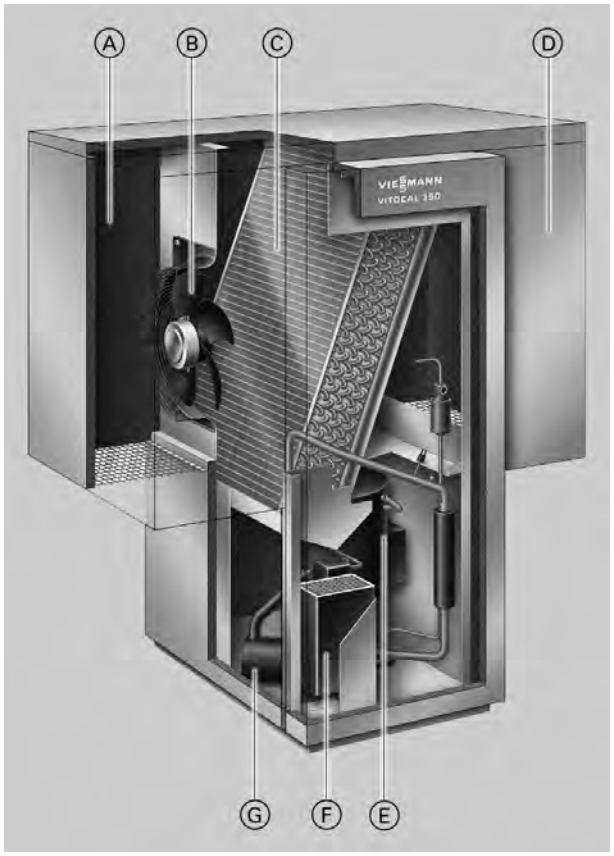
5.1 Product description



Ⓐ Outlet side
Ⓑ Fan
Ⓒ Evaporator
Ⓓ Inlet side
Ⓔ Hermetically sealed EVI Compliant scroll compressor
Ⓕ Condenser
Ⓖ Collector

- High operational reliability, safety and quiet running through scroll compressor.
- Also suitable for radiator heating systems and in particular for modernisation projects.
- Flow temperatures up to 65 °C, even with chilly outside temperatures.
- DHW heating up to 55 °C (subject to system version).
- Air as energy source: no installation of geothermal collectors or drilling of boreholes.
- Does not require permits (subject to location, approval by the local power supply utility is required).
- Installation inside or outside with matching accessories.
- Convenient heat pump control unit for wall mounting.
- High seasonal performance factors.
- High coefficient of performance up to 3.3 (air 2 °C, heating water flow temperature 35 °C).
- Suitable for all operating modes.
  Mono-mode heating operation:
  The heat pump alone provides all DHW and central heating.
  Dual-mode parallel heating operation:
  The heat pump operates in combination with a second heat source.
  Mono-energetic heating operation:
  The heat pump operates in combination with an electric instantaneous heating water heater.
- Hermetically sealed refrigerant circuit. For amount of refrigerant less than 6 kg, the annual inspection obligation does not apply.

Delivered condition

Complete heat pump in a compact design, attachments for indoor or outdoor installation packaged separately.
With electronic starting current limitation and a hot gas defrosting system with genuine on-demand defrosting. Low noise and low vibrations thanks to the double mounting of the compressor and the adjustable anti-vibration feet. Copper-soldered stainless steel plate-type heat exchanger (1.4401) for the heating circuit.
With weather-compensated, digital heat pump control unit CD 70 for wall mounting.
Optionally available for indoor (type AWI) or outdoor installation (type AWO); the colour is Vitosilver.
Order the hydraulic interconnecting lines required for the external installation separately (hydraulic connection set, accessories).

Note
To prevent damage to the device as a result of a compressor defect, do not tilt the heat pump more than 30° during transport.

Weather-compensated heat pump control unit CD 70

Digital heat pump control unit for wall mounting, for one heating circuit without mixer and one heating circuit with mixer. With cylinder temperature control for one DHW cylinder. For the control of an additional heat source in dual-mode, parallel operation (e.g. oil/gas fired boiler) and an instantaneous heating water heater. Menu-guided operation with plain text fault display. With diagnostic system and central fault message output. An outside temperature sensor, flow and return temperature sensors plus sensors for the primary inlet and outlet are part of the standard delivery.
Order the required cables to the heat pump separately (accessories).

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Vitocal 350-A, type AWI and AWO (cont.)

Accessories
(subject to order, packed separately)
- Divicon heating circuit distributor
- Heating circuit pump
- Safety equipment block with safety assembly
- 3-way diverter valve R 1 and R 1¼"
- Instantaneous heating water heater
- Heating water buffer cylinder
- Plate-type heat exchanger
- Pipe DN 630, wall outlet and weather grille for routing air in case of internal installation
- Pipe DN 630, flexible and sound insulated. For routing air in case of internal installation in rooms where noise could be a problem
- Silencer hood for mounting on the external wall. In case of internal installation of the heat pump for reducing the inlet and outlet sound emission (in systems where noise could be a problem)
- Electrical cables for connecting the heat pump and the control unit (5, 15 and 30 m long)
- Hydraulic connection set for flexible routing under ground (5, 10, 15, 20 or 25 m long).
  For connecting the heat pump to the water system in the building (only required for external installations)
- Pipe liner with wall seal flange or wall seal ring for bringing the hydraulic connecting set pipes into the building
- Cylinder temperature sensor
- Remote control
- Contact temperature sensor
- Heating mixers
- Mixer motor
- DHW cylinder
- Electric immersion heater for DHW cylinder

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5.2 Specification

Vitocal 350-A	Type	AWI			AWO		
		110	114	120	110	114	120
Output data at 100 % to EN 255 (2/35 °C, 10 K spread)							
Rated heating output	kW	10.6	14.8	18.5	10.6	14.8	18.5
Refrigerating capacity	kW	7.4	10.7	12.7	7.4	10.7	12.7
Power consumption	kW	3.2	4.5	5.8	3.2	4.5	5.8
Coefficient of performance ∈ (COP)		3.3	3.3	3.2	3.3	3.3	3.2
Heat yield							
Fan power	W	190	230	480	190	230	480
Air volume	m^3/h	3500	4000	4500	3500	4000	4500
max. permiss. pressure drop (on the ventilation air and extracted air side)	Pa	36	48	65	–	–	–
Min. air temperature	°C			–20			
Max. air temperature	°C			35			
Defrost rating	kW	3.3	4.2	6.2	3.3	4.2	6.2
Proportion defrost time/runtime	%			7 to 17			
Heating water (secondary)							
Capacity	litres	3.3	3.8	4.0	3.3	3.8	4.0
Min. throughput *1	l/h	1150	1200	1800	1150	1200	1800
Pressure drop*2	mbar	125	125	242	52	52	83
Max. flow temperature	°C (A−20)			55			
	°C (A-5)			65			
Electrical values							
Heat pump							
Rated voltage				3/N/PE ~ 400 V/50 Hz			
Rated current (max.)	A	10.0	14.0	18.3	10.0	14.0	18.3
Starting current*3	A	23.0	26.0	30.0	23.0	26.0	30.0
Starting current (with stalled armature)	A	64.0	70.5	99.0	64.0	70.5	99.0
Fuse protection*4	A	3 x 20	3 x 20	3 x 25	3 x 20	3 x 20	3 x 25
Fan protection				6.3 A H slow			
Protection			IP 21			IP 24	
Control circuit rated voltage				230 V~ 50 Hz			
Control circuit protection				6.3 A H slow			
Refrigerant circuit							
Refrigerant				R 407 C			
Compressor	Type			Hermetically sealed scroll compressor with injection			
Dimensions							
Total length	mm	1070	1070	1095	1095	1095	1095
Total width	mm	870	870	910	1520	1520	1560
Total height	mm	1365	1365	1950	1370	1370	1940
Permissible operating pressure	bar			4			
Connections							
Heating flow and return				R 1"			
Weights							
Standard appliance	kg	205	210	325	205	210	325
Casing	kg	50	50	60	90	90	100
Total weight	kg	255	260	385	295	300	425
Sound power level							
Weighted total sound power level*5	dB(A)	57.5*6	60.0*6	66.0*6	66.0*7	70.0*7	73.0*7

*1 *Always safeguard the min. throughput.*

*2 *With the connection pipes supplied as part of the standard delivery.*

*3 *With electronic starting current limiter (full wave soft starter). Required for safeguarding the Z characteristics.*

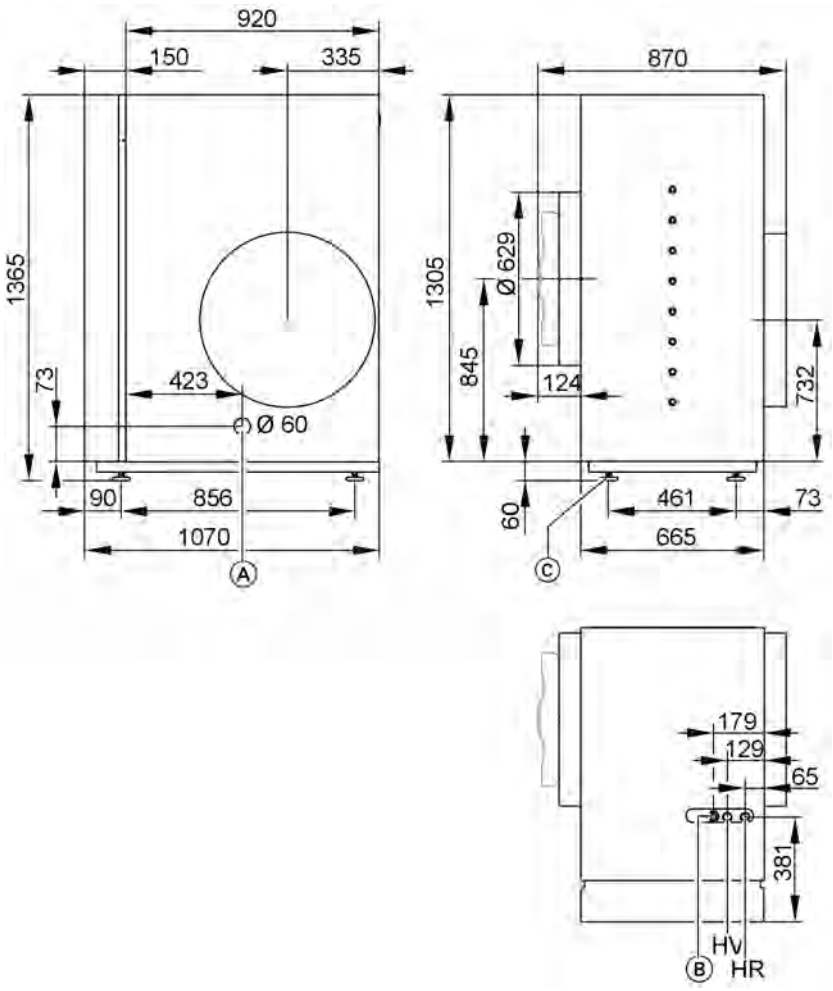
*4 *Z characteristic required.*

*5 *These measurements were taken in a semi-freestanding area under the following conditions: Inlet temperature 23 °C (±3 K); flow temperature 53 °C (±2 K).*

*6 *Test with reference to DIN EN ISO 3744.*

*7 *Test with reference to ISO 13261-1.*

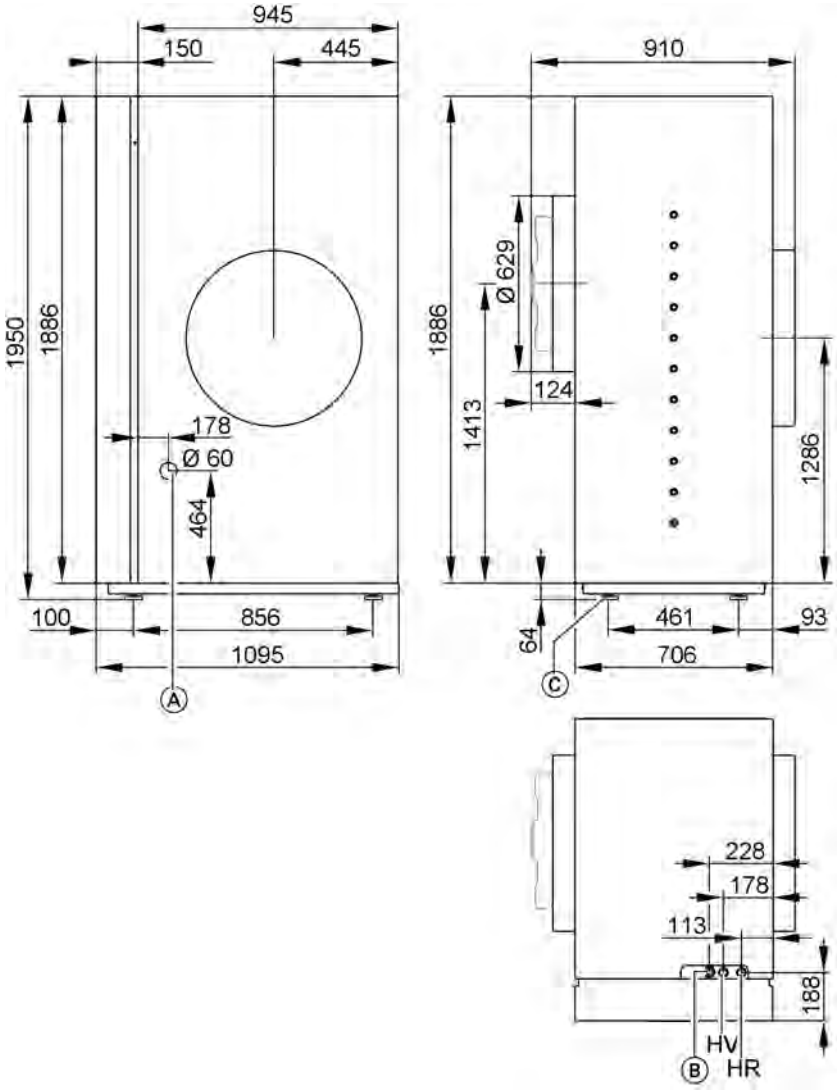
Dimensions for type AWI



Type AWI 110 and 114

Ⓐ Condensate drain hose aperture
Ⓑ Routing the power supply cable
Ⓒ Adjustable feet
HR Heating water return
HV Heating water flow

Note
To reduce the installation width to 665 mm, the fan can be removed.



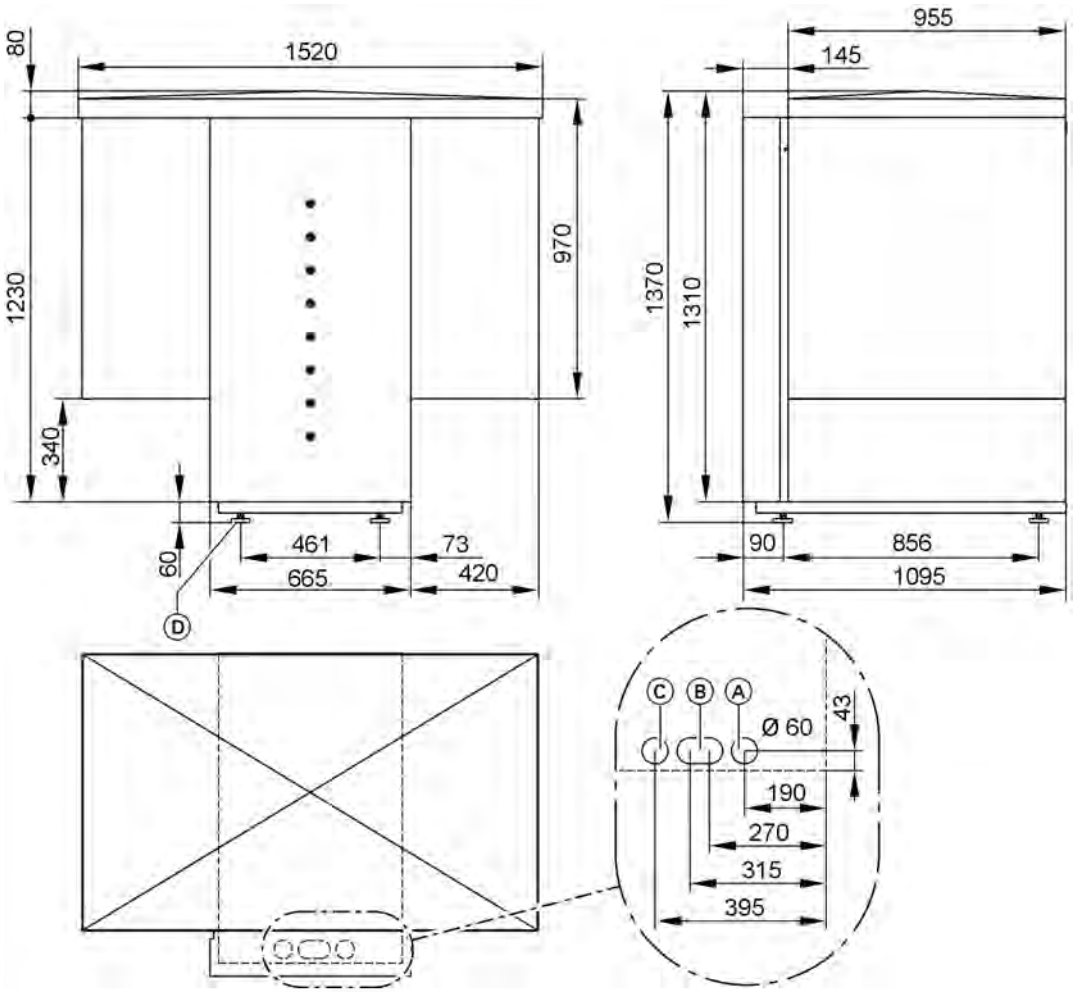
Type AWI 120

Ⓐ Condensate drain hose aperture
Ⓑ Routing the power supply cable
Ⓒ Adjustable feet

HR Heating water return
HV Heating water flow

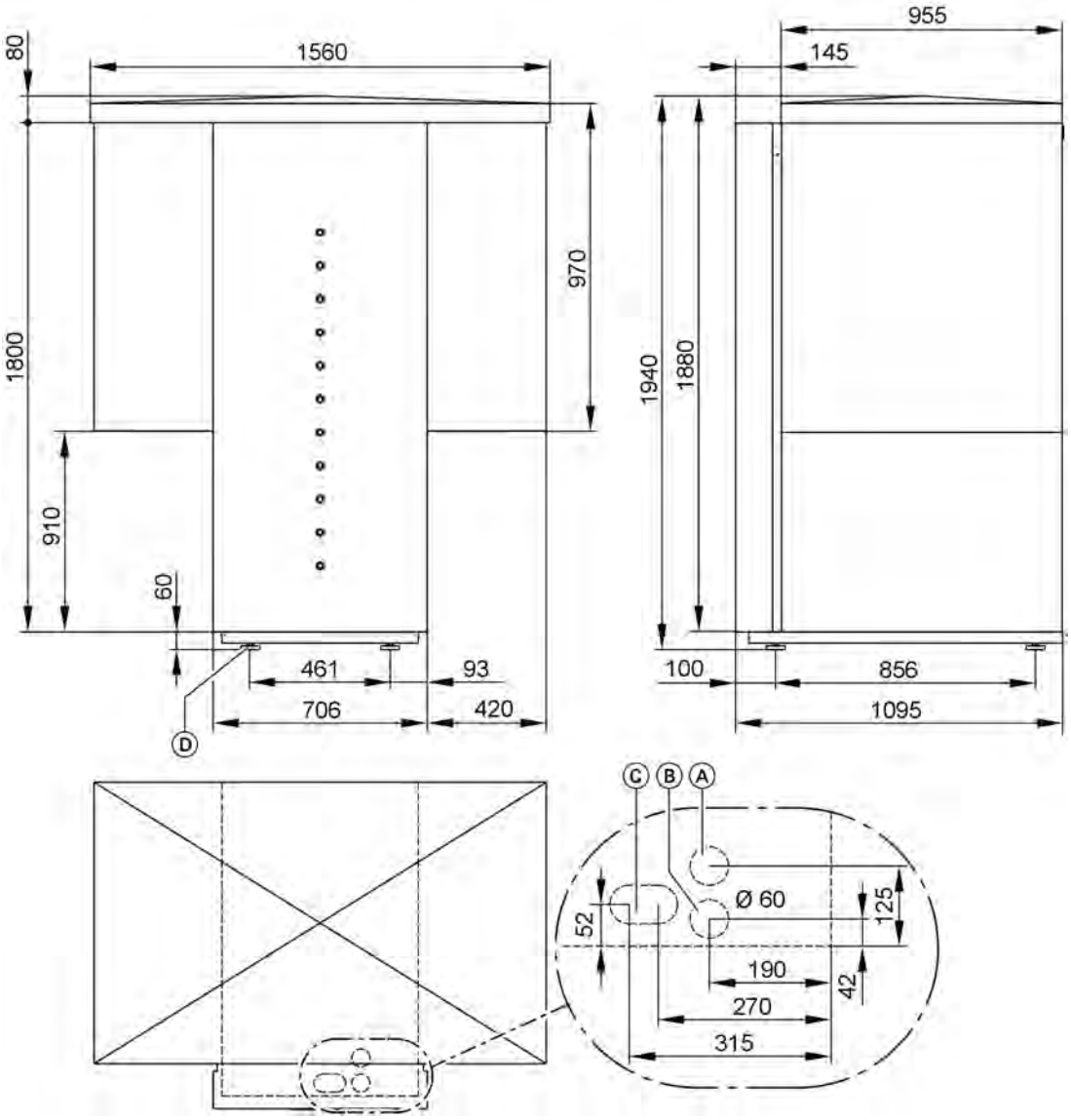
Note
To reduce the installation width to 706 mm, the fan can be removed.

Dimensions for type AWO



Type AWO 110 and 114

Ⓐ Power cable entry
Ⓑ Heating water flow entry **(left)** and heating water return **(right)**
Ⓒ Condensate drain hose aperture
Ⓓ Adjustable feet

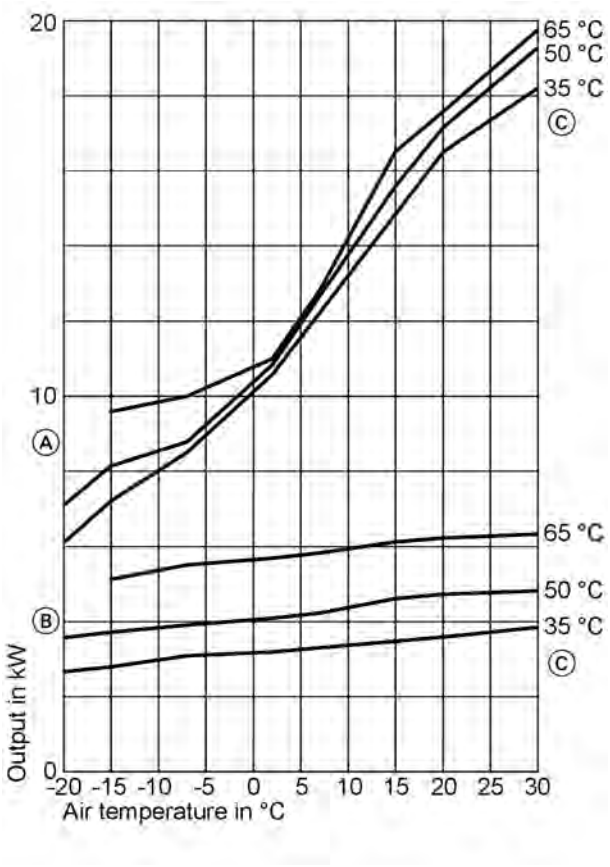


Type AWO 120

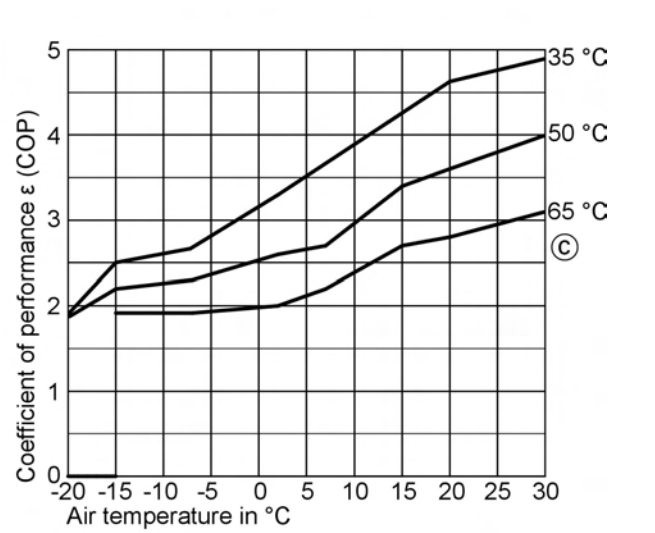
Ⓐ Condensate drain hose aperture
Ⓑ Power cable entry
Ⓒ Heating water flow entry **(right)** and heating water return **(left)**
Ⓓ Adjustable feet

Output diagrams*1

Type AWI/AWO 110



Ⓐ Heating output
Ⓑ Power consumption
Ⓒ Heating water flow temperatures T_{HV}



Ⓒ Heating water flow temperatures T_{HV}

Output data

Operating point		A2/W35	A-7/W50	A-7/W65
Heating output	kW	10.6	8.7	10.0
Power consumption	kW	3.2	3.9	5.5
Coefficient of performance ∈ (COP)		3.3	2.2	1.8

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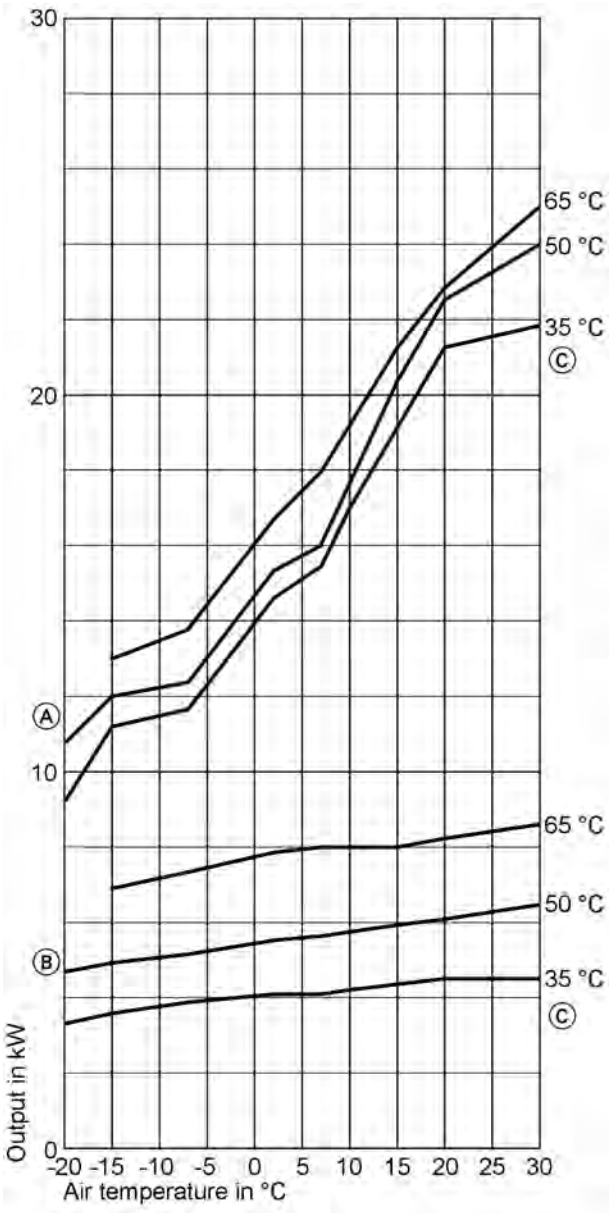
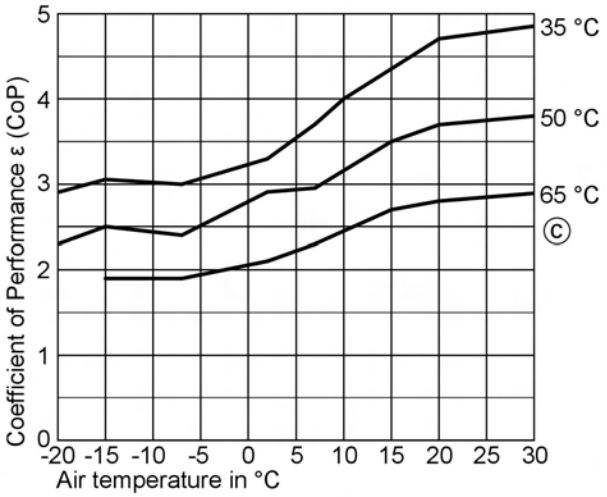
*1 *Data for the COP in tables and diagrams calculated with reference to DIN EN 255.*

Vitocal 350-A, type AWI and AWO (cont.)

Type AWI/AWO 114



Ⓐ Heating output
Ⓑ Power consumption
Ⓒ Heating water flow temperatures T_{HV}



Ⓒ Heating water flow temperatures T_{HV}

Output data

Operating point		A2/W35	A-7/W50	A-7/W65
Heating output	kW	14.8	12.4	13.8
Power consumption	kW	4.5	5.2	7.3
Coefficient of performance ε (COP)		3.3	2.4	1.9

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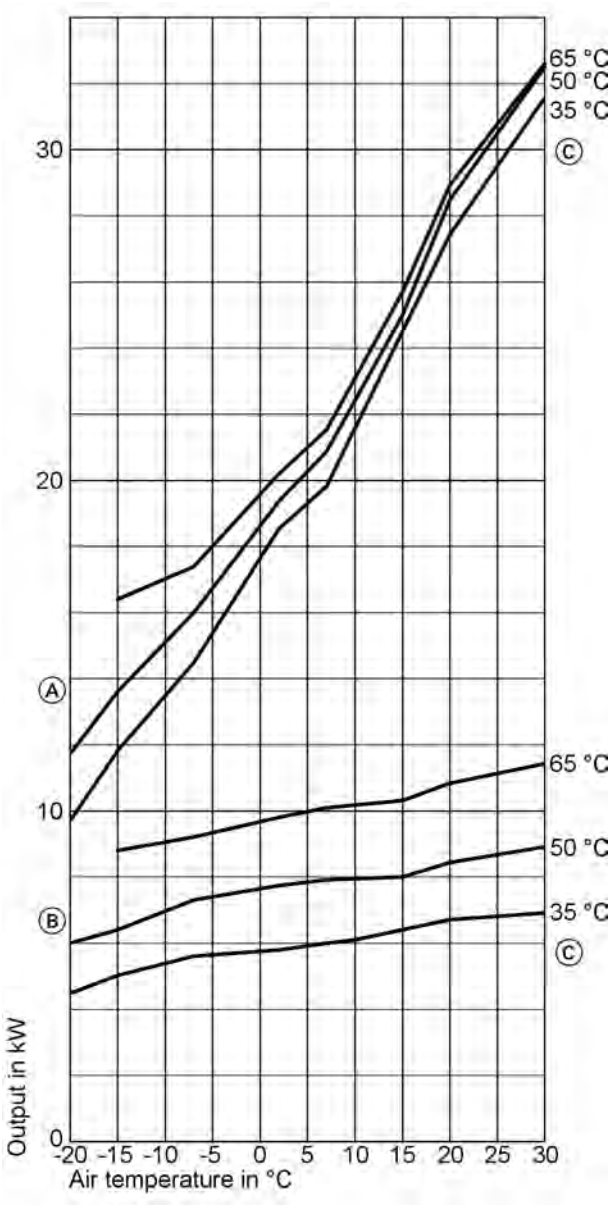
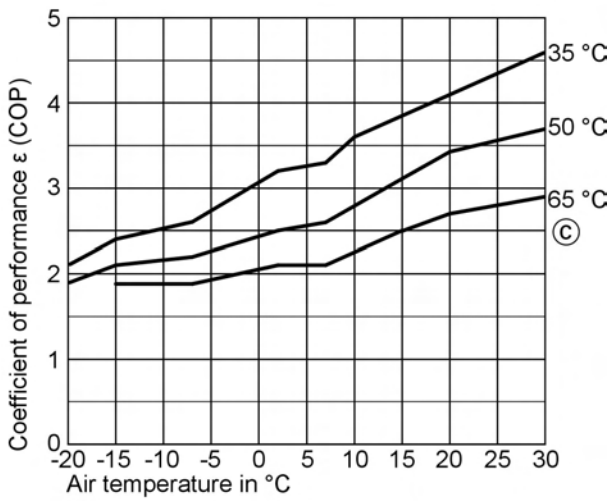
Type AWI/AWO 120



Ⓐ Heating output
Ⓑ Power consumption
Ⓒ Heating water flow temperatures T_{HV}



Ⓒ Heating water flow temperatures T_{HV}

Output data

Operating point		A2/W35	A-7/W50	A-7/W65
Heating output	kW	18.5	16.0	17.4
Power consumption	kW	5.8	7.2	9.2
Coefficient of performance ∈ (COP)		3.2	2.2	1.9

5