

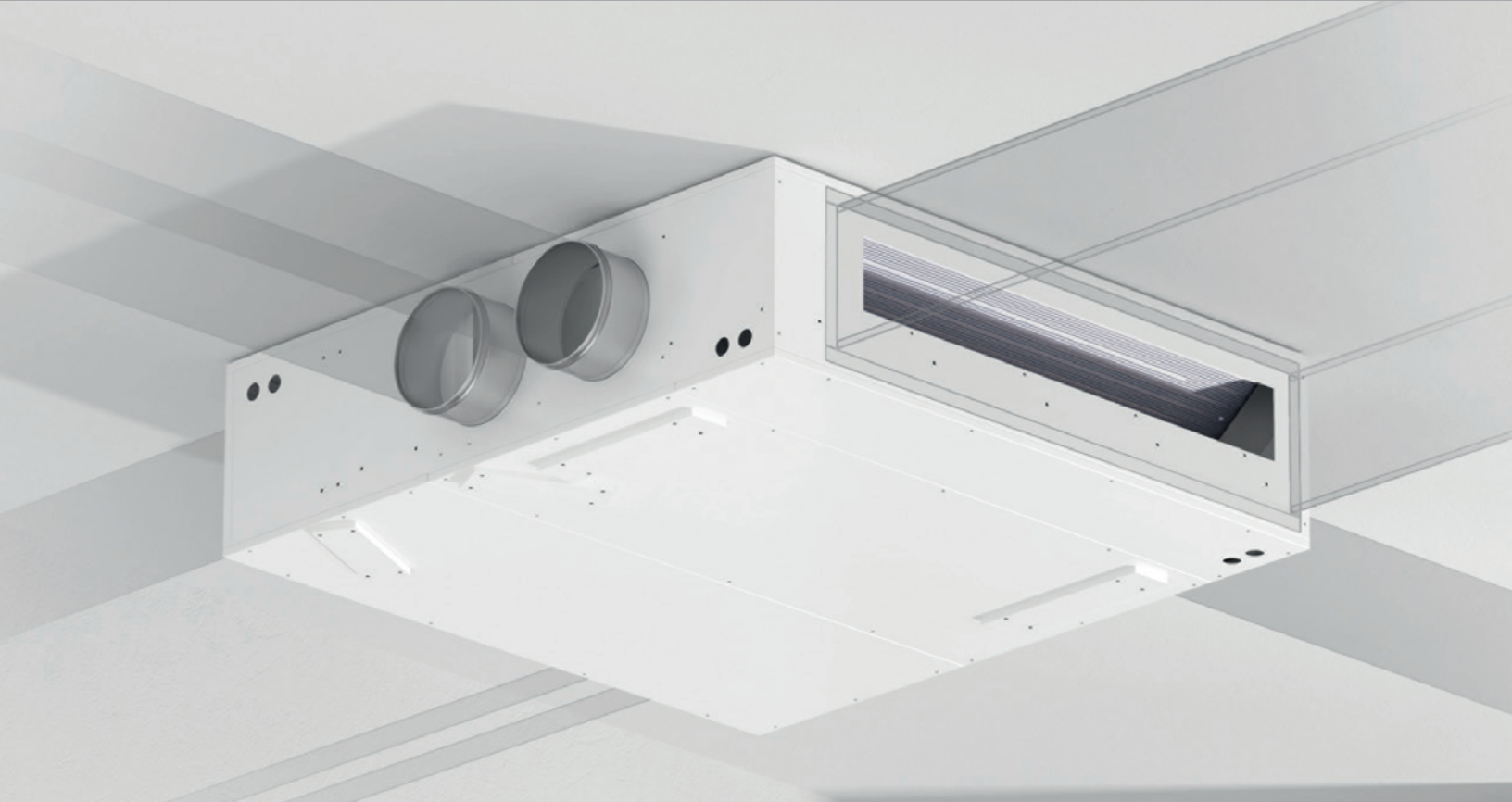
HRA-i-PLUS

Ceiling /Ducted Suspended Heat Pump

Enthalpy Heat Exchanger c/w integrated ERV and 2 kW electrical heater

Data Sheet : (standard) VRVA50HONUC / (mirrored) VRVA50IONUC - R-410a

Optional : (standard) VRVB50HONUC / (mirrored) VRVA50IONUC - R-32



The compact unit with heat pump for heating, cooling, and air supply in nZEB houses.

Seven functions in a single unit

- ✓ Heating
- ✓ Cooling
- ✓ Controlled mechanical ventilation
- ✓ Air purification
- ✓ Combined passive + thermodynamic heat recovery
- ✓ Dehumidification
- ✓ Free cooling

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HRA-i-PLUS

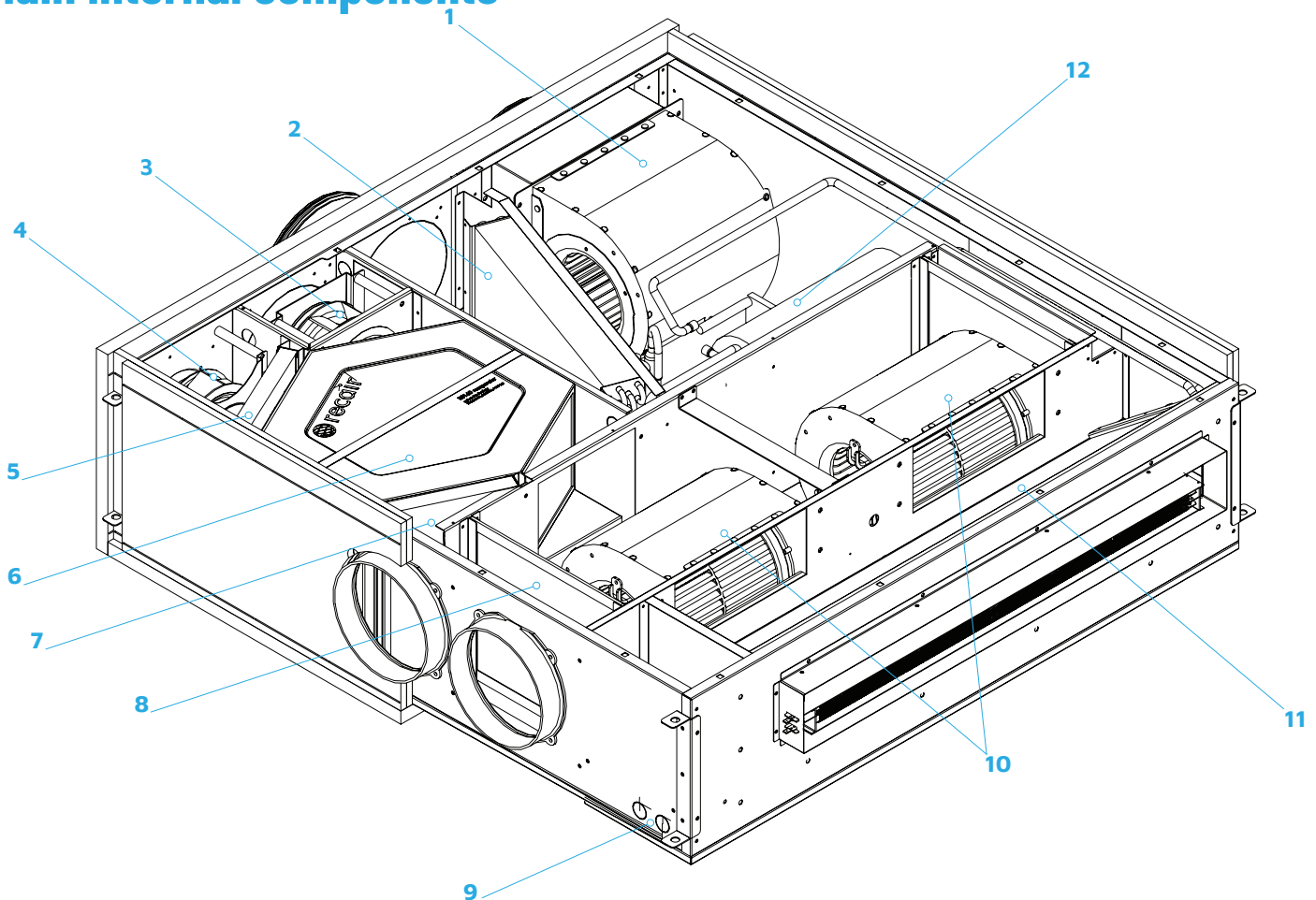
The compact unit with heat pump for heating, cooling, and air supply in nZEB (nearly Zero Energy Building) houses.

The HRA-i-PLUS Ceiling / Ducted Suspended Heat Pump combines heating, cooling, air renewal, dehumidification, free cooling (process whereby low external temperature is used as a natural cooling source), and combined passive and thermodynamic heat recovery in single machine. This system automatically monitors all the parameters of comfort in nZEB homes, optimizing energy savings at all times.

HRA-i-PLUS can be discreetly installed above a ceiling and is ideal for single or multi-room applications. The return can be from the sides for maximum flexibility. With up to 75 Pa external static pressure, this unit can be used where ducting is required.

Use with any interior grille and louver to provide additional design flexibility. A bathroom exhaust can connect to the dedicated stale air exhaust. The HRA-i-PLUS Ceiling / Ducted Suspended Heat Pump comes complete with integrated ERV and 2 kW heating elements.

Main internal components



1. General expulsion fan
2. Outdoor DX heat exchanger
3. ERV stale air exhaust fan
4. ERV outdoor air fan
5. ERV outdoor air filter
6. ERV Heat exchanger
7. ERV extracted filter
8. Air recirculation filter
9. Electrical panel
10. Supply fan
11. Indoor DX heat exchanger
12. Compressor

Key Features

No outdoor unit

The single package design means no outdoor unit, freeing up space on rooftops and at ground level and enabling installations in buildings without space for an outdoor unit.

Twin rotary BLDC inverter compressor

The state-of-the-art twin rotary BLDC inverter compressor operates efficiently, quietly, and with minimal vibration. HRA-i-PLUS is ideal for any room or area that requires between 4000 and 11,000 BTU.

Integrated ERV

HRA-i-PLUS integrated ERV eliminates the requirement of installing an independent ERV system, ducting, electrical work, and engineering.

Recovery plus

The integrated stale air exhaust can be used for bathrooms and kitchens, maintaining perfect air pressure and eliminating a dedicated exhaust system.

MERV 13 clean air

Clean outdoor air is essential to well-being and safety. The MERV 13 filter ensures that all air entering the room/home is clean and safe. Additionally, stale air is passed through a second MERV 13 filter keeping the core clean.

High-efficiency ECM fans

High-efficiency ECM fans, enable efficient and quiet operation as the EC motor can ramp up or down depending on the need.

Cold climate heat pump

The heat pump with efficiently function down to -20°C outdoors.

2000 W electrical heating

The electrical heater works in conjunction with the heat pump to boost the heating process.

Intelligent defrosting

HRA-i-PLUS's intelligent defrosting system means more time heating and less time on reverse, cycle defrost.

Quiet

With whisper-quiet operation as low as 27 dB, the occupant will barely notice HRA-i-PLUS is operating.

Leak protection

A drain alarm will activate if the drain becomes dogged, and the system will be shut off, preventing water damage.

Easy to service

HRA-i-PLUS can be easily maintained and repaired from the top or bottom of the unit without having to remove the unit from the wall or ceiling. It can also be quickly swapped out with a replacement, reducing downtime.

Versatile controls

HRA-i-PLUS includes Wi-Fi with an iOS and Android app, and an onboard touch controller. HRA-i-PLUS can be used with an optional Modbus module that enable interfacing with building management systems.

5-year limited warranty

Five-year limited on-site warranty provides peace of mind.

- 5-year warranty on compressor
- 1-year warranty on all other components

Technical specifications

General

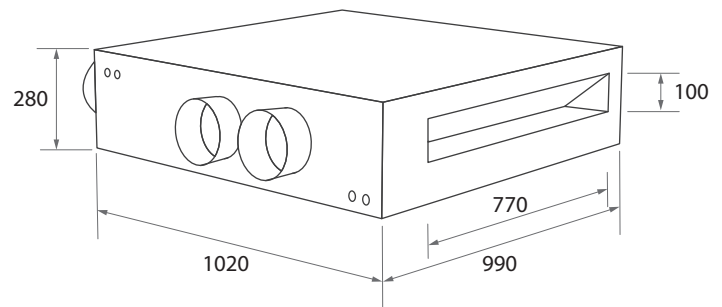
Controls	
Basic functionality	Dependent on controller
Wi-Fi	
ADA compliance	Yes
Dry contact	
Power outage restart	Auto. Based on last setting
Standard settings	
Summer operation	Cool+fresh air, fresh air only, and auto
Winter operation	Heat+fresh air, fresh air only, and auto
Timers	Dependent on controller
Condensate	
Pipe size	19 mm

Air flow

Indoor	Type	ECM centrifugal
	CFM	226 to 400
	Available ESP	75 Pa
	Supply connection (H × W)	100 mm × 770 mm (4.0 in. × 30.375 in.)
	Return connection	2 side 160 mm (6 in.) round
	Speeds	Low, med, high, auto
Fresh air intake (ERV)	Filter	MERV 3
	Type	ECM centrifugal
	CFM	20 to 85
	Connection	160 mm round (6.0 in.)
	Speeds	Based on CFM
Stale air exhaust	Filter	MERV 13
	Type	ECM centrifugal
	CFM	20 to 85
	Available ESP	50 Pa
	Connection	160 mm round (6.0 in.)
Outdoor FA and EA for outdoor fan	Speeds	Based on CFM
	Filter	MERV 13
	Type	ECM centrifugal
	CFM	385 to 638
	Available ESP	75 Pa
	Intake connection	200 mm (8 in.) round
	Exhaust connection	200 mm (8 in.) round
	Speeds	Low, med, high, auto

Physical data

Dimensions		
Net (W × D × H)	mm (in.)	990 × 1020 × 280 (39 × 40.16 × 11)
Gross (W × D × H)		1220 × 1220 × 457 (48 × 48 × 18)
Weight		
Net	kg (lb)	77 (170)
Gross		86 (190)
Cabinet		
Finish	Sheet metal with black insulation	
Material	Steel	



Sound

General		
Indoor	dB(A)	27 to 43
	STC	40
	OITC	35
Speeds	dB(A)	28 to 45

Corrosion protection

HRA-i-PLUS comes standard with corrosion protection assuring many years of trouble-free performance.

ERV filter efficiency: ePMI 80%

The filters capture 80% of the particulate with 1 micron size.

Electrical resistance heater

General	
Capacity	2000 W -6825 BTU/h

ERV

General				
Flow type	Counterflow enthalpy exchanger			
Material	Mold and bacterial resistant, washable polymer membrane			
ASHRAE compliance	62.1 and 62.2. When used with ERV.			
	40 CFM	60 CFM	80 CFM	
Efficiency of core in winter				
Sensible	%	86.7	85.2	88.1
Latent	%	72.5	65.1	60.3
Efficiency of core in summer				
Sensible	%	71.1	69.4	68.1
Latent	%	56.2	54.5	51.2
Filter				
Indoor air	MERV	MERV 13		
ERV FA & EA	MERV	MERV 13		
Leakage				
Internal	In w.q.	2.6% at 0.40	2.4% at 0.40	2.2% at 0.40
External	In w.q.	2.8% at 1.0	2.7% at 1.0	2.5% at 1.0

Electrical

General		
Voltage		208 to 240
Hz/Phase		60 Hz, single phase
Power supply		Hardwired only
Power factor	%	0.96
Cooling (rated)		3.4
Cooling (max)		7.8
Heating -heat pump only (rated)		3.2
Heating -heat pump only (max)		8.3
Input power (standby)	W	10.8
Input power (off mode)		1.7
Electric heat	kW	2.0

Motors		
Compressor	RLA	2.8
	LRA	4.7
	W (max)	180
Indoor CFM fan motor	FLA	0.8
	HP	0.24
Fresh air intake CFM fan motor	FLA	0.2
	HP	0.05
Stale air intake CFM fan motor	FLA	0.3
	HP	0.05
	W (max)	190
Outdoor CFM fan motor	FLA	0.8
	HP	0.25

Circuit breakers		
MCA -Heat pump + electric heat	A	18
Recommended breaker size	A	20
MOCP		25

Compressor		
Type	BLDC twin rotary inverter	
Refrigerant	Type	R410A (optional R32)
	Oz.	21.87
Oil	Type	Fv50s

Cooling and heating performance

Cooling 35 °C

Indoor 27 °C (80 °F), RH 55. Outdoor 35 °C (95 °F).

ERV		
Air flow		80 CFM
Sensible efficiency		74%
HRA-i-PLUS		
Range	BTU/h	6690 to 17 000
Capacity		11 000
Input power	W	1005
Efficiency	COP	3.24

Heating 8 °C

Indoor 21 °C (70 °F) RH 50. Outdoor 8 °C (47 °F).

ERV		
Air flow		80 CFM
Sensible efficiency		74.3%
HRA-i-PLUS		
Range	BTU/h	6690 to 17 000
Capacity		14 256
Input power	W	1170
Efficiency	COP	3.7
Electrical resistance heater		
Capacity	BTU/h	6825

Horizontal DC inverter compressor

The unit has a height of merely 26 cm and offers a broad modulation range from 15% up to 100% of the power. Furthermore, it uses proprietary drivers with advanced motor torque and control algorithms to eliminate vibrations.

Enthalpy

Enthalpy is the sum of the sensible and latent heat in a given air-vapour mix. It is sometimes referred to as the total heat of the air.

The Enthalpy Exchanger recovers both the thermal and the latent energy from the stale air extracted from wet rooms around the home.

Heating -5 °C

Indoor 21 °C (70 °F), RH 50. Outdoor -5 °C (23 °F).

ERV		
Air flow		80 CFM
Sensible efficiency		74.50%
HRA-i-PLUS		
Range	BTU/h	6690 to 17 490
Capacity		12 205
Input power	W	1140
Efficiency	COP	3.1
Electrical resistance heater		
Capacity	BTU/h	6825

Heating -15 °C

Indoor 21 °C (70 °F), RH 50. Outdoor -15 °C (5 °F).

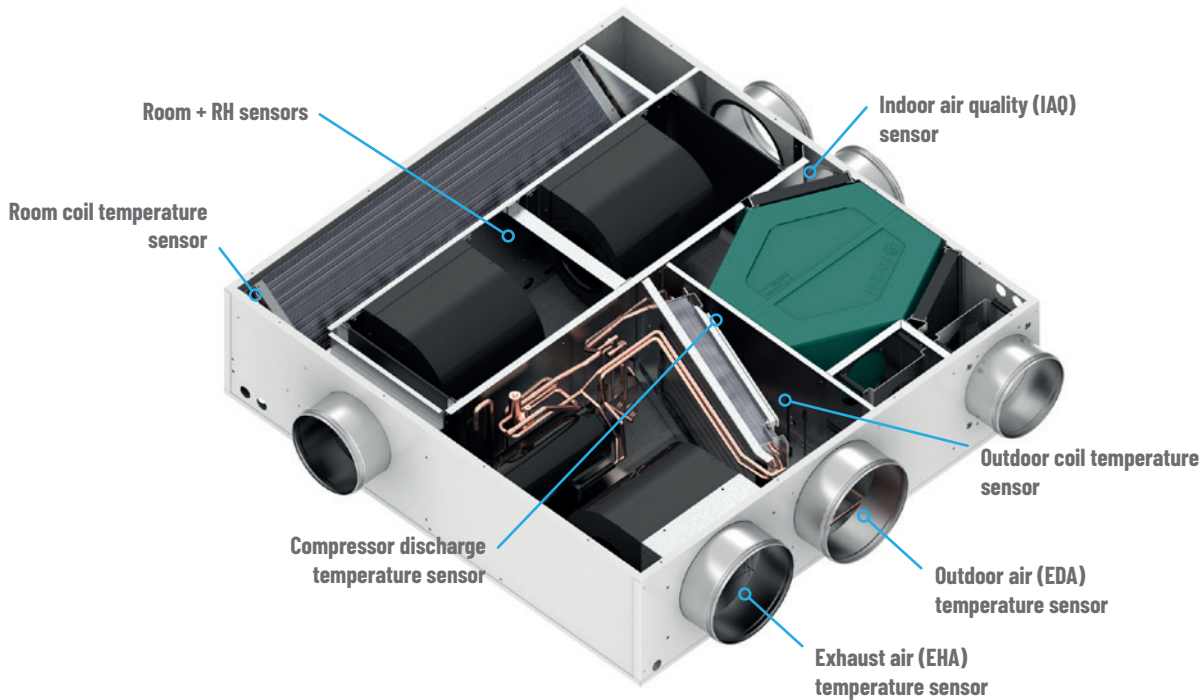
ERV		
Air flow		80 CFM
Sensible efficiency		75.30%
HRA-i-PLUS		
Range	BTU/h	6690 to 17 490
Capacity		9675
Input power	W	11-0
Efficiency	COP	2.57
Electrical resistance heater		
Capacity	BTU/h	6825

ERV -preheat added for defrost control

Optional electric heater for ERV OA inlet for operation below -10 °C.









The additional energy, which would otherwise have been lost, is transferred into the incoming fresh air stream before being supplied to habitable rooms.

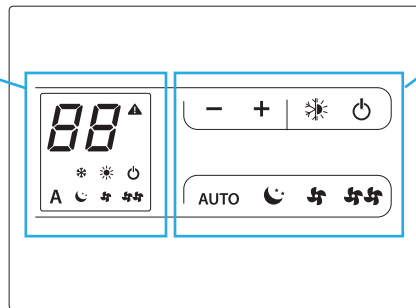
Sensors



Base functions

Display status and alarms







-  Alarm indication
Flashing with closed CP contact
Lit for alarm indication
-  Summer mode active
-  Winter mode active
-  Unit in stand-by mode
-  Auto function
-  Minimum ventilation speed activated
-  Rated ventilation speed activated
-  Maximum ventilation speed activated



The remote control can also be installed in a mechanical room.

The room temperature, as well as the humidity and quality of the air (VOC+CO2), are measured on the air extraction fitting of the unit.

Keypad functions

-  Decrease or increase the set temperature
-  Allows you to change the operating mode between summer and winter.
-  Allows the control panel to be switched on or put into stand-by mode.
- AUTO** Makes ventilation speed adjustment fully automatic according to IAQ values is RH%.
-  Allows you to set the minimum ventilation speed.
-  Allows you to set the rated ventilation speed.
-  Allows you to set the maximum ventilation speed.

Airflow

HRA-i-PLUS Ceiling / Ducted is flexible in many ways. It can be fully ducted or used with minimal or no ducting. This flexibility enables HRA-i-PLUS Ceiling / Ducted to be placed anywhere in a dwelling without restrictions.

Supply air

The rectangular 100 mm x 770 mm supply air connection is ideal for a supply grille or ducting, with up to 75 Pa external static pressure (combined between return and supply).

Stale air exhaust

The 160 mm round stale air exhaust connection can be used as part of a plenum return without any ducting or can be ducted to a bathroom or multiple locations with up to 50 Pa external static pressure. If configuring HRA-i-PLUS Ceiling / Ducted with a bottom return, the stale air can also be pulled from the bottom return.

Outside air intake

The single 200-mm round outside air intake connection provides air for the condenser portion and fresh air for the inside. This can be ducted with up to 75 Pa external static pressure (combined between intake and exhaust).

Outside air exhaust

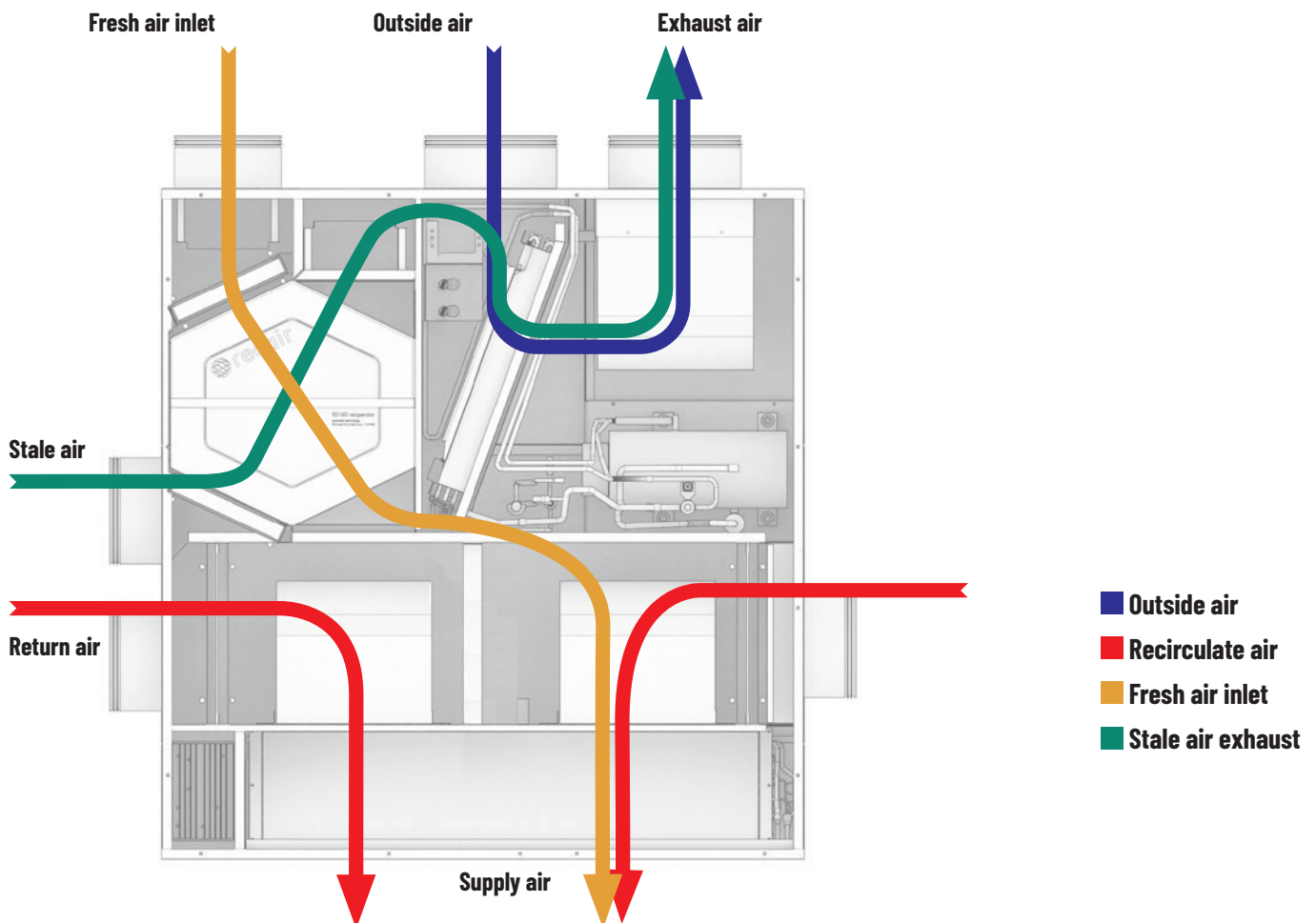
The single 200-mm round outside air exhaust connection is for the condenser. This can be ducted with up to 75 Pa external static pressure (combined between intake and exhaust).

Fresh air inlet

The single 160 mm round outside air intake connection provides fresh air for inside. Requires optional 1 kW electric preheat below -10 °C.

Return air -sides options

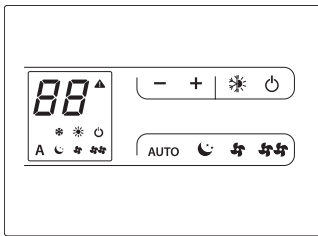
The left and right side 160-mm round connection can be ducted to one or more rooms with up to 75 Pa external static pressure (combined between return and supply). It can also be left open as a side plenum return. With two ECM fans, each with auto ESP, each connection fully independent. Duct bolt, leave both open or duct one and leave one open to a plenum.



Compatible accessories

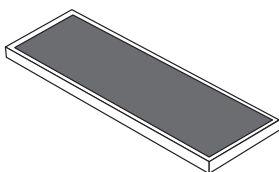
	Description	Code
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Command for Y version

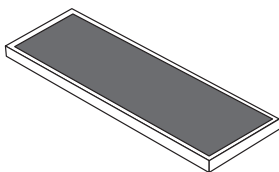


CNT-B smart touch electronic wall control panel with T/H sensor for Y electronics, integrated Wi-Fi module, black color	AHRA0571
CNT-B smart touch electronic wall control panel with T/H sensor for Y electronics, integrated Wi-Fi module, white color	AHRA0572
CNT-B smart touch electronic wall control panel with T/H sensor for Y electronics, integrated Modbus communication module, black color	AHRA0581
CNT-B smart touch electronic wall control panel with T/H sensor for Y electronics, integrated Modbus communication module, white color	AHRA0582

Spare filters

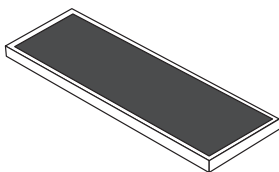


FDR kit 2 spare recirculation filters for HRA DOMO 50-15	AHRA0687
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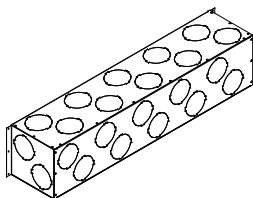
FDR kit 2 spare filters ePMI for HRA DOMO 50-15	AHRA0685
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Active carbon spare filters

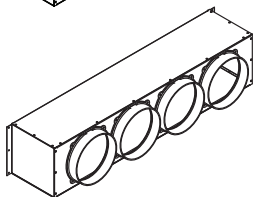


FCA activated carbon filter for HRA DOMO 50-15	AHRA0686
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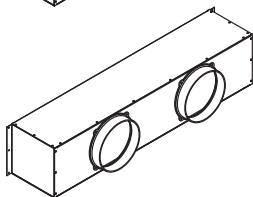
Exclusive accessories fro HRA and DOMO 50/15



Insulated plenum with unit connection flange and pre-cut holes for DN 75 / DN 90 corrugated pipes (4+16+4) (810 mm × 175 mm × 175 mm)	AHRA0712
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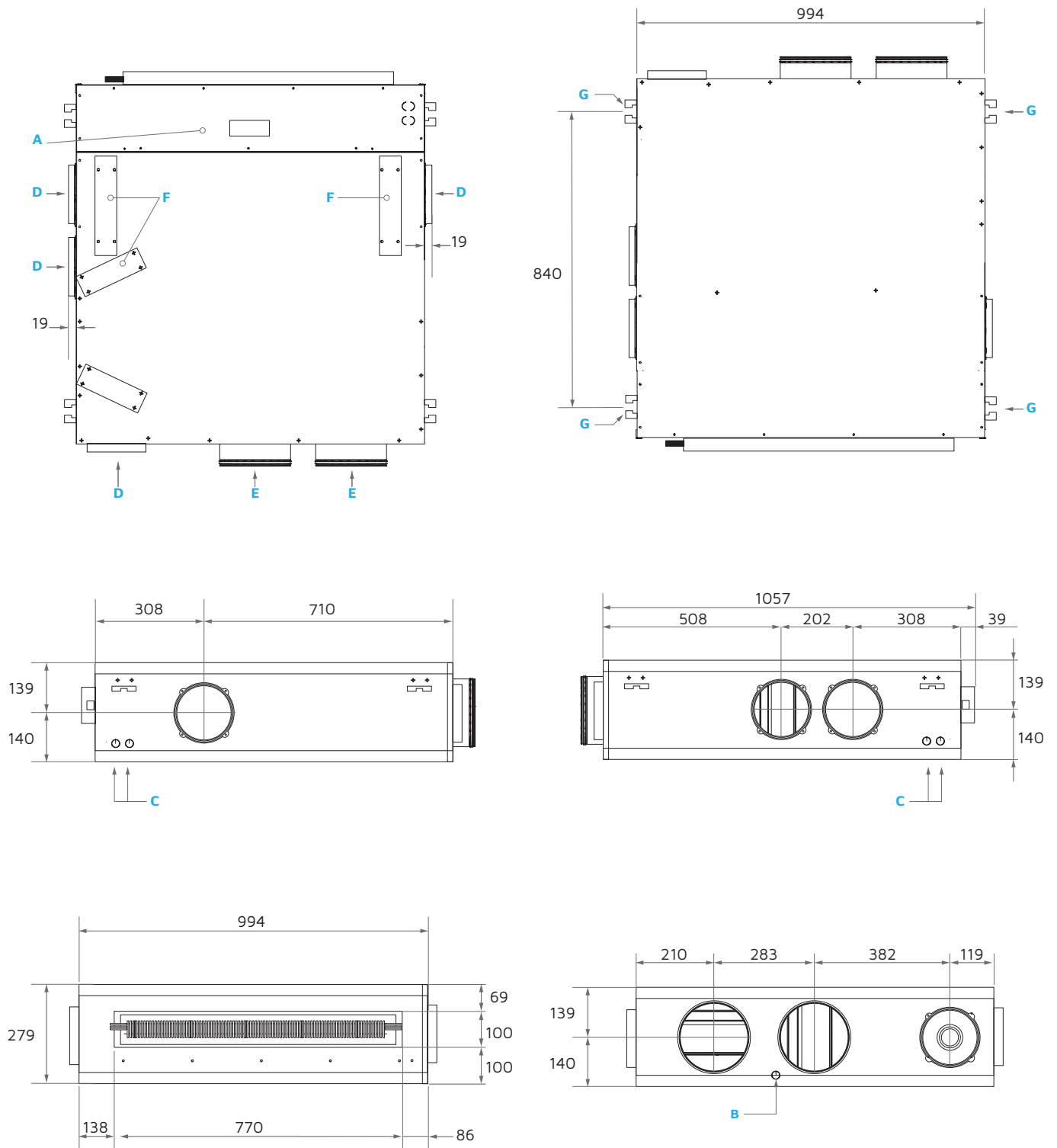


Insulated plenum with unit connection flange and four DN 125 mm circular dust connections (810 mm × 175 mm × 175 mm)	AHRA0713
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Insulated plenum with unit connection flange and two DN 160 mm circular dust connections (810 mm × 175 mm × 175 mm)	AHRA0706
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Mechanical drawing



- A** Electrical panel
- B** Condensate drain Ø16
- C** Power supply
- D** Female aeraulic connection Ø160

- E** Female air duct connection Ø200
- F** Filter port
- G** Installation bracket

Technical requirements

- Properly installed insulated condensate drain line (syphon) with a minimum of 30% slope.
An internal drain is highly recommended.
- Approved louvers installed with best practices to ensure no water into the wall assembly.
- Correctly sized ductwork, installed properly, and balanced.
- The unit must be perfectly level on the vertical axis and slope slightly toward drain outlet connection horizontally.
- Interior clearances are only required to prevent vibrations. Leave at least 12,5 mm of clearance from any surface. All other clearances are only dependent on ducting.
- It is highly important to install a P trap for condensate drain. (Refer to the Installation manual)
- Unblocked vents on the exterior and no obstacles within 1 m .
- An access panel with adequate clearance to be able to access the entire bottom of the unit for servicing.

Note: Refer to the full specifications for detailed Information about the list of specifications.

Any louver or louver assembly must meet these requirements as exceeding these limits can cause the unit to overheat and fail and void the warranty.

Optional ERV electric preheater must be used for outside air temperatures below -10°C .

Louver specifications

HRA-i-PLUS Ceiling / Ducted units can be vented through all kinds of custom and creative solutions. The possibilities are endless, from perforated panels to custom louvers.

There are two critical factors in selecting and sizing a solution that will work with HRA-i-PLUS Ceiling / Ducted units.

- **Free area**

This area on a louver/grille is open for the air to flow through. The louver, perforated panel, or other solution must have at least the amount of free area as required in the specifications below in the plenum from the unit so that ample air can enter and exit the condenser chamber. A more restrictive solution with a smaller free area can be utilized by enlarging the louver and plenum until the required free area is achieved.

The minimum free area required for the intake and exhaust vents are 0.03 m^2 .

- **Pressure drop**

Pressure drop is the resistance the louver/grille creates against the airflow. This resistance can create heat build-up inside the condenser portion, causing the compressor to overheat and shut down. A solution with a higher pressure drop than specified can be utilized by enlarging the louver and plenum until the pressure drop is within specification.

The maximum total pressure for the intake and exhaust ducting (if any) and intake and, exhaust louvers combined must be 50 to 75 Pa per fan. To be clear, the entire assembly of ductwork, plenums, and louvers for the complete air circuit, in, and out of the system may not exceed 50 to 75 Pa per fan.

HRA-1-PLUS

- ✓ **A system that automatically monitors all the parameters of home comfort, optimizing energy savings at all times.**
- ✓ **Constant flow with intelligent ventilation that automatically adapts to pressure drops.**
- ✓ **A compact system that uses the energy contained in the air as a heat source.**
- ✓ **7 functions in one unit, an ideal solution for low energy impact homes such as nZEB.**



Importer - Canada

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