Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

works with Loxone

Description

HRU-MinistAIR residential heat recovery units are a new version of a well recognized model, based on a completely new design. Airflows of 250, 325 or 350 m³/h and self-supporting casing made of EPP, acting as thermal and acoustic insulation at the same time. Counter-flow heat exchangers, made of PET, are responsible for heat recovery and enthalpic exchangers (E) recover moisture.In addition, the built-in RH sensor will take care of moisture level in the building. Left and Right version, together with horizontal installation, will allow you to adapt the unit to almost each project. Moreover, 56 cm width will allow installation in narrow spaces or wardrobes.

HRU-MinistAIR units can be equipped with a Constant Flow (CF) module. Wireless communication is used, likewise other series, both for controllers and IAQ sensors. Control is possible also via a mobile application.
The electric pre-heater will provide an additional frost protection for the heat exchanger.

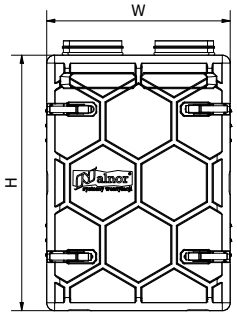
Heat recovery selector

Product code example

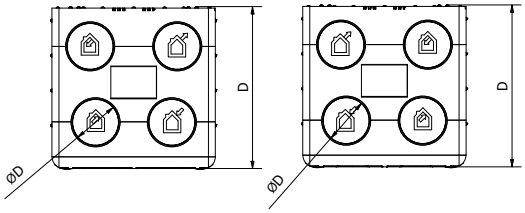
Product code: **HRU-MinistAIR - L - 250E - H - CF - P**

- type
- version
- air flow
- enthalpic heat exchanger
- pre-heater
- constant flow
- wired control

Dimensions



HRU-MinistAIR-L-... **HRU-MinistAIR-R-...**



OUTDOOR EXHAUST

SUPPLY EXTRACT

	ØD [mm]	W [mm]	H [mm]	D [mm]
MinistAIR-250	160	560	780	550
MinistAIR-325	160	560	780	550
MinistAIR-350	160	560	780	550

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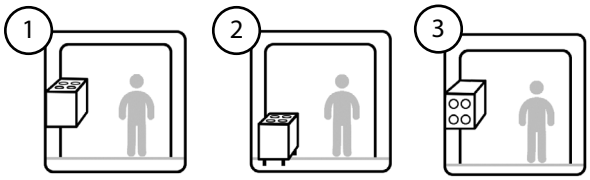
HRU-MinistAIR

Installation



Installation / Model	HRU-MinistAIR-250-H	HRU-MinistAIR-325-H	HRU-MinistAIR-350-H
Vertical	√	√	√
Horizontal	√	√	√

Technical data

	HRU-MinistAIR-250-H	HRU-MinistAIR-250E-H	HRU-MinistAIR-325-H	HRU-MinistAIR-325E-H	HRU-MinistAIR-350-H	HRU-MinistAIR-350E-H
Air flow [m³/h] @ 100 Pa	250	250	325	325	350	350
Maximal efficiency %[1]	96,0	92,0	95,5	88,0	93,7	87,3
Efficiency % (acc. 1254/2014)[2] Efficiency % (acc. 1254/2014)[2]	91	82,4	91,4	80,1	88,1	79,7
Maximal moisture efficiency %	-	77,8	-	74,8	-	74
Heat exchanger	counterflow PET	enthalpy	counterflow PET	enthalpy	counterflow PET	enthalpy
Voltage [V/Hz]	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
Maximum power consumption [W]	106	94	160	160	177	177
Sound power level L_{WA}[dB (A)]	48	48	49	49	53	53
Weight [kg]	25	25	25	25	25	25
Filters	ISO Coarse 70% / ISO Coarse 70%					
Built-in pre-heater	√	√	√	√	√	√
Pre-heater	1500	1500	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-MinistAIR

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

Heat recovery selector

air.alnor.com.pl

alnor AIR

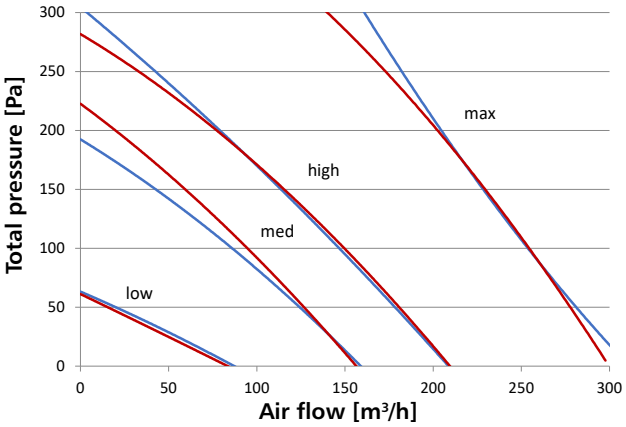
alnor service AIR

Heat recovery ventilation unit with counterflow exchanger

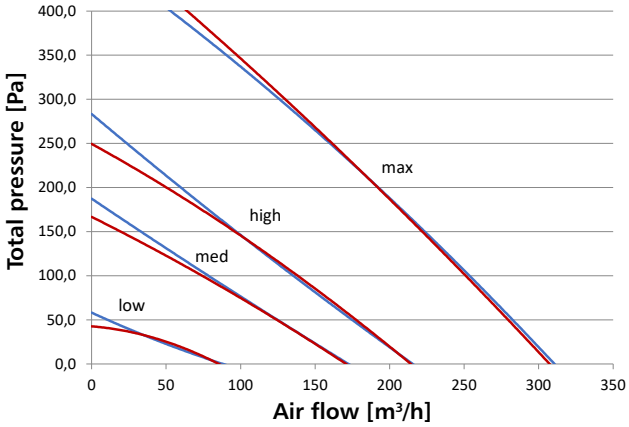
HRU-MinistAIR

Air flow and efficiency

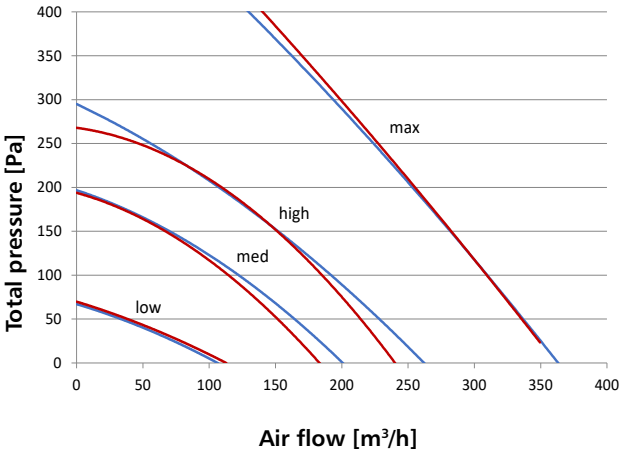
HRU-MinistAIR-250-H SUPPLY EXHAUST



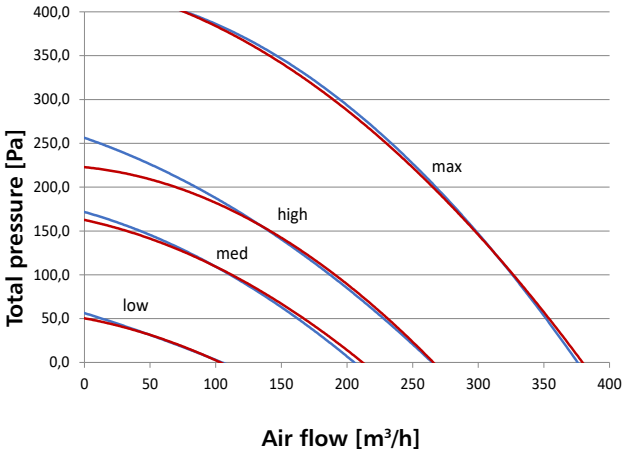
HRU-MinistAIR-250E-H SUPPLY EXHAUST



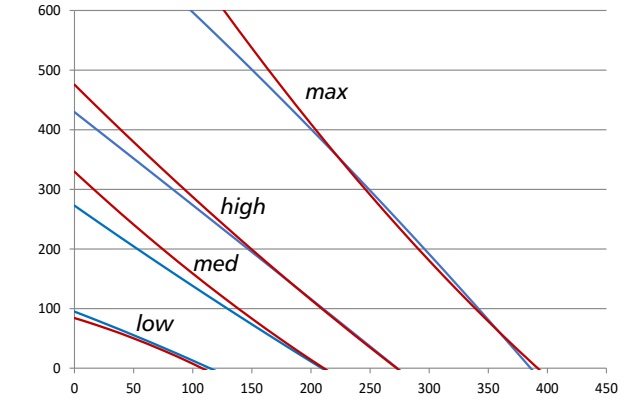
HRU-MinistAIR-325-H SUPPLY EXHAUST



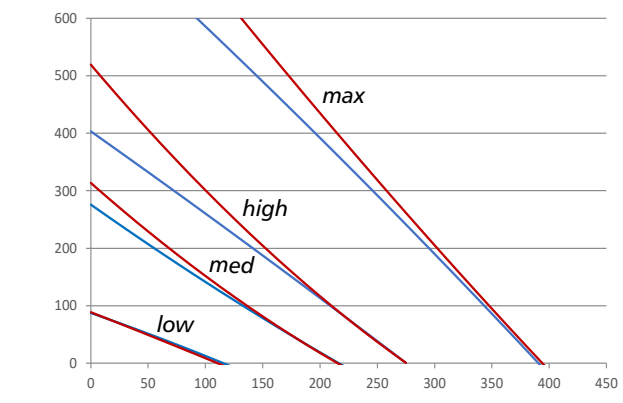
HRU-MinistAIR-325E-H SUPPLY EXHAUST



HRU-MinistAIR-350-H



HRU-MinistAIR-350E-H



Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Filtres

Alnor's heat recovery unit code	*Filters code*	*ISO filtration class 16890*	*Filtration class in accordance with EN 779:2012*	*Dimensions [mm]*
HRU-MinistAIR-250/325/350	HRF-MinistAIR-G4-280-182-23	ISO coarse 70%	G4	280x182x23
HRU-MinistAIR-250/325/350	HRF-MinistAIR-F7-280-182-23	ISO ePM1 55%	F7	280x182x23

HRQ-MinistAIR-FILT-C70 (standard)
HRQ-MinistAIR-MinistAIR-FILT-ePM155 (option)

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.

Additional devices

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

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 MinistAIR 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.

Constant Flow (CF)

MinistAIR 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.

Connecting the ground heat exchanger

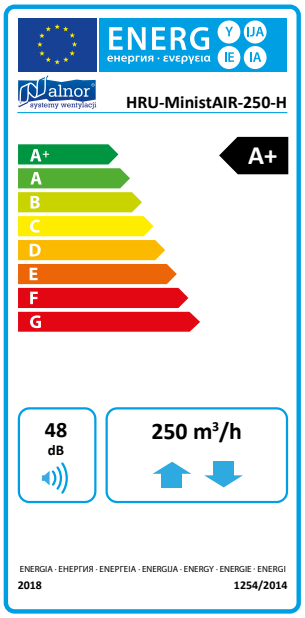
Heat recovery unit has a possibility to connect the ground heat exchanger. This function allows you to control a valve that optionally supply air through the ground-to-air heating system. To do this, install a dedicated damper with the actuator (DATVTML).

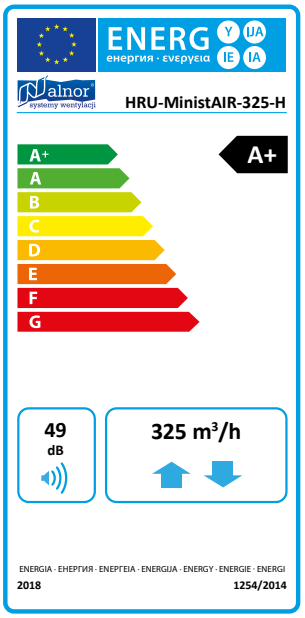
Heat recovery ventilation unit with counterflow exchanger

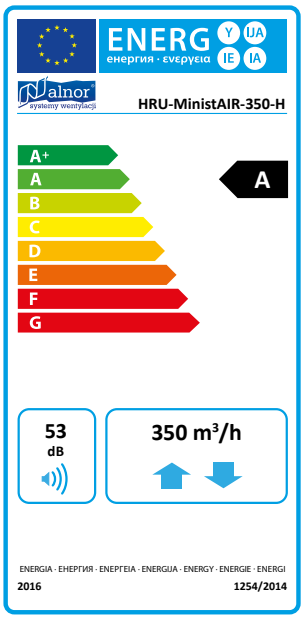
HRU-MinistAIR

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-MinistAIR-250-H	48	250	A	A	A	A+
HRU-MinistAIR-250-H-CF	48	250	A	A	A	A+
HRU-MinistAIR-250E-H	48	250	A	A	A	A
HRU-MinistAIR-250E-H-CF	48	250	A	A	A	A
HRU-MinistAIR-325-H	49	325	A	A	A	A+
HRU-MinistAIR-325-H-CF	49	325	A	A	A	A+
HRU-MinistAIR-325E-H	49	325	A	A	A	A
HRU-MinistAIR-325E-H-CF	49	325	A	A	A	A
HRU-MinistAIR-350-H	53	350	A	A	A	A+
HRU-MinistAIR-350-H-CF	53	350	A	A	A	A+
HRU-MinistAIR-350E-H	53	350	B	A	A	A
HRU-MinistAIR-350E-H-CF	53	350	B	A	A	A







Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Product fiche HRU-MinistAIR-250

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-MinistAIR-L-250-H, HRU-MinistAIR-LS-250-H HRU-MinistAIR-R-250-H, HRU-MinistAIR-RS-250-H HRU-MinistAIR-L-250-H-CF, HRU-MinistAIR-LS-250-H-CF HRU-MinistAIR-R-250-H-CF, HRU-MinistAIR-RS-250-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 consuption (SEC) [kWh/(m2.a)]	-76,38	**-37,63**	-12,81	-77,45	**-38,56**	-13,66	-79,46	**-40,30**	-15,24	-83,00	**-43,29**	-17,91
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]	9026	**4614**	2086	9054	**4628**	2093	9110	**4657**	2106	9222	**4714**	2132
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	91%											
Maximum flow rate [m³/h][2]	250											
Maxium electric power input [W]	106											
Sound power LWA [dB(A)]	48											
Reference flow rate [m³/s][3]	0,049											
Reference pressure difference [Pa][4]	50											
SPI [W/m³/h][5]	0,26											
Declared maxiumum leakages[6]	External: 1,3% 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 13141-7:2021+A1:2025
[2] According to EN 13141-7:2021+A1:2025 at pressure diference 100Pa
[3] According to EN 13141-7:2021+A1:2025 at 70% of maximum flow at static pressure diference 50Pa
[4] According to EN 13141-7:2021+A1:2025
[5] According to EN 13141-7:2021+A1:2025 at reference point - 70% of maxiumum air flow
[6] According to EN 13141-7:2021+A1:2025

Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Product fiche HRU-MinistAIR-250E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-MinistAIR-L-250E-H, HRU-MinistAIR-LS-250E-H HRU-MinistAIR-R-250E-H, HRU-MinistAIR-RS-250E-H HRU-MinistAIR-L-250E-H-CF, HRU-MinistAIR-LS-250E-H-CF HRU-MinistAIR-R-250E-H-CF, HRU-MinistAIR-RS-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 consuption (SEC) [kWh/(m2.a)]	-71,38	**-35,25**	-11,93	-72,68	**-36,28**	-12,81	-75,16	**-38,23**	-14,44	-79,67	**-41,66**	-17,26
SEC class	A+	**A**	E	A+	**A**	E	A+	**A**	E	A+	**A**	E
The annual electricity consumption (AEC) [kWh/a/100m²]	890	**353**	308	860	**323**	278	804	**267**	222	712	**175**	130
The annual heating saved (AHS) [kWh/a/100m²]	8490	**4340**	1962	8545	**4368**	1975	8654	**4424**	2000	8874	**4536**	2051
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	82,4%											
Maximum flow rate [m³/h][2]	250											
Maxium electric power input [W]	94											
Sound power LWA [dB(A)]	48											
Reference flow rate [m³/s][3]	0,049											
Reference pressure difference [Pa][4]	50											
SPI [W/m³/h][5]	0,25											
Declared maxiumum leakages[6]	External: 1,30% Internal: 2,80%											
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 13141-7:2021+A1:2025
[2] According to EN 13141-7:2021+A1:2025 at pressure diference 100Pa
[3] According to EN 13141-7:2021+A1:2025 at 70% of maximum flow at static pressure diference 50Pa
[4] According to EN 13141-7:2021+A1:2025
[5] According to EN 13141-7:2021+A1:2025 at reference point - 70% of maxiumum air flow
[6] According to EN 13141-7:2021+A1:2025

Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Product fiche HRU-MinistAIR-325

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-MinistAIR-L-325-H, HRU-MinistAIR-LS-325-H HRU-MinistAIR-R-325-H, HRU-MinistAIR-RS-325-H HRU-MinistAIR-L-325-H-CF, HRU-MinistAIR-LS-325-H-CF HRU-MinistAIR-R-325-H-CF, HRU-MinistAIR-RS-325-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 consuption (SEC) [kWh/(m2.a)]	-75,48	**-36,61**	-11,72	-76,65	**-37,65**	-12,68	-78,84	**-39,58**	-14,44	-82,67	**-42,89**	-17,47
SEC class	A+	**A**	E	A+	**A**	E	A+	**A**	E	A+	**A+**	E
The annual electricity consumption (AEC) [kWh/a/100m^2]	950	**413**	368	914	**377**	332	848	**312**	266	738	**201**	156
The annual heating saved (AHS) [kWh/a/100m^2]	9051	**4626**	2092	9077	**4640**	2098	9131	**4668**	2111	9238	**4722**	2135
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	91,4%											
Maximum flow rate [m^3/h][2]	325											
Maxium electric power input [W]	160											
Sound power LWA [dB(A)]	49											
Reference flow rate [m^3/s][3]	0,064											
Reference pressure difference [Pa][4]	50											
SPI [W/m^3/h][5]	0,29											
Declared maxiumum leakages[6]	External: 0,9% Internal: 2,9%											
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 13141-7:2021+A1:2025
[2] According to EN 13141-7:2021+A1:2025 at pressure diference 100Pa
[3] According to EN 13141-7:2021+A1:2025 at 70% of maximum flow at static pressure diference 50Pa
[4] According to EN 13141-7:2021+A1:2025
[5] According to EN 13141-7:2021+A1:2025 at reference point - 70% of maxiumum air flow
[6] According to EN 13141-7:2021+A1:2025

Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Product fiche HRU-MinistAIR-325E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-MinistAIR-L-325E-H, HRU-MinistAIR-LS-325E-H HRU-MinistAIR-R-325E-H, HRU-MinistAIR-RS-325E-H HRU-MinistAIR-L-325E-H-CF, HRU-MinistAIR-LS-325E-H-CF HRU-MinistAIR-R-325E-H-CF, HRU-MinistAIR-RS-325E-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 consuption (SEC) [kWh/(m2.a)]	-69,27	**-33,84**	-10,91	-70,70	**-34,97**	-11,87	-73,45	**-37,11**	-13,67	-78,44	**-40,89**	-16,74
SEC class	A+	**B**	E	A+	**A**	E	A+	**A**	E	A+	**A**	E
The annual electricity consumption (AEC) [kWh/a/100m²]	917	**380**	335	884	**347**	302	824	**288**	242	724	**187**	142
The annual heating saved (AHS) [kWh/a/100m²]	8347	**4267**	1929	8409	**4298**	1944	8533	**4362**	1972	8781	**4488**	2030
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	80,1%											
Maximum flow rate [m³/h][2]	325											
Maxium electric power input [W]	160											
Sound power LWA [dB(A)]	49											
Reference flow rate [m³/s][3]	0,064											
Reference pressure difference [Pa][4]	50											
SPI [W/m³/h][5]	0,27											
Declared maxiumum leakages[6]	External: 0,9% Internal: 2,2%											
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 13141-7:2021+A1:2025
[2] According to EN 13141-7:2021+A1:2025 at pressure diference 100Pa
[3] According to EN 13141-7:2021+A1:2025 at 70% of maximum flow at static pressure diference 50Pa
[4] According to EN 13141-7:2021+A1:2025
[5] According to EN 13141-7:2021+A1:2025 at reference point - 70% of maxiumum air flow
[6] According to EN 13141-7:2021+A1:2025

Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Product fiche HRU-MinistAIR-350

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-MinistAIR-L-350-H, HRU-MinistAIR-LS-350-H HRU-MinistAIR-R-350-H, HRU-MinistAIR-RS-350-H HRU-MinistAIR-L-350-H-CF, HRU-MinistAIR-LS-350-H-CF HRU-MinistAIR-R-350-H-CF, HRU-MinistAIR-RS-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 consuption (SEC) [kWh/(m2.a)]	-73,73	**-35,87**	-11,55	-74,97	**-36,92**	-12,50	-77,31	**-38,90**	-14,27	-81,47	**-42,33**	-17,29
SEC class	A+	**A**	E	A+	**A**	E	A+	**A**	E	A+	**A+**	E
The annual electricity consumption (AEC) [kWh/a/100m^2]	938	**401**	356	903	**366**	321	839	**302**	257	732	**195**	150
The annual heating saved (AHS) [kWh/a/100m^2]	8845	**4521**	2045	8882	**4540**	2053	8956	**4578**	2070	9105	**4654**	2104
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	88,1%											
Maximum flow rate [m^3/h][2]	350											
Maxium electric power input [W]	177											
Sound power LWA [dB(A)]	53											
Reference flow rate [m^3/s][3]	0,068											
Reference pressure difference [Pa][4]	50											
SPI [W/m^3/h][5]	0,28											
Declared maxiumum leakages[6]	External: 0,84% Internal: 2,90%											
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 13141-7:2021+A1:2025
[2] According to EN 13141-7:2021+A1:2025 at pressure diference 100Pa
[3] According to EN 13141-7:2021+A1:2025 at 70% of maximum flow at static pressure diference 50Pa
[4] According to EN 13141-7:2021+A1:2025
[5] According to EN 13141-7:2021+A1:2025 at reference point - 70% of maxiumum air flow
[6] According to EN 13141-7:2021+A1:2025

Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Product fiche HRU-MinistAIR-350E

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

Supplier's name or trade mark	ALNOR Ventilation Systems											
Model identifier	HRU-MinistAIR-L-350E-H, HRU-MinistAIR-LS-350E-H HRU-MinistAIR-R-350E-H, HRU-MinistAIR-RS-350E-H HRU-MinistAIR-L-350E-H-CF, HRU-MinistAIR-LS-350E-H-CF HRU-MinistAIR-R-350E-H-CF, HRU-MinistAIR-RS-350E-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 consuption (SEC) [kWh/(m2.a)]	-68,81	**-33,50**	-10,65	-70,28	**-34,66**	-11,63	-73,09	**-36,85**	-13,47	-78,19	**-40,72**	-16,63
SEC class	A+	**B**	E	A+	**A**	E	A+	**A**	E	A+	**A**	E
The annual electricity consumption (AEC) [kWh/a/100m²]	926	**389**	344	892	**355**	310	830	**293**	248	727	**190**	145
The annual heating saved (AHS) [kWh/a/100m²]	8322	**4254**	1924	8385	**4286**	1938	8511	**4351**	1967	8764	**4480**	2026
Declared typology	Bidirectional											
Type of drive	Variable											
Type of heat recovery system	Recuperative											
Thermal efficiency[1]	79,7%											
Maximum flow rate [m³/h][2]	350											
Maxium electric power input [W]	177											
Sound power LWA [dB(A)]	53											
Reference flow rate [m³/s][3]	0,068											
Reference pressure difference [Pa][4]	50											
SPI [W/m³/h][5]	0,27											
Declared maxiumum leakages[6]	External: 0,84% Internal: 2,05%											
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 13141-7:2021+A1:2025
[2] According to EN 13141-7:2021+A1:2025 at pressure diference 100Pa
[3] According to EN 13141-7:2021+A1:2025 at 70% of maximum flow at static pressure diference 50Pa
[4] According to EN 13141-7:2021+A1:2025
[5] According to EN 13141-7:2021+A1:2025 at reference point - 70% of maxiumum air flow
[6] According to EN 13141-7:2021+A1:2025