Heat recovery ventilation unit with counterflow exchanger

HRU-PremAIR

PRODUKT Z ATESTEM

works with Loxone

Description

Heat recovery ventilation unit HRU-PremAIR is a modern device with 350 / 450 or 500 m³/h air flow @ 100 Pa. Unit is made from cutting edge materials. Unit has self-supporting casing made of EPP. Depending on the model, following heat exchangers are used: counterflow PET, aluminium heat exchanger (HRV) or counterflow enthalpy exchanger (ERV). Built-in RH sensors regulates indoor humidity level

Enthalpy exchangers in HRU-PremAIR-E series have a polymer membrane that effectively recovers heat and moisture from the extract air. Such membrane works like a membrane in waterproof trekking clothing i.e. it allows water vapour to pass through, but not liquid water and air. The enthalpy exchanger also blocks the transfer of odours, bacteria and spores. The exchanger material, is needless to say, primarily optimized for maximum heat recovery efficiency.

PremAIR air handling units optionally can be equipped with the Constant Flow system, whose task is to maintain a constant air flow in the installation.

The device operation is controlled by an advanced PCB with wireless communication between control panels and sensors. In addition, the HRU-PremAIR can be connected to the Internet and controlled by an mobile application.

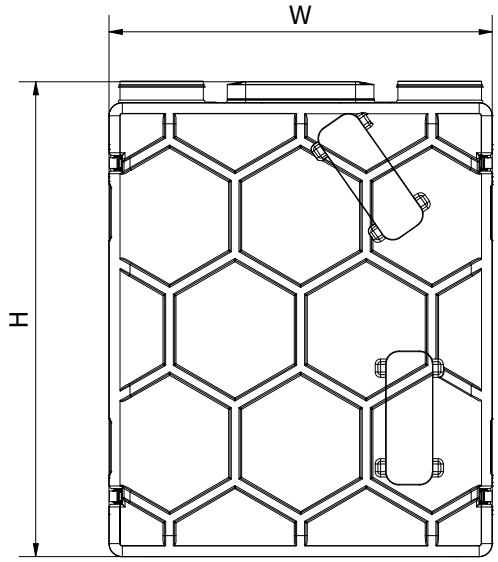
Heat recovery selector

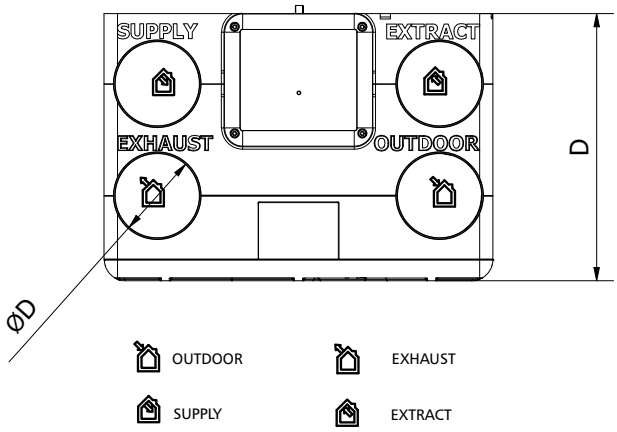
Product code example

Product code: **HRU-PremAIR - 250E - CF - P**

- type
- air flow
- enthalpic heat exchanger
- constant flow
- wired control

Dimensions





	ØD [mm]	W [mm]	H [mm]	D [mm]
PremAIR-350	160	730	906	502
PremAIR-450	160	730	906	502
PremAIR-500	160	730	906	502

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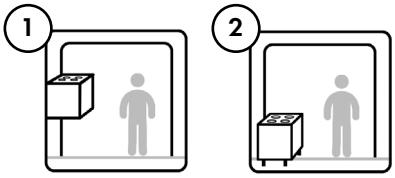
Heat recovery ventilation unit with counterflow exchanger

HRU-PremAIR

Installation



Installation / Model	HRU-PremAIR-350	HRU-PremAIR-350E	HRU-PremAIR-450	HRU-PremAIR-450E	HRU-PremAIR-500
Suspended	X	X	X	X	X
Vertical	√	√	√	√	√
Horizontal	X	X	X	X	X

Technical data

	HRU-PremAIR-350	HRU-PremAIR-350E	HRU-PremAIR-450	HRU-PremAIR-450E	HRU-PremAIR-500
Air flow [m³/h] @ 100 Pa	350 @ 100 Pa	350 @ 100 Pa	450 @ 100 Pa	450 @ 100 Pa	500 @ 100 Pa
Maximal efficiency %[1]	93,1	92,4	91,7	91,2	82,6
Efficiency % (acc. 1254/2014)[2]	88,9	84,7	88,2	82,1	81,5
Maximal moisture efficiency %		87,2		84,6	
Heat exchanger	counterflow, PET	counterflow, enthalpy	counterflow, PET	counterflow, enthalpy	counterflow, aluminium
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	144	150	220	220	220
Sound power level L_{WA}[dB (A)]	44	44	48	48	49
Weight [kg]	35	35	35	35	35
Filters	ISO Coarse 70% (ISO ePM1 55% optional)				
Built-in pre-heater	X	X	X	X	X
Pre-heater power [W]	-[3]	-[3]	-[3]	-[3]	-[3]
Built-in RH sensor	√	√	√	√	√

[1] Maximal thermal efficiency acc. to EN13141-7 at minimum air flow
[2] Thermal efficiency in reference point acc. to EN 13141-7, in compliance with UE 1254/2014
[3] The HRU-PremAIR model can be equipped with an external pre-heater, rated at 1.5kW - the HRQ-PremAIR-HDE-160-1,5

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Heat recovery ventilation unit with counterflow exchanger

HRU-PremAIR

Wirless control

HRQ-SW3-I

HRQ-BUT-LM11

HRQ-BUT-LM04

HRQ-BUT-LCD

HRQ-MODBUS

Modbus

works with Loxone

HRQ-2ZONE

HRQ-SENS-CO2

HRQ-SENS-I-CO2

HRQ-SENS-RH

HRQ-SENS-PIR

HRQ-GATE

alnor control AIR

Wired control

HRQ-BUT-PG15

HRQ-BUT-LCD-P5

HRQ-SENS-CO2RH-P

Modbus

works with Loxone

LOXONE SMART HOME

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Heat recovery selector

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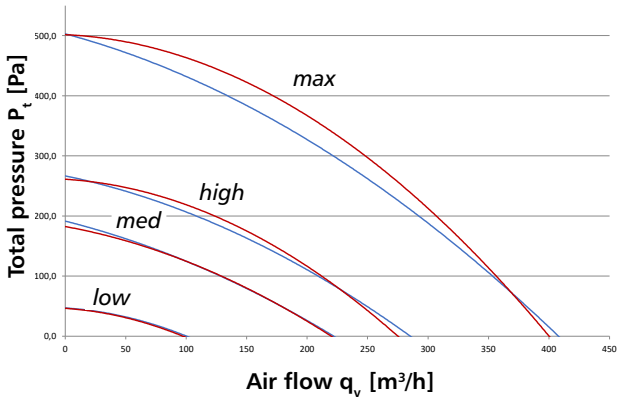
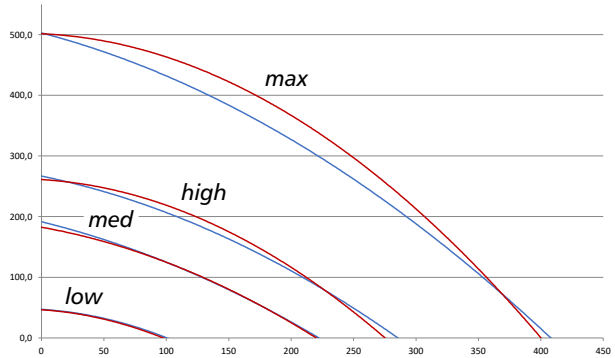
HRU-PremAIR

Air flow and efficiency

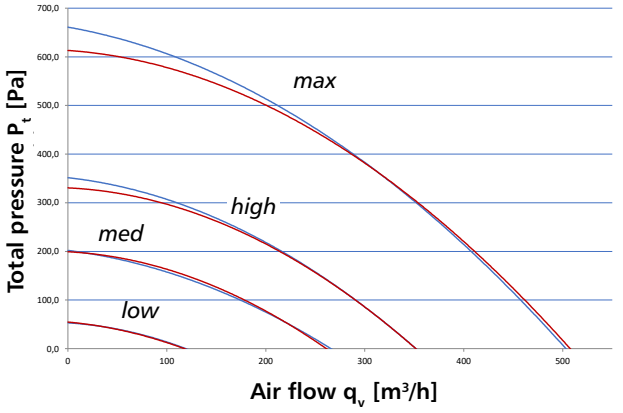
HRU-PremAIR-350 SUPPLY EXHAUST



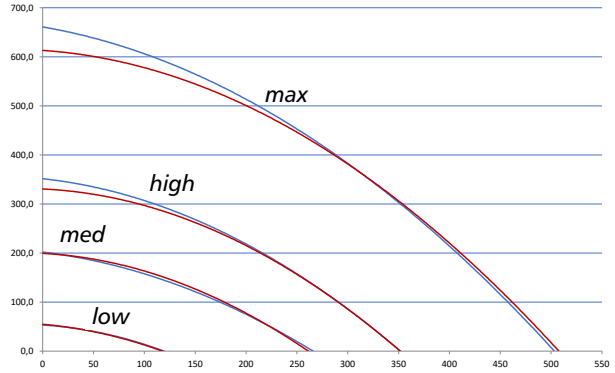
HRU-PremAIR-350E SUPPLY EXHAUST



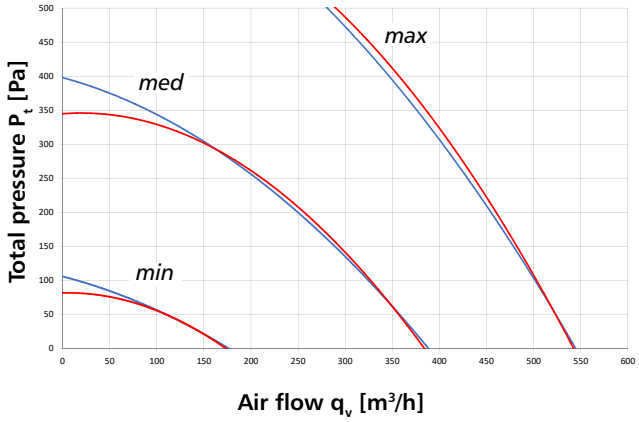
HRU-PremAIR-450 SUPPLY EXHAUST



HRU-PremAir-450E SUPPLY EXHAUST



HRU-PremAir-500 SUPPLY EXHAUST



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Heat recovery ventilation unit with counterflow exchanger

HRU-PremAIR

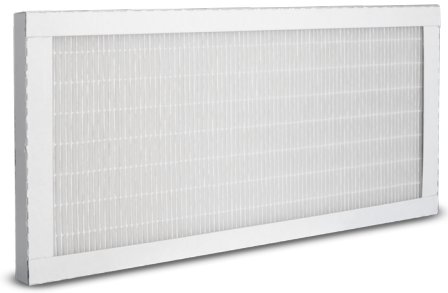
Filters

Filter HRQ-PremAIR-FILT-G4 (standard)

G4 pleated panel filters creates a larger media surface area for air filtration and ensures lower pressure drops. Filters are classified as in the ISO Coarse 70% according to ISO 16890 standards.

Code	*Filter class*	*Dimensionsr [mm]*
HRQ-PremAIR-FILT-G4	ISO Coarse 70 % (old G4)	423x223x23

Filter HRQ-PremAIR-FILT-F7 (optional)



F7 is classified as a fine filter according to EN 779:2012 norm and as ePM_1 55% in accordance with new standard ISO 16890.

Code	*Filter class*	*Dimensions [mm]*
HRQ-PremAir-FILT-F7	ISO ePM1 55% (old F7)	423x223x25

Additional devices

HRU-PremAIR series units can be optionally equipped with a dedicated external electric preheater with a power of 1500W. Heater models vary depending on the heat recovery unit automation system – see the user manual of the unit.

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

Constant Flow (CF)

PremAIR 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 PremAIR 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.

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).

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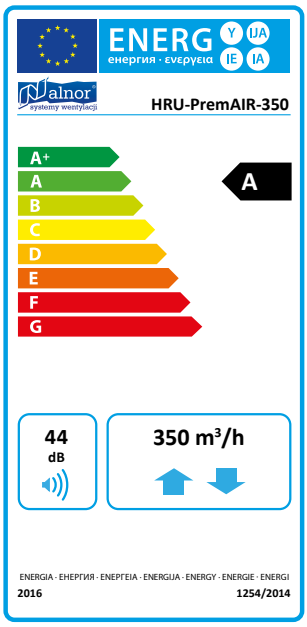
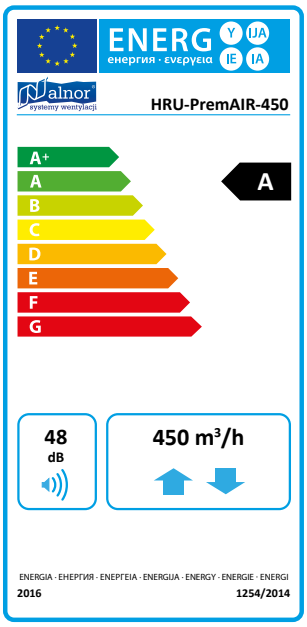
HRU-PremAIR

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-PremAIR-350	44	350	A	A	A	A+
HRU-PremAIR-350-CF	44	350	A	A	A	A+
HRU-PremAIR-350E	44	350	A	A	A	A
HRU-PremAIR-350E-CF	44	350	A	A	A	A
HRU-PremAIR-450	48	450	A	A	A	A+
HRU-PremAIR-450-CF	48	450	A	A	A	A+
HRU-PremAIR-450E	48	450	B	B	A	A
HRU-PremAIR-450E-CF	48	450	B	B	A	A
HRU-PremAIR-500	49	500	A	A	A	A
HRU-PremAIR-500-CF	49	500	A	A	A	A





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Suspended heat recovery unit with a plate heat exchanger

HRU-PremAIR

Product fiche HRU-PremAIR-350

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-PremAIR-350, HRU-PremAIR-350-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 consuption (SEC) [kWh/(m2.a)]	-75,97	**-37,86**	-13,40	-77,01	**-38,74**	-14,18	-78,99	**-40,38**	-15,63	-82,53	**-43,23**	-18,10
SEC class	A+	**A**	E	A+	**A**	E	A+	**A**	E	A+	**A+**	E
The annual electricity consumption (AEC) [kWh/a/100m²]	868	331	286	840	303	258	789	252	207	703	166	121
The annual heating saved (AHS) [kWh/a/100m²]	8895	4547	2056	8929	4565	2064	8999	4600	2080	9137	4671	2112
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	88,9%											
Maximum flow rate [m³/h][2]	350											
Maxium electric power input [W]	144											
Sound power LWA [dB(A)]	44											
Reference flow rate [m³/s][3]	0,068											
Reference pressure difference [Pa][4]	50											
SPI [W/m³/h][5]	0,23											
Declared maxiumum leakages[6]	External: 2,1% Internal: 3,0%											
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 maxiumum air flow
[6] According to EN 13141-7:2010

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Suspended heat recovery unit with a plate heat exchanger

HRU-PremAIR

Product fiche HRU-PremAIR-350E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-PremAIR-350E, HRU-PremAIR-350E-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 consuption (SEC) [kWh/(m2.a)]	-71,84	**-34,77**	-10,91	-72,73	**-35,66**	-11,81	-74,38	**-37,31**	-13,45	-77,12	**-40,06**	-16,20
SEC class	A+	**A**	E	A+	**A**	E	A+	**A**	E	A+	**A**	E
The annual electricity consumption (AEC) [kWh/a/100m²]	948	411	366	912	375	330	846	309	264	737	200	155
The annual heating saved (AHS) [kWh/a/100m²]	8633	4413	1996	8681	4437	2007	8776	4486	2029	8967	4584	2073
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	84,70%											
Maximum flow rate [m³/h][2]	350											
Maxium electric power input [W]	150											
Sound power LWA [dB(A)]	44											
Reference flow rate [m³/s][3]	0,068											
Reference pressure difference [Pa][4]	50											
SPI [W/m³/h][5]	0,29											
Declared maxiumum leakages[6]	External: 1,06% Internal: 1,53%											
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 maxiumum air flow
[6] According to EN 13141-7:2010

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Suspended heat recovery unit with a plate heat exchanger

HRU-PremAIR

Product fiche HRU-PremAIR-450

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-PremAIR-450, HRU-PremAIR-450-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 consuption (SEC) [kWh/(m2.a)]	-73,94	**-36,05**	-11,71	-75,16	**-37,09**	-12,65	-77,47	**-39,04**	-14,39	-81,57	**-42,41**	-17,36
SEC class	A+	**A**	E	A+	**A**	E	A+	**A**	E	A+	**A+**	E
The annual electricity consumption (AEC) [kWh/a/100m²]	932	395	350	898	361	316	835	298	253	730	193	148
The annual heating saved (AHS) [kWh/a/100m²]	8851	4525	2046	8888	4543	2054	8962	4581	2071	9109	4656	2105
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	88,20%											
Maximum flow rate [m³/h][2]	450											
Maxium electric power input [W]	220											
Sound power LWA [dB(A)]	48											
Reference flow rate [m³/s][3]	0,088											
Reference pressure difference [Pa][4]	50											
SPI [W/m³/h][5]	0,28											
Declared maxiumum leakages[6]	External: 1,6% Internal: 2,3%											
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 maxiumum air flow
[6] According to EN 13141-7:2010

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Suspended heat recovery unit with a plate heat exchanger

HRU-PremAIR

Product fiche HRU-PremAIR-450E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-PremAIR-450E, HRU-PremAIR-450E-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 consuption (SEC) [kWh/(m2.a)]	-69,08	**-32,76**	-9,34	-70,09	**-33,78**	-10,35	-71,95	**-35,64**	-12,22	-75,07	**-38,76**	-15,33
SEC class	A+	**B**	F	A+	**B**	E	A+	**A**	E	A+	**A**	E
The annual electricity consumption (AEC) [kWh/a/100m²]	997	460	415	956	419	374	882	345	300	757	220	175
The annual heating saved (AHS) [kWh/a/100m²]	8471	4330	1958	8527	4359	1971	8638	4416	1997	8862	4530	2048
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	82,10%											
Maximum flow rate [m³/h][2]	450											
Maxium electric power input [W]	220											
Sound power LWA [dB(A)]	48											
Reference flow rate [m³/s][3]	0,088											
Reference pressure difference [Pa][4]	50											
SPI [W/m³/h][5]	0,33											
Declared maxiumum leakages[6]	External: 0,82% Internal: 1,19%											
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 maxiumum air flow
[6] According to EN 13141-7:2010

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Suspended heat recovery unit with a plate heat exchanger

HRU-PremAIR

Product fiche HRU-PremAIR-500

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-PremAIR-500, HRU-PremAIR-500-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 consuption (SEC) [kWh/(m2.a)]	-70,46	**-34,61**	-11,44	-71,83	**-35,69**	-12,36	-74,43	**-37,73**	-14,08	-79,15	**-41,32**	-17,02
SEC class	A+	**A**	E	A+	**A**	E	A+	**A**	E	A+	**A**	E
The annual electricity consumption (AEC) [kWh/a/100m²]	904	367	322	873	336	291	815	278	233	718	181	136
The annual heating saved (AHS) [kWh/a/100m²]	8434	4311	1949	8491	4341	1963	8607	4400	1989	8837	4517	2043
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	81,50%											
Maximum flow rate [m³/h][2]	500											
Maxium electric power input [W]	220											
Sound power LWA [dB(A)]	49											
Reference flow rate [m³/s][3]	0,097											
Reference pressure difference [Pa][4]	50											
JPM [W/m³/h][5]	0,26											
Declared maxiumum leakages[6]	External: 0,82% Internal: 1,19%											
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 maxiumum air flow
[6] According to EN 13141-7:2010

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