

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR**Description**

The HRU-SlimAIR heat recovery units are designed for residential buildings. The HRVs have capacities of 250/350/500/800/1000 m³/h @ 100 Pa, generated by energy-efficient EC fans. Thanks to a counterflow heat exchanger made of a plastic (PET), it achieves up to 90% heat recovery. An ERV version with an enthalpy exchanger that recovers moisture is also available. Built-in electric preheater (except the 1000 model) protects heat exchanger against freezing, built-in RH sensors regulates indoor humidity level, wireless radio communication connects controllers and sensors, and all of it is enclosed inside a self-supporting, insulating EPP casing. HRU-SlimAIR can be installed in up to 3 positions (models 250 and 350), thanks to a special condensate drain system.

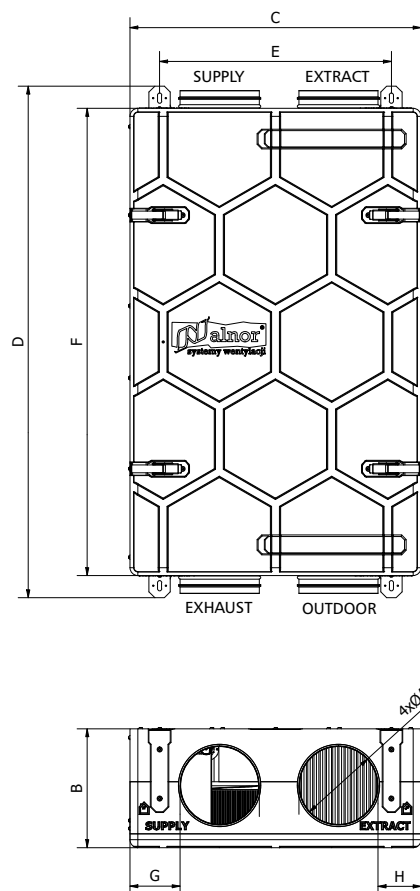


HRU-SlimAIR-250 is certified by **Passive House Institute** and can be used as a certified component in passive houses.

Available materials:

- | | |
|--------------------|--|
| HRU-SlimAIR-250-H | - PET counterflow heat exchanger, |
| HRU-SlimAIR-350-H | built-in preheater, built-in RH sensor |
| HRU-SlimAIR-500-H | |
| HRU-SlimAIR-800-H | |
| HRU-SlimAIR-1000 | - PET counterflow heat exchanger, |
| | built-in RH sensor |
| HRU-SlimAIR-250E-H | - enthalpy counterflow heat exchanger, |
| HRU-SlimAIR-350E-H | built-in preheater, built-in RH sensor |
| HRU-SlimAIR-500E-H | |
| HRU-SlimAIR-800E-H | |
| HRU-SlimAIR-1000E | - enthalpy counterflow heat exchanger, |
| | built-in RH sensor |

HRU-SlimAIR-...-CF - all model SlimAIR can be equipped with the Constant Flow system

Dimensions

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]
SlimAIR-250	160	242	685	1172	505	1070	143	120
SlimAIR-350	200	300	735	1292	585	1180	126,5	108,5
SlimAIR-500	200	300	898	1416	690	1300	153,7	163
SlimAIR-800	250	387	1081	1531	831	1397	193	181
SlimAIR-1000	250	387	1081	1531	831	1397	193	181

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Installation

Suspended

HRU-SlimAIR-250 / HRU-SlimAIR-350 / HRU-SlimAIR-500 /
HRU-SlimAIR-800 / HRU-SlimAIR-1000



Horizontal

only HRU-SlimAIR-250 / HRU-SlimAIR-350



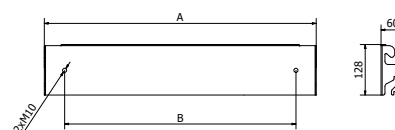
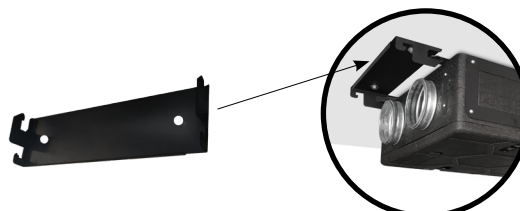
Vertical

HRU-SlimAIR-250 / HRU-SlimAIR-350 / HRU-SlimAIR-500 /
HRU-SlimAIR-800 / HRU-SlimAIR-1000



HRQ-SlimAIR-HANG

With the optional **HRQ-SlimAIR-HANG** mounting rack, the HRV unit can be suspended from the ceiling and mounted on the wall vertically. A single person can hang the unit using the mounting rack.



	A [mm]	B [mm]
HRQ-SlimAIR-250-HANG	509.5	386.5
HRQ-SlimAIR-350-HANG	587	464
HRQ-SlimAIR-500-HANG	689.5	586.6

Installation / Model	SlimAIR-250-H / SlimAIR-250-H-CF SlimAIR-250E-H / SlimAIR-250E-H-CF	SlimAIR-350-H / SlimAIR-350-H-CF SlimAIR-350E-H / SlimAIR-350E-H-CF	SlimAIR-500-H / SlimAIR-500-H-CF SlimAIR-500E-H / SlimAIR-500E-H-CF	SlimAIR-800-H / SlimAIR-800-H-CF SlimAIR-800E-H / SlimAIR-800E-H-CF	SlimAIR-1000 / SlimAIR-1000-CF SlimAIR-1000E / SlimAIR-1000E-CF
Suspended	✓	✓	✓	✓	✓
Vertical	✓	✓	✓	✓	✓
Horizontal	✓	✓	✗	✗	✗

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR**Technical data**

	<i>SlimAIR-250-H / SlimAIR-250-H-CF</i>	<i>SlimAIR-250E-H / SlimAIR-250E-H-CF</i>	<i>SlimAIR-350-H / SlimAIR-350-H-CF</i>	<i>SlimAIR-350E-H / SlimAIR-350E-H-CF</i>	<i>SlimAIR-500-H / SlimAIR-500-H-CF</i>
Air flow [m³/h] @ 100 Pa	250	250	350	350	500
Maximal efficiency % ¹	89,9	85,6	94,0	91,0	95,2
Efficiency % (acc. 1254/2014) ²	85,0	75,3	85,6	76,9	85,0
Maximal moisture efficiency %	-	63,3	-	87	-
Heat exchanger	counterflow PET	counterflow enthalpy	counterflow PET	counterflow enthalpy	counterflow PET
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	91,5	90,3	123,0	146,0	207,0
Sound power level L _{WA} [dB (A)]	50	50	49	49	51
Weight [kg]	25,5	25,5	36,0	36,0	44,0
Filters	ISO Coarse 70% / ISO ePM1 55% (optional)				
Built-in pre-heater	✓	✓	✓	✓	✓
Pre-heater power [W]	1000	1000	1800	1800	2200
Built-in RH sensor	✓	✓	✓	✓	✓

	<i>SlimAIR-500E-H / SlimAIR-500E-H-CF</i>	<i>SlimAIR-800-H / SlimAIR-800-H-CF</i>	<i>SlimAIR-800E-H / SlimAIR-800E-H-CF</i>	<i>SlimAIR-1000 / SlimAIR-1000-CF</i>	<i>SlimAIR-1000E / SlimAIR-1000E-CF</i>
Air flow [m³/h] @ 100 Pa	500	800	800	1000	1000
Maximal efficiency % ¹	89,0	94,7	83,8	94,2	85,7
Efficiency % (acc. 1254/2014) ²	75,4	86,6	76,9	86,8	76,8
Maximal moisture efficiency %	85,0	-	62,6	-	58,0
Heat exchanger	counterflow enthalpy	counterflow PET	counterflow enthalpy	counterflow PET	counterflow enthalpy
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	247,0	366,0	366,0	542,0	542,0
Sound power level L _{WA} [dB (A)]	51	54	54	57	57
Weight [kg]	44,0	65,0	65,0	75,00	75,00
Filters	ISO Coarse 70% / ISO ePM1 55% (optional)				
Built-in pre-heater	✓	✓	✓	✗	✗
Pre-heater power [W]	2200	3000	3000	4500 ³	4500 ³
Built-in RH sensor	✓	✓	✓	✓	✓

¹ Maximal thermal efficiency acc. to EN13141-7 at minimum air flow² Thermal efficiency in reference point acc. to EN 13141-7, in compliance with UE 1254/2014³ The HRU-SlimAIR-1000 model can be equipped with an external pre-heater, 3-phase 4.5kW- HRQ-SlimAIR-HDE-250-4,5.

Heat Recovery Unit PremAIR, SlimAIR and MinistAIR

Controllers and sensors

Control

Ventilation units can be controlled in several ways:

Application for Android, iOS and via a browser (via the HRQ-GATE internet gateway)



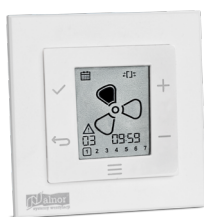
Application



HRQ-GATE

The gateway is connected to the local network via the Ethernet port. Communication with the device is wireless. On-line control is possible after installing the application on Android and iOS or via a browser on a computer. The application graphically illustrates the operation of the device, allows you to change modes and read basic parameters.

Controller LCD, flush-mounted (HRQ-BUT-LCD)



This version has an LCD display, allows you to select 1 of 7 operating modes, program the calendar and read additional operating parameters such as temperatures, current fan speeds or the by-pass status. It also allows you to configure ventilation speeds (according to user preferences).

4-button controller



HRQ-BUT-LM11



HRQ-BUT-LM04

This controller allows you to choose between 4 modes. The LM04 model has an AUTO button (instead of PARTY), recommended when there is at least 1 CO₂ or RH sensor in the system. Signalling of operation and errors by means of a LED diode.

The HRQ-SW3-I rotary switch is an option for wired control of the ventilation unit and allows you to choose between 3 speeds (AWAY, HOME, HOME +)



Control via CO₂ and RH sensors (we recommend as additional control).



HRQ-SENS-CO2



HRQ-SENS-RH



HRQ-SENS-I-CO2
(flush-mounted)

Each sensor also functions as a controller - it allows you to select from manual modes and, of course, engage AUTO mode. Indicates errors or dirty filters, but there is no filter status reset option.

Motion sensor HRQ-SENS-PIR



The sensor is designed to detect the presence of a person by motion detection and increase the ventilation demand (70% for 15 minutes). In addition, through a relay, the sensor can switch on the light.

Modbus gate (HRQ-MODBUS),



HRQ-MODBUS gate, which allows to control the device using the universal modbus protocol and RS485 data transmission.

NOTE!

Controller is not included in the kit. During purchase, choose the controller that is right for you. Multiple controllers can be connected at once - e.g. 4-button controller and an Internet gateway.

Heat Recovery Unit PremAIR, SlimAIR and MinistAIR

Controllers and sensors

Control options table:

Model	Photo	Communication with unit	Power supply	No of modes	AUTO mode*	Display	Calendar	Dirty filter signalization	Changing speed settings
HRQ-SW3-I		cable 	230V 	3	no	no	no	no	no
HRQ-BUT-LM11		wireless 	battery 	4	no	no	no	yes	no
HRQ-BUT-LM04		wireless 	battery 	4	yes	no	no	yes	no
HRQ-BUT-LCD		wireless 	230 V 	7	yes	yes	yes	yes	yes
HRQ-GATE		wireless 	230 V 	6	yes	yes	no	yes	no
HRQ-SENS-CO2		wireless 	230 V 	5	yes	no	no	yes	no
HRQ-SENS-I-CO2		wireless 							
HRQ-SENS-RH		wireless 	battery 	4	yes	no	no	yes	no
HRQ-MODBUS		wireless 	230 V 	-	-	-	-	-	-
HRQ-MODBUS		wireless 	n/d	7	yes	no	no	yes	no

* requires at least 1 CO₂ or RH sensor

Heat Recovery Unit PremAIR, SlimAIR and MinistAIR

Controllers and sensors

Constant Flow (CF)

SlimAIR 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.

Zoning

HRQ-2ZONE is a device designed for residential ventilation systems, dividing the air supply into two controlled and monitored zones. The air flow is controlled by motorized dampers, which are adjusted according to the demand sent by CO₂ sensors installed in each zone. Such a system allows for the detection of the inhabitant's presence and provides the right amount of fresh air in the right place at the right time.

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).

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 SlimAIR 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.

Demand Control Ventilation, DCV

The AUTO mode is the most energy-efficient and demand driven mode of SlimAIR units. Operation in the AUTO mode is possible when at least one carbon dioxide CO₂ or relative humidity RH sensor operates in the system.

In AUTO mode, the sensor (or several sensors) generates the so-called ventilation demand based on ambient air measurements. This request is sent wirelessly to the control board, which sets the efficiency of the fans in the range defined by AWAY and HOME(+ offset) speeds. It means, that in the case of factory settings, the range will be 15-70%.

The RH sensor will guard against excessive moisture. If there is a sudden increase in relative humidity (more than 3% within 24 seconds) or the reading exceeds 85%, the sensor will send 100% demand to the control panel to effectively and quickly reduce the RH level.

The CO₂ sensor will keep the carbon dioxide concentration below the specified level (the factory default is 800 ppm, you can choose between 700,800,900,1000 and 1100 ppm) thanks to the proportional PID algorithm.

This means that the request sent to the control board will change gradually over time until the CO₂ concentration decreases. HRU-PremAIR-SENS-CO₂ sensors have 2 AUTO modes: Comfort and Eco. Comfort is the basic setting (i.e. 800 ppm by default), while Eco increases the limit by 250 (i.e. 1050 by default).

The CO₂ sensor is available in the following versions:

surface

HRQ-SENS-CO

flush-mounted

HRQ-SENS-I-CO₂



In case of having several sensors, the unit control board will operate according to the highest indication (highest request). In the absence of any demand from the sensors, the ventilation unit will run at AWAY speed (lowest setting).

Heat Recovery Unit PremAIR, SlimAIR and MinistAIR

Controllers and sensors

Mobile application PremAIR

Mobile application for controlling a home ventilation unit HRU-SlimAIR, HRU-PremAIR and HRU-MinistAIR by ALNOR. It allows to monitor and control the unit via local network and Internet as well:

- Mode selection (Away, Home, Party, Boost, Auto and Standby)
- Temperature readouts
- Registering and displaying remote CO₂ and RH sensors readouts
- Fans efficiencies
- Defrost mode
- By-pass mode
- Filters conditions

Available for download in Google Play and App Store: PremAIR

Also via web browser: <https://premair.alnor.pl/>



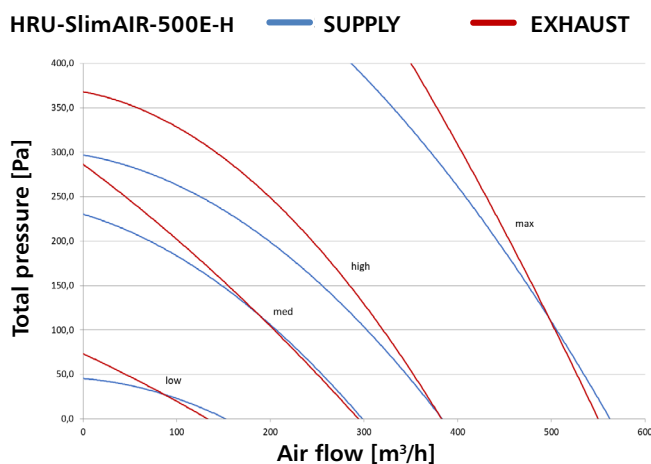
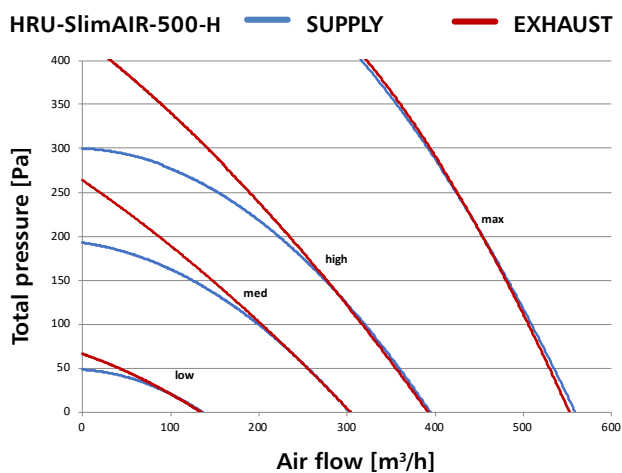
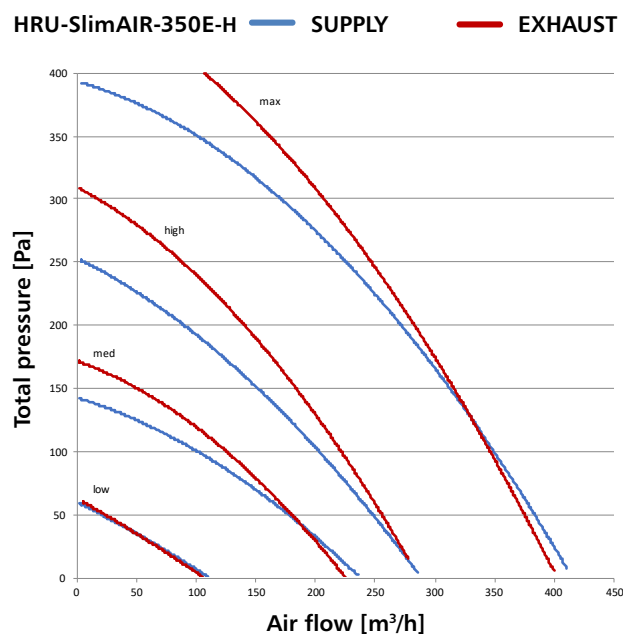
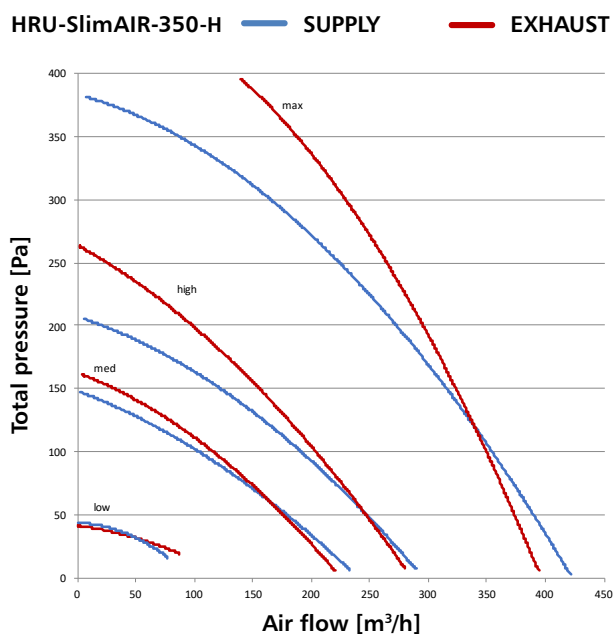
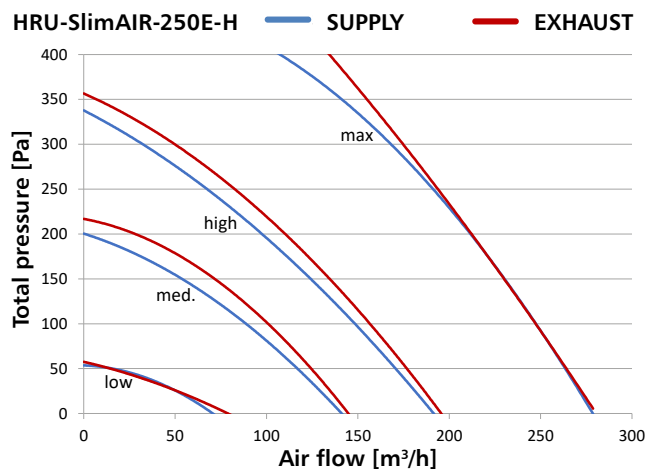
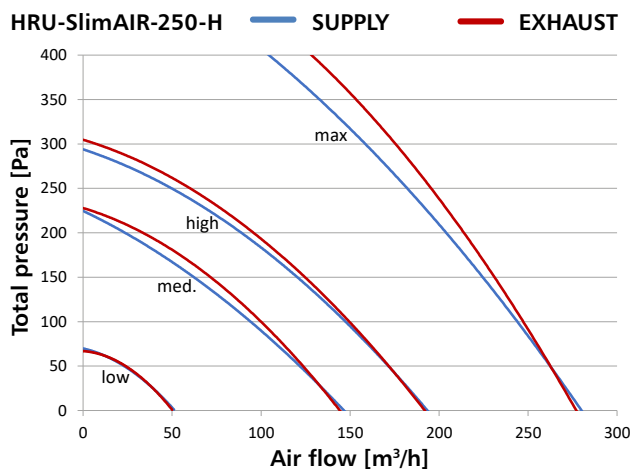
Screen shot:



Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

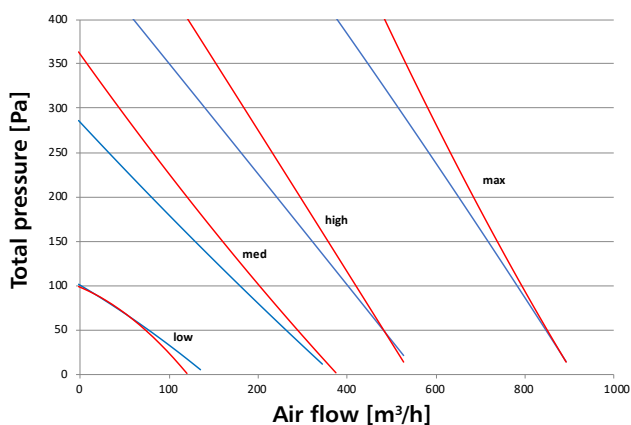
Air flow and efficiency



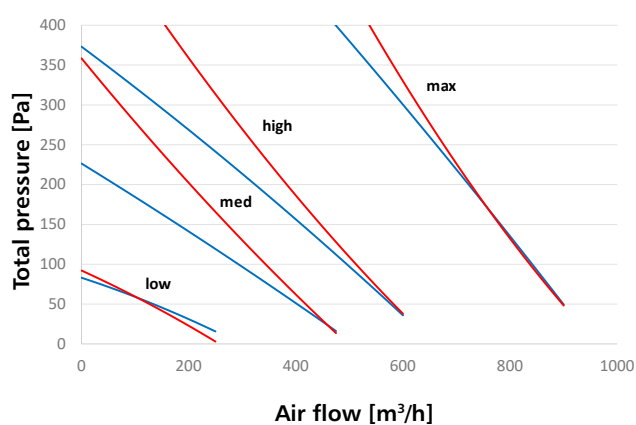
Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

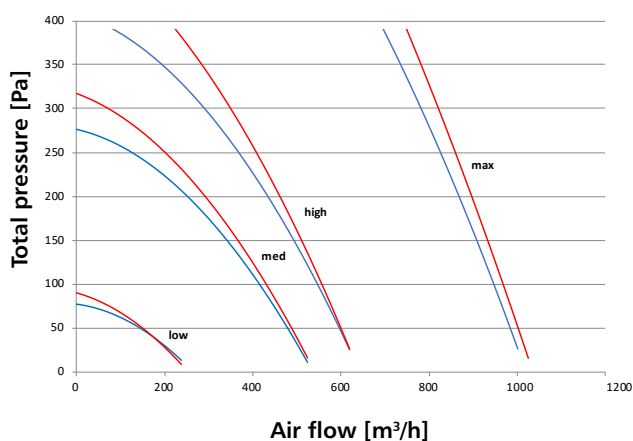
HRU-SlimAIR-800-H — SUPPLY — EXHAUST



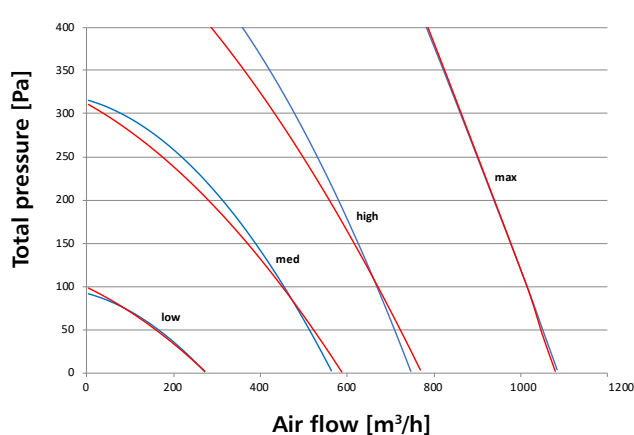
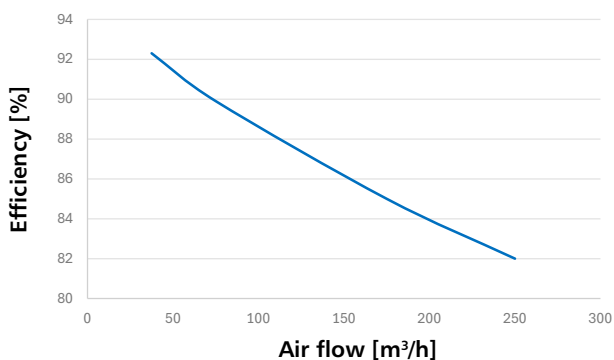
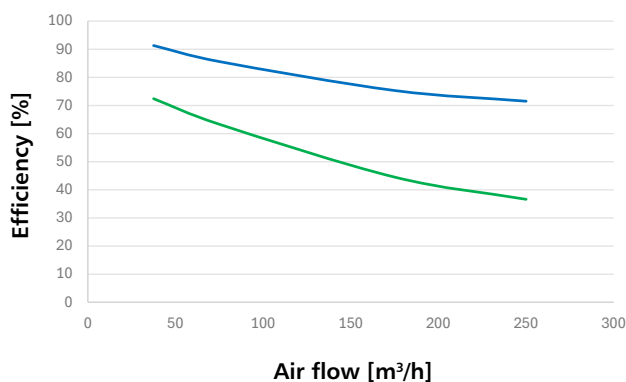
HRU-SlimAIR-800E-H — SUPPLY — EXHAUST



HRU-SlimAIR-1000 — SUPPLY — EXHAUST



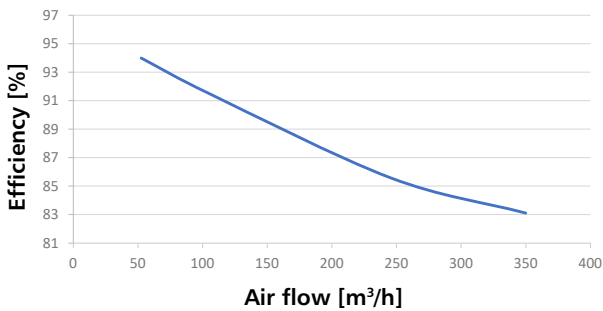
HRU-SlimAIR-1000E — SUPPLY — EXHAUST

Performance curve
HRU-SlimAIR-250-HPerformance curve Heat (—) and moisture recovery (—)
HRU-SlimAIR-250E-H

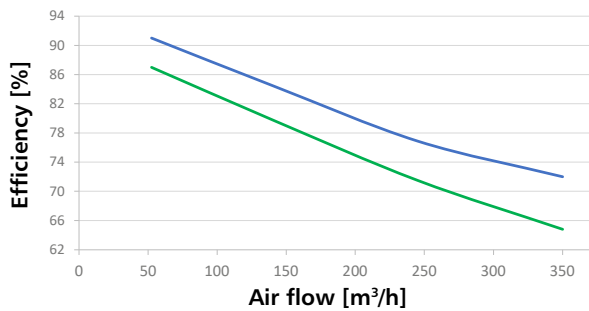
Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

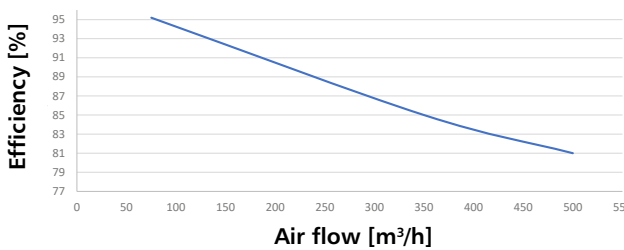
Performance curve
HRU-SlimAIR-350-H



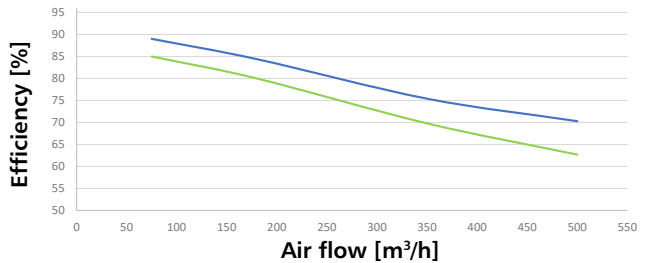
Performance curve Heat (—) and moisture recovery (—) HRU-SlimAIR-350E-H



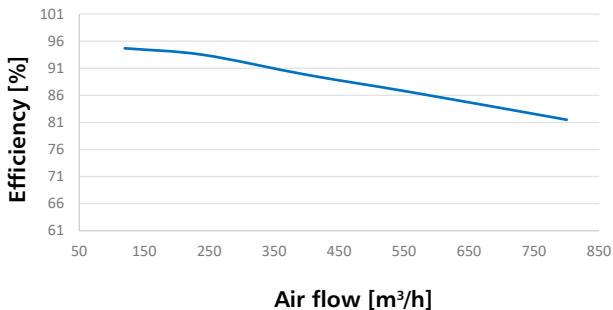
Performance curve
HRU-SlimAIR-500-H



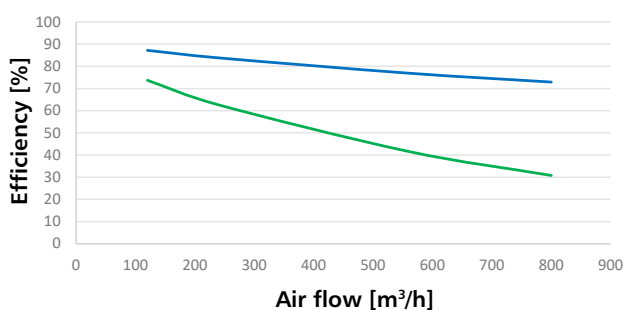
Performance curve Heat (—) and moisture recovery (—) HRU-SlimAIR-500E-H



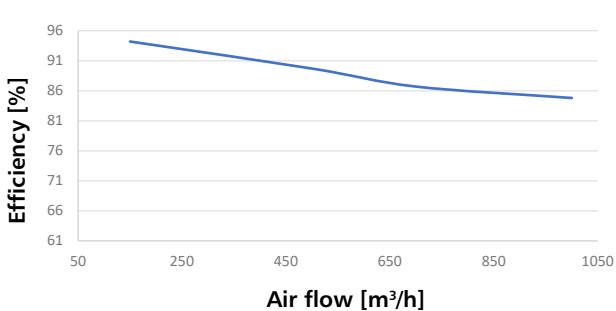
Performance curve
HRU-SlimAIR-800-H



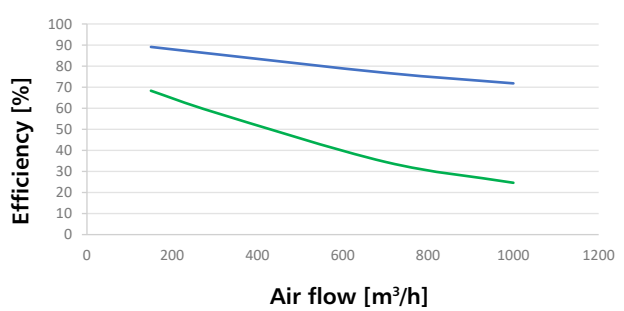
Performance curve Heat (—) and moisture recovery (—) HRU-SlimAIR-800E-H



Performance curve
HRU-SlimAIR-1000



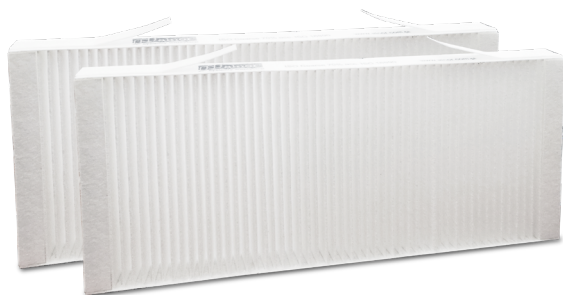
Performance curve Heat (—) and moisture recovery (—) HRU-SlimAIR-1000E



Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Filters



Pleated panel filter creates a larger media surface area for air filtration and ensures lower pressure drops.

The filter is classified as in the ISO Coarse 70% or ISO ePM₁ 55% according to ISO 16890 standards.

Code	Filter clas	Dimensions [mm]
HRQ-SlimAIR-FILT-C70	ISO Coarse 70%	170x334x23
HRQ-SlimAIR-350-FILT-C70	ISO Coarse 70%	220x314x23
HRQ-SlimAIR-500-FILT-C70	ISO Coarse 70%	218x432x23
HRQ-SlimAIR-800-FILT-C70	ISO Coarse 70%;	254x438x46
HRQ-SlimAIR-FILT-ePM155	ISO ePM ₁ 55%	170x334x23
HRQ-SlimAIR-350-FILT-ePM155	ISO ePM ₁ 55%	220x314x23
HRQ-SlimAIR-500-FILT-ePM155	ISO ePM ₁ 55%	218x432x23
HRQ-SlimAIR-800-FILT-ePM155	ISO ePM ₁ 55%	254x438x46

Filter replacement:
bottom access

side access



Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Smart ventilation system SmartAIR



SmartAIR heat recovery system with zoning is the most intelligent, efficient system on the market. Why is it intelligent?

The ventilation system works independently, based on readings from sensors. Besides knowing how many people are in the house, the system also knows where they are.

Thus, it provides the right amount of air at the right time and place. A situation like this can be achieved by zoning, i.e. by dividing the house into day and night zones in accordance with the natural cycle of the day of the household members.

[Find out more about the HRQ-2ZONE](#)

Complete EPP system



Choose thermally insulated EPP ducting. High mechanical strength, pre-insulated, and quick to assemble. You don't need an additional insulation layer. It comes in 15/43mm thicknesses.

EPP manifolds (distribution boxes)

Manifolds FLX-PLO-EPP-R are designed for use in domestic mechanical ventilation systems. They collect 75mm semi-rigid ducting, which is then distributed to the rooms. Typical installations contain from 1 to 2 such manifolds for the supply air and the extract air. Expanded polypropylene (EPP), the material used for the manifolds, is also an insulating material.

Duct and fittings made of EPP in thickness 15 or 43 mm.

[Check the elements of the EPP System?](#)

Duct-mounted humidifier



The adiabatic humidifier is designed for domestic mechanical ventilation systems with a maximum airflow 600 m³/h. Filtered water naturally evaporates on a special matrix, and then the humidified air is distributed to the ventilation duct system and to the connected rooms.

The humidification process is regulated by a wireless room controller and a duct sensor. Built-in PTC heater compensates for temperature losses caused by the evaporation process. The housing is made of EPP, while the matrix is made of fiber glass.

[Find out more about duct humidifier](#)

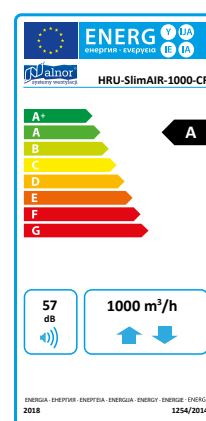
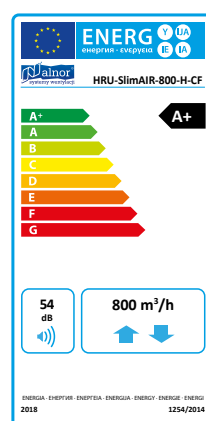
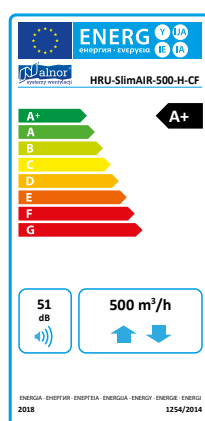
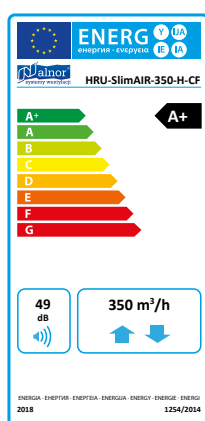
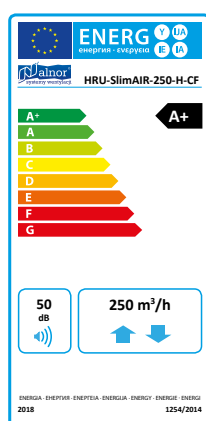
Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Ecodesign Data

Energy class

Model	Sound power level L_{WA} dB(A)* [dB]	Air flow rate [m³/h]	Energy class			
			Manual control	Clock control	Central demand control (1 sensor)	Local demand control (2 sensor)
HRU-SlimAIR-250-H	50	250	A	A	A	A+
HRU-SlimAIR-250-H-CF	50	250	A	A	A	A+
HRU-SlimAIR-250E-H	50	250	A	A	A	A
HRU-SlimAIR-250E-H-CF	50	250	A	A	A	A
HRU-SlimAIR-350-H	49	350	A	A	A	A+
HRU-SlimAIR-350-H-CF	49	350	A	A	A	A+
HRU-SlimAIR-350E-H	49	350	A	A	A	A
HRU-SlimAIR-350E-H-CF	49	350	A	A	A	A
HRU-SlimAIR-500-H	51	500	A	A	A	A+
HRU-SlimAIR-500-H-CF	51	500	A	A	A	A+
HRU-SlimAIR-500E-H	51	500	B	A	A	A
HRU-SlimAIR-500E-H-CF	51	500	B	A	A	A
HRU-SlimAIR-800-H	54	800	A	A	A	A+
HRU-SlimAIR-800-H-CF	54	800	A	A	A	A+
HRU-SlimAIR-800E-H	54	800	B	A	A	A
HRU-SlimAIR-800E-H-CF	54	800	B	A	A	A
HRU-SlimAIR-1000	57	1000	B	A	A	A
HRU-SlimAIR-1000-CF	57	1000	B	A	A	A
HRU-SlimAIR-1000E	57	1000	B	B	B	A
HRU-SlimAIR-1000E-CF	57	1000	B	B	B	A



Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-250

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-250-H, HRU-SlimAIR-250-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 ² .a)]	-73,63	-36,71	-12,93	-74,79	-37,64	-13,73	-76,99	-39,39	-15,22	-80,98	-42,46	-17,77
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	865	328	283	837	300	255	786	249	204	702	165	120
The annual heating saved (AHS) [kWh/a/100m ²]	8652	4423	2000	8699	4474	2011	8792	4494	2032	8979	4590	2075
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	85,00%											
Maximum flow rate [m ³ /h] ²	250											
Maximum electric power input [W]	91,5											
Sound power LWA [dB(A)]	50											
Reference flow rate [m ³ /s] ³	0,049											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,23											
Declared maximum leakages ⁶	External: 1,14% Internal: 2,45%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-250E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-250E-H, HRU-SlimAIR-250E-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 ² .a)]	-68,01	-34,05	-11,96	-69,43	-35,09	-12,79	-72,17	-37,07	-14,34	-77,24	-40,64	-17,04
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	848	311	266	822	285	240	774	237	192	694	157	112
The annual heating saved (AHS) [kWh/a/100m ²]	8047	4114	1860	8124	4153	1878	8278	4232	1914	8586	4389	1985
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	75,30%											
Maximum flow rate [m ³ /h] ²	250											
Maximum electric power input [W]	90,3											
Sound power LWA [dB(A)]	50											
Reference flow rate [m ³ /s] ³	0,049											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,21											
Declared maximum leakages ⁶	External: 0,67% Internal: 0,79%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-350

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-350-H, HRU-SlimAIR-350-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 ² .a)]	-74,43	-37,32	-13,44	-75,52	-38,20	-14,19	-77,62	-39,85	-15,59	-81,40	-42,76	-18,00
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	848	311	266	822	285	240	774	237	192	694	157	112
The annual heating saved (AHS) [kWh/a/100m ²]	8689	4442	2009	8734	4465	2019	8824	4511	2040	9003	4602	2081
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	85,60%											
Maximum flow rate [m ³ /h] ²	350											
Maxium electric power input [W]	123											
Sound power LWA [dB(A)]	49											
Reference flow rate [m ³ /s] ³	0,068											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,21											
Declared maximum leakages ⁶	External: 1,18% Internal: 2,74%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure diference 100 Pa

³ According to EN 13141-7:2010 at 70% of maximum flow at static pressure diference 50 Pa

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-350E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-350E-H, HRU-SlimAIR-350E-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 ² .a)]	-68,49	-34,04	-11,67	-69,91	-35,10	-12,54	-72,64	-37,13	-14,16	-77,66	-40,75	-16,97
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	868	331	286	840	303	258	789	252	207	703	166	121
The annual heating saved (AHS) [kWh/a/100m ²]	8147	4165	1883	8219	4201	1900	83,63	4275	1933	8651	4422	2000
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	76,90%											
Maximum flow rate [m ³ /h] ²	350											
Maximum electric power input [W]	146											
Sound power LWA [dB(A)]	49											
Reference flow rate [m ³ /s] ³	0,068											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,23											
Declared maximum leakages ⁶	External: 0,71% Internal: 2,66%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-500

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-500-H, HRU-SlimAIR-500-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 ² .a)]	-73,54	-36,62	-12,84	-74,71	-37,56	-13,65	-76,93	-39,32	-15,15	-80,95	-42,42	-17,73
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	869	331	286	840	303	258	789	252	207	703	166	121
The annual heating saved (AHS) [kWh/a/100m ²]	8652	4423	2000	8699	4447	2011	8792	4494	2032	8979	4590	2075
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	85,00%											
Maximum flow rate [m ³ /h] ²	500											
Maximum electric power input [W]	207											
Sound power LWA [dB(A)]	51											
Reference flow rate [m ³ /s] ³	0,097											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,23											
Declared maximum leakages ⁶	External: 1,30% Internal: 2,98%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-500E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-500E-H, HRU-SlimAIR-500E-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 ² .a)]	-67,02	-33,02	-10,92	-68,54	-34,17	-11,85	-71,46	-36,33	-13,59	-76,83	-40,21	-16,60
SEC class	A+	B	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	900	353	308	860	323	278	804	267	222	712	175	130
The annual heating saved (AHS) [kWh/a/100m ²]	8054	4117	1862	8130	4156	1879	8284	4234	1915	8590	4391	1986
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	75,40%											
Maximum flow rate [m ³ /h] ²	500											
Maximum electric power input [W]	247											
Sound power LWA [dB(A)]	51											
Reference flow rate [m ³ /s] ³	0,097											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,25											
Declared maximum leakages ⁶	External: 1,18% Internal: 2,74%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-800

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-800-H, HRU-SlimAIR-800-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 ² .a)]	-73,64	-36,23	-12,18	-74,85	-37,23	-13,06	-77,13	-39,11	-14,70	-81,22	-42,38	-17,50
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	904	367	322	873	336	291	815	278	233	718	181	136
The annual heating saved (AHS) [kWh/a/100m ²]	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 ¹	86,60%											
Maximum flow rate [m ³ /h] ²	800											
Maximum electric power input [W]	366											
Sound power LWA [dB(A)]	54											
Reference flow rate [m ³ /s] ³	0,156											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,26											
Declared maximum leakages ⁶	External: 1,70% Internal: 3,10%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-800E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-800E-H, HRU-SlimAIR-800E-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 ² .a)]	-68,21	-33,76	-11,39	-69,66	-34,85	-12,29	-72,44	-36,93	-13,96	-77,55	-40,63	-16,85
SEC class	A+	B	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	880	343	298	851	314	269	797	260	215	708	171	126
The annual heating saved (AHS) [kWh/a/100m ²]	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 ¹	76,90%											
Maximum flow rate [m ³ /h] ²	800											
Maximum electric power input [W]	366											
Sound power LWA [dB(A)]	54											
Reference flow rate [m ³ /s] ³	0,156											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,24											
Declared maximum leakages ⁶	External: 1,70% Internal: 3,10%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-1000

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-1000, HRU-SlimAIR-1000-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 ² .a)]	-71,44	-33,97	-9,88	-72,86	-35,19	-10,99	-75,55	-37,48	-13,04	-80,31	-41,44	-16,54
SEC class	A+	B	F	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	997	460	415	957	420	375	882	345	300	757	220	175
The annual heating saved (AHS) [kWh/a/100m ²]	8764	4480	2026	8805	4501	2035	8887	4543	2054	9052	4627	2092
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	86,80%											
Maximum flow rate [m ³ /h] ²	1000											
Maxium electric power input [W]	542											
Sound power LWA [dB(A)]	57											
Reference flow rate [m ³ /s] ³	0,194											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,31											
Declared maxiumum leakages ⁶	External: 1,70% Internal: 3,10%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010

Suspended heat recovery unit with a plate heat exchanger

HRU-SlimAIR

Product fiche HRU-SlimAIR-1000E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-SlimAIR-1000E, HRU-SlimAIR-1000E-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 ² .a)]	-64,05	-29,62	-7,27	-65,89	-31,12	-8,57	-69,42	-33,93	-10,98	-75,77	-38,87	-15,11
SEC class	A+	B	F	A+	B	F	A+	B	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	1044	507	462	999	462	417	916	379	334	777	240	195
The annual heating saved (AHS) [kWh/a/100m ²]	8141	4161	1882	8213	4198	1898	8358	4272	1932	8647	4420	1999
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	76,80%											
Maximum flow rate [m ³ /h] ²	1000											
Maximum electric power input [W]	551											
Sound power LWA [dB(A)]	57											
Reference flow rate [m ³ /s] ³	0,194											
Reference pressure difference [Pa] ⁴	50											
JPM [W/m ³ /h] ⁵	0,37											
Declared maximum leakages ⁶	External: 0,50% Internal: 2,60%											
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											

¹ According to EN 13141-7:2010

² According to EN 13141-7:2010 with at pressure difference 100 Pa

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

⁴ According to EN 13141-7:2010

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

⁶ According to EN 13141-7:2010