

**Hoval Belaria® pro comfort**  
**Hoval Belaria® pro compact**  
**Modulating monoblock heat pump for heating and cooling in the living area. Belaria® pro compact (8/100/300) and (13/100/300) additionally with integrated buffer storage tank (100 litres) and calorifier (300 litres) in the indoor unit.**

Monoblock heat pump set up outdoors consisting of outdoor unit and indoor unit.

*Belaria® pro outdoor unit*

- Compact floor-mounted air/water heat pump
- Elegant and extremely quiet outdoor unit
- Housing with sheet metal enclosure, powder-coated, anthracite colour (DB703)
- Belaria® pro (8-15) with modulating scroll compressor
- Refrigerant R290
- L-shaped louvre-type evaporator with the Belaria® pro (8,13)
- Straight louvre-type evaporator with the Belaria® pro (15)
- Speed-controlled axial fan with FlowGrid (inlet grille) with the Belaria® pro (8,13), Belaria® pro (15) without FlowGrid
- Condensate drip tray incl. tray heating and condensate trace heater for channelling all the condensate in the outdoor unit, fixed installation, 1" connection
- Plate-type condenser made of stainless steel/copper
- With cooling function with corresponding hydraulics
- Hydraulic connections behind louvre grille
  - Belaria® pro (8,13): heating connections 1"
  - Belaria® pro (15): heating connections 1¼"
  - Filter ball valve in heat pump return
- Electrical connections behind louvre grille
  - 230 V control current, supplied from the indoor unit
  - 400 V main power supply, supplied from the indoor unit
  - Data cable - bus connection to the indoor unit
- With fitting accessories for fixing the outdoor unit on the ground

*Belaria® pro comfort indoor unit*

- Compact wall-mounted indoor unit
- Casing made of structured EPP, colour black
- TopTronic® E controller installed
- With WFA-200S automatic heat pump device
- Integrated components:
  - Speed-regulated high-efficiency pump
  - Flow sensor/heat meter
  - Electric heating element 6 kW
  - 3-way switching ball valve for heating/ domestic hot water
- Sensor set consisting of outdoor sensor, flow sensor and domestic hot water sensor included in the scope of delivery
- Safety set consisting of safety valve, automatic air vent and pressure gauge (see accessories)
- Diaphragm pressure expansion tanks see "Various system components"



**Model range**

Belaria® pro comfort		Heat output <sup>1)</sup>		Cooling capacity <sup>1)</sup>
type		A-7W35 kW	A2W35 kW	A35W18 kW
	35 °C    55 °C			
(8)		2.0-8.3	2.1-8.3	3.1-10.2
(13)		4.0-10.3	4.1-11.8	5.1-14.0
(15)		6.0-13.3	6.0-14.5	6.1-16.6
Belaria® pro compact		Heat output <sup>1)</sup>		Cooling capacity <sup>1)</sup>
type		A-7W35 kW	A2W35 kW	A35W18 kW
	35 °C    55 °C			
(8/100/300)		2.0-8.3	2.1-8.3	3.1-10.2
(13/100/300)		4.0-10.3	4.1-11.8	5.1-14.0

Energy efficiency class of the compound system with control.

<sup>1)</sup> Modulation range

- Hydraulic connections at bottom
  - Belaria® pro (8,13): heating connections 1" domestic hot water 1"
  - Belaria® pro (15): heating connections 1¼" domestic hot water 1¼"
- Electrical connections introduced from bottom
- With fitting accessories for fixing the indoor unit to the wall
- Shut-off ball valves are included in the scope of delivery

*Belaria® pro compact indoor unit*

- Compact floor-mounted indoor unit
- Casing made from painted, galvanised sheet steel. Colour flame red/brown red (RAL 3000/RAL 3011)
- TopTronic® E controller installed
- With WFA-200S automatic heat pump device
- Integrated 100 litre buffer storage tank
- Integrated 300 litre calorifier

- Enamel painted calorifier with PU hard-foam insulation, energy efficiency class A, load profile XXL. Maintenance flange and magnesium protection anode built in
- Integrated components:
  - Speed-regulated high-efficiency pump
  - Flow sensor/heat meter
  - Electric heating element 6 kW
  - 3-way switching ball valve for heating/ domestic hot water
  - Heating/cooling circuit pump and mixer
  - Shut-off ball valves
- Sensor set: outdoor sensor included, flow sensor and calorifier sensor installed
- Safety set consisting of safety valve, automatic air vent and pressure gauge (see accessories)
- Diaphragm pressure expansion tanks see "Various system components"
- Hydraulic connections top
  - Heating connections 1"
  - Hot water connection 1"
  - Cold water connection 1"
- Electrical connections introduced from top

*TopTronic® E controller*

*Control panel*

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

*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 HovalConnect option)
- Adaptation of the heating strategy based on the weather forecast (with HovalConnect option)

*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 hot water charging circuit
  - Bivalent and cascade management
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- RAST 5 basic plug set

*Options for TopTronic® E controller*

- Can be expanded by max. 1 module expansion:
  - Module expansion heating circuit or
  - Module expansion Universal or
  - Module expansion heat balancing
- 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"**

**EnergyManager PV smart**

Feature to increase self-generated power consumption in use with HovalConnect.

If a HovalConnect gateway is used together with the heat pump, the EnergyManager PV smart feature is available. This allows the heat pump to be operated preferentially at times of higher solar radiation. The feature uses online weather data on the current solar radiation for this purpose and can be adjusted by means of an associated threshold value. The self-consumption of electricity from an existing photovoltaic plant is thus increased and the purchase of grid electricity is reduced. This results in a lasting and significant cost-saving potential without further investment costs for the customer.

*Delivery*

- Indoor and outdoor unit delivered packaged separately
- Sensor set Belaria® pro comfort:  
Outdoor, flow and calorifier sensor included separately in the electrical box
- Sensor set Belaria® pro compact:  
Outdoor sensor included, calorifier sensor and flow sensor installed in the indoor unit

*On site*

- Wall ducts for hydraulic connection lines
- Hydraulic connection lines outdoor/indoor unit
- Electrical connection line outdoor/indoor unit

**Air/water heat pump**



**Hoval Belaria® pro comfort**

Belaria® pro comfort Type	Heat output <sup>1)</sup>		Cooling capacity <sup>1)</sup>
	A-7W35 kW	A2W35 kW	A35W18 kW
(8)	2.0-8.3	2.1-8.3	3.1-10.2
(13)	4.0-10.3	4.1-11.8	5.1-14.0
(15)	6.0-13.3	6.0-14.5	6.1-16.6

<sup>1)</sup> Modulation range



**Hoval Belaria® pro compact**

with integrated buffer storage tank (100 litres)  
and calorifier (300 litres)

Belaria® pro compact Type	Heat output <sup>1)</sup>		Cooling capacity <sup>1)</sup>
	A-7W35 kW	A2W35 kW	A35W18 kW
(8/100/300)	2.0-8.3	2.1-8.3	3.1-10.2
(13/100/300)	4.0-10.3	4.1-11.8	5.1-14.0

<sup>1)</sup> Modulation range

**Energy efficiency class**  
see "Description"

**Electric heating elements**  
see "Calorifiers" - chapter "Electric heating  
elements"

**EnergyManager PV smart**

Free feature to increase self-generated  
power consumption in use with  
HovalConnect.

**Further information**

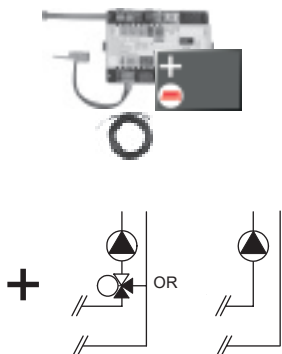
see "Description"

**Part No.**

7018 083  
7018 084  
7018 549

7018 085  
7018 086

**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 implementing the following functions:

- 1 heating/cooling circuit w/o mixer or
- 1 heating/cooling circuit with mixer

Consisting of:

- Fitting accessories

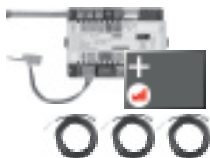
- 1 contact sensor

ALF/2P/4/T, L = 4.0 m

- Basic plug set FE module

**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 basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions:

- 1 heating/cooling circuit w/o mixer or
- 1 heating/cooling circuit with mixer incl. energy balancing in each case

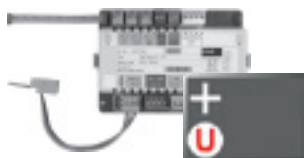
Consisting of:

- Fitting accessories

- 3 contact sensors

ALF/2P/4/T, L = 4.0 m

- Plug set FE module



**TopTronic® E module expansion Universal TTE-FE UNI**

Expansion to the inputs and outputs of a controller module (basic module heat generator, heating circuit/domestic hot water module, solar module, buffer module) for implementing various functions

Consisting of:

- Fitting accessories

- Plug set FE module

**Further information**

see "Controls" section - "Hoval TopTronic® E module expansions" chapter

**Notice**

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

**Part No.**

6034 576

6037 062

6034 575

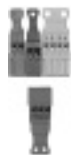
Accessories for TopTronic® E

Part No.



**TopTronic® E controller modules**

TTE-HK/WW	TopTronic® E heating circuit/ hot water module	6034 571
TTE-SOL	TopTronic® E solar module	6037 058
TTE-PS	TopTronic® E buffer module	6037 057
TTE-MWA	TopTronic® E measuring module	6034 574



**Supplementary plug set**

	for basic module heat generator TTE-WEZ	6034 499
	for controller modules and module expansion	6034 503
	TTE-FE HK	



**TopTronic® E room control modules**

TTE-RBM	TopTronic® E room control modules	
	easy white	6037 071
	comfort white	6037 069
	comfort black	6037 070



**Enhanced language package TopTronic® E**

	one SD card required per control module	6039 253
	Consisting of the following languages:	
	HU, CS, SL, RO, PL, TR, ES, HR,	
	SR, JA, DA	



**HovalConnect**

	HovalConnect LAN	6049 496
	HovalConnect WLAN	6049 498
	HovalConnect Modbus	6049 501
	HovalConnect KNX	6049 593

**TopTronic® E interface modules**

	GLT module 0-10 V	6034 578
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**TopTronic® E sensors**

AF/2P/K	Outdoor sensor	2055 889
	H x W x D = 80 x 50 x 28 mm	
TF/2P/5/6T	Immersion sensor, L = 5.0 m	2055 888
ALF/2P/4/T	Contact sensor, L = 4.0 m	2056 775
TF/1.1P/2.5S/6T	Collector sensor, L = 2.5 m	2056 776



**Bivalent switch**

	for various release or switching functions	
	Bivalent switch 1-piece	2056 858
	Bivalent switch 2-piece	2061 826



**System housing**

	System housing 182 mm	6038 551
	System housing 254 mm	6038 552



**TopTronic® E wall casing**

WG-190	Wall casing small	6052 983
WG-360	Wall casing medium	6052 984
WG-360 BM	Wall casing medium with control module cut-out	6052 985
WG-510	Wall casing large	6052 986
WG-510 BM	Wall casing large with control module cut-out	6052 987

**Further information**  
 see "Controls"

Accessories for Belaria® pro (8,13)



**HP line insul. AF-WPP 125-32**

for Belaria® pro (8,13)  
 Flexible, pre-insulated and self-compensating line with two heating pipes and two empty pipes  
 Outside diameter: 125 mm  
 Fluid pipes: 2 x 32 mm/2.9 mm  
 Empty pipe 1: 32 mm  
 Empty pipe 2: 25 mm  
 Bending radius: 0.5 m  
 Operating temperature: -40 °C to +90 °C  
 Maximum temperature: +95 °C

Dimension inside/outside	Line length m
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DN 25/32	10	2077 577
DN 25/32	15	2077 578
DN 25/32	20	2077 579
DN 25/32	25	2077 580



**Connector set HP line VS 32-WPP**

For HP line insulated AF-WPP 125-32  
 Consisting of:  
 - 2 shrink-fit end caps  
 - 4 clamping adapters 1" external thread, PN 6  
 - 1 building feed-in pressing water  
 Core hole diameter 198-202 mm  
 - 1 fixed point clamp

6053 304



**Lining pipe DN 200 D210/200 x 400**

For HP line insulated AF-WPP  
 Lining pipe for feeding the HP lines through ceilings, walls and floors.  
 Suitable for walling in and cementing in.  
 Lining pipe material: PVC  
 Formwork cover material: PE  
 Outer Ø: 210 mm  
 Internal Ø: 200 mm  
 Length: 400 mm

2080 584



**Connection set AS25-BPA**

For Belaria® pro (8,13)  
 Flexible connection line that can be shortened for connecting flow and return within the heat pump  
 Consisting of:  
 - 1 3.0 m corrugated pipe DN 20 insulated  
 Insulation 20/28 with PE protective foil  
 - 3 angle screw connection IT/ET 1"  
 - 4 union nuts 1"  
 - 3 support rings 1"  
 1 extra support ring for compression  
 - 7 flat seals NBR

6055 496

**Notice**

In cooling applications, the piping and fittings must be insulated accordingly.



**Adhesive tape IKB**

for thermal insulation made of EPDM  
 Thickness: 3 mm  
 width: 50 mm  
 roll: 15 m

2023 563

Accessories for Belaria® pro (15)



**HP line insul. AF-WPP 125-32**  
for Belaria® pro (8,13)  
Flexible, pre-insulated and self-compensating line with two heating pipes and two empty pipes  
Outside diameter: 125 mm  
Fluid pipes: 2 x 32 mm/2.9 mm  
Empty pipe 1: 32 mm  
Empty pipe 2: 25 mm  
Bending radius: 0.5 m  
Operating temperature: -40 °C to +90 °C  
Maximum temperature: +95 °C

Dimension inside/outside	Line length m
DN 25/32	10
DN 25/32	15
DN 25/32	20
DN 25/32	25

Part No.



**Connector set HP line VS 40-WPP**  
For HP line insulated AF-WPP 145-40  
Consisting of:  
- 2 shrink-fit end caps  
- 4 clamping adapters 1¼" external thread, PN 6  
- 1 building feed-in pressing water  
Core hole diameter: 198-202 mm  
- 1 fixed point clamp

6053 305



**Lining pipe DN 200 D210/200 x 400**  
For HP line insulated AF-WPP  
Lining pipe for feeding the HP lines through ceilings, walls and floors.  
Suitable for walling in and cementing in.  
Lining pipe material: PVC  
Formwork cover material: PE  
Outer Ø: 210 mm  
Internal Ø: 200 mm  
Length: 400 mm

2080 584



**Connection set AS32-BPA**  
For Belaria® pro (15)  
Flexible connection line that can be shortened for connecting flow and return within the heat pump  
Consisting of:  
- 1 3.0 m corrugated pipe DN 25 insulated  
Insulation 20/35 with PE protective foil  
- 3 external thread IT/ET 1¼"  
- 4 union nuts 1¼"  
- 3 support rings 1¼"  
1 extra support ring for compression  
- 7 flat seals NBR

6055 497

**Notice**

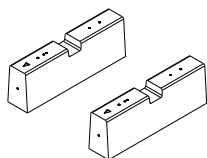
In cooling applications, the piping and fittings must be insulated accordingly.



**Adhesive tape IKB**  
for thermal insulation made of EPDM  
Thickness: 3 mm  
width: 50 mm  
roll: 15 m

2023 563

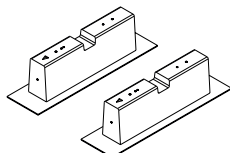
Accessories



**Concrete base set BSW02-FU**

for Belaria® pro (8-15) and  
 UltraSource® B (8,11)  
 for safe installation of an  
 outdoor unit on a firm base  
 Consisting of:  
 2 concrete bases with cast-in  
 fastening sleeves M8 and M10  
 Dimensions (H x W x D):  
 250 x 750 x 150 mm  
 Weight: 2 pieces of 57 kg

6054 856



**Concrete base set BSW02-FD**

for Belaria® pro (8-15) and  
 UltraSource® B (8,11)  
 for safe installation of an outdoor  
 unit on the flat roof.  
 Consisting of:  
 2 concrete bases with cast-in  
 fastening sleeves M8 and M10  
 Protective mats with aluminium lining  
 Dimensions (H x W x D):  
 250 x 750 x 150 mm  
 Weight: 2 pieces of 57 kg

6054 857

**Notice**

In a flat roof installation, all standards  
 concerning statics, wind load and access to  
 roofs must be complied with.

**Further information**

see "Engineering" chapter



**Vibration decoupler**

for reducing structure-borne noise  
 from heat pumps in the indoor area  
 Consisting of:  
 - 1 vibration decoupler  
 insulated for heating side  
 flat-sealing with union nut  
 - 2 flat seals  
 Nominal pressure: PN 10

Dimension	Connection inches	Nominal length mm	
DN 25	1"	300	2082 222
DN 25	1"	500	2082 223
DN 25	1"	1000	2080 794
DN 32	1¼"	300	2082 224
DN 32	1¼"	500	2082 225
DN 32	1¼"	1000	2080 796
DN 40	1½"	500	2082 226
DN 40	1½"	1000	2080 798
DN 50	2"	500	2082 227
DN 50	2"	1000	2080 800

2082 222  
 2082 223  
 2080 794  
 2082 224  
 2082 225  
 2080 796  
 2082 226  
 2080 798  
 2082 227  
 2080 800





**Separation system of heat pump**

For separating the heating circuit from the primary heating circuit

Consisting of:

- Plate heat exchanger (soldered)
- Connection bracket for wall installation
- Filling/flushing unit
- Connection screw fittings
- Safety group DN 15-1" insulated

Type	TS	Number of plates
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Belaria® pro comfort (8)	32-20	20
Belaria® pro comfort (13)	32-20	20
Belaria® pro comfort (15)	32-26	40

Heating circuit pump, diaphragm pressure expansion tanks and frost protection must be ordered separately.

**Part No.**

6058 805  
6058 805  
6058 806



**Separation system of heat pump**

For separating the heating circuit from the primary heating circuit

Consisting of:

- Plate heat exchanger (soldered)
- Connection bracket for wall installation
- Filling/flushing unit
- Pump incl. thermal insulation shell, mains and signal cable, as well as connection screw fittings
- Safety group DN 15-1" insulated

Type	TS	Number of plates
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Belaria® pro compact (8/100/300)	32-20	20
Belaria® pro compact (13/100/300)	32-20	20

Diaphragm pressure expansion tanks and frost protection must be ordered separately.

6058 807

6058 807



**HA group HA 25-2-WP**

for Belaria® pro compact (8,13/100/300)

Direct heating/cooling circuit without mixer for mounting in the Belaria® pro compact indoor unit

6053 317



**Correx® impressed current anode**

for Belaria® pro compact (8,13/100/300)

for long-term corrosion protection for installation in the enamelled calorifier with built-in socket.

6051 882

Only either a Correx® impressed current anode or a magnesium anode is allowed to be used.

Heating/cooling accessories



**Differential pressure relief valve DN 20**  
 for free installation  
 with flexible centre distance  
 Connections at both ends 1" external thread  
 Operating pressure: max. 10 bar  
 Operating temperature: max. 120 °C  
 Setting range: 0.05-0.5 bar  
 Length: 93 mm  
 Casing made of brass with setting handle made of plastic

240 554



**Differential pressure relief valve DN 32**  
 for installation in a HA group DN 32  
 both ends 1¼" external thread  
 Self-sealing with O-ring and screw connections  
 Operating pressure: max. 10 bar  
 Operating temperature: max. 110 °C  
 Setting range: 0.1-0.6 bar  
 Connections: 1¼" internal thread/ 1¼" external thread  
 Centre distance: 125 mm  
 Casing and spring hood made of brass  
 Spring made of stainless steel  
 Seals made of EPDM  
 Setting handle made of plastic with hexagon socket fastening screw

6014 849



**Connection set AS32-2/H**  
 for compact mounting  
 of all required fittings  
 of a direct circuit  
 consisting of:  
 2 thermometer ball valves  
 Wall bracket included separately  
 Connection T-piece DN 32  
 in the return flow for connecting the sludge separator CS 32 bottom and the diaphragm pressure expansion tank on the side on connection set  
 installation option  
 for an overflow valve  
 incl. non-return valve

6039 793



**System water protection filter FGM025-200**  
 For horizontal installation in return  
 For filtration of heating and cooling water, with high filtration capacity for corrosion particles and dirt without significant pressure drop  
 Consisting of:  
 - Filter head and bowl in brass  
 - Magnetic insert (nickel-neodymium)  
 - 2 pressure gauges  
 - Very large filter surface in stainless steel  
 - Filter fineness 200 µm  
 - With drain valve  
 - Connections Rp 1" internal thread with integrated shut-off valves and union connection (outlet)  
 Max. flow rate ( $\Delta p < 0.1$  bar): 5.5 m³/h  
 Weight: 6.8 kg  
 Water temperature: max. 90 °C  
 - incl. steam diffusion-tight insulating shells

6058 256

**Notice**

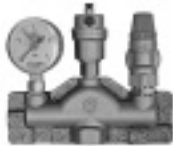
Performs the function of sludge separator and strainer.

Domestic hot water accessories



**Dew point switch FAS**  
mechanical dew point switch  
for monitoring the formation of  
condensate using adjustable  
switching value

2070 911



**Safety set SG15-1"**  
Suitable up to max. 50 kW  
complete with safety valve (3 bar)  
Pressure gauge and autom.  
aspirator with shut-off valve.  
Connection: DN 15, 1" internal thread

641 184

Services



**Commissioning**  
Commissioning by works service or Hoval  
trained authorised serviceman/company is  
condition for warranty.

For commissioning and other services  
please contact your Hoval sales office.

Belaria® pro comfort (8-15)

Belaria® pro compact (8/100/300,13/100/300)

Type		(8) (8/100/300)	(13) (13/100/300)	(15)
• Energy efficiency class of the compound system with control <sup>1)</sup>	35 °C/55 °C	A+++/A+++	A+++/A+++	A+++/A+++
• Energy efficiency class load profile XXL	Domestic hot water	-/A	-/A	-
• Room heating energy efficiency "moderate climate" 35 °C η <sub>S</sub>	%	207	203	221
• Room heating energy efficiency "moderate climate" 55 °C η <sub>S</sub>	%	154	154	162
• Water heating energy efficiency consumption profile/η <sub>wh</sub> 35 °C/55 °C	-/%	XXL/105	XXL/101	-/-
• Seasonal coefficient of performance moderate climate 35 °C/55 °C	SCOP	5.3/3.9	5.2/4.0	5.6/4.1
<b>Max./min. performance data heating and cooling in acc. with EN 14511</b>				
• Max. heat output A2W35	kW	8.3	11.8	14.5
• Max. heat output A-7W35	kW	8.3	10.3	13.3
• Min. heat output A15W35	kW	2.6	4.0	6.1
• Max. cooling capacity A35W18	kW	10.2	14.0	16.6
• Max. cooling capacity A35W7	kW	7.9	10.8	12.1
• Min. cooling capacity A35W18	kW	3.1	5.1	6.1
<b>Nominal output data heating in acc. with EN 14511</b>				
• Nominal heat output A2W35	kW	3.5	5.3	8.7
• Coefficient of performance A2W35	COP	4.6	4.6	4.7
• Nominal heat output A7W35	kW	4.1	5.9	9.8
• Coefficient of performance A7W35	COP	5.4	5.5	5.6
• Nominal heat output A-7W35	kW	4.0	5.3	8.5
• Coefficient of performance A-7W35	COP	3.4	3.5	3.5
<b>Nominal output data cooling in acc. with EN 14511</b>				
• Nominal cooling capacity A35W18	kW	6.3	9.7	11.6
• Energy efficiency ratio A35W18	EER	4.9	4.6	4.6
• Nominal cooling capacity A35W7	kW	4.4	6.5	7.5
• Energy efficiency ratio A35W7	EER	3.5	3.2	3
<b>Sound data</b>				
• Max. sound power level outdoor unit, night operation	dB(A)	44	49	48
• Sound power level EN 12102 outdoor unit <sup>2)</sup>	dB(A)	46	51	50
• Max. sound power level outdoor unit	dB(A)	55	57	55
• Sound pressure level 5 m <sup>2), 3)</sup>	dB(A)	27	32	31
• Sound pressure level 10 m <sup>2), 3)</sup>	dB(A)	21	26	25
<b>Hydraulic data</b>				
• Max. flow temperature	°C	70	70	70
• Max. flow rate heating side with A7/W35, ΔT 6 K	m <sup>3</sup> /h	1.2	1.8	2.3
• Nominal flow rate heating side with A7/W35, ΔT 5 K	m <sup>3</sup> /h	0.7	1	1.7
• Pressure drop heating side at nominal flow	kPa	4.5	11.0	31.0
• Residual overpressure of heating pump at max. pump speed and nominal flow	kPa	69	81	49
• Max. operating pressure on the heating side	bar	3	3	3
• Max. operating pressure domestic hot water side	bar	10	10	-
• Flow/return connection heating	R	1"	1"	1¼"
• Cold water connection Belaria® pro comfort	R	1"	1"	1¼"
• Cold/hot water connection Belaria® pro compact	R	1"/1"	1"/1"	-
• Nominal air volume outdoor unit (A7W35 and nominal rotation speed)	m <sup>3</sup> /h	2000	3000	4900
• Hydraulic connection line, max. length/dimension inside <sup>4)</sup>	m/DN	30/DN 25	30/DN 25	30/DN 32
<b>Cooling technical data</b>				
• Refrigerant		R290	R290	R290
• Compressor		modulating	modulating	modulating
• Refrigerant filling quantity	kg	1.2	1.8	2.8
• Compressor oil filling quantity/type	l/-	0.9/PZ46M	0.9/PZ46M	0.9/PZ46M

Type		(8) (8/100/300)	(8) (8/100/300)	(15)
<b>Electrical data</b>				
• Electrical connection compressor	V/Hz	3~400/50	3~400/50	3~400/50
• Electrical connection electric heating element	V/Hz	3~400/50	3~400/50	3~400/50
• Control electrical connection	V/Hz	1~230/50	1~230/50	1~230/50
• Max. heat pump operating current	A	8.5	9.5	12.9
• Max. compressor operating current	A	8.5	9.5	12.9
• Max. electric heating element operating current	A	13	13	13
• Max. output for electric heating element	kW	6	6	6
• Max. fan operating current	A	0.3	0.6	0.4
• Max. fan power consumption	W	70	140	84
• Max. starting current heat pump	A	8.5	9.5	12.9
• Output factor		0.88	0.88	0.88
• External protection main current	A	C/K 13	C/K 13	C/K 13
• External protection control current	A	B/Z 13	B/Z 13	B/Z 13
• External protection electric heating element	A	B/Z 13	B/Z 13	B/Z 13
<b>Dimensions/weight of outdoor unit</b>				
• Dimensions (H x W x D)	mm	954x1575x791	954x1575x791	1432x1575x791
• Weight	kg	287	300	350
• Protection class		IP24	IP24	IP24
<b>Dimensions/weight of indoor unit Belaria® pro comfort</b>				
• Dimensions (H x W x D)	mm	1005x550x280	1005x550x280	1005x550x280
• Weight	kg	30	30	30
• Protection class		IP20	IP20	IP20
<b>Dimensions/weight of indoor unit Belaria® pro compact</b>				
• Dimensions (H x W x D)	mm	1930x790x790	1930x790x790	-
• Tilting dimension	mm	2085	2085	-
• Weight	kg	360	360	-
• Protection class		IP20	IP20	-
• Dimensions without cladding (H x W x D) <sup>5)</sup>	mm	1930x783x785	1930x783x785	-
<b>Hot water storage tank Belaria® pro compact</b>				
• Volume <sup>6)</sup>	dm <sup>3</sup>	327	327	-
• Heating surface of heating coil	m <sup>2</sup>	4.0	4.0	-
• Heating water of heating coil	dm <sup>3</sup>	32	32	-
• Maximum storage tank temperature with electric heating element	°C	75	75	-
• Max. operating temperature	°C	80	80	-
• Output capacity at 40 °C and storage tank temperature at 60 °C <sup>7)</sup>	l	570	570	-
• Output capacity at 40 °C and storage tank temperature at 65 °C <sup>8)</sup>	l	634	634	-
• Output capacity at 40 °C and storage tank temperature at 75 °C <sup>9)</sup>	l	745	745	-
• Output capacity at 46 °C and storage tank temperature at 60 °C <sup>7)</sup>	l	469	469	-
• Output capacity at 46 °C and storage tank temperature at 65 °C <sup>8)</sup>	l	522	522	-
• Output capacity at 46 °C and storage tank temperature at 75 °C <sup>9)</sup>	l	613	613	-
<b>Heating water storage tank (buffer) Belaria® pro compact</b>				
• Volume <sup>6)</sup>	dm <sup>3</sup>	93	93	-

<sup>1)</sup> Related to moderate climate

<sup>2)</sup> The sound values apply with a clean evaporator. These values are temporarily exceeded before defrosting.

<sup>3)</sup> The sound pressure levels indicated apply if the outdoor unit is placed at a building façade. These values are reduced by 3 dB if the outdoor unit is free-standing. With installation in a corner, the sound pressure level increases by 3 dB.

<sup>4)</sup> If the Belaria® pro is operated without a buffer storage tank connected in parallel, the customer must assess whether the next larger pipe dimension is more suitable due to the pressure drop. Hydraulic connection lines DN 40 are listed in the Belaria® pro (24) chapter.

<sup>5)</sup> The removal of the cladding sections is time-consuming.

<sup>6)</sup> Storage capacity incl. heating coil

<sup>7)</sup> 12 °C cold water temperature/60 °C lower storage tank temperature (heat pump)

<sup>8)</sup> 12 °C cold water temperature/65 °C lower storage tank temperature (heat pump + electric heating element)

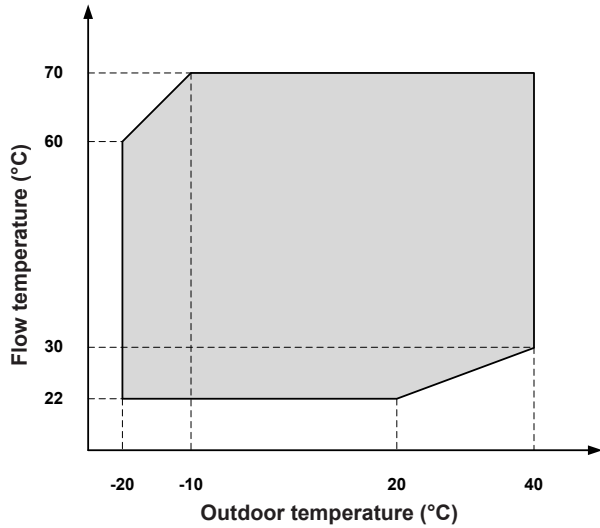
<sup>9)</sup> 12 °C cold water temperature/75 °C lower storage tank temperature (heat pump + electric heating element)

Using a fault-current circuit breaker RCCB type B, IΔn ≥ 300 mA is recommended. Country-specific regulations must be observed.

## Diagrams of areas of application

### Heating and domestic hot water

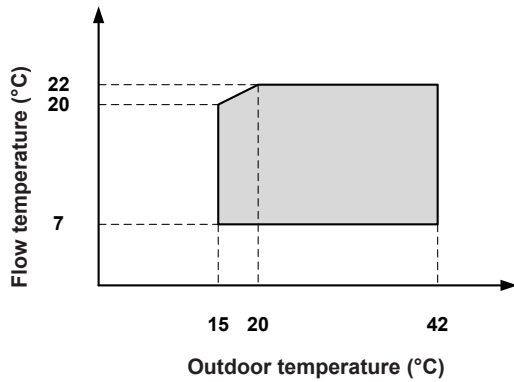
Belaria® pro comfort (8-15)  
Belaria® pro compact (8/100/300), (13/100/300)



Area of application of the heat pump for heating/domestic hot water (Belaria® pro comfort and pro compact)

### Cooling

Belaria® pro comfort (8-15)  
Belaria® pro compact (8/100/300), (13/100/300)



Area of application of the heat pump for cooling (Belaria® pro comfort and pro compact)

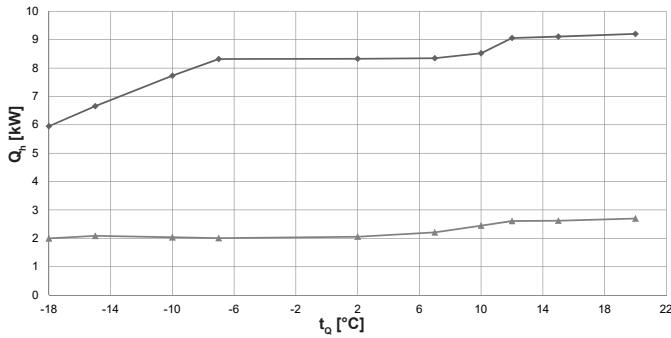
**Performance data – heating**

Maximum heat output allowing for defrosting losses

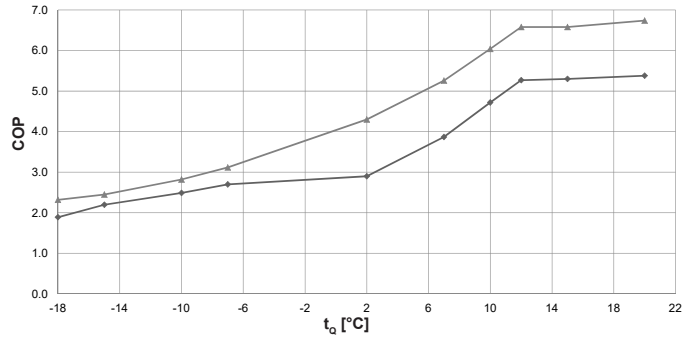
**Belaria® pro comfort (8), compact (8/100/300)**

Data according to EN 14511

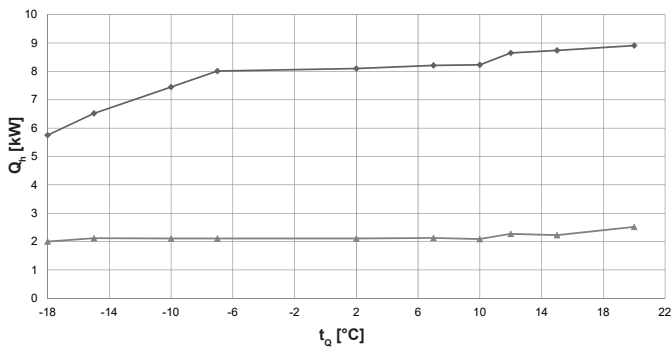
**Heat output -  $t_{VL}$  35 °C**



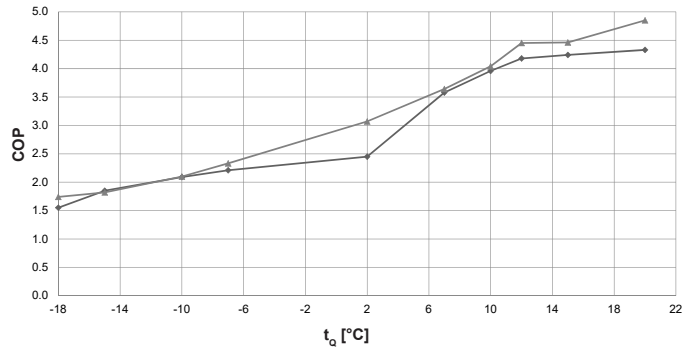
**Coefficient of performance -  $t_{VL}$  35 °C**



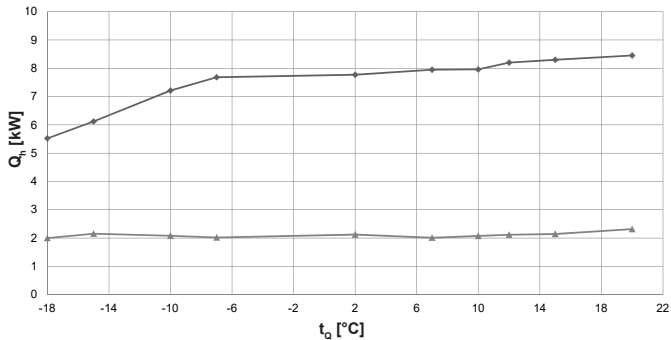
**Heat output -  $t_{VL}$  45 °C**



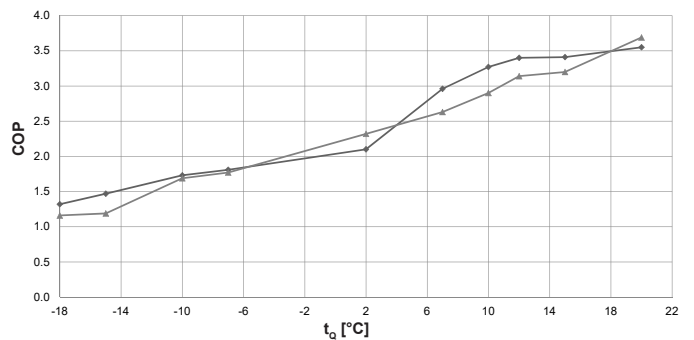
**Coefficient of performance -  $t_{VL}$  45 °C**



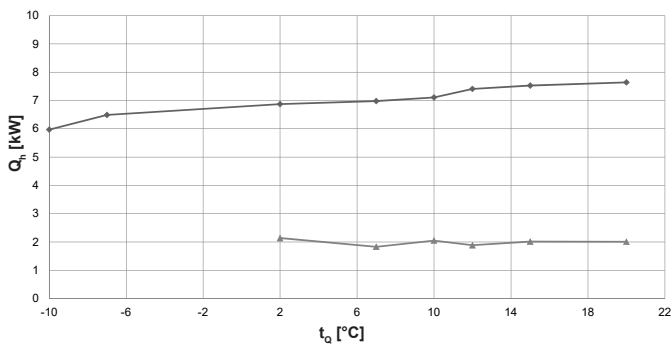
**Heat output -  $t_{VL}$  55 °C**



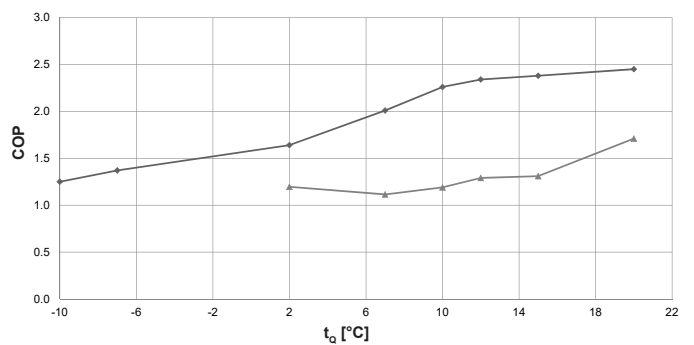
**Coefficient of performance -  $t_{VL}$  55 °C**



**Heat output -  $t_{VL}$  70 °C**



**Coefficient of performance -  $t_{VL}$  70 °C**



$t_{VL}$  = heating flow temperature (°C)

$t_o$  = source temperature (°C)

$Q_h$  = heat output (kW), measured in accordance with standard EN 14511

COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

◆ Maximum output

▲ Minimum output

Performance data – heating

Belaria® pro comfort (8), compact (8/100/300)

Data according to EN 14511

$t_{VL}$ °C	$t_G$ °C	Maximum output			Minimum output		
		$Q_h$ kW	P kW	COP	$Q_h$ kW	P kW	COP
35	-18	6.0	3.1	1.9	2.0	0.9	2.3
	-15	6.7	3.0	2.2	2.1	0.9	2.5
	-10	7.7	3.1	2.5	2.0	0.7	2.8
	-7	8.3	3.1	2.7	2.0	0.6	3.1
	2	8.3	2.9	2.9	2.1	0.5	4.3
	7	8.4	2.2	3.9	2.2	0.4	5.3
	10	8.5	1.8	4.7	2.5	0.4	6.0
	12	9.1	1.7	5.3	2.6	0.4	6.6
	15	9.1	1.7	5.3	2.6	0.4	6.6
20	9.2	1.7	5.4	2.7	0.4	6.7	
45	-18	5.8	3.7	1.6	2.0	1.1	1.7
	-15	6.5	3.5	1.9	2.1	1.2	1.8
	-10	7.5	3.6	2.1	2.1	1.0	2.1
	-7	8.0	3.6	2.2	2.1	0.9	2.3
	2	8.1	3.3	2.5	2.1	0.7	3.1
	7	8.2	2.3	3.6	2.1	0.6	3.6
	10	8.2	2.1	4.0	2.1	0.5	4.0
	12	8.7	2.1	4.2	2.3	0.5	4.5
	15	8.7	2.1	4.2	2.2	0.5	4.5
20	8.9	2.1	4.3	2.5	0.5	4.9	
50	-18	5.6	3.9	1.4	2.0	1.4	1.5
	-15	6.3	3.8	1.7	2.1	1.4	1.5
	-10	7.3	3.8	1.9	2.1	1.1	1.9
	-7	7.8	3.9	2.0	2.1	1.0	2.1
	2	7.9	3.5	2.3	2.1	0.8	2.7
	7	8.1	2.5	3.3	2.1	0.7	3.1
	10	8.1	2.2	3.6	2.1	0.6	3.5
	12	8.4	2.2	3.8	2.2	0.6	3.8
	15	8.5	2.2	3.8	2.2	0.6	3.8
20	8.7	2.2	3.9	2.4	0.6	4.3	
55	-18	5.5	4.2	1.3	2.0	1.7	1.2
	-15	6.1	4.2	1.5	2.2	1.8	1.2
	-10	7.2	4.2	1.7	2.1	1.2	1.7
	-7	7.7	4.2	1.8	2.0	1.1	1.8
	2	7.8	3.7	2.1	2.1	0.9	2.3
	7	8.0	2.7	3.0	2.0	0.8	2.6
	10	8.0	2.4	3.3	2.1	0.7	2.9
	12	8.2	2.4	3.4	2.1	0.7	3.1
	15	8.3	2.4	3.4	2.1	0.7	3.2
20	8.5	2.4	3.6	2.3	0.6	3.7	
60	-18	5.4	4.6	1.2	-	-	-
	-15	5.8	4.6	1.3	-	-	-
	-10	6.7	4.5	1.5	2.1	1.5	1.4
	-7	7.4	4.5	1.6	2.0	1.3	1.5
	2	7.6	3.9	1.9	2.1	1.1	1.9
	7	7.6	3.0	2.6	2.0	0.9	2.1
	10	7.8	2.7	2.8	2.1	0.9	2.3
	12	8.0	2.6	3.0	2.0	0.8	2.5
	15	8.1	2.7	3.0	2.1	0.8	2.6
20	8.2	2.6	3.2	2.2	0.7	3.1	
70	-18	-	-	-	-	-	-
	-15	-	-	-	-	-	-
	-10	6.0	4.8	1.3	-	-	-
	-7	6.5	4.7	1.4	-	-	-
	2	6.9	4.2	1.6	2.1	1.8	1.2
	7	7.0	3.5	2.0	1.8	1.6	1.1
	10	7.1	3.1	2.3	2.0	1.7	1.2
	12	7.4	3.2	2.3	1.9	1.5	1.3
	15	7.5	3.2	2.4	2.0	1.5	1.3
20	7.6	3.1	2.5	2.0	1.2	1.7	

$t_{VL}$  = heating flow temperature (°C)

$t_G$  = source temperature (°C)

$Q_h$  = heat output (kW), measured in accordance with standard EN 14511

P = power consumption, overall unit (kW)

COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

**Observe daily power interruptions!**  
see "Engineering heat pumps general"



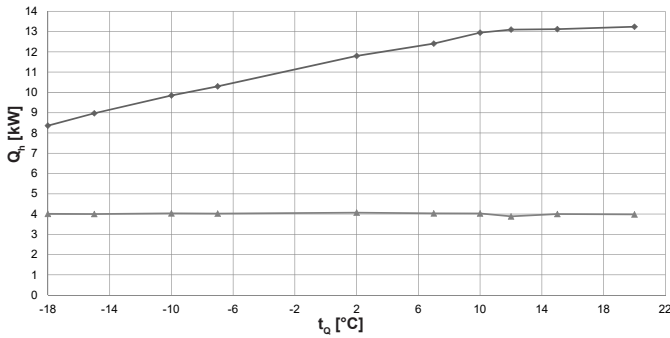
**Performance data – heating**

Maximum heat output allowing for defrosting losses

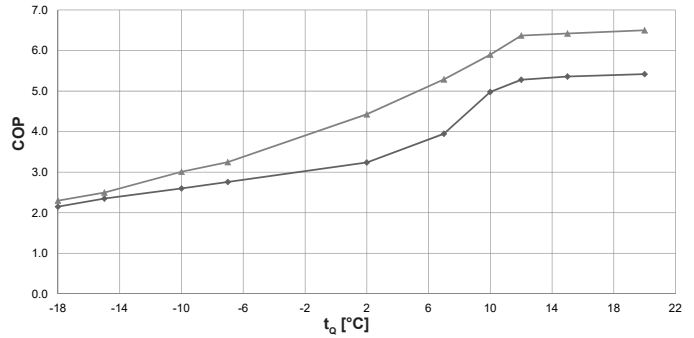
**Belaria® pro comfort (13), compact (13/100/300)**

Data according to EN 14511

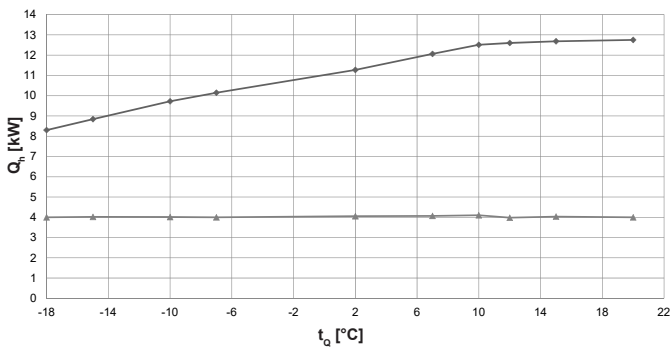
**Heat output -  $t_{VL}$  35 °C**



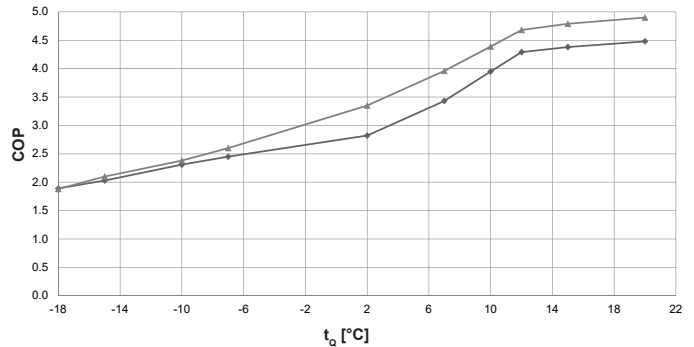
**Coefficient of performance -  $t_{VL}$  35 °C**



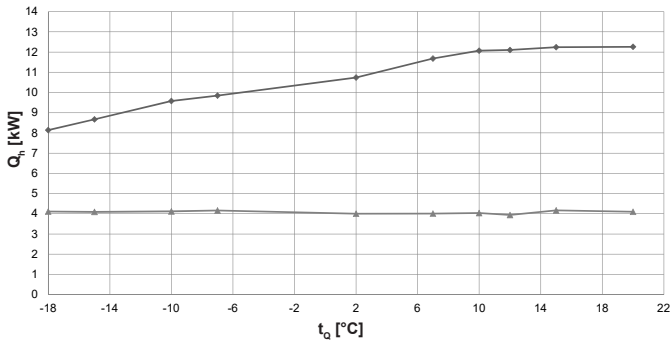
**Heat output -  $t_{VL}$  45 °C**



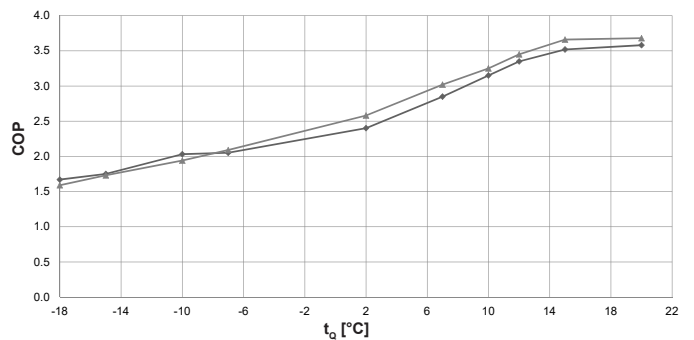
**Coefficient of performance -  $t_{VL}$  45 °C**



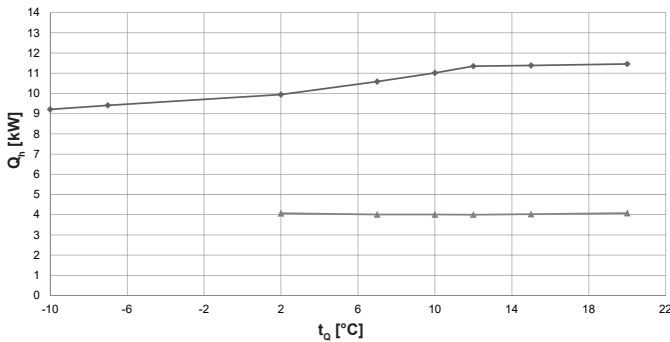
**Heat output -  $t_{VL}$  55 °C**



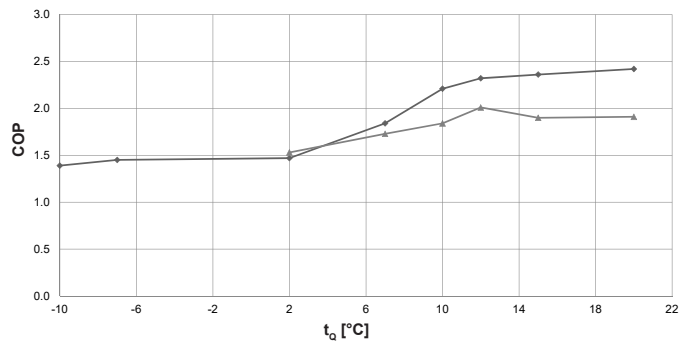
**Coefficient of performance -  $t_{VL}$  55 °C**



**Heat output -  $t_{VL}$  70 °C**



**Coefficient of performance -  $t_{VL}$  70 °C**



$t_{VL}$  = heating flow temperature (°C)

$t_o$  = source temperature (°C)

$Q_h$  = heat output (kW), measured in accordance with standard EN 14511

COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

◆ Maximum output

▲ Minimum output

Performance data – heating

Belaria® pro comfort (13), compact (13/100/300)

Data according to EN 14511

$t_{VL}$ °C	$t_G$ °C	Maximum output			Minimum output		
		$Q_h$ kW	P kW	COP	$Q_h$ kW	P kW	COP
35	-18	8.4	3.9	2.2	4.0	1.7	2.3
	-15	9.0	3.8	2.4	4.0	1.6	2.5
	-10	9.9	3.8	2.6	4.0	1.3	3.0
	-7	10.3	3.7	2.8	4.0	1.2	3.3
	2	11.8	3.6	3.2	4.1	0.9	4.4
	7	12.4	3.1	4.0	4.0	0.8	5.3
	10	13.0	2.6	5.0	4.0	0.7	5.9
	12	13.1	2.5	5.3	3.9	0.6	6.4
	15	13.1	2.4	5.4	4.0	0.6	6.4
20	13.2	2.4	5.4	4.0	0.6	6.5	
45	-18	8.3	4.4	1.9	4.0	2.1	1.9
	-15	8.8	4.4	2.0	4.0	1.9	2.1
	-10	9.7	4.2	2.3	4.0	1.7	2.4
	-7	10.1	4.1	2.5	4.0	1.5	2.6
	2	11.3	4.0	2.8	4.1	1.2	3.4
	7	12.1	3.5	3.4	4.1	1.0	4.0
	10	12.5	3.2	4.0	4.1	0.9	4.4
	12	12.6	2.9	4.3	4.0	0.9	4.7
	15	12.7	2.9	4.4	4.0	0.8	4.8
20	12.8	2.8	4.5	4.0	0.8	4.9	
50	-18	8.2	4.6	1.8	4.1	2.3	1.7
	-15	8.8	4.6	1.9	4.1	2.1	1.9
	-10	9.6	4.4	2.2	4.1	1.9	2.2
	-7	10.0	4.4	2.3	4.1	1.7	2.3
	2	11.0	4.2	2.6	4.0	1.4	3.0
	7	11.9	3.8	3.1	4.0	1.2	3.5
	10	12.3	3.5	3.6	4.1	1.1	3.8
	12	12.4	3.2	3.8	4.0	1.0	4.1
	15	12.5	3.2	4.0	4.1	1.0	4.2
20	12.5	3.1	4.0	4.1	0.9	4.3	
55	-18	8.1	4.9	1.7	4.1	2.6	1.6
	-15	8.7	5.0	1.8	4.1	2.4	1.7
	-10	9.6	4.7	2.0	4.1	2.1	1.9
	-7	9.9	4.8	2.1	4.2	2.0	2.1
	2	10.7	4.5	2.4	4.0	1.6	2.6
	7	11.7	4.1	2.9	4.0	1.3	3.0
	10	12.1	3.8	3.2	4.0	1.2	3.3
	12	12.1	3.6	3.4	3.9	1.1	3.5
	15	12.2	3.5	3.5	4.2	1.1	3.7
20	12.3	3.4	3.6	4.1	1.1	3.7	
60	-18	8.1	5.2	1.6	-	-	-
	-15	8.6	5.3	1.6	-	-	-
	-10	9.4	5.3	1.8	4.1	2.4	1.7
	-7	9.7	5.2	1.9	4.1	2.2	1.9
	2	10.5	5.1	2.0	4.0	1.8	2.2
	7	11.5	4.5	2.6	4.0	1.5	2.6
	10	11.9	4.3	2.8	4.0	1.4	2.8
	12	11.9	4.1	2.9	4.0	1.3	3.0
	15	12.0	3.9	3.1	3.9	1.3	3.1
20	12.0	3.8	3.1	4.1	1.3	3.1	
70	-18	-	-	-	-	-	-
	-15	-	-	-	-	-	-
	-10	9.2	6.6	1.4	-	-	-
	-7	9.4	6.5	1.5	-	-	-
	2	9.9	6.8	1.5	4.1	2.7	1.5
	7	10.6	5.8	1.8	4.0	2.3	1.7
	10	11.0	5.0	2.2	4.0	2.2	1.8
	12	11.4	4.9	2.3	4.0	2.0	2.0
	15	11.4	4.8	2.4	4.0	2.1	1.9
20	11.5	4.7	2.4	4.1	2.1	1.9	

$t_{VL}$  = heating flow temperature (°C)

$t_G$  = source temperature (°C)

$Q_h$  = heat output (kW), measured in accordance with standard EN 14511

P = power consumption, overall unit (kW)

COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

**Observe daily power interruptions!**  
see "Engineering heat pumps general"

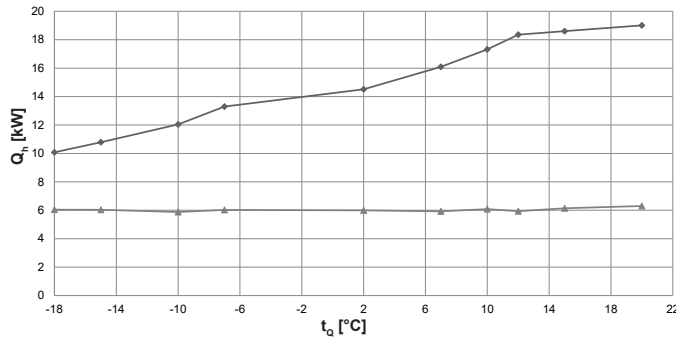
**Performance data – heating**

Maximum heat output allowing for defrosting losses

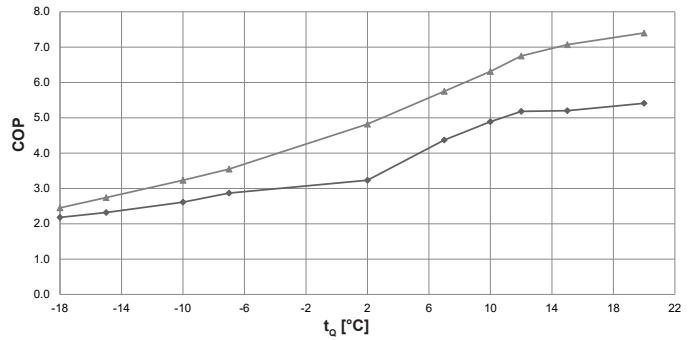
**Belaria® pro comfort (15)**

Data according to EN 14511

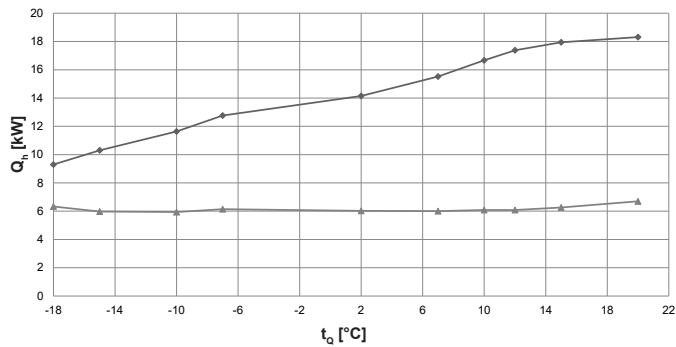
**Heat output -  $t_{VL}$  35 °C**



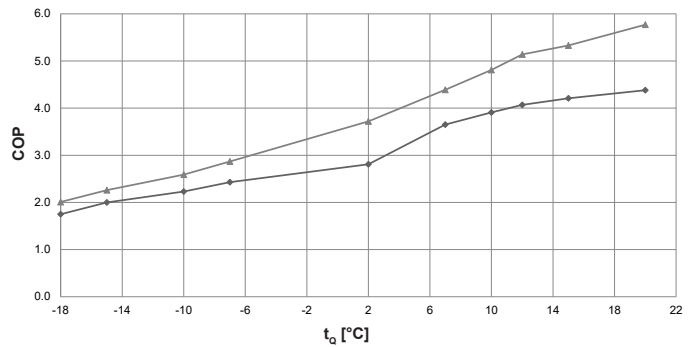
**Coefficient of performance -  $t_{VL}$  35 °C**



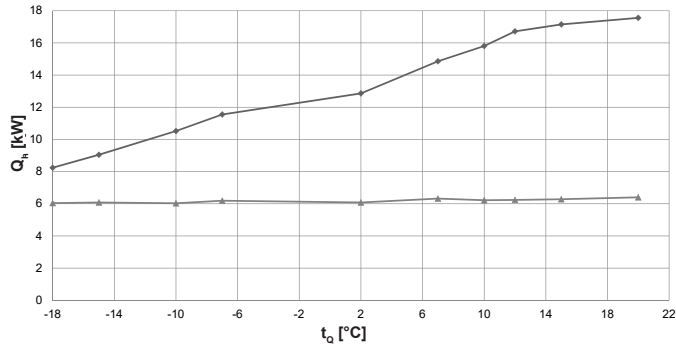
**Heat output -  $t_{VL}$  45 °C**



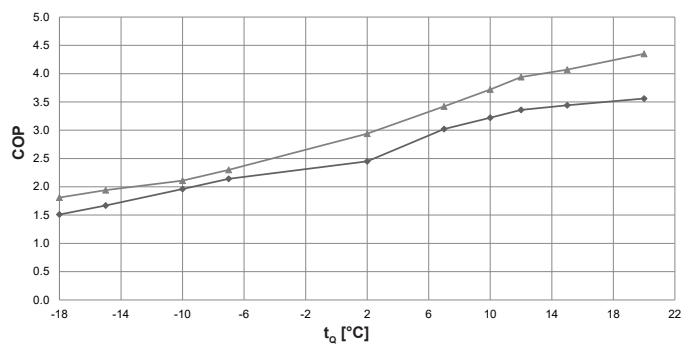
**Coefficient of performance -  $t_{VL}$  45 °C**



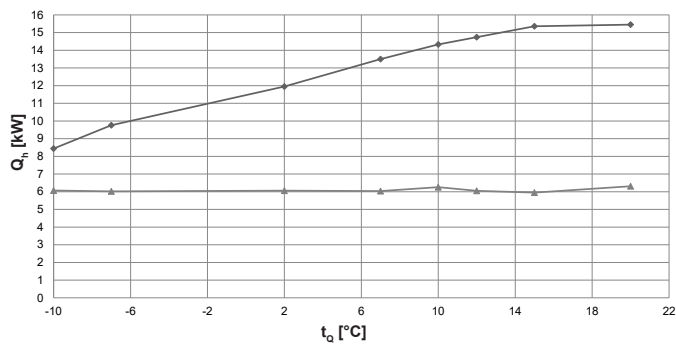
**Heat output -  $t_{VL}$  55 °C**



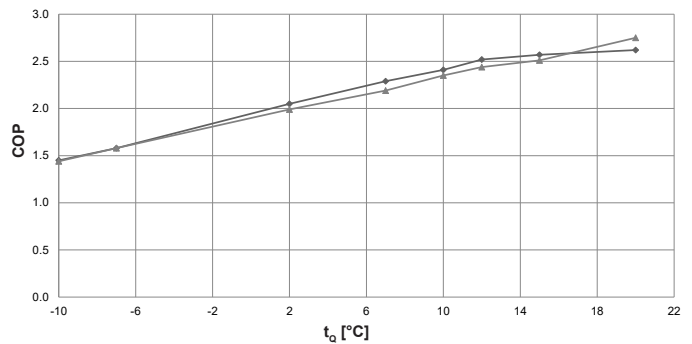
**Coefficient of performance -  $t_{VL}$  55 °C**



**Heat output -  $t_{VL}$  70 °C**



**Coefficient of performance -  $t_{VL}$  70 °C**



$t_{VL}$  = heating flow temperature (°C)

$t_O$  = source temperature (°C)

$Q_h$  = heat output (kW), measured in accordance with standard EN 14511

COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

◆ Maximum output

▲ Minimum output

Performance data – heating

Belaria® pro comfort (15)

Data according to EN 14511

$t_{VL}$ °C	$t_Q$ °C	Maximum output			Minimum output		
		$Q_h$ kW	P kW	COP	$Q_h$ kW	P kW	COP
35	-18	10.1	4.6	2.2	6.0	2.5	2.5
	-15	10.8	4.7	2.3	6.0	2.2	2.7
	-10	12.0	4.6	2.6	5.9	1.8	3.2
	-7	13.3	4.6	2.9	6.0	1.7	3.6
	2	14.5	4.5	3.2	6.0	1.2	4.8
	7	16.1	3.7	4.4	5.9	1.0	5.8
	10	17.3	3.5	4.9	6.1	1.0	6.3
	12	18.4	3.5	5.2	5.9	0.9	6.8
	15	18.6	3.6	5.2	6.1	0.9	7.1
20	19.0	3.5	5.4	6.3	0.9	7.4	
45	-18	9.3	5.3	1.8	6.3	3.1	2.0
	-15	10.3	5.2	2.0	6.0	2.6	2.3
	-10	11.6	5.2	2.2	5.9	2.3	2.6
	-7	12.8	5.3	2.4	6.1	2.1	2.9
	2	14.2	5.0	2.8	6.0	1.6	3.7
	7	15.5	4.3	3.7	6.0	1.4	4.4
	10	16.7	4.3	3.9	6.1	1.3	4.8
	12	17.4	4.3	4.1	6.1	1.2	5.1
	15	17.9	4.3	4.2	6.3	1.2	5.3
20	18.3	4.2	4.4	6.7	1.2	5.8	
50	-18	8.8	5.4	1.6	6.2	3.2	1.9
	-15	9.9	5.4	1.8	6.0	2.9	2.1
	-10	11.1	5.3	2.1	6.0	2.5	2.4
	-7	12.3	5.5	2.2	6.2	2.4	2.6
	2	13.5	5.1	2.6	6.1	1.8	3.3
	7	15.2	4.7	3.3	6.2	1.6	3.9
	10	16.3	4.7	3.5	6.2	1.4	4.3
	12	17.1	4.7	3.7	6.2	1.4	4.5
	15	17.5	4.7	3.8	6.3	1.3	4.7
20	17.9	4.5	4.0	6.6	1.3	5.1	
55	-18	8.2	5.5	1.5	6.0	3.3	1.8
	-15	9.1	5.4	1.7	6.1	3.1	1.9
	-10	10.5	5.4	2.0	6.0	2.9	2.1
	-7	11.6	5.4	2.1	6.2	2.7	2.3
	2	12.9	5.2	2.5	6.1	2.1	2.9
	7	14.9	4.9	3.0	6.3	1.8	3.4
	10	15.8	4.9	3.2	6.2	1.7	3.7
	12	16.7	5.0	3.4	6.2	1.6	3.9
	15	17.2	5.0	3.4	6.3	1.5	4.1
20	17.6	4.9	3.6	6.4	1.5	4.4	
60	-18	8.6	5.2	1.4	6.0	4.0	1.5
	-15	9.1	5.6	1.5	6.0	3.6	1.7
	-10	10.1	5.6	1.7	6.0	3.2	1.9
	-7	10.8	5.4	2.0	6.2	3.1	2.0
	2	12.4	5.5	2.3	6.0	2.4	2.5
	7	14.5	5.4	2.7	6.0	2.1	2.8
	10	15.5	5.4	2.8	6.1	2.0	3.1
	12	16.1	5.4	3.0	6.0	1.9	3.2
	15	16.4	5.4	3.0	6.0	1.8	3.4
20	16.7	5.1	3.3	6.1	1.7	3.7	
70	-18	-	-	-	-	-	-
	-15	-	-	-	-	-	-
	-10	8.4	5.8	1.5	6.1	4.2	1.4
	-7	9.8	6.2	1.6	6.0	3.8	1.6
	2	12.0	5.8	2.1	6.1	3.0	2.0
	7	13.5	5.9	2.3	6.0	2.8	2.2
	10	14.3	5.9	2.4	6.3	2.7	2.4
	12	14.7	5.8	2.5	6.1	2.5	2.4
	15	15.4	6.0	2.6	6.0	2.4	2.5
20	15.5	5.9	2.6	6.3	2.3	2.8	

$t_{VL}$  = heating flow temperature (°C)

$t_Q$  = source temperature (°C)

$Q_h$  = heat output (kW), measured in accordance with standard EN 14511

P = power consumption, overall unit (kW)

COP = Coefficient of Performance for the overall unit in accordance with standard EN 14511

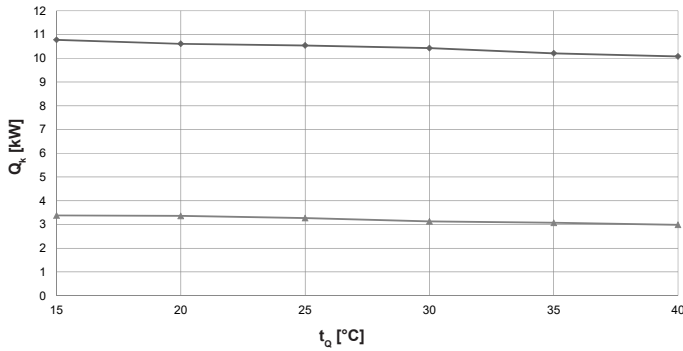
**Observe daily power interruptions!**  
see "Engineering heat pumps general"

Performance data – cooling

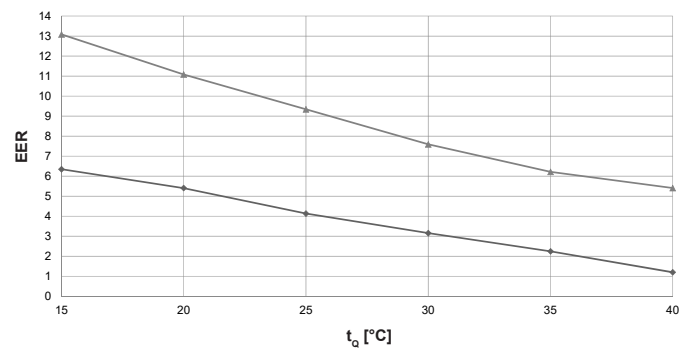
Maximum cooling capacity

Belaria® pro comfort (8), compact (8/100/300)

Cooling capacity -  $t_{VL} 18\text{ °C}$



Energy efficiency ratio -  $t_{VL} 18\text{ °C}$



◆ Maximum output  
▲ Minimum output

Belaria® pro comfort (8), compact (8/100/300)

Data according to EN 14511

$t_{VL}$ °C	$t_0$ °C	Maximum output			Minimum output		
		$Q_k$ kW	P kW	EER	$Q_k$ kW	P kW	EER
7	15	10.7	2.0	5.4	3.0	0.4	8.5
	20	10.2	3.8	2.6	3.1	0.4	7.0
	25	9.6	4.5	2.1	3.1	0.6	5.6
	30	8.8	4.8	1.8	3.1	0.7	4.5
	35	7.9	5.8	1.3	3.1	0.8	3.7
	40	7.1	5.4	1.3	3.3	1.0	3.3
12	15	10.8	1.4	7.7	3.3	0.3	10.2
	20	10.6	3.0	3.5	3.1	0.4	8.7
	25	10.6	4.2	2.5	3.1	0.4	7.1
	30	10.0	4.7	2.1	3.1	0.5	6.1
	35	9.2	5.7	1.6	3.0	0.6	5.3
	40	8.6	5.4	1.6	2.9	0.6	4.6
18	15	10.8	1.0	6.3	3.4	0.3	13.1
	20	10.6	2.0	5.4	3.4	0.3	11.1
	25	10.5	2.6	4.1	3.3	0.4	9.3
	30	10.4	3.3	3.2	3.1	0.4	7.6
	35	10.2	4.6	2.2	3.1	0.5	6.2
	40	10.1	5.4	1.2	3.0	0.6	5.4

$t_{VL}$  = cooling water flow temperature (°C)  
 $t_0$  = source temperature (°C)  
 $Q_k$  = cooling capacity (kW), measured in accordance with standard EN 14511  
P = power consumption, overall unit (kW)  
EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

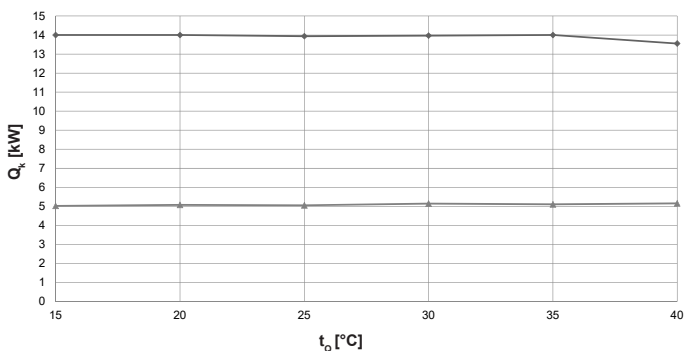
Observe daily power interruptions!  
see "Engineering heat pumps general"

Performance data – cooling

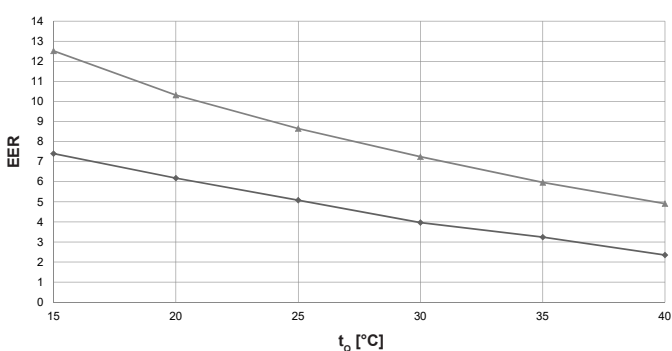
Maximum cooling capacity

Belaria® pro comfort (13), compact (13/100/300)

Cooling capacity -  $t_{VL} 18\text{ °C}$



Energy efficiency ratio -  $t_{VL} 18\text{ °C}$



◆ Maximum output  
▲ Minimum output

Belaria® pro comfort (13), compact (13/100/300)

Data according to EN 14511

$t_{VL}$ °C	$t_0$ °C	Maximum output			Minimum output		
		$Q_k$ kW	P kW	EER	$Q_k$ kW	P kW	EER
7	15	14.0	3.9	3.6	5.0	0.6	8.1
	20	13.4	4.4	3.0	5.1	0.8	6.5
	25	12.7	4.8	2.6	5.1	1.0	5.3
	30	11.8	5.1	2.3	5.1	1.2	4.3
	35	10.8	5.5	2.0	5.1	1.4	3.5
	40	9.5	5.7	1.7	5.1	1.8	2.8
12	15	14.0	2.8	5.1	5.0	0.5	9.5
	20	14.0	3.5	4.0	5.1	0.6	7.9
	25	14.0	4.5	3.1	5.1	0.8	6.7
	30	13.4	4.9	2.7	5.1	0.9	5.7
	35	12.6	5.4	2.3	5.1	1.1	4.6
	40	11.5	5.8	2.0	5.1	1.3	3.9
18	15	14.0	1.9	7.4	5.0	0.4	12.5
	20	14.0	2.3	6.2	5.1	0.5	10.3
	25	13.9	2.7	5.1	5.1	0.6	8.7
	30	14.0	3.5	4.0	5.2	0.7	7.3
	35	14.0	4.3	3.2	5.1	0.9	6.0
	40	13.6	5.8	2.4	5.2	1.1	4.9

$t_{VL}$  = cooling water flow temperature (°C)  
 $t_0$  = source temperature (°C)  
 $Q_k$  = cooling capacity (kW), measured in accordance with standard EN 14511  
P = power consumption, overall unit (kW)  
EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

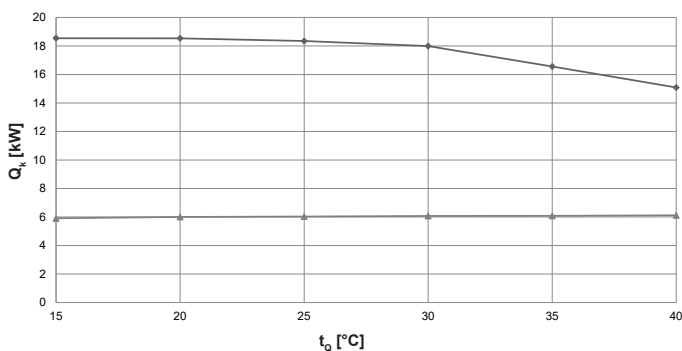
**Observe daily power interruptions!**  
see "Engineering heat pumps general"

**Performance data – cooling**

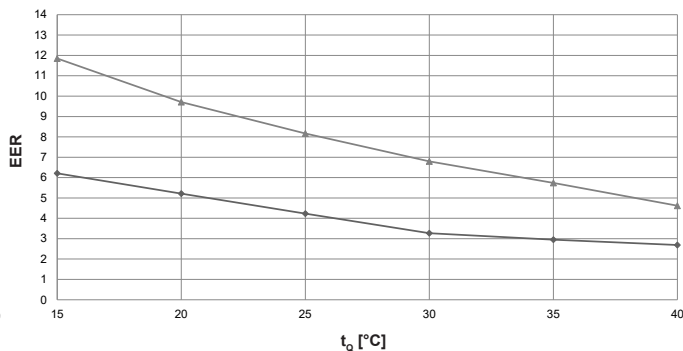
Maximum cooling capacity

**Belaria® pro comfort (15)**

Cooling capacity -  $t_{VL}$  18 °C



Energy efficiency ratio -  $t_{VL}$  18 °C



◆ Maximum output  
 ▲ Minimum output

**Belaria® pro comfort (15)**

Data according to EN 14511

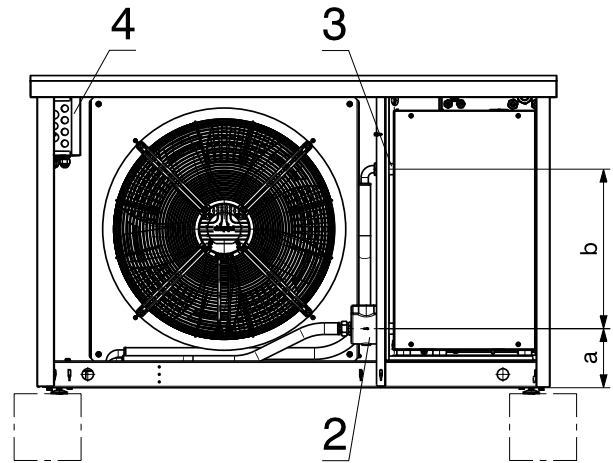
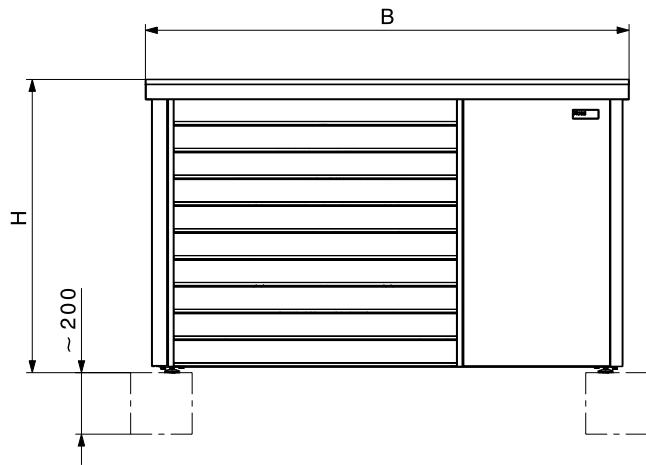
$t_{VL}$ °C	$t_o$ °C	Maximum output			Minimum output		
		$Q_k$ kW	P kW	EER	$Q_k$ kW	P kW	EER
7	15	17.1	4.8	3.5	6.0	0.8	7.2
	20	15.9	5.3	3.0	6.1	1.0	6.2
	25	14.5	5.3	2.7	5.9	1.1	5.3
	30	13.0	5.5	2.4	5.9	1.4	4.3
	35	12.1	5.5	2.2	6.1	1.7	3.6
	40	10.9	5.6	2.0	6.0	2.2	2.8
12	15	18.4	4.3	4.3	6.0	0.7	9.0
	20	17.8	5.3	3.4	6.0	0.8	7.6
	25	16.9	5.3	3.2	6.1	0.9	6.7
	30	15.3	5.4	2.8	6.0	1.1	5.5
	35	14.2	5.4	2.6	5.9	1.3	4.5
18	40	13.0	5.5	2.4	6.1	1.7	3.6
	15	18.5	3.0	6.2	5.9	0.5	11.9
	20	18.5	3.6	5.2	6.0	0.6	9.7
	25	18.3	4.3	4.2	6.0	0.7	8.2
	30	18.0	5.5	3.3	6.1	0.9	6.8
	35	16.6	5.6	3.0	6.1	1.1	5.7
	40	15.1	5.6	2.7	6.1	1.3	4.6

$t_{VL}$  = cooling water flow temperature (°C)  
 $t_o$  = source temperature (°C)  
 $Q_k$  = cooling capacity (kW), measured in accordance with standard EN 14511  
 P = power consumption, overall unit (kW)  
 EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

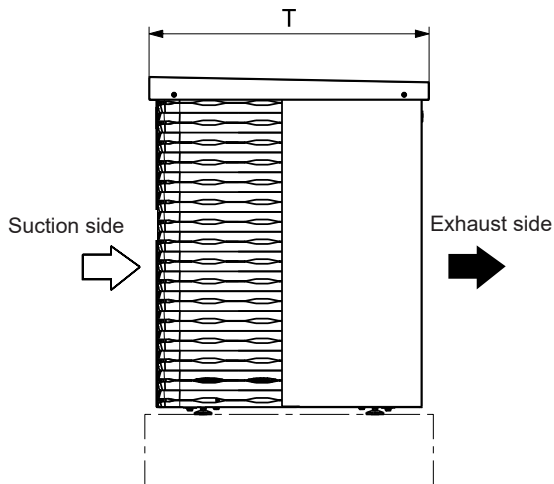
**Observe daily power interruptions!**  
 see "Engineering heat pumps general"

**Belaria® pro**  
**Outdoor unit**  
 (Dimensions in mm)

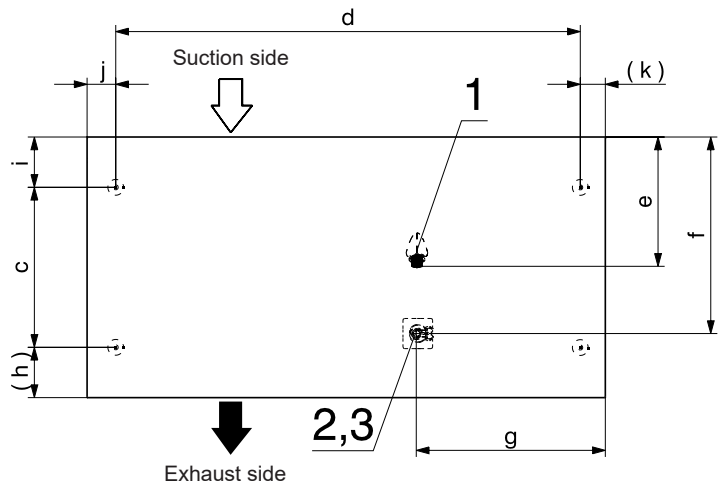
Front view



View from the left



View from top



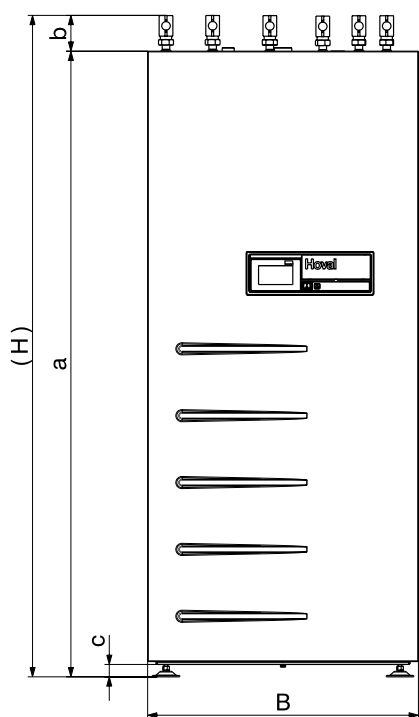
- 1 Condensate drain 1"
- 2 Connection hydraulic connection line return (8,13): 1" ext. thread/(15): 1¼" ext. thread
- 3 Connection hydraulic connection line flow (8,13): 1" ext. thread/(15): 1¼" ext. thread
- 4 Electrical connection

Type	H	B	T	a	b	c	d	e	f	g	h	i	j	k
Belaria® pro (8)	954	1575	791	175	480	485	1410	400	600	640	150	155	90	75
Belaria® pro (13)	954	1575	791	175	480	485	1410	400	600	640	150	155	90	75
Belaria® pro (15)	1432	1575	791	175	480	485	1410	400	600	640	150	155	90	75

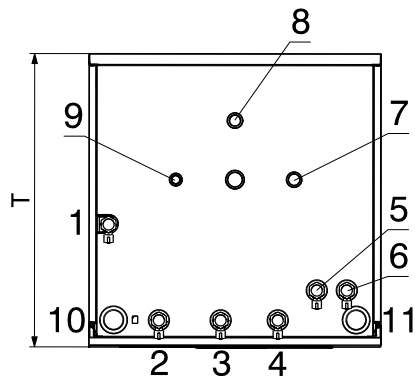




**Belaria® pro compact (8/100/300), (13/100/300)**  
Indoor unit with buffer storage tank and calorifier  
(Dimensions in mm)



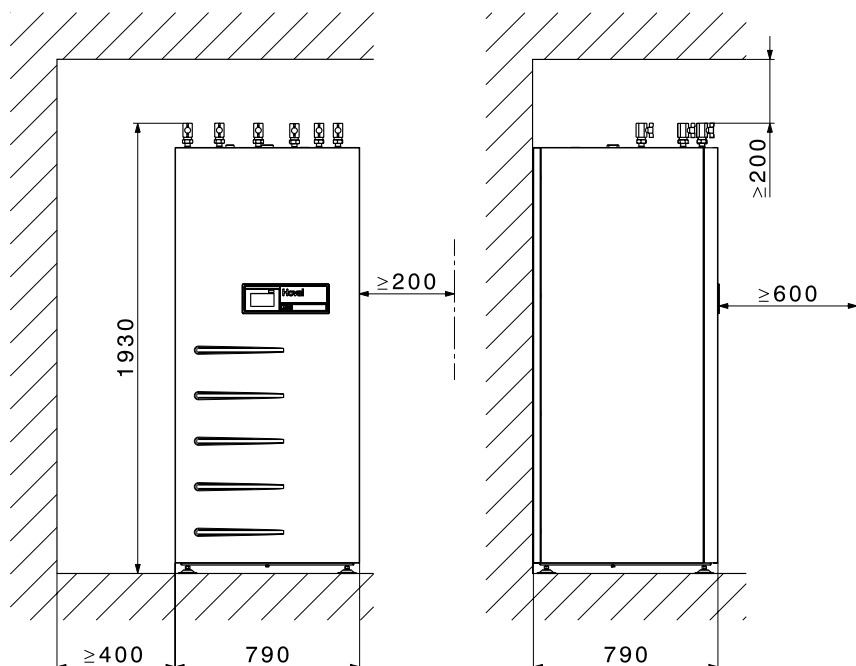
View from above



- 1 Outdoor unit flow 1" int. thread
- 2 Outdoor unit return 1" int. thread
- 3 Flow second heating circuit 1" int. thread (optional)
- 4 Return second heating circuit 1" int. thread (optional)
- 5 Flow heating circuit 1" int. thread
- 6 Return heating circuit 1" int. thread
- 7 Hot water connection 1" int. thread
- 8 Cold water connection 1" int. thread
- 9 Circulation connection 3/4" ext. thread
- 10 Cable feed-in sensors, RS485
- 11 Cable feed-in main current, control current

Type	H	B	T	a	b	c
Belaria® pro compact (8/100/300)	1930	790	790	1825	105	38
Belaria® pro compact (13/100/300)	1930	790	790	1825	105	38

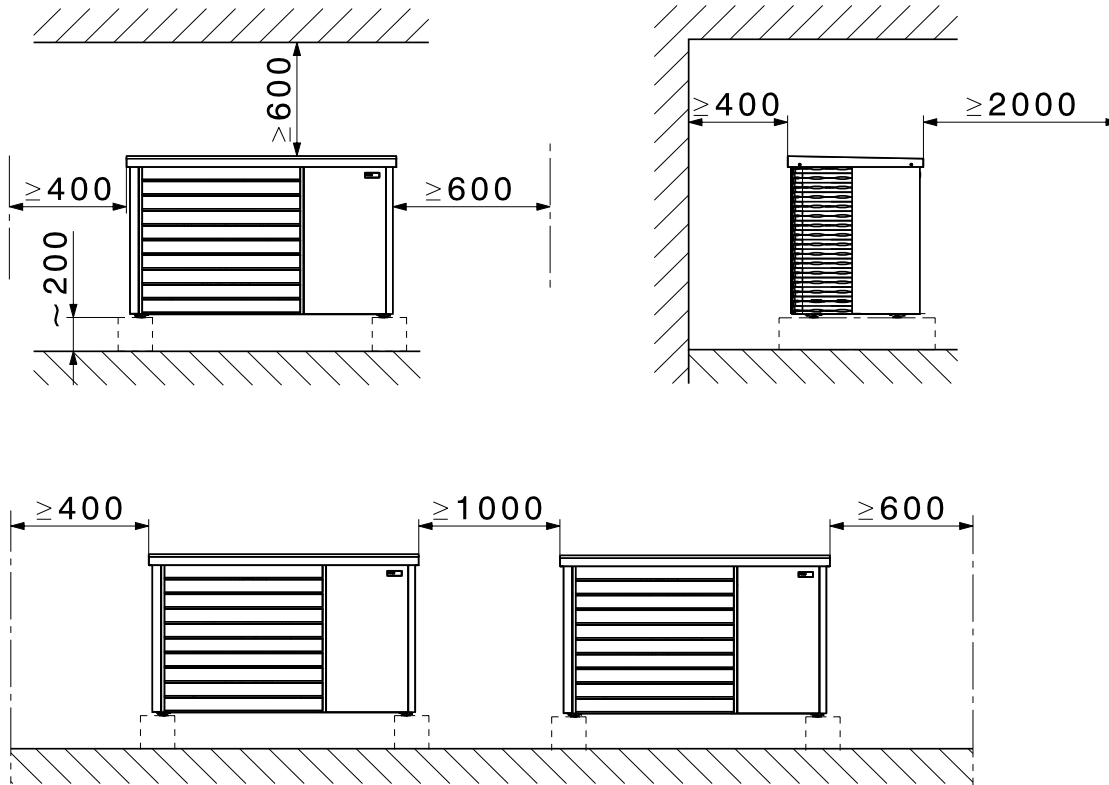
**Belaria® pro compact (8,13/100/300)**  
Indoor unit floor-mounted



To ensure accessibility to the electrical/hydraulic connections, a clearance of at least 200 mm must be provided above the indoor unit. In addition, the side clearances must be observed.

**Space requirement**  
 (Dimensions in mm)

**Belaria® pro**  
**Outdoor unit**

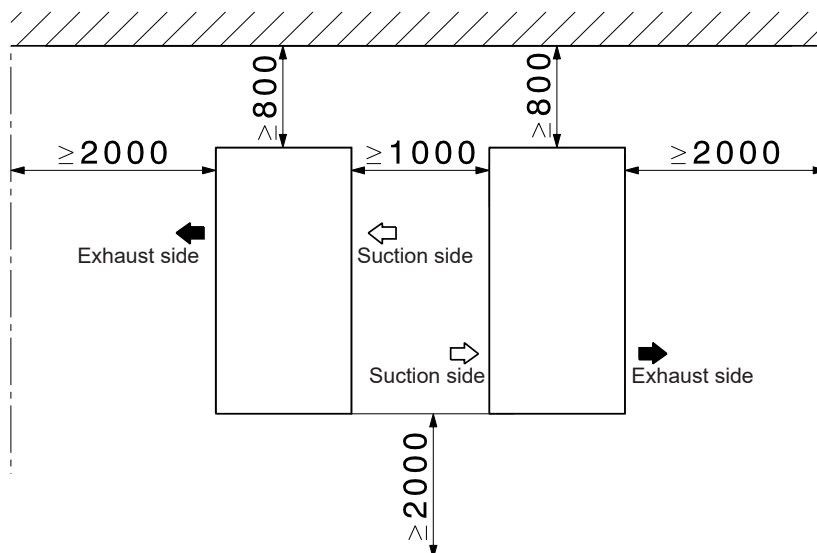


Any possible openings/recesses and ignition sources must be avoided within a radius of one meter around the outdoor unit.

In order to ensure accessibility during maintenance, a clearance of at least 600 mm upwards must be maintained. For any service work, the minimum clearances at the rear and sides of the heat pump must be observed.

**Belaria® pro**  
**Outdoor unit**

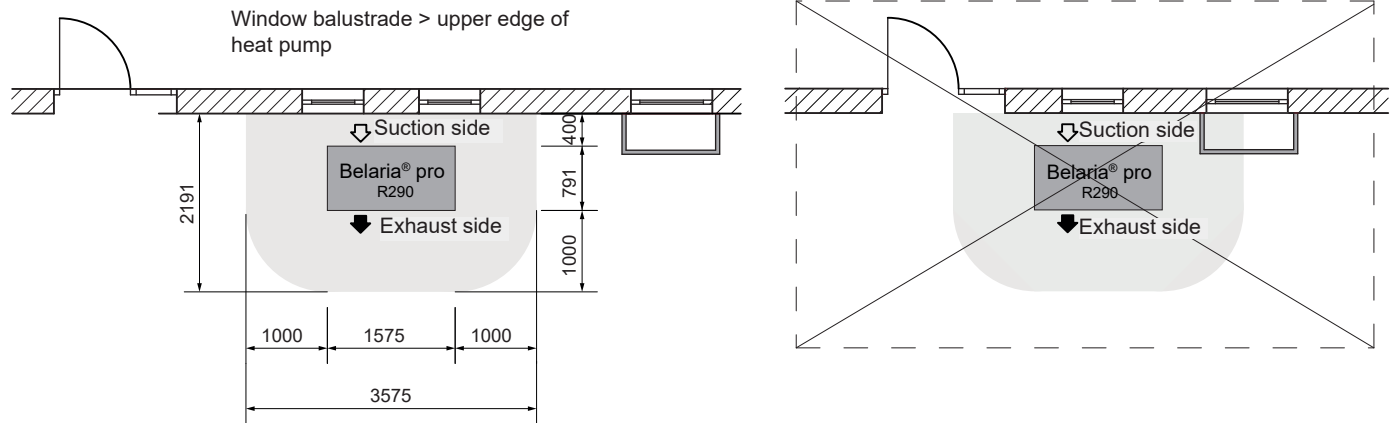
**View from above**



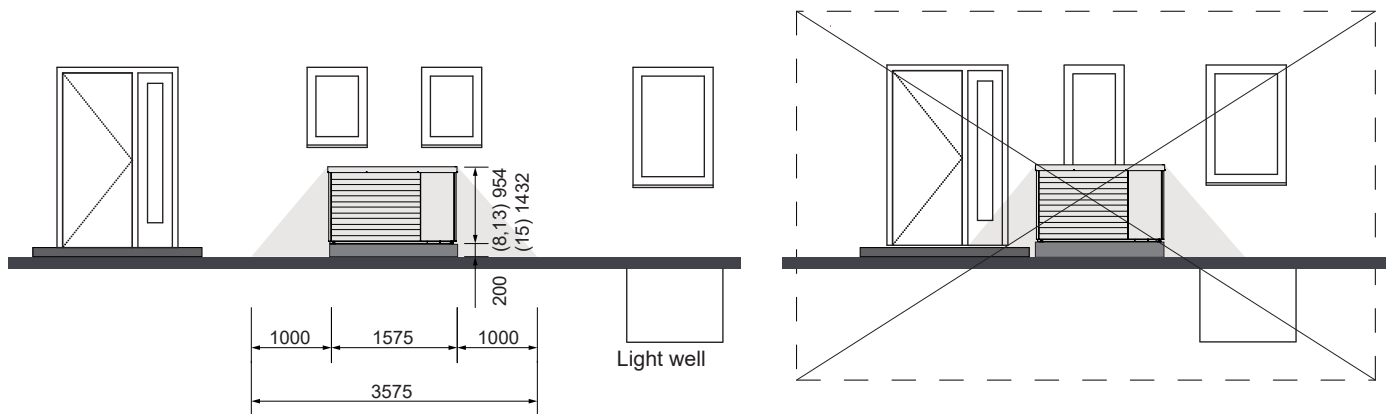
**Presentation of protection zones**

Belaria® pro with refrigerant R290  
 (Dimensions in mm)

**Floor plan - protection zone when installed in front of a wall**

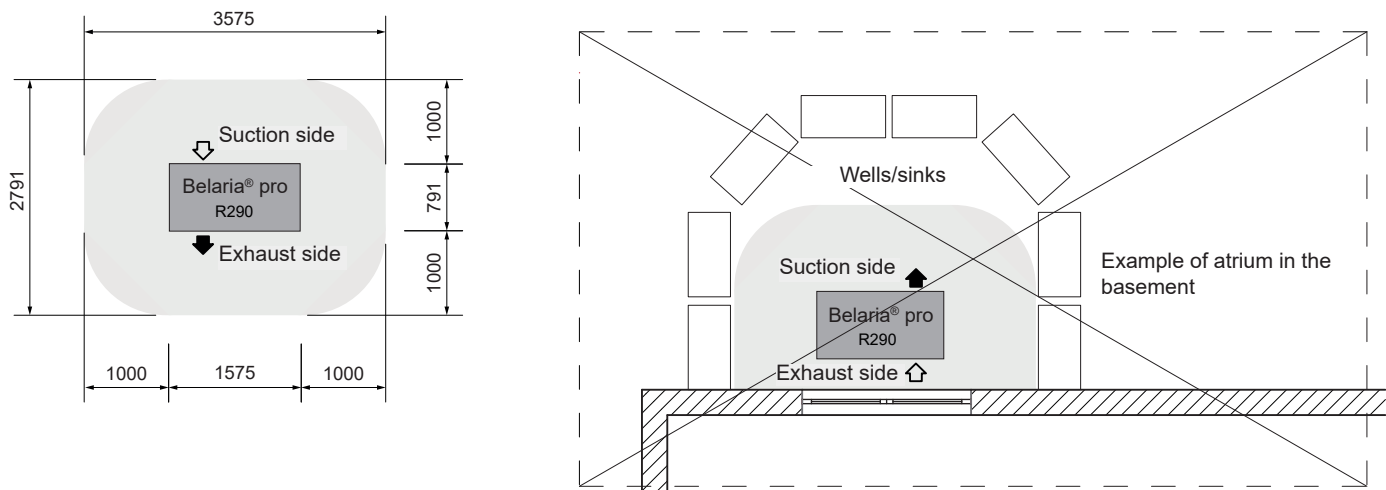


**View - protection zone when installed in front of a wall**

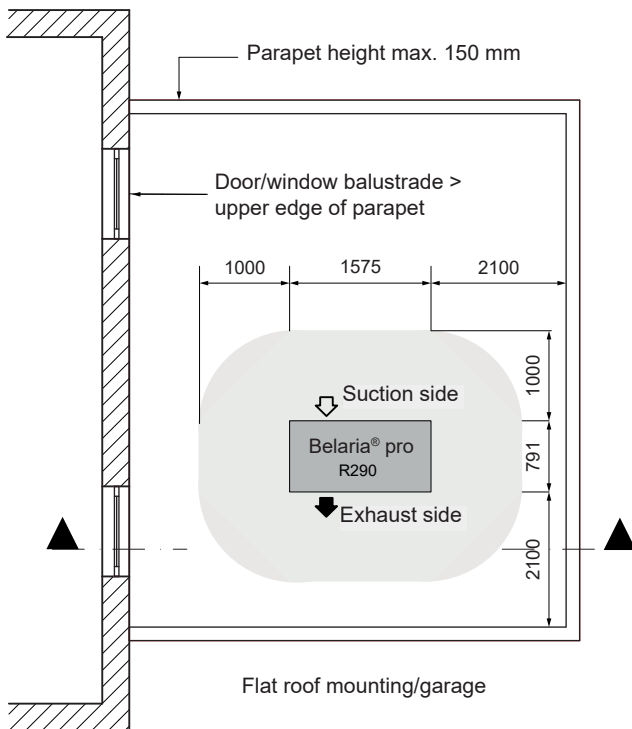


- There must be no building openings (windows, doors, shafts, ventilation openings, floor drains or the like) within a radius of 1 m from the outdoor unit and no potential ignition sources must be present.
- Window balustrades must be higher than the upper edge of the outdoor unit in the protection zone!
- The heat pump must be at least 1 m from the property boundary; observe building regulations!
- At the entrances to properties, it must be ensured that no vehicle can enter the protection zone.

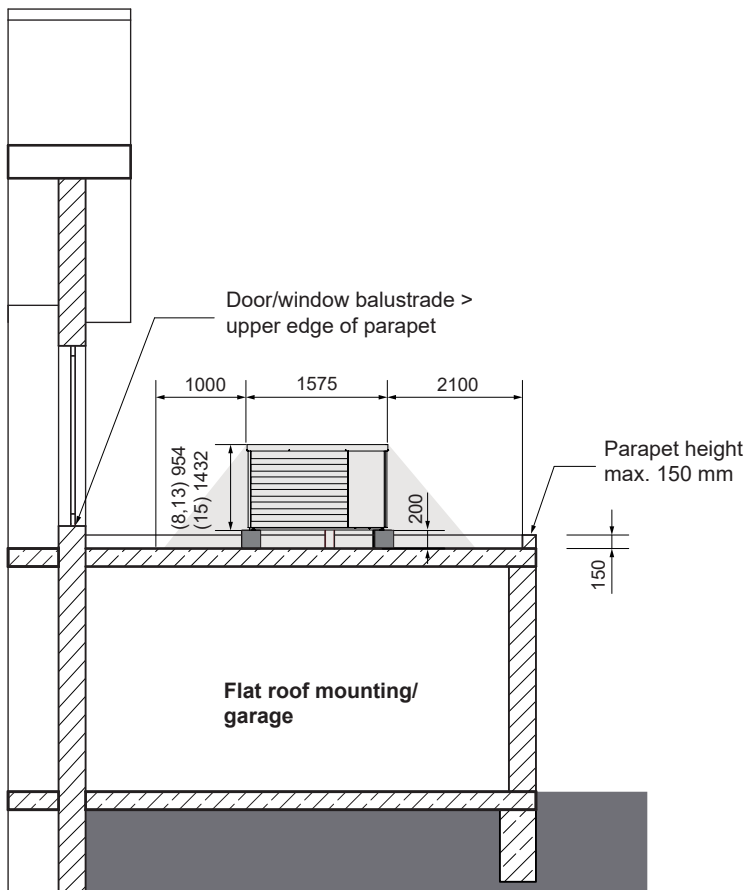
**Floor plan - protection zone when installed outdoors**



Floor plan flat roof - protection zone



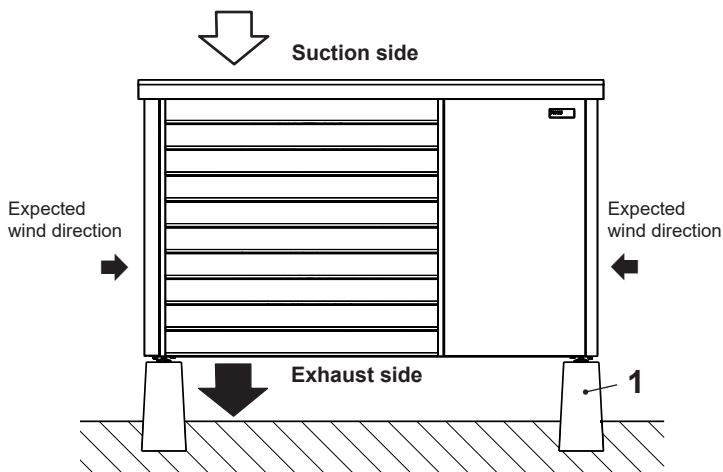
Section flat roof - protection zone



- Strict compliance with safety measures regarding combustible refrigerants.
- All standards concerning statics, wind load and access to roofs must be complied with. The outdoor unit must be firmly bolted onto the substructure (e.g. concrete base). The heat pump must be prevented from tilting.
- Minimum distance of the heat pump to the roof edge: 1.5 m (personal protection) + 0.6 m (working area refrigeration circuit).
- Accessibility for maintenance and repair work must be ensured. For work on the heat pump, a measuring case and test equipment, refrigerant bottle, etc. must be transported to the site, amongst other things. In addition to the safety equipment (fall protection devices, anchoring devices, etc.), this must also be taken into account for skylights, stairs, railings, etc.
- There must be no floor-to-ceiling doors/windows to the flat roof, or balustrade must be higher than the parapet.
- Protection zones around windows must be complied with.
- There must not be any pipe vents, skylights or the like on the flat roof within a radius of 1 m from the heat pump.
- If there is a risk of frost, a siphon must be installed in the shaft immediately before the condensate drain is introduced into the downpipe.

**Installation variants for Belaria® pro outdoor unit**  
 (Dimensions in mm)

**Firm base on site with strip foundation**

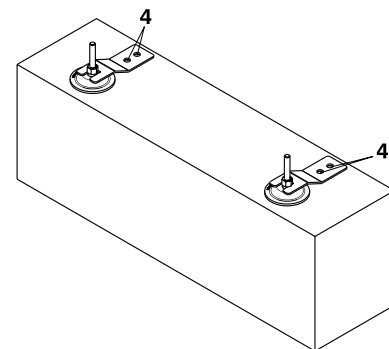
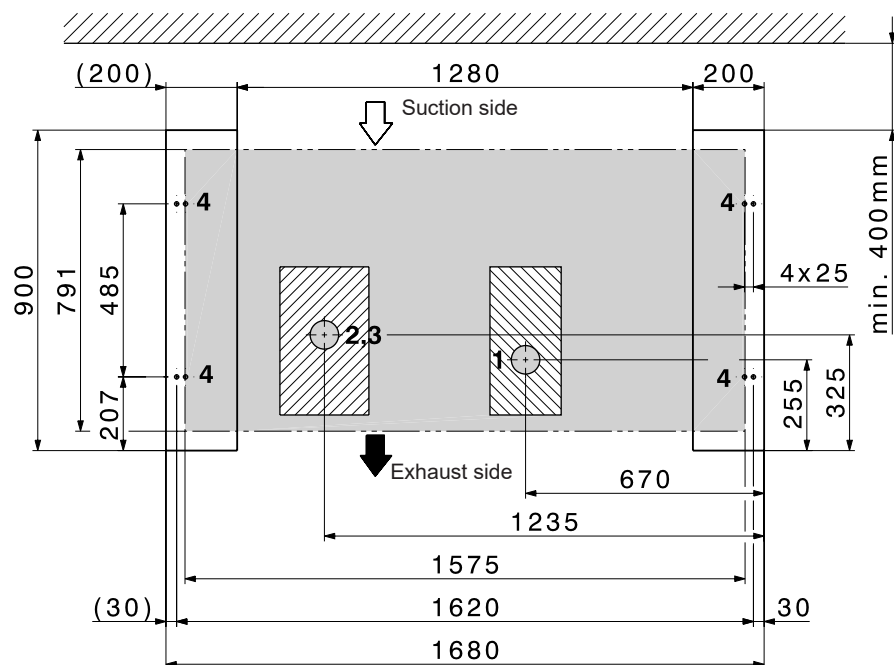


1 Concrete base on site

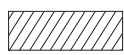

**Installation variants for Belaria® pro outdoor unit**  
 (Dimensions in mm)

**Strip foundation**

Plan concrete base set  
 (view from above)



Attachment of the outdoor unit from the outside (laterally) using the supplied clamps. The clamps are visible. It is not necessary to remove the cladding sections.

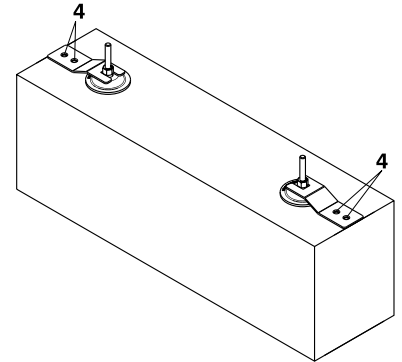
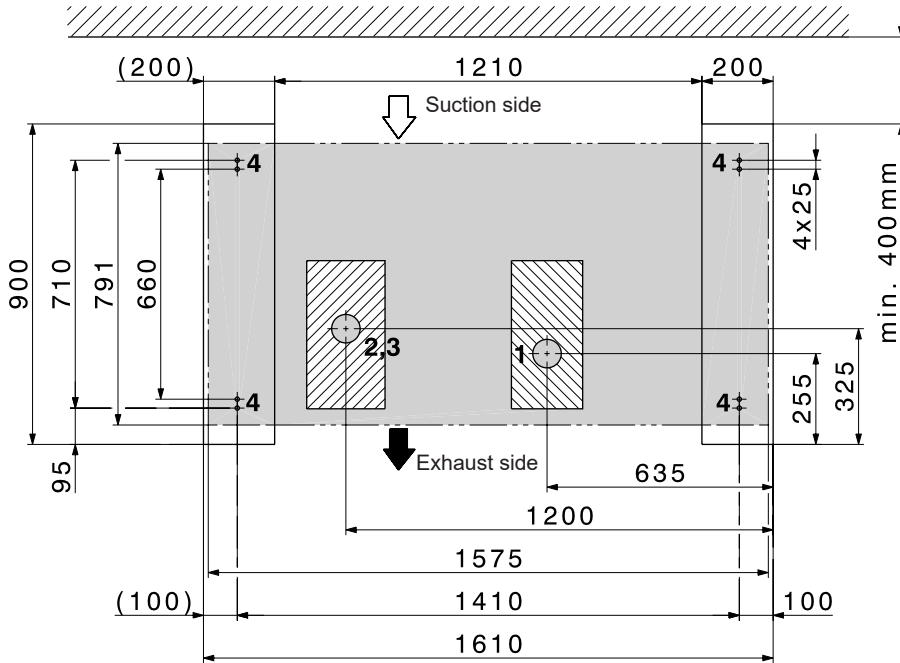
-  Possible area for empty tubes in the concrete base
-  Possible area for condensate drain in the concrete base

- 1 Condensate drain area
- 2 Area FL hydraulics  
RT hydraulics
- 3 Electrics area
- 4 Attachment points M8 Belaria® pro (dowels in scope of delivery)

**Installation variants for Belaria® pro outdoor unit**  
 (Dimensions in mm)

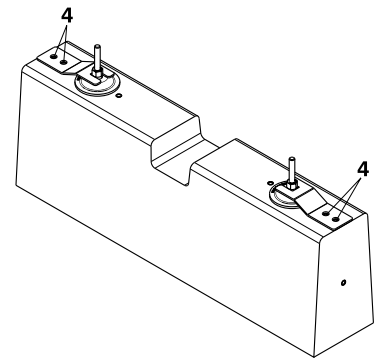
**Strip foundation**

Plan concrete base set  
 (view from above)



Attachment of the outdoor unit from the "inside/bottom" (grey area) of the heat pump using the supplied clamps. The clamps are not visible. It is necessary to remove the cladding sections.

Installation on concrete base set BSW02  
 Attention: dimensions (H x W x D) concrete base set BSW02 250 x 150 x 750 mm

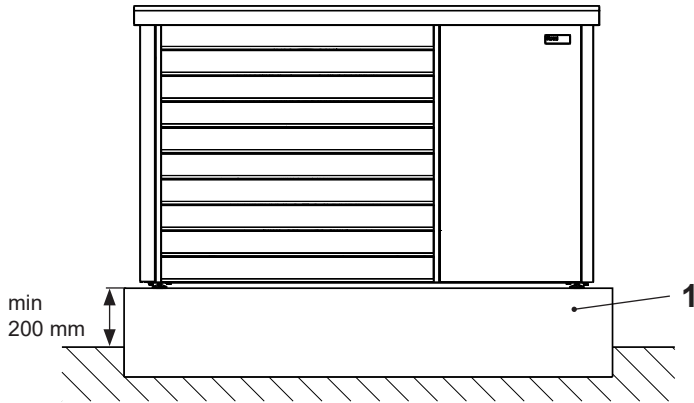


- Possible area for empty tubes in the concrete base
- Possible area for condensate drain in the concrete base

- 1 Condensate drain area
- 2 Area FL hydraulics  
RT hydraulics
- 3 Electrics area
- 4 Attachment points M8 Belaria® pro (dowels in scope of delivery)

**Installation variants for Belaria® pro outdoor unit**  
 (Dimensions in mm)

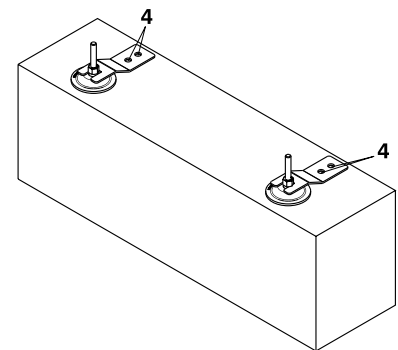
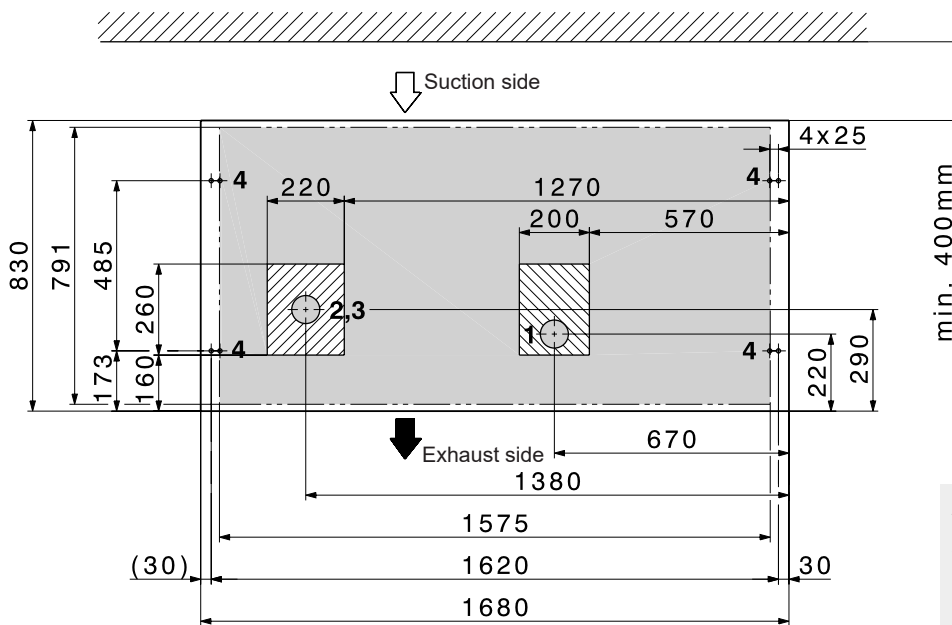
**Firm base on site with floor plate**



1 Floor plate on site

**Floor plate**

Plan  
 (view from above)



Attachment of the outdoor unit from the outside (laterally) using the supplied clamps. The clamps are visible. It is not necessary to remove the cladding sections.

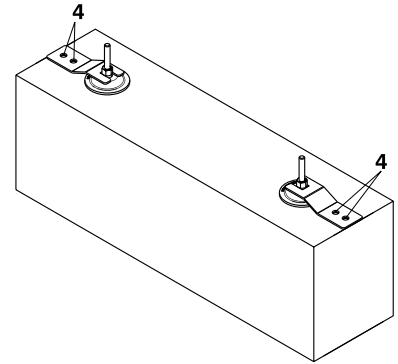
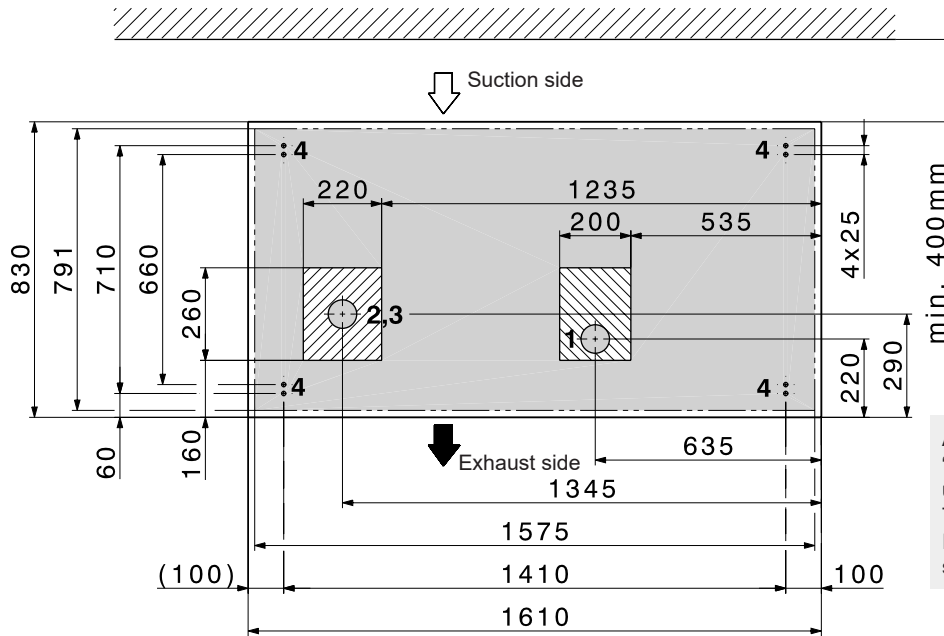
- Possible area for empty tubes in the concrete base
- Possible area for condensate drain in the concrete base

- 1 Condensate drain area
- 2 Area FL hydraulics  
RT hydraulics
- 3 Electrics area
- 4 Attachment points M8 Belaria® pro (dowels in scope of delivery)



**Installation variants for Belaria® pro outdoor unit**  
 (Dimensions in mm)

**Floor plate**  
 Plan  
 (view from above)

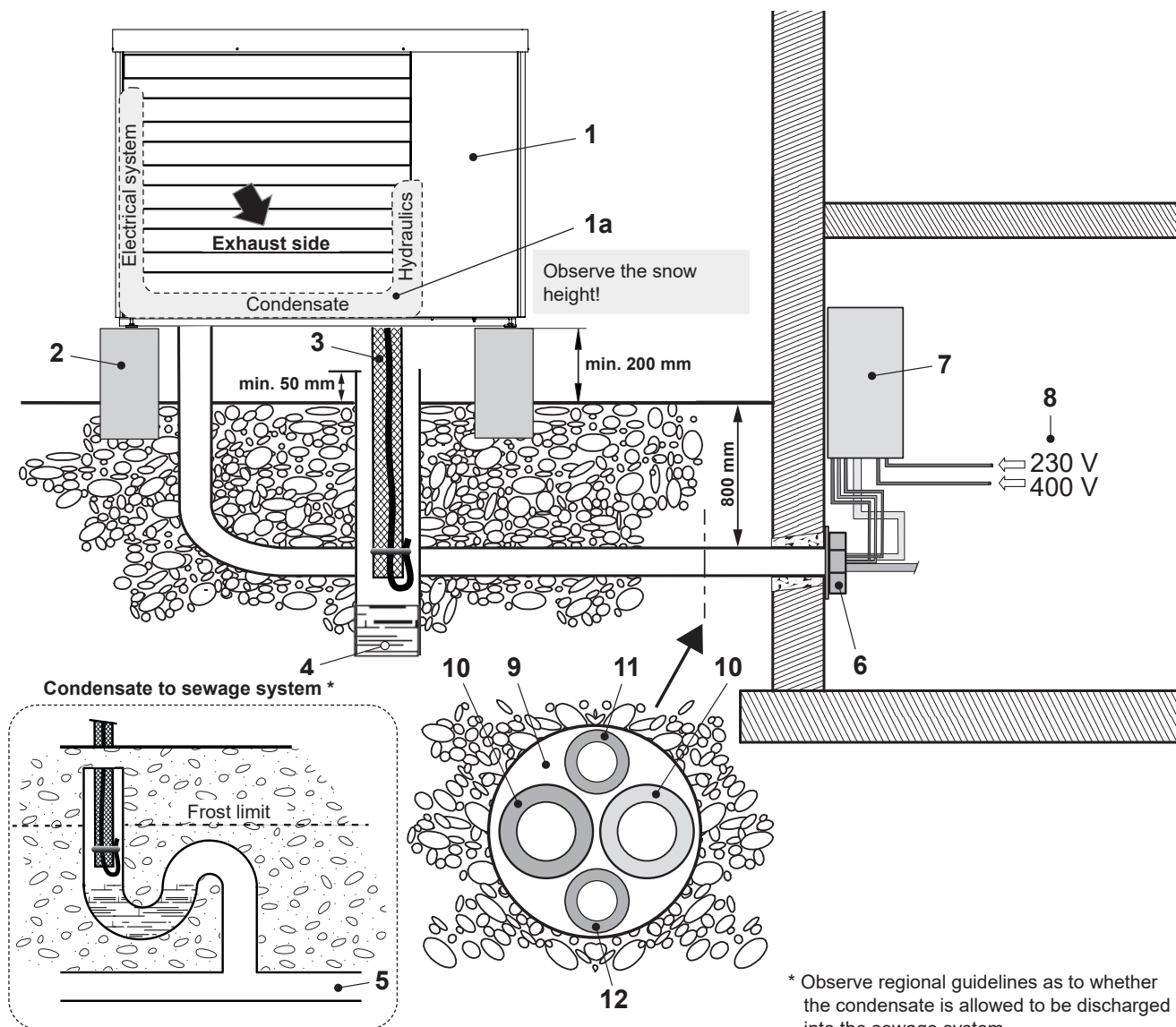


Attachment of the outdoor unit from the "inside/bottom" (grey area) of the heat pump using the supplied clamps. The clamps are not visible. It is necessary to remove the cladding sections.

- Possible area for empty tubes in the concrete base
- Possible area for condensate drain in the concrete base

- 1 Condensate drain area
- 2 Area FL hydraulics  
RT hydraulics
- 3 Electrics area
- 4 Attachment points M8 Belaria® pro (dowels in scope of delivery)

Configuration and connection diagram Belaria® pro



\* Observe regional guidelines as to whether the condensate is allowed to be discharged into the sewage system.

- |   |   |
|---|---|
| <p>1 Outdoor unit<br/>                 1a Space for connection of hydraulics (FL + RT), condensate drain and electrics.<br/>                 2 Concrete base<br/>                 3 Condensate drain Ø 28 mm<br/>                 4 Variant 1: Seepage (duct/gravel layer)<br/>                 5 Variant 2: Discharging into the sewage system (penetration into the soil must be made leak-tight)<br/>                 6 Wall bushing (hydraulic and electrical connections)<br/>                 7 Belaria® pro comfort indoor unit (8-15)<br/>                 On the Belaria® pro compact (8,13/100/300), the hydraulic and electrical connections are located on the top of the unit!</p> | <p>8 Main current:<br/>                 3 x 400 V/50 Hz<br/>                 Control current:<br/>                 1 x 230 V/50 Hz<br/>                 Electric heating element main current:<br/>                 3 x 400 V/50 Hz<br/>                 Network cables (optional)<br/>                 9 Empty tube for hydraulics and electrics<br/>                 10 Connection line flow + return<br/>                 11 Empty tube for electrical connections for outdoor unit<br/>                 Main current outdoor unit: 3 x 400 V/50 Hz<br/>                 Outdoor unit control current: 1 x 230 V/50 Hz<br/>                 12 Empty tube for data bus RS485</p> |
|---|---|

### Requirements and directives

The general requirements and directives listed in the chapter Engineering apply.

### Set-up

- The distance between the indoor and outdoor unit must be as short as possible. Only short and simple routing of lines guarantees cost effectiveness and low heat losses.
- The maximum permitted single cable length is 30 m between the outdoor unit, via the indoor unit and the heating storage tank. This must not be exceeded.  
If the Belaria® pro is operated without a buffer storage tank connected in parallel, the customer must assess whether the next larger pipe dimension is more suitable due to the pressure drop.
- There must be no building openings (windows, doors, shafts, ventilation openings, etc.) within a radius of 1 m from the outdoor unit and no potential ignition sources must be present.
- Wall ducts into the building must be airtight.
- The outdoor unit must not be placed in or near floor recesses.
- The outdoor unit must not be placed closer than 1 m to the boundary of the property. Country-specific regulations must be observed.
- The air intake and air outlet sides must not be narrowed or blocked. The air outlet side must be the side facing away from the building and unobstructed (> 2 m).
- For efficiency reasons, the line length with the Belaria® pro comfort between the calorifier and the indoor unit is not allowed to be more than 10 m.

### Outdoor unit

The outdoor unit is installed outdoors. The installation location must be selected carefully. It is essential that the following ancillary conditions are met:

- The maximum line length according to the installation must not be exceeded.
- The connection lines must be laid insulated and frost-proof.
- The installation location must be chosen in such a way that no noise pollution can occur (do not install near bedrooms, keep a distance from neighbours), hedges and bushes can have a sound-absorbing effect.
- Unobstructed air inflow and outflow must be possible.
- It is imperative that the minimum distances are observed (see Dimensions/Space requirement)
- The intake air must be free of impurities such as sand and aggressive substances such as ammonia, sulphur, chlorine etc.
- The outdoor unit must be installed on a load-bearing fixed structure.
- If the unit is installed at wind-prone locations, the alignment of the heat pump must be selected in such a way that the expected wind direction is crossways to the suction direction of the outdoor unit.
- If an alternative installation in areas subject to strong winds cannot be avoided, an additional wind shield in the form of a hedge, for example, should be installed, or additional fastening should be provided for the outdoor unit.

- If the installation location is not protected against snowfall, it must be chosen in such a way that the evaporator remains free of snow.
- The outdoor unit must always be installed on a solid surface in a horizontal position. This can be achieved by means of concrete bases or a floor plate.
- The load-bearing capability must be adequate. The unit must be fixed with 4 M8 screws.
- Air heat pumps generate condensate during operation. This can amount to 8 litres per defrost cycle within 2 minutes for the outdoor unit of the Belaria® pro.
- The condensate drain must be frost-proof so that the condensate can flow away without problems even at outdoor temperatures below 0 °C.
- If the discharge is into the sewage system, a siphon must be provided and the duct lead-through into the ground must be sealed so that no refrigerant can enter the sewage system uncontrolled.
- The condensate trough included in the outdoor unit is already equipped with a tank heater at the factory and thus prevents freezing.
- The condensate drain line is also secured with the preassembled heating tape.
- The air outlet has increased susceptibility to frost. Gutters, water pipes and water containers must not be situated right next to the outlet.
- The condensate drain must be discharged outside the building and must not be led into or through a building.
- If installed near the coast, the location must be at least 5 km from the coastline. If this safe distance is not complied with, increased corrosion can be expected. These cases are excluded from the warranty.
- To prevent damage caused by animals such as rodents or insects, all cable ducts must be properly sealed.
- The hydraulic lines from the heat pump can transmit structure-borne noise. Therefore, structure-borne noise decoupling should be provided, e.g. with sound-insulating hoses.

### Flat roof installation

Flat roof installation of the Belaria® pro is possible under the following conditions:

- Strict compliance with safety measures regarding flammable refrigerants (see below).
- All standards concerning statics, wind load and access to roofs must be complied with. The outdoor unit must be firmly bolted onto the substructure (e.g. concrete base). The heat pump must be prevented from tilting.
- Minimum distance of the heat pump to the roof edge: 1.5 m (personal protection) + 0.6 m (working area refrigeration circuit).

- Accessibility for maintenance and repair work must be ensured. For work on the heat pump, a measuring case and test equipment, refrigerant bottle, etc. must be transported to the site, amongst other things. In addition to the safety equipment (fall protection devices, anchoring devices, etc.), this must also be taken into account for skylights, stairs, railings, etc.

### Safety measures to be complied with

- There must be no building openings (windows, doors, shafts, ventilation openings, floor drains, etc.) within a radius of 1 m from the outdoor unit and no potential ignition sources must be present.
- Wall or ceiling ducts into the building must be airtight.
- The outdoor unit must not be placed in or near floor recesses.
- The outdoor unit must not be placed closer than 1 m to the boundary of the property. Country-specific regulations must be observed.
- The air intake and air outlet sides must not be narrowed or blocked. The air outlet side must be the side facing away from the building and unobstructed (> 2 m).
- If there is a risk of frost, a siphon must be installed in the shaft immediately before the condensate drain is introduced into the downpipe.

### Indoor unit

- The installation location must be selected in accordance with the valid requirements and directives.
- The indoor unit must be installed in a room protected against frost, by an approved specialist company. Room temperature must be between 5 °C and 25 °C.
- Installation in wet rooms, dusty rooms or rooms with a potentially explosive atmosphere is not permitted.
- To minimise vibration and noise inside the building, the inside of the heat pump should be isolated as well as possible from the building structure. The screed must be recessed around the indoor unit. For example, indoor units should never be installed on lightweight ceilings/floors.
- The connections for the heat pump or heating flow are located at the bottom of the Belaria® pro comfort indoor unit and at the top of the Belaria® pro compact.
- The connections for hot and cold water as well as for the hot water circulation are also located on top in the Belaria® pro compact.
- Due to the accessibility to the hydraulic system, the distances must be maintained on all sides (see Dimensions/Space requirements).
- False flow rates as a result of incorrect dimensions of the pipework, incorrect fittings or improper pump operation can cause damage to the heat pump.

The installation of a system water protection filter in the return of the outdoor unit is mandatory.

### Electrical connections

- The electrical connection must be carried out by a qualified technician and registered with the responsible energy supply company. The relevant electrical installation company is responsible for ensuring that electrical connection is carried out in accordance with standards and that safeguard measures are put in place.
- The mains voltage at the connection terminals of the heat pump must be 400 V or 230 V  $\pm$  10 %. The conductor cross-sections of the connection line must be checked by the electrical company carrying out the work.
- A fault-current circuit breaker is recommended. Country-specific requirements must be complied with. If the "fault-current circuit breaker" safeguard measure is implemented by the electrical company, a separate fault-current circuit breaker is recommended for the heat pump.
- This fault-current circuit breaker must be of the all-current-sensitive type B (IAN  $\geq$  300 mA). The specified RCCB types apply to the heat pump regardless of externally connected components (refer to assembly instructions, data sheets).
- Owing to the starting currents that occur, circuit breakers with a type "C" or "K" tripping characteristic are to be used for the main circuit.
- For the control circuit and additional electric heating (if present), circuit breakers with a type "B" or "Z" tripping characteristic are sufficient.
- The electrical connection and feeder lines must be copper cables.
- Please refer to the wiring diagram for electrical details.
- The wall feedthrough should slope down from the inside to the outside.
- To avoid damage, the opening should be padded on the inside or, for example, lined with a PVC pipe.
- After installation, the wall opening must be sealed with a suitable sealing compound on site, observing the fire protection regulations.

### Routing of the hydraulic connection lines

- If the hydraulic connection lines are laid in the ground, this must be done in a protective tube. For example, this can be a PVC pipe with a diameter of 150 mm.
- Wall ducts must be sealed to the outside on site.
- After the hydraulic connection lines have been laid, they must be checked for damage and re-insulated. In case of cooling, condensate can form on the pipes.
- The hydraulic connection lines must be laid decoupled from the building and must never be laid flush-mounted.

- Care must be taken to ensure that water pipes do not pass through the sleeping or living areas.
- Shut-off valves must be installed on site in accordance with the corresponding hydraulic diagram. The shut-off valves are not allowed to be opened until immediately before commissioning.
- The danger of frost damage must be taken into account if there are prolonged power outages.

### Room cooling

- Room cooling can be provided by fan convectors and is recommended. The connection lines for the fan convectors must have condensation-proof insulation. In addition, the condensate from the fan convectors must be drained off.
- If panel heating is used for room cooling, various criteria such as temperatures below the dewpoint or the temperature profiles must be allowed for, and can lead to costly consequential damage in the case of inadequate planning or incorrect use. We recommend that you consult Hoval.

### Further guidelines see "Engineering"

### Connection on drinking water side

- The hydraulic connection is made according to the information in the corresponding diagrams from Hoval.
- According to the Drinking Water Regulation and DIN 50930-6, the domestic hot water storage tank is suitable for normal drinking water (pH value  $>$  7.3).
- The connection piping can be made using galvanised pipes, stainless steel pipes, copper pipes or plastic pipes.
- The connections must be made pressure-tight.
- The safety devices tested for the components in accordance with DIN 1988 and DIN 4753 must be installed in the cold water pipe.
- The 10 bar operating pressure stated on the data plate is not allowed to be exceeded. Install a pressure reducing valve if necessary.
- A suitable water filter must be installed in the cold water pipe.
- A water softener must be installed if the water is hard.

### Installation on heating side

- All pertinent laws, regulations and standards for heating house pipework and for heat pump systems must be complied with.
- It is imperative that a sludge separator is installed in the heating return upstream from the heat pump.

- The safety and expansion devices for closed heating systems must be provided in accordance with EN 12828.
- Dimensioning of the pipework must be done according to the required flow rates and given pressure drops.
- Ventilation possibilities must be provided at the highest points and drainage possibilities at the lowest points of the connection lines.
- To prevent energy losses, the connection lines must be insulated with suitable material.

### Transport and storage

- When removing the packaging, check the outdoor unit for damage. If the outdoor unit was damaged during transport or storage, contact Hoval customer service, a service partner or a licensed specialist immediately. They must carry out a leak test with a suitable leak detector. In the event of a leak, the outdoor unit must be repaired.
- Store the outdoor unit in a cool place without fire hazard and without direct exposure to heat sources. The ambient temperature must not exceed 43 °C.
- The same regulations apply for storage as for installation (no recesses, ventilation pipes, ignition sources in the storage area).
- The outdoor unit must not be stored in closed rooms, cellars or garages.
- The outdoor unit is only allowed to be stored outdoors.
- During transport, ensure sufficient ventilation in the closed vehicle, also when parking and stopping.
- Storage in passageways, escape routes or in front of entrances or exits is not permitted.
- Ignition sources such as naked flames, switched-on gas appliances, electric heaters, etc. must be kept away from the unit.
- Transport and storage only in upright position. Protect from mechanical damage and from falling over or falling down (make sure the load is secure).

Looking for the appropriate hydraulic schematic?  
Please contact your local Hoval partner.