NIBE F2120

Air/water heat pump

A breakthrough in efficiency

NIBE F2120 is an air/water heat pump that represents a real breakthrough with a market-leading SCOP. F2120 utilises the heat energy from the outdoor air, which places considerable demands on the technology that is used. F2120 is designed to be docked to waterborne heating systems.

Possibly more important is the class leading work range with max 65 °C supply temperature and that F2120 delivers up to an unbelievable 63 °C at outdoor temperatures as low as -25 °C. All this combined with a very low noise level.

- A breakthrough in efficiency. An air/water heat pump with a SCOP value of more than 5.0*.
- Inverter controlled compressor with EVI technology that adapts output to the prevailing requirements.
- Class leading working range. Max 65 °C supply temperature and up to sensational 63 °C at -25 °C outdoor temperatures.
- Quiet fan with intelligent control reduces the noise to a minimum.
- 3 phase connection for all sizes; no need for more powerful fuses or rebuilding of the electrical system.
- Integrated condensation water trough that together with accessory KVR 10 provides frost free drainage of condensation.
- Reversible operation for cooling requirements down to the outdoor temperature +15 °C.
- F2120 is intended for combination with one of NIBE's indoor modules VVM 310 / 320 / 500 or control modules SMO 20 / 40.
- Up to eight heat pumps of the same size can be docked together with control from SMO 40.

*NIBE F2120-8, -12 SCOP 4.8. NIBE F2120-16, -20 SCOP 5.1.

NIBE

A+++

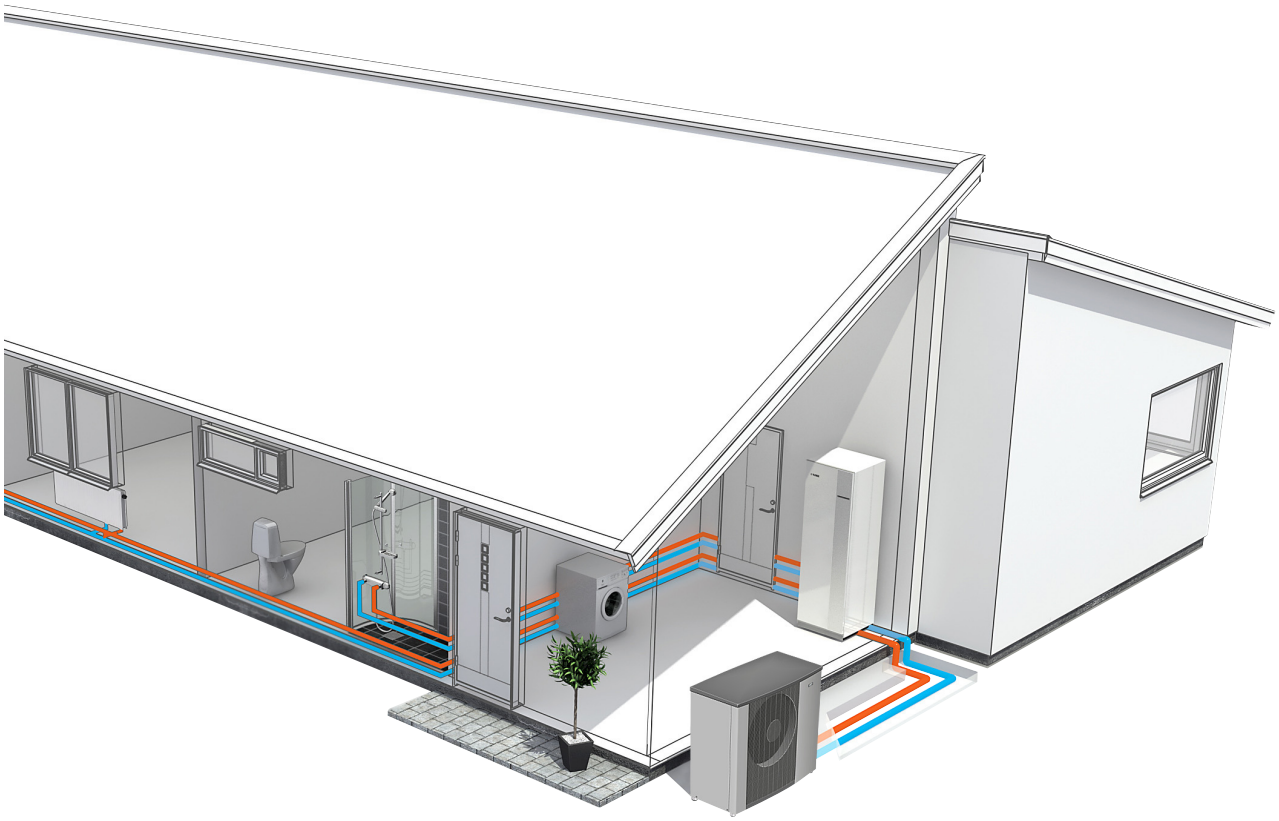
The system's efficiency class for heating.

A XL

The product's efficiency class and tap profile for hot water.

This is how NIBE F2120 works

Installation method



Compatible indoor modules

	VVM 310	VVM 320	VVM 500	SMO 20	SMO 40
F2120-8	X	X	X	X	X
F2120-12	X	X	X	X	X
F2120-16	X	X	X	X	X
F2120-20	X	X	X	X	X

F2120 – a part of your climate system where F2120 is intended to be combined with one of the indoor modules VVM or the control modules SMO.

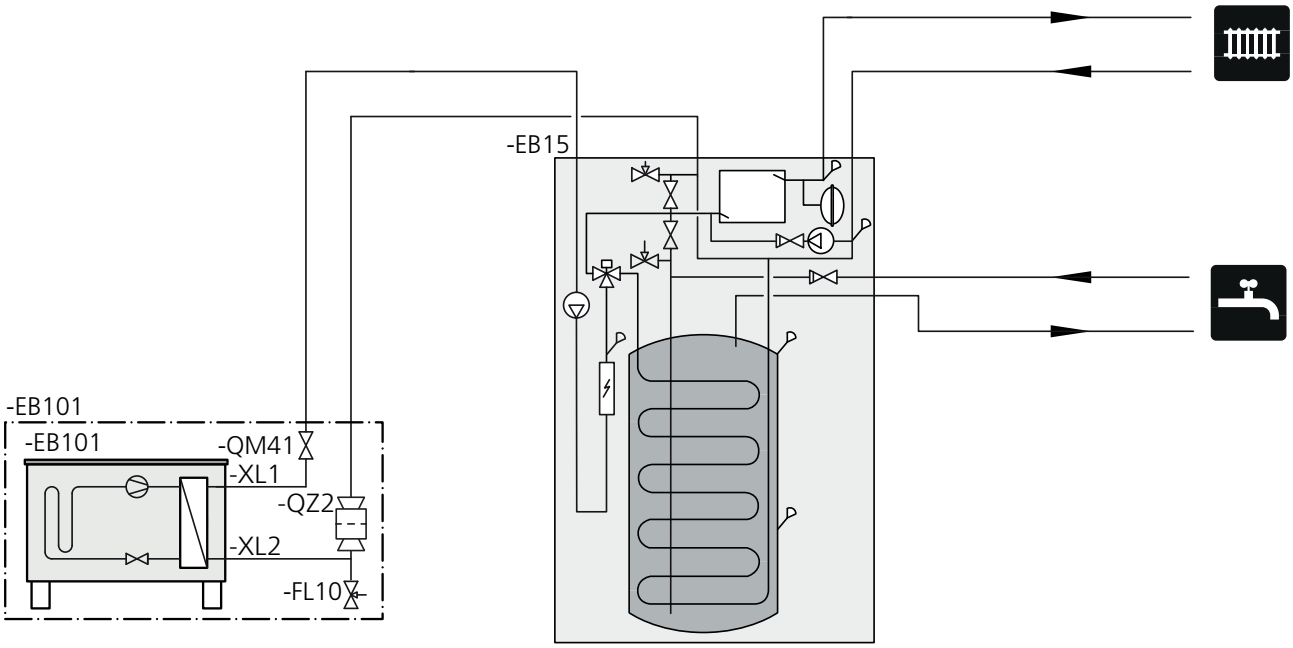
Together with an indoor module F2120 creates a complete heating / cooling and hot water unit. Our flexible indoor modules give efficient heating and high hot water performance. VVM indoor modules are complete with a smart and user-friendly control system, hot water heater, additional heat, self-regulating circulation pump, etc.

The control modules, SMO, offer a flexible system solution that can be easily customised. For systems with SMO, different components such as water heaters, additional heat and other accessories can be selected to suit the installation's requirements. Up to eight F2120 can be connected to a SMO 40.

There is a wide range of system solutions and accessories for NIBE's indoor modules and control modules.

Function principle with hot water and a heating system

The heating medium side and the domestic hot water side must be fitted with the necessary safety equipment in accordance with the applicable regulations.



EB15	**Indoor module (VVM 320)**
EB101	**Heat pump (F2120)**
FL10	Safety valve, heat pump
QM41	Shut-off valve
QZ2	Filterball
XL1	Connection, heating medium out of F2120
XL2	Connection, heating medium in to F2120,

Good to know about NIBE F2120

Transport and storage

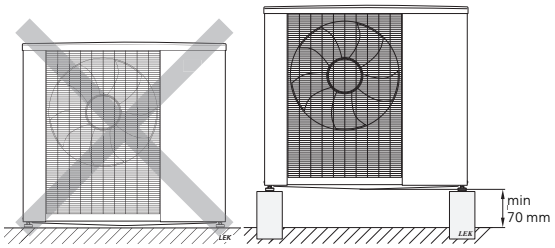
F2120 must be transported and stored vertically.

NOTE Ensure that the heat pump cannot fall over during transport.

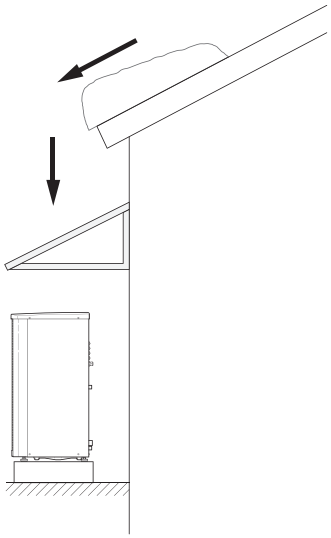
Ensure that the heat pump cannot be damaged during transportation.

Installation and positioning

- Place F2120 outdoors on a solid level base that can take the weight, preferably a concrete foundation. If concrete slabs are used they must rest on asphalt or shingle.
- The lower edge of the evaporator must be at the level of the average local snow depth. The concrete foundation or concrete plinths must therefore be at least 70 mm high.
- F2120 should not be positioned next to noise sensitive walls, for example, next to a bedroom.
- Also ensure that the placement does not inconvenience the neighbours.
- F2120 must not be placed so that recirculation of the outdoor air can occur. This causes lower output and impaired efficiency.
- The evaporator must be sheltered from direct wind / , which negatively affects the defrosting function. Place F2120 protected from wind / against the evaporator.
- Small amounts of condensation water, as well as melt water from defrosting, may be produced. Condensation water must be led off to a drain or equivalent.
- Care must be exercised so that the heat pump is not scratched during installation.



Do not place F2120 directly on the lawn or other non solid surface.

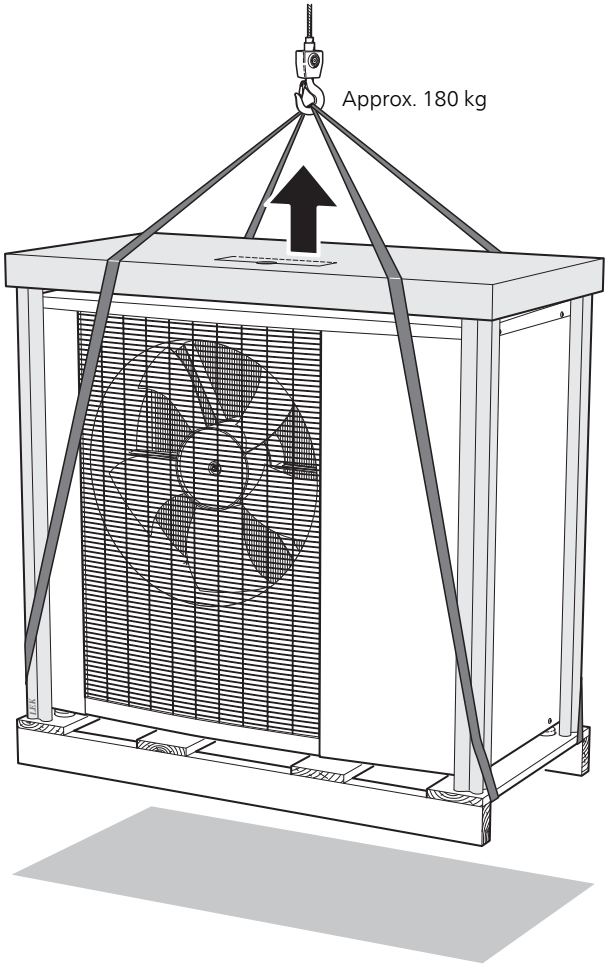


If there is a risk of snow slip from roof, a protective roof or cover must be erected to protect the heat pump, pipes and wiring.

Lift from the street to the set up location

If the base allows, the simplest thing is to use a pallet truck to move the F2120 to the set up location.

NOTE The centre of gravity is offset to one side (see print on the packaging).



If F2120 needs to be transported across soft ground, such as a lawn, we recommend that a crane is used that can lift the unit to the installation location. When F2120 is lifted with a crane, the packaging must be undisturbed, see the illustration above.

If a crane vehicle cannot be used the F2120 can be transported on an extended sack truck. F2120 must be taken from its heaviest side and two people are required to lift F2120.

Lift from the pallet to final positioning

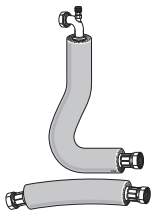
Before lifting remove the packaging and the securing strap to the pallet.

Place lifting straps around each machine foot. Lifting from the pallet to the base requires four persons, one for each lifting strap.

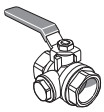
Supplied components

Local differences in the enclosed kit may occur. See relevant installer manual for more information.

F2120-8, F2120-12

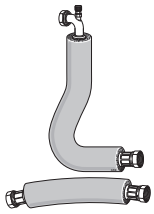


2 x flexible pipes (DN25, G1") with 4 x gaskets.

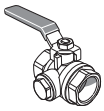


Filterball (G1").

F2120-16, F2120-20



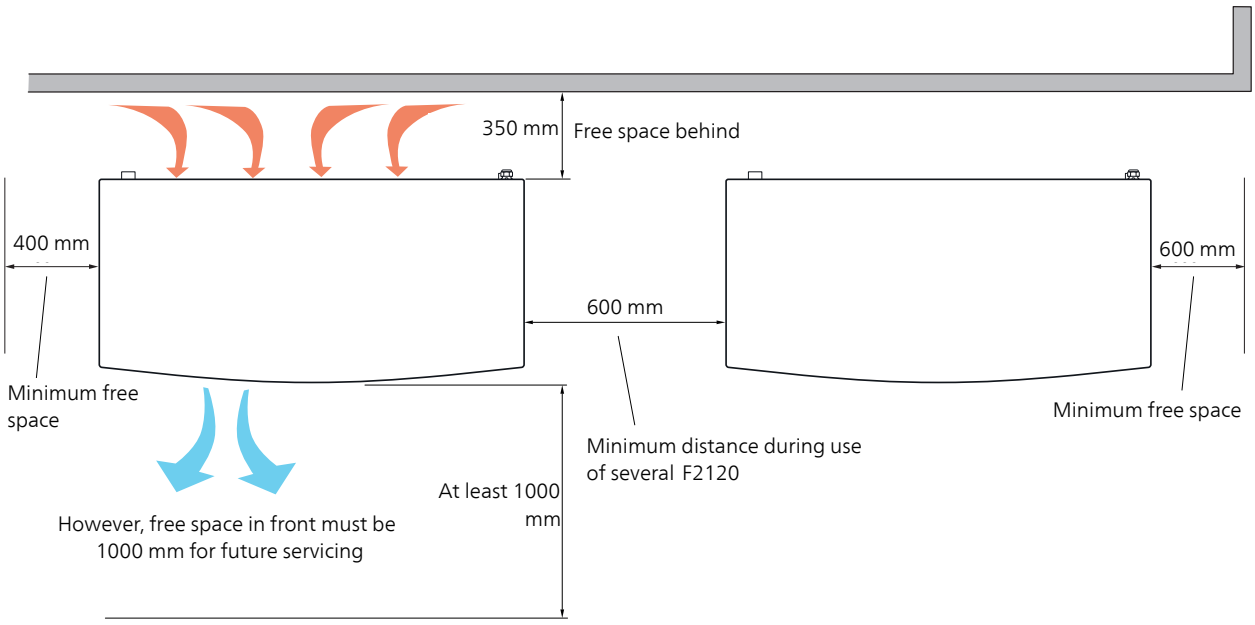
2 x flexible pipes (DN25, G1 1/4") with 4 x gaskets.



Filterball (G1 1/4").

Installation area

The distance between F2120 and the house wall must be at least 350 mm. Clearance above F2120 should be at least 1,000 mm. However, free space in front must be 1,000mm for future servicing.



Installation

Inspection of the installation

Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person and should be documented. The above applies to closed heating systems.

If the heat pump is replaced, the installation must be inspected again.

Condensation water trough

The condensation water trough collects and leads away most of the condensation water from the heat pump.

NOTE It is important to the heat pump function that condensation water is led away and that the drain for the condensation water run off is not positioned so that it can cause damage to the house.Condensation runoff should be checked regularly, especially during the autumn. Clean if necessary.

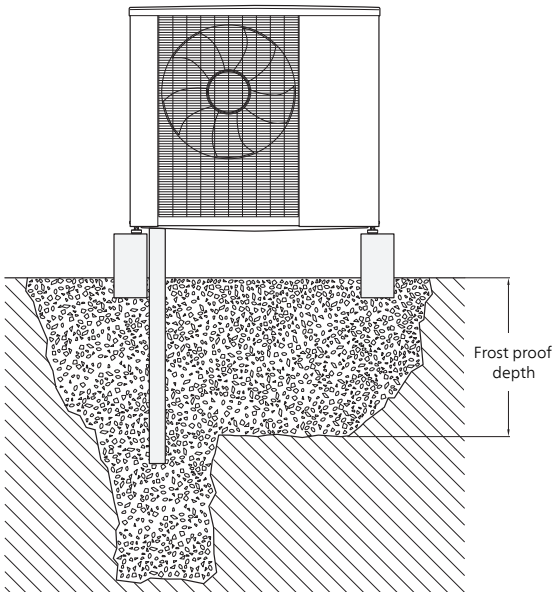
NOTE Pipe with heating cable for draining the condensation water trough is not included.To ensure this function the accessory KVR 10 should be used.

NOTE The electrical installation and wiring must be carried out under the supervision of an authorised electrician.

- The condensation water (up to 50 litres/24 hrs) that collects in the trough should be routed away by a pipe to an appropriate drain, it is recommended that the shortest outdoor stretch possible is used.
- The section of the pipe that can be affected by frost must be heated by the heating cable to prevent freezing.
- Route the pipe downward from F2120.
- The outlet of the condensation water pipe must be at a depth that is frost free or alternatively indoors (with reservation for local ordinances and regulations).
- Use a water trap for installations where air circulation may occur in the condensation water pipe.
- The insulation must seal against the bottom of the condensation water trough.

Recommended alternative for leading off condensation water

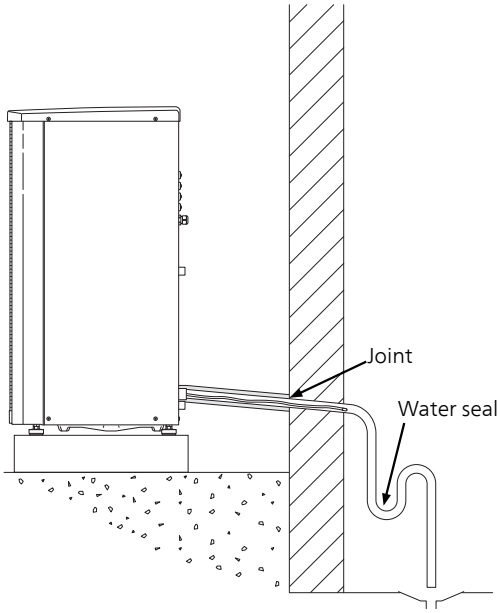
Stone caisson



If the house has a cellar the stone caisson must be positioned so that condensation water does not affect the house. Otherwise the stone caisson can be positioned directly under the heat pump.

The outlet of the condensation water pipe must be at frost free depth.

Drain indoors



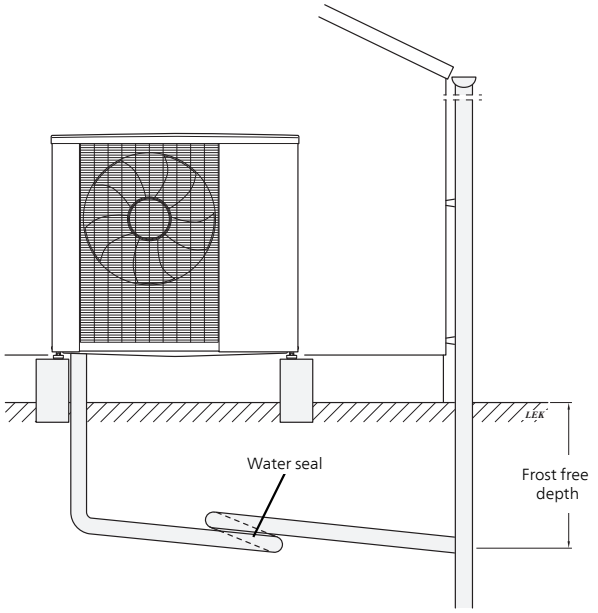
The condensation water is lead to an indoor drain (subject to local rules and regulations).

Route the pipe downward from F2120.

The condensation water pipe must have a water seal to prevent air circulation in the pipe.

KVR 10 spliced as illustrated. Pipe routing inside house not included.

Gutter drainage



The outlet of the condensation water pipe must be at frost free depth.

Route the pipe downward from F2120.

The condensation water pipe must have a water seal to prevent air circulation in the pipe.

Caution If none of the recommended alternatives is used good lead off of condensation water must be assured.

Pipe installation

Pipe installation must be carried out in accordance with current norms and directives.

F2120 can only operate up to a return temperature of about 55 °C and an outgoing temperature of about 65 °C from the heat pump.

F2120 is not equipped with external shut off valves on the water side; these must be installed to facilitate any future servicing. The return temperature is limited by the return line sensor.

Water volumes

Depending on the size of F2120, an available water volume is required to prevent short operating times and to enable defrosting. For optimal operation of F2120, a minimum available water volume of 10 litres times the size number is recommended. E.g. F2120-12: 10 litres x 12 = 120 litres.

Pipe coupling heating medium circuit

- The heat pump must be vented by the upper connection (XL1) using the venting nipple on the enclosed flexible hose.
- Install the enclosed particle filter before the inlet, i.e. the lower connection (XL2) on F2120.
- All outdoor pipes must be thermally insulated with at least 19 mm thick pipe insulation.
- Install shutoff and drain valves so that F2120 can be emptied in the event of prolonged power failures.
- The supplied flexible hoses act as vibration dampers. The flexible pipes are fitted so an elbow is created, thus acting as vibration damping.

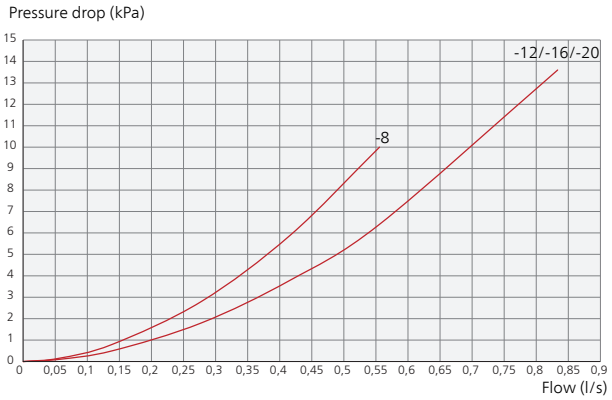
Charge pump

The charge pump (not included in the product) is powered and controlled from the indoor module/control module. It has a built-in anti-freezing function and must therefore not be switched off when there is a risk of freezing.

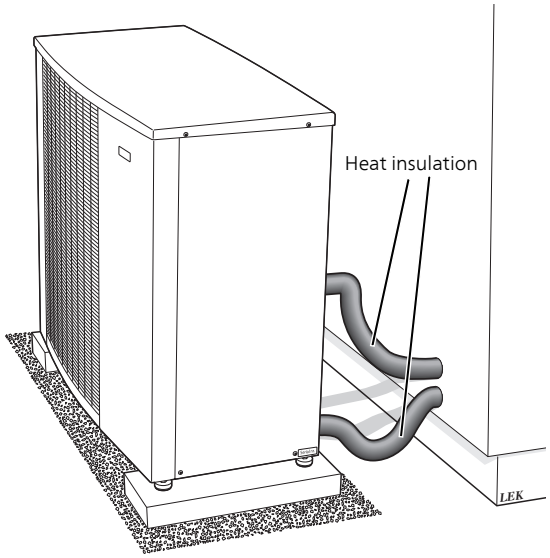
At temperatures below +2 °C the charge pump runs periodically, to prevent the water from freezing in the charge circuit. The function also protects against excess temperatures in the charge circuit.

Pressure drop, heating medium side

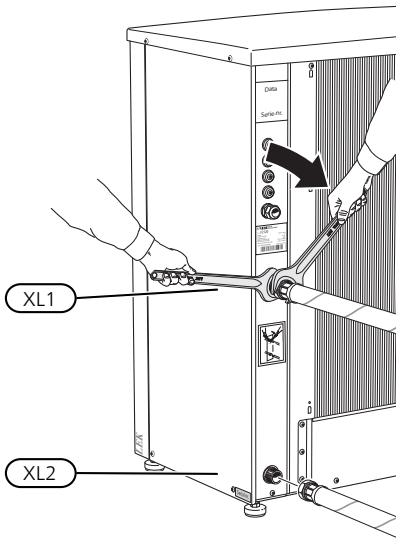
F2120-8, -12, -16, -20



Heat insulation



Installing flex hoses



XL1 Connection, heating medium out of F2120
XL2 Connection, heating medium in to F2120,

Docking

F2120 can be connected in several ways. The necessary safety equipment must be installed in accordance with current regulations for all docking options.

See www.nibe.eu for more detailed docking options.

Electrical connections

- The heat pump must not be connected without the permission of the electricity supplier and must be connected under the supervision of a qualified electrician.
- If F2120 is fused with a miniature circuit breaker, it must have at least motor characteristic "C". For MCB size see "Technical Specifications".
- F2120 does not include an omnipolar circuit breaker on the incoming power supply. The heat pump's supply cable must be connected to a circuit breaker with at least a 3 mm breaking gap. When the building is equipped with an earth-fault breaker, the heat pump should be equipped with a separate one. The earth-fault breaker should have a nominal tripping current of no more than 30 mA. Incoming supply must be 400V 3N~ 50Hz via electrical distribution units with fuses.

  For 230V~ 50Hz, the incoming supply must be 230V~ 50Hz via distribution box with fuses.
- If an insulation test is to be carried out in the building, disconnect the heat pump.
- If the control is to be supplied separately from other components in the heat pump (e.g. for tariff connection), a separate operating cable must be connected to terminal block (X5).
- The routing of cables for heavy current and signals should be made out through the cable glands on the heat pump's right-hand side, seen from the front.
- The communication cable must be a three core, screened cable and be connected between F2120 terminal block X22 and the indoor module/control module.
- Connect the charge pump to the indoor module/control module. See where the charge pump must be connected in the installation manual for your indoor module/control module.

NOTE Electrical installation and service must be carried out under the supervision of a qualified electrician. Cut the current with the circuit breaker before carrying out any servicing. Electrical installation and wiring must be carried out in accordance with the stipulations in force.

NOTE Check the connections, main voltage and phase voltage before the machine is started, to prevent damage to the air/water heat pump electronics.

NOTE The live external control must be taken into consideration when connecting.

NOTE If the supply cable is damaged, only NIBE, its service representative or similar authorised person may replace it to prevent any danger and damage.

Maintenance

When your heat pump is located outdoors some external maintenance is required.

NOTE Insufficient maintenance can cause serious damage to F2120, which is not covered by the guarantee.

Checking grilles and bottom panel on F2120

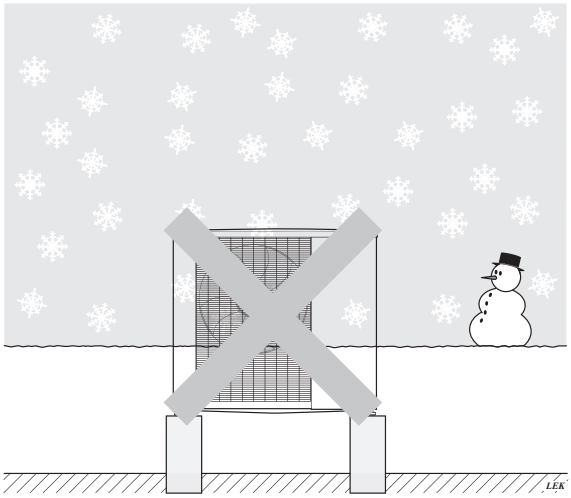
Regularly check throughout the year that the grille is not clogged by leaves, snow or anything else.

You should be vigilant during windy conditions and/or in the event of snow as the grille can become blocked.

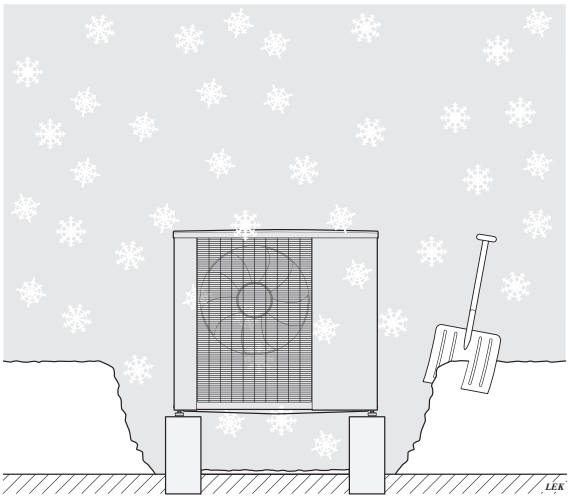
Also check that the drain holes in the bottom panel (ten) are free from dirt and leaves.

Regularly check that condensation is routed away correctly through the condensation pipe. Ask your installer for assistance if required.

Keep free of snow and ice



Prevent snow from building up and covering the grilles and drain holes on F2120.



Keep free of snow and/or ice.

Cleaning the outer casing

If necessary the outer casing can be cleaned using a damp cloth.

Care must be exercised so that the heat pump is not scratched when cleaning. Avoid spraying water into the grilles or the sides so that water penetrates into F2120. Prevent F2120 coming into contact with alkaline cleaning agents.

Functions

Control, general

F2120 is equipped with an internal electronic controller that handles all functions necessary for operation of the heat pump, e. g. defrosting, stop at max/min temperature, connection of the compressor heater, and protective functions during operation.

Temperatures, number of starts and run time, are read off in the indoor module/control module.

The integrated control shows information via status-LEDs and can be used during servicing.

Under normal operating conditions the home owner does not need to have access to the controller.

F2120 communicates with the NIBE indoor module/control module, which means that all settings and measurement values from F2120 are adjusted and read off on the indoor module/control module.

LED status

The base board in F2120 has six status LEDs for easy control and fault tracing.

Master control

To control F2120, a NIBE indoor module/control module is required, which calls upon F2120 according to demand. All settings for F2120 are made via the indoor module/control module. It also shows the status and sensor values from F2120.

NIBE VVM indoor modules

F2120 together with one of the indoor modules (VVM*) creates a complete heating and hot water unit.

VVM indoor modules are equipped with a control box that provides with the most economical operation at the present time, both for the immersion heater integrated in the indoor module and compressor operation in the outdoor module F2120.

VVM indoor modules come complete with a heating control system, reversing valve, circulation pump and speed controlled charge pump.

With VVM indoor modules it is possible to heat a pool as well as an extra shunt group, i.e. two heating systems with different supply temperatures.

VVM indoor modules are designed for simple connection to F2120.

*See Compatible indoor modules on page 2.

NIBE SMO control modules

SMO 20

SMO 20 is an intelligent control module that together with F2120 and existing heating and hot water heater equipment creates a complete installation. SMO 20 manages compressor operation in F2120 and, if necessary, the additional power from any type of existing equipment that may be required.

SMO 20 also manages speed controlled circulation pumps, reversing valves and sensors.

For SMO dockings see www.nibe.eu.

SMO 40

SMO 40 is an intelligent control module that together with F2120 and existing heating and hot water heater equipment creates a complete installation. SMO 40 manages compressor operation in F2120 and, if necessary, the additional power from any type of existing equipment that may be required.

SMO 40 also manages automatic by-passes, load monitors, speed controlled circulation pumps, reversing valves and sensors. With SMO 40 it is possible to heat a pool as well as extra shunt groups, i.e. several heating systems with different supply temperatures.

Up to eight F2120 of the same size can be docked together with control from SMO 40.

For SMO dockings see www.nibe.eu.

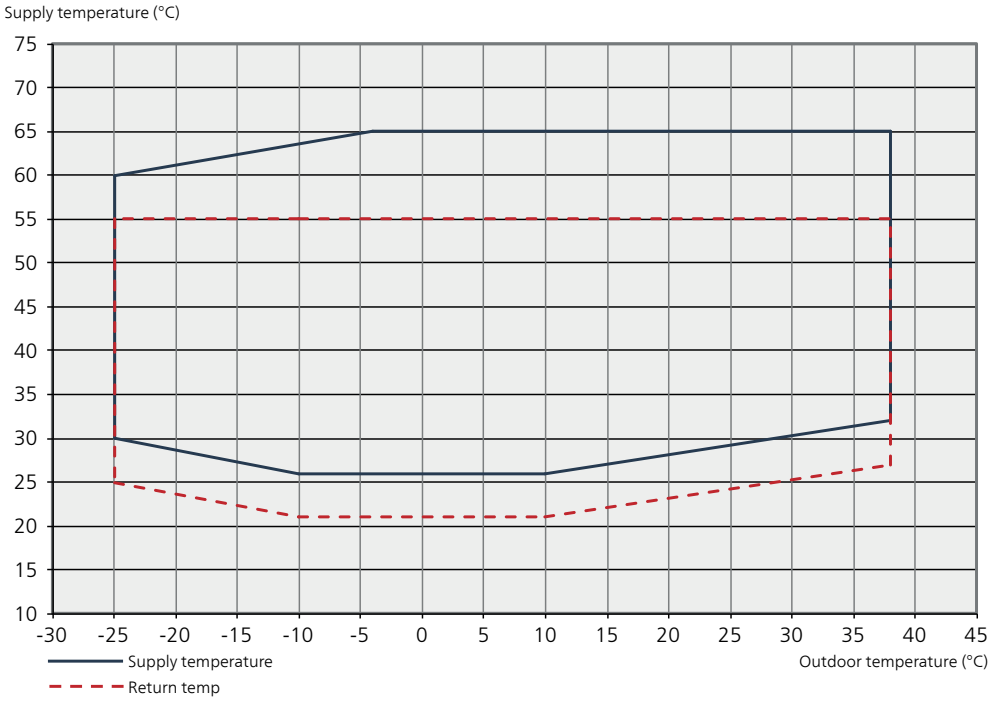
Speed controlled charge pump CPD 11 (accessory for SMO 20 and SMO 40)

It is possible to optimise the system flow from SMO 20 and SMO 40 depending on the type of heat distribution system, radiator or underfloor heating. This means increased efficiency when the heat pump gives the highest possible performance in relation to the demands. The same relationship applies to domestic hot water production.

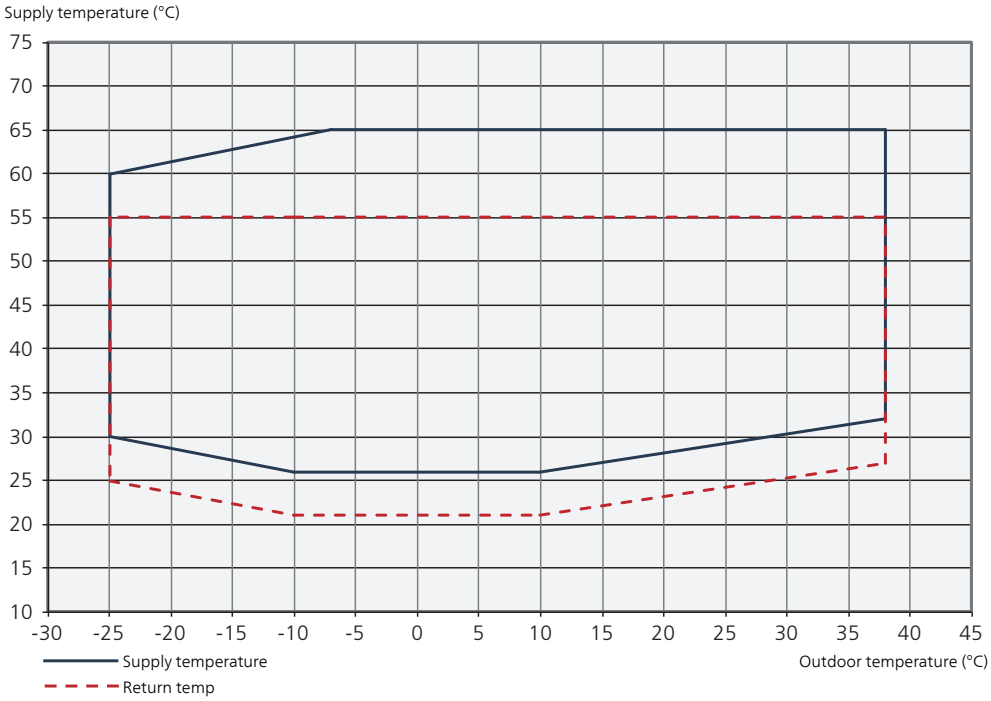
Because the air/water heat pumps are affected by the ambient outdoor temperature, the speed controlled charge pump can be used to adapt the flow better in different operating conditions, depending on the season.

Technical data
Working area

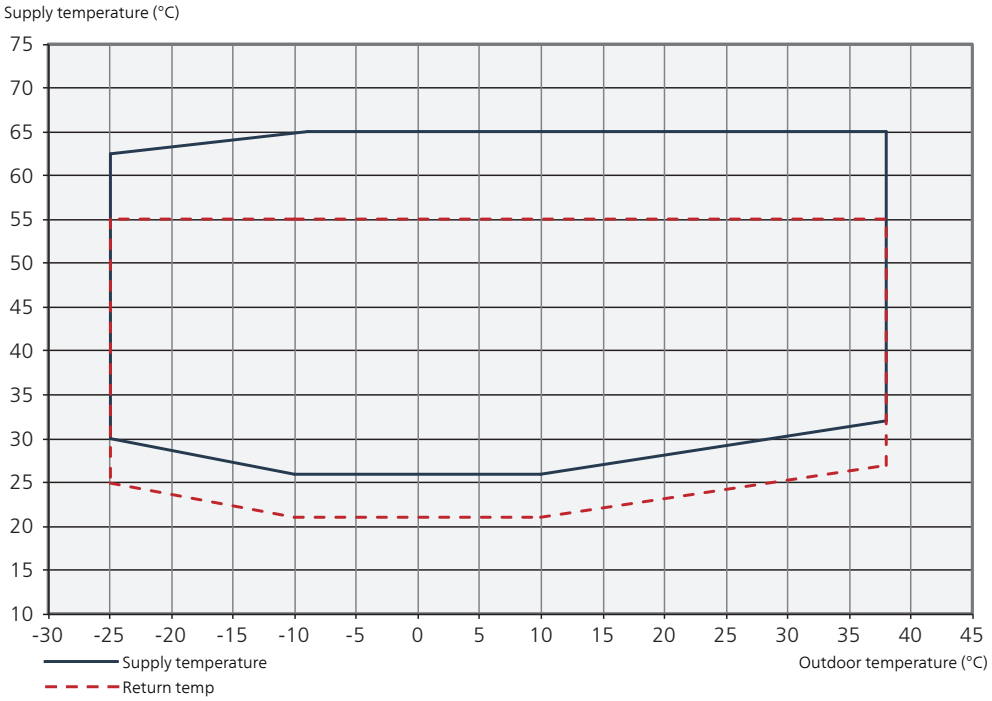
F2120-8 working range



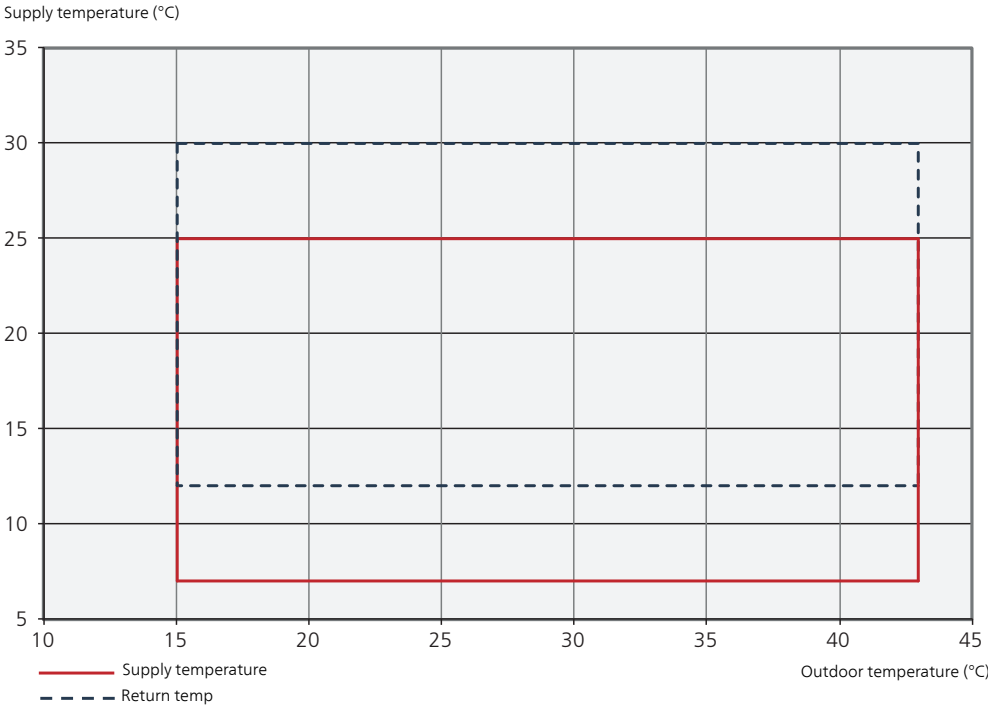
F2120-12 working range



F2120-16 / F2120-20 working range



F2120 working range cooling



During shorter time it is allowed to have lower working temperatures on the water side, e.g. during start up.

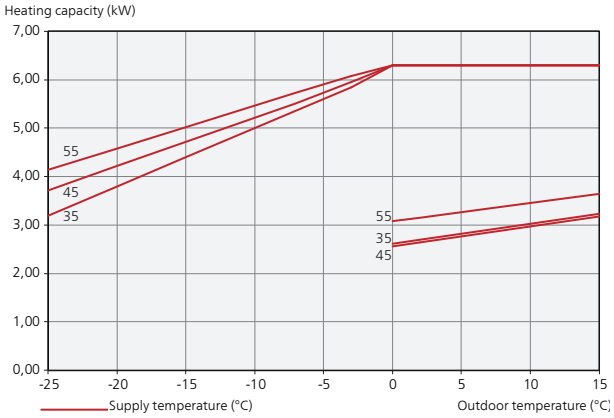
Heating

Output and COP at different supply temperatures

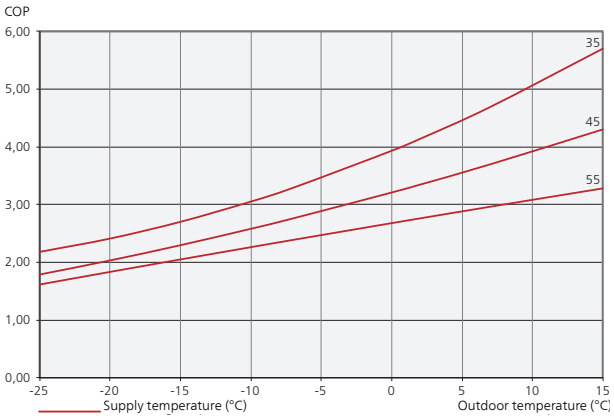
Maximum output during continuous operation.

F2120-8

F2120-8 max and min heating capacity

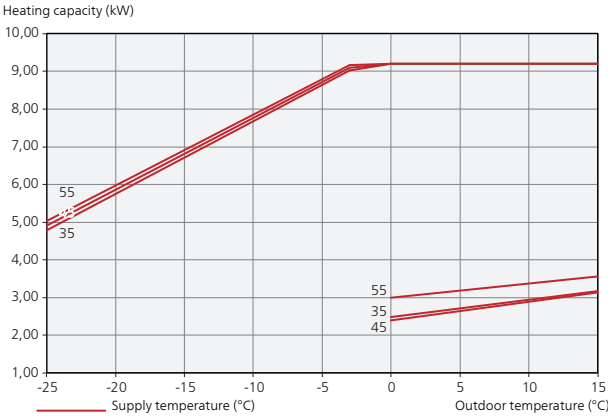


F2120-8 COP

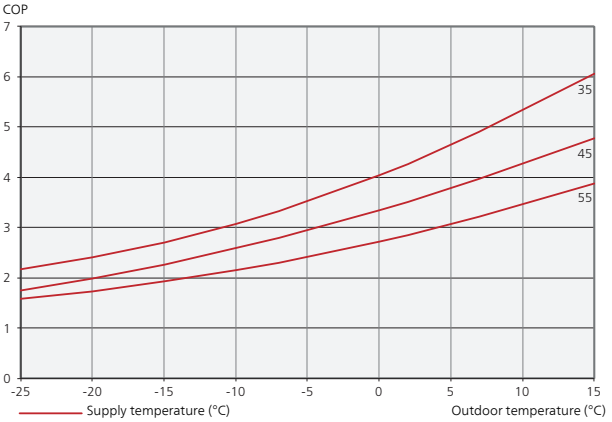


F2120-12

F2120-12 max and min heating capacity

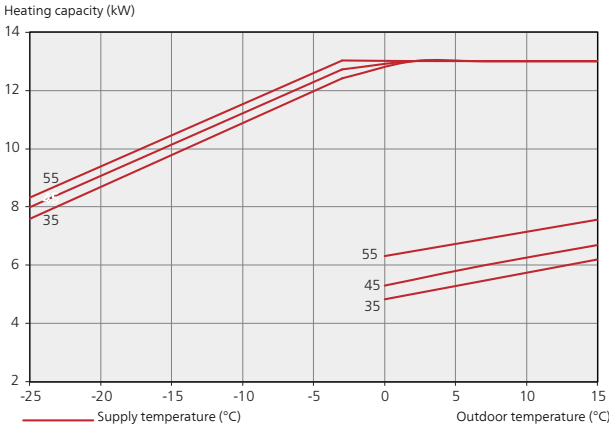


F2120-12 COP

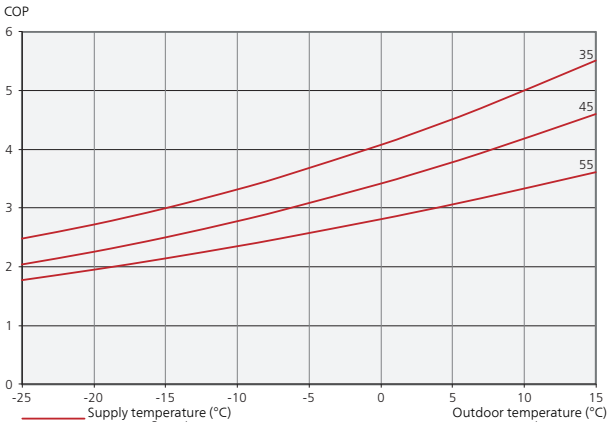


F2120-16

F2120-16 max and min heating capacity

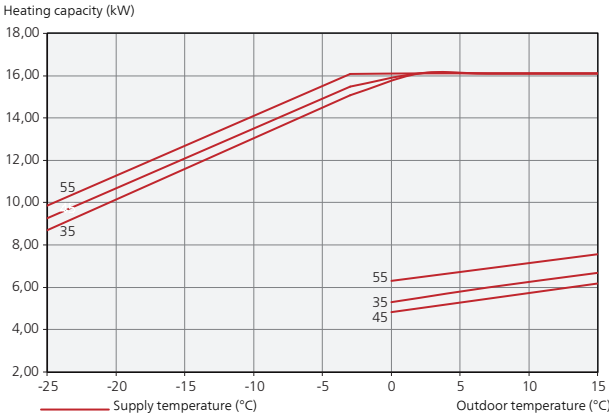


F2120-16 COP

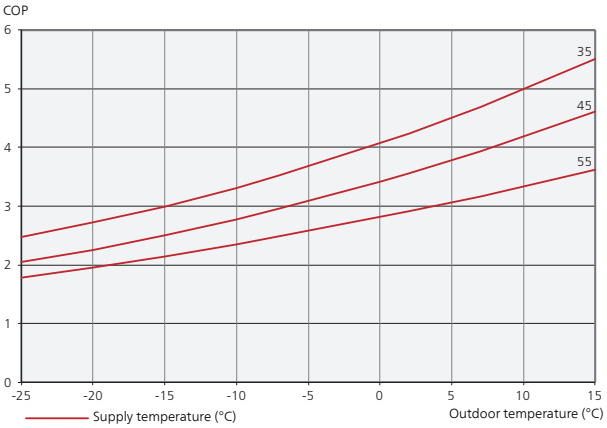


F2120-20

F2120-20 max and min heating capacity



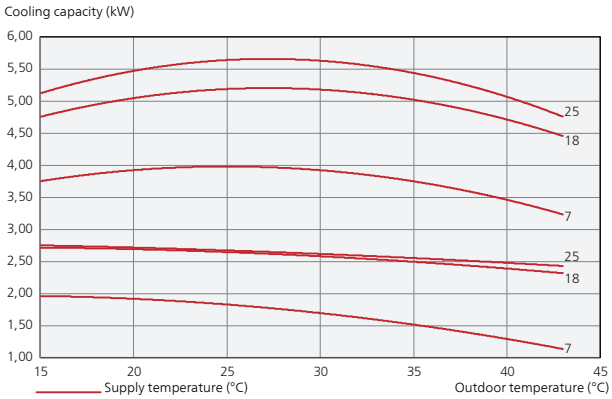
F2120-20 COP



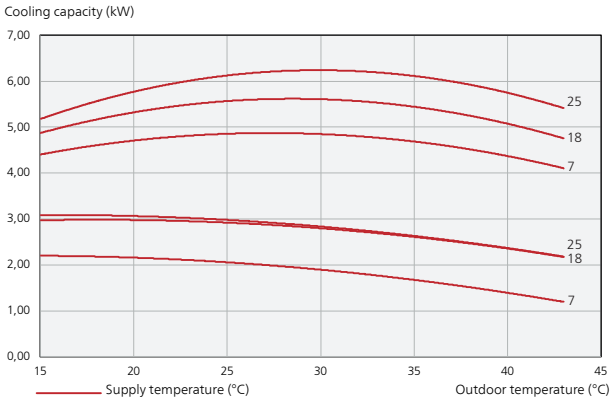
Cooling

Output at different supply temperatures (cooling)

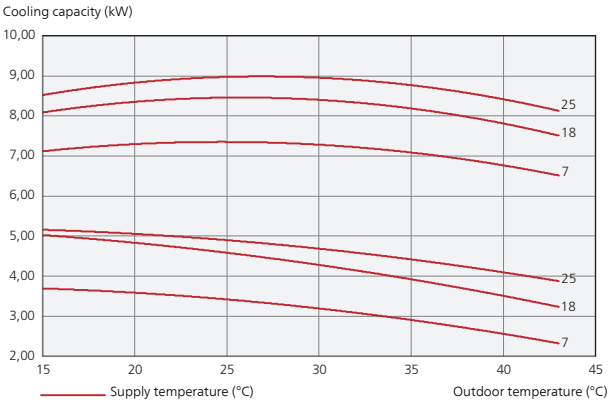
F2120-8



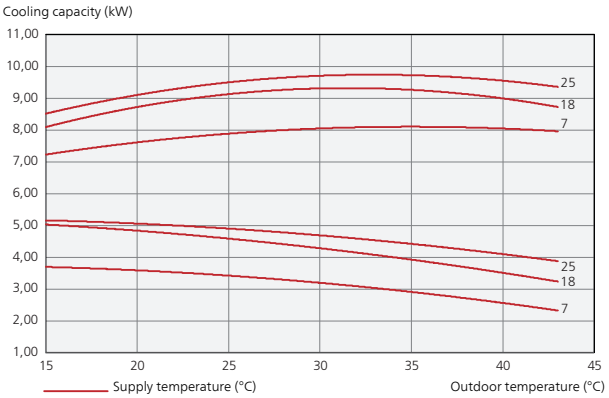
F2120-12



F2120-16

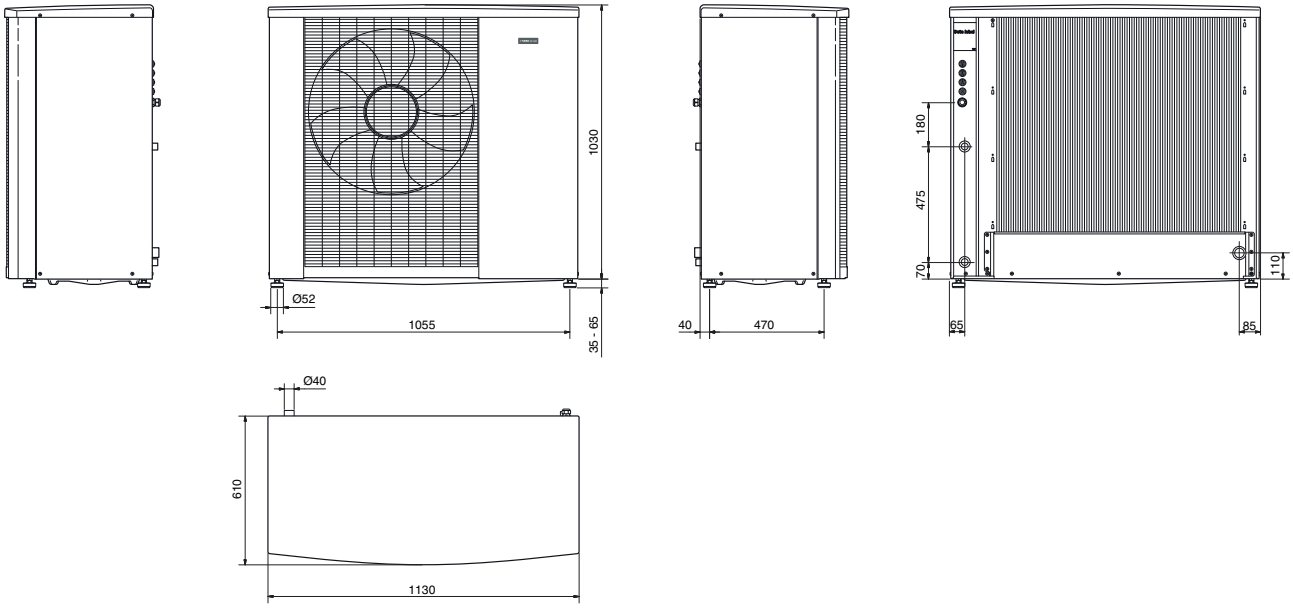


F2120-20

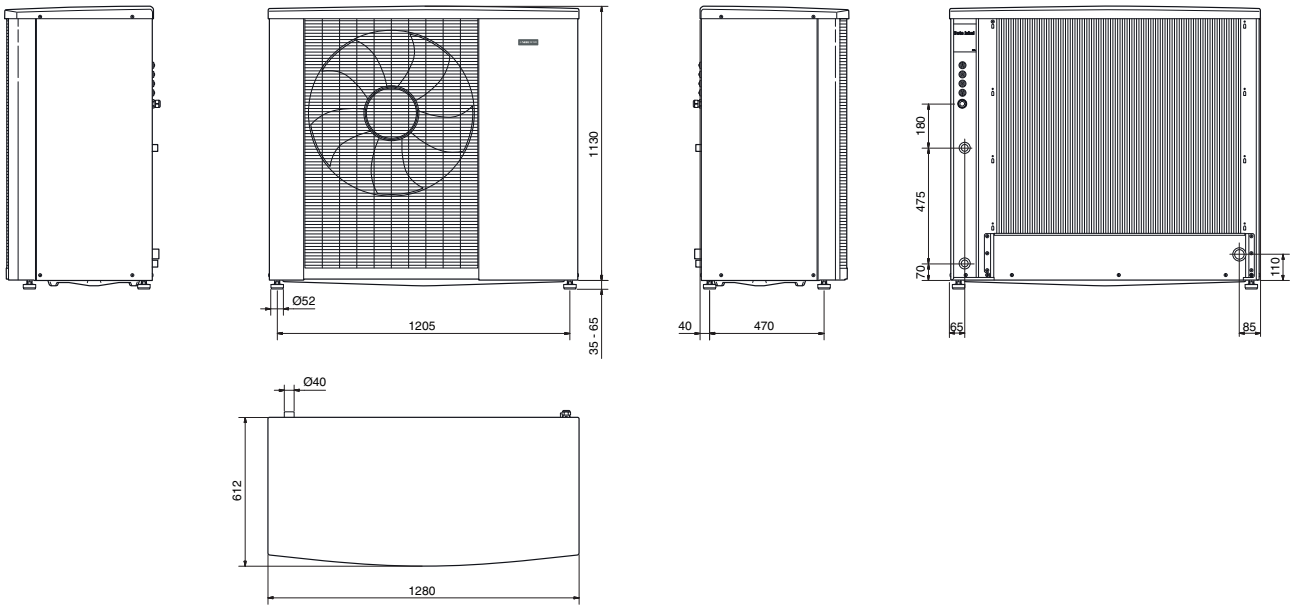


Dimensions

F2120-8



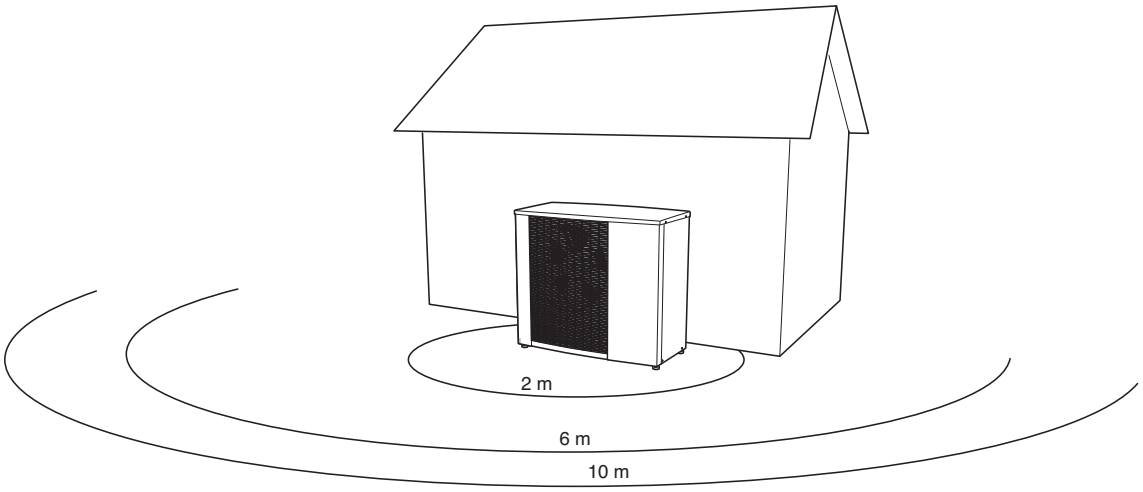
F2120-12, -16, -20



Sound pressure levels

F2120 is usually placed next to a house wall, which gives a directed sound distribution that should be considered. Accordingly, you should always attempt when positioning to choose the side that faces the least sound sensitive neighbouring area.

The sound pressure levels are further affected by walls, bricks, differences in ground level, etc and should therefore only be seen as guide values.



F2120		8	12	16	20
Sound power level (L_{WA}), according to EN12102 at 7 / 45 (nominal)	L_W(A)	53	53	53	53
Sound pressure level (L_{PA}) at 2 m*	dB(A)	39	39	39	39
Sound pressure level (L_{PA}) at 6 m*	dB(A)	29.5	29.5	29.5	29.5
Sound pressure level (L_{PA}) at 10 m*	dB(A)	25	25	25	25

*Free space.

Technical data CE

F2120 – 1x230V		8	12
Heating			
Output data according to EN 14511, partial load[1)]			
7/35 Rated output / Supplied power / $COP_{EN14511}$	kW/kW/-	3.57 / 0.78 / 4.57	3.54 / 0.69 / 5.12
7/45 Rated output / Supplied power / $COP_{EN14511}$	kW/kW/-	3.66 / 0.98 / 3.74	3.64 / 0.91 / 4.00
2/35 Rated output / Supplied power / $COP_{EN14511}$	kW/kW/-	4.03 / 0.91 / 4.43	5.21/ 1.22 / 4.27
2/45 Rated output / Supplied power / $COP_{EN14511}$	kW/kW/-	4.07 / 1.16 / 3.51	5.27 / 1.49 / 3.54

Cooling	Outd. temp: / Supply temp.	Max	Max
Output data according to EN14511 ΔT5K	35 / 7 °C	3.80 / 1.28 / 2.97	4.69 / 1.70 / 2.76
Specified/supplied power/EER	35 / 18 °C	5.10 / 1.37 / 3.73	5.44 / 1.73 / 3.15

Electrical data			
Rated voltage		230V~50Hz	
Max operating current, heat pump	A_{rms}	14	16
Max operating current, compressor	A_{rms}	13	15
Max output, fan	W	40	45
Fuse	A_{rms}	16	16
Refrigerant circuit			
Type of refrigerant		R410A	
GWP refrigerant		2,088	
Type of compressor		Scroll	
Volume	kg	2.4	2.6
CO_2 equivalent	t	5.01	5.43
Airflow			
Max airflow	m^3/h	2,400	3,400
Min/Max air temp, max	°C	-25 / 43	
Water flow			
Max system pressure heating medium	MPa	0.45 (4.5 bar)	
Min/Max flow	l/s	0.08 / 0.32	0.11 / 0.44
Min/Max HM temp continuous operation	°C	26 / 65	
Connection heating medium F2120		G1 1/4" external thread	
Connection heating medium flex pipe		G1 external thread	
Weight (excl. packaging)	kg	150	160
Miscellaneous			
Enclosure class		IP24	
Colour		grey	
Part No.		064 134	064 136

F2120 – 3x400V		8	12	16	20
Heating					
Output data according to EN 14511, partial load[1)]					
7/35 Rated output / Supplied power / $COP_{EN14511}$	kW/kW/-	3.57/0.78/4.57	3.54/0.69/5.12	5.17/1.01/5.11	5.17/1.01/5.11
7/45 Rated output / Supplied power / $COP_{EN14511}$	kW/kW/-	3.66/0.98/3.74	3.64/0.91/4.00	5.49/1.33/4.14	5.49/1.33/4.14
2/35 Rated output / Supplied power / $COP_{EN14511}$	kW/kW/-	4.03/0.91/4.43	5.21/1.22/4.27	7.80/1.79/4.36	9.95/2.36/4.22
2/45 Rated output / Supplied power / $COP_{EN14511}$	kW/kW/-	4.07/1.16/3.51	5.27/1.49/3.54	7.97/2.24/3.56	10.41/2.88/3.61

Cooling	Outd. temp: / Supply temp.	Max	Max	Max	Max
Output data according to EN14511 ΔT5K	35 / 7 °C	3.80/1.28/2.97	4.69/1.70/2.76	7.09/2.72/2.61	8.10/3.50/2.31
Specified/supplied power/EER	35 / 18 °C	5.10/1.37/3.73	5.44/1.73/3.15	8.19/2.83/2.90	9.26/3.64/2.54

Electrical data					
Rated voltage		400V 3N~50Hz			
Max operating current, heat pump	A_{rms}	6	7	9.5	11
Max operating current, compressor	A_{rms}	5	6	8.5	10
Max output, fan	W	40	45	68	80
Fuse	A_{rms}	10	10	10	13

Refrigerant circuit					
Type of refrigerant		R410A			
GWP refrigerant		2,088			
Type of compressor		Scroll			
Volume	kg	2.4	2.6	3	3
CO_2 equivalent	t	5.01	5.43	6.26	6.26

Airflow					
Max airflow	m^3/h	2,400	3,400	4,150	4,500
Min/Max air temp, max	°C	-25 / 43			

Water flow					
Max system pressure heating medium	MPa	0.45 (4.5 bar)			
Min/Max flow	l/s	0.08/0.32	0.11/0.44	0.15/0.60	0.19/0.75
Min flow defrosting (100 % pump speed)	l/s	0.27	0.35	0.38	0.48
Min/Max HM temp continuous operation	°C	26 / 65			
Connection heating medium F2120		G1 1/4" external thread			
Connection heating medium flex pipe		G1 external thread		G1 1/4" external thread	

Weight (excl. packaging)	kg	167	177	183	

Miscellaneous					
Enclosure class		IP24			
Colour		Grey			
Part No.		064 135	064 137	064139	064 141

SCOP & Pdesign F2120 according to EN 14825								
F2120	8		12		16		20	
	Pdesign	SCOP	Pdesign	SCOP	Pdesign	SCOP	Pdesign	SCOP
SCOP 35 Average climate (Europe)	5.9	4.80	8	4.83	11	5.05	11	5.05
SCOP 55 Average climate (Europe)	6.3	3.75	8.3	3.78	12.3	3.9	12.3	3.9
SCOP 35 Cold climate	6.8	4.03	9.3	4.05	13	4.25	13	4.25
SCOP 55 Cold climate	7.4	3.33	9.8	3.33	14	3.53	14	3.53
SCOP 35 Warm climate	5.9	5.43	9.2	5.48	13	5.5	13	5.5
SCOP 55 Warm climate	6.3	4.35	9.2	4.48	13	4.5	13	4.5

1)Power statements including defrosting according to EN14511 at heating medium supply corresponding to DT=5 K at 7 / 45.
2)Nominal flow corresponds to DT=10 K at 7 / 45.

Energy rating, average climate

Model		F2120-8	F2120-12	F2120-16	F2120-20
Model hot water heater		VVM 320	VVM 320	VVM 500	VVM 500
Temperature application	°C	35 / 55	35 / 55	35 / 55	35 / 55
Energy efficiency class for space heating		A++ / A++	A++ / A++	A++ / A++	A++ / A++
Space heating efficiency class of the system[1)]		A+++ / A+++	A+++ / A+++	A+++ / A+++	A+++ / A+++
Water heating energy efficiency class		A	A	A	A
Declared load profile for water heating		XL	XL	XXL	XXL

1) Reported efficiency for the system also takes the temperature regulator into account. If the system is supplemented with an external additional boiler or solar heating the total efficiency of the system must be recalculated.

Accessories

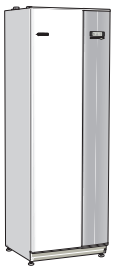
Not all accessories are available on all markets.

Detailed information about the accessories and complete accessories list available at www.nibe.eu.

Indoor module

VVM 310

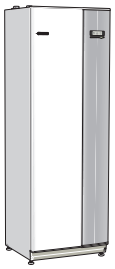
Part no. 069 430



VVM 310

With integrated EMK 310

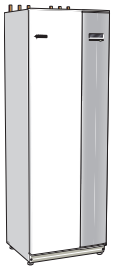
Part no. 069 084



VVM320

Copper, 3x400 V

Part no. 069 108



Stainless steel, 3x400 V

Part no. 069 109

Enamel, 3x400 V

With integrated EMK 300

Part no. 069 110

Stainless steel, 3x230 V

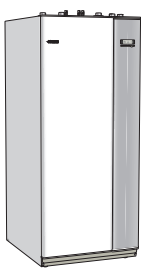
Part no. 069 113

Stainless steel, 1x230 V

Part no. 069 111

VVM 500

Part no. 069 400



Condensation water pipe

Condensation water pipe, different lengths.

KVR 10-10 F2120

1 metres
Part no. 067 549

KVR 10-30 F2120

3 metres
Part no. 067 550

KVR 10-60 F2120

6 metres
Part no. 067 551

Control module

SMO 20

Control module
Part no. 067 224

SMO 40

Control module
Part no. 067 225

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