

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR



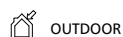
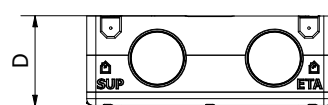
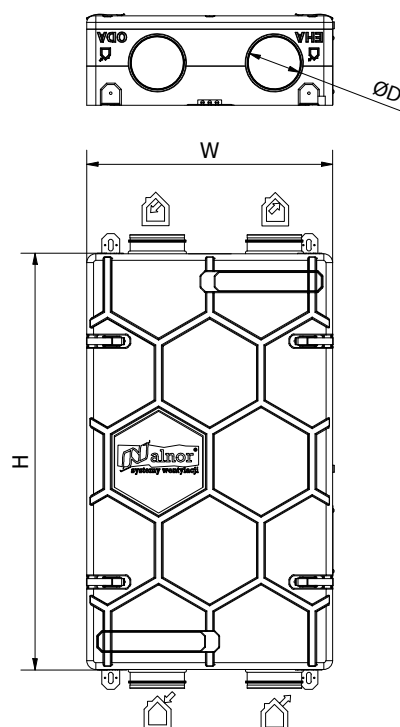
Description

Heat recovery units of the HRU-FlatAIR series are modern units with a capacity of 80, 100, 120, 125, 150, 200, 225 and 250 m³/h @100 Pa. For heat recovery is responsible for counter-current exchanger made of plastic (PET) or enthalpic exchanger that recovers moisture.

Due to their very compact size, they will find use in apartments and condominiums. This allows the entire installation to be built into a suspended ceiling without taking up any usable space. This is particularly important with this method of installation. An additional advantage is the design that allows full service of the unit without the need to disassemble the unit.

A built-in electric heater protects the heat exchanger from freezing, and a built-in RH sensor takes care of the optimal humidity level in the house. The recuperator connects to the controller and additional sensors via wireless radio communication. In addition, the HRU-FlatAIR unit can be connected to the Internet and controlled using a mobile app. The recuperator is made of self-supporting EPP construction, which is characterized by strength, lightness as well as very good thermal and acoustic insulation.

Dimensions



OUTDOOR



EXHAUST



SUPPLY



EXTRACT

	ØD [mm]	W [mm]	H [mm]	D [mm]
FlatAIR-80	100	500	800	170
FlatAIR-100	100	500	800	170
FlatAIR-120	125	550	930	200
FlatAIR-125	100	500	800	170
FlatAIR-150	125	550	930	200
FlatAIR-200	125	550	930	200
FlatAIR-225	125	550	930	200
FlatAIR-250	125	550	930	200

Heat recovery selector



Product code example

Product Code: **HRU-FlatAIR - 150E- H -CF - P**

type

air flow

enthalpic heat exchanger

pre-heater

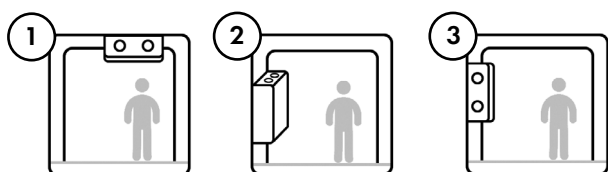
constant flow

wired control

Heat recovery ventilation unit with counterflow exchanger

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Version installation



Installation / Model	FlatAIR-80-H	FlatAIR-100-H	FlatAIR-120-H	FlatAIR-125-H	FlatAIR-150-H	FlatAIR-200-H	FlatAIR-225-H	FlatAIR-250-H
Suspended	✓	✓	✓	✓	✓	✓	✓	✓
Vertical	✓	✓	✓	✓	✓	✓	✓	✓
Horizontal	✓*	✓*	✓*	✓*	✓*	✓*	✓*	✓*

*versions with enthalpy exchanger only

Technical data

	HRU-FlatAIR-80-H	HRU-FlatAIR-80E-H	HRU-FlatAIR-100-H	HRU-FlatAIR-100E-H
Air flow [m³/h] @ 100 Pa	80	80	100	100
Maximal efficiency % ¹	92,3	85,0	97,3	84,0
Efficiency % (acc. 1254/2014) ²	88,4	82,0	90,3	79,0
Maximal moisture efficiency %	-	77,0	-	76,0
Heat exchanger	Counterflow PET	Enthalpy	Counterflow PET	Enthalpy
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	29	26	47	45
Sound power level L_{WA} [dB (A)]	42	42	46	46
Weight [kg]	15	15	15	15
Filters	ISO Coarse 70% / ISO Coarse 70%			
Built-in pre-heater	✓	✓	✓	✓
Pre-heater power [W]	1000	1000	1000	1000
Built-in RH sensor	✓	✓	✓	✓

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HRU-FlatAIR

	HRU-FlatAIR-120-H	HRU-FlatAIR-120E-H	HRU-FlatAIR-125-H	HRU-FlatAIR-125E-H
Air flow [m³/h] @ 100 Pa	120	120	125	125
Maximal efficiency % ¹	94,3	86,0	96,8	82
Efficiency % (acc. 1254/2014) ²	86,6	83,1	85,8	76
Maximal moisture efficiency %	-	83,0	-	75,0
Heat exchanger	Counterflow PET	Enthalpy	Counterflow PET	Enthalpy
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	45	45	67	74
Sound power level L _{WA} [dB (A)]	39	39	49	49
Weight [kg]	22	22	15	15
Filters	ISO Coarse 70% / ISO Coarse 70%			
Built-in pre-heater	✓	✓	✓	✓
Pre-heater power [W]	1000	1000	1000	1000
Built-in RH sensor	✓	✓	✓	✓

	HRU-FlatAIR-150-H	HRU-FlatAIR-150E-H	HRU-FlatAIR-200-H	HRU-FlatAIR-200E-H
Air flow [m³/h] @ 100 Pa	150	150	200	200
Maximal efficiency % ¹	92,7	85,0	88,5	84,5
Efficiency % (acc. 1254/2014) ²	88,5	80,0	85,6	76
Maximal moisture efficiency %	-	82,0	-	78,2
Heat exchanger	Counterflow PET	Enthalpy	Counterflow PET	Enthalpy
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	53	54	78	93
Sound power level L _{WA} [dB (A)]	44	44	46	46
Weight [kg]	22	22	22	22
Filters	ISO Coarse 70% / ISO Coarse 70%			
Built-in pre-heater	✓	✓	✓	✓
Pre-heater power [W]	1200	1200	1200	1200
Built-in RH sensor	✓	✓	✓	✓

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

	HRU-FlatAIR-225-H	HRU-FlatAIR-225E-H	HRU-FlatAIR-250-H	HRU-FlatAIR-250E-H
Air flow [m³/h] @ 100 Pa	225	225	250	250
Maximal efficiency % ¹	89,7	82	91,3	83
Efficiency % (acc. 1254/2014) ²	85,7	75	84,5	73
Maximal moisture efficiency %	-	76	-	75
Heat exchanger	Counterflow PET	Enthalpy	Counterflow PET	Enthalpy
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	107	105	130	136
Sound power level L _{WA} [dB (A)]	46	46	48	48
Weight [kg]	22	22	22	22
Filters	ISO Coarse 70% / ISO Coarse 70%			
Built-in pre-heater	✓	✓	✓	✓
Pre-heater power [W]	1500	1500	1500	1500
Built-in RH sensor	✓	✓	✓	✓

¹ Maximal thermal efficiency acc. to EN13141-7 at minimum air flow

² Recovery efficiency at the reference point, that is, about 70% of the maximum flow according to EN 13141-7, according to EU 1253/2014 and EU 1254/2014

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

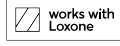
Wireless control

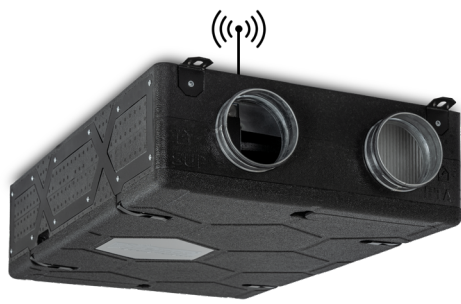
HRQ-SW3-I 

HRQ-BUT-LM11 

HRQ-BUT-LM04 

HRQ-BUT-LCD 

HRQ-MODBUS  




HRQ-2ZONE 

 HRQ-SENS-CO2 

 HRQ-SENS-I-CO2 

 HRQ-SENS-RH 

 HRQ-SENS-PIR 

 HRQ-GATE 



Wired control



LOXONE
SMART HOME

HRQ-BUT-PG15  

HRQ-BUT-LCD-P5  

HRQ-SENS-CO2RH-P

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Heat recovery selector

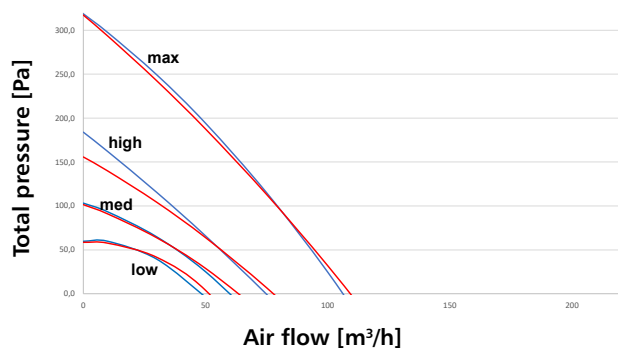


Heat recovery ventilation unit with counterflow exchanger

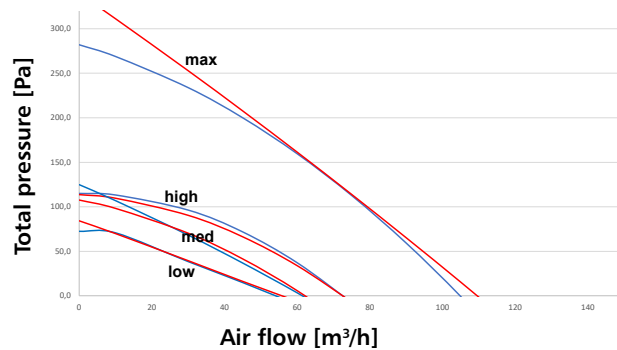
HRU-FlatAIR

Air flow

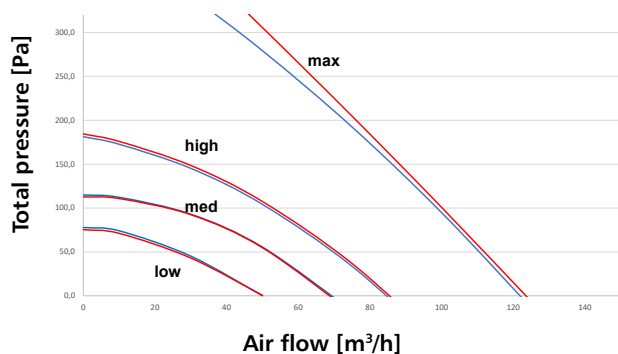
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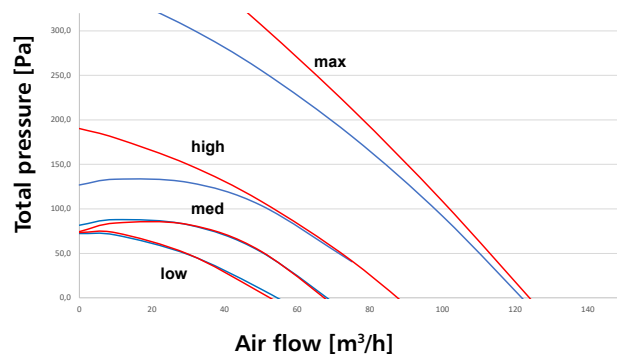
HRU-FlatAIR-80E-H — SUPPLY — EXHAUST



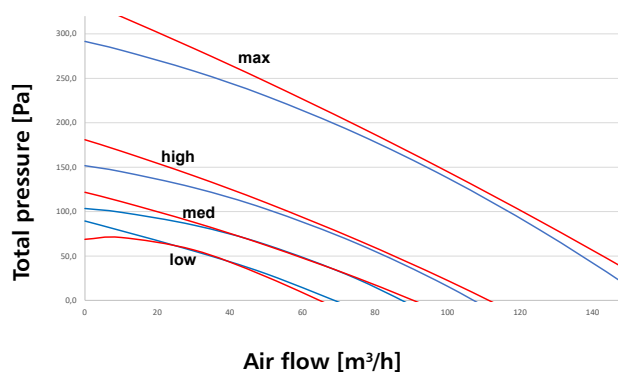
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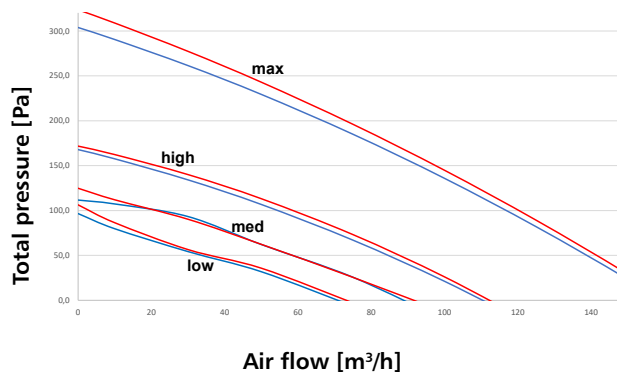
HRU-FlatAIR-100E-H — SUPPLY — EXHAUST



HRU-FlatAIR-120-H — SUPPLY — EXHAUST



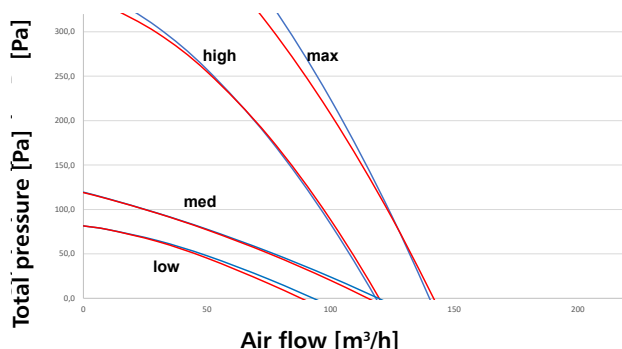
HRU-FlatAIR-120E-H — SUPPLY — EXHAUST



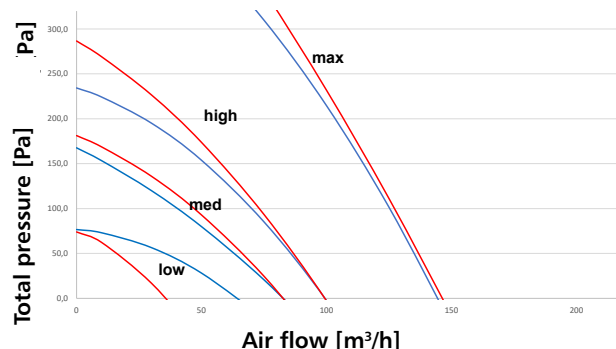
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HRU-FlatAIR

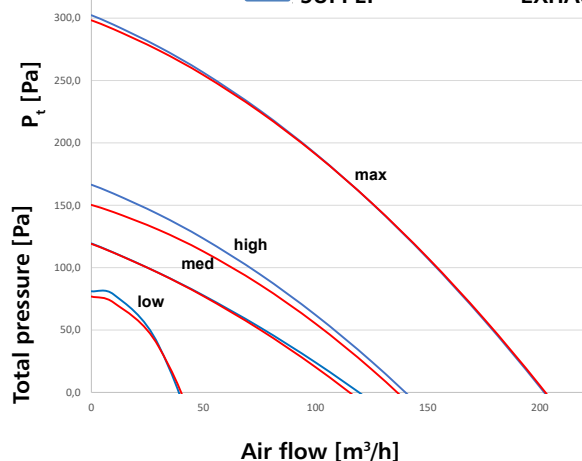
HRU-FlatAIR-125-H — SUPPLY — EXHAUST



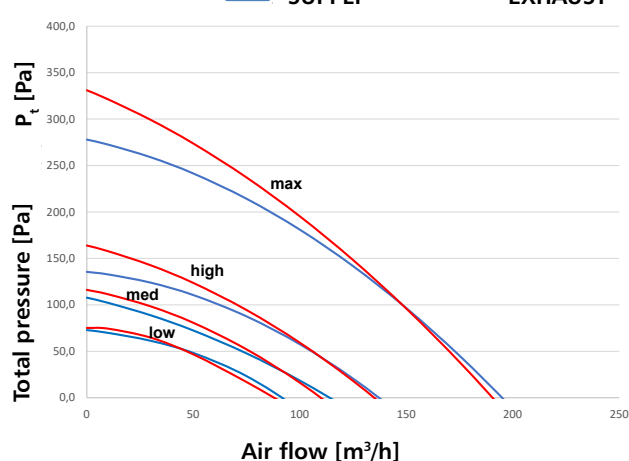
HRU-FlatAIR-125E-H — SUPPLY — EXHAUST



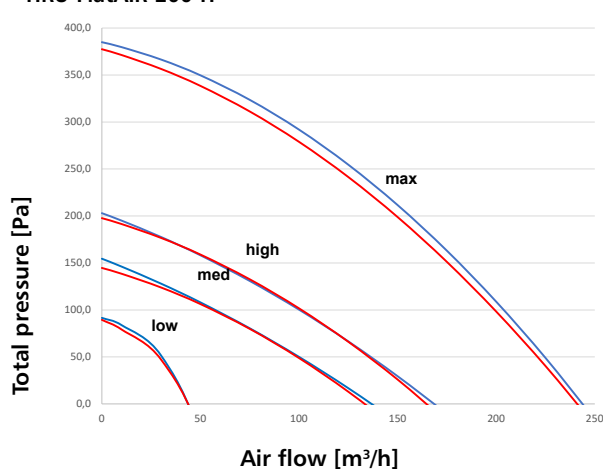
HRU-FlatAIR-150-H — SUPPLY — EXHAUST



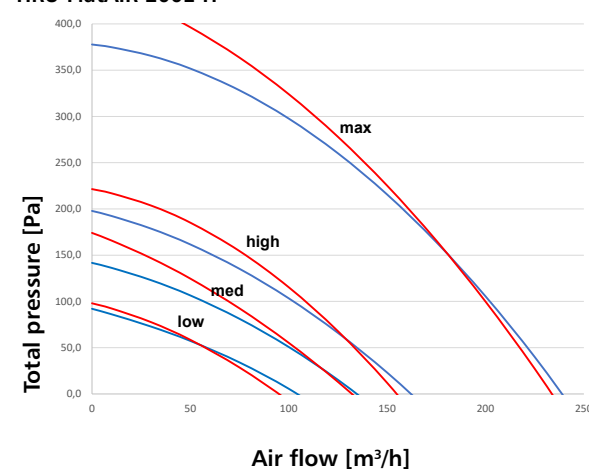
HRU-FlatAIR-150E-H — SUPPLY — EXHAUST



HRU-FlatAIR-200-H — SUPPLY — EXHAUST



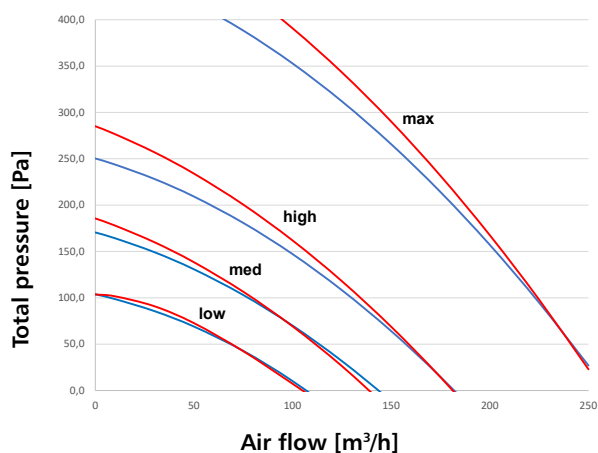
HRU-FlatAIR-200E-H — SUPPLY — EXHAUST



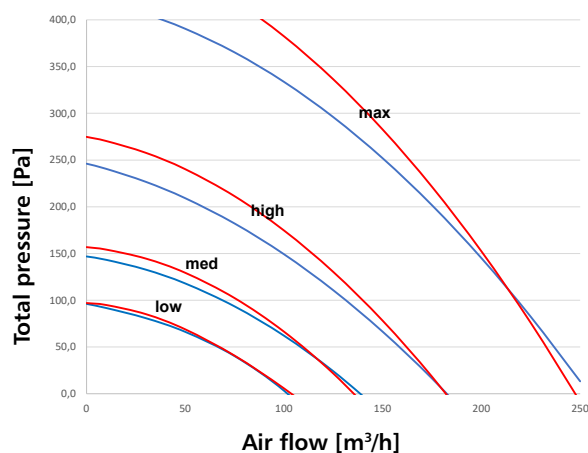
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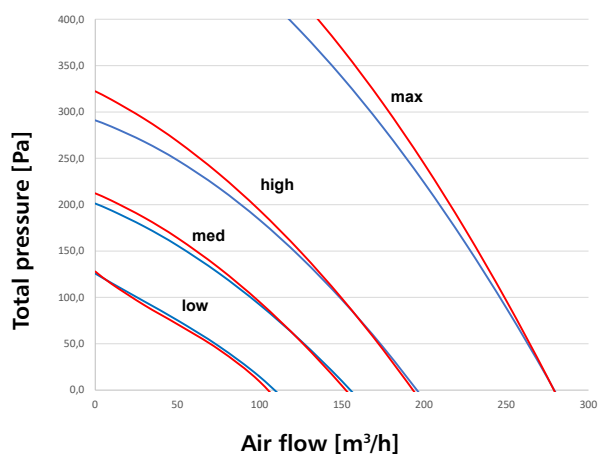
HRU-FlatAIR-225-H — SUPPLY — EXHAUST



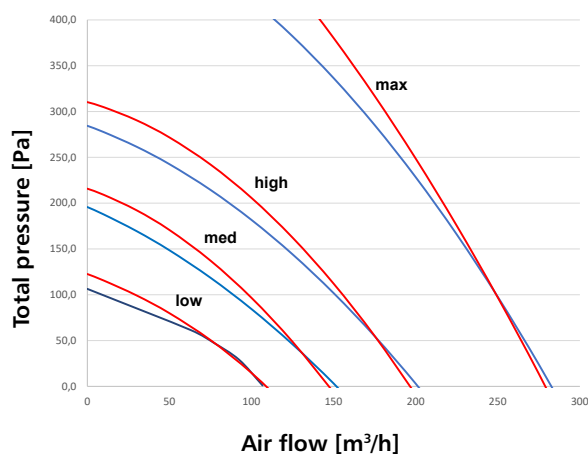
HRU-FlatAIR-225E-H — SUPPLY — EXHAUST



HRU-FlatAIR-250-H — SUPPLY — EXHAUST



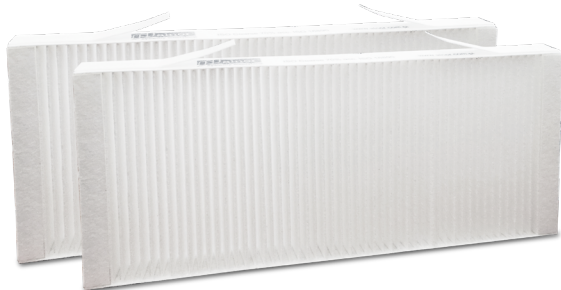
HRU-FlatAIR-250E-H — SUPPLY — EXHAUST



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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-FlatAIR-80	HRQ-FlatAIR-100-FILT-C70	ISO Coarse 70%
HRU-FlatAIR-100	HRQ-FlatAIR-100-FILT-ePM155	ISO ePM ₁ 55%
HRU-FlatAIR-125		
HRU-FlatAIR-120	HRQ-FlatAIR-200-FILT-C70	ISO Coarse 70%
HRU-FlatAIR-150		
HRU-FlatAIR-200	HRQ-FlatAIR-200-FILT-ePM155	ISO ePM ₁ 55%
HRU-FlatAIR-225		
HRU-FlatAIR-250		

Constant Flow (CF)

FlatAIR 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 FlatAIR 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

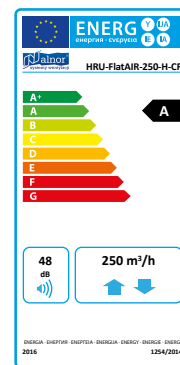
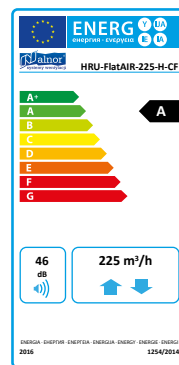
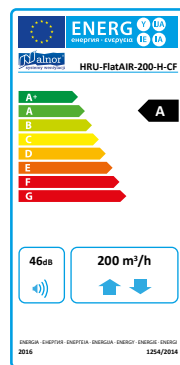
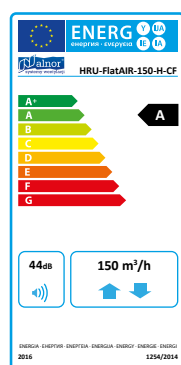
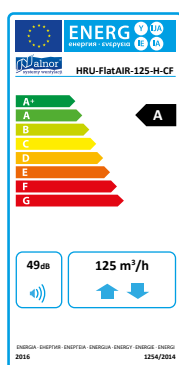
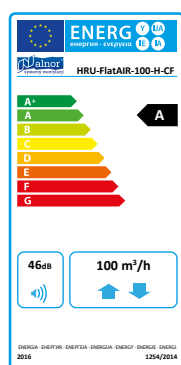
Heat recovery unit has a possibility to connect the ground heat exchanger. This function allows you to control a valve that optionally supply air through the ground-to-air heating system. To do this, install a dedicated damper with the actuator (DATVTML).

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

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 sensors)
HRU-FlatAIR-80-H	42	80	A	A	A	A+
HRU-FlatAIR-80-H-CF	42	80	A	A	A	A+
HRU-FlatAIR-80E-H	42	80	A	A	A	A+
HRU-FlatAIR-80E-H-CF	42	80	A	A	A	A+
HRU-FlatAIR-100-H	46	100	A	A	A	A+
HRU-FlatAIR-100-H-CF	46	100	A	A	A	A+
HRU-FlatAIR-100E-H	46	100	A	A	A	A
HRU-FlatAIR-100E-H-CF	46	100	A	A	A	A
HRU-FlatAIR-120-H	39	120	A	A	A	A+
HRU-FlatAIR-120-H-CF	39	120	A	A	A	A+
HRU-FlatAIR-120E-H	39	120	A	A	A	A
HRU-FlatAIR-120E-H-CF	39	120	A	A	A	A
HRU-FlatAIR-125-H	49	125	A	A	A	A
HRU-FlatAIR-125-H-CF	49	125	A	A	A	A
HRU-FlatAIR-125E-H	49	125	B	B	A	A
HRU-FlatAIR-125E-H-CF	49	125	B	B	A	A
HRU-FlatAIR-150-H	44	150	A	A	A	A+
HRU-FlatAIR-150-H-CF	44	150	A	A	A	A+
HRU-FlatAIR-150E-H	44	150	B	A	A	A
HRU-FlatAIR-150E-H-CF	44	150	B	A	A	A
HRU-FlatAIR-200-H	46	200	A	A	A	A
HRU-FlatAIR-200-H-CF	46	200	A	A	A	A
HRU-FlatAIR-200E-H	46	200	B	A	A	A
HRU-FlatAIR-200E-H-CF	46	200	B	A	A	A
HRU-FlatAIR-225-H	46	225	A	A	A	A+
HRU-FlatAIR-225-H-CF	46	225	A	A	A	A+
HRU-FlatAIR-225E-H	46	225	B	B	A	A
HRU-FlatAIR-225E-H-CF	46	225	B	B	A	A
HRU-FlatAIR-250-H	48	250	A	A	A	A
HRU-FlatAIR-250-H-CF	48	250	A	A	A	A
HRU-FlatAIR-250E-H	48	250	B	B	B	A
HRU-FlatAIR-250E-H-CF	48	250	B	B	B	A



Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR**Product fiche HRU-FlatAIR-80****Commission Regulation (UE) Nr 1253/2014, 1254/2014, Annex IV**

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-80-H, HRU-FlatAIR-80-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)]	-75,55	-37,59	-13,22	-76,62	-38,48	-14,01	-78,65	-40,16	-15,49	-82,28	-43,08	-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]	873	336	291	844	307	262	792	255	210	705	168	123
The annual heating saved (AHS) [kWh/a/100m ²]	8864	4531	2049	8900	4549	2057	8972	4586	2074	9117	4660	4660
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	88,4%											
Maximum flow rate [m ³ /h] ²	80											
Maxium electric power input [W]	29											
Sound power LWA [dB(A)]	42											
Reference flow rate [m ³ /s] ³	0,016											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,23											
Declared maximum leakages ⁶	External: 4,00% Internal: 1,50%											
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 13141-7:2010² According to EN 13141-7:2010 at pressure difference 100Pa³ According to EN 13141-7:2010 at 70% of maximum flow at static pressure difference 50Pa⁴ According to EN 13141-7:2010⁵ According to EN 13141-7:2010 at reference point - 70% of maximum air flow⁶ According to EN 13141-7:2010

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-80E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-80E-H, HRU-FlatAIR-80E-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)]	-73,80	-37,79	-14,53	-74,85	-38,57	-15,15	-76,88	-40,04	-16,32	-80,63	-42,70	-18,35
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	783	246	201	764	227	182	727	190	145	667	130	85
The annual heating saved (AHS) [kWh/a/100m ²]	8465	4327	1957	8521	4356	1970	8633	4413	1996	8857	4528	2047
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	82,0%											
Maximum flow rate [m ³ /h] ²	80											
Maximum electric power input [W]	26											
Sound power LWA [dB(A)]	42											
Reference flow rate [m ³ /s] ³	0,016											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,16											
Declared maximum leakages ⁶	External: 4,00% Internal: 4,27%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR**Product fiche HRU-FlatAIR-100****Commission Regulation (UE) Nr 1253/2014, 1254/2014, Annex IV**

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-100-H, HRU-FlatAIR-100-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)]	-76,04	-37,50	-12,80	-77,12	-38,43	-13,64	-79,15	-40,17	-15,22	-82,75	-43,18	-17,89
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	901	364	319	869	332	287	812	275	230	717	180	135
The annual heating saved (AHS) [kWh/a/100m ²]	8982	4591	2076	9012	4607	2083	9073	4638	2097	9194	4700	2125
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	90,30%											
Maximum flow rate [m ³ /h] ²	100											
Maximum electric power input [W]	47											
Sound power LWA [dB(A)]	46											
Reference flow rate [m ³ /s] ³	0,019											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,25											
Declared maximum leakages ⁶	External: 4,00% Internal: 1,50%											
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 13141-7:2010² According to EN 13141-7:2010 at pressure difference 100Pa³ According to EN 13141-7:2010 at 70% of maximum flow at static pressure difference 50Pa⁴ According to EN 13141-7:2010⁵ According to EN 13141-7:2010 at reference point - 70% of maximum air flow⁶ According to EN 13141-7:2010

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-100E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-100E-H, HRU-FlatAIR-100E-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)]	-69,18	-34,08	-11,35	-70,59	-35,17	-12,26	-73,30	-37,24	-13,96	-78,25	-40,92	-16,90
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	893	356	311	863	326	281	807	270	225	714	177	132
The annual heating saved (AHS) [kWh/a/100m ²]	8278	4232	1913	8343	4265	1929	8474	4332	1959	8736	4466	2019
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	79,0%											
Maximum flow rate [m ³ /h] ²	100											
Maximum electric power input [W]	45											
Sound power LWA [dB(A)]	46											
Reference flow rate [m ³ /s] ³	0,019											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,25											
Declared maximum leakages ⁶	External: 4,00% Internal: 4,27%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-120

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-120-H, HRU-FlatAIR-120-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)]	-74,24	-36,83	-12,77	-75,38	-37,77	-13,60	-77,56	-39,54	-15,13	-81,47	-42,63	-17,75
SEC class	A+	A	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	86,6%											
Maximum flow rate [m ³ /h] ²	120											
Maximum electric power input [W]	45											
Sound power LWA [dB(A)]	39											
Reference flow rate [m ³ /s] ³	0,023											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,24											
Declared maximum leakages ⁶	External: 4,80% Internal: 1,31%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-120E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-120E-H, HRU-FlatAIR-120E-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)]	-72,06	-35,71	-12,27	-73,31	-36,71	-13,12	-75,71	-38,59	-14,70	-80,05	-41,90	-17,43
SEC class	A+	A	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]	8533	4362	1972	8586	4389	1985	8691	4443	2009	8902	4551	2058
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	83,1%											
Maximum flow rate [m ³ /h] ²	120											
Maximum electric power input [W]	45											
Sound power LWA [dB(A)]	39											
Reference flow rate [m ³ /s] ³	0,023											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,24											
Declared maximum leakages ⁶	External: 4,80% Internal: 4,76%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-125

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-125-H, HRU-FlatAIR-125-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)]	-71,46	-34,30	-10,38	-72,85	-35,47	-11,43	-75,49	-37,68	-13,39	-80,18	-41,50	-16,72
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	971	434	389	933	396	351	863	326	281	747	210	165
The annual heating saved (AHS) [kWh/a/100m ²]	8702	4448	2011	8746	4471	2022	8834	4516	2042	9011	4606	2083
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	85,8%											
Maximum flow rate [m ³ /h] ²	125											
Maximum electric power input [W]	67											
Sound power LWA [dB(A)]	49											
Reference flow rate [m ³ /s] ³	0,024											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,31											
Declared maximum leakages ⁶	External: 1,40% 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											

¹ According to EN 13141-7:2010

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

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-125E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-125E-H, HRU-FlatAIR-125E-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)]	-66,11	-31,93	-9,72	-67,73	-33,18	-10,77	-70,84	-35,57	-12,73	-76,53	-39,79	-16,12
SEC class	A+	B	F	A+	B	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	941	404	359	906	369	324	842	305	260	734	197	152
The annual heating saved (AHS) [kWh/a/100m ²]	8091	4136	1870	8166	4174	1888	8315	4251	1922	8614	4404	1991
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	76,0%											
Maximum flow rate [m ³ /h] ²	125											
Maxium electric power input [W]	74											
Sound power LWA [dB(A)]	49											
Reference flow rate [m ³ /s] ³	0,024											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,29											
Declared maxiumum leakages ⁶	External: 1,40% Internal: 3,42%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR**Product fiche HRU-FlatAIR-150****Commission Regulation (UE) Nr 1253/2014, 1254/2014, Annex IV**

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-150-H, HRU-FlatAIR-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 ² .a)]	-73,79	-36,75	-12,90	-74,94	-37,68	-13,70	-77,14	-39,43	-15,20	-81,11	-42,51	-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]	868	331	286	840	303	258	789	252	207	703	166	121
The annual heating saved (AHS) [kWh/a/100m ²]	8677	4435	2006	8722	4459	2016	8813	4505	2037	8995	4598	2079
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	85,40%											
Maximum flow rate [m ³ /h] ²	150											
Maximum electric power input [W]	53											
Sound power LWA [dB(A)]	44											
Reference flow rate [m ³ /s] ³	0,029											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,23											
Declared maximum leakages ⁶	External: 3,38% 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 13141-7:2010² According to EN 13141-7:2010 at pressure difference 100Pa³ According to EN 13141-7:2010 at 70% of maximum flow at static pressure difference 50Pa⁴ According to EN 13141-7:2010⁵ According to EN 13141-7:2010 at reference point - 70% of maximum air flow⁶ According to EN 13141-7:2010

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-150E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-150E-H, HRU-FlatAIR-150E-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)]	-68,55	-33,15	-10,24	-70,05	-34,35	-11,27	-72,92	-36,61	-13,18	-78,13	-40,60	-16,47
SEC class	A+	B	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	943	406	361	908	371	326	843	306	261	735	198	153
The annual heating saved (AHS) [kWh/a/100m ²]	8340	4263	1928	8403	4295	1942	8527	4359	1971	8776	4486	2029
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	80,0%											
Maximum flow rate [m ³ /h] ²	150											
Maximum electric power input [W]	54											
Sound power LWA [dB(A)]	44											
Reference flow rate [m ³ /s] ³	0,029											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,29											
Declared maximum leakages ⁶	External: 3,38% Internal: 3,81%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-200

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-200-H, HRU-FlatAIR-200-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)]	-72,12	-35,02	-11,14	-73,45	-36,12	-12,11	-75,95	-38,19	-13,93	-80,43	-41,79	-17,03
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	940	403	358	905	368	323	841	304	259	733	196	151
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	85,6%											
Maximum flow rate [m ³ /h] ²	200											
Maximum electric power input [W]	78											
Sound power LWA [dB(A)]	46											
Reference flow rate [m ³ /s] ³	0,039											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,29											
Declared maximum leakages ⁶	External: 2,54% Internal: 2,86%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-200E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-200E-H, HRU-FlatAIR-200E-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)]	-67,08	-32,90	-10,69	-68,61	-34,06	-11,65	-71,55	-36,27	-13,43	-76,94	-40,20	-16,53
SEC class	A+	B	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	902	365	320	871	334	289	813	276	231	717	180	135
The annual heating saved (AHS) [kWh/a/100m ²]	8091	4136	1870	8166	4174	1888	8315	4251	1922	8614	4404	1991
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	76,0%											
Maximum flow rate [m ³ /h] ²	200											
Maxium electric power input [W]	93											
Sound power LWA [dB(A)]	46											
Reference flow rate [m ³ /s] ³	0,039											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,26											
Declared maxiumum leakages ⁶	External: 2,54% Internal: 2,86%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-225

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-225-H, HRU-FlatAIR-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 ² .a)]	-73,18	-36,05	-12,15	-74,40	-37,05	-13,02	-76,72	-38,94	-14,66	-80,89	-42,23	-17,46
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	900	363	318	869	332	287	812	275	230	716	179	134
The annual heating saved (AHS) [kWh/a/100m ²]	8695	4445	2010	8740	4468	2020	8829	4513	2041	9007	4604	2082
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	85,7%											
Maximum flow rate [m ³ /h] ²	225											
Maxium electric power input [W]	107											
Sound power LWA [dB(A)]	46											
Reference flow rate [m ³ /s] ³	0,044											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,25											
Declared maximum leakages ⁶	External: 2,25% Internal: 2,83%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-225E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-225E-H, HRU-FlatAIR-225E-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)]	-64,49	-30,61	-8,58	-66,24	-31,98	-9,73	-69,59	-34,57	-11,89	-75,70	-39,16	-15,60
SEC class	A+	B	F	A+	B	F	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	981	444	399	942	405	360	870	333	288	751	214	169
The annual heating saved (AHS) [kWh/a/100m ²]	8029	4104	1856	8107	4144	1874	8262	4224	1910	8574	4383	1982
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	75,0%											
Maximum flow rate [m ³ /h] ²	225											
Maximum electric power input [W]	105											
Sound power LWA [dB(A)]	46											
Reference flow rate [m ³ /s] ³	0,044											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,33											
Declared maximum leakages ⁶	External: 1,25% Internal: 2,54%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-250

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-250-H, HRU-FlatAIR-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)]	-71,62	-34,85	-11,16	-72,96	-35,95	-12,12	-75,50	-38,02	-13,93	-80,06	-41,64	-17,00
SEC class	A+	A	E	A+	A	E	A+	A	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	933	396	351	899	362	317	835	298	253	730	193	148
The annual heating saved (AHS) [kWh/a/100m ²]	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 ¹	84,5%											
Maximum flow rate [m ³ /h] ²	250											
Maximum electric power input [W]	130											
Sound power LWA [dB(A)]	48											
Reference flow rate [m ³ /s] ³	0,049											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,28											
Declared maximum leakages ⁶	External: 2,03% Internal: 2,54%											
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 at pressure difference 100Pa

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

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

Heat recovery ventilation unit with counterflow exchanger

HRU-FlatAIR

Product fiche HRU-FlatAIR-250

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-FlatAIR-250E-H, HRU-FlatAIR-250E-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)]	-62,95	-29,68	-8,00	-64,79	-31,11	-9,19	-68,32	-33,82	-11,43	-74,77	-38,62	-15,29
SEC class	A+	B	F	A+	B	F	A+	B	E	A+	A	E
The annual electricity consumption (AEC) [kWh/a/100m ²]	993	456	411	953	416	371	879	342	297	756	219	174
The annual heating saved (AHS) [kWh/a/100m ²]	7904	4040	1827	7988	4083	1846	8156	4169	1885	8493	4341	1963
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency ¹	73,0%											
Maximum flow rate [m ³ /h] ²	250											
Maxium electric power input [W]	136											
Sound power LWA [dB(A)]	48											
Reference flow rate [m ³ /s] ³	0,049											
Reference pressure difference [Pa] ⁴	50											
SPI [W/m ³ /h] ⁵	0,33											
Declared maximum leakages ⁶	External: 2,03% Internal: 2,29%											
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 at pressure difference 100Pa

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

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