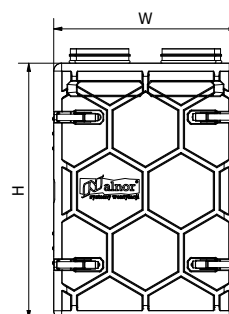


Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR



Dimensions



Description

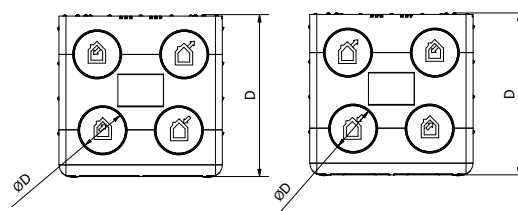
HRU-MinistAIR residential heat recovery units are a new version of a well recognized model, based on a completely new design. Airflows of 250, 325 or 350 m³/h and self-supporting casing made of EPP, acting as thermal and acoustic insulation at the same time. Counter-flow heat exchangers, made of PET, 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.

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

Heat recovery selector



Product code example

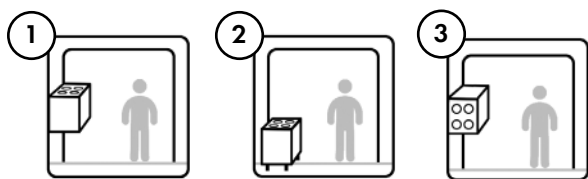
Product code: **HRU-MinistAIR - L - 250E - H - CF - P**

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

Heat recovery ventilation unit with counterflow exchanger

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

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



HRQ-BUT-PG15  

HRQ-BUT-LCD-P5  

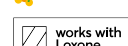
HRQ-SENS-CO2RH-P









LOXONE
SMART HOME

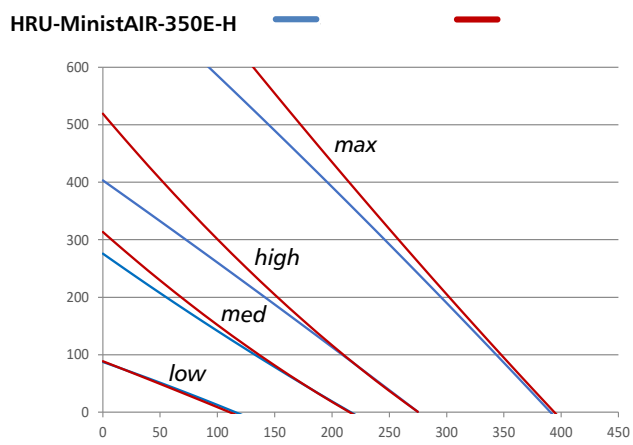
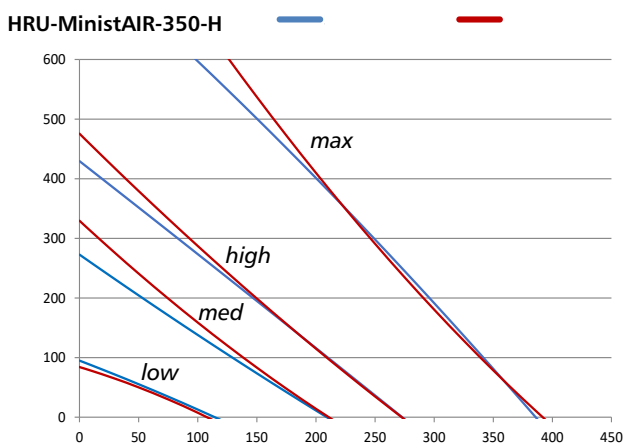
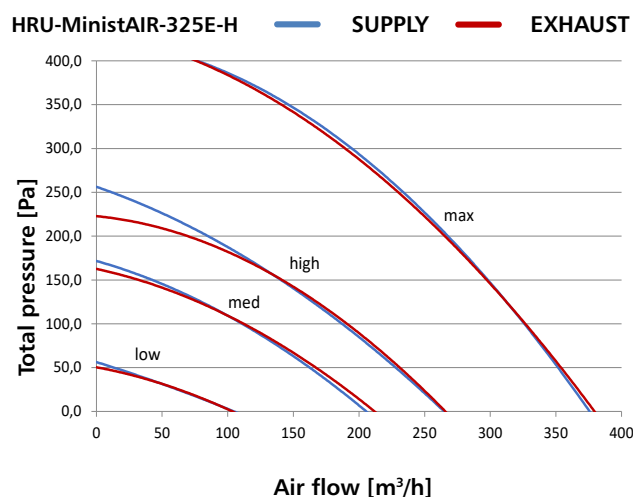
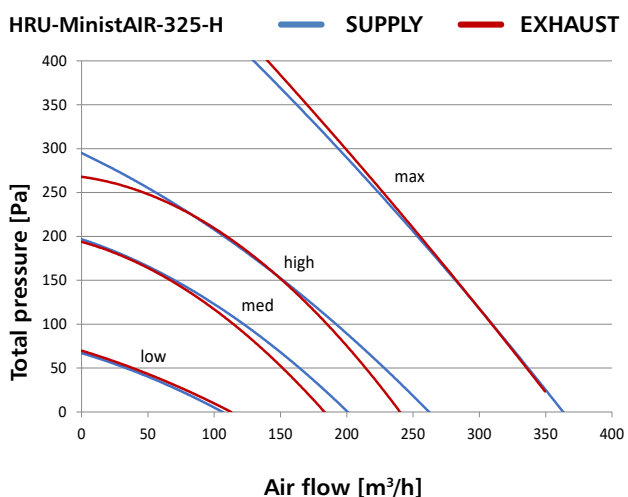
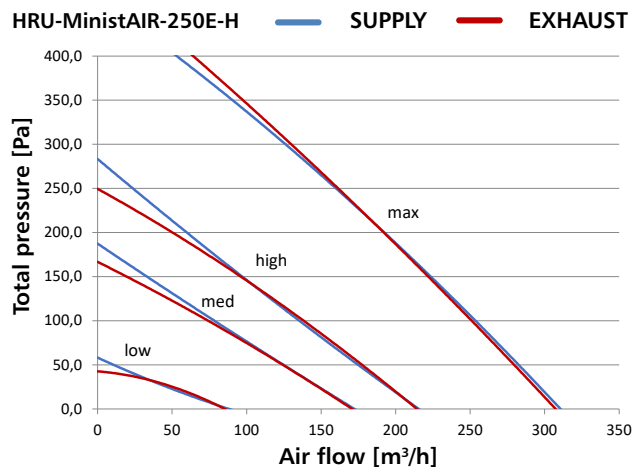
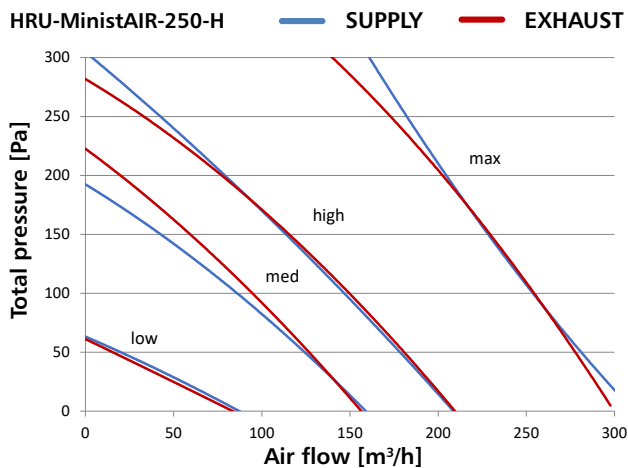
Heat recovery selector



Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Air flow and efficiency



Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Filtres

HRQ-MinistAIR-FILT-C70 (standard)

HRQ-MinistAIR-MinistAIR-FILFePM155 (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.

Code	Filter class	Dimension [mm]
HRQ-MinistAIR-FILT-C70	ISO Coarse 70%	280x182x23
HRQ-MinistAIR-FILFePM155	ISO ePM ₁ 55%	280x182x23

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.

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.

Connecting the ground heat exchanger

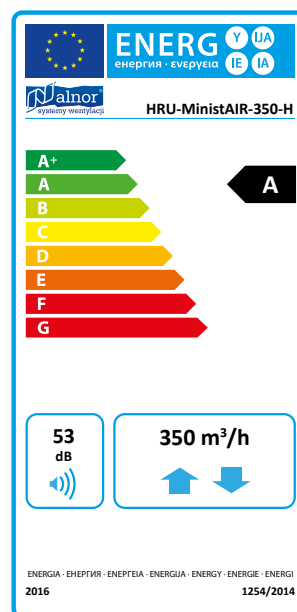
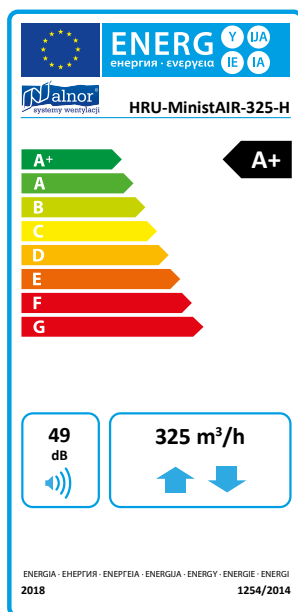
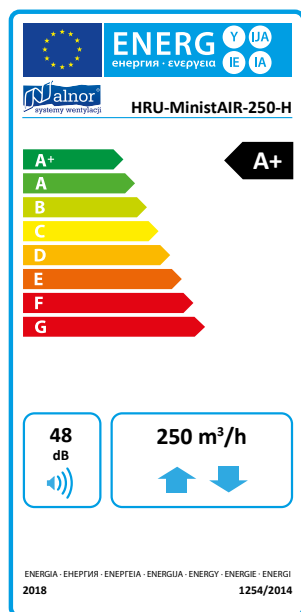
Heat recovery unit has a possibility to connect the ground heat exchanger. This function allows you to control a valve that optionally supply air through the ground-to-air heating system. To do this, install a dedicated damper with the actuator (DATVTML).

Heat recovery ventilation unit with counterflow exchanger

HRU-MinistAIR

Energy class

Model	Sound power level L_{WA} dB(A)* [dB]	Air flow rate $[m^3/h]$	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 consumption (SEC) [kWh/(m ² .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/100m ²]	904	367	322	873	336	291	815	278	233	718	181	136
The annual heating saved (AHS) [kWh/a/100m ²]	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 [m ³ /h] ²	250											
Maxium electric power input [W]	106											
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	0,26											
Declared maximum 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 13141-7:2010

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-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 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)]	-71,38	-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/100m ²]	890	353	308	860	323	278	804	267	222	712	175	130
The annual heating saved (AHS) [kWh/a/100m ²]	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 [m ³ /h] ²	250											
Maximum electric power input [W]	94											
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	0,25											
Declared maximum 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 13141-7:2010

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-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 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)]	-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											
Maximum 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 maximum 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 13141-7:2010

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-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 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)]	-69,27	-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/100m ²]	917	380	335	884	347	302	824	288	242	724	187	142
The annual heating saved (AHS) [kWh/a/100m ²]	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 [m ³ /h] ²	325											
Maximum 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	0,27											
Declared maximum 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 13141-7:2010

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-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 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)]	-73,73	-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											
Maximum 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 maximum 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 13141-7:2010

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-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 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)]	-68,81	-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/100m ²]	926	389	344	892	355	310	830	293	248	727	190	145
The annual heating saved (AHS) [kWh/a/100m ²]	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 [m ³ /h] ²	350											
Maximum 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	0,27											
Declared maximum 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 13141-7:2010

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