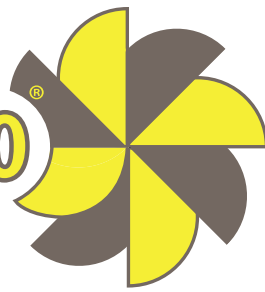


Apply.co[®]

Mechanical Controlled
Ventilation



**HEAT RECOVERY UNITS
RECOMMENDED FOR USE IN
SCHOOLS**

by  **Tecnosystemi**[®]
group



WHAT ARE THE HAZARDS OF KEEPING WINDOWS OPEN?



INCREASED RISK OF FALLING ILL

To ensure air circulation, windows are left open. Students are thus compelled to wear coats, hats, gloves and scarves during class time.



MORE ENERGY IS WASTED

It is not advisable to keep windows open for extended periods of time, even if they are only partially open or ajar, since cold air flows continue to enter, lowering the temperature in the classroom, and heating systems have to work much harder to provide heat.



ENTRY OF SMOG OR POLLUTED AIR

Today we live in increasingly polluted environments, and the air we breathe, especially in cities, is becoming increasingly dirty and harmful. Ventilation by opening windows is, unfortunately, no longer a viable option.

Once again this year, schools will have to keep their windows open to protect themselves from Covid, even during the winter months: the recommendation is included in the operational protocol for face-to-face classes drawn up by the Italian National Institute of Health.

To ensure quantities and ventilation intervals, scientists explain that it will also be necessary to take into account sizes and widths of rooms and spaces, numbers of users present, increasing the volumes and openings in view of poorly ventilated rooms/spaces.

This recommendation has been included in the definitive text of the safety protocol, in which it is considered essential to ensure good levels of ventilation – the matter concerns the “steady, continuous intake of outdoor air” – using natural or mechanical means in all school rooms and classrooms.





If the air outside is polluted and the air inside is even more polluted, then what could the solution possibly be?

There is only a single solution to this problem, and it is very simple: **filter the ventilated air before releasing it into rooms.**

Controlled mechanical ventilation allows this to occur. This is a system that can expel exhaust air from buildings and draw in fresh air from outside, filtering it beforehand.

CMV systems operate continuously, 24 hours a day, ensuring you have fresh, healthy, clean air without ever having to open windows.

Tecnosystemi has expanded its range to include new heat recovery units designed and engineered for all school buildings.

Controlled mechanical ventilation systems are designed to be set up during the construction or renovation of a house, but decentralised solutions may also be adopted (or one-off CMV devices), which can be installed in individual rooms, even in finished buildings. **With a CMV system you will have a safe, enduring benefits regarding physical well-being and air quality in your home, saving you money and time spent in opening windows.**

new

SILENCE AIR

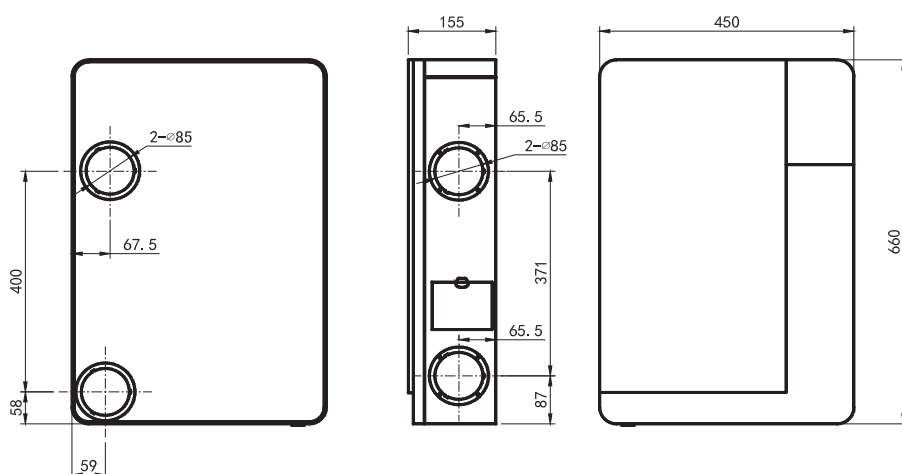
WALL-MOUNTED RESIDENTIAL HEAT RECOVERY UNIT

**WALL-MOUNTED**

TECHNICAL SPECIFICATIONS

- IDEAL FOR WALL MOUNTING
- HEPA FILTERING EFFICIENCY 99%
- INDOOR AND OUTDOOR AIR FILTRATION
- HIGH-EFFICIENCY HEAT AND HUMIDITY RECOVERY
- LOW NOISE
- HIGH-EFFICIENCY FANS
- AIR QUALITY INDEX (AQI) MONITORING

DIMENSIONS



FLOWS



TECHNICAL DATA	SILENCE AIR - 150m ³ /h
AIR FLOW CAPACITY [m ³ /h]	150
FILTERING EFFICIENCY	99% HEPA
FILTERING MODE	Low, Medium, High
SPEED	8 speed settings
POWER [W]	35
TEMPERATURE EFFICIENCY	82%
SOUND PRESSURE [dB(A)]	36
CONTROLS	Display touch screen / Remote control
AIR CONTROL DISPLAY	CO ₂ / Temp & RH
OPERATING MODES	Manual / Automatic / Programmed
ROOM AREA [m ²]	20 - 45
DIMENSIONS [mm]	450 x 155 x 660
WEIGHT [kg]	10

DISPLAY WITH CO₂ DETECTOR

Measured CO ₂ level	Air quality rating	Operating speed
CO ₂ ≤ 500	Excellent	1
500 < CO ₂ ≤ 650	Good	3
650 < CO ₂ ≤ 800	Slightly Polluted	5
CO ₂ > 800	Highly Polluted	8



FILTRATION

A wall-mounted heat recovery unit, which integrates air purification and an energy recovery feature, consists of a delivery fan, intake fan, heat exchanger, primary filter, activated carbon filter and HEPA filter on the air inlet side, and a primary filter on the return air duct. It features the following functions:

1. Fresh air purification:

Outside air is sucked in by an intake fan through a primary filter, it goes through a heat exchanger where heat exchange is carried out using the return air from the room. Lastly, the fresh air is further filtered by a HEPA filter and delivered into the house while an extractor fan discharges the stale air from the room to the outside.

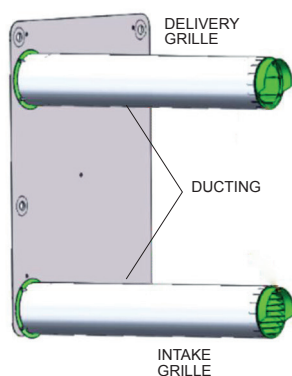
This process improves the air quality in the room.

2. Energy recovery:

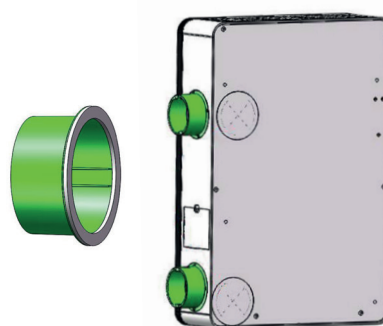
In the heat recovery unit, a plastic exchange pack retains the heat from the expelled air to transfer it to the fresh inlet air, thus allowing a notable reduction in heat loss and consequent savings in terms of money with respect to ventilation of air by opening windows.



INSTALLATION WITH REAR DUCTING



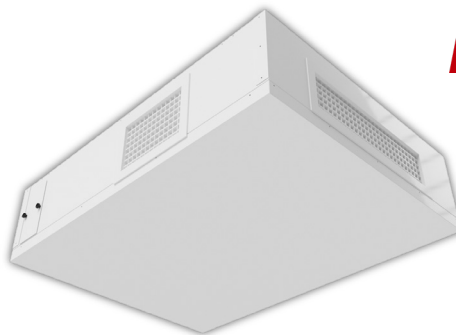
INSTALLATION WITH SIDE DUCTING



CODE	DESCRIPTION
ACC300002	WALL-MOUNTED RESIDENTIAL HEAT RECOVERY UNIT "SILENCE AIR" - 150m ³ /h
ACC300003	GRADE F7 REPLACEMENT FILTER FOR OUTSIDE AIR INLET FOR SILENCE AIR
ACC300004	REPLACEMENT HEPA FILTER + ACTIVATED CHARCOAL FILTER FOR AIR DELIVERY FOR SILENCE AIR
ACC300005	REPLACEMENT INTAKE AIR FILTER FOR SILENCE AIR
ACC300006	EXCHANGE PACK FOR SILENCE AIR

TOTAL CLASS HORIZONTAL 300 NON-DUCTED VENTILATION UNIT

TOTAL
Class 300
800



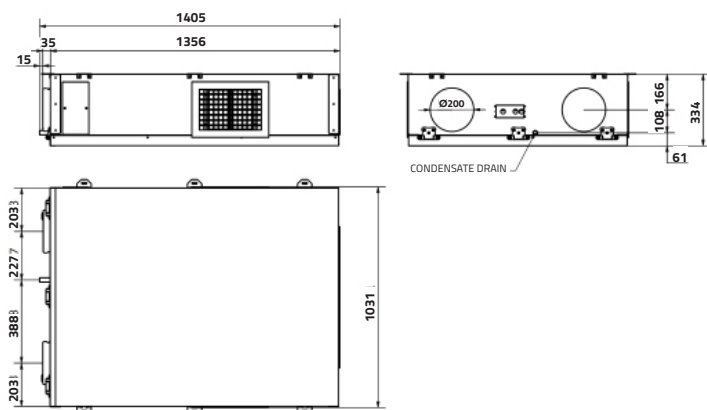
new

CE

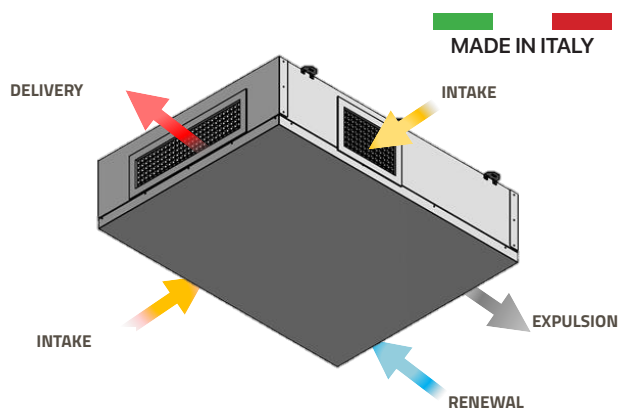
TECHNICAL SPECIFICATIONS

- NON-DUCTED VENTILATION UNIT
- EVO 300 MAXIMUM FLOW CAPACITY 400 m³/h
- POLYPROPYLENE COUNTER-FLOW HEAT RECOVERY UNIT WITH >90% EFFICIENCY
- EC CENTRIFUGAL FANS, BACKWARD CURVED BLADES, LOW CONSUMPTION
- LOW PRESSURE DROP FILTERS: F7 (and PM1 70%) FOR RENEWAL AND EXHAUST AIR
- SELF-SUPPORTING STRUCTURE IN PRE-PAINTED SHEET METAL
- ROCK WOOL THERMAL/ACOUSTIC INSULATION TH. 50mm
- INTEGRATED BYPASS FOR FREE-COOLING / FREE-HEATING (MOTORISED DRIVE WITH AUTOMATIC CONTROL)
- AVAILABLE WITH EVO AND EVO PLUS CONTROLS
- INTEGRATED FROST PROTECTION
- OPERATING CONDITIONS: AMBIENT TEMPERATURE BETWEEN 0°C AND 45°C, HUMIDITY <80%

DIMENSIONS



FLOWS



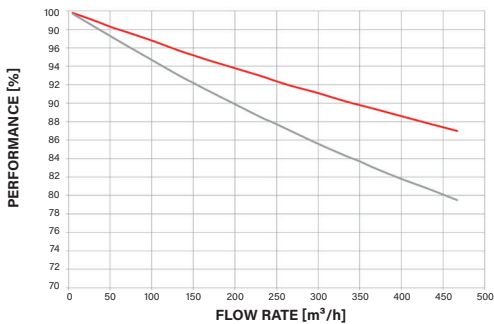
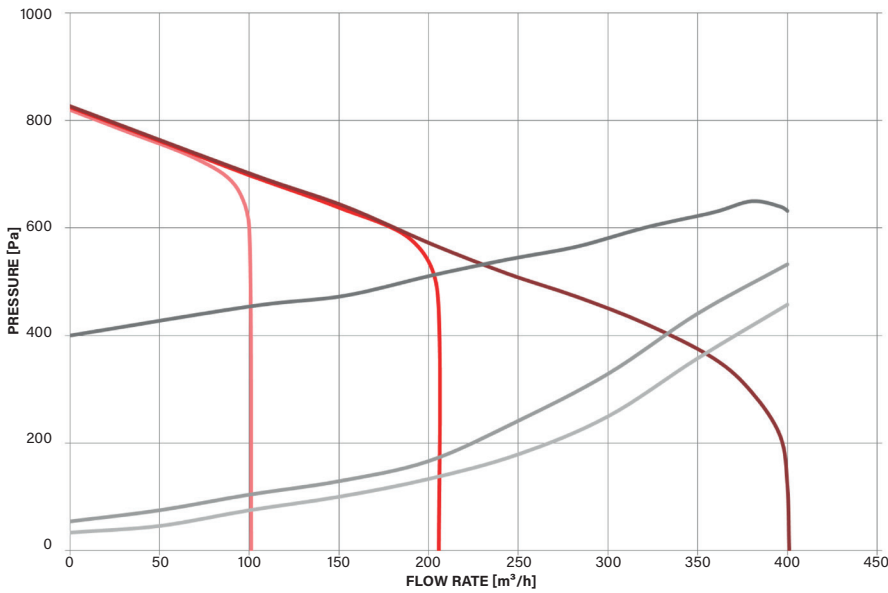
TECHNICAL DATA	EVO 300 / EVO 300 PLUS
Voltage	230V
Frequency	50-60 Hz
Current	2.7A
Power	350 W
Horizontal model dimensions (w x d x h)*	1020 x 1350 x 335 mm
Tubing DN	2X Ø 200 mm
Weight	95 kg
Flow capacity	400 m ³ /h
Effective electrical power consumption	0.327 kW
Specific internal fan power SFP _{int} *	1378 W/(m ³ /s)
Front speed at nominal capacity*	1.56 m/s
Nominal external pressure Δp _{s,ext}	358 Pa
Internal pressure drop of ventilation components Δp _{s,int} *	259 Pa
Fan static efficiency η _{s,fan} **	39.1%
Sound pressure level (L _{pa} in dB(A))***	36 dB(A)

*excluding sleeves and condensate drains ** calculated as per EU Regulation No. 327/2011

*** with machine correctly installed and fans at 70% at a distance of 3m

FLOW RATE DIAGRAMS

TOTAL CLASS 300



CONTROL UNIT TYPE



EVO MODEL

THE REMOTE CONTROL CAN BE INSTALLED INSIDE A 503 HORIZONTAL BUILT-IN BOX AND COMES WITH A SET OF ADAPTERS FOR INSTALLATION WITH ALL WELL-KNOWN BRANDS THE REMOTE CONTROL CONSISTS OF THE FOLLOWING:

- 2 KEYS FOR SPEED SETTING CHANGE AND FILTER ALARM RESET
- 5 SIGNALLING LEDS: 3 GREEN LEDS TO INDICATE ACTIVE SPEED, 1 RED LED TO SIGNAL THE FILTER ALARM, AND 1 BLUE LED TO SIGNAL THE OPENING OF THE BY-PASS AND ANTI-FREEZE FEATURE.
- THE REMOTE CONTROL IS CONNECTED VIA A STANDARD NETWORK CABLE (NON CROSSOVER) USING RJ45 CONNECTORS (MAX. RECOMMENDED LENGTH 30 M). SUPPLIED WITH 3M CABLE AS STANDARD



EVO PLUS MODEL

CIRCUIT BOARD WITH WHITE LCD DISPLAY

- SPEED SETTING 1,2,3 OR AUTOMATIC
- AUTOMATIC BY-PASS MANAGEMENT FOR FREE-COOLING AND FREE-HEATING
- FROST PROTECTION (WITH HEATING ELEMENT OPTION),
- FILTER ALARM WITH HOUR COUNTER (WITH PRESSURE SWITCH OPTION)
- MANAGEMENT OF HUMIDITY, TEMPERATURE, AIR QUALITY AND CO₂ PROBES
- CONTROL OF WATER COILS AND PRE-TREATMENT AND/OR POST-TREATMENT HEATING ELEMENTS.
- COMMUNICATION VIA MOD. BUS.
- INTEGRATED HUMIDITY AND TEMPERATURE PROBES

CODE	DESCRIPTION
ACC200001	TOTAL CLASS EVO 300 - HORIZONTAL
ACC200002	TOTAL CLASS EVO PLUS 300 - HORIZONTAL

TOTAL CLASS VERTICAL 300 NON-DUCTED VENTILATION UNIT

TOTAL
Class 300
800



new

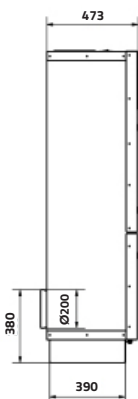
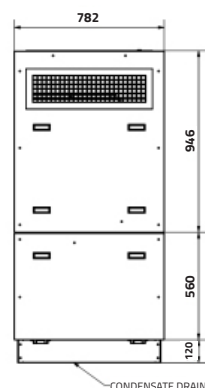
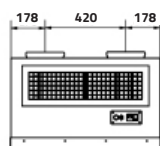
CE

FLOOR-STANDING

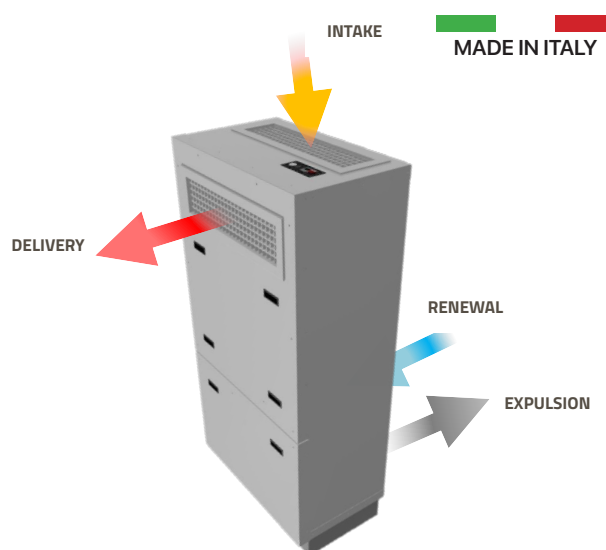
TECHNICAL SPECIFICATIONS

- NON-DUCTED VENTILATION UNIT
- EVO 300 MAXIMUM FLOW CAPACITY 400 m³/h
- POLYPROPYLENE COUNTER-FLOW HEAT RECOVERY UNIT WITH >90% EFFICIENCY
- EC CENTRIFUGAL FANS, BACKWARD CURVED BLADES, LOW CONSUMPTION
- LOW PRESSURE DROP FILTERS: F7 (and PM1 70%) FOR RENEWAL AND EXHAUST AIR
- SELF-SUPPORTING STRUCTURE IN PRE-PAINTED SHEET METAL
- ROCK WOOL THERMAL/ACOUSTIC INSULATION TH. 50mm
- INTEGRATED BYPASS FOR FREE-COOLING / FREE-HEATING (MOTORISED DRIVE WITH AUTOMATIC CONTROL)
- AVAILABLE WITH EVO AND EVO PLUS CONTROLS
- INTEGRATED FROST PROTECTION
- OPERATING CONDITIONS: AMBIENT TEMPERATURE BETWEEN 0°C AND 45°C, HUMIDITY <80%

DIMENSIONS



FLOWS



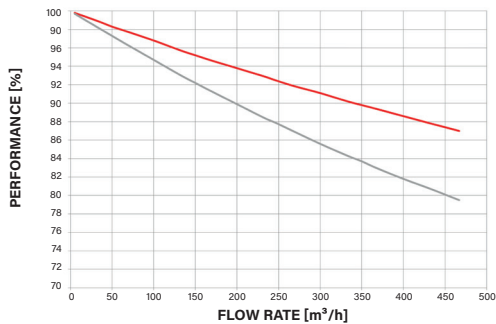
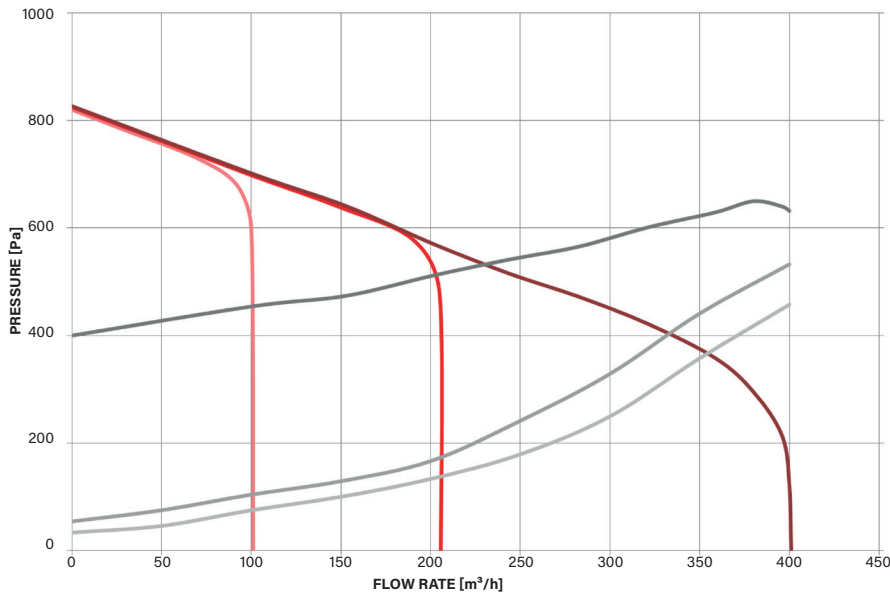
TECHNICAL DATA	EVO 300 / EVO 300 PLUS
Voltage	230V
Frequency	50-60 Hz
Current	2.7A
Power	350 W
Dimensions vertical model (w x d x h)*	785 x 475 x 1625 mm
Tubing DN	2X Ø 200 mm
Weight	95 kg
Flow capacity	400 m ³ /h
Effective electrical power consumption	0.327 kW
Specific internal fan power SFP _{int} * [*]	1378 W/(m ³ /s)
Front speed at nominal capacity*	1.56 m/s
Nominal external pressure Δp _{s,ext}	358 Pa
Internal pressure drop of ventilation components Δp _{s,int} * [*]	259 Pa
Fan static efficiency η _{s,fan} **	39.1%
Sound pressure level (L _{pa} in dB(A))***	36 dB(A)

*excluding sleeves and condensate drains ** calculated as per EU Regulation No. 327/2011

*** with machine correctly installed and fans at 70% at a distance of 3m

FLOW RATE DIAGRAMS

TOTAL CLASS 300



CONTROL UNIT TYPE



EVO MODEL

THE REMOTE CONTROL CAN BE INSTALLED INSIDE A 503 HORIZONTAL BUILT-IN BOX AND COMES WITH A SET OF ADAPTERS FOR INSTALLATION WITH ALL WELL-KNOWN BRANDS THE REMOTE CONTROL CONSISTS OF THE FOLLOWING:

- 2 KEYS FOR SPEED SETTING CHANGE AND FILTER ALARM RESET
- 5 SIGNALLING LEDS: 3 GREEN LEDS TO INDICATE ACTIVE SPEED, 1 RED LED TO SIGNAL THE FILTER ALARM, AND 1 BLUE LED TO SIGNAL THE OPENING OF THE BY-PASS AND ANTI-FREEZE FEATURE.
- THE REMOTE CONTROL IS CONNECTED VIA A STANDARD NETWORK CABLE (NON CROSSOVER) USING RJ45 CONNECTORS (MAX. RECOMMENDED LENGTH 30 M). SUPPLIED WITH 3M CABLE AS STANDARD



EVO PLUS MODEL

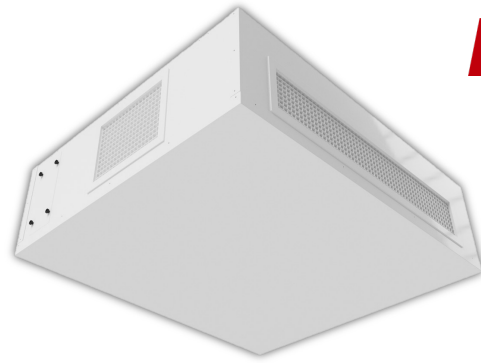
CIRCUIT BOARD WITH WHITE LCD DISPLAY

- SPEED SETTING 1,2,3 OR AUTOMATIC
- AUTOMATIC BY-PASS MANAGEMENT FOR FREE-COOLING AND FREE-HEATING
- FROST PROTECTION (WITH HEATING ELEMENT OPTION),
- FILTER ALARM WITH HOUR COUNTER (WITH PRESSURE SWITCH OPTION)
- MANAGEMENT OF HUMIDITY, TEMPERATURE, AIR QUALITY AND CO₂ PROBES
- CONTROL OF WATER COILS AND PRE-TREATMENT AND/OR POST-TREATMENT HEATING ELEMENTS.
- COMMUNICATION VIA MOD. BUS.
- INTEGRATED HUMIDITY AND TEMPERATURE PROBES

CODE	DESCRIPTION
ACC200005	TOTAL CLASS EVO 300 - VERTICAL
ACC200006	TOTAL CLASS EVO PLUS 300 - VERTICAL

TOTAL CLASS HORIZONTAL 800 NON-DUCTED VENTILATION UNIT

TOTAL
Class 300
800



new

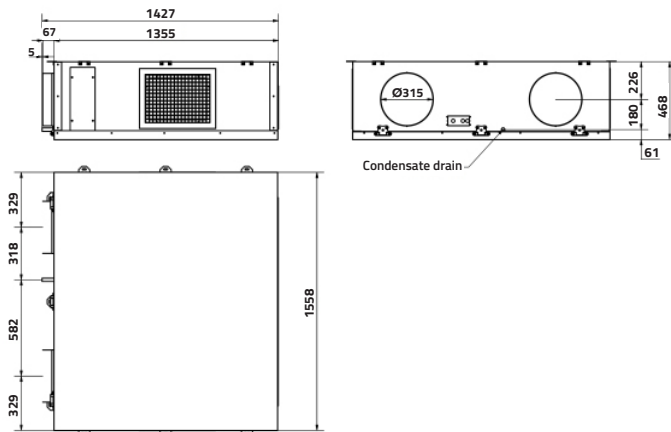
CE

CEILING-MOUNTED

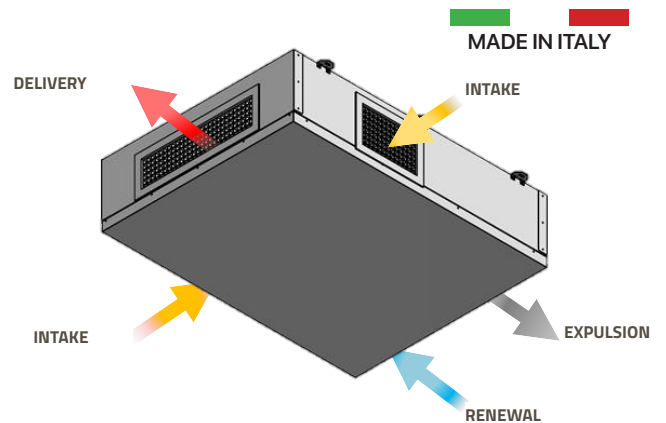
TECHNICAL SPECIFICATIONS

- NON-DUCTED VENTILATION UNIT
- EVO 800 MAXIMUM FLOW CAPACITY 1000 m³/h
- POLYPROPYLENE COUNTER-FLOW HEAT RECOVERY UNIT WITH >90% EFFICIENCY
- EC CENTRIFUGAL FANS, BACKWARD CURVED BLADES, LOW CONSUMPTION
- LOW PRESSURE DROP FILTERS: F7 (and PM1 70%) FOR RENEWAL AND EXHAUST AIR
- SELF-SUPPORTING STRUCTURE IN PRE-PAINTED SHEET METAL
- ROCK WOOL THERMAL/ACOUSTIC INSULATION TH. 50mm
- INTEGRATED BYPASS FOR FREE-COOLING / FREE-HEATING (MOTORISED DRIVE WITH AUTOMATIC CONTROL)
- AVAILABLE WITH EVO AND EVO PLUS CONTROLS
- INTEGRATED FROST PROTECTION
- OPERATING CONDITIONS: AMBIENT TEMPERATURE BETWEEN 0°C AND 45°C, HUMIDITY <80%

DIMENSIONS



FLOWS



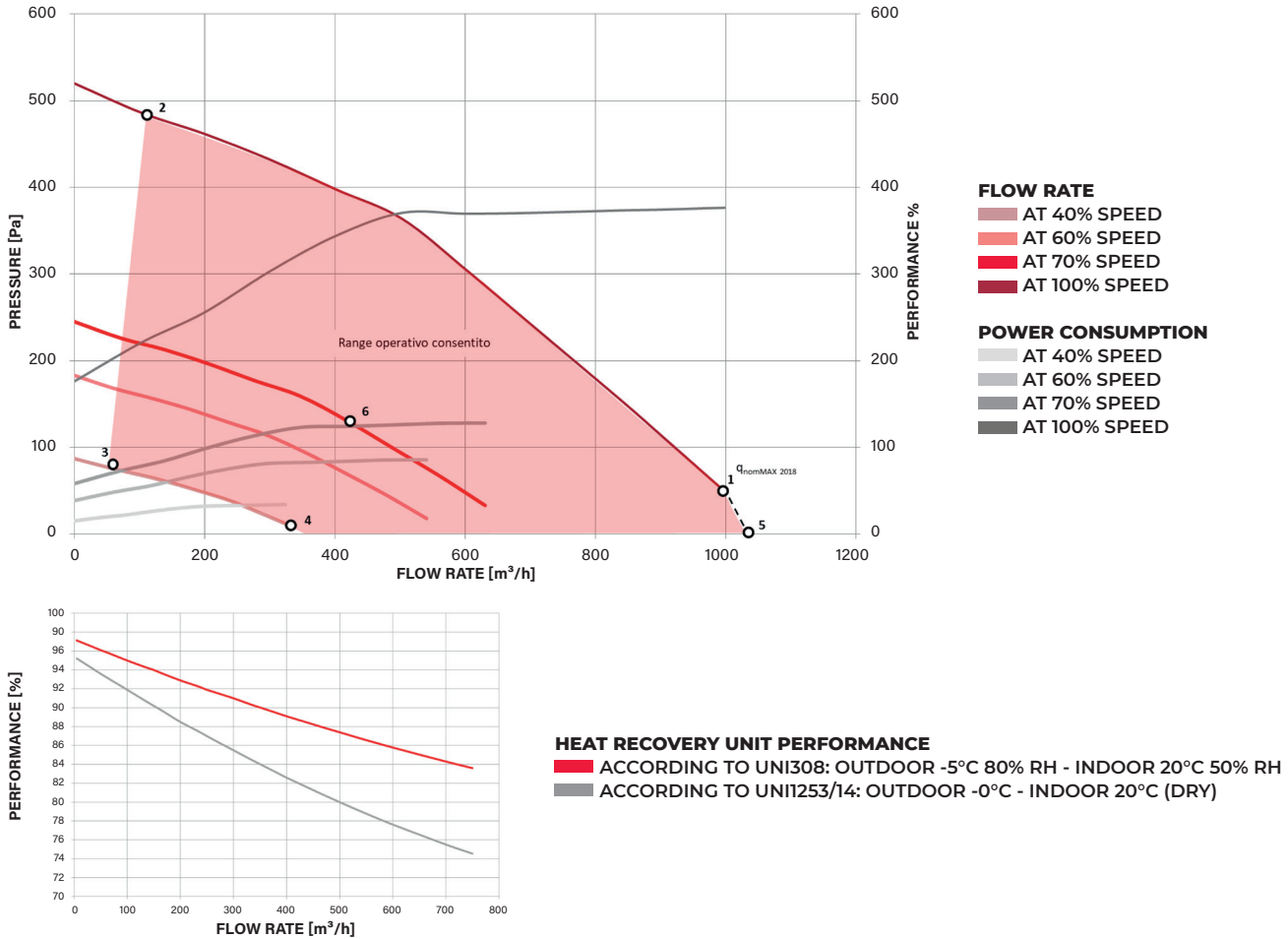
TECHNICAL DATA	EVO 800 / EVO 800 PLUS
Voltage	230V
Frequency	50-60 Hz
Current	2.8A
Power	380 W
Horizontal model dimensions (w x d x h)*	1555 x 1355 x 470 mm
Tubing DN	2x Ø315
Weight	148 kg
Flow capacity	1000 m ³ /h
Effective electrical power consumption	0.377 kW
Specific internal fan power SFP _{int} *	1189 W/(m ³ /s)
Front speed at nominal capacity*	1.42 m/s
Nominal external pressure Δp _{s,ext}	50 Pa
Internal pressure drop of ventilation components Δp _{s,int} *	269 Pa
Fan static efficiency η _{is,fan} **	49.3%
Sound pressure level (L _{pa} in dB(A))***	34 dB(A)

*excluding sleeves and condensate drains ** calculated as per EU Regulation No. 327/2011

*** with machine correctly installed and fans at 70% at a distance of 3m

FLOW RATE DIAGRAMS

TOTAL CLASS 800



CONTROL UNIT TYPE



EVO MODEL

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THE REMOTE CONTROL CONSISTS OF THE FOLLOWING:

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- 5 SIGNALING LEDS: 3 GREEN LEDS TO INDICATE ACTIVE SPEED, 1 RED LED TO SIGNAL THE FILTER ALARM, AND 1 BLUE LED TO SIGNAL THE OPENING OF THE BY-PASS AND ANTI-FREEZE FEATURE.
- THE REMOTE CONTROL IS CONNECTED VIA A STANDARD NETWORK CABLE (NON CROSSOVER) USING RJ45 CONNECTORS (MAX. RECOMMENDED LENGTH 30 M). SUPPLIED WITH 3M CABLE AS STANDARD



EVO PLUS MODEL

CIRCUIT BOARD WITH WHITE LCD DISPLAY

- SPEED SETTING 1,2,3 OR AUTOMATIC
- AUTOMATIC BY-PASS MANAGEMENT FOR FREE-COOLING AND FREE-HEATING
- FROST PROTECTION (WITH HEATING ELEMENT OPTION),
- FILTER ALARM WITH HOUR COUNTER (WITH PRESSURE SWITCH OPTION)
- MANAGEMENT OF HUMIDITY, TEMPERATURE, AIR QUALITY AND CO₂ PROBES
- CONTROL OF WATER COILS AND PRE-TREATMENT AND/OR POST-TREATMENT HEATING ELEMENTS.
- COMMUNICATION VIA MOD. BUS.
- INTEGRATED HUMIDITY AND TEMPERATURE PROBES

CODE	DESCRIPTION
ACC200003	TOTAL CLASS EVO 800 - HORIZONTAL
ACC200004	TOTAL CLASS EVO PLUS 800 - HORIZONTAL

TOTAL CLASS VERTICAL 800 NON-DUCTED VENTILATION UNIT

TOTAL
Class 300
800



new

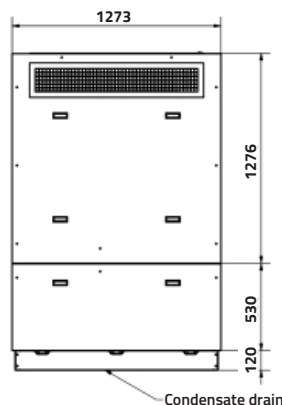
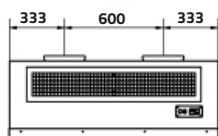
CE

FLOOR-STANDING

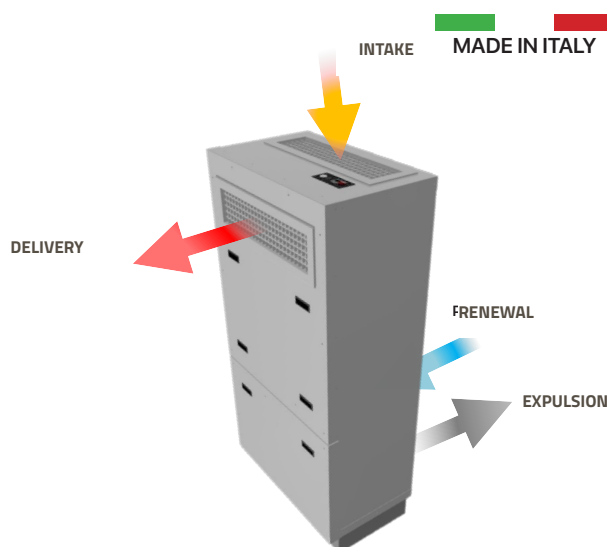
TECHNICAL SPECIFICATIONS

- NON-DUCTED VENTILATION UNIT
- EVO 300 MAXIMUM FLOW CAPACITY 1000 m³/h
- POLYPROPYLENE COUNTER-FLOW HEAT RECOVERY UNIT WITH >90% EFFICIENCY
- EC CENTRIFUGAL FANS, BACKWARD CURVED BLADES, LOW CONSUMPTION
- LOW PRESSURE DROP FILTERS: F7 (and PM1 70%) FOR RENEWAL AND EXHAUST AIR
- SELF-SUPPORTING STRUCTURE IN PRE-PAINTED SHEET METAL
- ROCK WOOL THERMAL/ACOUSTIC INSULATION TH. 50mm
- INTEGRATED BYPASS FOR FREE-COOLING / FREE-HEATING (MOTORISED DRIVE WITH AUTOMATIC CONTROL)
- AVAILABLE WITH EVO AND EVO PLUS CONTROLS
- INTEGRATED FROST PROTECTION
- OPERATING CONDITIONS: AMBIENT TEMPERATURE BETWEEN 0°C AND 45°C, HUMIDITY <80%

DIMENSIONS



FLOWS



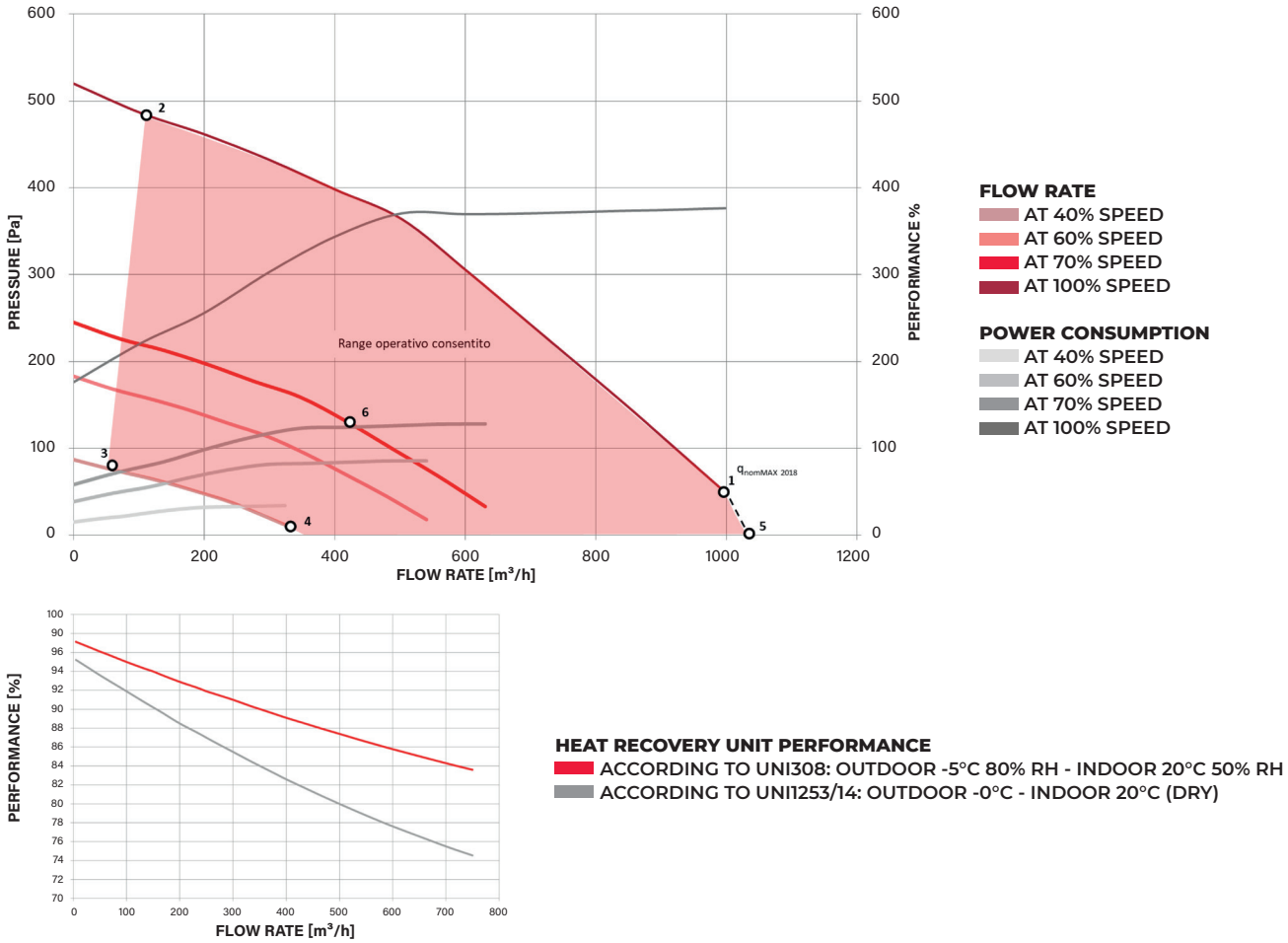
TECHNICAL DATA		EVO 800 / EVO 800 PLUS
Voltage		230V
Frequency		50-60 Hz
Current		2.8A
Power		380 W
Dimensions vertical model (w x d x h)*		1265x475x1925 mm
Tubing DN		2x Ø315
Weight		148 kg
Flow capacity		1000 m ³ /h
Effective electrical power consumption		0.377 kW
Specific internal fan power SFP _{int} * [*]		1189 W/(m ³ /s)
Front speed at nominal capacity*		1.42 m/s
Nominal external pressure Δp _{s,ext}		50 Pa
Internal pressure drop of ventilation components Δp _{s,int} * [*]		269 Pa
Fan static efficiency η _{s,fan} **		49.3%
Sound pressure level (L _{pa} in dB(A))***		34 dB(A)

*excluding sleeves and condensate drains ** calculated as per EU Regulation No. 327/2011

*** with machine correctly installed and fans at 70% at a distance of 3m

FLOW RATE DIAGRAMS

TOTAL CLASS 800



CONTROL UNIT TYPE



EVO MODEL

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EVO PLUS MODEL

CIRCUIT BOARD WITH WHITE LCD DISPLAY

- SPEED SETTING 1,2,3 OR AUTOMATIC
- AUTOMATIC BY-PASS MANAGEMENT FOR FREE-COOLING AND FREE-HEATING
- FROST PROTECTION (WITH HEATING ELEMENT OPTION),
- FILTER ALARM WITH HOUR COUNTER (WITH PRESSURE SWITCH OPTION)
- MANAGEMENT OF HUMIDITY, TEMPERATURE, AIR QUALITY AND CO₂ PROBES
- CONTROL OF WATER COILS AND PRE-TREATMENT AND/OR POST-TREATMENT HEATING ELEMENTS.
- COMMUNICATION VIA MOD. BUS.
- INTEGRATED HUMIDITY AND TEMPERATURE PROBES

CODE	DESCRIPTION
ACC200007	TOTAL CLASS EVO 800 - VERTICAL
ACC200008	TOTAL CLASS EVO PLUS 800 - VERTICAL



Tecnosystemi S.p.A. Benefit Company



Via dell'Industria, 2/4
Z.I. San Giacomo di Veglia
31029 Vittorio Veneto (Treviso), Italy
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Fax +39 0438.501516
TOLL FREE NO. 800.904474

Tax Code - VAT no. - R.I.TV IT02535780247
Share Cap. €5,000,000.00 fully paid-up

www.tecnosystemi.com

**INNOVATION
DESIGN & QUALITY
FOR AIR CONDITIONING
AND VENTILATION SYSTEMS**



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