

Hoval Belaria® comfort ICM Modulating air/water heat pump

- Air/water heat pump in compact design for indoor installation.
- Sturdy housing with steel frame. Removable side walls made of power-coated sheet steel with optimum heat and noise insulation. Colour flame red/brown red (RAL 3000/RAL 3011)
- Belaria® comfort ICM (8) with modulating rotary compressor
Belaria® comfort ICM (13) with modulating scroll enclosed compressor
- With enclosed scroll compressor controlled by inverter
- With large-area, aluminium/copper ribbed pipe evaporator and plate-type condenser made from stainless steel/copper
- Speed-controlled centrifugal fan
- Refrigerant circuit with electronic expansion valve, filter dryer with sight glass, suction-gas heat exchanger, manifold, high and low-pressure pressure controllers
- Efficient defrosting control via reversible refrigeration circuit
- With cooling function with corresponding hydraulics
- Speed-controlled high-efficiency pump installed
- Flow sensor/flow meter or heat meter
- Electric heating element 1 to 6 kW
- Filled with refrigerant R410A, wired up internally ready for connection
- Hydraulic connections removable from left or right, hoses 1" see accessories
- Safety set consisting of safety valve, automatic air vent and pressure gauge (see accessories)
- Diaphragm pressure expansion tanks see "Various system components"
- The heat pump can be brought in separately. Separation of the heat pump must be performed by a Hoval specialist.
- TopTronic® E controller installed

Condensate connection

- Discharge pipe must be configured with a sufficient slope and without a change of section

Heat source connections (air intake and air blow-off)

- Air intake from the rear (long side)
- Blow-out opening (can be converted for the air blow-out direction to the side left or right)

Electrical connections

- Connection bottom left or right
- Do not attach any rigid connections (e.g. cable duct) to the heat pump housing

Set-up

- Variable and cost-effective corner installation, air blow-off and hydraulic connection can be selected on the left or right

Options

- Hot water set: drive motor for 3-way switch ball valve with flexible hose 1", calorifier sensor
- Active cooling mode
- Internet connection
- Weatherproof grille
- Mesh grille
- Wall insulation
- Wall connection elements
- Air hose



Model range

Belaria® comfort ICM type			Heat output ¹⁾ A2W35 kW	COP A2W35	Cooling capacity ¹⁾ A35W18 kW
	35 °C	55 °C			
(8)	A++	A++	2.1-6.6	4.3	2.6-8.0
(13)	A++	A++	3.8-12.7	4.1	6.9-13.9

Energy efficiency class of the compound system with control

¹⁾ Modulation range

Delivery

- One-piece design
- Completely packed

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)

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 heat balancing or
 - Module expansion universal
- 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.

Air/water heat pump



Belaria® comfort ICM type	Heat output ¹⁾	Cooling capacity ¹⁾
	A2W35 kW	A35W18 kW
(8)	2.1-6.6	2.6-8.0
(13)	3.8-12.7	6.9-13.9

¹⁾ Modulation range

Energy efficiency class see description

EnergyManager PV smart

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

Further information

see "Description"

Electric heating elements

see "Calorifiers" -
chapter "electric heating elements"



Hose set SPCH25-25-10-2

for UltraSource® B cf C (8-17) and
Belaria® comfort ICM (8)

Consisting of:

- 2 reinforced hoses PN 10 DN 25 1" IT
insulated for heating side
flat-sealing with union nut
- Length: 1.0 m
- 2 brackets DN 25
- Seals

6058 817



Hose set SPCH25-40-10/15-2

for Belaria® comfort ICM (13)

Consisting of:

- 1 reinforced hoses PN 10 DN 25 1" IT
insulated for heating side
flat-sealing with union nut
- Length: 1.0 m
- 1 reinforced hose PN 10 DN 25 1" IT
insulated for heating side
flat-sealing with union nut
- Length: 1.5 m
- 1 bracket set DN 25-DN 32
- Seals

6058 818

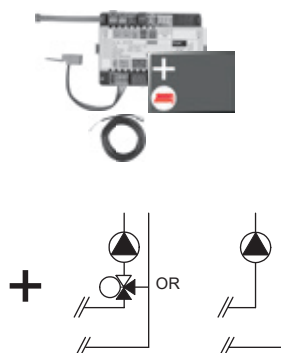
Part No.

7019 150

7019 151

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:

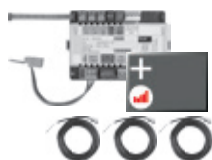
- Fitting accessories
- 1 contact sensor

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:

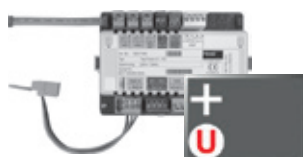
- 1 heating/cooling circuit w/o mixer or
- 1 heating/cooling circuit with mixer incl. energy balancing in each case

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

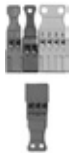
6034 575

Accessories for TopTronic® E



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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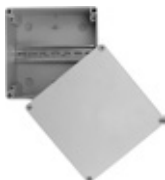
TopTronic® E sensors

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"

Heating accessories

Part No.

Pressure expansion tanks
see "Various system components"



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



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



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 1 1/4" 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: 1 1/4" internal thread/
1 1/4" 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



Notice
Fulfills the function of sludge separator and strainer

Additional sludge separators
see "Various system components"

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 ($\Delta p < 0.1 \text{ bar}$): 5.5 m³/h
Weight: 6.8 kg
Water temperature: max. 90 °C
- incl. steam diffusion-tight insulating shells



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



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
DN 25	1"	500
DN 25	1"	1000
DN 32	1¼"	300
DN 32	1¼"	500
DN 32	1¼"	1000
DN 40	1½"	500
DN 40	1½"	1000
DN 50	2"	500
DN 50	2"	1000

Part No.

6058 256

2070 911

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

Domestic hot water accessories



Domestic hot water set SPW25-25-10-1MD
for UltraSource® B comfort C (8-17),
Belaria® comfort ICM (8) and
UltraSource® T comfort (8-17)
Consisting of:
- 1 actuator for installed
3-way switching ball valve for heating/
domestic hot water
- 1 reinforced hose PN 10 DN 25 1" IT
insulated for domestic hot water side
flat-sealing with union nut
- Length: 1.0 m
- Seals

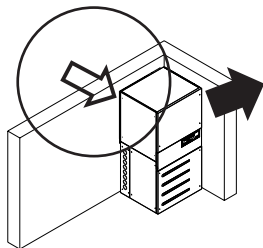
6058 815



Domestic hot water set SPW25-40-10-1MD
for Belaria® comfort ICM (13)
Consisting of:
- 1 actuator for installed
3-way switching ball valve for heating/
domestic hot water
- 1 reinforced hose PN 10 DN 25 1" IT
insulated for domestic hot water side
flat-sealing with union nut
- Length: 1.0 m
- 1 bracket DN 25-40
- Seals

6058 816

Accessories of the air guide



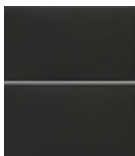
“Standard” indoor installation
Installation directly in the corner

Intake



Wall connection element WA-E01 for suction
for Belaria® comfort ICM (8,13)
for sealing the suction side directly on the wall
black synthetic rubber, 50 mm

6031 891



Wall insulation 1250 x 600 x 20
for Belaria® comfort ICM (8,13),
for Belaria® twin I/IR (20-30)
for suction and exhaust

2076 728



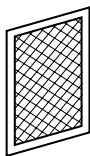
Weatherproof grille WG-E01 for suction
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20
for suction, made of aluminium with grilles

6031 935



Weatherproof grille WG-E01 sound-insulated
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20
for suction, made of aluminium with grilles
Reduction of sound power level 5 dB(A)

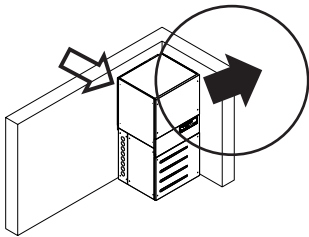
2076 720



Mesh grille MG-E01 for suction
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20

6031 938

Accessories of the air guide



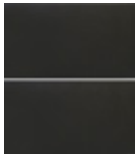
“Standard” indoor installation
Installation directly in the corner

Outlet



Wall connection element WA-A01 for exhaust
for Belaria® comfort ICM (8,13)
for sealing the exhaust side directly on the wall
black synthetic rubber, 50 mm

6031 892



Wall insulation 1250 x 600 x 20
for Belaria® comfort ICM (8,13),
for Belaria® twin I/IR (20-30)
for suction and exhaust

2076 728



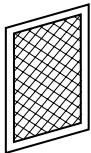
Weatherproof grille WG-A01 for exhaust
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20
for exhaust, made of aluminium with grilles

6031 936



Weatherproof grille WG-A01 sound-insulated
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20
for exhaust, made of aluminium with grilles
Reduction of sound power level 5 dB(A)

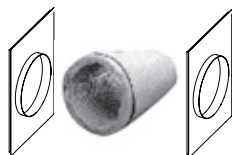
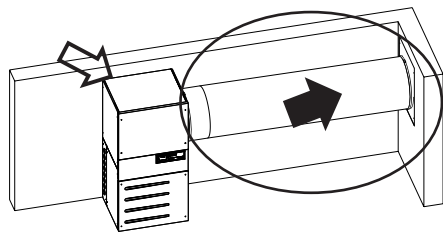
2076 721



Mesh grille MG-A01 for exhaust
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20

6031 939

Accessories of the air guide



“Flex” indoor installation
“Flex” installation for individual solutions

Intake

see “Standard” installation

Outlet on side via flexible hose

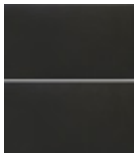
Air hose set LS 560
for Belaria® comfort ICM
Ø 560 mm insulated hose, plastic foil outside.
Insulation mineral wool,
metal spiral inside with plastic foil.
incl. clamps and connection plates;
heat pump and wall side.

**Reduced sound levels (outside)
due to the installation situation**
The following reductions in the sound levels
can be assumed as a result of the installation
of the following components in the air duct:
- Light well from a depth of 1.5 m: - 4 dB(A)
- Air hose sound-insulated on inside,
L < 2 m: - 4 dB(A)
- Air hose sound-insulated on inside,
L > 2 m: - 6 dB(A)

Type	length, can be shortened m
560-2	2
560-3	3
560-5	5

Part No.

6032 045
6032 046
6032 047



Wall insulation 1250 x 600 x 20
for Belaria® comfort ICM (8,13),
for Belaria® twin I/IR (20-30)
for suction and exhaust

2076 728



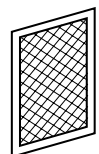
Weatherproof grille WG-A02 for exhaust
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20
for exhaust with air hose in an
air duct
made of aluminium with grilles

6031 937



**Weatherproof grille WG-A02
sound-insulated**
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20
for exhaust with air hose in an
air duct
made of aluminium with grilles
Reduction of sound power level 5 dB(A)

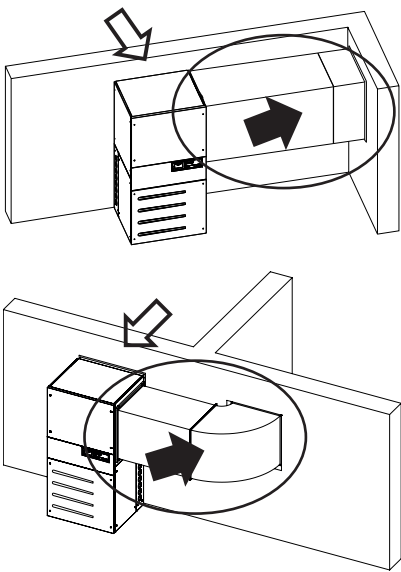
2076 722



Mesh grille MG-A02 for exhaust
for Belaria® comfort ICM (8,13)
suitable for wall insulation 1250 x 600 x 20
for exhaust with air hose in an
air duct
made of aluminium with grilles

6031 940

Accessories of the air guide

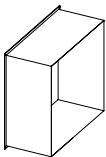


“Duct” indoor installation
Straight or with elbow

Intake

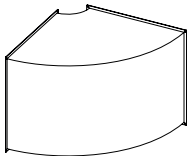
see “Standard” installation

Blow off to the side via duct



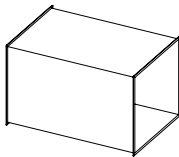
Wall fitting MS01
for Belaria® comfort ICM
For connection of the air duct
LKG 10 or LKG 15 on the wall
air duct wall fitting insulated
incl. installation material
H x W: 680 x 650 mm

6040 349



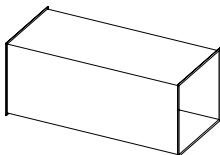
Air duct elbow LKB90 - 90°
for Belaria® comfort ICM
air duct 90° insulated
incl. installation material
H x W: 680 x 650 mm

6040 350



Air duct LKG10 - 1.0 m
for Belaria® comfort ICM
air duct outlet side insulated,
incl. installation material
H x W x L: 680 x 650 mm x 1000 mm
ducts can be shortened

6040 351



Air duct LKG15 - 1.5 m
for Belaria® comfort ICM
air duct outlet side insulated,
incl. installation material
H x W x L: 680 x 650 mm x 1500 mm
ducts can be shortened

6040 352



Weatherproof grille WG-MS01
for Belaria® comfort ICM
Weatherproof grille outlet
via air duct
Anodized aluminium
incl. installation material

6040 363

Part No.		
	Mesh grille MG-MS01 for Belaria® comfort ICM Mesh grille outlet via air duct Galvanised steel incl. installation material	6040 364
	Blow-out panel cpl. - duct conn.RAL 3000 for Belaria® comfort ICM For connection of the air duct LKG 10 or LKG 15 to the heat pump	6038 045

Belaria® comfort ICM (8,13)

Type		(8)	(13)
• Energy efficiency class of the compound system with control	35 °C/55 °C	A+++/A++	A+++/A++
• Room heating energy efficiency "moderate climate" 35 °C η_S ^{1), 2)}	%	181	180
• Room heating energy efficiency "moderate climate" 55 °C η_S ^{1), 2)}	%	130	136
• Seasonal coefficient of performance moderate climate 35 °C/55 °C	SCOP	4.5/3.3	4.6/3.5
Max./min. performance data heating and cooling in acc. with EN 14511			
• Max. heat output A2W35	kW	6.6	12.7
• Max. heat output A-7W35	kW	6.2	10.9
• Max. heat output A15W35	kW	2.6	5.8
• Max. cooling capacity A35W18	kW	8.0	13.9
• Max. cooling capacity A35W7	kW	6.1	9.8
• Max. cooling capacity A35W18	kW	2.5	6.9
Nominal performance data heating in acc. with EN 14511			
• Nominal heat output A2W35	kW	3.9	7.1
• Coefficient of performance A2W35	COP	4.3	4.1
• Nominal heat output A7W35	kW	4.5	8.3
• Coefficient of performance A7W35	COP	5.1	4.8
• Nominal heat output A-7W35	kW	2.8	5.5
• Coefficient of performance A-7W35	COP	3.2	3.3
Nominal performance data cooling in acc. with EN 14511			
• Nominal heat output A35W18	kW	5.1	9.5
• Energy efficiency ratio A35W18	EER	4.5	4.1
• Nominal heat output A35W7	kW	3.4	6.8
• Energy efficiency ratio A35W7	EER	3.2	3.0
Sound data			
• Sound power level EN 12102 indoor	dB(A)	44	42
• Sound power level EN 12102 outdoor ³⁾	dB(A)	44	51
• Sound pressure level at 5 m	dB(A)	25	32
• Sound pressure level at 10 m	dB(A)	19	26
Hydraulic data			
• Max. flow temperature	°C	62	60
• Max. flow of heating water with A7/W35, 5 K ΔT	m ³ /h	1.5	2.5
• Residual overpressure of heating pump at nominal output	kPa	49	68
• Max. operating pressure on the heating side	bar	3	3
• Flow/return connection heating	R	1"	1"
• Built-in condensate drain (hose connection)	mm	35	35
• Built-in fan		Centrifugal fan	Centrifugal fan
• Air quantity at max. speed A7W35	m ³ /h	2200	3900
• Residual pressure at maximum rpm	Pa	150	110
Cooling technical data			
• Refrigerant		R410A	R410A
• Compressor/stages		Inverter/1	Inverter/1
• Refrigerant filling quantity	kg	3.2	6.2
• Compressor oil filling quantity (FV50S)	l	0.35	1.90

Type		(8)	(13)
Electrical data			
• Electrical connection compressor	V/Hz	1~230/50	3~400/50
• Electrical connection electric heating element	V/Hz	3~400/50 opt. 1~230/50	3~400/50
• Control electrical connection	V/Hz	1~230/50	1~230/50
• Max. compressor operating current	A	15.3	19.7
• Max. electric heating element operating current	A	13	13
• Max. output for electric heating element	kW	6	6
• Max. fan operating current	A	0.24	0.50
• Max. fan power consumption	W	56	115
• Max. compressor starting current	A	15.3	19.7
• Protection main fuse	A	C 16	C 20
• Protection control fuse	A	B 13	B 13
• Fuse electric heating element	A	B 13	B 13
Dimensions/weight			
• Dimensions (H x W x D)	mm	1830 x 910 x 780	1830 x 910 x 780
• Weight	kg	280	298
• Tilting measure	mm	2028	2028
• Minimum sizes of installation room	m ³	7.3	14.1

¹⁾ 2 % can be added for class II heat pump incl. control.

²⁾ 4 % can be added for class IV heat pump incl. control and room thermostat.

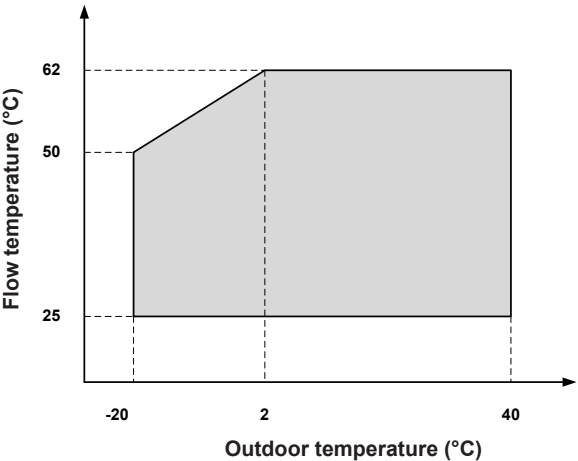
³⁾ The sound power levels apply in whisper mode. Values increase by +4 dB(A) in normal operation.

Using a fault-current circuit breaker RCCB type B. $I_{\Delta n} \geq 300$ mA is recommended. Country-specific regulations must be observed.

Graphs of operating range

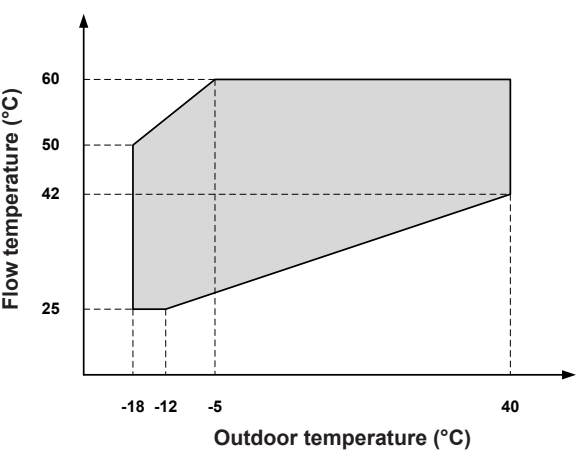
Heating and hot water

Belaria® comfort ICM (8)



Area of application of the heat pump for heating/domestic hot water

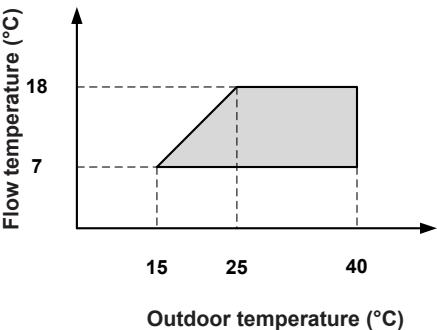
Belaria® comfort ICM (13)



Area of application of the heat pump for heating/domestic hot water

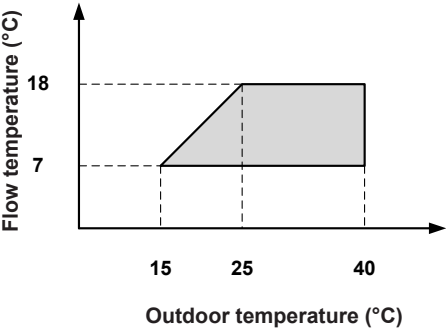
Cooling

Belaria® comfort ICM (8)



Area of application of the heat pump for heating/domestic hot water

Belaria® comfort ICM (13)



Area of application of the heat pump for heating/domestic hot water

Belaria® comfort ICM (8,13)

Sound pressure level – sound power level

The **sound pressure level** is dependent on the **place of measurement** and the installation environment within a sound field and describes the sound intensity at this point. In contrast, the **sound power level** is a characteristic of the sound source and therefore does not change with distance; it describes the totality of sound power of the relevant source radiated in all directions.

The effective sound pressure in the installation room depends on various factors such as room size, absorption capacity, reflection, free sound propagation, etc.

For this reason, it is important to ensure that where possible, the boiler room is outside noise-sensitive areas of the building and equipped with a sound-absorbing door.

Structure-borne sound

To prevent the transmission of structure-borne sound, all connections must be fitted with compensators or vibration dampers.

Type (indications for equipment room)	(8)	(13)
• Standard installation		
Sound power level	44	42

Outlet and intake directly through the wall

The sound pressure levels indicated below apply if the air intake and outlet are positioned across a corner from each other on a straight wall with weather protection grille without roofing.

Type (indications for outside)	(8)	(13)
• Sound power level ¹⁾	44	51
• Sound pressure level at 5 m ¹⁾	25	32
• Sound pressure level at 10 m ¹⁾	19	26

¹⁾ The sound power levels apply in whisper mode. Values increase by + 4 dB(A) in normal operation.

Reduced sound levels (outside) as a result of the installation situation

The following reductions in the sound levels can be assumed as a result of the installation of the following components in the air duct:

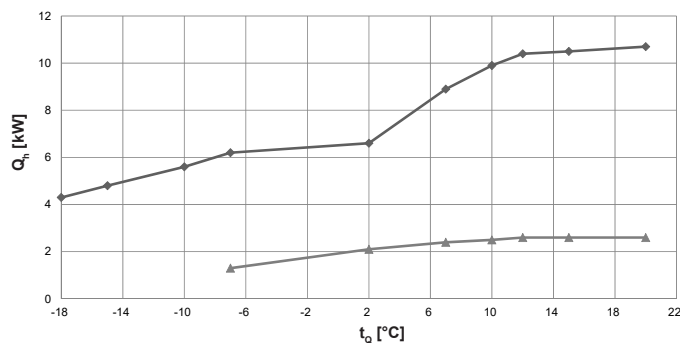
- Light well from a depth of 1.5 m: - 4 dB(A)
- Air hose sound-insulated on the inside, L < 2 m: - 4 dB(A)
- Air hose sound-insulated on the inside, L > 2 m: - 6 dB(A)

Performance data – heating

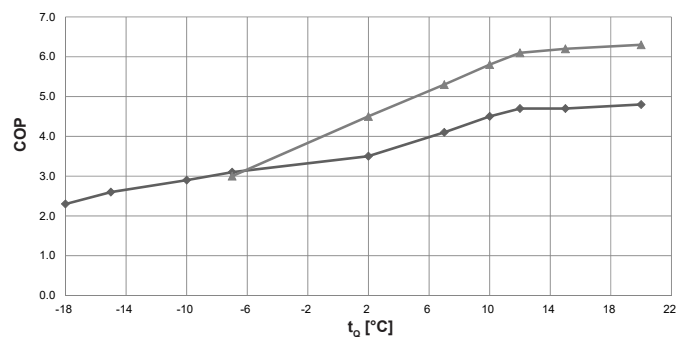
Maximum heat output allowing for defrosting losses

Belaria® comfort ICM (8)

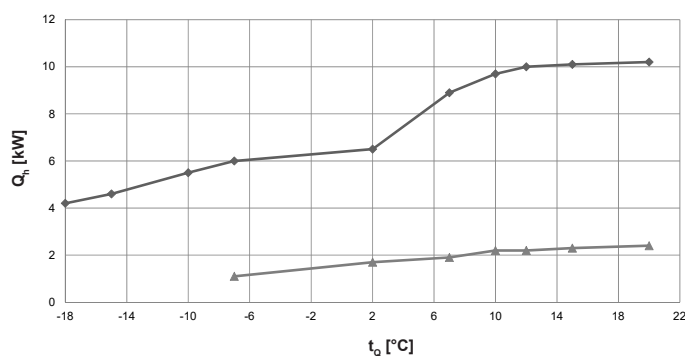
Heat output - t_{VL} 35 °C



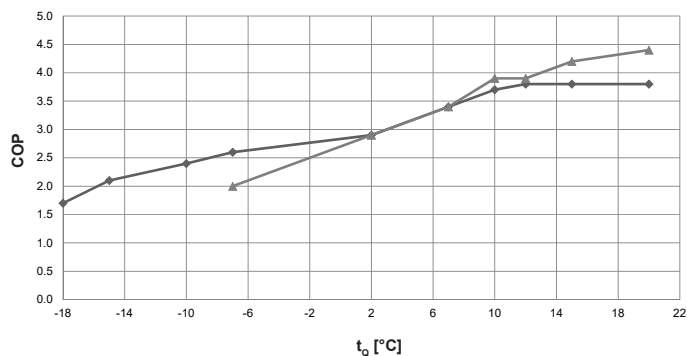
Coefficient of performance - t_{VL} 35 °C



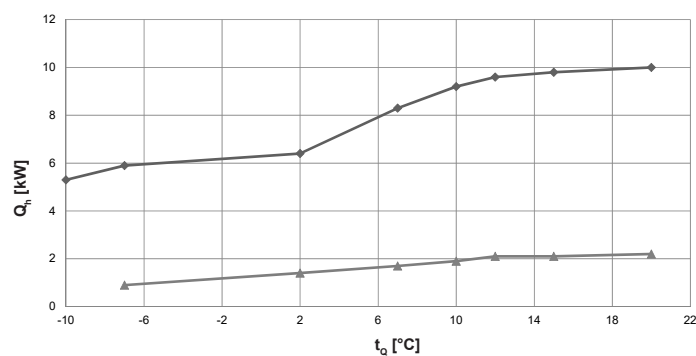
Heat output - t_{VL} 45 °C



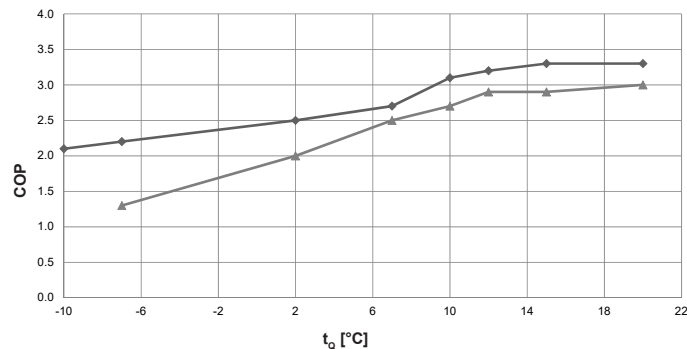
Coefficient of performance - t_{VL} 45 °C



Heat output - t_{VL} 55 °C



Coefficient of performance - t_{VL} 55 °C



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® comfort ICM (8)

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	4.3	1.8	2.3	-	-	-
	-15	4.8	1.8	2.6	-	-	-
	-10	5.6	1.9	2.9	-	-	-
	-7	6.2	1.9	3.1	1.3	0.5	3.0
	2	6.6	1.9	3.5	2.1	0.5	4.5
	7	8.9	2.1	4.1	2.4	0.4	5.3
	10	9.9	2.2	4.5	2.5	0.4	5.8
	12	10.4	2.2	4.7	2.6	0.4	6.1
	15	10.5	2.2	4.7	2.6	0.4	6.2
45	20	10.7	2.2	4.8	2.6	0.4	6.3
	-18	4.2	2.1	2.0	-	-	-
	-15	4.6	2.2	2.1	-	-	-
	-10	5.5	2.3	2.4	-	-	-
	-7	6.0	2.4	2.6	1.1	0.6	2.0
	2	6.5	2.2	2.9	1.7	0.6	2.9
	7	8.9	2.6	3.4	1.9	0.6	3.4
	10	9.7	2.6	3.7	2.2	0.6	3.9
	12	10.0	2.7	3.8	2.2	0.6	3.9
50	15	10.1	2.7	3.8	2.3	0.6	4.2
	20	10.2	2.7	3.8	2.4	0.6	4.4
	-18	3.4	2.3	1.5	-	-	-
	-15	3.9	2.4	1.6	-	-	-
	-10	4.9	2.5	1.9	-	-	-
	-7	5.6	2.5	2.2	1.2	0.6	1.9
	2	5.9	2.4	2.4	1.8	0.6	3.1
	7	7.9	2.9	2.8	2.1	0.6	3.5
	10	8.7	3.0	2.9	2.2	0.6	3.8
55	12	9.0	3.0	3.0	2.2	0.6	3.8
	15	9.4	3.0	3.1	2.3	0.6	4.0
	20	9.7	3.0	3.2	2.4	0.6	4.1
	-18	4.0	2.4	1.7	-	-	-
	-15	4.4	2.5	1.8	-	-	-
	-10	5.3	2.6	2.1	-	-	-
	-7	5.9	2.7	2.2	0.9	0.7	1.3
	2	6.4	2.6	2.5	1.4	0.7	2.0
	7	8.3	3.1	2.7	1.7	0.7	2.5
60	10	9.2	3.0	3.1	1.9	0.7	2.7
	12	9.6	3.0	3.2	2.1	0.7	2.9
	15	9.8	3.0	3.3	2.1	0.7	2.9
	20	10.0	3.0	3.3	2.2	0.7	3.0
	-7	5.2	2.6	2.0	-	-	-
	2	5.6	2.5	2.2	1.3	0.8	1.6
	7	7.3	3.0	2.5	1.6	0.8	2.0
	10	8.1	2.9	2.8	1.8	0.8	2.3
	12	8.5	2.9	2.9	2.0	0.8	2.5
	15	8.6	2.9	3.0	2.0	0.8	2.5
	20	8.8	2.9	3.0	2.1	0.8	2.7

 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 of the overall unit (kW) incl. high-efficiency pump, measured in accordance with EN 14511

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

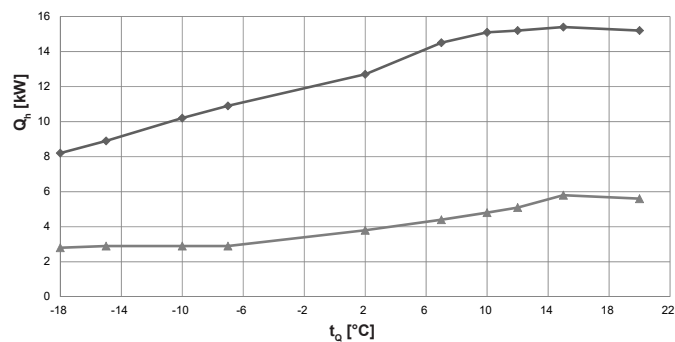
Observe daily power interruptions!
see "Engineering heat pumps general"

Performance data – heating

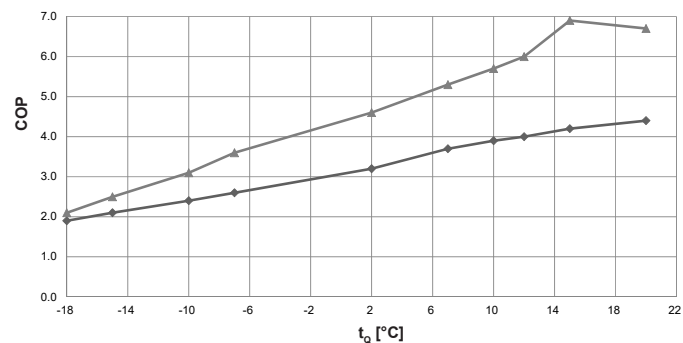
Maximum heat output allowing for defrosting losses

Belaria® comfort ICM (13)

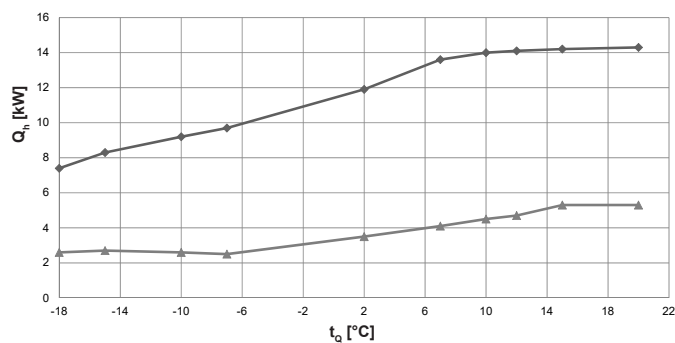
Heat output - t_{VL} 35 °C



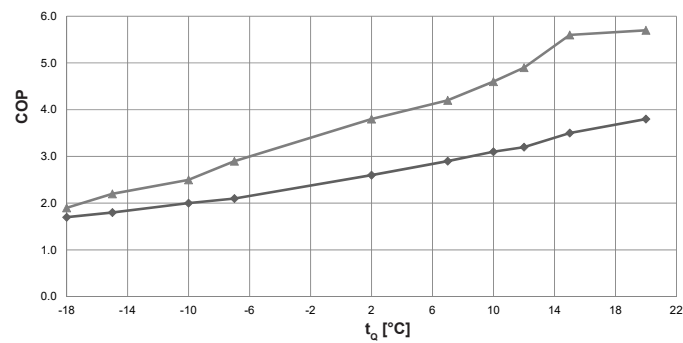
Coefficient of performance - t_{VL} 35 °C



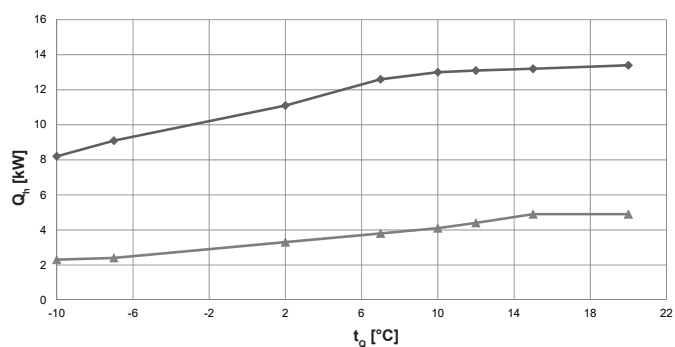
Heat output - t_{VL} 45 °C



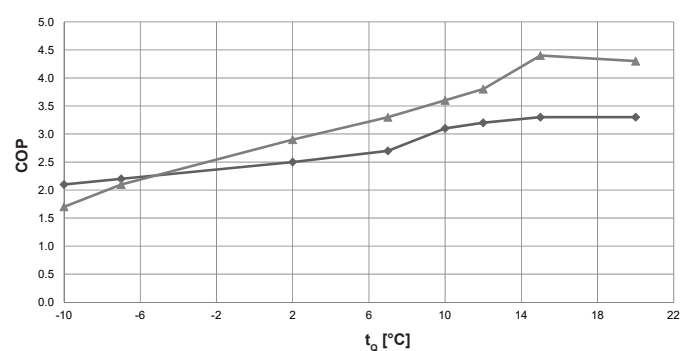
Coefficient of performance - t_{VL} 45 °C



Heat output - t_{VL} 55 °C



Coefficient of performance - t_{VL} 55 °C



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® comfort ICM (13)

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	8.2	4.3	1.9	2.8	1.3	2.1
	-15	8.9	4.3	2.1	2.9	1.2	2.5
	-10	10.2	4.2	2.4	2.9	0.9	3.1
	-7	10.9	4.2	2.6	2.9	0.8	3.6
	2	12.7	4.0	3.2	3.8	0.8	4.6
	7	14.5	3.9	3.7	4.4	0.8	5.3
	10	15.1	3.9	3.9	4.8	0.8	5.7
	12	15.2	3.8	4.0	5.1	0.9	6.0
	15	15.4	3.7	4.2	5.8	0.8	6.9
45	20	15.2	3.4	4.4	5.6	0.8	6.7
	-18	7.4	4.4	1.7	2.6	1.4	1.9
	-15	8.3	4.6	1.8	2.7	1.2	2.2
	-10	9.2	4.6	2.0	2.6	1.0	2.5
	-7	9.7	4.6	2.1	2.5	0.9	2.9
	2	11.9	4.5	2.6	3.5	0.9	3.8
	7	13.6	4.6	2.9	4.1	1.0	4.2
	10	14.0	4.5	3.1	4.5	1.0	4.6
	12	14.1	4.4	3.2	4.7	1.0	4.9
55	15	14.2	4.1	3.5	5.3	0.9	5.6
	20	14.3	3.8	3.8	5.3	0.9	5.7
	-18	-	-	-	-	-	-
	-15	-	-	-	-	-	-
	-10	8.2	6.1	1.4	2.3	1.4	1.7
	-7	9.1	6.0	1.5	2.4	1.2	2.1
	2	11.1	5.6	2.0	3.3	1.2	2.9
	7	12.6	5.6	2.3	3.8	1.2	3.3
	10	13.0	5.3	2.5	4.1	1.1	3.6
60	12	13.1	5.1	2.5	4.4	1.2	3.8
	15	13.2	4.9	2.7	4.9	1.1	4.4
	20	13.4	4.7	2.8	4.9	1.1	4.3
	-18	-	-	-	-	-	-
	-15	-	-	-	-	-	-
	-10	-	-	-	-	-	-
	-7	-	-	-	-	-	-
	2	10.6	6.2	1.7	3.2	1.3	2.5
	7	11.9	6.1	2.0	3.6	1.3	2.8
	10	12.4	5.9	2.1	3.9	1.3	3.1
	12	12.5	5.7	2.2	4.2	1.3	3.3
	15	12.7	5.5	2.3	4.7	1.3	3.8
	20	13.1	5.3	2.5	4.8	1.3	3.7

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 of the overall unit (kW) incl. high-efficiency pump, measured in accordance with EN 14511

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

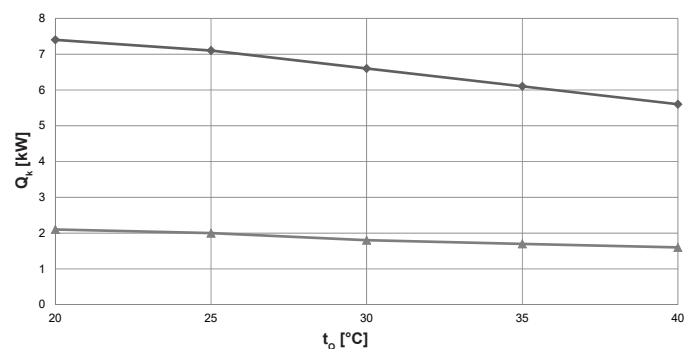
Observe daily power interruptions!
see "Engineering heat pumps general"

Performance data – cooling

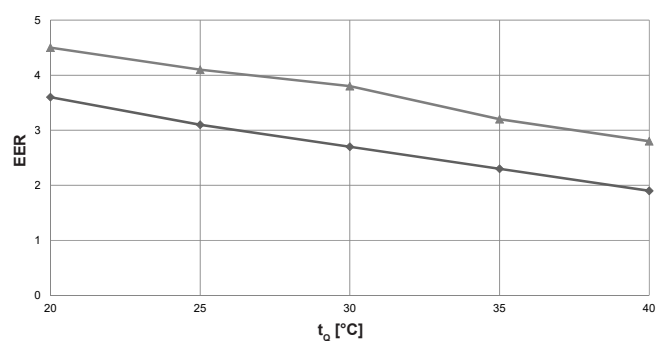
Maximum cooling capacity

Belaria® comfort ICM (8)

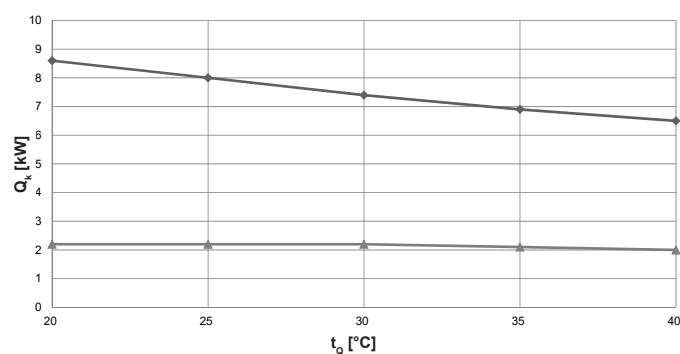
Cooling capacity - t_{VL} 7 °C



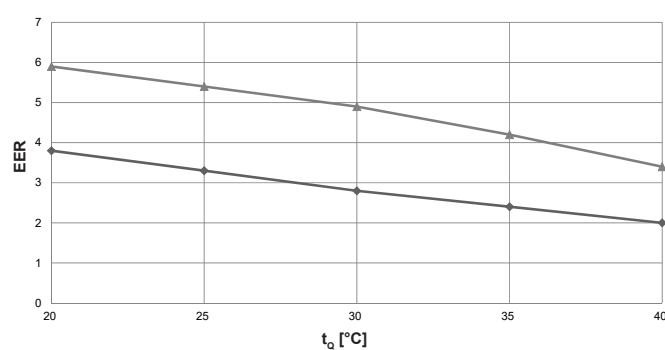
Energy efficiency ratio - t_{VL} 7 °C



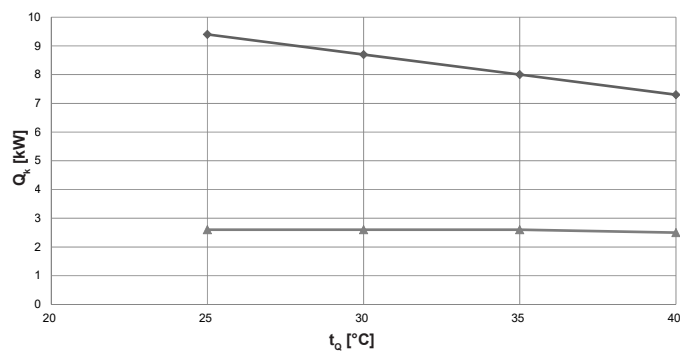
Cooling capacity - t_{VL} 12 °C



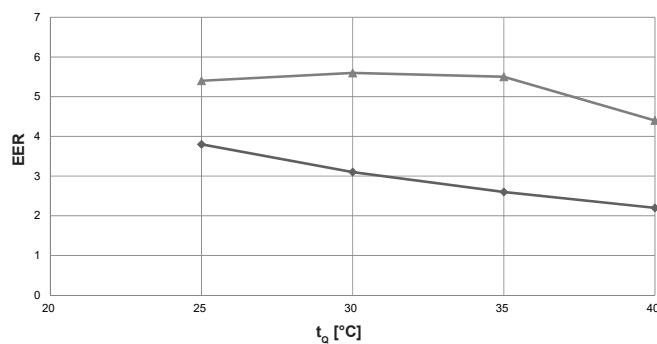
Energy efficiency ratio - t_{VL} 12 °C



Cooling capacity - t_{VL} 18 °C



Energy efficiency ratio - t_{VL} 18 °C



t_{VL} = cooling water flow temperature (°C)

t_o = source temperature (°C)

Q_k = cooling capacity (kW), measured in accordance with standard EN 14511

EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

◆ Maximum output
▲ Minimum output

Performance data – cooling

Belaria® comfort ICM (8)

Data according to EN 14511

t _{VL} °C	t _Q °C	Maximum output			Minimum output		
		Q _k kW	P kW	EER	Q _k kW	P kW	EER
7	20	7.4	2.1	3.6	2.1	0.5	4.5
	25	7.1	2.3	3.1	2.0	0.5	4.1
	30	6.6	2.5	2.7	1.8	0.5	3.8
	35	6.1	2.7	2.3	1.7	0.5	3.2
	40	5.6	2.9	1.9	1.6	0.6	2.8
12	15	-	-	-	-	-	-
	20	8.6	2.3	3.8	2.2	0.8	5.9
	25	8.0	2.4	3.3	2.2	0.9	5.4
	30	7.4	2.6	2.8	2.2	1.0	4.9
	35	6.9	2.9	2.4	2.1	1.1	4.2
18	40	6.5	6.2	2.0	2.0	1.2	3.4
	15	-	-	-	-	-	-
	20	-	-	-	-	-	-
	25	9.4	2.5	3.8	2.6	0.5	5.4
	30	8.7	2.9	3.1	2.6	0.5	5.6
	35	8.0	3.1	2.6	2.6	0.5	5.5
	40	7.3	3.4	2.2	2.5	0.6	4.4

t_{VL} = cooling water flow temperature (°C)
t_Q = source temperature (°C)
Q_k = cooling capacity (kW), measured in accordance with standard EN 14511
P = power consumption of the overall unit (kW) incl. high-efficiency pump, measured in accordance with EN 14511
EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

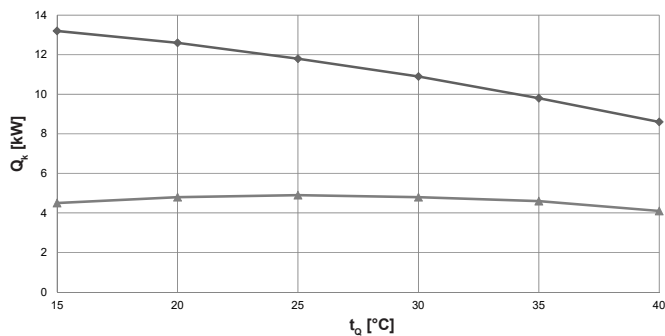
Observe daily power interruptions!
see “Engineering heat pumps general”

Performance data – cooling

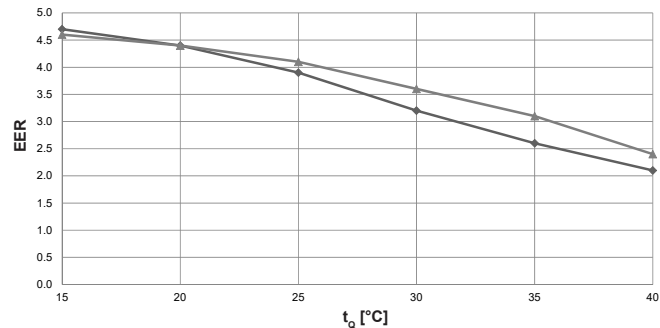
Maximum cooling capacity

Belaria® comfort ICM (13)

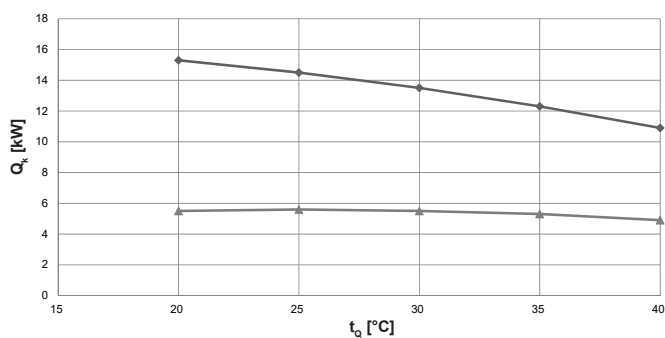
Cooling capacity - t_{VL} 7 °C



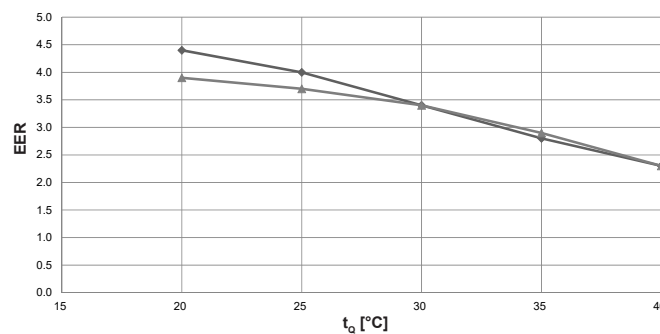
Energy efficiency ratio - t_{VL} 7 °C



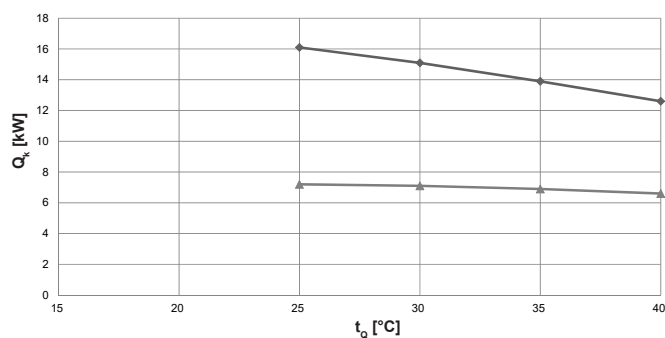
Cooling capacity - t_{VL} 12 °C



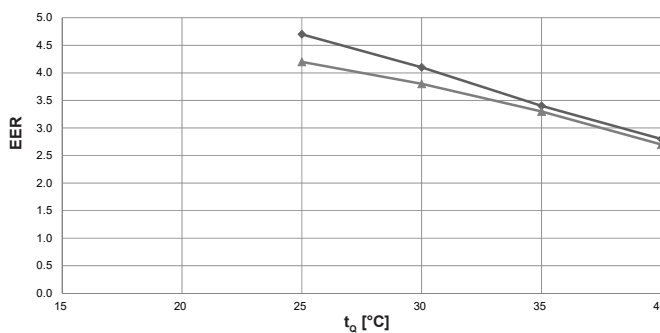
Energy efficiency ratio - t_{VL} 12 °C



Cooling capacity - t_{VL} 18 °C



Energy efficiency ratio - t_{VL} 18 °C



t_{VL} = cooling water flow temperature (°C)

t_o = source temperature (°C)

Q_k = cooling capacity (kW), measured in accordance with standard EN 14511

EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

◆ Maximum output

▲ Minimum output

Performance data – cooling

Belaria® comfort ICM (13)

Data according to EN 14511

t_{VL} °C	t_Q °C	Maximum output			Minimum output		
		Q_k kW	P kW	EER	Q_k kW	P kW	EER
7	15	13.2	2.8	4.7	4.5	1.0	4.6
	20	12.6	2.9	4.4	4.8	1.1	4.4
	25	11.8	3.0	3.9	4.9	1.2	4.1
	30	10.9	3.4	3.2	4.8	1.3	3.6
	35	9.8	3.7	2.6	4.6	1.5	3.1
	40	8.6	4.2	2.1	4.1	1.7	2.4
12	15	-	-	-	-	-	-
	20	15.3	3.5	4.4	5.5	1.4	3.9
	25	14.5	3.6	4.0	5.6	1.5	3.7
	30	13.5	4.0	3.4	5.5	1.7	3.4
	35	12.3	4.4	2.8	5.3	1.9	2.9
	40	10.9	4.9	2.3	4.9	2.1	2.3
18	15	-	-	-	-	-	-
	20	-	-	-	-	-	-
	25	16.1	3.5	4.7	7.2	1.7	4.2
	30	15.1	3.7	4.1	7.1	1.9	3.8
	35	13.9	4.1	3.4	6.9	2.1	3.3
	40	12.6	4.6	2.8	6.6	2.4	2.7

t_{VL} = cooling water flow temperature (°C)

t_Q = source temperature (°C)

Q_k = cooling capacity (kW), measured in accordance with standard EN 14511

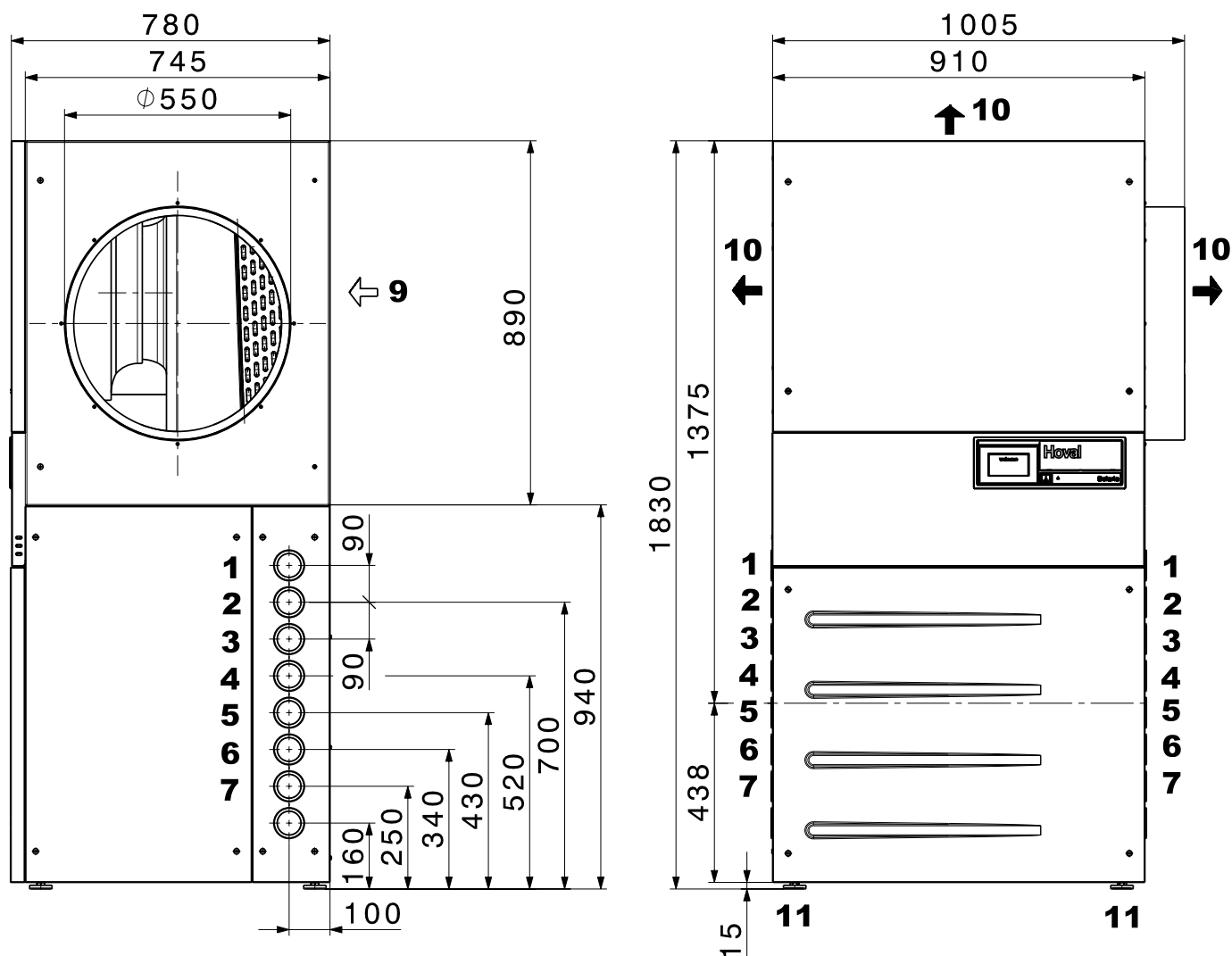
P = power consumption of the overall unit (kW) incl. high-efficiency pump, measured in accordance with EN 14511

EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

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

Belaria® comfort ICM (8,13)

(Dimensions in mm)



Connections optionally on the left or right
Conversion on site

- 1 DHW flow R 1"
- 2 Heating flow R1"
- 3 Condensate drain
- 4 Heating return R1"
- 5 Main electrical connection
- 6 Electrical heating insert
- 7 Control current connection
- 8 Free
- 9 Control panel
- 10 Air intake (evaporator inlet)
- 11 Air outlet opening, outlet upwards
only possible in version "Flex"

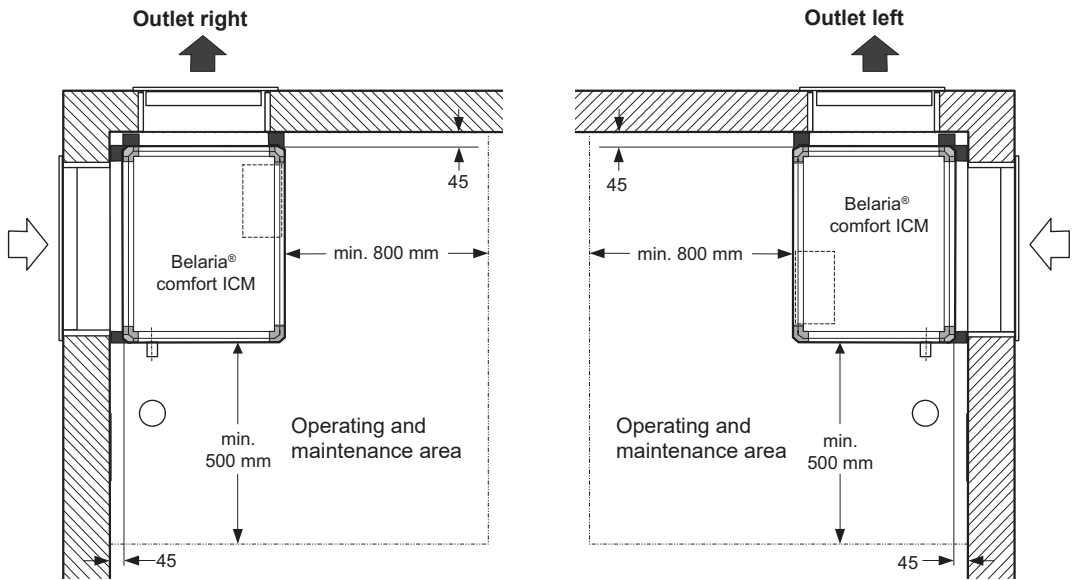
* Dimensions of the divided version of the Belaria® comfort ICM (8,13)

Space requirement “standard” installation with wall insulation MI

“Standard” installation with wall insulation MI
Installation in the corner of the boiler room, directly on the outside wall, with wall connection element and weatherproof grille. Intake at the back, outlet to the right (preferred) or to the left. Water connections on the opposite side.

Cut-outs
The cut-outs must be created professionally and without cold bridges! The dimensions of the cut-outs are “clear dimensions” measured from the finished floor!

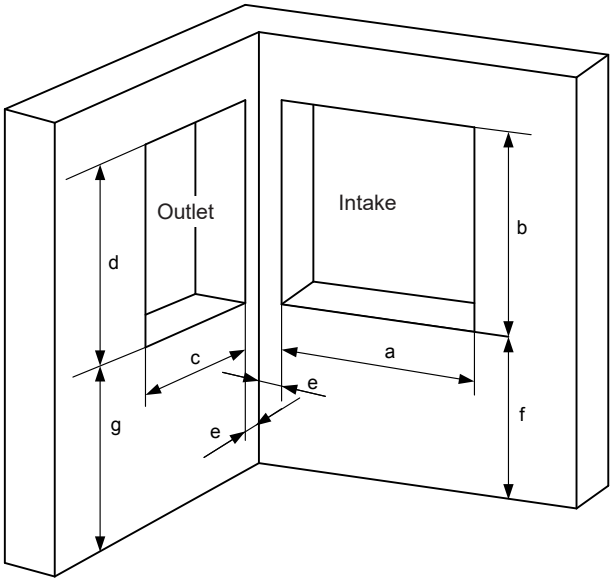
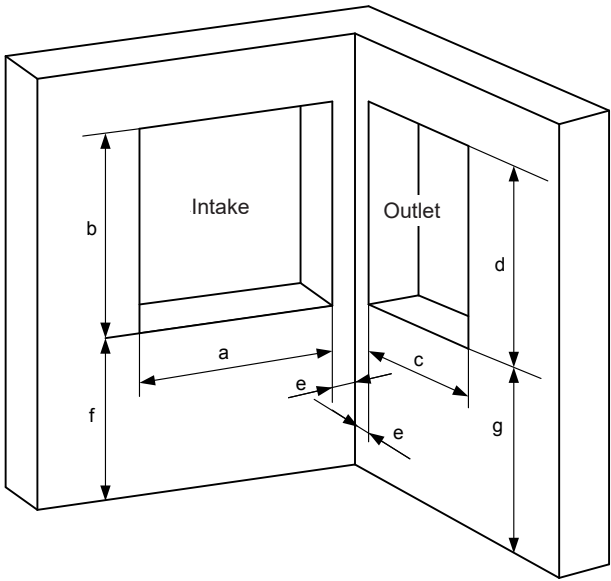
Air ducts
Concrete ducts have unfavourable acoustic properties and often magnify sound emissions. It is therefore advisable to equip the air ducts with a sound-absorbing, weatherproof lining. The air ducts must be drained.



Cut-out dimensions
“Standard” installations - heat pump in the corner, without air ducts, with wall insulation MI
(Dimensions in mm)
- The cut-outs must be created professionally.
- Cut-out dimensions from top edge of finished floor.

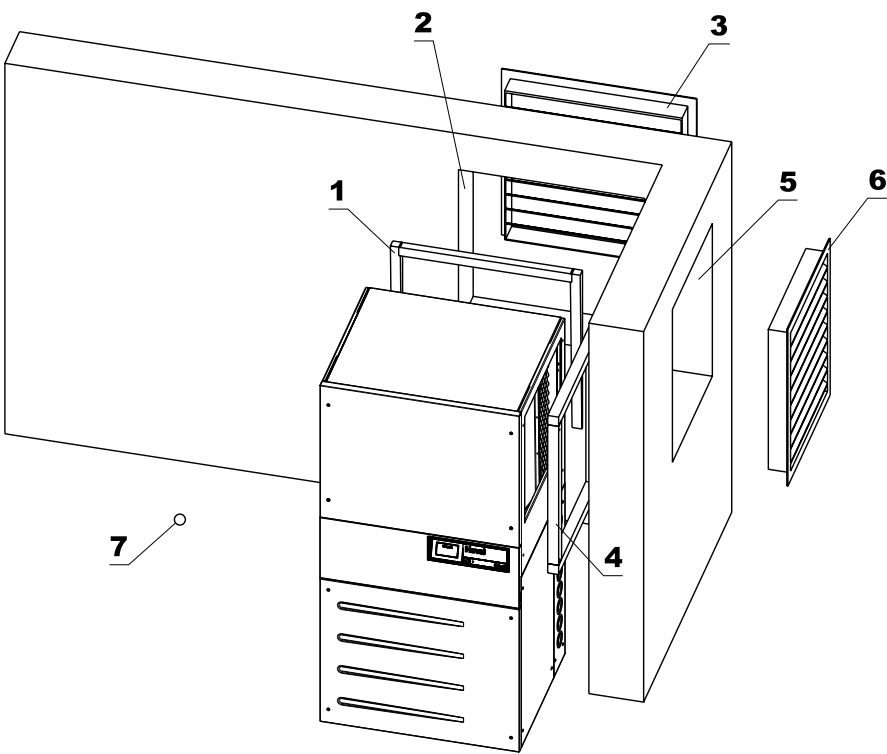
Standard installation 1
Air outlet to the right
Preferred solution due to ease of access for servicing

Standard installation 2
Air outlet to the left



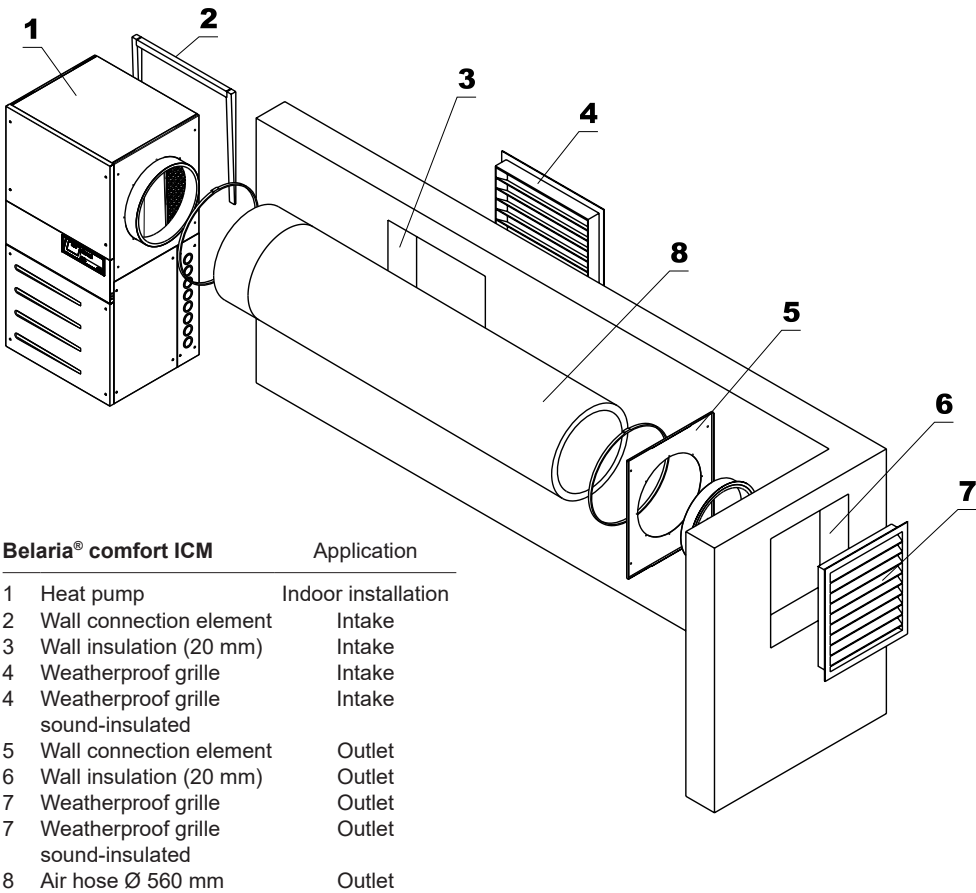
Cut-out dimensions							
Belaria® comfort ICM	a	b	c	d	e	f	g
(8,13)	850	855	680	825	80	960	960

Space requirement “standard” installation with wall insulation MI



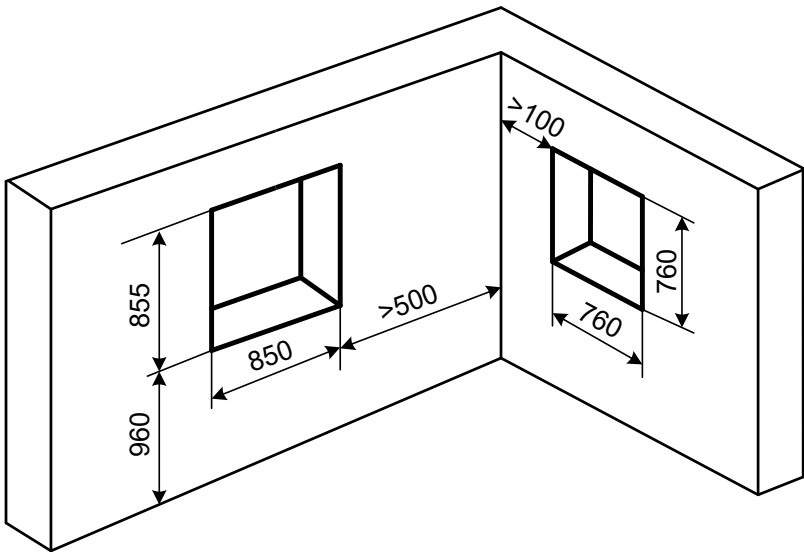
Belaria® comfort ICM		Application	Accessory type
Heat pump		Indoor installation	
1	Wall connection element	Intake	WA-E01
2	Wall insulation	Intake	MI
3	Weatherproof grille	Intake	WG-E01
3	Weatherproof grille sound-insulated	Intake	WG-E01
4	Wall connection set	Outlet	WA-A01
5	Wall insulation	Outlet	MI
6	Weatherproof grille	Outlet	WG-A01
6	Weatherproof grille sound-insulated	Outlet	WG-A01
7	Condensate drain		

Space requirement “Flex” installation with wall insulation MI

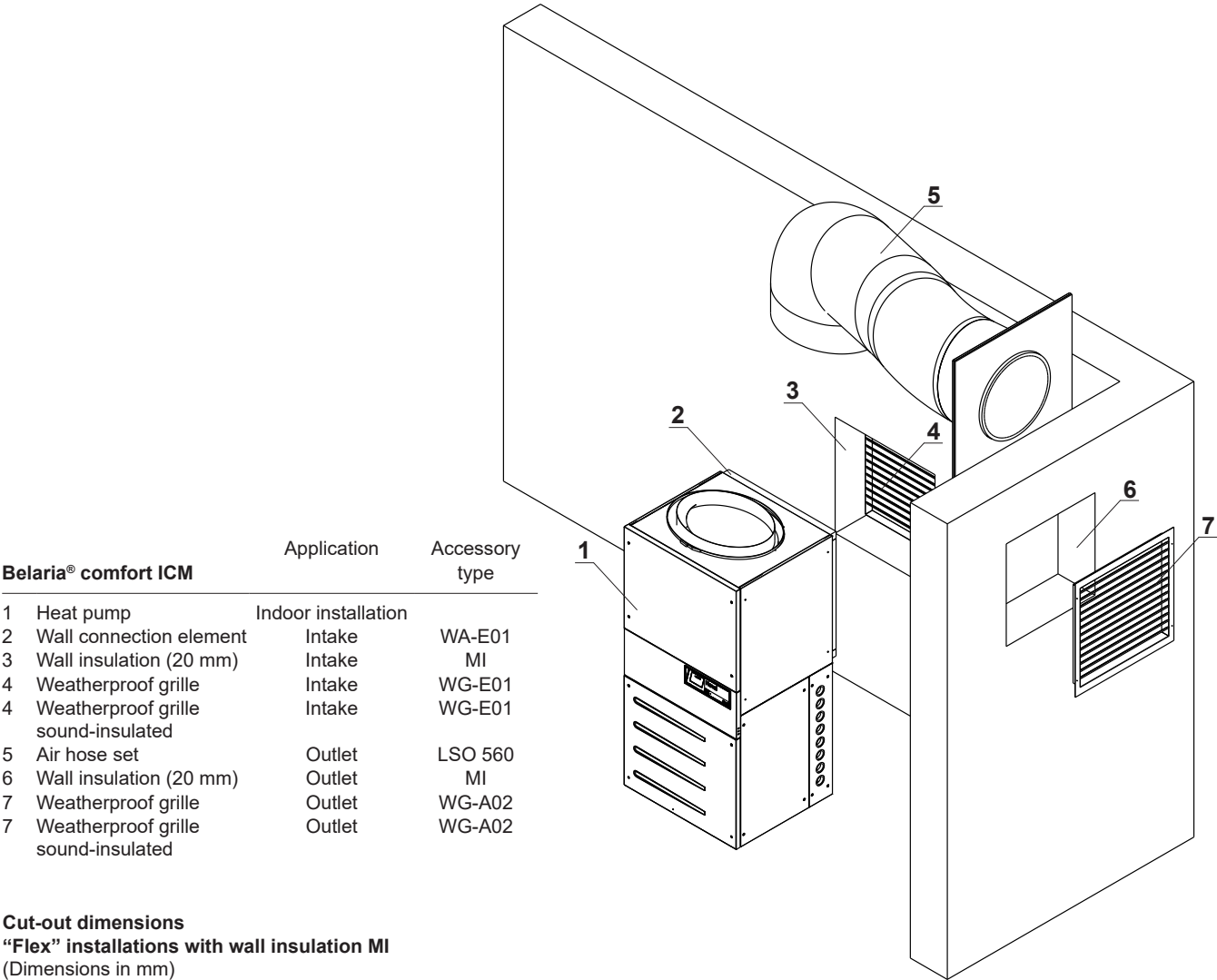


Cut-out dimensions
“Flex” installations with wall insulation MI
 (Dimensions in mm)

- The cut-outs must be created professionally.
- Cut-out dimensions from top edge of finished floor.

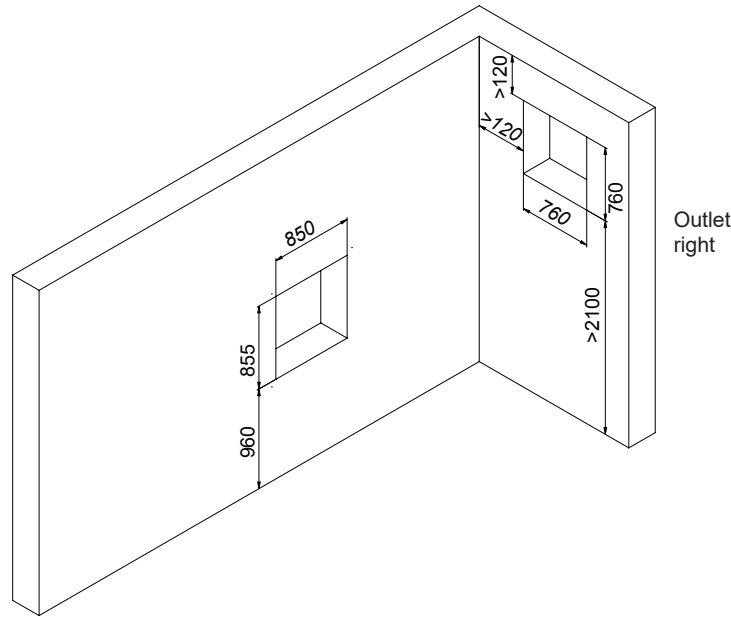


Space requirement “Flex” installation with wall insulation MI, outlet on top via flexible hose

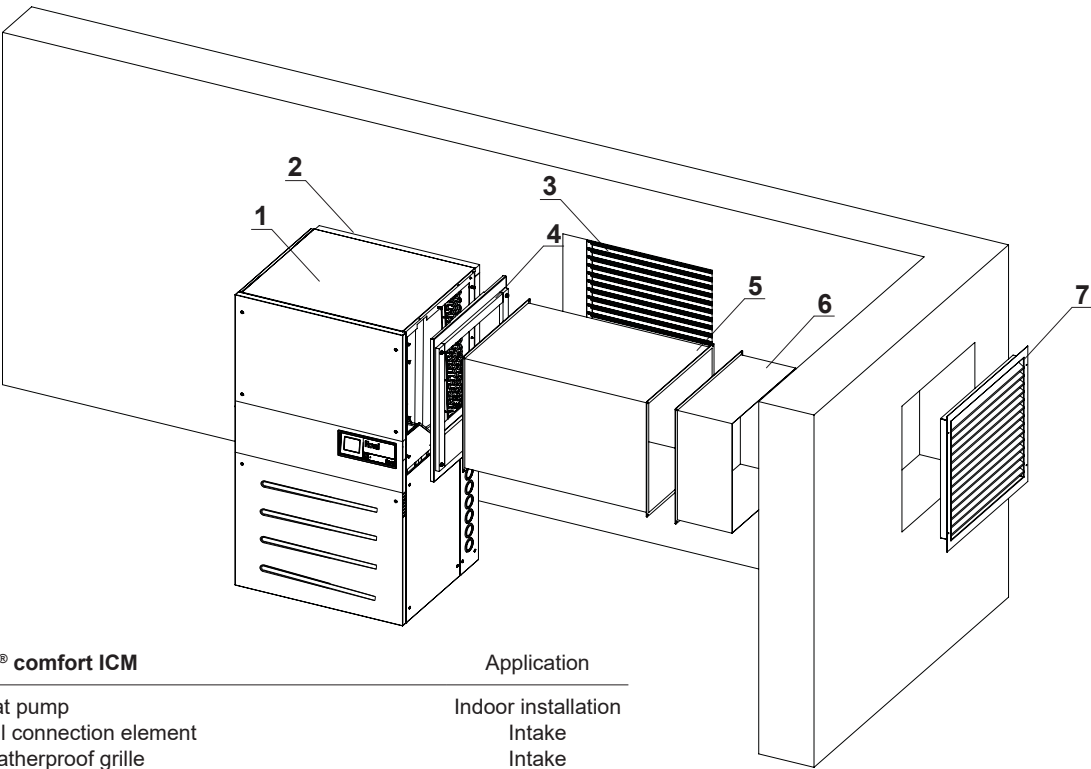


Cut-out dimensions
“Flex” installations with wall insulation MI
(Dimensions in mm)

- The cut-outs must be created professionally.
- Cut-out dimensions from top edge of finished floor.



Space requirement “Duct” indoor installation, straight



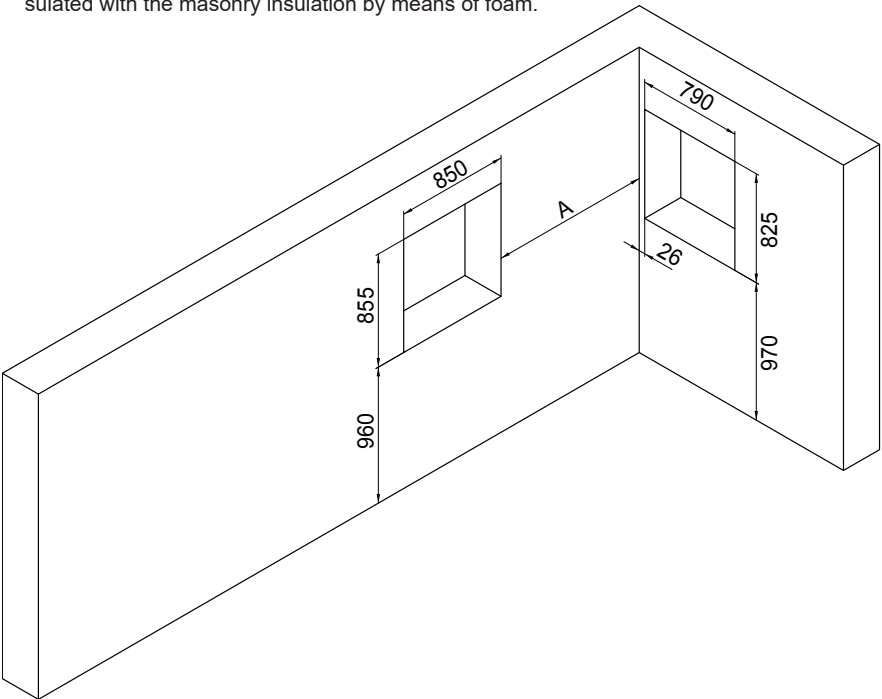
Belaria® comfort ICM	Application
1 Heat pump	Indoor installation
2 Wall connection element	Intake
3 Weatherproof grille	Intake
4 Blow-out panel cpl. - duct connection RAL 3000	Outlet
5 Air duct LKG10 - 1.0 m	Outlet
Air duct LKG15 - 1.5 m	Outlet
6 Wall fitting MS01	Outlet
7 Weatherproof grille	Outlet
7 Weatherproof grille sound-insulated	Outlet

Notice
Ducts can be shortened!

The wall insulation (20 mm) is not required when using the wall fitting MS01.

Cut-out dimensions
“Duct” indoor installation, straight
(Dimensions in mm)

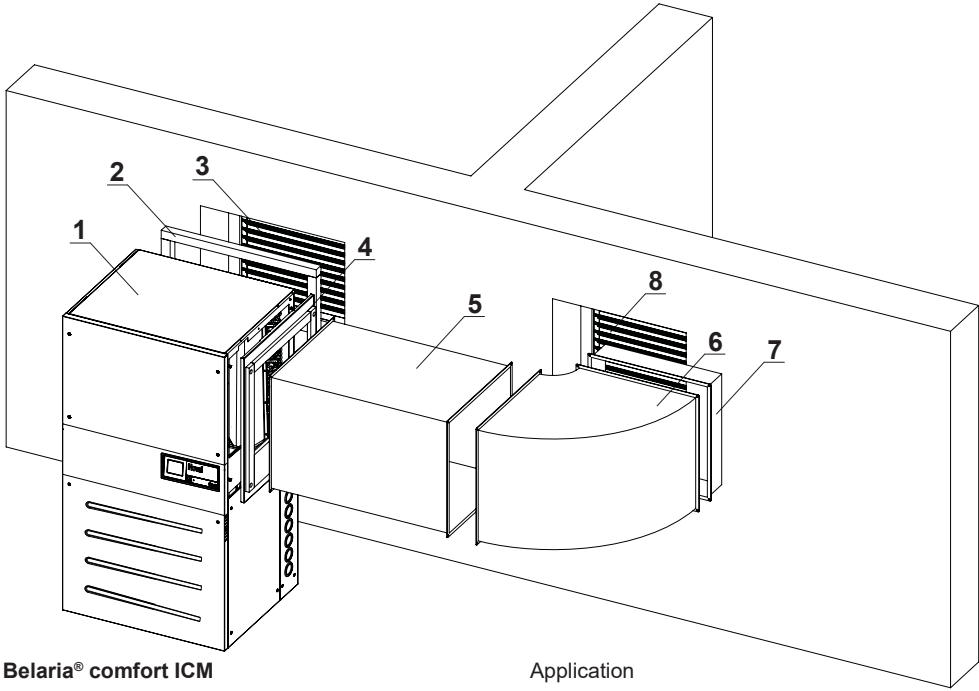
- The cut-outs must be created professionally.
- The masonry support is fixed into the wall opening insulated with the masonry insulation by means of foam.



A depends on the selection of the air duct:

Length of air duct	A
1000	1130
1500	1630

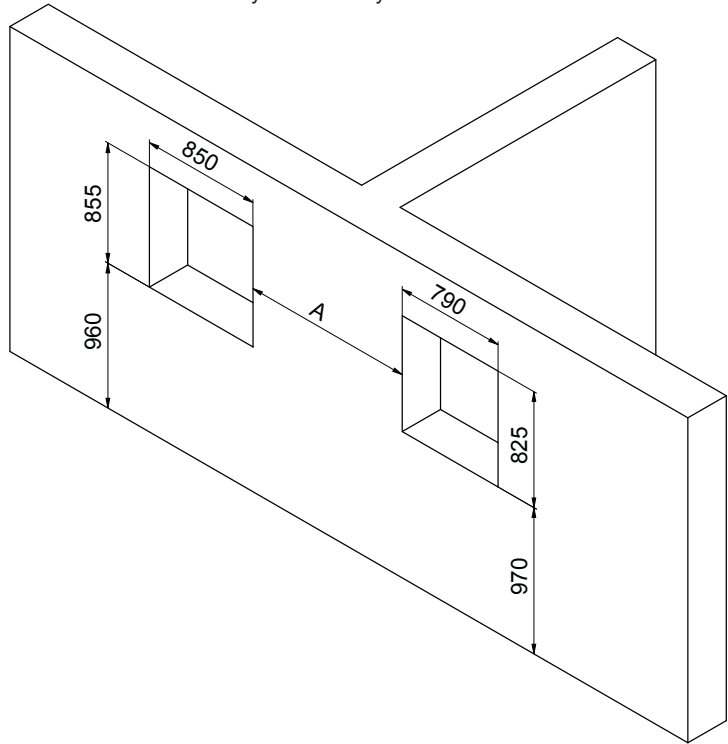
Space requirement “Duct” indoor installation with elbow



Belaria® comfort ICM	Application
1 Heat pump	Indoor installation
2 Wall connection element	Intake
3 Weatherproof grille	Intake
4 Blow-out panel cpl. - duct connection RAL 3000	Outlet
5 Air duct LKG10 - 1.0 m	Outlet
6 Air duct LKG15 - 1.5 m	
7 Air duct elbow LKB90 - 90°	Outlet
8 Wall fitting MS01	Outlet
9 Weatherproof grille	Outlet
10 Weatherproof grille sound-insulated	Outlet

Cut-out dimensions
“Duct” indoor installation with elbow
(Dimensions in mm)

- The cut-outs must be created professionally.
- The masonry support is fixed into the wall opening insulated with the masonry insulation by means of foam.



Notices

- Ducts can be shortened!
- In order to prevent an air short circuit, the partition must be positioned between the suction and exhaust opening.

The wall insulation (20 mm) is not required when using the wall fitting MS01.

A depends on the selection of the air duct:

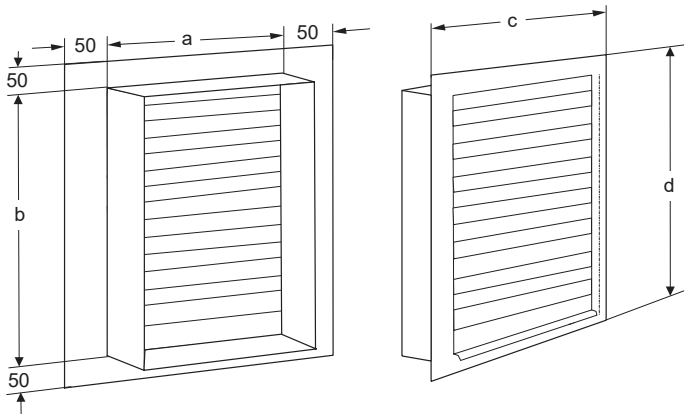
Length of air duct	A
1000	1126
1500	1626

Weatherproof grille
(Dimensions in mm)

Weatherproof grille made of aluminium
with mesh grille.

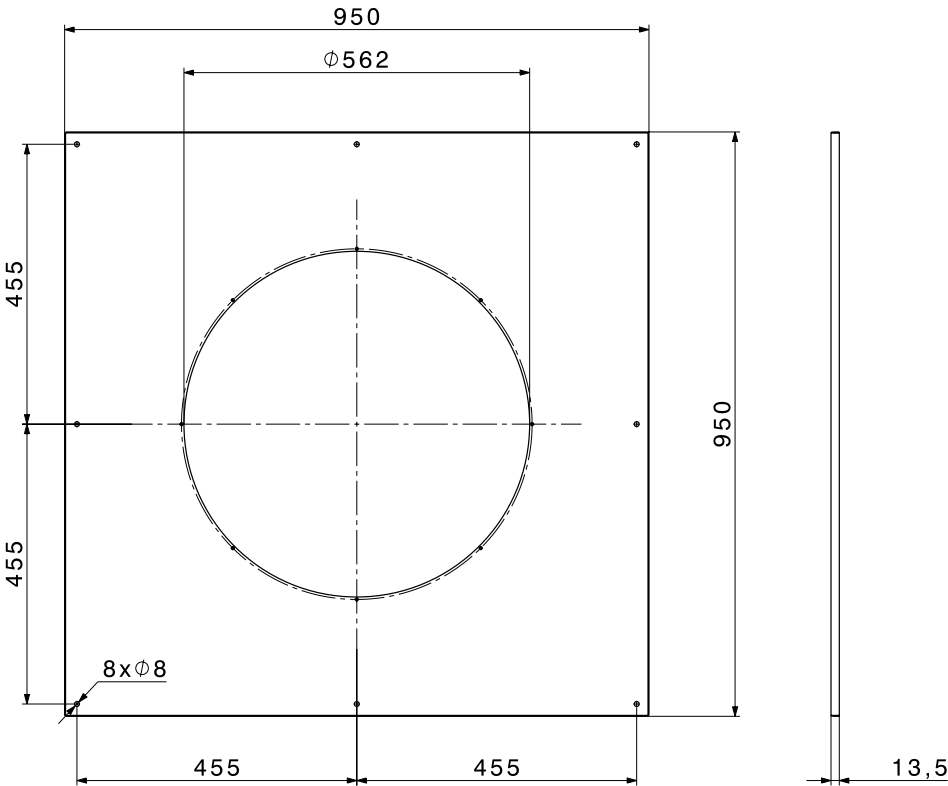
For the openings with Hoval wall insulation type
MI-E01 (suction) or MI-A01, MI-A02 (exhaust).

If the thermal insulation for the wall openings
is provided on-site, it must be 20 mm thick!



Weatherproof grille type	Belaria® comfort ICM type	Application for	a	b	c	d
WG-E01	8,13	Intake	810	796	890	896
WG-A01	8,13	Outlet	640	746	720	846
WG-A02	8,13	Outlet Flex	720	696	800	796
WG-MS01	8,13	Outlet duct	750	746	830	846

Wall connection element Belaria® comfort ICM
(Dimensions in mm)



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