

Ground source heat pump NIBE F1245

NIBE F1245 is an all-in-one heat pump with an integrated water heater with a capacity of 180 litres.

NIBE F1245 has high seasonal efficiency and a high temperature range. NIBE F1245 is available in the following output sizes: 6, 8, 10 and 12 kW. The heat pump is suitable for detached and terraced houses.

Thanks to smart technology, the product gives you control over your energy consumption and will be a key part of your connected home. The efficient control system automatically adjusts the indoor climate for maximum comfort, and you do nature a favour at the same time.

- Efficient, all-in-one heat pump with integrated hot water tank.
- High seasonal efficiency – high temperature range.
- Energy-saving smart technology with user-friendly control.

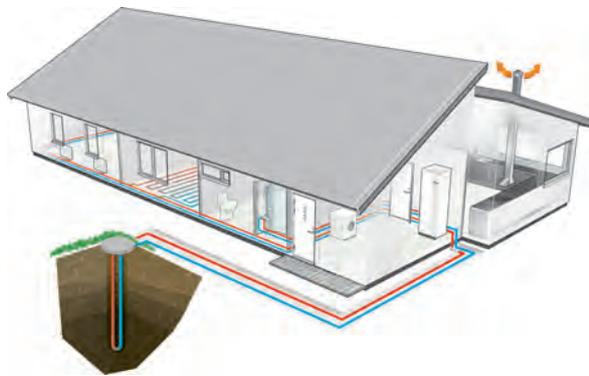


This is how F1245 works

Installation method

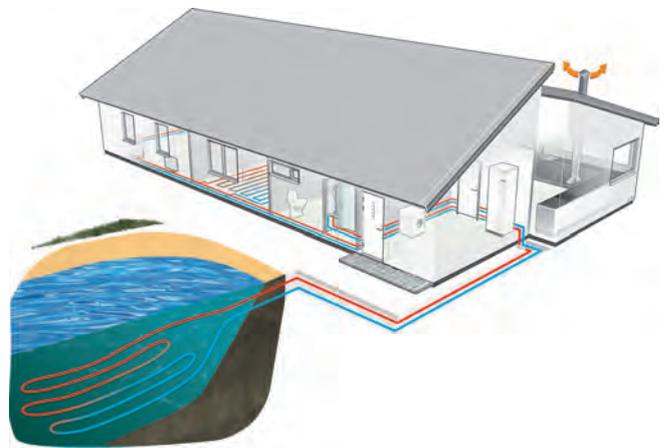
Rock

F1245 collects a proportion of the rock's stored solar energy via a collector in a borehole in the rock.



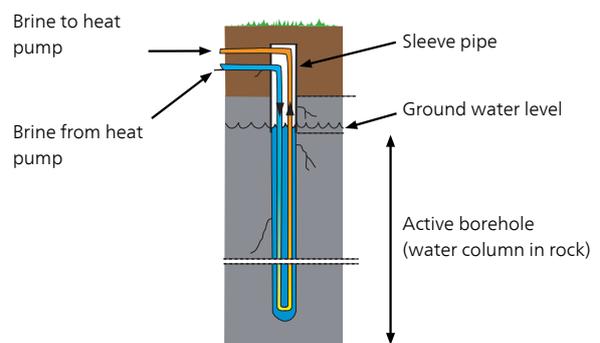
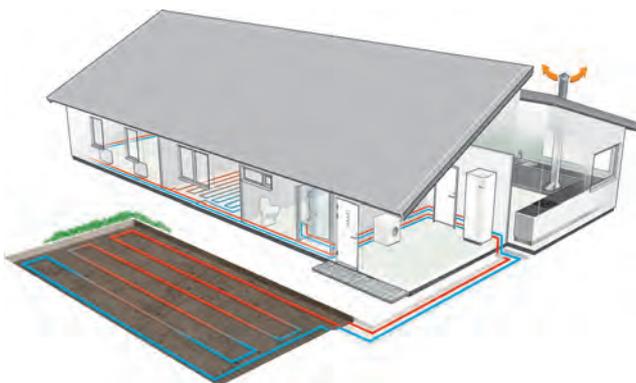
Lake

F1245 collects a proportion of the water's stored solar energy via a lake collector that is anchored on the lake bed.



Ground

F1245 collects a proportion of the ground's stored solar energy via a buried ground collector.



Design

F1245 is equipped with a 180 litre water heater, which is optimally insulated for minimal heat loss. F1245 has a 7 kW immersion heater with seven steps that engage automatically as necessary. Switchable to four steps of 9 kW.

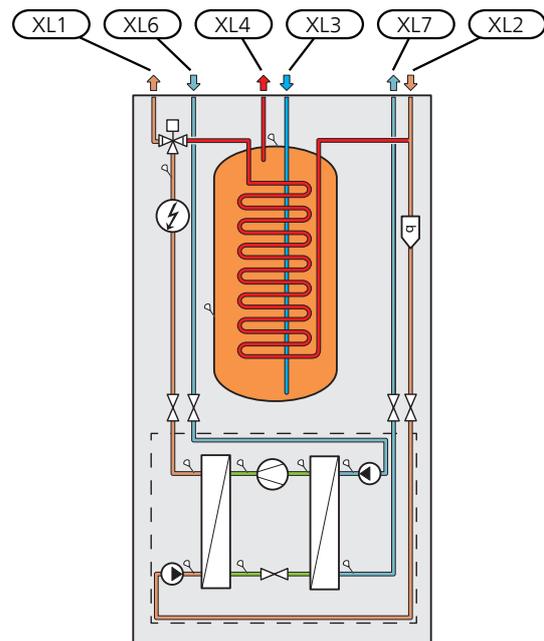
F1245 is constructed on a robust frame with durable panels and effective soundproofing for the best possible comfort. All panels are easy to remove to facilitate installation and for any servicing.

Principle of operation

F1245 consists of a heat pump, water heater, electrical module, circulation pumps and a control system. F1245 is connected to the brine and heating medium circuits.

The heat from the heat source (rock, soil, lake) is taken up via a closed brine system in which a mixture of water and antifreeze circulates. In some cases, the ground water can also be used as a heat source. An intermediate heat exchanger should be used to protect the heat pump in such cases.

In the heat pump evaporator, the brine (water mixed with anti-freeze, glycol or ethanol) releases its energy to the refrigerant, which is vaporised in order to be compressed in the compressor. The refrigerant, of which the temperature has now been raised, is passed to the condenser where it gives off its energy to the heating medium circuit and, if necessary, to the water heater. If there is a greater need for heating/hot water than the compressor can provide there is an integrated immersion heater.



- | | |
|-----|-----------------------------------|
| XL1 | Connection, heating medium flow |
| XL2 | Connection, heating medium return |
| XL3 | Connection, cold water |
| XL4 | Connection, hot water |
| XL6 | Connection, brine in |
| XL7 | Connection, brine out |

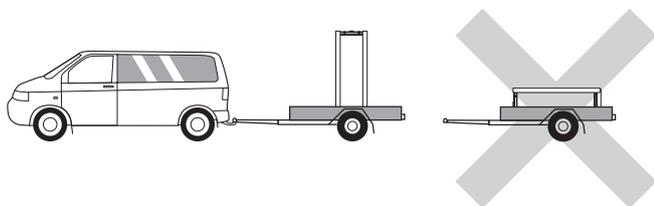
Good to know about F1245

Transport and storage

F1245 should be transported and stored vertically in a dry place. When being moved into a building, F1245 may be leant back 45 °.

The product can be tail heavy.

Remove the outer panels in order to protect them when moving in confined spaces inside buildings.



EXTRACTING THE COOLING MODULE

To simplify transport and service, the heat pump can be separated by pulling the cooling module out from the cabinet.

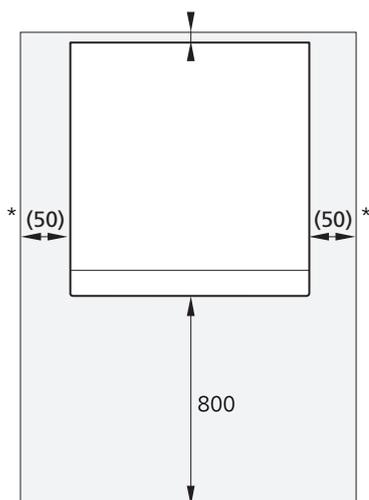
See section "Service" in the installer manual for comprehensive instructions about the separation.

Installation and positioning

- Position F1245 on a fixed foundation that can take the weight of the heat pump.
- Because water comes from F1245, the area where the heating pump is located must be equipped with floor drainage.
- Install with its back to an outside wall, ideally in a room where noise does not matter, in order to eliminate noise problems. If this is not possible, avoid placing it against a wall behind a bedroom or other room where noise may be a problem.
- Wherever the unit is located, walls to sound sensitive rooms should be fitted with sound insulation.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.

INSTALLATION AREA

Leave a free space of 800 mm in front of the product. Approx. 50 mm free space is required on each side, to remove the side panels (see image). The panels do not need to be removed during service. All service on F1245 can be carried out from the front. Leave space between the heat pump and the wall behind (and any routing of supply cables and pipes) to reduce the risk of any vibration being propagated.



* A normal installation needs 300 – 400 mm (any side) for connection equipment, i.e. level vessel, valves and electrical equipment.

Supplied components

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



Outside sensor



Room sensor



Current sensor



Safety valve
0.3 MPa (3 bar)



O-rings



Level vessel



Compression ring
couplings



Particle filter

5 – 10 kW

1 x G1

1 x G3/4

12 kW

1 x G1

1 x G1 1/4

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.

Pipe installation

Pipe installation must be carried out in accordance with current norms and directives. F1245 can operate with a return temperature of up to 58 °C and an outgoing temperature from the heat pump of 70 (65 °C with only the compressor).

F1245 is not equipped with external shut off valves; these must be installed to facilitate any future servicing.

PIPE CONNECTION BRINE

- Insulate all indoor brine pipes against condensation.
- The level vessel must be installed at the highest point in the brine system, on the incoming pipe before the brine pump .

If the level vessel cannot be placed at the highest point, an expansion vessel must be used.

Note that condensation may drip from the level vessel. Position the vessel so that this does not harm other equipment.

- Details of the antifreeze used must be shown on the level vessel.
- Install the enclosed safety valve under the level vessel . The entire length of the overflow water pipe from the safety valve must be inclined to prevent water pockets and must also be frost-free.
- Install shut off valves as close to the heat pump as possible.
- Fit the supplied particle filter on the incoming pipe.

In the case of connection to an open groundwater system, an intermediate frost-protected circuit must be provided, because of the risk of dirt and freezing in the evaporator. This requires an extra heat exchanger.

Side connection

It is possible to angle the brine connections, for connection to the side instead of top connection.

PIPE CONNECTION HEATING MEDIUM

Connecting the climate system

A climate system is a system that regulates indoor comfort with the help of the control system in F1245 and for example radiators, underfloor heating/cooling, fan convectors etc.

- Install all required safety devices, shut-off valves (as close to the heat pump as possible), and supplied particle filter.
- The safety valve must have a maximum 0.25 MPa (2.5 bar) opening pressure and be installed on the heating medium return. The entire length of the overflow water pipe from the safety valves must be inclined to prevent water pockets and must also be frost-free.
- When connecting to a system with thermostats on all radiators, a relief valve must be fitted, or some of the thermostats must be removed to ensure sufficient flow.

PIPE CONNECTION WATER HEATER

- The hot water heater in the heat pump must be supplied with necessary set of valves.
- The mixing valve must be installed if the setting is changed so that the temperature can exceed 60 °C.
- The safety valve must have a maximum opening pressure of 1.0 MPa (10.0 bar) and be installed on the incoming domestic water line . The entire length of the overflow water pipe from the safety valve must be inclined to prevent water pockets and must also be frost-free.

Ensure that incoming water is clean. When using a private well, it may be necessary to supplement with an extra water filter.

For more information see nibe.eu.

Guideline values for collectors

Type	Surface soil heat, recommended collector length (m)	Rock heat, recommended active drilling depth (m)
5 kW	200-300	70-90
6 kW	250-400	90-110
8 kW	325-2x250	120-145
10 kW	400-2x300	150-180
12 kW	2x250-2x350	180-210

Applies to PEM hose 40x2.4 PN 6.3.

These are rough example values. At installation the correct calculations must be made according to local conditions.

The length of the collector hose varies depending on the rock/soil conditions, climate zone and on the climate system (radiators or underfloor heating) and the heating requirement of the building. Each installation must be sized individually.

Max length per coil for the collector should not exceed 400 m.

In those cases where it is necessary to have several collectors, these should be connected in parallel with the possibility for adjusting the flow of the relevant coil.

For surface soil heat, the hose should be buried at a depth determined by local conditions and the distance between the hoses should be at least 1 metre.

For several bore holes, the distance between the holes must be determined according to local conditions.

Ensure the collector hose rises constantly towards the heat pump to avoid air pockets. If this is not possible, airvents should be used.

Because the temperature of the brine system can fall below 0 °C, it must be protected against freezing down to -15 °C. When making the volume calculation, use 1 litres of ready mixed brine per metre of collector hose (applies when using PEM-hose 40x2.4 PN 6.3) as a guide value.

Docking alternatives

VENTILATION RECOVERY



The installation can be supplemented with the exhaust air module FLM to enable ventilation recovery. NIBE FLM is equipped with a built-in

fan specially designed to combine the recovery of mechanical exhaust air with an energy collector in rock or in the ground.

- Pipes and other cold surfaces must be insulated with diffusion-proof material to prevent condensation.
- The brine system must be supplied with a pressure expansion vessel. If there is a level vessel this should be replaced.

FREE COOLING



The accessory PCS 44 allows the connection of passive cooling, for example with fan coils. The cooling system is connected to the heat pump brine circuit, whereby cooling is supplied from the collector via a circulation pump and shunt valve.

- Pipes and other cold surfaces must be insulated with diffusion-proof material to prevent condensation.
- Where the cooling demand is high, fan convectors with drip trays and drain connection are needed.
- The brine system must be supplied with a pressure expansion vessel. If there is a level vessel this should be replaced.

UNDER FLOOR HEATING SYSTEMS



The external circulation pump is dimensioned for the under floor heating system's demand.

If the climate system volume is too small for the heat pump output, the underfloor heating system can be supplemented with a buffer vessel, for example NIBE UKV.

POOL



By supplementing the installation with the accessory POOL 40, pool heating is enabled in your climate unit.

During pool heating, the heating medium circulates between the F1245 and the pool exchanger using the heat pump's internal circulation pumps.

TWO OR MORE CLIMATE SYSTEMS



In buildings with several climate systems that require different supply temperatures, the accessory ECS 40/ECS 41 can be connected. A shunt valve then lowers the temperature to the under-floor heating system, for example.

Functions

Control, general

The indoor temperature depends on several different factors. Sunlight and heat emissions from people and household machines are normally sufficient to keep the house warm during the warmer parts of the year. When it gets colder outside, the climate system must be started. The colder it is outside, the warmer radiators and under floor heating system must be.

The heat pump is controlled by built-in supply and return brine temperature sensors (collector). Brine return temperatures can, if necessary, be limited to a minimum e.g. for ground water systems.

Control of the heat production is performed based on the "floating condensing" principle, which means that the temperature level needed for heating at a specific outdoor temperature is produced based on collected values from the outdoor and supply temperature sensors. The room sensor can also be used to compensate the deviation in room temperature.

Heat production



The supply of heat to the house is regulated in accordance with the heating curve setting selected. After adjustment, the correct amount of heat for the current outdoor temperature is supplied. The supply temperature of the heat pump will oscillate around the theoretically required value.

OWN CURVE

F1245 has pre-programmed non-linear heating curves. It is also possible to create your own defined curve. This is an individual linear curve with a number of break points. You select break points and the associated temperatures.

Hot water production



Hot water charging starts when the temperature has fallen to the set start temperature. Hot water charging stops when the hot water temperature at the hot water sensor has been reached.

For occasional higher hot water demand, there is a function called "temporary lux" that allows the temperature to be raised via one time increase or up to 12 hours (selected in the menu system).

It is also possible to set F1245 in holiday mode, which means that the lowest possible temperature is achieved without the risk of freezing.

Master/slave



Several heat pumps (F1145, F1245 and F1345) can be connected by selecting one heat pump as master and the others as slaves.

The heat pump is always delivered as master and up to till 8 slaves can be connected to it. In systems with several heat pumps each pump must have a unique name, that is only one heat pump can be "Master" and only one can be for example "Slave 5".

Additional heat only

F1245 can be used exclusively as an additional heater, (max 9 kW) to produce heat and any hot water, for example before the collector system is complete.

Alarm indications

The status lamp lights red in the event of an alarm and the display shows detailed information depending on the fault. An alarm log is created with each alarm containing a number of temperatures, times and operating status.

Floor drying

F1245 has an integrated underfloor drying function. This allows for controlled drying of concrete slabs. It is possible to create your own program or to follow a pre-programmed time and temperature schedule.

NIBE Uplink



Using the Internet and NIBE Uplink, you can obtain a quick overview and the present status of the installation and the heating in your home.

You can obtain a good overall view, allowing you to monitor and control the heating and hot water comfort effectively. If the system is affected by a malfunction, you receive an alert via e-mail that allows you to react quickly.

NIBE Uplink also gives you the opportunity to control the comfort in your home easily, no matter where you are.

RANGE OF SERVICES

You have access to different levels of service via NIBE Uplink. A basic level that is free and a premium level where you can select different extended service functions for a fixed annual subscription fee (the subscription fee varies depending on the selected functions).

NIBE Uplink also available as an app from App Store and Google Play.

INSTALLATION AND ASSOCIATED EQUIPMENT REQUIREMENTS

The following is required in order for NIBE Uplink to function with your F1245:

- Network cable (straight, male-male, at least Cat 5E UTP)
- Internet connection to which F1245 can be connected
- web browser with JavaScript activated.

If it is not possible to connect to NIBE Uplink, F1245 can be controlled remotely via text message. For this, the SMS 40 accessory is required.

For further presentation, visit nibeuplink.com.

NIBE SMART PRICE ADAPTION™



Smart Price Adaption is not available in all countries. Contact your NIBE dealer for more information.

Smart Price Adaption adjusts the heat pump's consumption according to the time of day that electricity prices are lowest. This allows for savings, provided that the hourly rate subscription has been signed with the electricity supplier.

The function is based on hourly rates for the coming day being downloaded via NIBE Uplink. To use the function, an Internet connection and account on NIBE Uplink are necessary.

SMART HOME

When you have a smart home system that can communicate with NIBE Uplink, you can control the installation via an app by activating the "smart home" function.

By allowing connected units to communicate with NIBE Uplink, your heating system becomes a natural part of your homesmart home and gives you the opportunity to optimise the operation.

Remember that the "smart home" function requires NIBE Uplink in order to work.

The display

F1245 is controlled using a clear and easy to use display.

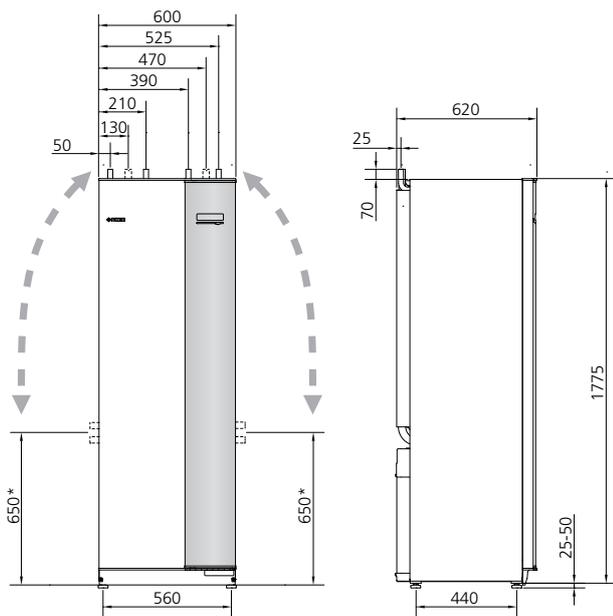
Instructions, settings and operational information are shown on the display. You can easily navigate between the different menus and options to set the comfort or obtain the information you require.

The display unit is equipped with a USB socket that can be used to update the software and save logged information in F1245.

Visit nibeuplink.com and click the "Software" tab to download the latest software for your installation.

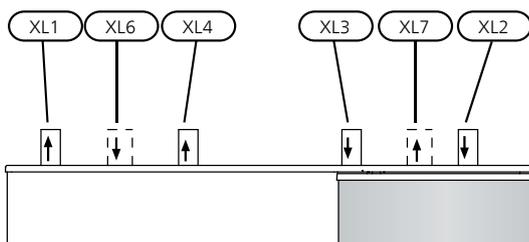
Technical data

Dimensions



* Can be angled for side connection

Pipe connections



PIPE DIMENSIONS

Connection	(kW)	5-8	12
(XL6)/(XL7) Brine in/out ext Ø	(mm)	28	
(XL1)/(XL2) Heating medium flow/return ext Ø	(mm)	22	28
(XL3)/(XL4) Cold/hot water Ø	(mm)	22	

Technical data

The following data only applies to F1245 3x400 V. F1245 is also available with energy meter and in voltage version 3x230 V. Contact your NIBE dealer for more information.

Model		F1245-5	F1245-6	F1245-8	F1245-10	F1245-12
<i>Output data according to EN 14511</i>						
<i>0/35</i>						
Heating capacity (P _H)	kW	4.65	6.07	7.67	9.66	11.48
Supplied power (P _E)	kW	1.08	1.32	1.64	2.01	2.51
COP	-	4.30	4.59	4.68	4.81	4.57
<i>0/45</i>						
Heating capacity (P _H)	kW	3.98	5.19	6.70	8.55	10.99
Supplied power (P _E)	kW	1.17	1.46	1.83	2.27	3.02
COP	-	3.40	3.56	3.67	3.77	3.64
<i>Output data according to EN 14825</i>						
P _{designh}	kW	6 / 5	7 / 6	9 / 8	12 / 10	14
SCOP cold climate, 35 °C / 55 °C	-	4.6 / 3.5	5.0 / 3.7	5.1 / 3.8	5.2 / 4.0	4.9 / 3.8
SCOP average climate, 35 °C / 55 °C	-	4.5 / 3.4	4.8 / 3.6	4.9 / 3.3	5.1 / 3.9	4.8 / 3.7
<i>Energy rating, average climate</i>						
Efficiency class, room heating 35 °C / 55 °C ¹⁾		A++ / A++	A++ / A++	A++ / A++	A++ / A++	A++ / A++
The system's efficiency class, room heating 35 °C / 55 °C ²⁾		A+++ / A++	A+++ / A++	A+++ / A++	A+++ / A+++	A+++ / A++
Efficiency class hot water heating /declared tap profile		A / XL	A / XL	A / XL	A / XL	A / XL
<i>Electrical data</i>						
Rated voltage		400V 3N ~ 50Hz				
Starting current		23	18	23	23	29
Additional power	kW	1-7 (switchable to 2-9)				
Max. operating current heat pump, including control system, circulation pumps and 0 kW immersion heater	A _{rms}	9.5 (1-phase) (16)	4.6	6.6	6.9	9.0
Max. operating current heat pump including 1 – 6 kW immersion heater (recommended fuse rating)	A _{rms}	18 (20)	13 (16)	15 (16)	15 (16)	18 (20)
Max. operating current heat pump including 1 – 2 kW immersion heater (recommended fuse rating)	A _{rms}	18 (20)	13 (16)	15 (16)	15 (16)	18 (20)
Max. operating current heat pump including 3 – 4 kW immersion heater (recommended fuse rating)	A _{rms}	18 (20)	13 (16)	15 (16)	15 (16)	18 (20)
Max. operating current heat pump including 5 – 6 kW immersion heater (recommended fuse rating)	A _{rms}	18 (20)	13 (16)	15 (16)	15 (16)	18 (20)
Max. operating current heat pump including 7 kW immersion heater, connected upon delivery (recommended fuse rating)	A _{rms}	18 (20)	19 (20)	21 (25)	21 (25)	23 (25)
Max. operating current heat pump including 9 kW immersion heater, requires reconnection (recommended fuse rating)	A _{rms}	24 (25)	19 (20)	22 (25)	22 (25)	24 (25)
Max permitted impedance at connection point ³⁾	ohm	-	-	-	-	-
Output, Brine pump	W	30 – 87	30 – 87	30 – 87	35 – 185	35 – 185
Output, Heating medium pump	W	7 – 67	7 – 67	7 – 67	7 – 67	7 – 67
Enclosure class		IP 21				
<i>Refrigerant circuit</i>						
Type of refrigerant		R407C				
GWP refrigerant		1,774				
Fill amount	kg	1.2	1.5	1.8	1.8	2.0
CO ₂ equivalent	ton	2.13	2.66	3.19	3.73	3.55
<i>Compressor oil</i>						
Oil type		POE				
Oil volume	l	1.04	1.33	1.33	1.33	1.89

Model		F1245-5	F1245-6	F1245-8	F1245-10	F1245-12
<i>Brine circuit</i>						
Min/max system pressure brine	MPa	0.05 (0.5 bar) / 0.3 (3 bar)				
Min flow	l/s	0.19	0.25	0.33	0.30	0.47
Nominal flow	l/s	0.23	0.30	0.42	0.51	0.65
Max external avail. press at nom flow	kPa	62	58	48	85	69
Min/Max incoming Brine temp	°C	see diagram				
Min. outgoing brine temp.	°C	-12				
<i>Heating medium circuit</i>						
Min/Max system pressure heating medium	MPa	0.05 (0.5 bar) / 0.45 (4.5 bar)				
Min flow	l/s	0.08	0.10	0.13	0.16	0.19
Nominal flow	l/s	0.10	0.13	0.18	0.22	0.27
Max external avail. press at nom flow	kPa	68	67	64	64	58
Min/max HM-temp	°C	see diagram				
<i>Noise</i>						
Sound power level (L _{WA}) according to EN 12102 at 0/35	dB(A)	37	42	43	43	43
Sound pressure level (L _{PA}) calculated values according to EN ISO 11203 at 0/35 and 1 m range	dB(A)	21.5	27	28	28	28
<i>Pipe connections</i>						
Brine ext diam. CU pipe		28	28	28	28	28
Heating medium ext diam. CU pipes		22	22	22	22	28
<i>Dimensions and weight</i>						
Width x Depth x Height	mm	600 x 620 x 1,800				
Ceiling height ⁴⁾	mm	1,950				
Weight complete heat pump	kg	235	240	250	255	260
Weight only cooling module	kg	103	110	115	121	126
Part number, 3x400V		065 065	065 075	065 076	065 077	065 078
RSK number, 3x400V		624 76 30	624 76 31	624 76 32	624 76 33	624 76 34

¹⁾Scale for efficiency class hot water: A to G. Reported efficiency for the system takes the product's temperature regulator into account.

²⁾Scale for the product's efficiency class room heating: A++ to G.

³⁾Max permitted impedance in the mains connection point in accordance with EN 61000-3-11. Start currents can cause short voltage dips that may affect other equipment in unfavourable conditions. If the impedance in the mains connection point is higher than that stated, it is probable that interference will occur. If the impedance in the mains connection point is higher than that stated, check with the power supplier before purchasing the equipment. Reported efficiency for the system takes the product's temperature regulator into account.

⁴⁾With feet removed, the height is approx. 1,930 mm.

<i>Dimensions and weight</i>		5			6			8			10			12		
Width	mm	600														
Depth	mm	620														
Height	mm	1800														
Required ceiling height ¹⁾	mm	1950														
Corrosion protection ²⁾		Cu	E	Rf	Cu	E	Rf	Cu	E	Rf	Cu	E	Rf	Cu	E	Rf
Weight complete heat pump	kg	235	250	215	240	255	220	250	265	230	255	270	235	260	275	240
Weight only cooling module	kg	103			110			115			121			126		
Part no.		065 065	-	065 079	065 075	065 084	065 080	065 076	065 085	065 081	065 077	065 086	065 082	065 078	065 087	065 083

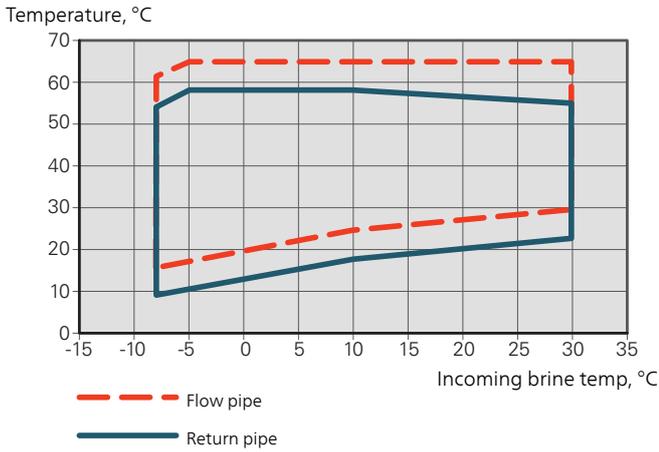
¹⁾With feet removed, the height is approx. 1,930 mm.

²⁾Cu: copper, Rf: stainless, E: enamel.

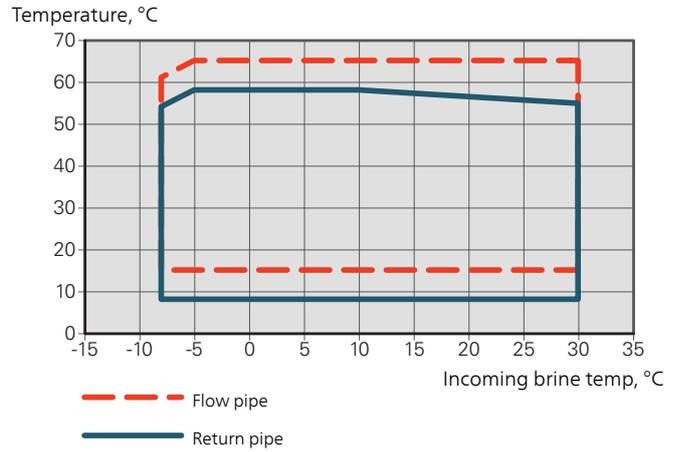
WORKING RANGE HEAT PUMP, COMPRESSOR OPERATION

The compressor provides a supply temperature up to 65 °C, at 0 °C incoming brine temperature, the remainder (up to 70°C) is obtained using the additional heat.

12 kW 3x400V



Other



DIAGRAMS, PUMP CAPACITY

Brine side

The brine pump must run at the correct speed for the correct flow in the brine system. F1245 has a brine pump that can be automatically controlled in standard mode.

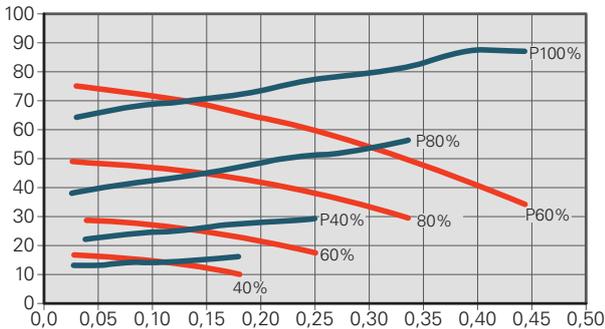
If several F1245 are installed in a master/slave configuration, all F1245 must be the same size (e.g. 10 kW) for the automatic control to work. If the installation contains, e.g. one 8 kW and one 10 kW, manual operation adjustments must be made. See the installer manual for more information.

The automatic control occurs when the compressor is running and it sets the speed of the brine pump to obtain the optimal temperature difference between the supply and return lines.

- Available pressure, kPa
- p Electrical output, W

F1245 5 kW

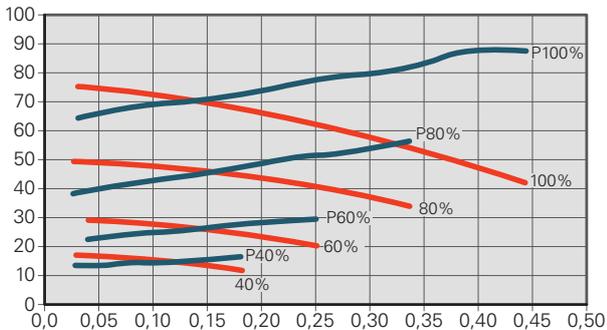
Available pressure, kPa
Electrical output, W



Flow l/s

F1245 6 and 8 kW

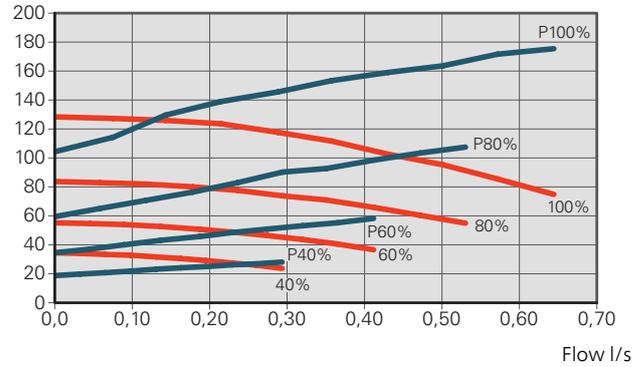
Available pressure, kPa
Electrical output, W



Flow l/s

F1245 10 kW

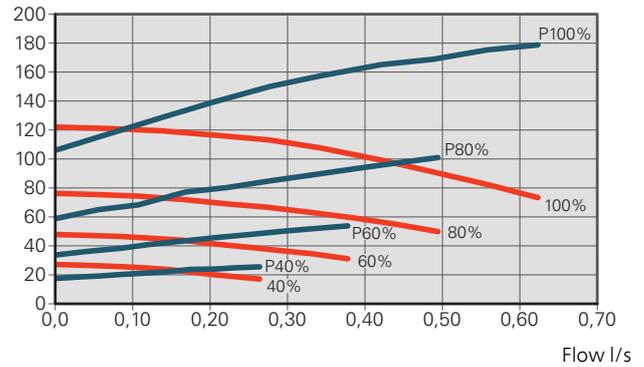
Available pressure, kPa
Electrical output, W



Flow l/s

F1245 12 kW

Available pressure, kPa
Electrical output, W



Flow l/s

Heating medium side

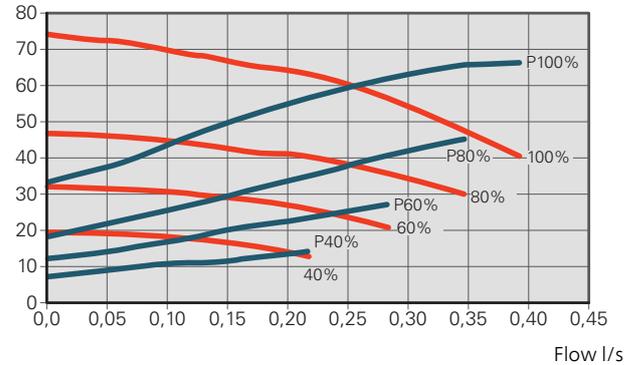
To set the correct flow in the heating medium system, the heating medium pump must run at the correct speed. F1245 has a heating medium pump that can be automatically controlled in standard mode.

This automatic control occurs when the compressor is running and sets the speed of the heating medium pump, for the present operating mode, to obtain the optimal temperature difference between the supply and return lines.

- Available pressure, kPa
- p_e Electrical output, W

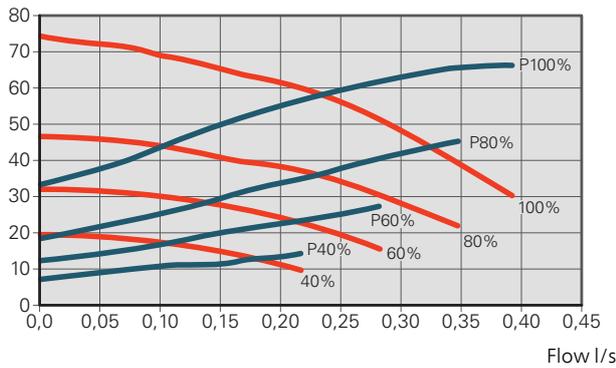
F1245 8 and 12 kW

Available pressure, kPa
Electrical output, W



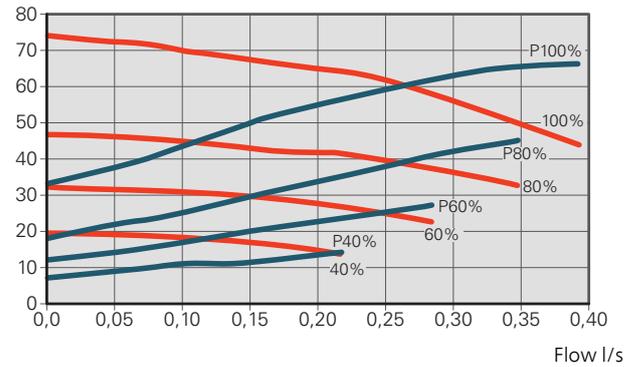
F1245 5 kW

Available pressure, kPa
Electrical output, W



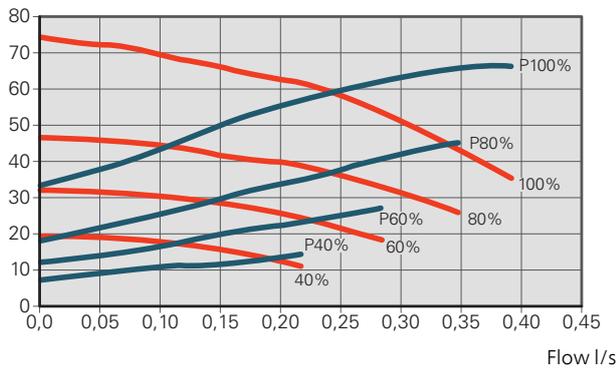
F1245 10 kW

Available pressure, kPa
Electrical output, W



F1245 6 kW

Available pressure, kPa
Electrical output, W



Accessories

Not all accessories are available on all markets.

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

ACTIVE/PASSIVE COOLING IN 4-PIPE SYSTEM ACS 45

ACS 45 is an accessory that makes it possible for your heat pump to control the production of heating and cooling independently of each other.



EXTRA SHUNT GROUP ECS 40/ECS 41

This accessory is used when F1245 is installed in houses with two or more different heating systems that require different supply temperatures.



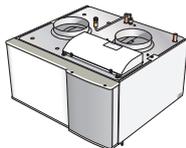
FREE COOLING PCS 44

This accessory is used when F1245 is installed in an installation with passive cooling.



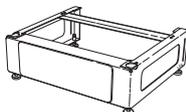
EXHAUST AIR MODULE NIBE FLM

NIBE FLM is an exhaust air module designed to combine recovery of mechanical exhaust air with ground source heating.



BASE EXTENSION EF 45

This accessory is used to create a larger connection area under F1245.



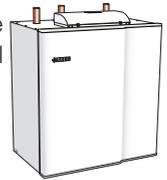
COMMUNICATIONS MODULE SMS 40

When there is no internet connection, you can use the accessory SMS 40 to control F1245 via SMS.



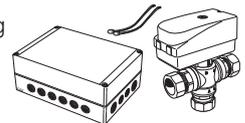
PASSIVE COOLING PCM 40/42

PCM 40/42 makes it possible to obtain passive cooling from rock, groundwater or surface soil collectors.



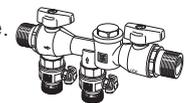
POOL HEATING POOL 40

POOL 40 is used to enable pool heating with F1245.



FILLING VALVE KIT KB 25/32

Valve kit for filling brine in the collector hose. Includes particle filter and insulation.



ROOM UNIT RMU 40

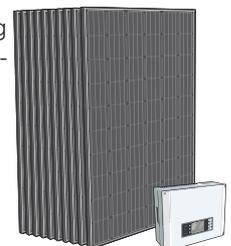
RMU 40 means that control and monitoring of F1245 can be carried out in a different part of your home to where it is located.



SOLAR PACKAGE NIBE PV

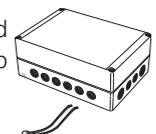
Solar panel package with extremely long service-life to produce your own electricity.

3 kW	6 kW	9 kW
10 Solar panels	20 Solar panels	30 Solar panels
12 kW	15 kW	18 kW
40 Solar panels	50 Solar panels	60 Solar panels
21 kW	24 kW	
70 Solar panels	80 Solar panels	



ACCESSORY CARD AXC 40

This accessory is used to enable connection and control of shunt controlled additional heat, step controlled additional heat, external circulation pump or ground water pump.



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