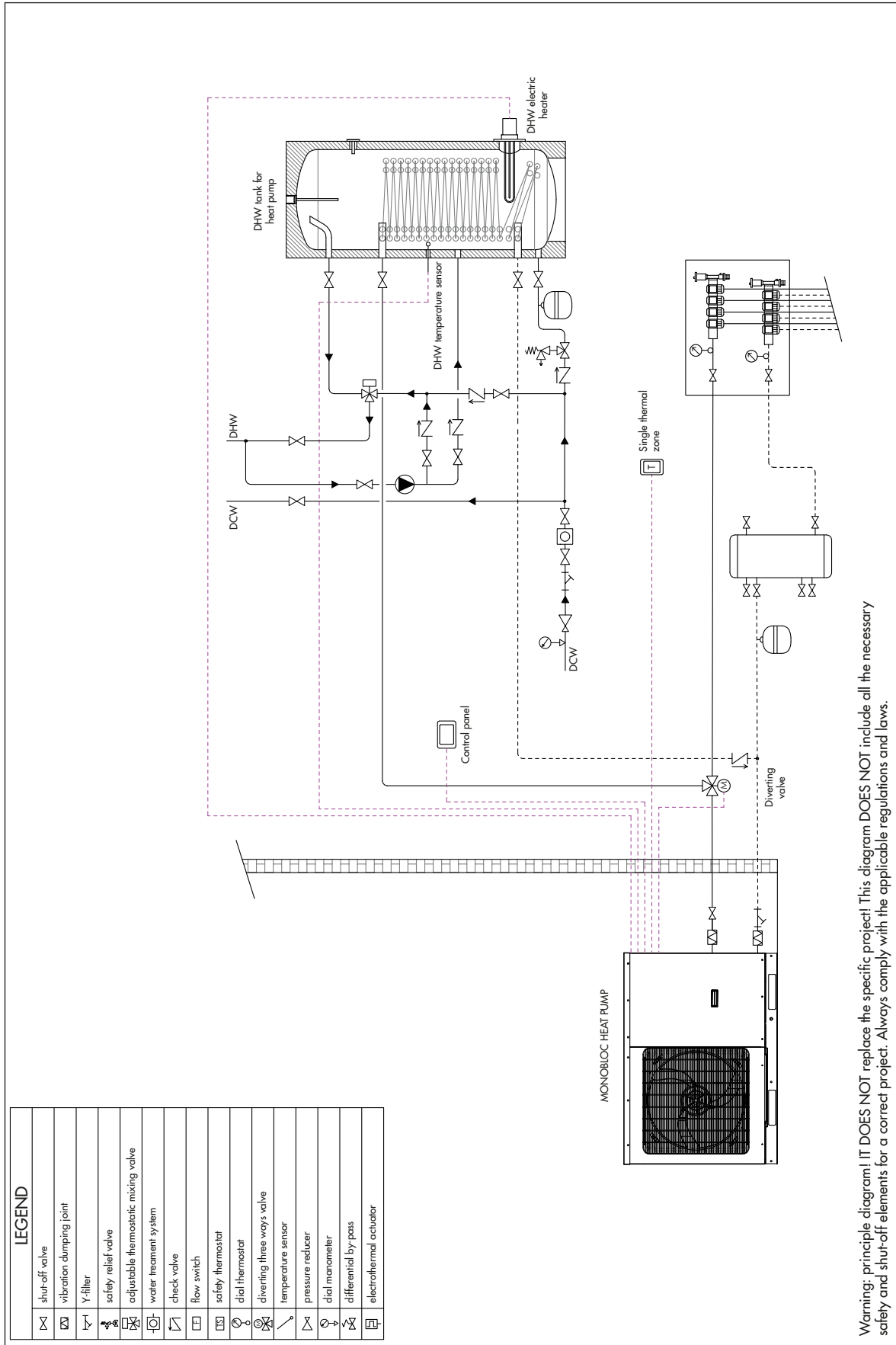


Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

# INSTALLATION EXAMPLES

## EXAMPLE 3

Radiant heating, single thermal zone and DHW with three-way valve and tank



LEGEND	
	shut-off valve
	vibration dumping joint
	Y-filler
	safety relief valve
	adjustable thermostatic mixing valve
	water treatment system
	check valve
	flow switch
	safety thermostat
	dial thermostat
	diverging three ways valve
	temperature sensor
	pressure reducer
	dial manometer
	differential bypass
	electrothermal actuator

Warning: principle diagram! IT DOES NOT replace the specific project! This diagram DOES NOT include all the necessary safety and shut-off elements for a correct project. Always comply with the applicable regulations and laws.

# INSTALLATION EXAMPLES

## EXAMPLE 4

Radiant heating, integration with gas boiler and DHW with three-way valve and tank

