

Hoval Belaria® dual AR

Air/water heat pump

- Air/water heat pump in compact design for outdoor installation
- High energy efficiency
- Evaporator and refrigeration part are placed adjacent to one another. The refrigeration part is encapsulated with electrolytically galvanised, powder-coated and sound-insulated steel sheets. Colour light grey (RAL 7035)
- Covering made of sheet steel
Colour anthrazite (DB 703)
- Refrigerant interim injection. This permits flow temperatures from 65 °C up to an outdoor temperature of -20 °C
- With large-area, multi-row aluminium/copper ribbed pipe evaporator and copper-brazed plate-type condenser made from stainless steel
- Two electronic expansion valves for the highest efficiency and operational reliability
- Two speed-controlled axial fans made from high-strength composite material with vanes as a compact unit for low energy consumption and the lowest noise level
- Two separate refrigeration circuits in one casing
- Two electronic starting current limiters including phase and phase-sequence monitoring
- With cooling function through inversion of cycle
- Filled with refrigerant R410A, wired up internally ready for connection
- Electrical box for wall mounting inside the building with built-in TopTronic® E controller
- The electrical box is not included in the scope of delivery and must be ordered in addition as an accessory.
- Strainer ball valve installed
- Connecting hoses already fitted. Heating side pipework in the casing.

TopTronic® E controller

Control panel

- 4.3-inch colour touchscreen
- Heat generator blocking switch for interrupting operation
- Fault signalling lamp

TopTronic® E control module

- Simple, intuitive operating concept
- Display of the most important operating states
- Configurable start screen
- Operating mode selection
- Configurable day and week programmes
- Operation of all connected Hoval CAN bus modules
- Commissioning wizard
- Service and maintenance function
- Fault message management
- Analysis function
- Weather display (with online HovalConnect)
- Adaptation of the heating strategy based on the weather forecast (with online HovalConnect)



Seal of approval FWS
The Belaria® dual AR (60) series are certified by the seal of approval of the authorisation commission of Switzerland.

Model range

Belaria® dual AR

Type	Refrigerant		Max. flow °C	Heat output A2W35 kW		Cooling capacity A35W7 kW		
	35 °C	55 °C		Stage 1	Stage 2	Stage 1	Stage 2	
(60)	A ⁺⁺	A ⁺	2x R410A	65	25.1	50.3	24.6	49.2

TopTronic® E basic module heat generator (TTE-WEZ)

- Integrated control functions for
 - 1 heating/cooling circuit with mixer
 - 1 heating/cooling circuit without mixer
 - 1 DHW charging circuit
- Bivalent and cascade management
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- Rast5 basic plug set

Options for TopTronic® E controller

- Can be expanded by max. 1 module expansion:
 - Heating circuit module expansion or
 - Universal module expansion or
 - Heat balancing module expansion
- Can be networked with up to 16 controller modules in total:
 - Heating circuit/DHW module
 - Solar module
 - Buffer module
 - Measuring module

Number of additional modules that can be installed in the heat generator:

- 1 module expansion and 1 controller module **or**
- 2 controller modules

The supplementary plug set must be ordered in order to use expanded controller functions.

For further information about the TopTronic® E, see "Controls"

Condensate connection

- The discharge pipe must be configured with a sufficient slope and without a change of section
- The customer is responsible for providing the water connections and condensate discharge pipe outdoors and ensuring that they are protected against frost (see base plan)

Hydraulic connections

- Heating connections with flexible hoses downwards

Electrical connections

- Connection from below (see base plan)

Options

- Diffuser for sound reduction

Delivery

- One-piece design. Compact unit wired-up internally ready for connection.

Recommended accessories

- Continuous, speed-controlled high-efficiency pump

Air/water heat pump - 2-stage



Hoval Belaria® dual AR

Air/water heat pump with cooling function for outdoor installation without electrical box.

Delivery

One-piece design. Compact unit wired-up internally ready for connection.

Belaria® dual AR Type	Heat output for A2W35		Cooling capacity for A35W7	
	Stage 1	Stage 2	Stage 1	Stage 2
	kW		kW	
(60)	25.1	50.3	24.6	49.2

Part No.

7016 825

Notice

Corresponding charging pumps:

Hoval system pump set SPS-I with interface for pump control

Type 0–10 V or PWM1

Stratos premium pump

with IF module Stratos Ext. Off (0-10 V)

See “Circulating pumps”

The electrical box with built-in TopTronic® E controller must be ordered separately.

If the heat pump is ordered without electrical box, engineering must absolutely be performed by Hoval, otherwise it will not be taken into operation.

Energy efficiency class

See Description

Notice

An energy buffer accumulator must be provided.

Matching energy buffer storage tanks see “Calorifiers”

Accessories



Electrical box

for wall installation in building interiors with built-in Hoval TopTronic® E controller
 Integrated control functions for
 - 1 heating/cooling circuit with mixer
 - 1 heating/cooling circuit without mixer
 - 1 DHW charging circuit
 - Bivalent and cascade management
 • Option of extending by max. 1 module extension:
 - heating circuit module extension or
 - heat balancing module extension or
 - universal module extension
 • Option of networking with up to 16 controller modules (incl. solar module)
 Incl. outdoor sensor, immersion sensor (calorifier sensor), contact sensor (flow temperature sensor) and RAST 5 basic connector set

Part No.

6046 330



Flow rate sensor sets

Plastic housing

Size	Connection	Flow rate l/min
DN 8	G 3/4"	0.9-15
DN 10	G 3/4"	1.8-32
DN 15	G 1"	3.5-50
DN 20	G 1 1/4"	5-85
DN 25	G 1 1/2"	9-150

6038 526
 6038 507
 6038 508
 6038 509
 6038 510



Brass housing

Size	Connection	Flow rate l/min
DN 10	G 1"	2-40
DN 32	G 1 1/2"	14-240

6042 949
 6042 950

Hoval recommendation

Recommended use	Installation site	Part. No.
dual AR (60)	Inside the HP	6042 950

Notice

With the help of flow rate sensors and further technical measures, the heating circuit freezing can be prevented up to approx. -6 °C. In order to protect the heat pump from frost in the event of a power failure or for example in bivalence mode, a system separation or other technical measures must be provided on site. The flow rate sensor set must be installed inside the heat pump.



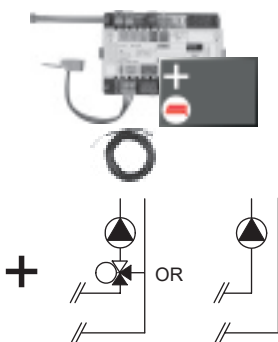
Set vibration-damping adjustable feet 55/65
for Belaria® dual AR (60)
for reducing the transmission
of solid-borne noise
Set comprises 4 vibration
damping feet, threaded rod
and lock nut
Material elastomer part: NR, black
Material housing: galvanised steel,
chromated

Recommended accessory:
**High-efficiency pump with
continuously variable speed control**

Part No.

6040 854

TopTronic® E module expansions
for TopTronic® E basic module heat generator



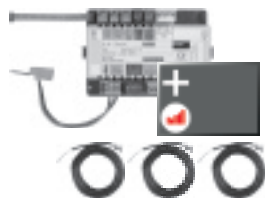
**TopTronic® E module expansion
heating circuit TTE-FE HK**
Expansion to the inputs and outputs of the
basic module heat generator or the heating
circuit/domestic hot water module for imple-
menting the following functions:
- 1 heating circuit without mixer or
- 1 heating circuit with mixer

incl. fitting accessories
1x contact sensor ALF/2P/4/T L = 4.0 m

Can be installed in:
Boiler control, wall housing, control panel

6034 576

Notice
The supplementary plug set may have
to be ordered to implement functions
differing from the standard!



**TopTronic® E module expansion heating
circuit incl. energy balancing TTE-FE HK-EBZ**
Expansion to the inputs and outputs of the ba-
sic module heat generator or the heating cir-
cuit/domestic hot water module for implemen-
ting the following functions:
- 1 heating/cooling circuit w/o mixer or
- 1 heating/cooling circuit with mixer
in each case incl. energy balancing

incl. fitting accessories
3x contact sensor ALF/2P/4/T L = 4.0 m

Can be installed in:
Boiler control, wall housing, control panel

6037 062

Notice
The flow rate sensor set
must be ordered as well.



**TopTronic® E module expansion Universal
TTE-FE UNI**
Expansion to the inputs and outputs of a con-
troller module (basic module heat generator,
heating circuit/domestic hot water module, so-
lar module, buffer module) for implementing
various functions

incl. fitting accessories

Can be installed in:
Boiler control, wall housing, control panel

6034 575

Notice
Refer to the Hoval System Technology
to find which functions and hydraulic
arrangements can be implemented.

Further information
see "Controls" - "Hoval TopTronic® E
module expansions" chapter

Accessories for TopTronic® E



HovalConnect available from mid-2020
Up to that point, TopTronic® E online is delivered.



Supplementary plug set

for basic module heat generator (TTE-WEZ)
for controller modules and module expansion
TTE-FE HK

TopTronic® E controller modules

TTE-HK/WW TopTronic® E heating circuit/
hot water module
TTE-SOL TopTronic® E solar module
TTE-PS TopTronic® E buffer module
TTE-MWA TopTronic® E measuring module

TopTronic® E room control modules

TTE-RBM TopTronic® E room control modules
easy white
comfort white
comfort black

Enhanced language package TopTronic® E

one SD card required per control module
Consisting of the following languages:
HU, CS, SL, RO, PL, TR, ES, HR, SR, JA, DA

HovalConnect

HovalConnect LAN
HovalConnect WLAN

TopTronic® E interface modules

GLT module 0-10 V
HovalConnect Modbus
HovalConnect KNX

TopTronic® E wall casing

WG-190 Wall casing small
WG-360 Wall casing medium
WG-360 BM Wall casing medium with
control module cut-out
WG-510 Wall casing large
WG-510 BM Wall casing large with
control module cut-out

TopTronic® E sensors

AF/2P/K Outdoor sensor
TF/2P/5/6T Immersion sensor, L = 5.0 m
ALF/2P/4/T Contact sensor, L = 4.0 m
TF/1.1P/2.5S/6T Collector sensor, L = 2.5 m

System housing

System housing 182 mm
System housing 254 mm

Bivalent switch

Outdoor sensor, immersion sensor and
contact sensor supplied with the heat pump.

Further information
see "Controls"

Part No.

6034 499
6034 503

6034 571
6037 058
6037 057
6034 574

6037 071
6037 069
6037 070

6039 253

6049 496
6049 498

6034 578
6049 501
6049 593

6035 563
6035 564
6035 565
6035 566
6038 533

2055 889
2055 888
2056 775
2056 776

6038 551
6038 552

2061 826

Accessories



**Protective pipe immersion sleeve
SB 280 1/2"**

brass nickel-plated
PN10, 280 mm



Trace heating tape

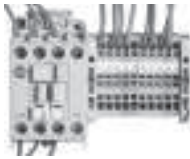
for heating a condensate
drainage pipe (on site)
and a condensate drip tray KWD
with thermostat and microfuses
Output: 40-80 W, 230 V
Length: cable 1.5 m; heating tape 2 m



Screw-in electrical heating inset

for plants with energy buffer storage tank
as emergency heating.
Control set must be ordered.

Type	Heat output [kW]	Installation depth [mm]
EP 2.5	2.35	390
EP 3.5	3.6	500
EP 5	4.6	620
EP 7.5	7.5	850



Control set (switching contactor)
for installation in the wall-hanging
electrical box.

Necessary for the control
of an electrical heating inset.



System water protection filter

Type: FGM050-200
For horizontal installation in return
for filtration of heating
and cooling water, with high
filtration capacity for
corrosion particles and
dirt without significant
pressure loss.
Consisting of:
- Filter head and bowl in brass
- Magnetic insert (nickel-neodymium)
- 2 pressure gauges
- Very large filter surface
made of stainless steel
- Filter fineness 200 µm
- With drain valve
- Connections Rp2":
Internal thread with integrated
shut-off valves and union connection
(outlet)
Max. flow rate: ($\Delta p < 0.1$ bar): 7.2 m³/h
Weight: 6.9 kg
Water temperature: max. 90 °C

Notice:

Fulfills the function of sludge separator and
strainer

Further strainers

see "Various system components"

Part No.

2018 837

6033 374

6049 557

6049 558

6049 559

6049 560

6033 403

2076 375

Accessories



**Switching ball valve VBI60...L
DN 25-50, PN 16, 120 °C**

- Three-way ball valve made of brass with threaded connection
- incl. seals and screw connections

DN	Connection	kvs m³/h
40	Rp 1½"	25
50	Rp 2"	37

Part No.

6052 446
6052 447



Suitable motor drive

Type	Voltage	Control signal	Actuator run time
GLB341.9E	230 V / 50/60 Hz	2-/3-point	150 s

2070 331



Floating cone flow controller

Operating range
3000–30,000 l/h, 0–80 °C
Nominal pressure 10 bar
DN 65 connection
Installation length 335 mm
Bistable Reed contact
Contact open without flow

2064 164

For active cooling, the installation of a flow controller is mandatory!

Accessories



Expansion connector set
 for the automatic heat pump ECR461.
 Use for additional function:

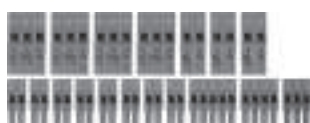
- Flow monitor
- Crankcase bottom heating
 (included in the scope of delivery
 for Belaria® twin A, twin AR, dual AR)
- Condensation drain heating
- Heat quantity metering

Plugs:

- 1x 230V digital input
- 2x 230V outputs
- 4x low-voltage inputs
- 1x ratio. Input

Part No.

6032 509



Universal connector set
 for automatic heat pump ECR461

Plugs:

- 3x 230V digital input
- 4x 230V outputs
- 6x low-voltage inputs
- 2x low-voltage outputs
- 1x ratio. input
- 1x electr. expansion valve

6032 510

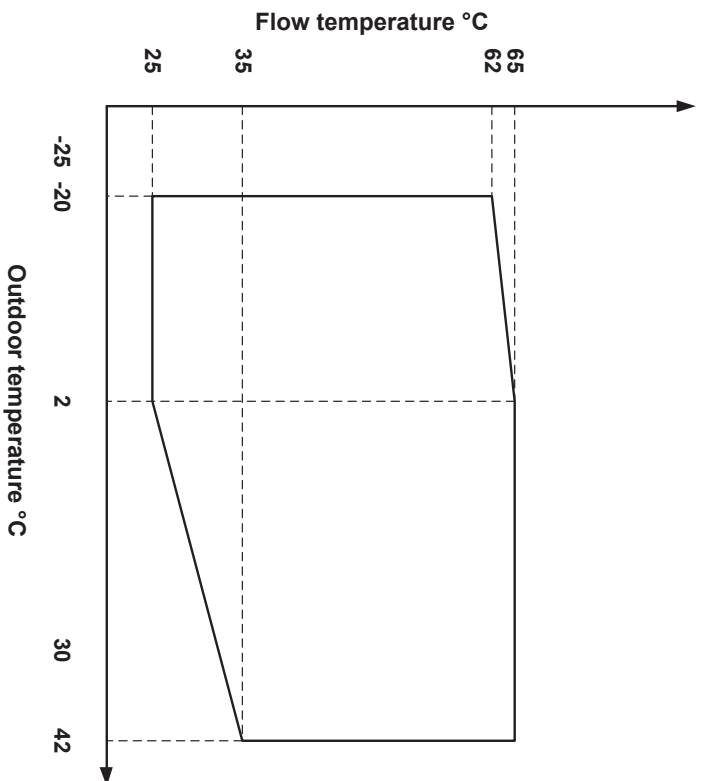
Belaria® dual AR (60)

Seasonal coefficient of performance moderate climate 35 °C /55 °C	SCOP	4.0/3.2
Max. performance data heating and cooling in acc. with EN 14511		
• Heat output A2W35	kW	50.3
• Power consumption A2W35	kW	13.8
• Coefficient of performance A2W35	COP	3.6
• Heat output A-7W35	kW	45.5
• Power consumption A-7W35	kW	14.6
• Coefficient of performance A-7W35	COP	3.1
• Cooling capacity A35W18	kW	70.5
• Power consumption A35W18	kW	21.3
• Coefficient of performance A35W18	EER	3.3
• Cooling capacity A35W7	kW	49.2
• Power consumption A35W7	kW	20.9
• Coefficient of performance A35W7	EER	2.4
Sound data		
• Sound power level at full load ¹⁾	dB (A)	67.0
• Sound pressure level at 5 m (on facade) ¹⁾	dB (A)	48.0
• Sound pressure level at 10 m (on facade) ¹⁾	dB (A)	42.0
• Sound power level at partial load ¹⁾	dB (A)	66.0
• Sound pressure level at 5 m (on facade) ¹⁾	dB (A)	47.0
• Sound pressure level at 10 m (on facade) ¹⁾	dB (A)	41.0
Hydraulic data		
• Maximum flow temperature	°C	65
• Nominal flow rate heating water 5K ΔT	m³/h	12.9
• Nominal flow rate heating water 8K ΔT	m³/h	7.3
• Condenser pressure drop at nominal flow rate	kPa	6.0
• Max. operating pressure on the heating side	bar	3
• Flow/return connection heating	R	2" external thread
• Built-in condensate drain	R	2" external thread
• Built-in fan		2 x owl-wing axial fan
• Nominal air quantity	m³/h	2 x 11,000
• Max./min. fan speed	rpm	700/175
Cooling technical data		
• Refrigerant		R410A
• Refrigeration circuits		2
• Compressor stages		2
• Refrigerant filling quantity	kg	2 x 17.8
• Compressor oil filling quantity	l	2 x 3.3
Electrical data		
• Compressor/heating element/fan connections	V/Hz	3~ 400/50
• Control electrical connection	V/Hz	1~ 230/50
• Starting current (compressor and fan)	A	80.5
• Compressor operating current	A	2 x 21.61
• Fan operating current (maximum value)	A	2x 1.45
• Fan power consumption (total)	W	2x 620
• Main current fuse	A	63 A
• Control current fuse	A	B 13
• Heating element fuse (up to 9 kW)	A	B 13
Dimensions/Weight		
• Dimensions (H x W x D)	mm	1439 x 3272 x 895
• Weight	kg	880

¹⁾ The sound power levels apply in whisper mode.
The values increase by +6 dB(A) in full-load operation or +4 dB(A) in partial load operation.

Graphs of operating range

Heating and hot water



Cooling

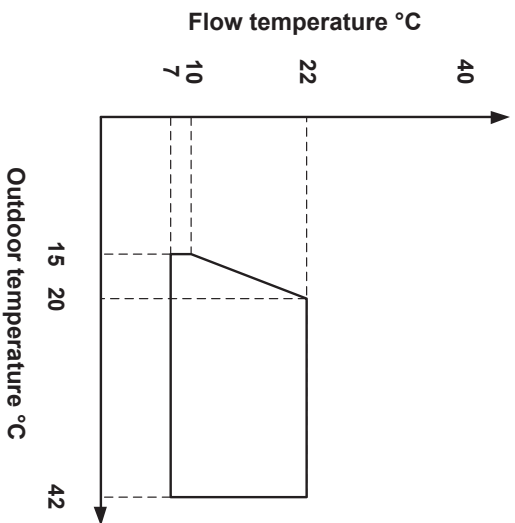
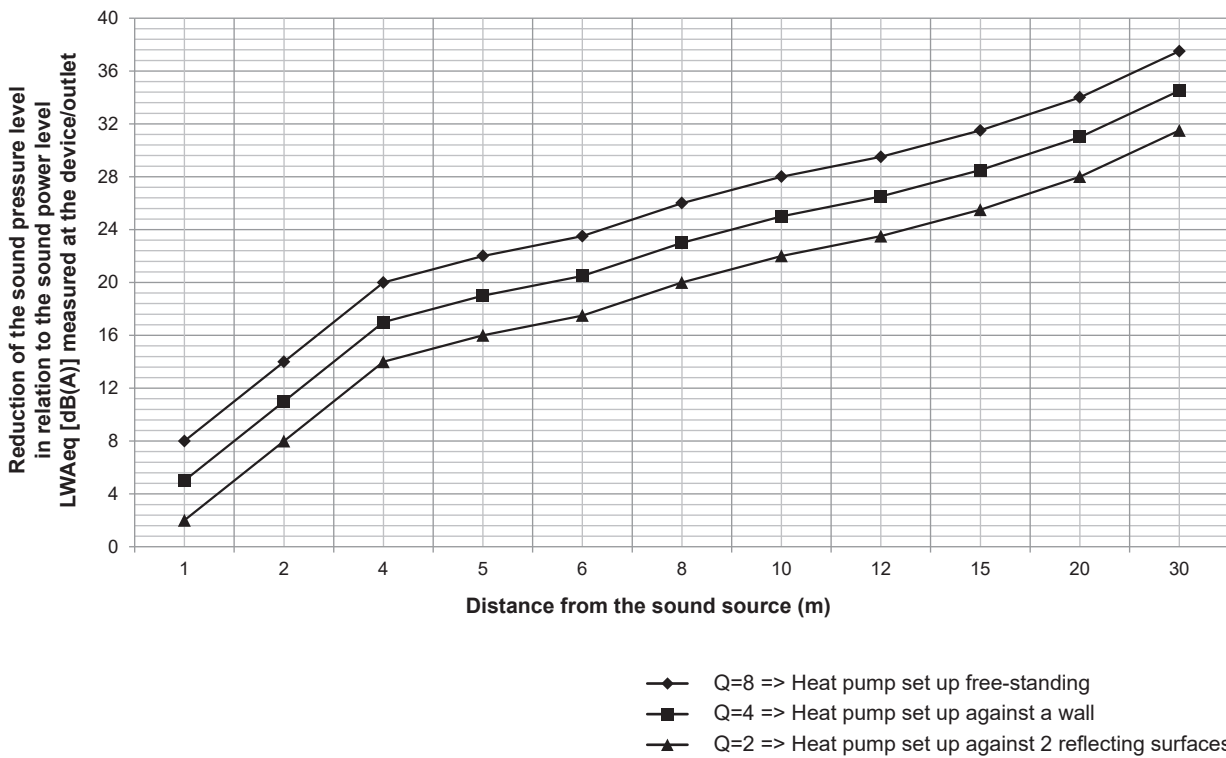


Diagram for rough calculation of the sound pressure level



Example 1:

The sound pressure level of the **Belaria® dual AR (60)** should be measured at a distance of **5 m** if it is installed on a facade.

$$\begin{array}{rcl}
 \text{Sound power level} & - & \text{Sound pressure level reduction (5 m)} & = & \text{Sound pressure level (5 m)} \\
 67.0 \text{ dB(A)}^{1)} & - & 19 \text{ dB(A)} & = & 48.0 \text{ dB(A)}^{1)}
 \end{array}$$

The sound pressure level of the **Belaria® dual AR (60)** should be measured at a distance of **10 m** if it is installed on a facade.

$$\begin{array}{rcl}
 \text{Sound power level} & - & \text{Sound pressure level reduction (10 m)} & = & \text{Sound pressure level (10 m)} \\
 67.0 \text{ dB(A)}^{1)} & - & 25 \text{ dB(A)} & = & 42.0 \text{ dB(A)}^{1)}
 \end{array}$$

¹⁾ The sound power levels apply in whisper mode.

The values increase by +6 dB(A) in full-load operation or +4 dB(A) in partial load operation.

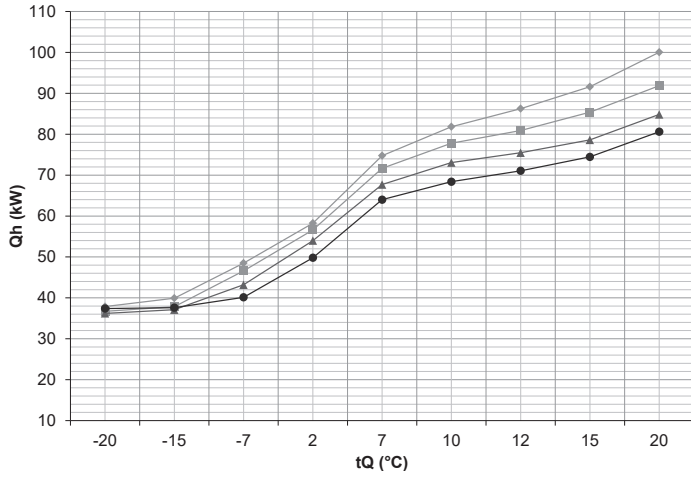
Performance data – heating

Maximum heat output allowing for defrosting losses

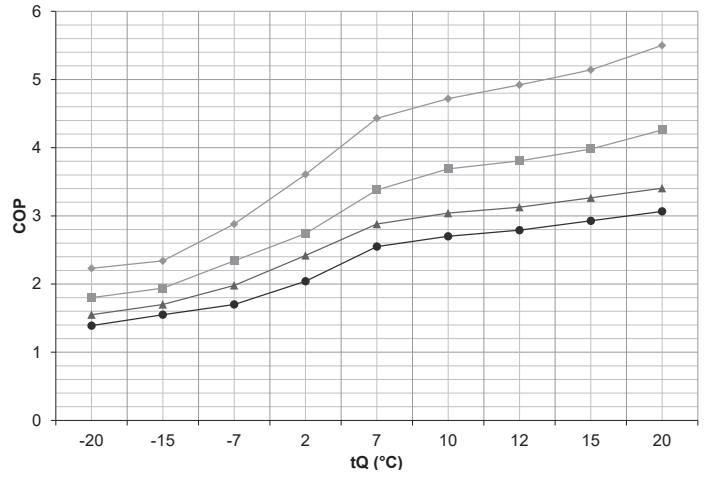
Belaria® dual AR (60)

Full load (2-stage)

Heat output

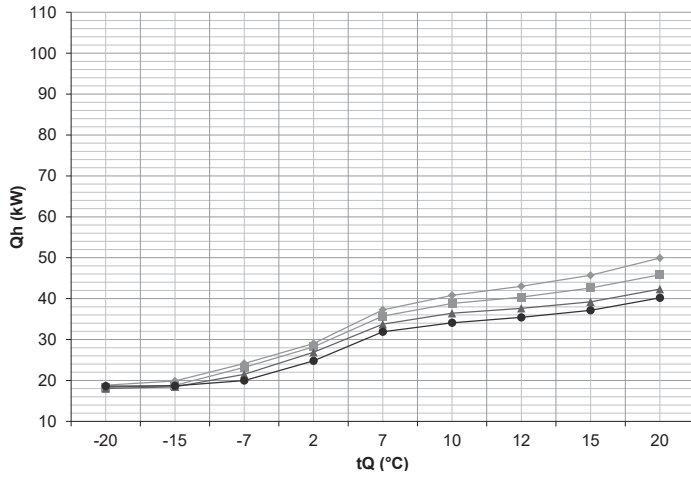


Coefficient of performance

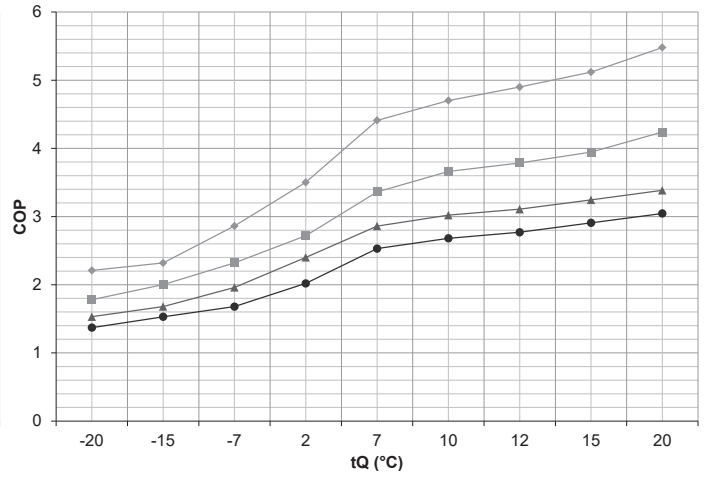


Partial load (1-stage)

Heat output



Coefficient of performance



tQ = Source temperature (°C)
 Qh = Heat output at full load (kW), measured in accordance with standard EN 14511
 COP = Coefficient of performance in accordance with standard EN 14511

- ◆ 35 °C
- 45 °C
- ▲ 55 °C
- 62 °C

Performance data – heating

Belaria® dual AR

Data according to EN 14511

Type	tFL °C	tQ °C	(60) Stage 1			(60) Stage 2		
			Qh kW	P kW	COP	Qh kW	P kW	COP
35	-20	18.2	7.4	2.5	36.6	14.8	2.5	
	-15	19.2	7.6	2.6	38.6	14.6	2.6	
	-7	22.7	7.3	3.1	45.5	14.6	3.1	
	2	25.1	6.9	3.6	50.3	13.8	3.6	
	7	34.6	7.8	4.4	69.4	15.6	4.5	
	10	37.9	8.0	4.7	76.0	16.0	4.7	
	12	40.0	8.1	4.9	80.2	16.2	4.9	
	15	42.5	8.3	5.1	85.1	16.5	5.2	
45	20	46.4	8.4	5.5	93.0	16.8	5.5	
	-20	18.0	8.9	2.0	36.2	17.7	2.0	
	-15	19.0	8.6	2.2	38.2	17.8	2.1	
	-7	22.4	8.8	2.6	45.0	17.5	2.6	
	2	24.4	8.3	2.9	49.0	16.5	3.0	
	7	33.7	9.3	3.6	67.6	18.6	3.6	
	10	36.7	9.6	3.8	73.5	19.1	3.6	
	12	38.3	9.6	4.0	76.8	19.2	4.0	
55	15	40.3	9.7	4.2	80.8	19.3	4.2	
	20	43.8	10.0	4.4	87.8	19.9	4.4	
	-20	17.8	10.4	1.7	35.8	20.7	1.7	
	-15	18.7	10.5	1.8	37.7	20.8	1.8	
	-7	22.2	10.2	2.2	44.5	20.4	2.2	
	2	23.8	9.7	2.5	47.7	19.2	2.5	
	7	32.8	10.9	3.0	65.8	21.7	3.0	
	10	35.4	11.1	3.2	71.0	22.2	3.2	
62	12	36.6	11.2	3.3	73.4	22.2	3.3	
	15	38.1	11.1	3.4	76.4	22.2	3.4	
	20	41.1	11.5	3.6	82.6	23.0	3.6	
	-20	18.4	12.0	1.5	37.0	23.8	1.6	
	-15	19.0	11.6	1.6	38.2	23.1	1.7	
	-7	20.6	11.1	1.9	41.4	22.0	1.9	
	2	21.9	10.6	2.1	44.0	21.3	2.1	
	7	31.0	11.6	2.7	62.2	23.1	2.7	
62	10	33.2	11.7	2.8	66.5	23.4	2.6	
	12	33.4	11.8	2.9	69.1	23.5	2.9	
	15	36.1	11.8	3.1	72.4	23.5	3.1	
	20	39.1	12.2	3.2	78.4	24.2	3.2	

tFL = Heating flow temperature (°C)

tQ = Source temperature (°C)

Qh = Heat output at full load (kW), measured in accordance with standard EN 14511

P = Power consumption for the overall unit (kW)

COP = Coefficient of performance in accordance with standard EN 14511

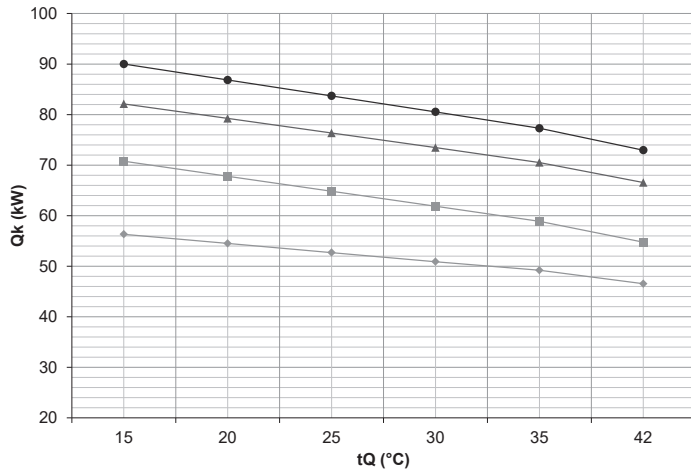
Performance data – cooling

Maximum cooling capacity

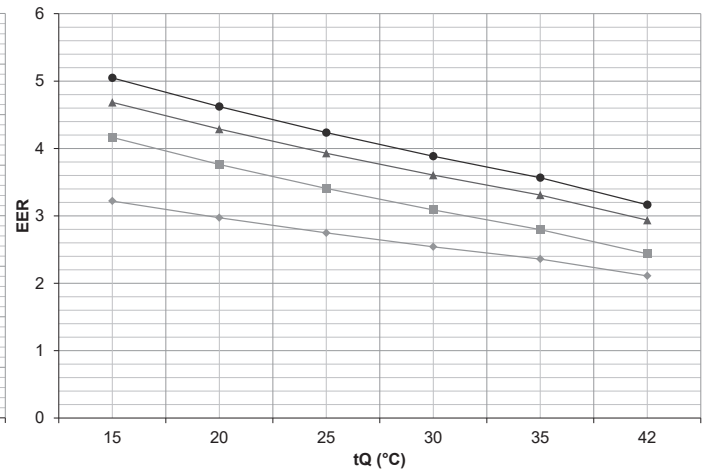
Belaria® dual AR (60)

Full load

Cooling capacity

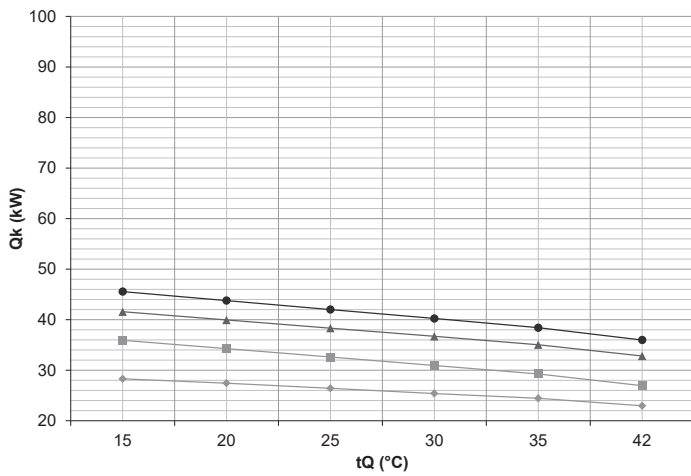


Coefficient of performance

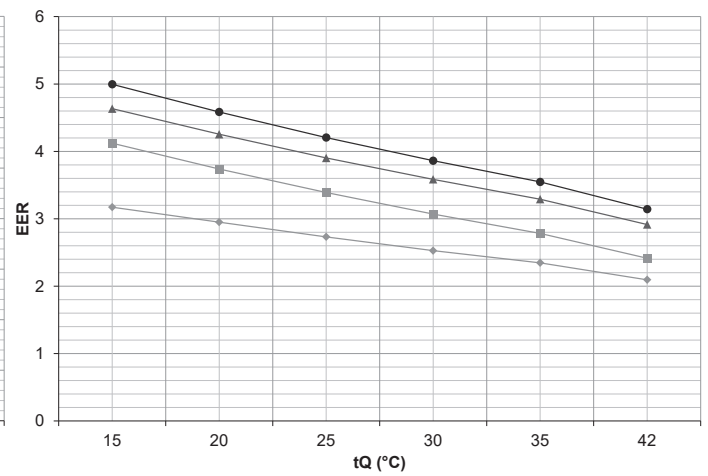


Partial load

Cooling capacity



Coefficient of performance



tQ = Source temperature (°C)

Qk = Cooling capacity at full load (kW), measured in accordance with standard EN 14511

EER = Energy efficient rate for the overall unit in accordance with standard EN 14511

- ◆ 7 °C
- 12 °C
- ▲ 18 °C
- 22 °C

Performance data – cooling

Belaria® dual AR (60)

Data according to EN 14511

Type	tFL °C	tQ °C	Qk kW	(60) Stage 1 P kW	EER	Qk kW	(60) Stage 2 P kW	EER
7	15	28.3	8.9	3.2	56.3	17.5	3.2	
	20	27.4	9.3	3.0	54.5	18.3	3.0	
	25	26.4	9.7	2.7	52.7	19.2	2.7	
	30	25.4	10.1	2.5	50.9	20.0	2.5	
	35	24.5	10.4	2.3	49.2	20.9	2.4	
	42	23.0	11.0	2.1	46.5	22.1	2.1	
10	15	33.0	8.8	3.7	65.0	17.2	3.8	
	20	31.5	9.2	3.4	62.5	18.1	3.4	
	25	30.1	9.6	3.1	60.0	19.1	3.1	
	30	28.7	10.1	2.9	57.5	20.0	2.9	
	35	27.3	10.5	2.6	55.0	21.0	2.6	
	42	25.4	11.1	2.3	51.5	22.3	2.3	
13	15	35.9	8.7	4.1	70.8	17.0	4.2	
	20	34.3	9.2	3.7	67.8	18.0	3.8	
	25	32.6	9.6	3.4	64.8	19.0	3.4	
	30	30.9	10.1	3.1	61.9	20.0	3.1	
	35	29.3	10.5	2.8	58.9	21.1	2.8	
	42	26.9	11.2	2.4	54.8	22.5	2.4	
15	15	38.8	8.9	4.4	76.5	17.3	4.4	
	20	37.1	9.3	4.0	73.5	18.3	4.0	
	25	35.5	9.7	3.6	70.6	19.2	3.7	
	30	33.8	10.2	3.3	67.7	20.2	3.3	
	35	32.2	10.6	3.0	64.7	21.2	3.1	
	42	29.9	11.2	2.7	60.7	22.6	2.7	
18	15	41.6	9.0	4.6	82.1	17.5	4.7	
	20	40.0	9.4	4.3	79.2	18.5	4.3	
	25	38.3	9.8	3.9	76.4	19.4	3.9	
	30	36.7	10.2	3.6	73.5	20.4	3.6	
	35	35.1	10.7	3.3	70.5	21.3	3.3	
	42	32.8	11.3	2.9	66.6	22.7	2.9	
20	15	43.6	9.1	4.8	86.1	17.7	4.9	
	20	41.9	9.5	4.4	83.1	18.6	4.5	
	25	40.2	9.9	4.1	80.0	19.6	4.1	
	30	38.5	10.3	3.7	77.0	20.6	3.7	
	35	36.7	10.7	3.4	73.9	21.5	3.4	
	42	34.4	11.4	3.0	69.8	22.9	3.1	
22	15	45.6	9.1	5.0	90.0	17.8	5.0	
	20	43.8	9.6	4.6	86.9	18.8	4.6	
	25	42.0	10.0	4.2	83.7	19.8	4.2	
	30	40.2	10.4	3.9	80.5	20.7	3.9	
	35	38.4	10.8	3.5	77.3	21.7	3.6	
	42	36.0	11.5	3.1	73.0	23.1	3.2	

tFL = Cooling water flow temperature (°C)

tQ = Source temperature (°C)

Qk = Cooling capacity at full load (kW), measured in accordance with standard EN 14511

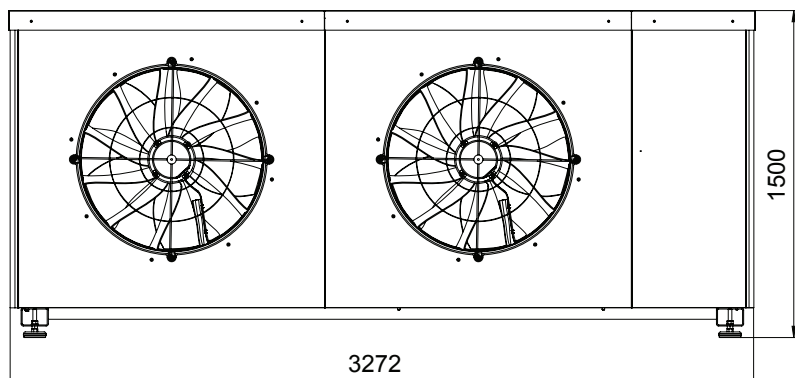
P = Power consumption for the overall unit (kW)

EER = Energy efficient rate for the overall unit in accordance with standard EN 14511

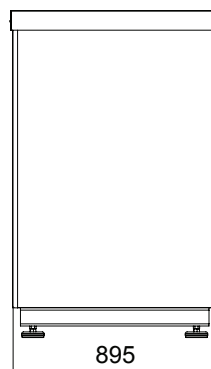
Belaria® dual AR (60)

(Dimensions in mm)

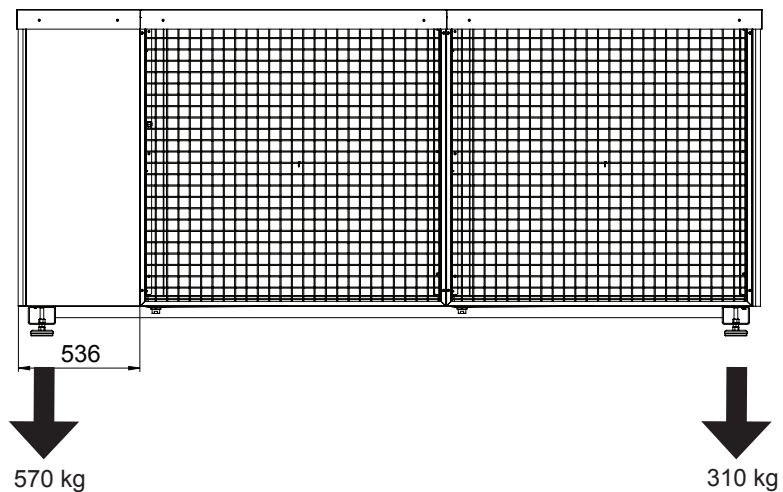
Front view (exhaust side)



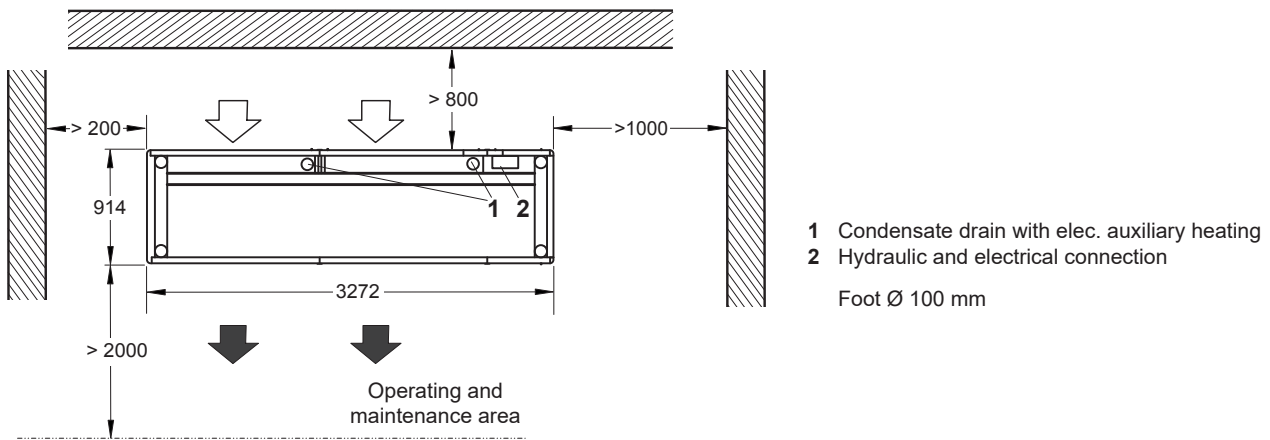
Page view



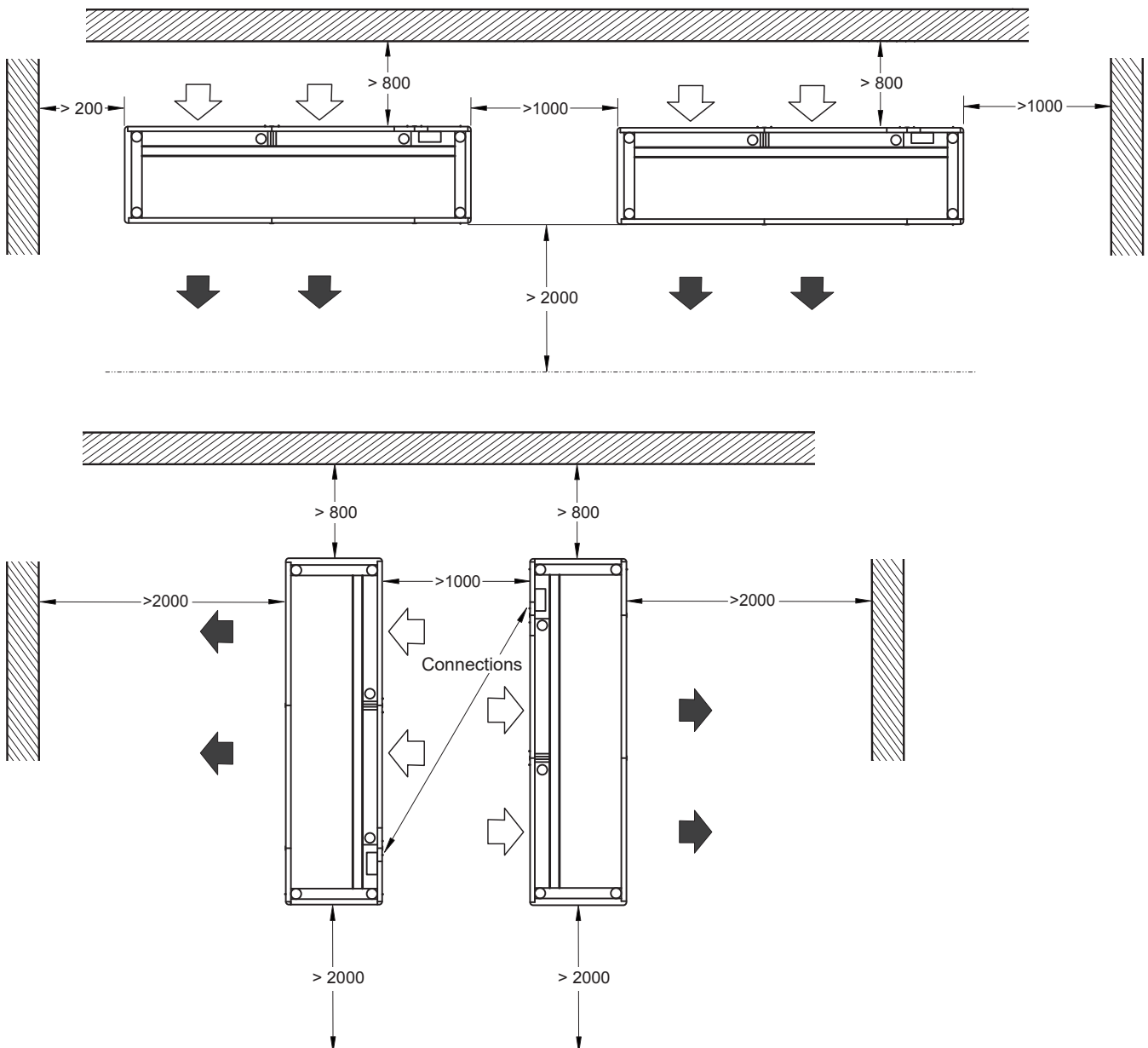
Rear (suction side)



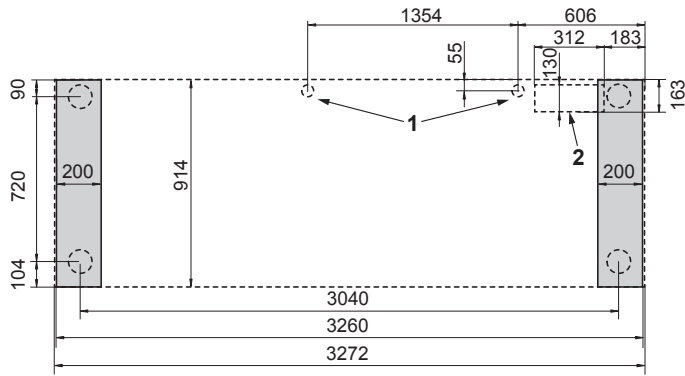
Space requirement
(Dimensions in mm)



Minimum distances for cascade systems
(Dimensions in mm)



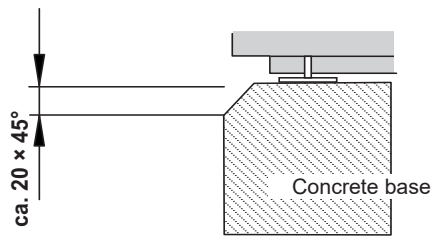
Base design
(Dimensions in mm)



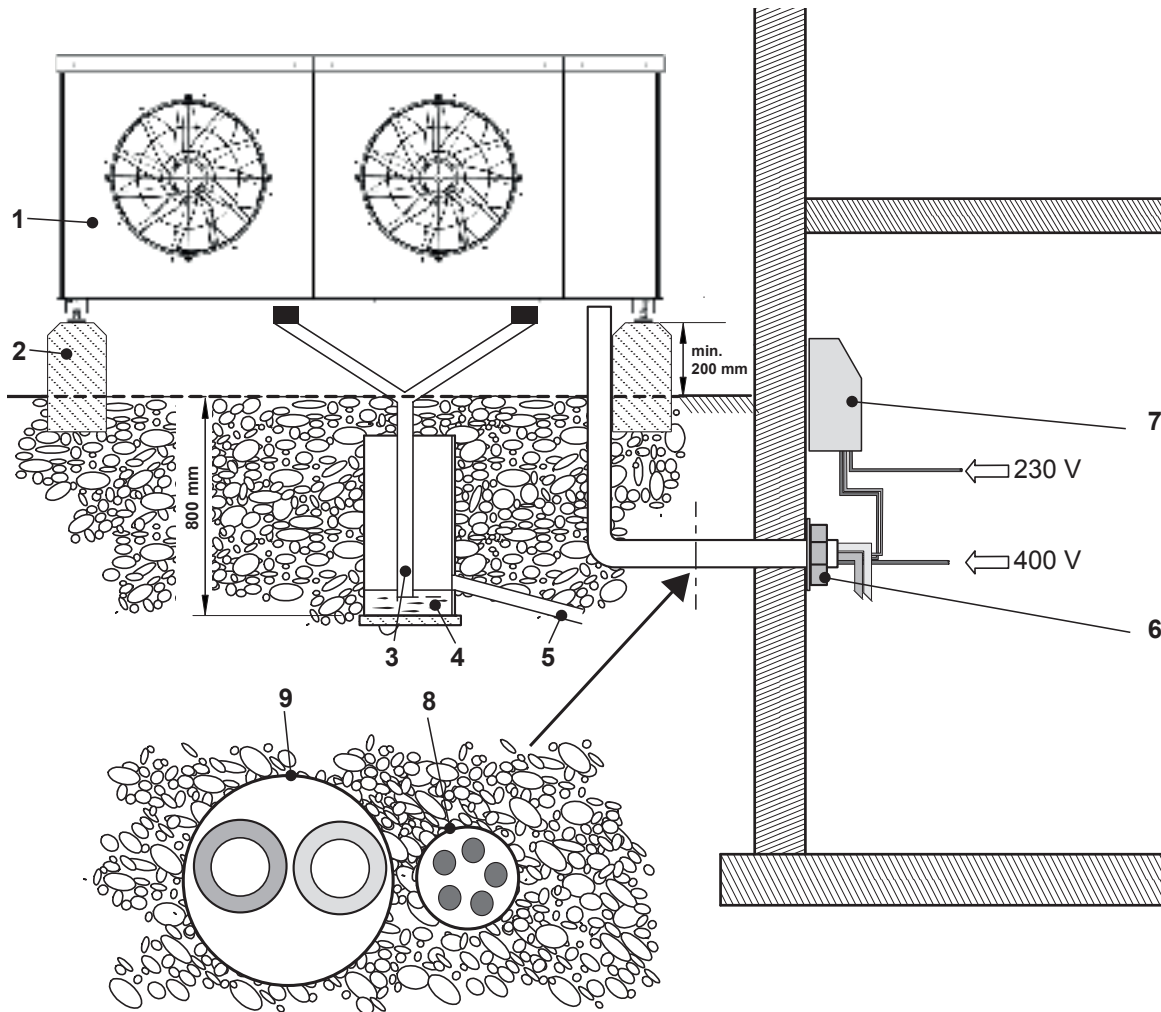
- 1 Condensate drain with elec. auxiliary heating
- 2 Hydraulic and electrical connection

The condensate drain is located on the rear (suction side).

The concrete base must have a level surface the size of the Belaria® dual AR (60). The base should have chamfered edges.



Configuration and connection diagram for the Belaria® dual AR (60)



- 1 Belaria® dual AR (60)
- 2 Concrete base
- 3 Condensate drain with elec. auxiliary heating (provided by customer)
- 4 Possible variant with duct (Ø 300 mm)
- 5 Discharge into the sewer system
- 6 Wall lead-through (hydraulic and electrical connections)
- 7 Electrical box/TopTronic® E controller
- 8 Empty tube for electrical connections for outdoor unit

Necessary

	Main current	400 V/5-pole/configuration cross section on site
	Control current	230 V/3-pole/configuration cross section on site
	Bus line	24 V/2-pole (see wiring diagram)
	Pump control CP	24 V/2-pole (see wiring diagram)
1 cable 10 x 1,5 mm ²	Fault contact CP	230 V/2-pole (see wiring diagram)
	Lock by energy supply company	230 V/2-pole (see wiring diagram)
	Reset	230 V/1-pole (see wiring diagram)
	Heat generator block	230 V/1-pole (see wiring diagram)
	Collective fault	230 V/2-pole (see wiring diagram)
	Electric inset	230 V/1-pole (see wiring diagram)

Options

CP pump ON/OFF	230 V/2-pole (see wiring diagram)
(does not apply for pump control 0-10 V)	
Fault contact for PLC	230 V/2-pole (see wiring diagram)
Flow rate meter	230 V/2-pole (see wiring diagram)
Electricity meter	230 V/2-pole (see wiring diagram)
USB cable for line recorder	
USB 2.0 extension cable active	

- 9 Empty tube for hydraulic connections for outdoor unit
 - Heating flow R 2"
 - Heating return R 2"

The piping from the boiler room to the heat pump must be configured by the installer. Connecting pipes are not included.

Electrical box Belaria® dual AR (60)
(Dimensions in mm)

