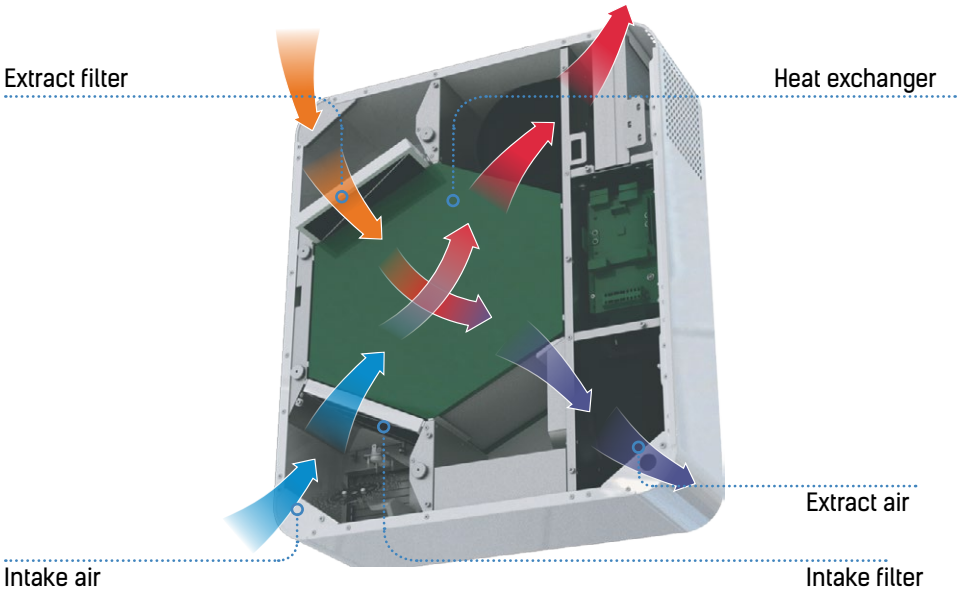
MICRA 100

MICRA 100 is a single-room energy-efficient air handling unit intended for decentralised ventilation of residential and commercial spaces as well as apartments and houses. This unit is ideally suited for creating simple yet highly efficient ventilation systems in newly erected and renovated spaces without requiring duct installation.

FEATURES

- Efficient solution for supply and exhaust ventilation of enclosed spaces.
- Models with an electric preheater or reheater are available for cold climate conditions.
- Modification with an enthalpy heat exchanger available for humid and hot climate conditions.
- EC fans with low energy consumption.
- Silent operation.
- Supply air purification ensured by two integrated G4 and F8 filters.
- Optionally – F8 Carbon, H13.
- Upgradeable with an extract air duct to provide air extraction from the bathroom.
- Easy installation.
- Compact size.
- Modern design.

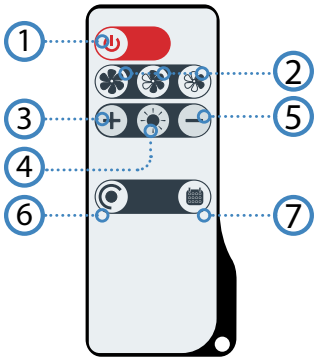
OPERATING LOGIC



CONTROL AND AUTOMATION

The unit is equipped with a control panel. A remote control is included in the delivery set.

① Switching the unit on/off
② Speed selection
③ Reheater temperature setpoint increase (for models equipped with a reheater)
④ Switching the reheater on/off (for models equipped with a reheater)
⑤ Reheater temperature setpoint decrease (for models equipped with a reheater)
⑥ Timer on/off
⑦ Scheduled operation on/off



Available functions	MICRA 100 MICRA 100 E	MICRA 100 E1
Speed switching	+	+
Filter replacement indication	+	+
Alarm indication	+	+
Speed setting	+	+
Timer	+	+
Weekly schedule	+	+
Reheating on/off	-	+
Supply air temperature setting	-	+

CASING

Polymer coated metal casing decorated with an acrylic front panel. Due to modern design, the unit matches well with any interior. Heat and sound insulation is ensured by a layer of 10 mm cellular synthetic rubber. The front panel provides convenient access for filter maintenance and has a lock for extra security. The unit has two Ø 100 mm spigots for fresh air intake and stale air extraction outside. The third Ø 100 mm spigot (included in the delivery set) can be additionally fitted to the unit to connect the extract air duct from the bathroom.

FILTERS

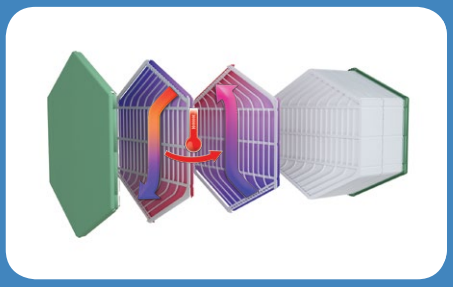
Intake air cleaning is provided by G4 and F8 panel filters. To meet more stringent air purity requirements, an F8 filter can be replaced with an H13 filter (purchased separately). Extract air is cleaned by a panel G4 filter.

ADDITIONAL SPIGOT

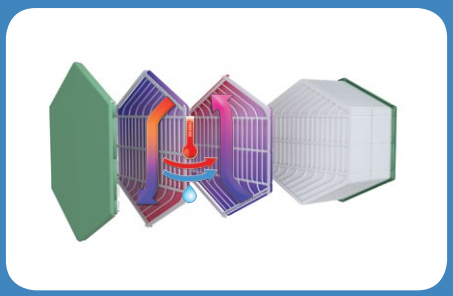
For air extraction from the bathroom.

HEAT EXCHANGER

The MICRA 100 units are equipped with a counter-flow heat exchanger with a polystyrene core. In the cold season the extract air heat is transferred to the intake air stream which reduces heat losses through ventilation. However, this can lead to formation of condensate that is collected in a special drain pan and is drained off outside through the exhaust air duct. In the warm season the ambient air heat is transferred to the extract air. This allows for a considerable reduction of the supply air temperature which, in turn, reduces the air conditioning load.



The MICRA 100 ERV unit is equipped with a counter-flow enthalpy heat exchanger. In the cold season the extract air heat and moisture are transferred to the supply air stream through the enthalpy heat exchanger reducing the heat losses through ventilation. The ambient air heat and moisture are transferred to the extract air through the enthalpy heat exchanger in the warm season. This allows for a considerable reduction of the supply air temperature and humidity which, in turn, reduces the air conditioning load.



SUPPLY AND EXHAUST AIR DAMPERS

The unit is equipped with supply and exhaust air dampers which activate automatically to prevent drafts while the unit is off.

FREEZE PROTECTION

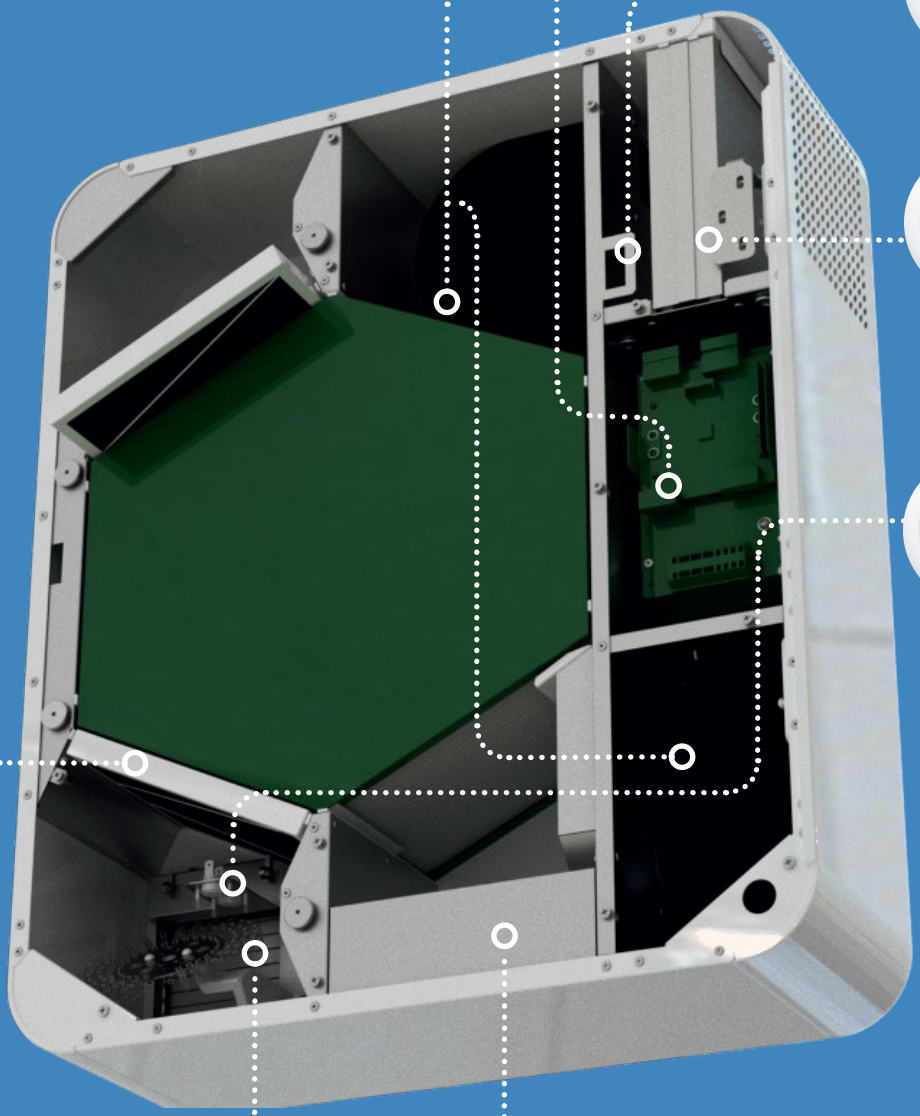
The MICRA 100 unit features an exhaust air temperature sensor downstream of the heat exchanger which disables the supply fan to let the warm extract air raise the heat exchanger temperature. Then the supply fan is turned on and the unit reverts to normal operation. Freeze protection for MICRA 100 E1 units is implemented with a preheater.

FANS

The units feature efficient electronically commutated (EC) motors with an external rotor and impellers with forward curved blades. In addition to that, the efficiency of electronically commutated motors reaches very impressive levels of up to 90 %.

CONTROL UNIT

LIMIT SWITCH



REHEATING

The MICRA 100 E1 unit are equipped with an electric reheater to raise the supply air temperature when necessary.

PREHEATING

The MICRA E1 unit are equipped with an electric preheater which protects the heat exchanger from freezing.

DRAIN PAN

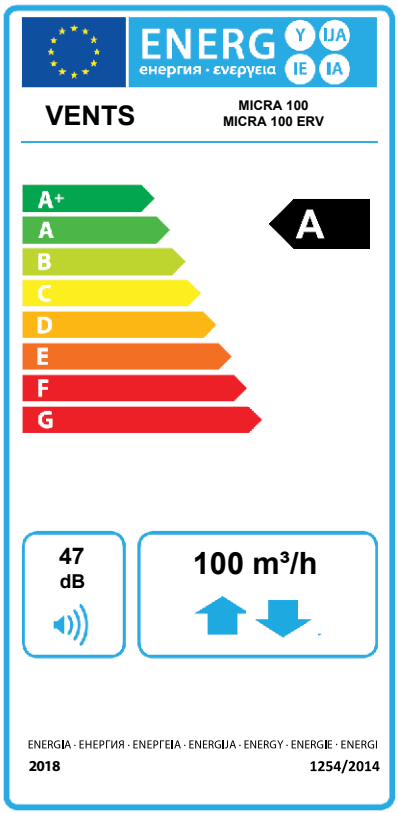
NE MICRA 100 HEATER FOR CONDENSATE FREEZE PROTECTION (OPTIONAL)

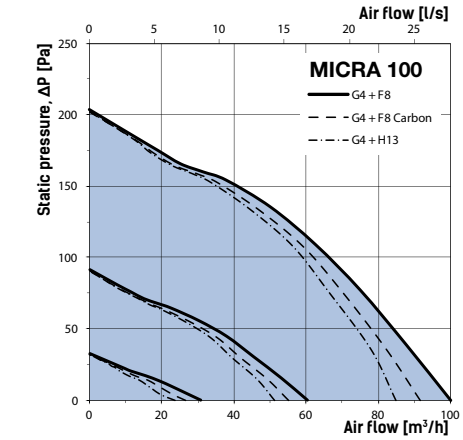
Operation in a cold climate may result in condensate freezing in the exhaust air duct and the external hood. Therefore, it is recommended to install the NE MICRA 100 heater (purchased separately) to prevent icing.

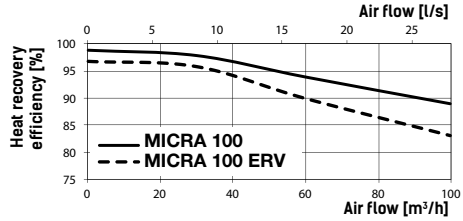
TECHNICAL DATA

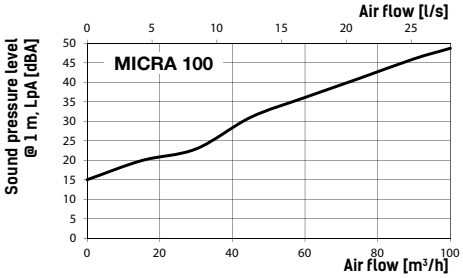
	MICRA 100			MICRA 100 E			MICRA 100 E1		
Maximum air flow [m³/h]	30	60	100	30	60	100	30	60	100
Unit voltage [V/50 (60) Hz]	1 ~ 220-240			1 ~ 220-240			1 ~ 220-240		
Maximum fan power [W]	12	21	45	12	21	45	12	21	45
Sound pressure level at 3 m distance [dBA]	13	27	39	13	27	39	13	27	39
Electric preheater power [W]	-			700			-		
Electric reheater power [W]	-			-			350		
Maximum unit current (without an electric heater) [A]	0,4			0,4			0,4		
Maximum unit current (with an electric heater) [A]	-			3,08			1,94		
Transported air temperature [°C]	-15...+40								
Casing material	Painted steel								
Insulation	10 mm (foam rubber)								
Heat recovery efficiency [%]	98	92	89	98	92	89	98	92	89
Heat exchanger type	Counter-flow								
Heat exchanger material	Polystyrene								
Intake filter	G4, F8 Option: F8 Carbon, H13			G4, F8 Option: F8 Carbon, H13			G4		
Extract filter	G4								
Connected air duct diameter [mm]	Ø 100								
Weight [kg]	31			31			31		
SEC class	A								

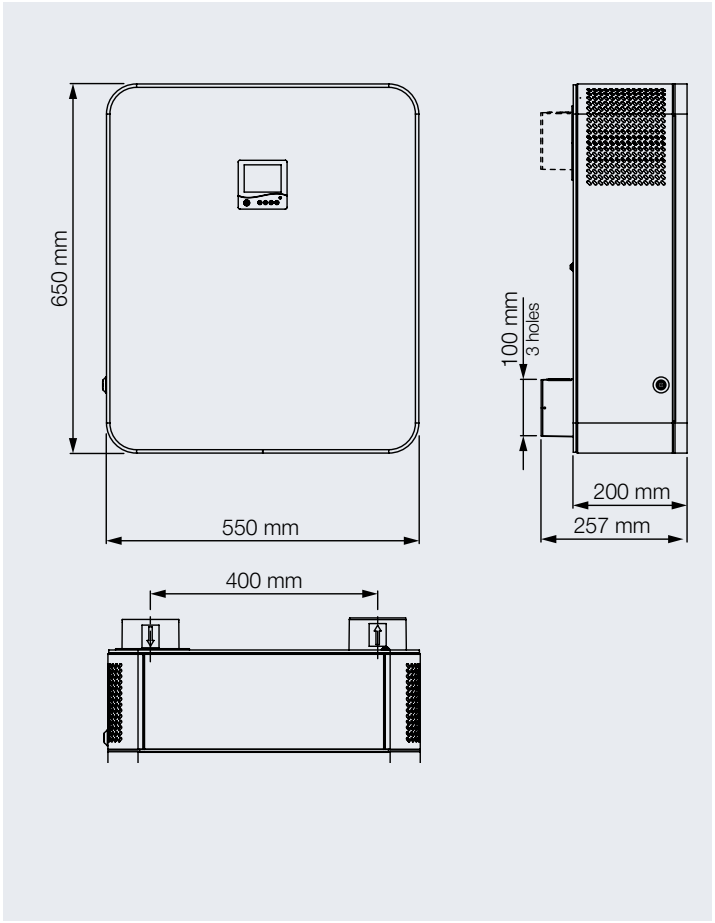
	MICRA 100 ERV			MICRA 100 E ERV			MICRA 100 E1 ERV		
Maximum air flow [m³/h]	30	60	100	30	60	100	30	60	100
Unit voltage [V/50 (60) Hz]	1 ~ 220-240			1 ~ 220-240			1 ~ 220-240		
Maximum fan power [W]	12	21	45	12	21	45	12	21	45
Sound pressure level at 3 m distance [dBA]	13	27	39	13	27	39	13	27	39
Electric preheater power [W]	-			700			-		
Electric reheater power [W]	-			-			350		
Maximum unit current (without an electric heater) [A]	0,4			0,4			0,4		
Maximum unit current (with an electric heater) [A]	-			3,08			1,94		
Transported air temperature [°C]	-15...+40								
Casing material	Painted steel								
Insulation	10 mm (foam rubber)								
Heat recovery efficiency [%]	96	89	83	96	89	83	96	89	83
Heat exchanger type	Counter-flow								
Heat exchanger material	Enthalpy								
Intake filter	G4, F8 Option: F8 Carbon, H13			G4, F8 Option: F8 Carbon, H13			G4		
Extract filter	G4								
Connected air duct diameter [mm]	Ø 100								
Weight [kg]	31			31			31		
SEC class	A								





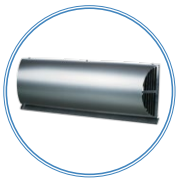




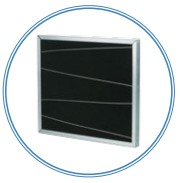


ACCESSORIES

NB MICRA 100 white
Outdoor box (white)

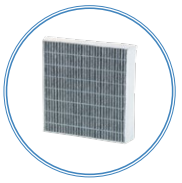


NB MICRA 100 chrome
Brushed stainless steel outdoor box



SF 193x158x18 G4
G4 filter

SF 193x158x47 F8
F8 filter



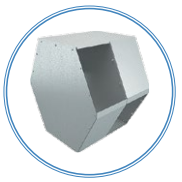
SF 193x158x47 F8 C
F8 carbon filter

SF 193x158x47 H13
H13 HEPA filter

HR-S
HR-S humidity sensor

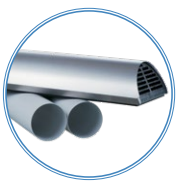
CO2-1
CO_2 sensor with air quality indication and On/Off button

CO2-2
CO_2 sensor



VL R6 366/157
Summer block

MICRA 100 white mounting kit:
- two plastic Ø 100 mm air ducts 500 mm long
- outdoor box (white)
- cardboard template



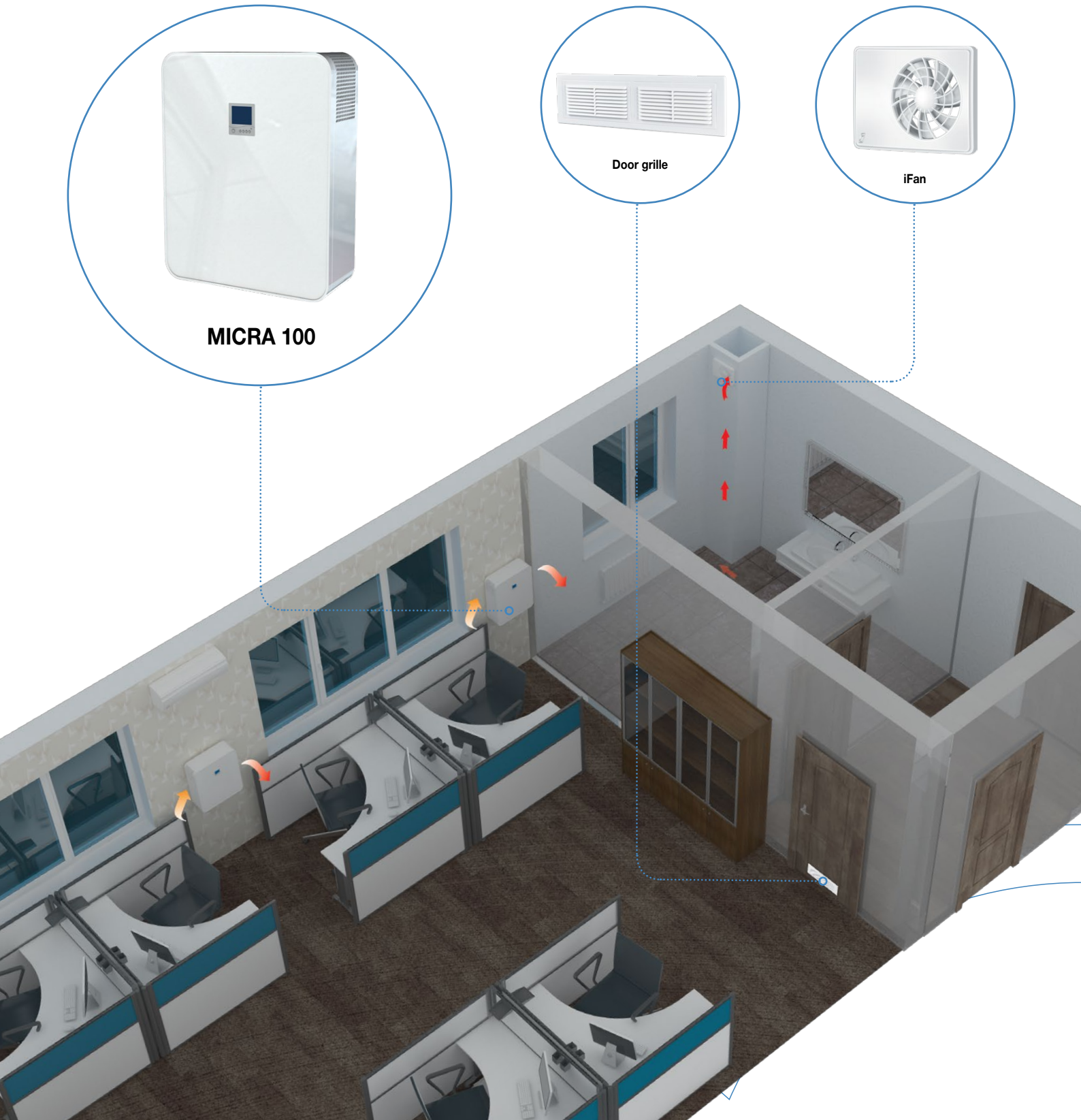
MICRA 100 chrome mounting kit:
- two plastic Ø 100 mm air ducts 500 mm long
- outdoor box (white)
- cardboard template

NE MICRA 100
Heater to prevent condensate freezing in the drain pipe and the outdoor box

VENTILATION SYSTEM ARRANGEMENT

Each space requiring proper ventilation should be equipped with a single or several MICRA 100 units. A single unit is capable of ensuring efficient ventilation in spaces with floor area up to 100 m^2. MICRA 100 units can be upgraded with a bathroom extract air duct. For this, the units can be additionally equipped with an optional ø 100 mm spigot (included in the delivery set).

MICRA 100 application in an office space



MICRA 100 application in a compact residential space