

# Heat recovery ventilation unit with counterflow exchanger

## HRU-BoxAIR



### Description

The BoxAIR heat recovery unit stands out with its cutting-edge design and exceptional functionality. It is available in three performance variants: 150, 200, and 225 m³/h, all within the same external dimensions. Heat recovery is facilitated by a counterflow plastic (PET) heat exchanger, ensuring optimal thermal efficiency. The unit is equipped with automatic by-pass, built in preheater and internal RH sensor.

The unit features an innovative construction concept. The BoxAIR is designed as a universal left- or right-handed unit, and the configuration can be changed during installation. The process is quick and straightforward, requiring only a 180° rotation of the unit and a few simple adjustments. Full service access is ensured from both sides of the unit.

Both supply and exhaust fans are positioned on the outdoor air intake and exhaust side, significantly reducing noise levels in living spaces. This unique design allows the heat exchanger to function as a sound attenuator, making it very quiet. The high-performance heat exchanger, specifically engineered for the BoxAIR unit, is larger than standard exchangers found in competing units of similar size. This results in higher heat recovery efficiency, lower pressure drops, and improved airflow performance.

Heat recovery selector

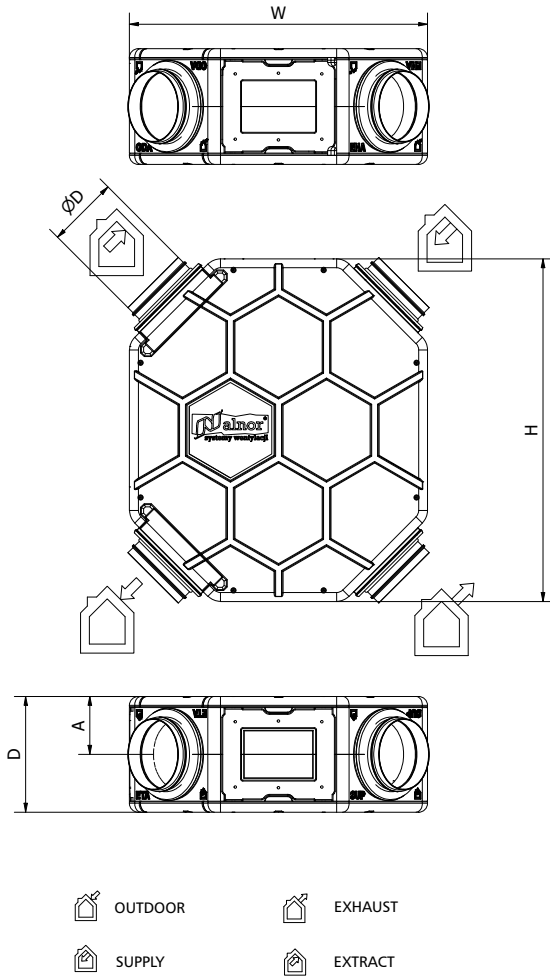


#### Product code example

Product Code: **HRU-BoxAIR - 150 - H - CF - P - BLX**

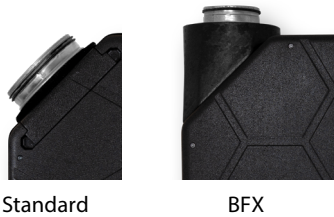
type \_\_\_\_\_  
 air flow \_\_\_\_\_  
 pre-heater \_\_\_\_\_  
 constant flow \_\_\_\_\_  
 wired control \_\_\_\_\_  
 duct connections \_\_\_\_\_

### Dimensions



	ØD [mm]	W [mm]	H [mm]	D [mm]	A [mm]
BoxAIR-150	160	670	770	260	130
BoxAIR-200	160	670	770	260	130
BoxAIR-225	160	670	770	260	130
BoxAIR-150-BFX	125	670	770	260	130
BoxAIR-200-BFX	125	670	770	260	130
BoxAIR-225-BFX	125	670	770	260	130

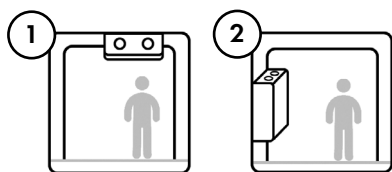
Optional adjustable duct connections **BLX** that allow for flexible ductwork layout in any direction, making it adaptable to any installation project.



# Heat recovery ventilation unit with counterflow exchanger

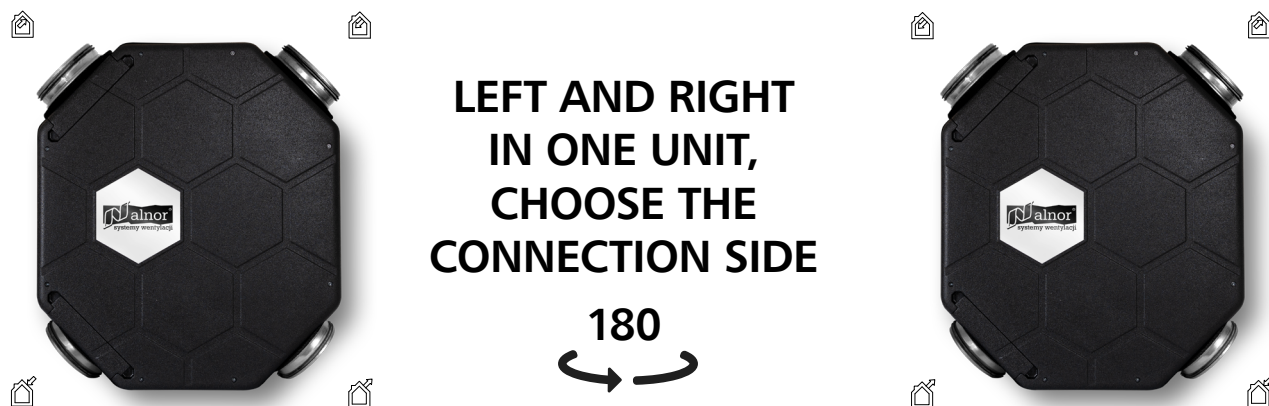
## HRU-BoxAIR

### Version installation



Installation / Model	BoxAIR-150-H	BoxAIR-200-H	BoxAIR-225-H
Suspended	✓	✓	✓
Vertical	✓	✓	✓
Horizontal	✓*	✓*	✓*

\* using the movable connection elbows included in the set



### Technical data

	HRU-BoxAIR-150-H	HRU-BoxAIR-200-H	HRU-BoxAIR-225-H
Air flow [m³/h] @ 100 Pa	150	200	225
Maximal efficiency % <sup>1</sup>	93,2	92,9	92
Efficiency % (acc. 1254/2014) <sup>2</sup>	89	86,6	84,5
Maximal moisture efficiency %	-	-	-
Heat exchanger	Counterflow PET	Counterflow PET	Counterflow PET
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	61	100	142
Sound power level L <sub>WA</sub> [dB (A)]	53	56	58
Weight [kg]			
Filters	ISO Coarse 70% / ISO Coarse 70%		
Built-in pre-heater	✓	✓	✓
Pre-heater power [W]	1500	1500	1500
Built-in RH sensor	✓	✓	✓
Automatic by-pass	✓	✓	✓

# Heat recovery ventilation unit with counterflow exchanger **HRU-BoxAIR**


## Wireless control




 HRQ-SW3-I  
 HRQ-BUT-LM11  
 HRQ-BUT-LM04  
 HRQ-BUT-LCD  
 HRQ-MODBUS  
 works with Loxone



  
 HRQ-2ZONE



 HRQ-SENS-CO2  
 HRQ-SENS-I-CO2  
 HRQ-SENS-RH  
 HRQ-SENS-PIR  
 HRQ-GATE  



## Wired control




 HRQ-BUT-PG15  
 HRQ-BUT-LCD-P5  
 HRQ-SENS-CO2RH-P

 works with Loxone  




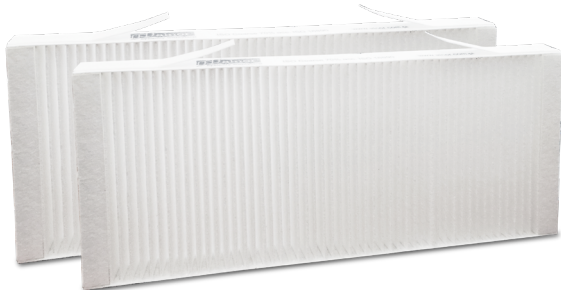


Heat recovery selector

# Heat recovery ventilation unit with counterflow exchanger

## HRU-BoxAIR

### Filtres



ISO coarse 70% filters according to ISO 16890 (former G4) and ISO ePM1 55% according to ISO 16890 (former F7) standard with pleated design, resulting in greater filtration area and low pressure drops.

	Code	Filter class
HRU-BoxAIR-150	HRQ-BoxAIR-FILT-C70	ISO Coarse 70%
HRU-BoxAIR-200		
HRU-BoxAIR-225	HRQ-BoxAIR-FILT-ePM155	ISO ePM <sub>1</sub> 55%

### Constant Flow (CF)

BoxAIR air handling units optionally can be equipped with the Constant Flow system, whose task is to maintain a constant air flow in the installation. CF works by reading the difference between the dynamic pressure around the fan and the static pressure in the duct in front of the fan. The CF system constantly monitors the pressure in the ducts and if the resistance increases, it increases the speed of the fans to maintain a constant flow, such as on the first day when the ventilation unit was commissioned. During exploitation, the installation pressure is naturally disrupted (dirty filters, condensation of water in the heat exchanger, temperature difference changing the air mass). CF counteracts to those changes, thanks to which the airflows remain sustainable, and only a sustainable system takes full advantage of the air handling unit's capabilities.

### Cooperation with the kitchen hood

The cooker hood can be connected to the MVHR system via the X25 contact on the main board of the BoxAIR heat recovery units. It is a potential-free contact. Short-circuits of contact inputs will result in an exhaust fan stopping completely during the period the contact is closed.

### Additional devices



The HRQ-REPEATER signal booster is used to increase the communication range between the air handling unit and wireless controllers and sensors.

### Connecting the ground heat exchanger

Heat recovery unit has a possibility to connect the ground heat exchanger. This function allows you to control a valve that optionally supply air through the ground-to-air heating system. To do this, install a dedicated damper with the actuator (DATVTML).

Heat recovery ventilation unit with counterflow exchanger

**HRU-BoxAIR****Energy class**

Model	Air flow rate [m³/h]	Energy class			
		Manual control	Clock control	Central demand control (1 sensor)	Local demand control (2 sensors)
HRU-BoxAIR-150-H-P	150	A	A	A	A+
HRU-BoxAIR-150-H-CF-P	150	A	A	A	A+
HRU-BoxAIR-200-H-P	200	A	A	A	A
HRU-BoxAIR-200-H-CF-P	200	A	A	A	A
HRU-BoxAIR-225-H-P	225	B	B	A	A
HRU-BoxAIR-225-H-CF-P	225	B	B	A	A

# Heat recovery ventilation unit with counterflow exchanger

# HRU-BoxAIR

## Product fiche HRU-BoxAIR-150

## Commission Regulation (UE) Nr 1253/2014, 1254/2014, Annex IV

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-BoxAIR-150-H, HRU-BoxAIR-150-H-CF											
Control	Manual control			Clock control			Central demand control			Local demand control		
Control factor	1			0,95			0,85			0,65		
Climat	Cold	Average	Warm	Cold	Average	Warm	Cold	Average	Warm	Cold	Average	Warm
Specific energy consumption (SEC) [kWh/(m <sup>2</sup> .a)]	-74,84	-36,70	-12,22	-76,00	-37,69	-13,12	-78,19	-39,54	-14,78	-82,06	-42,75	-17,60
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
The annual electricity consumption (AEC) [kWh/a/100m <sup>2</sup> ]	-74,84	-36,70	-12,22	-76,00	-37,69	-13,12	-78,19	-39,54	-14,78	-82,06	-42,75	-17,60
The annual heating saved (AHS) [kWh/a/100m <sup>2</sup> ]	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency <sup>1</sup>	89,0%											
Maximum flow rate [m <sup>3</sup> /h] <sup>2</sup>	150											
Maximum electric power input [W]	61											
Sound power LWA [dB(A)]	53											
Reference flow rate [m <sup>3</sup> /s] <sup>3</sup>	0,029											
Reference pressure difference [Pa] <sup>4</sup>	50											
SPI [W/m <sup>3</sup> /h] <sup>5</sup>	0,27											
Declared maximum leakages <sup>6</sup>	External: 6,00% Internal: 3,00%											
Position and description of visual filter warning	Visual on status LED light on unit and on status LED light on controller											
Internet address	www.ventilation-alnor.co.uk											

<sup>1</sup> According to EN 13141-7:2010

<sup>2</sup> According to EN 13141-7:2010 at pressure difference 100Pa

<sup>3</sup> According to EN 13141-7:2010 at 70% of maximum flow at static pressure difference 50Pa

<sup>4</sup> According to EN 13141-7:2010

<sup>5</sup> According to EN 13141-7:2010 at reference point - 70% of maximum air flow

<sup>6</sup> According to EN 13141-7:2010

# Heat recovery ventilation unit with counterflow exchanger

## HRU-BoxAIR

### Product fiche HRU-BoxAIR-200

### Commission Regulation (UE) Nr 1253/2014, 1254/2014, Annex IV

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-BoxAIR-200-H, HRU-BoxAIR-200-H-CF											
Control	Manual control			Clock control			Central demand control			Local demand control		
Control facotr	1			0,95			0,85			0,65		
Climat	Cold	Average	Warm	Cold	Average	Warm	Cold	Average	Warm	Cold	Average	Warm
Specific energy consumption (SEC) [kWh/(m <sup>2</sup> .a)]	-72,03	-34,62	-10,57	-73,39	-35,78	-11,60	-75,97	-37,94	-13,54	-80,54	-41,70	-16,82
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m <sup>2</sup> ]	969	432	387	931	394	349	861	324	279	745	208	163
The annual heating saved (AHS) [kWh/a/100m <sup>2</sup> ]	8752	4474	2023	8793	4495	2033	8877	4538	2052	9044	4623	2090
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency <sup>1</sup>	86,6%											
Maximum flow rate [m <sup>3</sup> /h] <sup>2</sup>	200											
Maxium electric power input [W]	100											
Sound power LWA [dB(A)]	56											
Reference flow rate [m <sup>3</sup> /s] <sup>3</sup>	0,039											
Reference pressure difference [Pa] <sup>4</sup>	50											
SPI [W/m <sup>3</sup> /h] <sup>5</sup>	0,31											
Declared maxiumum leakages <sup>6</sup>	External: 6,00% Internal: 3,00%											
Position and description of visual filter warning	Visual on status LED light on unit and on status LED light on controller											
Internet address	www.ventilation-alnor.co.uk											

<sup>1</sup> According to EN 13141-7:2010

<sup>2</sup> According to EN 13141-7:2010 at pressure difference 100Pa

<sup>3</sup> According to EN 13141-7:2010 at 70% of maximum flow at static pressure difference 50Pa

<sup>4</sup> According to EN 13141-7:2010

<sup>5</sup> According to EN 13141-7:2010 at reference point - 70% of maximum air flow

<sup>6</sup> According to EN 13141-7:2010

# Heat recovery ventilation unit with counterflow exchanger

# HRU-BoxAIR

## Product fiche HRU-BoxAIR-225

## Commission Regulation (UE) Nr 1253/2014, 1254/2014, Annex IV

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-BoxAIR-225-H, HRU-BoxAIR-225-H-CF											
Control	Manual control			Clock control			Central demand control			Local demand control		
Control facotr	1			0,95			0,85			0,65		
Climat	Cold	Average	Warm	Cold	Average	Warm	Cold	Average	Warm	Cold	Average	Warm
Specific energy consumption (SEC) [kWh/(m <sup>2</sup> .a)]	-69,11	-32,34	-8,65	-70,69	-33,69	-9,86	-73,69	-36,21	-12,12	-79,00	-40,58	-15,94
SEC class	A+	B	F	A+	B	F	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m <sup>2</sup> ]	1033	496	451	989	452	407	908	371	326	773	236	191
The annual heating saved (AHS) [kWh/a/100m <sup>2</sup> ]	8621	4407	1993	8669	4431	2004	8766	4481	2026	8959	4580	2071
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency <sup>1</sup>	84,5%											
Maximum flow rate [m <sup>3</sup> /h] <sup>2</sup>	225											
Maxium electric power input [W]	142											
Sound power LWA [dB(A)]	58											
Reference flow rate [m <sup>3</sup> /s] <sup>3</sup>	0,049											
Reference pressure difference [Pa] <sup>4</sup>	50											
SPI [W/m <sup>3</sup> /h] <sup>5</sup>	0,36											
Declared maxiumum leakages <sup>6</sup>	External: 4,86% Internal: 2,46%											
Position and description of visual filter warning	Visual on status LED light on unit and on status LED light on controller											
Internet address	www.ventilation-alnor.co.uk											

<sup>1</sup> According to EN 13141-7:2010

<sup>2</sup> According to EN 13141-7:2010 at pressure difference 100Pa

<sup>3</sup> According to EN 13141-7:2010 at 70% of maximum flow at static pressure difference 50Pa

<sup>4</sup> According to EN 13141-7:2010

<sup>5</sup> According to EN 13141-7:2010 at reference point - 70% of maxiumum air flow

<sup>6</sup> According to EN 13141-7:2010