

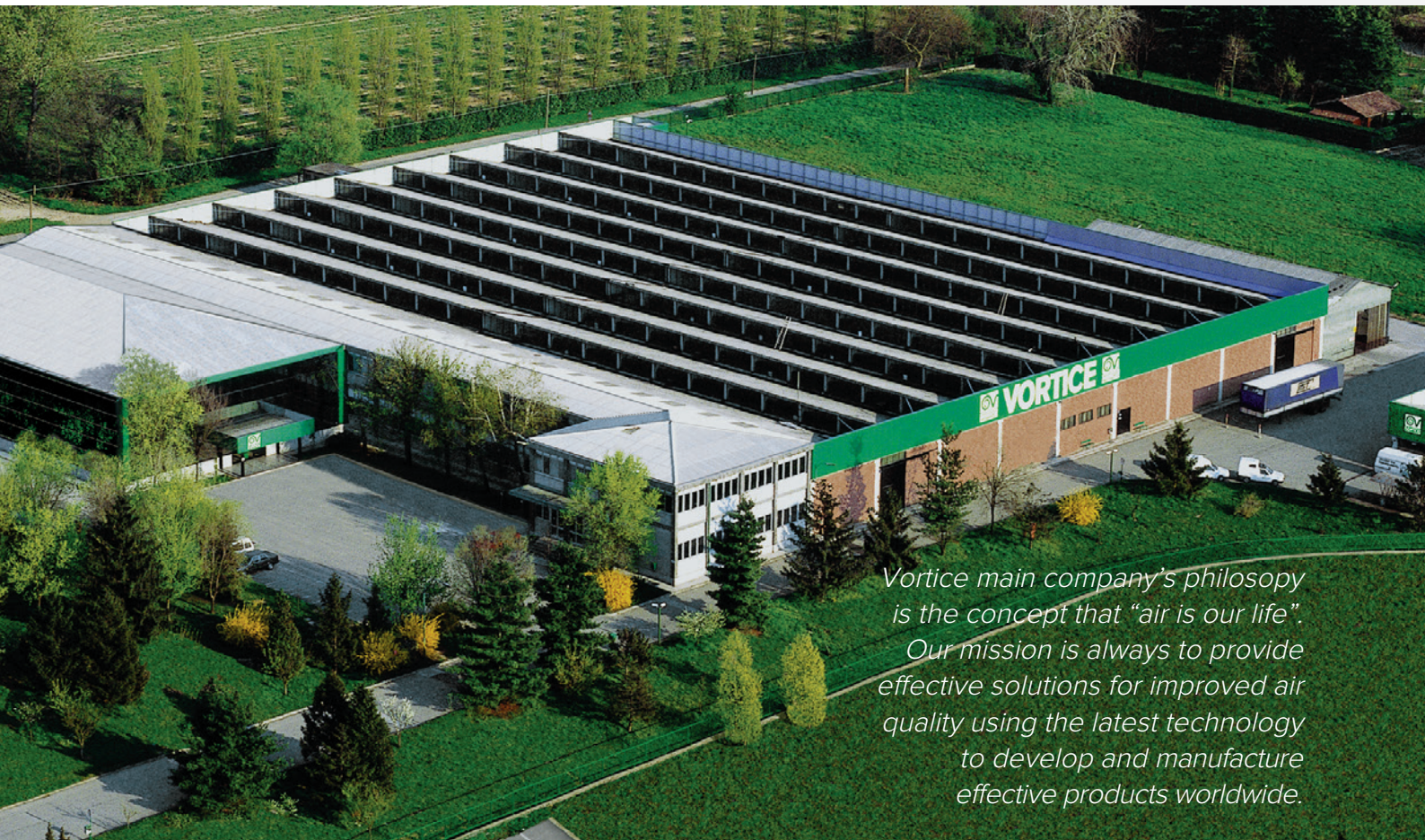


COMMERCIAL VENTILATION 

RLHE RANGE

High efficiency heat recovery units for applications
in commercial and tertiary environments

NEW



Vortice main company's philosophy is the concept that "air is our life". Our mission is always to provide effective solutions for improved air quality using the latest technology to develop and manufacture effective products worldwide.

Our current Vortice Headquarters have been located in Tribiano (Milan) since 1972.

Vortice has achieved European market leadership by dedicating their efforts to the production of products for ventilation, climate control, heating, extraction, purification and the treatment of air, for domestic, commercial and industrial applications. Since 1954 Vortice has been synonymous with quality and excellence and continues to make significant improvements by investing in continuous research to improve the efficiency and quality of its products.

VORTICE IN THE WORLD

ENGLAND



Founded in 1977, Vortice Limited is located at Burton on Trent in the East Midlands.

CHINA



Founded in 2012, Vortice Ventilation System is located about 200 Km from Shanghai.

SOUTH AMERICA



Founded in 2012, Vortice Latam in San José, Costa Rica.

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Certification

According to the following state of the art Standards:
Safety:

- EN 60204-1
- EN 12100
- EN 12499
- EN 13857
- EN 1886
- EN 13053+A1

EMC:

- EN 55014-1
- EN 55014-2
- EN 61000-3-2
- EN 61000-3-3

Commercial ventilation appliances conform to the following European Directives:

- Machines Directive: N° 2006/42/CE
- EMC: N° 2014/30/UE
- Energy Related Products (ErP) Directive: N° 2009/125/CE
- Electric Motor Efficiency Regulation: N° 640/2009/CE
- Motor-fans Regulation: N° 327/2011/UE
- Ventilation Units Regulation: N° 1253/2014/UE



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The new range of RLHE heat recovery units consists of 6 models, with nominal air flow rates of 500, 1000, 1500, 2000, 3000, 4000 m³/h respectively. Each model is available in horizontal version (H), for false ceiling and floor installation (on request), and vertical version (V). All models are also available in the “BASIC” version (without control) and in “PLUS”, “TOP” and “PREMIUM” versions (with different control modes).

Benefits

- Compliant with EU Regulation 1253-2014 EU 2018 (ERP 2018).
- High efficiency static energy recovery (> 85%).
- Reduced electrical absorption for the use of fans with brushless motors.
- Reduced sound emission levels.
- Reduced heights for false ceiling installation.
- Horizontal (false ceiling and ground) and vertical installation.
- Possibility of changing the location and orientation of air flows.
- Plug & Play installation with pre-testing at the factory.
- Possibility of control and regulation of the ventilation with constant flow, constant pressure or with CO₂ control.

PROPOSED CONFIGURATIONS

	BASIC	PLUS	TOP	PREMIUM
Water post-heating coil (internal)	•	•	•	•
Cooling water coil (external module)	•	•	•	•
Direct expansion coil for cooling (external module)	•	•	•	•
Water post-heating coil (internal) + Cooling water coil (external module)	•	•	•	•
Water post-heating coil (internal) + Direct expansion coil for cooling (external module)	•	•	•	•
Electric post-heating coil (internal)	•	•	•	•
Electric pre-heating coil (external module)	•	•	•	•
Water post-heating coil (internal) + Electric pre-heating coil (external module)	•	•	•	•
Electric post-heating coil (internal) + Electric pre-heating coil (external module)	•	•	•	•
Cooling water coil (external module) + Electric pre-heating coil (external module)	•	•	•	•
Direct expansion coil for cooling (external module) + Electric pre-heating coil (external module)	•	•	•	•
Water post-heating coil (internal) + Cooling water coil (external module) + Electric pre-heating coil (external module)	•	•	•	•
Water post-heating coil (internal) + Direct expansion coil for cooling (external module) + Electric pre-heating coil (external module)	•	•	•	•
Remote functions management terminal with LCD viewer	—	•	•	•
Control	—	constant pressure	constant air flow	CO ₂

CONSTRUCTION AND TECHNOLOGICAL CHARACTERISTICS

MANUFACTURE

- Frame in 40 mm anodized aluminium profiles.
- Sandwich panels with 23 mm of thickness.
- Panel insulation in polyurethane foam, density 40 kg/m³
- External sheet panel in pre-painted steel 0,6 mm of thickness with protective film surface.
- Internal sheet panel in galvanized steel with 0,6 mm of thickness.
- Automatic by-pass damper for fresh air complete filtered
- Legs for installation on floor or brackets for suspended ceilings unit
- Removable panels for direct access to filters and internal components.



HEAT EXCHANGER

The RLHE units is equipped with aluminium heat exchangers cross-flow type in counter current flow. The efficiency of the heat exchanger is Eurovent certified at nominal flow rate which value is measured under the following conditions:

Fresh Air (renewal): -5°C / 80% RH
Ambient Air (indoor): +20°C / 50% RH

FILTERS

G4 filters in exhaust air and fresh air intake. Possibility of filtration F7 placed in the air flow of fresh air section. Both types of filters are mounted on guides equipped with seals to guarantee the high tightness. The installation of the filters upstream the internal components guarantees the protection of the same.

FANS

They are made up centrifugal impellers with blades directly coupled to external rotor EC brushless motors with electronically switched on single-phase or three-phase execution (according to the model). The electric motor it's complete of internal thermal protectors. The fans are able to adjust the performances at the instant load condition by a stepless regulation of the air flow and it's assuring a low energy consumption and sound emissions.

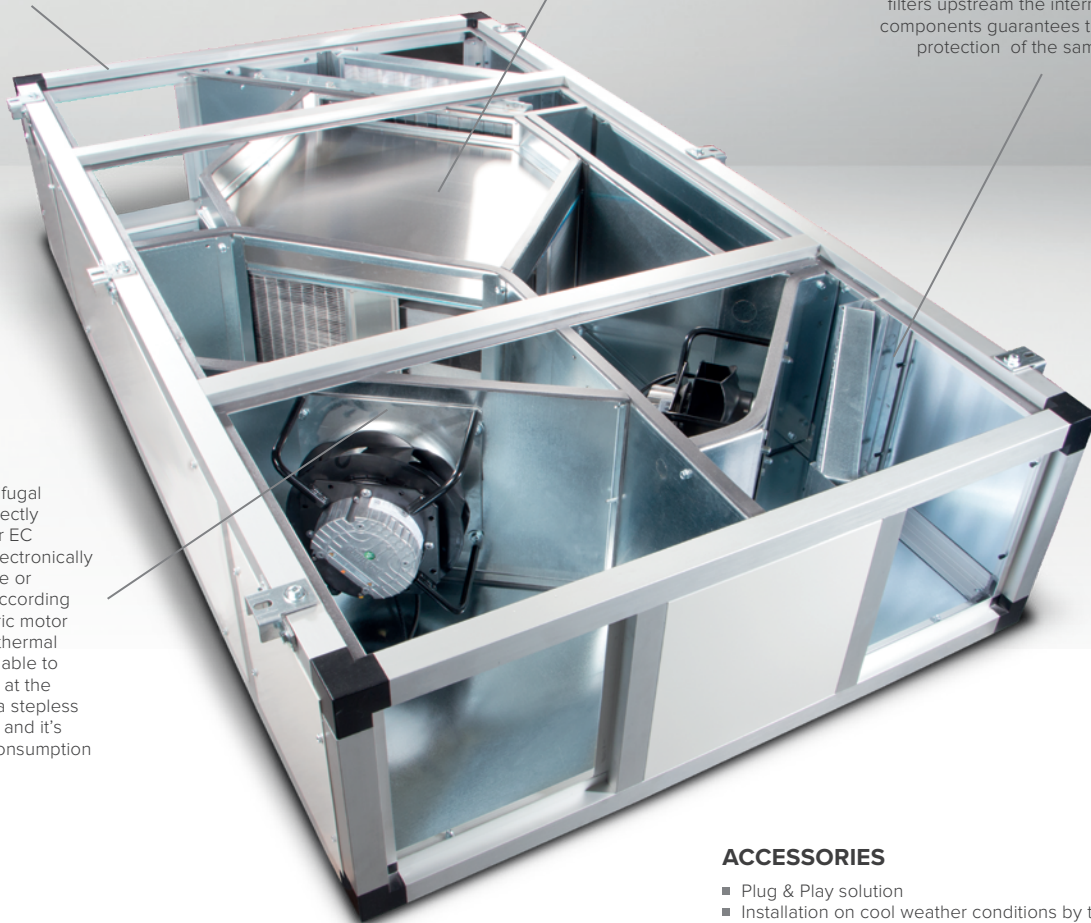
CONTROLS AND SAFETY DEVICES

The **RLHE** units are supplied with a remote control panel with a dedicate line connection. By remote it's possible select a specific speed control for the EC fans, the summer or winter operation mode of the unit and check the cleaning condition of the filters section by the status of "clogged filter" alarm light. The control box is closed with a lock to avoid unauthorized access and changes to the previously parameters settings.

- All models of the range can be configured to manage:
 - the automatic freecooling mode through the automatic actuation of the air by-pass damper on the fans speed management,
 - The condition of clogging filters through differential pressure switches;
- All models can be guarantee the operation at the minimum outdoor temperature of -5°C.
- A mainswitch mounted on the front panel allows the shutdown of the unit in case of failure.

ACCESSORIES

- Plug & Play solution
- Installation on cool weather conditions by the installation of electric pre-heater module (required below -5 °C of outdoor air)
- Cooling coil on dedicate external section connected to the unit.
- Electric or hot-water heating coil installed internally on the unit.
- Aluminium dampers on supply, recycle and return air connections.





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TECHNICAL DATA

MODEL		005	010	015	020	030	040
Nominal air flow	mc/h	500	100	1500	2000	3000	4000
By-pass		internal					

FANS

Brushless fans		EC	EC	EC	EC	EC	EC
External static pressure	Pa	150	150	150	150	150	150
Installed power	Watt	2x170	2x500	2x750	2x752	2x1200	2x1800
SFP	W / (l/s)	1,80	1,66	1,54	1,49	1,56	1,84
Fans Regulation		0-10 V	0-10 V	0-10 V	0-10 V	0-10 V	0-10 V
Fans Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50	230-1-50	380-3-50	380-3-50

RECOVERY

Type		counterflow					
Winter yield	-5°C/80% U.R. / 20°C/50% U.R.	16,2°C	17,3°C	17,1°C	17,2°C	18°C	17,9°C
Winter efficiency		85%	89%	88%	89%	92%	92%
Summer yield	32°C/50% U.R. / 26°C/50% U.R.	27,3°C	27,1°C	27,1°C	27,1°C	27,2°C	27,2°C
Summer efficiency		78%	81%	81%	82%	80%	81%
Efficiency Reg. 1253/2014 Eco Design	5°C / 25°C dry	80%	82%	82%	82%	85%	85%

DIMENSIONAL FEATURES BASE UNIT horizontal version H

Width	mm	970	1100	1200	1400	1550	1900
Length	mm	1400	1900	1980	2200	2400	3000
Height	mm	400	400	470	550	680	680

DIMENSIONAL FEATURES BASE UNIT vertical version V

Width	mm	400	400	470	550	680	680
Length	mm	1400	1900	1980	2200	2400	3000
Height	mm	970	1100	1200	1400	1550	1900

TECHNICAL FEATURES BASE UNIT H / V

Weight horizontal version	kg	96	137	176	230	300	435
Weight vertical version		93	137	190	224	298	412
Calculated sound pressure level at 1 mt external panel	dB(A)	47	51	48	53	54	57

APPLICATIONS



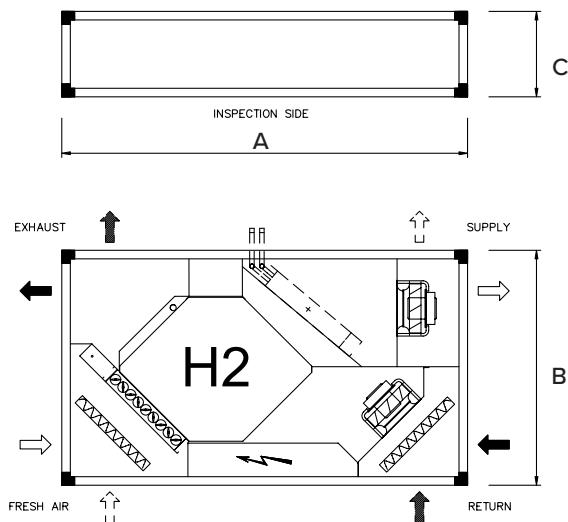
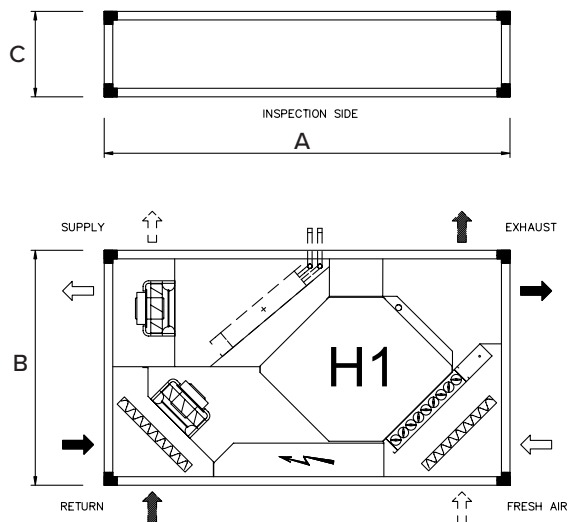


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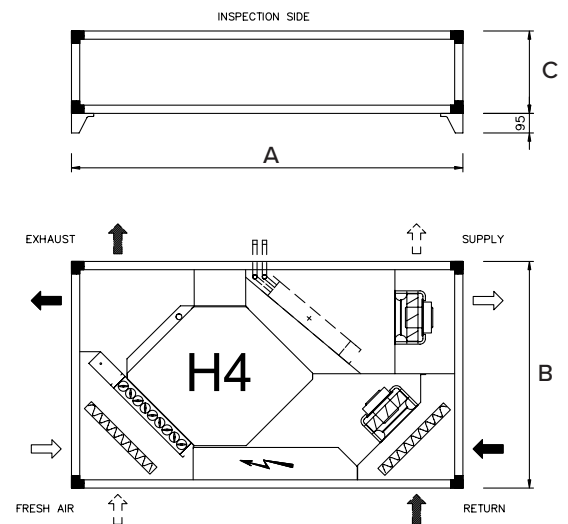
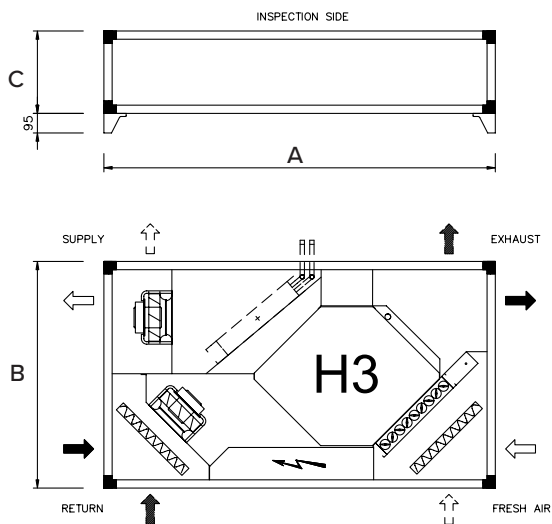
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DIMENSIONS

Horizontal for false ceiling



Horizontal for floor installation

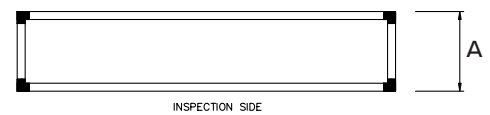
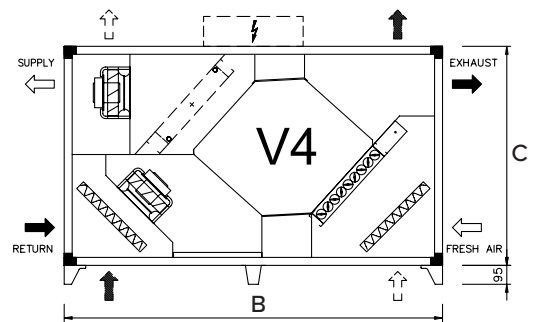
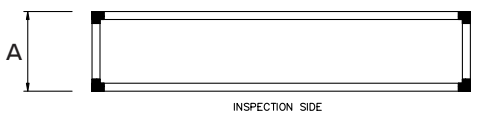
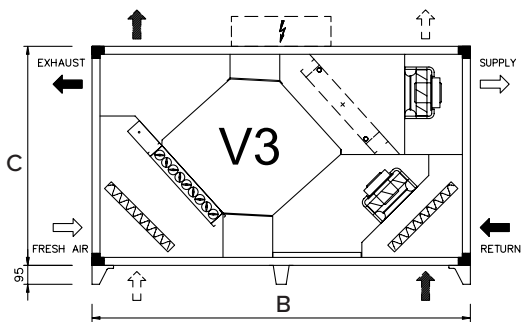
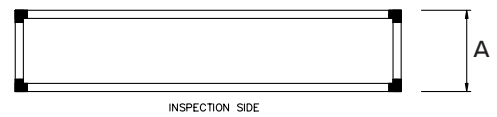
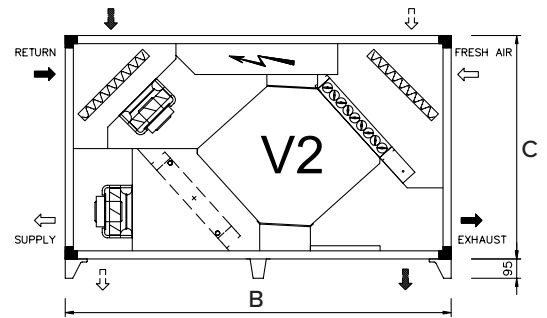
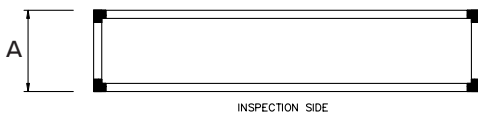
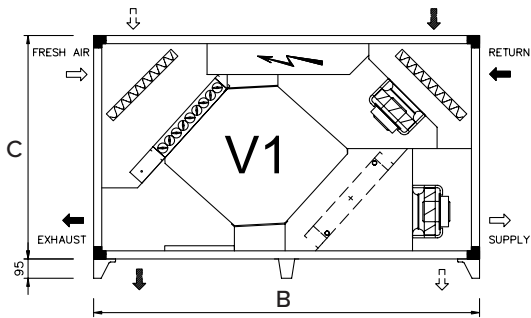


Model	A	B	C
RLHE 005	970	1400	400
RLHE 010	1100	1900	400
RLHE 015	1200	1980	470
RLHE 020	1400	2200	550
RLHE 030	1550	2400	680
RLHE 040	1900	3000	680

Dimensions (mm)

DIMENSIONS

Vertical



Model	A	B	C
RLHE 005	400	1400	970
RLHE 010	400	1900	1100
RLHE 015	470	1980	1200
RLHE 020	550	2200	1400
RLHE 030	680	2400	1550
RLHE 040	680	3000	1900

Dimensions (mm)

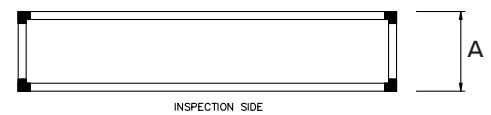
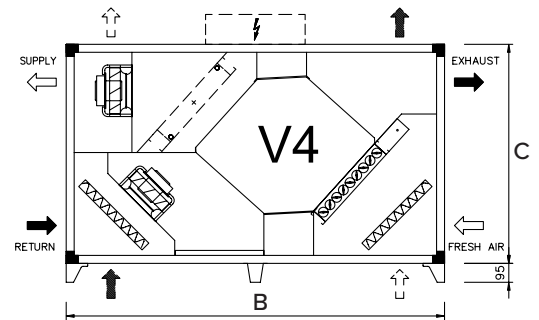
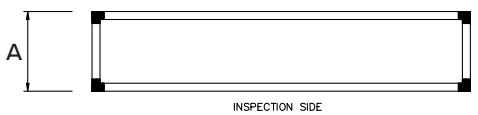
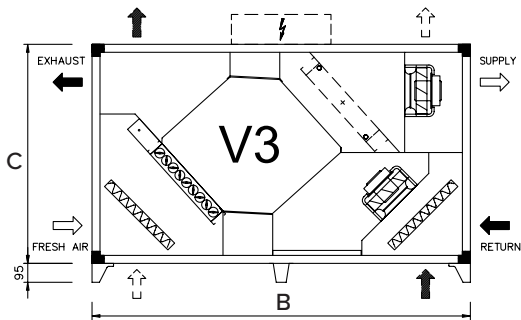
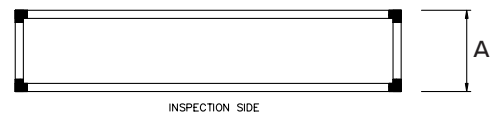
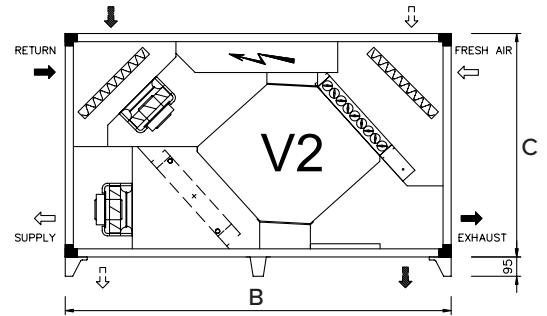
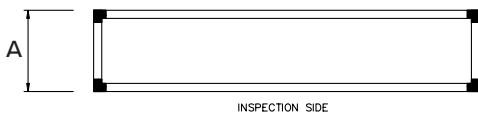
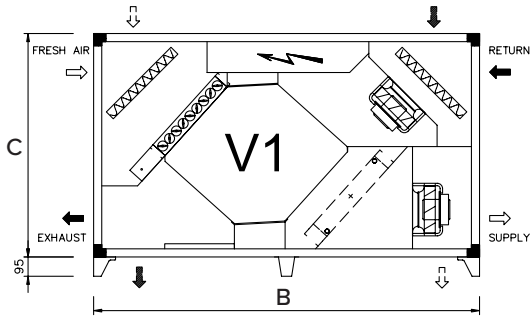


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DIMENSIONS

Vertical



Model	A	B	C
RLHE 005	400	1400	970
RLHE 010	400	1900	1100
RLHE 015	470	1980	1200
RLHE 020	550	2200	1400
RLHE 030	680	2400	1550
RLHE 040	680	3000	1900

Dimensions (mm)

CONTROL

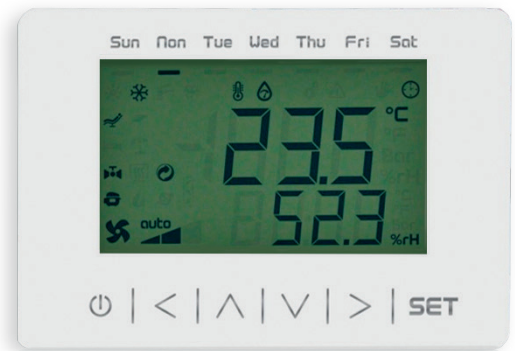
The Plug & Play version comes complete with an electric control panel and thermoregulation for constant-flow or constant pressure machine management and includes standard control of:

- General alarm contact.
- Remote ON/OFF control.
- Summer/winter season change.
- External air temperature probe.
- Supply air temperature probe.
- Recovery air temperature probe.
- Pressure switches for supply and recovery filter dirt signal.
- Remote functions management terminal with LCD viewer (see photo).
- RS-485 Modbus port for communicating with BMS systems.
- Time slot management for turning the machine on and off.
- Management of the Free-cooling damper.
- Differential pressure transducer for controlling constant pressure/flow fans.
- Fan speed control with 0-10 Vdc signal.

Options:

- Coil management in the previously described configurations.
- Air quality control by means of the CO₂ probe (see photo).
- Additional damper management.

NOTE: Personalised software versions can be supplied upon request.



ACCESSORIES

- F7 filtration in supply.
- Adjustment potentiometer 0-10 V (only for BASIC version)
- Ventilating section sound-proofing section with sound absorbing mat.
- 2-row internal hot water coil.
- Cooling coil on the external module.
- Direct expansion coil for cooling on external module.
- Double coil (internal hot and cold on external module).
- Electric pre-heating.
- Damper for external air inlet, discharge, recirculation, air delivery, room air recovery.
- Circular channel connection fittings.

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