

Heat recovery ventilator unit with counterflow core

HRU-PremAIR-NA




90%
SRE

Description

Heat recovery ventilation unit HRU-PremAIR-NA-450 is a modern device with 261 CFM (123 L/S) air flow at 0.4" w.g. (100 Pa) external static pressure. Unit is made from cutting edge materials – PET counterflow core with high temperature recovery efficiency and EPP self-supporting casing which has good acoustic and thermal isolation properties. HRU-PremAIR-NA air handling units optionally can be equipped with two different defrost strategies. Recirculation unit, which task is to recover heat from extracting areas. Second option is electrical pre-heater which also prevents the heat exchanger from freezing. The device operation is controlled by an advanced PCB with wired control panel.

In addition, the HRU-PremAIR-NA can be connected to the Internet and controlled via a mobile application or website.

Features:

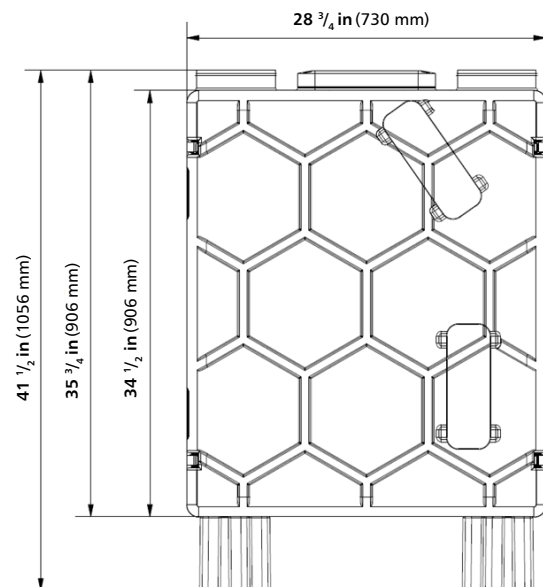
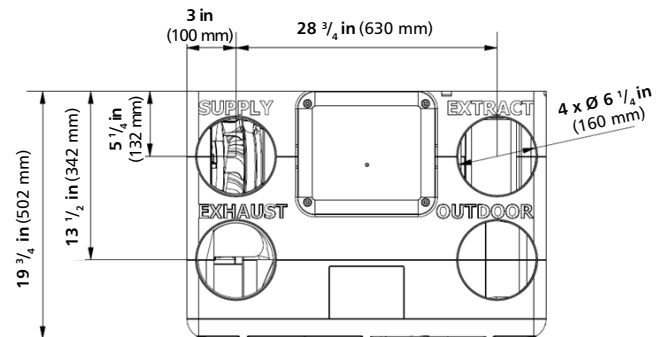
- HRV Heat Recovery Ventilator with PET counterflow core
- 261 CFM supply air @ 0.4" w.g.
- SRE 90 %
- Top ports 160mm (6 1/4") with rubber seals
- Easy accessible MERV 7 filters 
- EPP insulated casing
- Centrifugal fans with backward curved blades with low energy consumption EC motors

Electrical requirement

120 VAC, 60Hz, 1 Phase

Cord Set: Type B 70 3/4 in (1800 mm) with ground

Dimensions

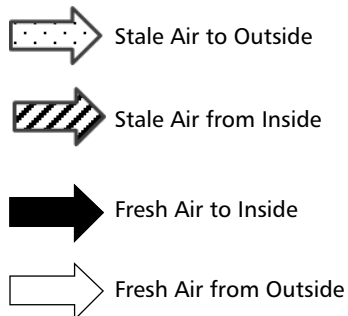
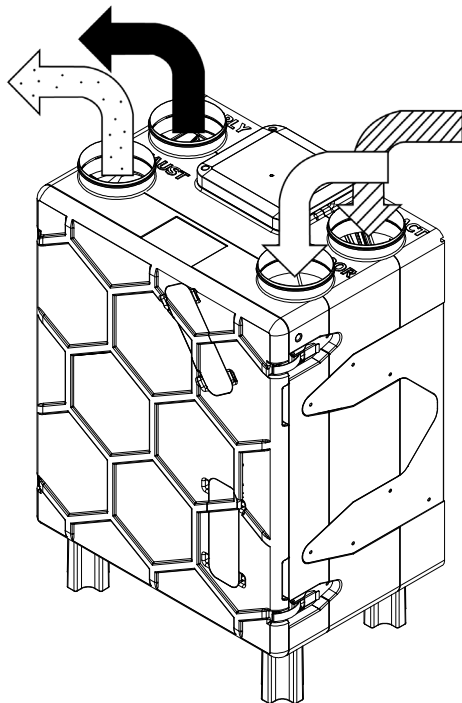


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Air flow



Controller

Ventilation units can be controlled in several ways:

- The HRQ-BUT-PG15 panel is should be a not an wired option with limited manual control options of the ventilation unit with Physical buttons allows you to choose between 4 speeds (PAUSE, LOW, MEDIUM, HOME). It also allows you to pick actual mode (MANUAL, SCHEDULE), turn (ON/OFF) AUTO mode or turn (ON/OFF) UNIT. It has a built-in temperature and RH sensor. The panel also has wireless control of unit (build in Bluetooth and WI-FI module) via APP for Android, IOS and browser.
- The HRQ-BUT-LCD-P5 display allows you to select working modes, program the calendar and read additional working parameters such as temperature, current fan speeds or bypass status. It also allows you to configure speeds (according to user preference). It has a built-in temperature and RH sensor. The panel has a Wi-Fi and Bluetooth module.



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- Cloud service for Android, iOS and via a browser (requires panel HRQ-BUT-PG15 or HRQ-BUT-LCD-P5).



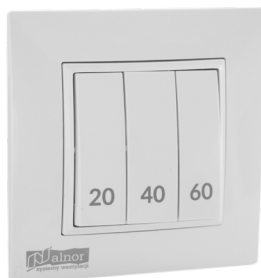
- APP The panels are connected to the local network via WI-FI. Communication with the device is wireless. On-line control is possible after installing the application on Android and iOS or via a browser on a computer. The application graphically illustrates the operation of the device, allows you to choose between 4 speeds (PAUSE, LOW, MEDIUM, HOME), time programs (EXIT, PARTY, AIRING), program the calendar and read additional operating parameters such as temperatures, current fan speeds or RH level. It also allows you to configure ventilation speeds (according to user preferences).



Additional controllers

It is possible to equip the system with additional external controllers:

- HRQ-BUT-20-40-60 switch controller is used to activate the high speed in the unit in the respective time mode. Upon expiration of the time, the unit returns to the operation status mode just before the activation of the given time mode.



- HRQ-BUT-SWITCH is used to activate or deactivate the operation of the device on an hourly operating cycle. The hour-long work cycle is divided temporally into two parts:

1. The first part is the operation of the device on the operating speed : low/medium/high.
2. The second part of the operation is the operation of the unit in air recirculation mode (HRQ-REC product required) or complete shutdown of the fans.

After the second part of the unit's operation is completed, the cycle begins to repeat and the unit starts operation from the beginning.



Additional external sensor

- HRQ-SENS-CO2RH-P The most energy efficient and adapted to current needs of HRVs is the AUTO mode. Working in AUTO mode is possible when the CO2 or RH sensor is working in the system. In AUTO mode, the sensor generates ventilation request based on measurements of ambient air. This request is sent wired to the control panel, which sets the appropriate efficiency % of the fans, making it possible to save energy because the air exchange will only be carried out when it is needed.



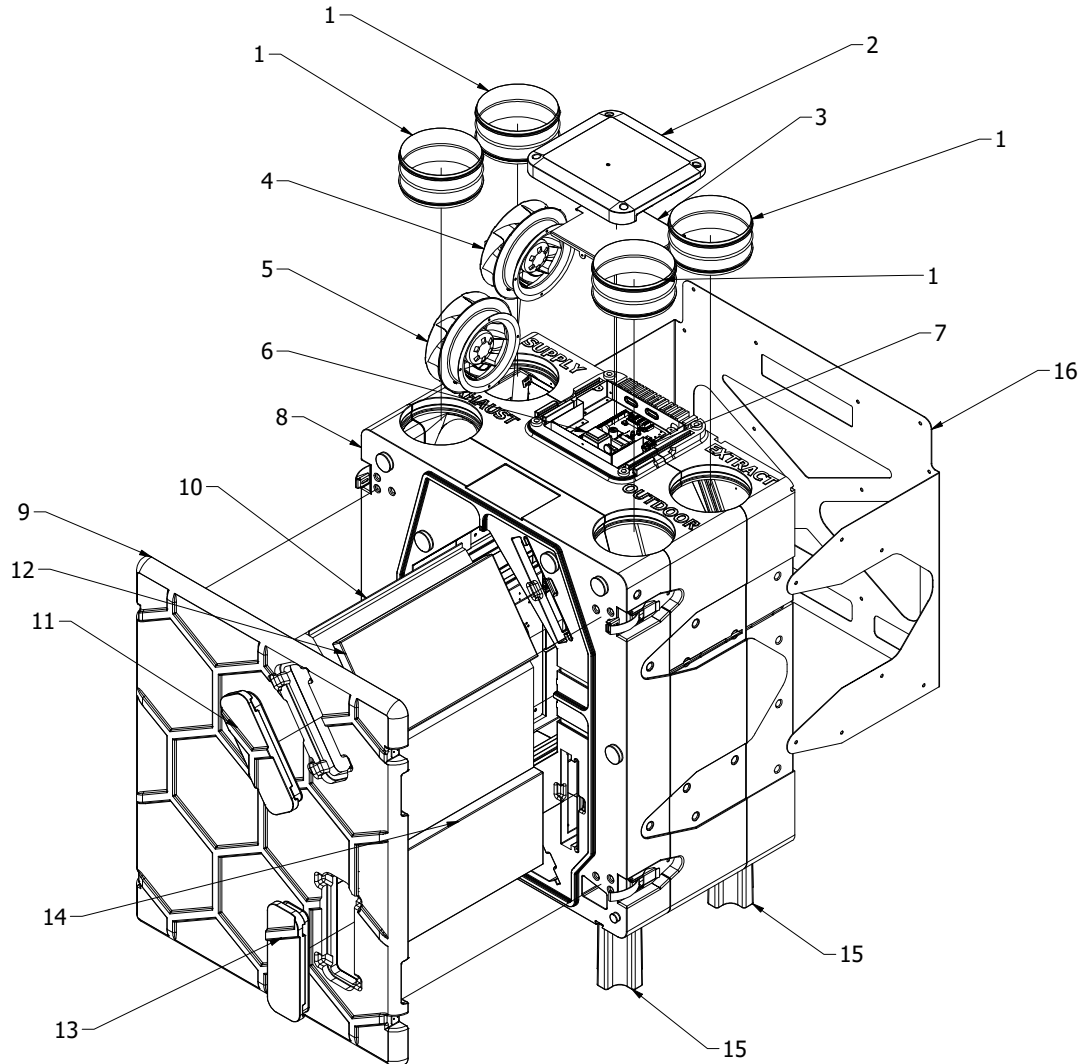
Performance

- SRE up to 90.5 %
- Hi-tech modern casing made of Expanded Polypropylene – EPP
- High mechanical resistance
- High thermal and acoustic insulation
- Performance tested according to CSA C439-18 standard
- Wall mounting racks and feet included
- Replaceable duct connections
- Wireless control through mobile application or web service
- Wired function controller
- Light weight construction – only 32 kg!
- POLISH product

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Design



1. NSL connector	9. Front cover
2. External control circuit EPP cover	10. Core
3. Internal control circuit metal cover	11. Extract filter cover
4. Supply fan	12. Extract filter
5. Extract fan	13. Supply filter cover
6. Control circuit board	14. Supply filter
7. Main fuse	15. Mounting foot
8. HRU housing	16. Handling chassis

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Defrosting system

There're 3 available defrosting options:

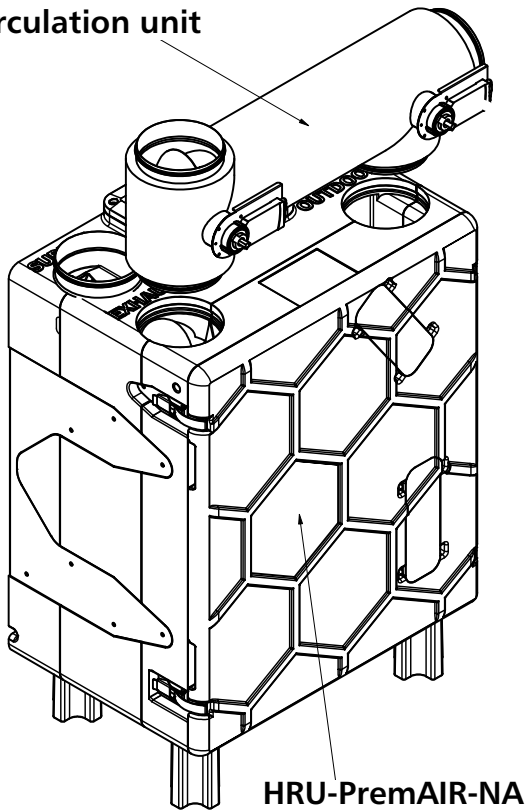
1. Recirculation
2. Preheater with unbalance
3. Unbalance

1 Recirculation

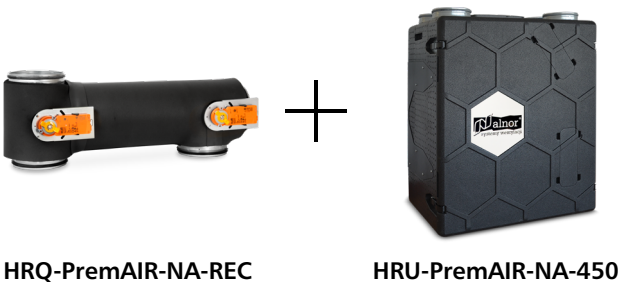
Heat recovery unit has the possibility to connect the Alnor Recirculation System. The function allows you to control the valve that redirects air from the exhaust to the unit's intake (depending on outdoor temperature conditions).

Recirculation operates between - 25°C to -3°C.

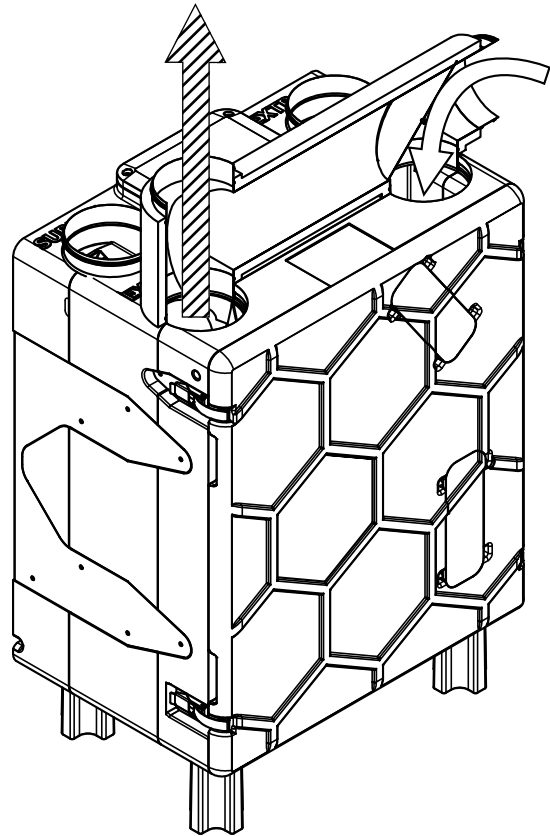
Recirculation unit



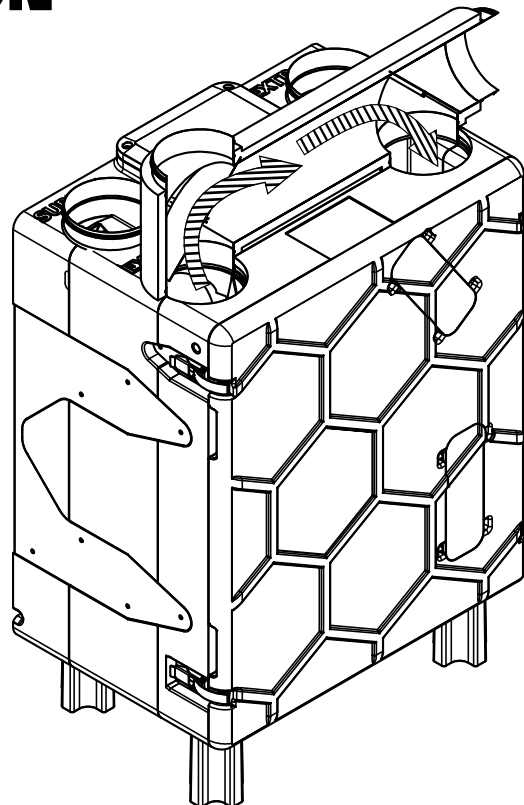
Available combinatons



OFF



ON



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2 Preheater



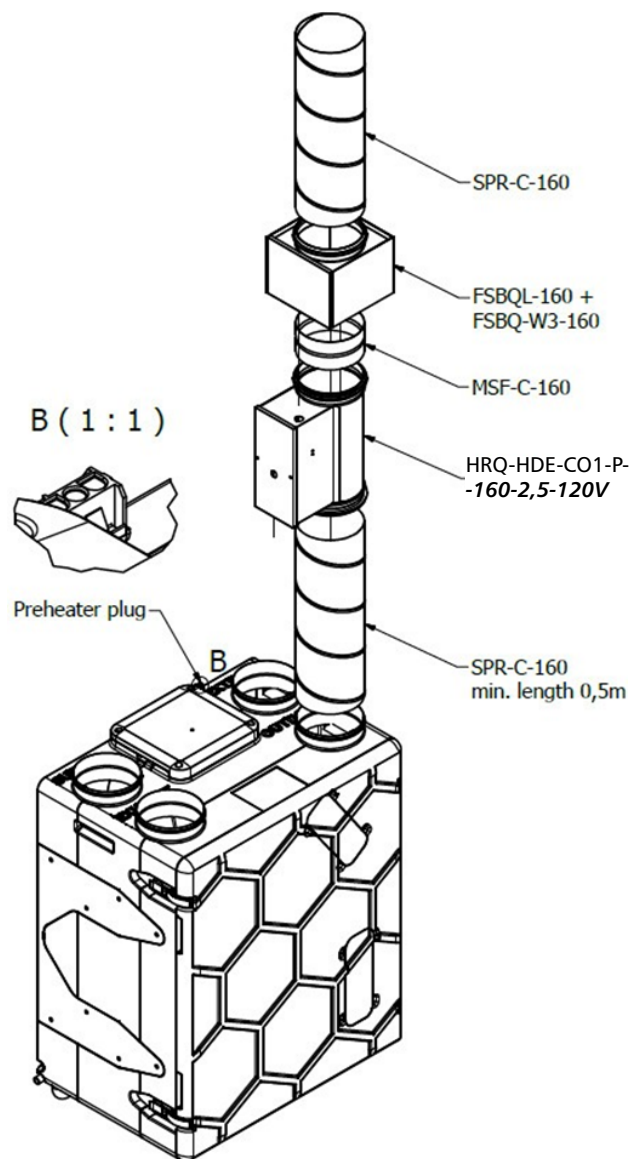
HRQ-HDE-CO1-P-160-2,5-120V round duct electric heater is designed for ventilation systems with residential air handling unit to use as pre-heaters - serve as additional (optional) frost protection for the core and therefore allow the unit to work in a balanced way even during heavy winter conditions.

The casing is made from galvanised steel sheet, the heating elements are made from stainless steel. Heaters are equipped with two-stage overheat protection. The first thermostat is an automatic-reset temperature limiter set to trip at +60°C. The other thermostat is a manual temperature limiter set to trip at +90°C (once tripped, this device needs to be reset by hand). Ducted electric heaters feature EPDM gaskets at the male connection ends and a 3m long power cord for external power and a dedicated steering plug for HRVs.

Detailed installation instructions are described in the manual.

Preheater operates below -3°C.

Connection diagram



Available combinatons



HRQ-HDE-CO1-P-160-2,5-120V

HRU-PremAIR-NA-450

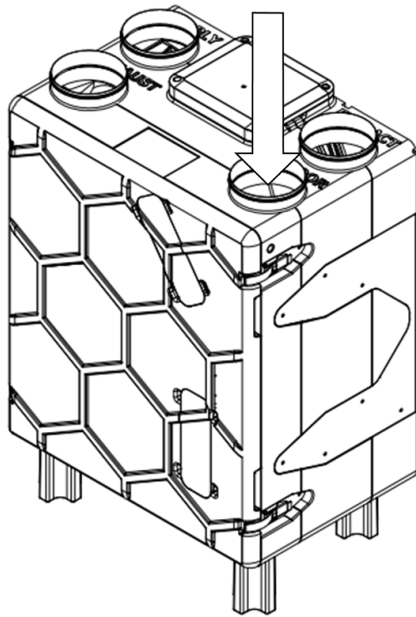
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3 Fan unbalance

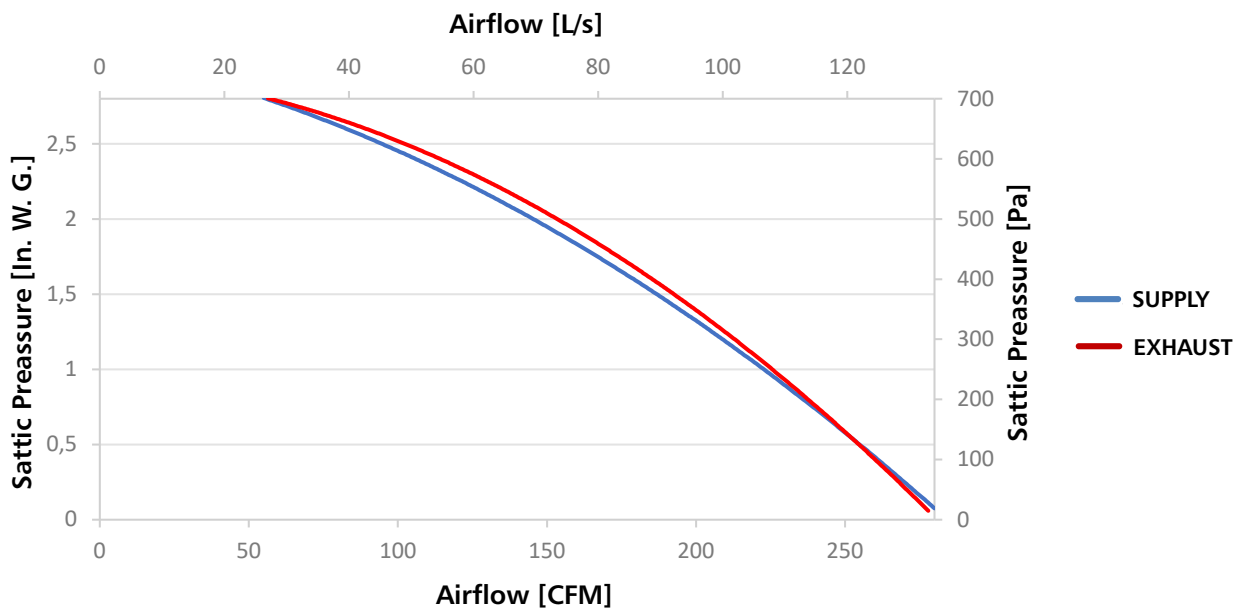
Frost protection is achieved by reducing the supply fan's speed to the minimum level of the fan. The whole process goes gradually, depending on the outdoor temperature drop. When the outdoor temperature continues to decrease and the fan has reached the set minimum revolutions.

Unbalance works within -3°C to +1°C.



External Static Pressure	Net Supply Air Flow			Gross Air Flow				Power
				Supply		Exhaust		
Pa	In. W. G.	L/s	CFM	L/s	SCFM	L/s	SCFM	Watts
25	0,1	132	280	134	284	133	282	231
50	0,2	129	273	131	278	130	275	234
75	0,3	126	267	128	271	127	269	234
100	0,4	123	261	125	265	124	263	234
125	0,5	120	254	122	259	121	256	236
150	0,6	117	248	119	252	119	252	236
175	0,7	114	242	116	246	116	246	236
200	0,8	111	235	113	239	113	239	236
250	1,0	105	222	106	225	108	229	236
300	1,2	99	210	100	212	102	216	235
400	1,6	85	180	86	182	90	191	229
500	2,0	69	146	70	148	74	157	219
600	2,4	50	106	51	108	54	114	204
700	2,8	26	55	27	57	27	57	174

Ventilation performance





Energy performance

Supply Temperature		Net Outdoor Air Flow		Power Consumed (Watts)	Sensible Recovery Efficiency	Adjusted Sensible Recovery Efficiency	Apparent Sensible Effectiveness	Latent Recovery/ Moisture Trans
°C	°F	L/s	CFM					
Heating								
0	32	31	66	22	90	93	95	0,00
0	32	62	131	53	89	92	95	0,00
0	32	86	182	116	86	91	92	0,00
-25	-13	32	66	65	78	81	98	0,06

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, which is an equivalent to MERV 7.

Code	Filter class	Dimensions [mm]
HRQ-PremAIR-FILT-G4	ISO Coarse 70% (MERV 7)	423x223x23



- Filter HRQ-PremAIR-FILT-F7 (optional)**

F7 is classified as a fine filter according to EN 779:2012 norm and as ePM1 55% in accordance with new standard ISO 16890, which is an equivalent to MERV 13.

Code	Filter class	Dimensions [mm]
HRQ-PremAir-FILT-F7	ISO ePM1 55% (MERV 13)	423x223x25

