

# FRESHBOX 100 WIFI

## SINGLE-ROOM AIR HANDLING UNITS

### Features

- o Efficient solution for supply and exhaust ventilation of enclosed spaces.
- o Electric pre-heater or re-heater modification available for cold climate conditions.
- o Heat exchanger with an enthalpy membrane modification available for humid and hot climate conditions.
- o Low-energy EC fans.
- o Silent operation.
- o Supply air purification ensured by two built-in G4 and F8 filters (optionally H13 filter).
- o Upgradeable with an exhaust duct to provide air extraction from the bathroom.
- o Easy installation.
- o Compact size.
- o Wi-Fi communication
- o Controlled by Android or iOS smartphone or tablet over Wi-Fi.



**Air flow:**  
up to 100 m<sup>3</sup>/h



**Heat recovery efficiency:**  
up to 96 %

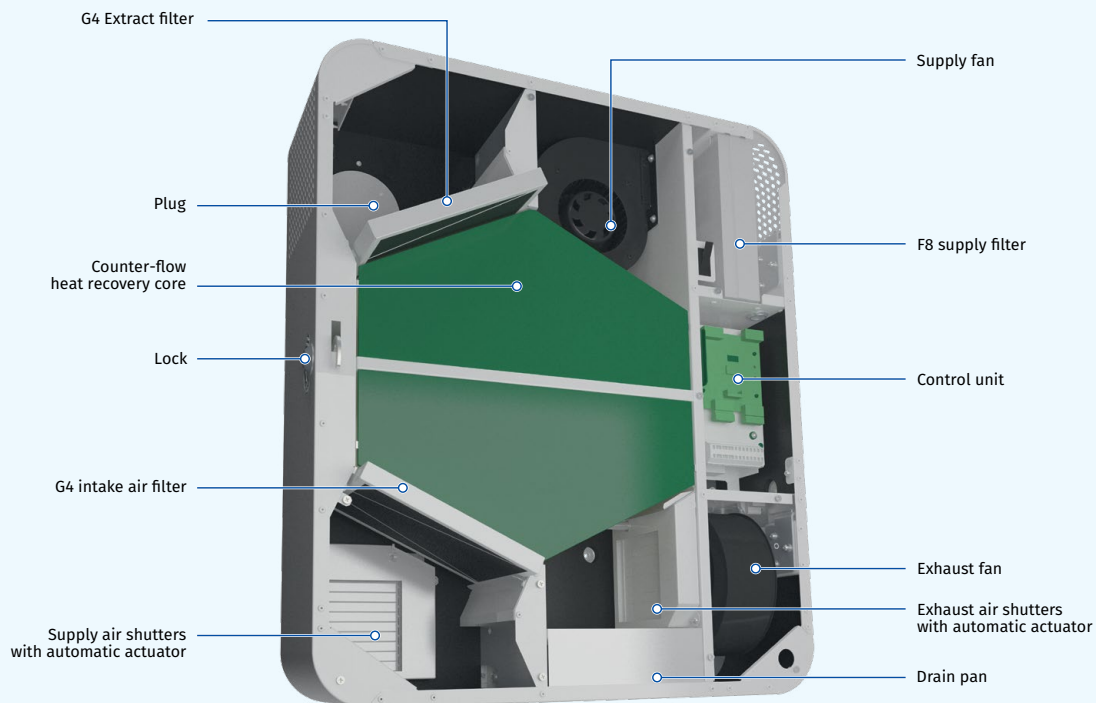


### Design

- o Polymer coated metal casing decorated with an acrylic front panel. Heat and noise insulation is ensured by a layer of 10 mm cellular synthetic rubber.
- o The front panel provides convenient access for filter maintenance and has a lock for extra security.
- o The unit has two Ø 100 mm pipes for fresh air intake and stale air extraction outside. The third Ø 100 mm pipe (included in the scope of delivery) can be additionally fitted to the unit to connect the exhaust air duct from the bathroom.

### Fans

- o The units feature efficient electronically commutated (EC) motors with an external rotor and impellers with forward curved blades. These state-of-the-art motors are the most advanced solution in energy efficiency today.
- o EC motors are characterised with high performance and optimum control across the entire speed range. In addition to that the efficiency of electronically commutated motors reaches very impressive levels of up to 90 %.



### Designation key

Model	Heater	Nominal air flow [m <sup>3</sup> /h]	Heat exchanger core type	Control
Freshbox	_: no heater E: pre-heating E1: re-heating E2: pre-heating and re-heating	100	_: standard type ERV: enthalpy type	WiFi: Sensor control panel and Wi-Fi communication

# FRESHBOX 100 WiFi

## SINGLE-ROOM AIR HANDLING UNITS

### Air dampers

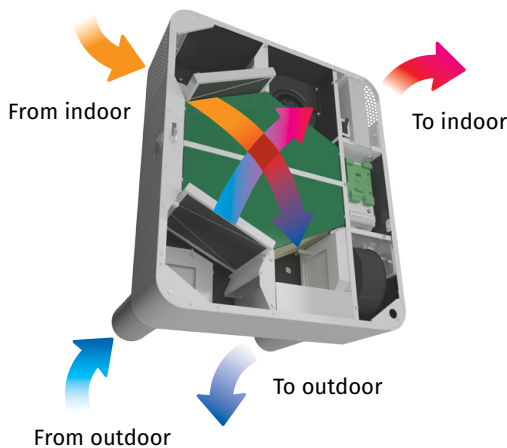
- The unit is equipped with supply and exhaust air dampers which activate automatically to prevent drafts while the unit is off.

### Air filtration

- Supply air cleaning is provided by the G4 and F8 filters. To meet more stringent air purity requirements the F8 filter can be replaced with an H13 Filter (purchased separately). Exhaust air is cleaned by the panel filter G4.

### Operating principle

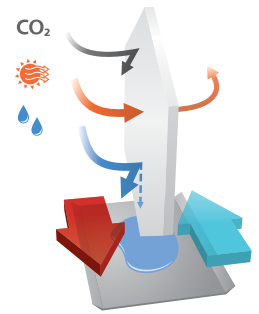
- The cold outdoor air passes through the filters and the heat exchanger and then is delivered to the serviced space by the supply centrifugal fan.
- Warm stale air from indoors passes through the filter and the heat exchanger and is discharged outdoors by the centrifugal fan.
- The supply and exhaust air flows are fully separated which helps eliminate the possibility of odour or microbial transfer between the streams.



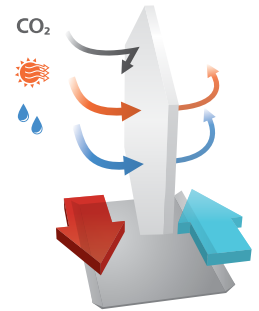
Operating principle with extra spigot for bathroom exhaust ventilation

### Heat and energy recovery

- The **Freshbox 100 WiFi** units are equipped with a counter-flow heat recovery core with a polystyrene core.
  - In the cold season the exhaust air heat is captured and transferred to the supply air stream which reduces the ventilation-generated heat losses.
  - Some condensate may form during heat recovery. The condensate is collected in the drain pan and is removed from the exhaust air duct.
  - In the warm season the intake air heat is transferred to the extract air stream. This allows for a considerable reduction of the supply air temperature which, in turn, reduces the air conditioning load.



- The **Freshbox 100 ERV WiFi** units are equipped with a counter-flow energy recovery core with an enthalpy membrane at the core.
  - In the cold season the exhaust air heat and moisture are transferred to the supply air stream through the enthalpy membrane reducing the heat losses through ventilation.
  - Consequently, it is the intake air heat and moisture transferred to the extract air stream through the enthalpy membrane 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.



### Pre-Heating

- Freshbox E-100 WiFi, Freshbox E2-100 WiFi** units are equipped with an electric pre-heater for freeze protection of the heat exchanger.

### Re-Heating

- Freshbox E1-100 WiFi, Freshbox E2-100 WiFi** units feature an electric re-heater to raise the supply air temperature as necessary.

### Freeze protection

- Freshbox 100 WiFi** features an exhaust air temperature sensor downstream of the heat exchanger which disables the supply fan to let the warm extract air warm up the heat exchanger. After that the supply fan is turned on and the unit reverts to the normal operation mode.
- Overheating protection for **Freshbox E-100 WiFi** and **Freshbox E2-100 WiFi** is implemented with a pre-heater.

# FRESHBOX 100 WIFI

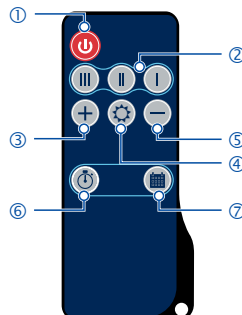
## SINGLE-ROOM AIR HANDLING UNITS

### Control

- The unit is equipped with a control panel.
- The remote control is supplied as standard
- Wi-Fi communication.



### REMOTE CONTROL



- 1 Turning unit on/off
- 2 Speed selection (Min/Mid/Max)
- 3 Increasing temperature set point for the re-heater (available for the models with a re-heater)
- 4 Turning re-heater on/off (available for the models with a re-heater)
- 5 Decreasing temperature set point for the re-heater (available for the models with a re-heater)
- 6 Turning timer on/off
- 7 Activation/deactivation of the scheduled operation mode

### AUTOMATIC FUNCTIONS

	Freshbox 100 WiFi Freshbox E-100 WiFi	Freshbox E1-100 WiFi Freshbox E2-100 WiFi
Speed selection	•	•
Filter replacement indication	•	•
Alarm indication	•	•
Speed setup	•	•
Timer	•	•
Week scheduler	•	•
Re-heater enabled/disabled		•
Supply air temperature setup		•
Control with the mobile application Android / iOS	•	•



Download  
Android application  
**Blauberg Freshbox**



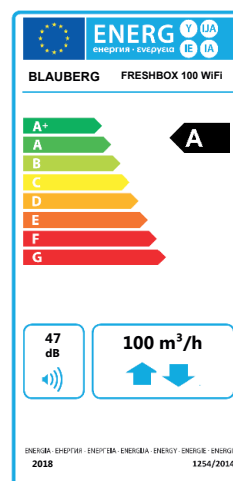
Download  
iOS application  
**Blauberg Freshbox**

### CONTROL PANEL

- ON/OFF button
- Speed changeover (down)
- Speed changeover (up)
- Weekly schedule
- Connection to WiFi
- Filter replacement indication
- Alarm indication

### Ecodesign parameters

Trade mark	BLAUBERG					
	FRESHBOX 100 WiFi					
Model	Cold		Average	Warm		
Specific energy consumption (SEC), kWh/(m <sup>2</sup> /a)	-79.4	A+	-39.7	A	-14.3	E
Type of ventilation unit	Bidirectional					
Type of drive installed	Variable speed					
Type of heat recovery system	Recuperative					
Thermal efficiency of heat recovery, %	92					
Maximum flow rate, m <sup>3</sup> /h	100					
Electric power input, W	53					
Sound power level, dBA	47					
Reference flow rate, m <sup>3</sup> /s	0.017					
Reference pressure difference, Pa	N/A					
Specific power input (SPI), W/(m <sup>3</sup> /h)	0.483					
Control typology	Local demand control					
Maximum internal leakage rates, %	0.1					
Maximum external leakage rates, %	0.9					
Mixing rate of bidirectional units, %	20					
Airflow sensitivity at +20 Pa and -20 Pa	0.93000000					
The indoor/outdoor air tightness, m <sup>3</sup> /h	7					
Internet address	<a href="http://www.blaubergventilatoren.de/">http://www.blaubergventilatoren.de/</a>					
The annual electricity consumption (AEC), kWh electricity/a	Cold	Average		Warm		
	863	326		281		
The annual heating saved (AHS), kWh primary energy/a	Cold	Average		Warm		
	9230	4718		2133		



# FRESHBOX 100 WIFI

## SINGLE-ROOM AIR HANDLING UNITS

### Technical data

Parameters	Freshbox 100 WiFi					Freshbox 100 ERV WiFi					Freshbox E-100 WiFi					Freshbox E-100 ERV WiFi				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Speed																				
Voltage [V / 50 (60) Hz]	1~110-240																			
Max. power [W]	20	23	29	37	53	20	23	29	37	53	20	23	29	37	53	20	23	29	37	53
Preheater power consumption [W]											600					600				
Reheater power consumption [W]																				
Max. current consumption without heater(s) [A]	0,4																			
Max. current consumption with heater(s) [A]											3,08					3,08				
Maximum air flow [m³/h (l/s)]	30 (8)	44 (12)	60 (17)	75 (21)	100 (28)	30 (8)	44 (12)	60 (17)	75 (21)	100 (28)	30 (8)	44 (12)	60 (17)	75 (21)	100 (28)	30 (8)	44 (12)	60 (17)	75 (21)	100 (28)
RPM [min <sup>-1</sup> ]	max 2200																			
Sound pressure level at 3 m [dBA]	13	20	27	33	39	13	20	27	33	39	13	20	27	33	39	13	20	27	33	39
Transported air temperature [°C]	-25...+50																			
Casing material	polymer coated steel																			
Insulation thickness [mm]	10																			
Extract filter	G4																			
Supply filter	G4 + F8 (Option: F8 Carbon; H13)																			
Connected air duct diameter [mm]	100																			
Weight [kg]	31																			
Heat recovery efficiency [%]*	96	94	92	89	87	96	94	92	89	87	96	94	92	89	87	96	94	92	89	87
Heat recovery core type	counter-flow																			
Heat exchanger material	polystyrene					enthalpic membrane					polystyrene					enthalpic membrane				
SEC class	A																			

\*Heat recovery efficiency is specified in compliance with EN 13141-8.

Parameters	Freshbox E1-100 WiFi					Freshbox E1-100 ERV WiFi					Freshbox E2-100 WiFi					Freshbox E2-100 ERV WiFi				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Speed																				
Voltage [V / 50 (60) Hz]	1~110-240																			
Max. power [W]	20	23	29	37	53	20	23	29	37	53	20	23	29	37	53	20	23	29	37	53
Preheater power consumption [W]											600					600				
Reheater power consumption [W]	350																			
Max. current consumption without heater(s) [A]	0,4																			
Max. current consumption with heater(s) [A]	1,94										4,67									
Maximum air flow [m³/h (l/s)]	30 (8)	44 (12)	60 (17)	75 (21)	100 (28)	30 (8)	44 (12)	60 (17)	75 (21)	100 (28)	30 (8)	44 (12)	60 (17)	75 (21)	100 (28)	30 (8)	44 (12)	60 (17)	75 (21)	100 (28)
RPM [min <sup>-1</sup> ]	max 2200																			
Sound pressure level at 3 m [dBA]	13	20	27	33	39	13	20	27	33	39	13	20	27	33	39	13	20	27	33	39
Transported air temperature [°C]	-25...+50																			
Casing material	polymer coated steel																			
Insulation thickness [mm]	10																			
Extract filter	G4																			
Supply filter	G4 + F8 (Option: F8 Carbon; H13)																			
Connected air duct diameter [mm]	100																			
Weight [kg]	31																			
Heat recovery efficiency [%]*	96	94	92	89	87	96	94	92	89	87	96	94	92	89	87	96	94	92	89	87
Heat recovery core type	counter-flow																			
Heat exchanger material	polystyrene					enthalpic membrane					polystyrene					enthalpic membrane				
SEC class	A																			

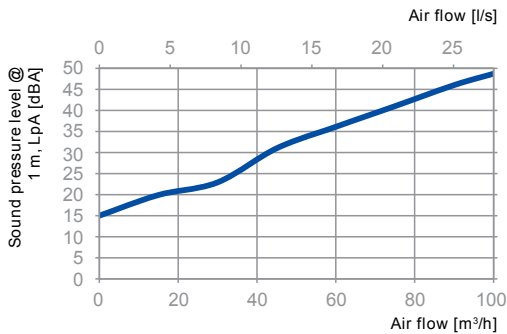
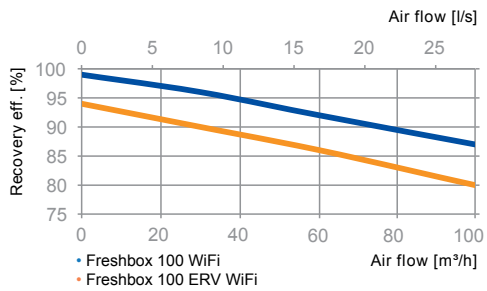
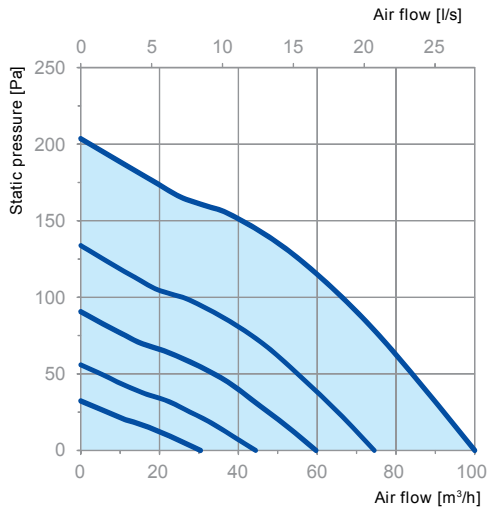
\*Heat recovery efficiency is specified in compliance with EN 13141-8.

Sound-power level, A - weighted	General	Octave frequency band [Hz]								Sound pressure level at 3 m, A-filter applied	Sound pressure level at 1 m, A-filter applied
		63	125	250	500	1000	2000	4000	8000		
L <sub>WA</sub> to environment [dBA]	<b>4000</b>	45	40	44	38	33	29	27	22	<b>28</b>	<b>38</b>

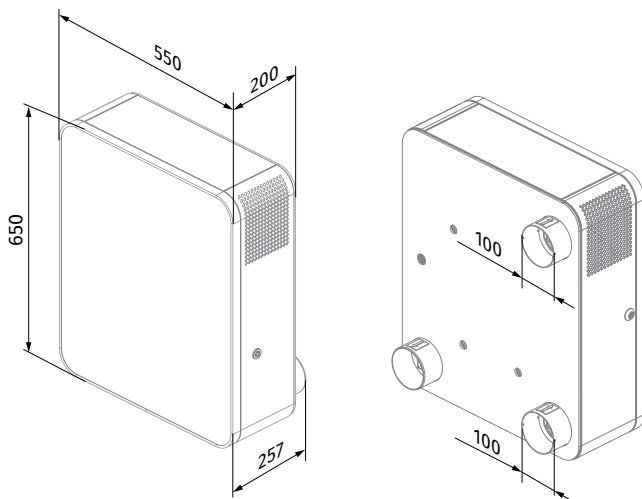
# FRESHBOX 100 WIFI

## SINGLE-ROOM AIR HANDLING UNITS

### Technical data



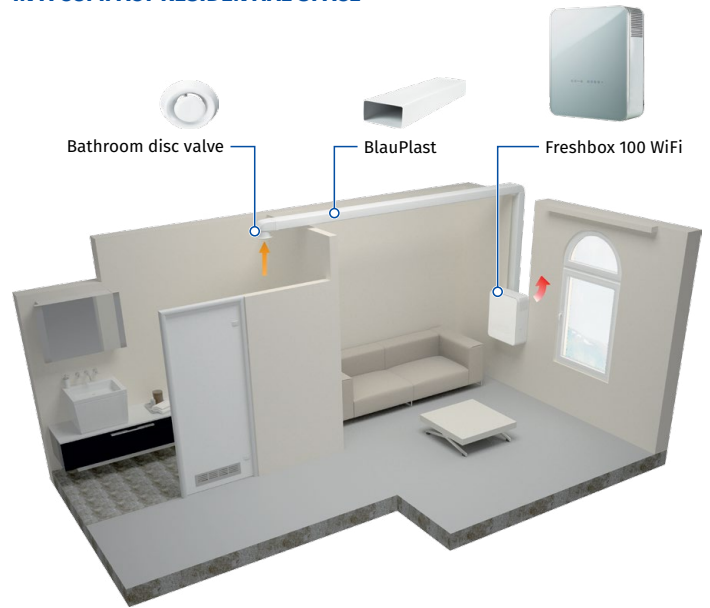
### Overall dimensions [mm]



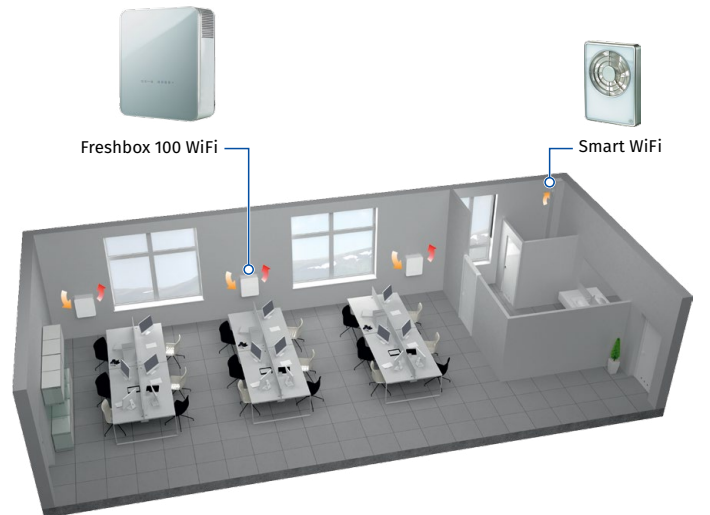
### Mounting example

Each space requiring ventilation is equipped with one or several Freshbox 100 WiFi units. A single unit is capable to ensure efficient ventilation in spaces with floor area up to 75 m<sup>2</sup>. Freshbox 100 WiFi units can be upgraded with a bathroom exhaust air duct. To enable such a configuration the units can be additionally equipped with the optional  $\varnothing$  100 mm spigot (supplied as standard).

#### FRESHBOX 100 WIFI DEPLOYMENT IN A COMPACT RESIDENTIAL SPACE















#### FRESHBOX 100 WIFI MOUNTING EXAMPLE IN THE OFFICE



# FRESHBOX 100 WIFI

## SINGLE-ROOM AIR HANDLING UNITS

### Accessories

Name		Description
MS Freshbox 100 chrome		Mounting kit: • Two Ø 100 mm air ducts, 500 mm long • Ventilation outer hood made of polished steel • Cardboard template
MS Freshbox 100 white		Mounting kit: • Two Ø 100 mm air ducts, 500 mm long • Ventilation outer hood, painted white • Cardboard template
AH Freshbox 100 chrome		Ventilation outer hood made of polished steel
AH Freshbox 100 white		Ventilation outer hood, painted white
EH Freshbox 100		Heater to prevent condensate freezing in the drain pipe and outer ventilation hood
FP 193x158x18 G4 PPI		G4 Panel filter
FP 193x158x47 F8		F8 Panel filter
FP 193x158x47 F8 C		F8 Carbon panel filter
FP 193x158x47 H13		H13 Hepa panel filter
HR-S		Humidity sensor
CD-1		CO <sub>2</sub> Sensor with LED lights for indication of CO <sub>2</sub> concentration and a touch button for operation mode switching
CD-2		CO <sub>2</sub> Sensor