



**VENTILATION SOLUTIONS**  
PRODUCTS CATALOGUE





# INNOVATION THAT EXCELS IN AIR QUALITY AND ENERGY SAVINGS

































**Everyone knows** that air quality is a decisive factor when it comes to comfort at home and in the office. Additionally, modern building regulations make cutting energy costs a major priority. Aereco has been meeting these demands by designing and manufacturing innovative demand controlled ventilation systems for the 30 years since it invented the humidity sensitive ventilation system in 1984.

**Today, it continues to pursue its research,** consistently offering new intelligent ventilation solutions that are adapted to the specific needs of dwellings and office buildings. The humidity sensitive ventilation process is a landmark in demand controlled ventilation systems. It has bestowed upon Aereco and its products an image that guarantees quality and technical know-how, making Aereco a formidable player in the ventilation sector the world over. In conjunction with its commercial activities, the company is engaged in improving regulations in the various countries it trades in, in order to optimise the position that ventilation holds in the construction industry. Aereco, with its head office and factory at Marne-la-Vallée, in France, is represented worldwide through several subsidiaries and distributors.

**Marc Jardinier**  
CEO of Aereco S.A.

# KEY TO SYMBOLS

Dwelling		Individual dwelling	Characteristics		Humidity sensitive	Characteristics		Compatible with demand controlled ventilation
		Block of flats			Switch			Anti-insect grille
Room		Bedroom		Pull cord		Closing with/without opening device		
		Living room		Presence detection		Slim profile		
		Kitchen		Motion detection		No condensation		
		Bathroom		CO <sub>2</sub> detection		Energy savings		
		Toilets		VOC detection		Guaranteed indoor air quality		
		Meeting room		Remote control		Comfort		
	Characteristics		Easy maintenance		Acoustic attenuation		Fire safety	
			Easy installation		Silent			
				Low energy consumption				



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## HUMIDITY, A DECISIVE FACTOR FOR A HEALTHY DWELLING



The first objective of a ventilation system is to ensure good indoor air quality, replacing stale air with fresh air from outdoors. While indoor pollution – a result of emissions from the human metabolism, indoor activities, and building materials and furniture – is a complex of many types of pollutants, humidity plays a remarkable and specific role in the residential context.

**Humidity: a decisive factor for a healthy building and occupants**

Whether in liquid or vapour form, water is a leading cause of harm in dwellings. Small quantities of water vapour are enough to cause direct and indirect effects on a building and its occupants’ health. While some moisture is essential for the correct functioning of the respiratory system - ideally between 40 % and 60 % relative humidity -, too much moisture is bad for a building and for its occupants. In new or thermally renovated buildings, a lack of ventilation associated with better insulation and better air-tightness can cause significant damage by allowing condensation to form on thermal bridges, glazing, and the vapour control layer on the insulation, and also cause deterioration of the insulation inside walls.

Most of this excess moisture is produced by human activity: water vapour from simply breathing and evaporation from domestic chores (washing, cooking, drying clothes, etc.); even indoor plants, if there are enough of them, can add to relative humidity.

**A high relative humidity favours bio-contaminators**

A high relative humidity in indoor air increases the risk of infestation by dust mites and creates condensation on cold surfaces, favouring the proliferation of fungi and bacteria. The relative humidity in a dwelling must therefore be effectively controlled by an effective ventilation system and stabilised at a suitable level.



**Water vapour emission sources in the dwelling**

	g/h
Hot shower	2 000
Uncovered boiling saucepan	900
Gas cooker on high power	400
Perspiration of one highly active person	400
Covered boiling saucepan	350
Hot bath	300
5 kg of drying clothes	200
Gas cooker on low power	100
Perspiration of one person at a low rate of activity	100
Hot meal on the table	60
Breathing of one person at rest	50



## OTHER FORMS OF INDOOR POLLUTION



In addition to humidity, shown to have a decisive role on the health and comfort of the dwelling, CO<sub>2</sub>, VOC's, and other bio-contaminants have to be included in ventilation strategy to ensure good indoor air quality.

### VOC's

Studies carried out in countries throughout the world have shown that, especially when ventilation is deficient, many pollutants are present in our dwellings at levels significantly higher than existing standards and WHO recommendations allow. The substances in question include paint, wallpapers, vitrifying products, laminated floor coverings, polishes, aerosol cans, kerosene stoves, and perfumes - among others.

**By ensuring permanent ventilation at a variable rate that is never null, Aereco ventilation systems are an appropriate answer to the issue of VOC's.** Combined with the right choice of low-emission furniture, materials, etc., our ventilation system limits the risk of exposure to these pollutants.

### Carbon dioxide (CO<sub>2</sub>) and other pollutants

The presence of CO<sub>2</sub> in a dwelling is mainly due to people breathing. Studies show that breathing is accompanied by water vapour emissions, confirming the utility of using humidity controlled devices to manage the ventilation rate.

Among the pollutants found in dwellings that may be health hazards, those of most concern are: carbon monoxide, produced by heating systems, cooking with gas, and smoking; radon; asbestos; nitrogen oxides (NO<sub>x</sub>) and nitrogen dioxide (NO<sub>2</sub>). Other high-risk contributors include bio-contaminants such as dust mites, microbes, mould, etc.

**There is only one way to effectively evacuate all these pollutants: ventilation. It is a vital need and an essential requirement for good health.**

## VENTILATE TO ADAPT TO NEW BUILDING ENERGY PERFORMANCE REQUIREMENTS

Because of new energy and acoustic requirements for dwellings, new and renovated buildings are now basically envelopes with reinforced insulation and sealing (picture at bottom right), while older buildings are generally 'over-ventilated' (picture at bottom left) due to leaky windows and outside walls.

The main thermal issues of older buildings have been solved, **but new problems have appeared**. In new and refurbished buildings, when ventilation is absent or insufficient, fresh air cannot enter, creating manifest problems: air quality declines and excess moisture condenses on the coldest parts of the dwelling.

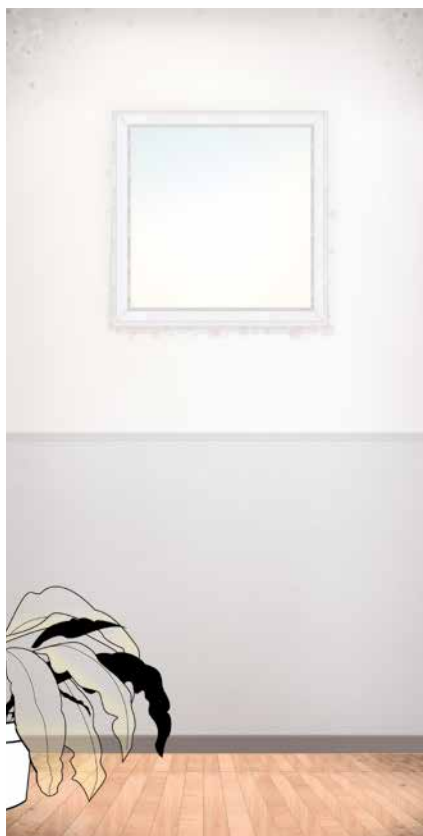
**Openings must therefore be created for fresh air to circulate through the dwelling.** With the Aereco ventilation system, fresh air is drawn into the least polluted rooms and polluted air is extracted through wet rooms.

### How can ventilation be provided in a renovated dwelling?

- place air inlets in habitable rooms to bring air into the dwelling,
- ensure the circulation of the air inside the dwelling by leaving sufficient gaps under interior doors,
- place grilles or exhaust units, connected to a fan through a duct, in wet rooms (kitchen, bathroom, and toilets). These will extract the air.



Old building



New building

# AN ACTIVATION MODE FOR EACH POLLUTANT

## Aereco system's major activation modes:



Humidity sensitive airflow, created by Aereco in 1984



Manually activated airflow



Airflow activated by presence detection



Airflow activated by a CO<sub>2</sub> sensor



Airflow activated by a VOC sensor



Airflow activated by a remote control

## Ventilate Right

This is the concept that underlies the design of all Aereco ventilation products. The ventilation system terminals\* are controlled and activated in various ways according to pollution and the needs of each room. The activation modes most often used in Aereco products are:



### Humidity sensitive airflow (1)

Principle: the airflow is controlled by the local relative humidity.

This is the first activation mode of Aereco systems. The detector and actuator of the humidity sensitive products, the sensor, makes use of a well-known physical phenomenon: the tendency of some fabrics to become longer when the relative humidity of the air increases and shorter when it decreases. The 8\*\* polyamide strips of the sensor use this principle to activate one or more shutters, thereby adjusting the passage of the air according to the ambient relative humidity. The higher the humidity in the room, the wider the shutters open. The sensor is isolated from the incoming airflow; it measures only the interior moisture content. Moreover, thanks to a thermal correction, the opening of the shutters is unaffected by the external climatic conditions.

Aereco's humidity sensitive technology is applied to air inlets, grilles, and exhaust units located in the rooms where the humidity reflects the level of indoor pollution (lounge, bedrooms, bathrooms).



humidity sensitive mechanism (in blue) of an Aereco air inlet



### Manually activated airflow (2)

Principle: let the occupant increase the exhaust airflow at times of intensive pollution.

Where the relative humidity cannot be used as an indicator of high pollution (kitchen, toilets, etc. in use) the occupant can manually activate the maximum airflow at the exhaust unit to quickly evacuate stale air, unpleasant odours, and excess moisture. This boost can be activated by a pushbutton ('on-off switch'), by pulling a cord, or through a remote control. This function can also supplement a humidity sensitive function on an exhaust unit.



### Airflow activated by a presence detector

Principle: automatically increase the airflow when a presence is detected in the room.

The presence of somebody in the room automatically activates the presence detector, which then opens the shutters of the exhaust unit for maximum airflow. This process is used when moisture is not sufficient to reveal a high pollution level (use of the toilets, random occupation in offices, etc.). This technology makes it possible to save heating energy during the period of non-detection.



2

The presence detection module comprises a pyroelectric sensor that detects infrared radiation focused by a Fresnel lens. With a 4-meter range and a 100° angle of detection, this is very effective. The infrared radiation focused on the sensor is continually analysed; when a variation is perceived, a signal is sent to the electronic board, which analyses it and then activates the motor controlling the opening of the exhaust unit shutters. The presence detection technology is used on exhaust units and mechanical ventilation terminals in rooms where the relative humidity cannot be used as an indicator of the pollution level (toilets, offices, etc.).



### Airflow activated by a CO<sub>2</sub> or VOC sensor (3)

Principle: control the airflow automatically according to the level of CO<sub>2</sub> or VOC.

Both sensors operate the same way: the opening threshold is selected at the time of installation. When the level of CO<sub>2</sub> (or of VOC, depending on the version of the product) is below the opening threshold, the airflow is at the baseline rate (minimum). When the level of the pollutant rises above this threshold, the exhaust grille opens to the maximum airflow for as long as the level of pollution exceeds the preset threshold.



3

# AERECO, A SOLUTION FOR EVERY VENTILATION TECHNIQUE

Choosing the appropriate ventilation technique is essential to attaining the performance objectives set for a project, whether in a renovation or in a new building. The right technique depends on the targets (lower heating costs, better air quality, reduced running costs, simplicity of maintenance, etc.) but depends more specifically on the environment. This is particularly true of renovations, since the technique must be adapted to the existing architecture. The following pages present a selection of the commonest techniques that can be implemented with Aereco ventilation systems.

## Controlled mechanical exhaust ventilation (MEV) – collective treatment for apartments

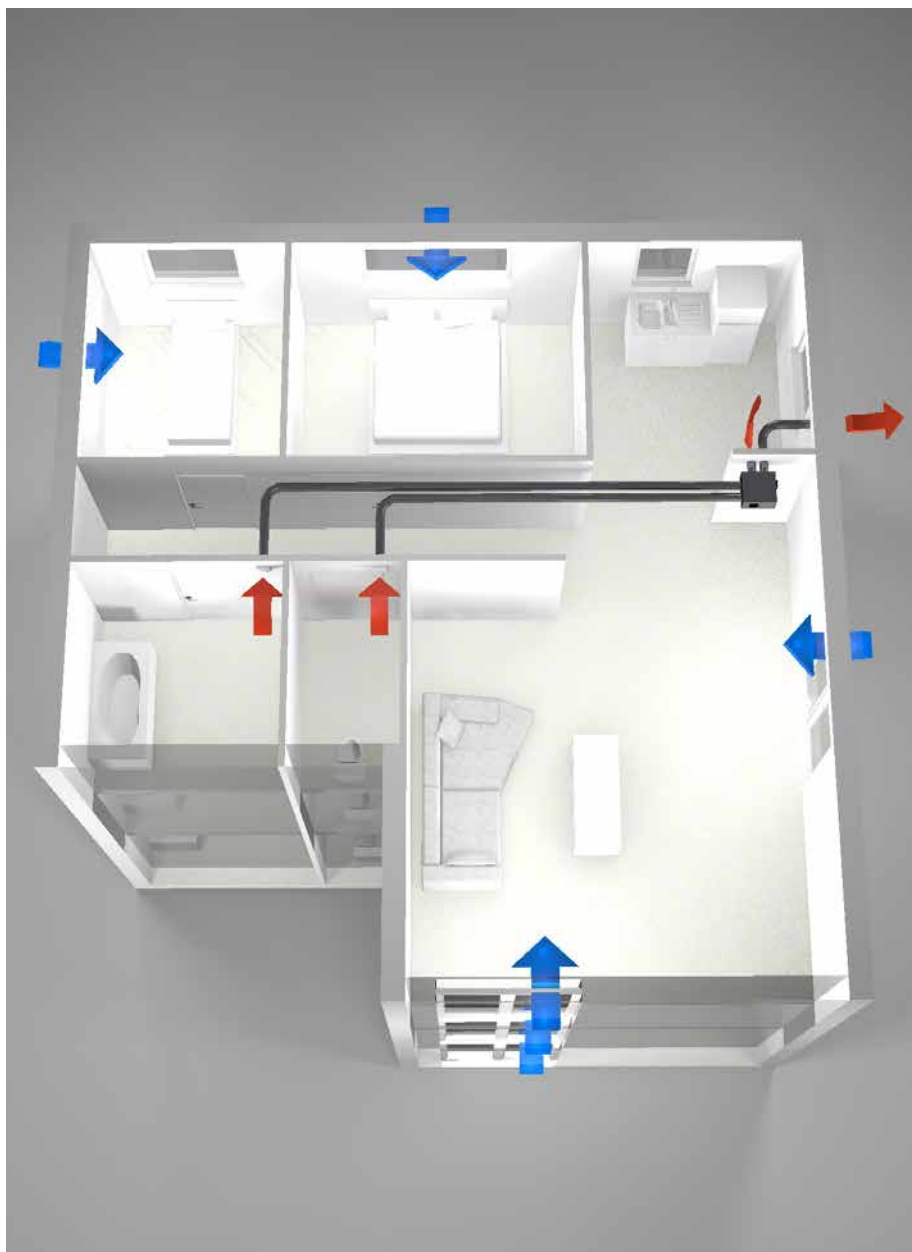
In collective mechanical exhaust ventilation, the air in a building is renewed by a fan, installed in the roof or other convenient outside location. In demand controlled ventilation, the air extracted through the exhaust units of the wet rooms determines the air renewal of the entire dwelling. The humidity sensitive air inlets then distribute the new air according to the needs of each main room. The demand controlled exhaust units distribute the airflow generated by the fan according to the needs of each wet room, in each dwelling. Thus rooms, or dwellings, with high new air requirements induce more airflow than empty ones.





### Controlled mechanical exhaust ventilation – individual treatment for apartments or houses

In this case, the fan is placed inside the dwelling. This treatment is applicable to individual houses as well as apartments. Placing the fan inside the dwelling has the advantage of making it directly accessible, a welcome advantage when it comes to maintenance.



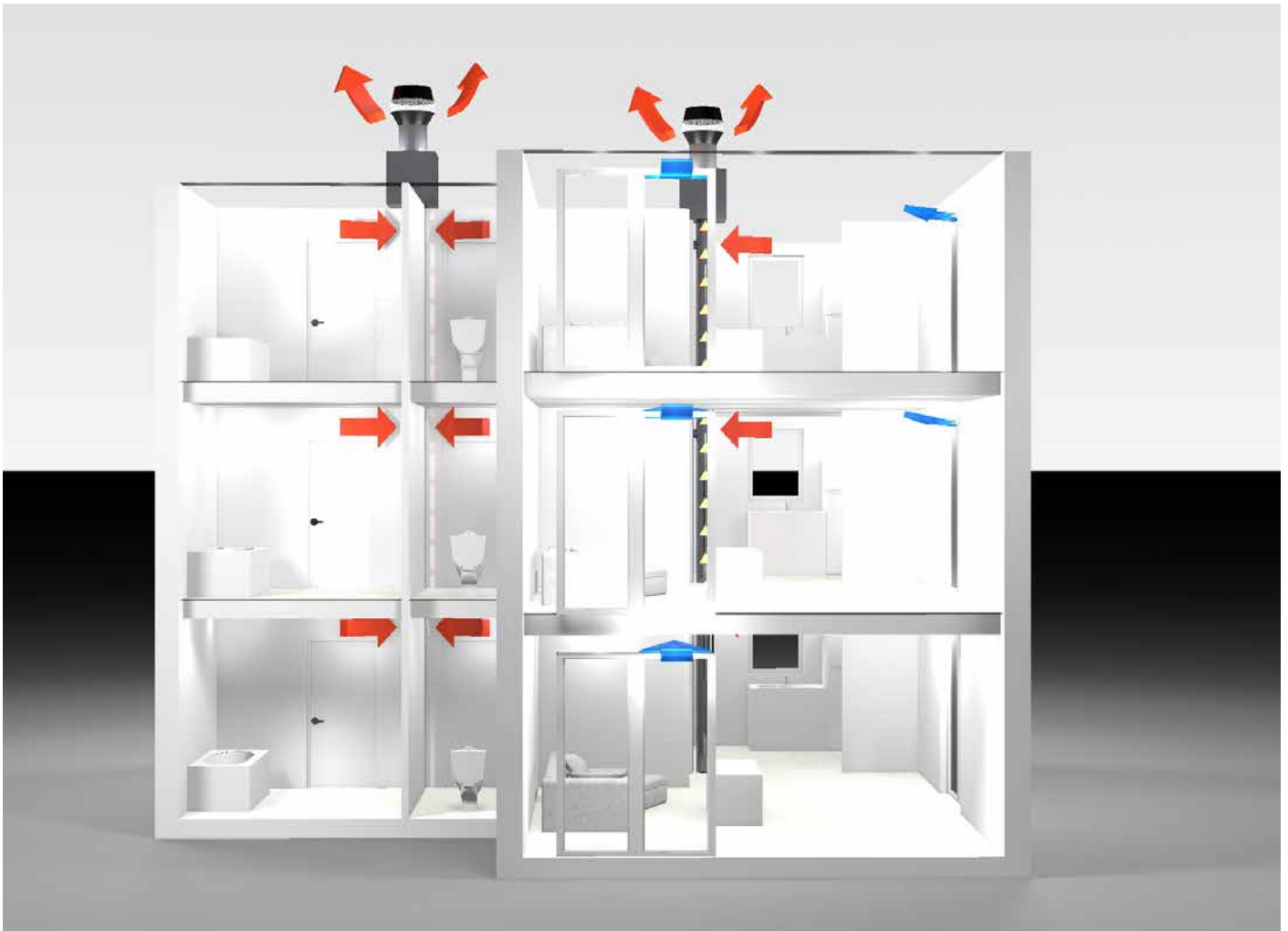
As with collective MEV, the air in the dwelling is renewed by a fan. In demand controlled ventilation, the air extracted through the exhaust units of the wet rooms determines the renewal of air in the entire dwelling. Humidity sensitive air inlets then distribute the new air according to the needs of each main room. The demand controlled exhaust units distribute the airflow generated by the fan according to the needs of each wet room. Thus rooms with high new air requirements induce more airflow than empty rooms.

### Hybrid ventilation – collective treatment for apartments

A cross between passive stack ventilation and mechanical exhaust ventilation, hybrid ventilation is a modern concept that uses the components and dimensioning of the passive stack ventilation ducts coupled to non-permanent low-pressure mechanical assistance. The mechanical assistance is used only when the natural forces are not sufficient to ensure the required airflow. It is started up automatically, and can be activated by a temperature sensor, a pressure controller, or even a wind gauge.

The fresh air is admitted by humidity sensitive air inlets in the main rooms (bedrooms and living rooms); the stale air is evacuated through the wet rooms (toilets, bathroom, kitchen) through demand controlled exhaust units. These components control the airflows according to the needs of each room.

Hybrid ventilation combines the advantages of easy maintenance, energy savings, acoustics, and reliability of passive stack ventilation with the aerodynamic performance of mechanical ventilation.



### HR Vent monitoring: two years of measurements of hybrid humidity sensitive ventilation in occupied housing in France.

HR Vent was an experiment conducted in occupied housing in Nangis (near Paris), exceptional both in its size and in the measuring tools used.

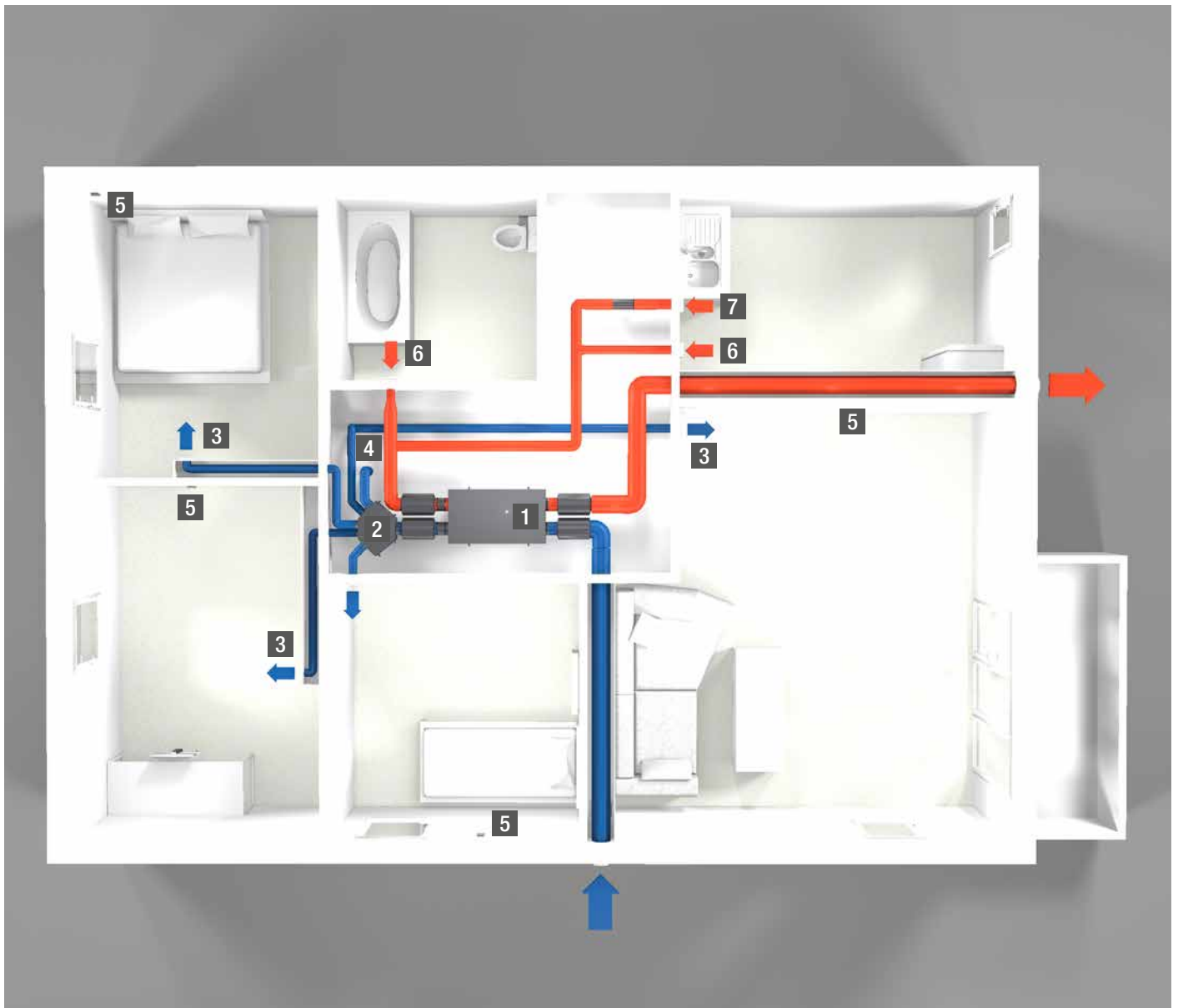
With more than 700 million data points recorded over a two-year period, in 55 dwellings in five buildings, the experiment created an opportunity to measure the efficiency of a new concept: a passive stack humidity sensitive ventilation system assisted by a low-pressure fan in intermittent operation. From January 2004 to December 2005, relative humidity, temperature, pressure, and extracted airflow data were recorded minute by minute in each wet room of every dwelling, using specially developed sensors.

**Measurements confirmed the performance of the humidity sensitive ventilation system, in particular its capacity to improve indoor air quality, to decrease condensation risks, and to limit thermal losses.** Its stabilising role was highlighted: it attenuates airflow imbalances between floors and limits airflow variations over the year by providing real control of the natural 'engines' (wind and stack effect). The mechanical assistance optimises passive stack ventilation performance: **for a consumption of only 5 W per dwelling**, the fan increases the pressure levels and thereby ensures healthy airflows all year long and prevents reverse airflow. Coupled with humidity sensitive ventilation, the low pressure mechanical assistance optimises the use of natural forces: average airflows are lowered in winter, contributing to energy savings, and available pressure is ensured all year long, notably in hot weather. In renovations, the hybrid humidity sensitive ventilation system delivers airflows comparable to those required by French regulations for new buildings. Carried out in collaboration with such major French institutional partners as the CSTB and Gaz de France, with financial support from ADEME, HR Vent has opened the door to the development of innovative ventilation solutions for residential buildings.



### Heat recovery ventilation – individual treatment for houses and apartments

The principle behind heat recovery ventilation is to supply fresh air and exhaust stale air by a mechanical process, using double ductwork connected to a central unit that includes a heat exchanger to pre-heat the fresh air. Aereco has implemented this principle in an innovative system that controls airflows room-by-room, according to their specific needs: the DXR.











The DXR system comprises a heat recovery unit (DXR unit) connected to exhaust units and to a distribution box (DXR hub) that controls the airflows supplied. The counter-flow heat exchanger, incorporated in the main unit, recovers most of the energy from the exhaust air and transfers it to the supply air, so less energy is needed to heat the fresh air.

**Airflows are automatically controlled according to the needs of each room of the dwelling:** for the supply air in the bedrooms and the living room, and for the exhaust air from the kitchen, bathroom and WC. Each supply unit is directly connected to the DXR Hub distribution box, which adjusts the airflow to all main rooms based on the level of CO<sub>2</sub> (or on presence detection), keeping it proportional to the measured level of pollutant. On the exhaust side, the BXC units automatically adjust the airflow according to parameters determined by various sensors: humidity in the bathroom, presence in the WC, humidity and manual boost in the kitchen. Versions with CO<sub>2</sub> or VOC sensors can also be used for exhaust units.

**At all times, the total supply and exhaust airflows are measured and balanced** by means of two controlled compensation valves, which can be located in the living room, in the kitchen, or in a corridor. For example, when the need for ventilation is growing during meal preparation in the kitchen without being accompanied by strong demand in the main rooms, the required exhaust airflow can be achieved by opening the supply compensation valve (located in the DXR Hub).

**The bypass in the heat recovery unit automatically sends exhaust air directly outdoors, without going through the exchanger,** when the outdoor temperature is mild enough; it can also be used in free-cooling mode to provide night cooling in summer.

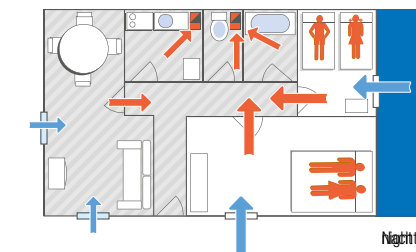
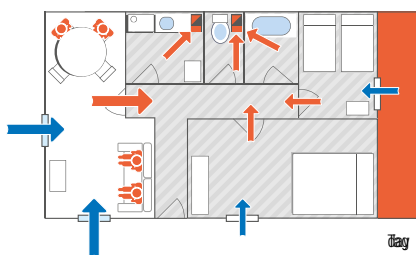
DXR heat recovery ventilation components:

	<b>DXR Unit</b> Heat recovery unit with balanced demand controlled airflows	<b>1</b>
	<b>DXR Hub</b> Distribution box for demand controlled supply airflows	<b>2</b>
	<b>SDC100</b> Supply units	<b>3</b>
	<b>SDC125</b> Supply unit for balance	<b>4</b>
	<b>S-CO2</b> CO <sub>2</sub> sensors	<b>5</b>
	<b>BXC</b> units incorporating humidity, presence detection, or other sensors	<b>6</b>
	<b>BXC b</b> Exhaust unit for balance	<b>7</b>
	<b>Touch screen</b> Display and control module for the user; also used for maintenance	

# COMFORT AND ENERGY SAVINGS: THE SECRETS OF DEMAND CONTROLLED VENTILATION (DCV)

By offering airflow adapted moment-by-moment to occupants' needs, Aereco demand controlled ventilation systems reduce the thermal losses due to ventilation, improve indoor air quality, and limit moisture problems.

Invented by Aereco in 1984, humidity sensitive ventilation is still regarded as a major technological breakthrough in demand controlled ventilation today.



**1. Humidity sensitive air inlets open in direct proportion to the occupancy of the rooms.**

## Intelligent airflow distribution (1)

The Aereco process optimises air distribution within the dwelling: thanks to its humidity sensitive air inlets, it directs the most air to the rooms that need it most. In this way, it limits heat loss in unoccupied rooms and provides good ventilation where it is needed.

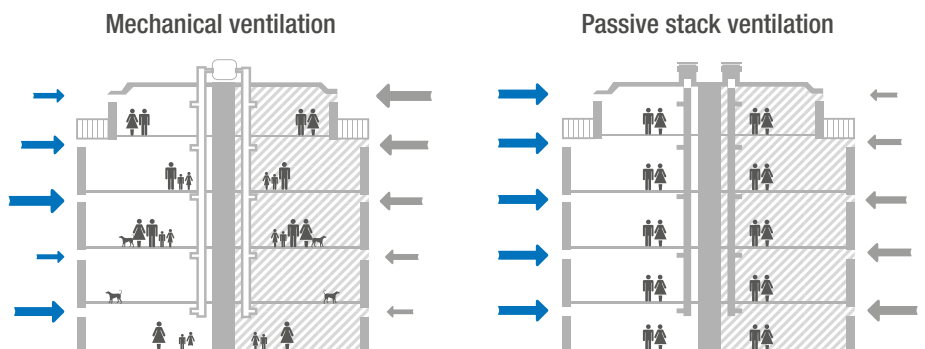
**Because the number and activity of occupants in dwellings vary from moment to moment, so does the need for air renewal. (2)**

To meet this variable need, Aereco ventilation systems provide an airflow directly determined by the level of pollution inside each dwelling. An increase of indoor pollution is usually accompanied by an increase of relative humidity, which causes the opening of humidity sensitive air inlets and exhaust units. In residences where occupancy is lower, the terminals open less, saving energy.

## Pressures and airflows are balanced (3)

In apartment blocks using passive stack ventilation or hybrid ventilation, the stack effect naturally favours the lower floors over the higher floors, giving more pressure to the first floors. The humidity controlled ventilation system compensates for the lack of pressure at the upper floors by opening more (for a given humidity), balancing the airflows along the duct column.

**For comparable occupancy on each floor, the Aereco process attenuates airflow differences, whereas constant ventilation leads to larger airflow disparities between floors.**



**2. Aereco process** | constant airflow ventilation

**3. Aereco process** | constant airflow ventilation

## Direct advantages of DCV

### Better air renewal for greater comfort

By providing the most ventilation for the places that need it most, Aereco's demand controlled ventilation systems largely contribute to improving air quality in dwellings.

When a main room is occupied, its relative humidity increases; the air inlets then open more to increase airflow and better evacuate stale air. Activity in wet rooms (kitchen, bathroom, toilets, etc.) is accompanied by water vapour emissions; the opening of the exhaust units increases with the relative humidity, increasing the airflow and so evacuating polluted air more rapidly.

### Protection against moisture

The higher relative humidity generated by breathing and human activity in the kitchen or shower, for example, can lead to destructive condensation, in which moulds can grow. When the relative humidity increases dangerously, humidity sensitive exhaust units open quickly to evacuate excess moisture and eliminate the risk of condensation.

### Reduced and controlled heating consumption

Ventilation is often held responsible for a large share of the thermal losses in a dwelling, sometimes as much as 50 %. While this is true of the majority of traditional ventilation processes, Aereco systems preserve heat in less occupied rooms and dwellings by automatically reducing the airflow.

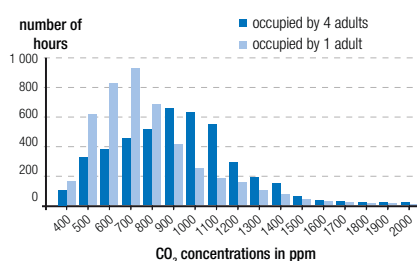




# MONITORING PERFORMANCE

Applied to two new buildings erected in Paris and near Lyon in 2007, the Performance project created an opportunity to measure precisely the efficiency of humidity sensitive mechanical exhaust ventilation in general, and of the Aereco DCV system in particular, in a large set of dwellings.

A total of 30 occupied dwellings were monitored for two years beginning in November 2007 to measure representative energy consumption and indoor air quality parameters. This monitoring led to a better understanding of the parameters that may influence ventilation performance.



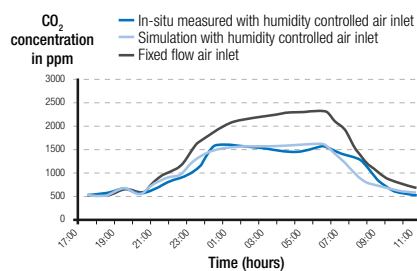
**Figure 1:** CO<sub>2</sub> concentrations in two bedrooms with different occupancy levels.

**On-going measurement, study, and analysis of ventilation behaviour in order to optimise the performance of our systems is,** and will always be, a major concern at Aereco. By comparing theory and practice, field experiments and studies conducted in many countries have added to our knowledge of ventilation and confirmed the performance of Aereco ventilation systems. The large scale 'Performance' monitoring project enabled to test the Aereco mechanical ventilation system in-situ. Here are the main results.

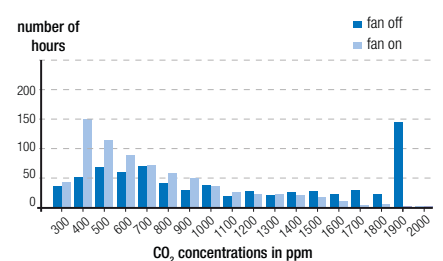
## CO<sub>2</sub> concentrations lowered by Aereco ventilation system.

The measurements of CO<sub>2</sub> concentrations plotted in the histogram of figure 1 show that indoor air quality is maintained in a low-occupancy bedroom (one adult – light blue) and in a high-occupancy one (four adults – dark blue). The peak CO<sub>2</sub> concentration was shifted from 700 ppm in the low-occupancy bedroom to 950 ppm in the high-occupancy one, but even in the latter, **the 1 500 ppm level was exceeded for only a very few hours in the heating season.**

The chart of figure 2 confirms the efficiency of the humidity sensitive air inlet on representative overnight variations compared with a simulated fixed ventilation system: **the humidity sensitive air inlet keeps the CO<sub>2</sub> level below 1 500 ppm, but an air inlet with a fixed airflow would have led to a CO<sub>2</sub> level of over 2 200 ppm.** The monitoring also created an opportunity to test the impact of the global system on indoor air quality: the fan was stopped for a short period (one month) and the CO<sub>2</sub> concentrations were compared with the other months (with ventilation) of the heating season. **The histogram of figure 3 clearly shows the value of the ventilation and its positive impact on IAQ.** When the fan was stopped, a strong rise in CO<sub>2</sub> concentrations (above 1 900 ppm most of the time) was observed. The occupants did not react to compensate for the lack of air renewal. **This confirms the impact of ventilation on IAQ and shows that occupants are unaware of poor ventilation and fail to compensate, for instance by opening windows.**



**Figure 2:** Overnight variation of CO<sub>2</sub> concentrations in a bedroom. Comparison of HC air inlet (measured and simulated) and fixed-flow air inlet (simulated).



**Figure 3:** CO<sub>2</sub> concentrations with/without ventilation. Measurements for one month with fan off in a bedroom compared with fan-on for the rest of the heating season. 3 occupants in a bedroom.



### Approximately 30 % energy savings on ventilation with the Aereco DCV system

The chart of figure 4 presents the average equivalent-heat-loss airflow for every dwelling in the monitoring sample during a complete heating season. The dwellings are grouped by type (number of main rooms). The differences in measured airflows result from the adaptation of the ventilation systems to different occupancy levels, activities, occupant behaviours, and dwelling sizes. The comparison with the French regulatory reference (fixed airflow, black bars) shows the statistical airflow reduction – thus the energy savings – with the DCV system. The measured savings on the airflow in this project are evaluated at 30 %. But a survey showed that most of these dwellings are over-occupied, especially on the Paris site. When this result is extrapolated to the statistical average French occupancy for each type of dwelling, the result is about 55 % energy savings on ventilation heat losses. This statistical airflow reduction does not affect the IAQ; indeed, the IAQ, in terms of CO<sub>2</sub> and humidity, has been shown to be better, as stated earlier.

### Results

The large scale in-situ monitoring of 30 dwellings demonstrated the good performance of the Aereco DCV system tested: a high level of indoor air quality compared to a fixed ventilation system. The condensation risks are negligible; the monitored system yielded 30 % energy savings compared with the regulatory fixed airflow in these over-occupied dwellings. An extrapolation to the statistical average French occupancy indicates 55 % energy savings on heat losses. Fan energy consumption was reduced by between 35 % and 50 % on both sites. In addition, the in-situ working characteristics of the monitored DCV terminals were consistent with the laboratory test results.

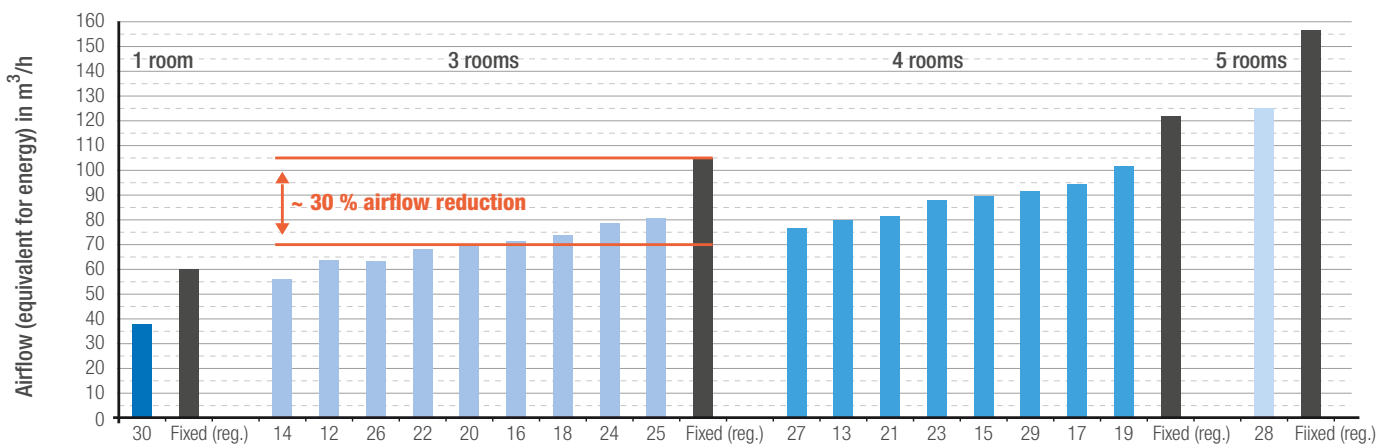
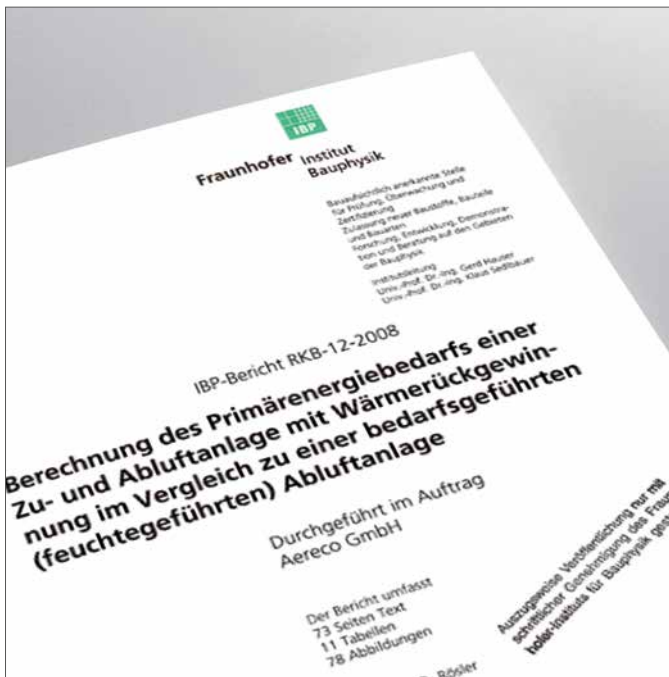


Figure 4: Statistical equivalent-heat-loss airflows per dwelling (numbers in abscissa) on Paris site. Rated by dwelling types by comparison with the constant airflow required by French regulations (black). 2007-2008 heating period.

# AERECO DEMAND CONTROLLED MEV<sup>1</sup>: A RELEVANT, LOW-COST ALTERNATIVE TO CONSTANT HRV<sup>2</sup>



Calculation of the primary energy needs of a supply and extractor fan with heat recovery compared with demand controlled mechanical exhaust ventilation (humidity controlled) - Reference IBP-Bericht RKB-12-2008

Detailed study available from Aereco on request.

A study was conducted in 2008 by the Fraunhofer Institut Bauphysik<sup>3</sup> to evaluate the performance of the Aereco humidity controlled mechanical ventilation system and compare it with several other heat recovery systems.

## Assumptions

The simulation was carried out in a 75 m<sup>2</sup> apartment occupied by 3 persons. The indoor temperature was a constant 21°C. The U-factor assumed was 0.25 W/m<sup>2</sup>.K. Three representative types of weather were used (data supplied by the German Meteorological Institute):

- Hof (cold)
- Würzburg (temperate)
- Freiburg (warm)

The results presented here are based on the Hof weather data (with which heat recovery yields the largest energy savings).

## Energy savings

The study showed that the Aereco demand controlled MEV system consumes only slightly more energy – 1 070 kWh – per heating period than an 80 % heat recovery system, under the conditions of the study. The corresponding extra cost – €47 – is much smaller than the cost of the annual filter change necessary to maintain the level of performance of HR units (graph no. 2).

The long-term projection of graph no. 1 shows that the initial extra cost of the heat recovery system (supply and installation), compared with the Aereco demand controlled MEV, is never paid back (even without counting the required annual filter change).

1. Mechanical Exhaust Ventilation

2. Heat Recovery Ventilation

3. Located in Germany, the Fraunhofer Institute for Building Physics IBP is engaged in research, development, testing, demonstrations, and consulting in all fields of building physics

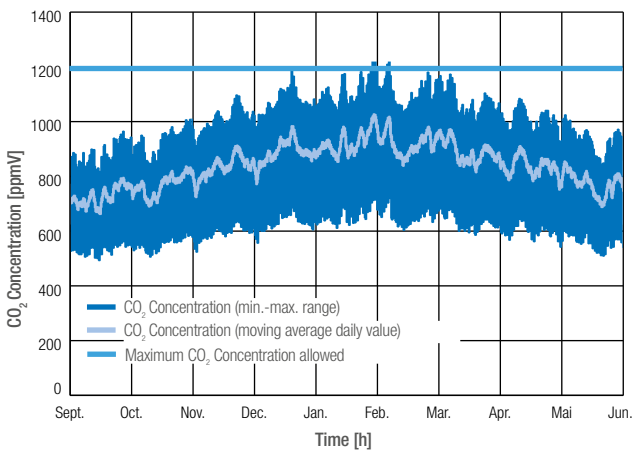
4. PE = primary energy factor for electricity, value for Germany

**Environmental benefits**

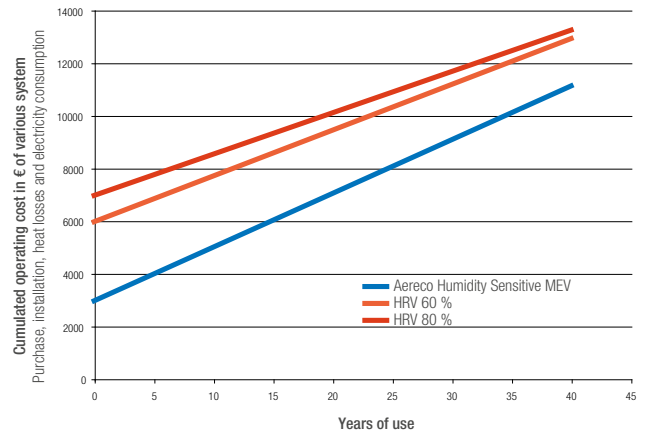
The energy performance of Aereco’s demand controlled MEV system is reinforced by the fact that its single fan consumes less electricity than the two fans and preheating of the heat recovery system. With a PE-factor<sup>4</sup> of 2.7, **the impact on primary energy consumption – and so on CO<sub>2</sub> emissions – favours humidity controlled ventilation for the share of energy necessary to run the system.**

**Indoor air quality**

This study also showed that, under real occupancy conditions, **Aereco demand controlled MEV keeps CO<sub>2</sub> levels below 1 200 ppm, guaranteeing optimal indoor air quality (IAQ) in the dwelling (graph no. 3).**

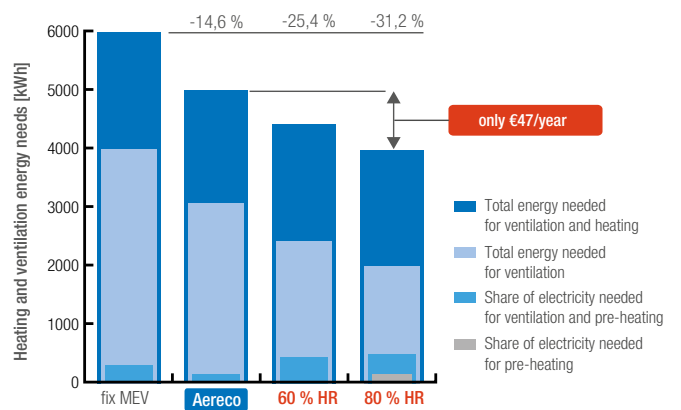


**graph no. 3 – Daily variation of CO<sub>2</sub> inside the dwelling equipped with Aereco demand controlled MEV**



**graph no. 1 – Operating costs and R.O.I. of various ventilation systems**

Assumption: 1 kWh = €0.10 +VAT



**graph no. 2 – Total energy consumption of various ventilation systems**

Assumption: 1 kWh electricity = €0.19; 1 kWh Fuel oil or Gas = €0.07



**PRODUCTS**

# EMM

## HUMIDITY SENSITIVE AIR INLET



### Slim, robust design

The EMM air inlet concentrates all of Aereco's experience in the manufacture of humidity controlled ventilation products.

The slim and robust design of the EMM humidity sensitive air inlet, available in two airflow models and three different colours, has contributed to its success in many countries. With its acoustic canopy, the EMM air inlet achieves an acoustic attenuation of 37 dB.

It is very easy to install: the base is attached to the window, then the air inlet is clipped to it.

### Suited to all configurations (1, 2)

The directional base of the EMM air inlet makes it possible to install it with its air stream directed according to the position of the window relative to the ceiling or to an horizontal obstacle (in the pictures below: 1, vertical; 2, oblique) to ensure maximum comfort for the occupants.

### A closing device against cold weather and strong winds (3)

A manual closing device available as an option or on a specific version allows manual locking of the air inlet at minimum aperture to prevent air from entering. This option is useful in countries where winter temperatures may be very low.

### Air inlet



Humidity sensitive system: modulates the airflow according to the local relative humidity.



Acoustic attenuation up to 37 db with accessories.

Directional airflow: adaptable to the windows/ceiling configuration.



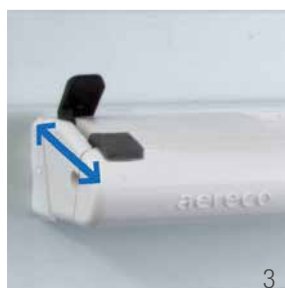
Optional closing device.



Slim profile (27 mm) for easy installation on windows.



Easy to maintain: no adjustment, simple yearly dusting.



# EHA<sup>2</sup>

## ACOUSTIC HUMIDITY SENSITIVE AIR INLET





## Stylish design, with maximum functions

The stylish design of the EHA<sup>2</sup> inlet enables perfect integration on most windows or rolling shutter casings. With the inclusion of high efficiency acoustic foam the product reaches an acoustic attenuation of up to 42 dB when mounted with the special base and canopy. An optional device allows on demand manually closing or opening of the air inlet, complementing the humidity sensitive function available on the EHA<sup>2</sup>.

### Oblique air jet for occupant comfort (1)

The oblique air jet of the EHA<sup>2</sup> skims the ceiling ensuring progressive heating of fresh air for the improved comfort of the occupants.

### Optional opening and closing device (2)

This device is available on versions '5-35' (humidity sensitive) and '35' (without humidity control); it enables the occupant to choose between three modes: minimum, automatic (humidity sensitive) or maximum airflow. The device can be added after the product is installed.

### Efficient protection against external noise (3)

When installed on its acoustic base and with acoustic external canopy (A-EHA), the EHA<sup>2</sup> air inlet offers great acoustic attenuation, up to 42 dB at maximum opening, which makes it one of the best products available on the market with an air cross section this size (3 600 mm<sup>2</sup>).

## Air inlet



Humidity sensitive system: modulates the airflow according to the local relative humidity rate.



Acoustic attenuation up to 42 dB with accessories.



Optional closing and opening device.



Slim profile for easy adaptation on windows.



Easy to maintain: no adjustment, simple yearly-dusting.



# EHT

## WALL HUMIDITY SENSITIVE AIR INLET



## The effective wall mounted alternative

Designed to be installed on a wall or on a rolling shutter casing, the EHT humidity sensitive air inlet is an ideal alternative to window-mounted air inlets. It thus solves the problem of lack of space on windows. With accessories, it provides a high level of acoustic protection, up to 52 dB attenuation. A closing device and an airflow controller can be used to protect from cold weather and strong winds.

### Easy wall mounting and efficient protection against outdoor noise (1)

Easy to install, in particular in refurbishment; the circular hole can be made using a core drill 100 mm in diameter - 125 mm for the complete acoustic kit.

The complete acoustic kit (EHT + 125 mm duct + acoustic foam + acoustic canopy) can attain an acoustic attenuation of 52 dB, which places it among the best products available on the market.

### Insect filter (2)

Nothing could be easier than cleaning the insect filter: once the EHT is unclipped, the removable F-EHT filter is readily accessible from the interior of the dwelling.

### ACW: automatic airflow controller (3)

The ACW makes it possible to limit the maximum airflow to 40 m<sup>3</sup>/h in a duct 100 or 125 mm in diameter, even when the pressure exceeds 20 Pa (when there is wind for example).

## Air inlet



Humidity sensitive system: modulates the airflow according to the local relative humidity.



Core drilling: easy installation on the wall, ideal for refurbishment projects.



Acoustic attenuation up to 52 db with accessories.



Easy to maintain: no adjustment, simple yearly dusting, and readily accessible filters.



## AC

### AIRFLOW CONTROLLER CANOPY



### OTHER WINDOW CANOPIES



### Total airflow control

Not only does the AC external canopy protect the interior of the window from water infiltration through the ventilation slot, it also avoids over-ventilation: a patented internal device limits the maximum airflow when the pressure is too high, making the AC canopy well suited to tall buildings or windy locations.

The AC external canopy can be installed with fixed or humidity sensitive air inlets. A built-in grille keeps flying insects out of the dwelling.

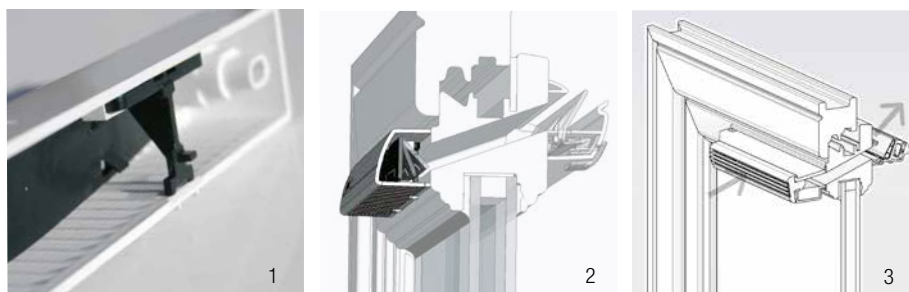
Installation is easy: it has the same screw spacing, allowing direct replacement of most Aereco window canopies.

#### Patented design to control the maximum airflow (1, 2)

The AC external canopy is designed to automatically limit the airflow in the event of high pressure, thanks to a patented device. The mechanism comprises a silicon flap that moves according to the airflow. It automatically reduces the air cross-section when the airflow becomes too high.

### Window canopies: attractive, easy-to-install protection

External air inlet canopies protect the elements of the frame (windows, casings) hosting the air passage holes against bad weather and water infiltration (3). Their role is also aesthetic: they blend in perfectly with the frontage and windows. They can also perform such functions as soundproofing, insect protection, etc.



### Canopy



Limits air noise in windy conditions.

Controls the airflow to limit the impact of high pressures on the facade.

Protects the internal structure of the window against water infiltration.



Protects the dwelling from flying insects.

Protects the internal structure of windows against water infiltration.

Ensures the aesthetic balance of frontage and windows.



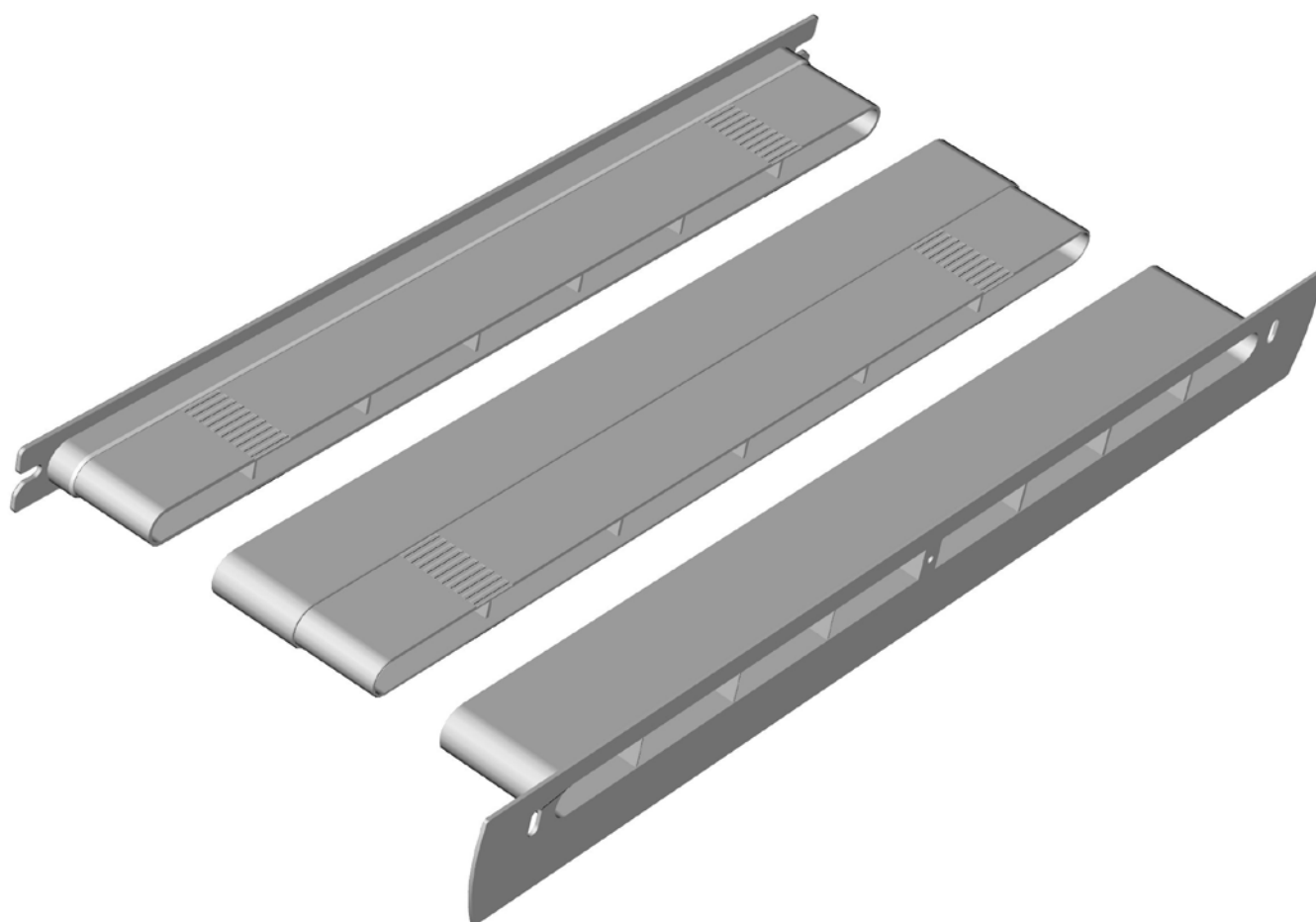
Protects against flying insects.



Helps protect against noise (acoustic canopies).

**E-TFR**

## WINDOW TELESCOPIC SLEEVE



## Protection of the window and guarantee of airflows

By ensuring the continuity of the airflow from the outside canopy to the air inlet, the E-TFR protects the interior of the window and avoids cooling to prevent internal condensation.

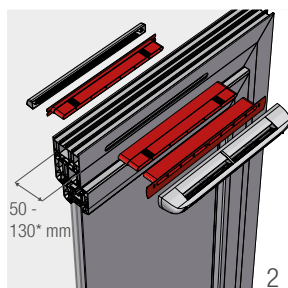
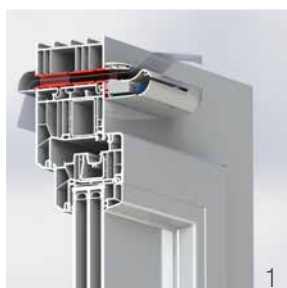
Its implementation guarantees sufficient air passage for ventilation of the room. The window sleeve is composed of two interlocking parts (a canopy side and an air inlet side) plus an optional extension to cover a wide range of window thicknesses, from 50 to 130 mm\*. Two versions are available to fit perfectly to the different Aereco air inlets to ensure a perfect airtightness and aesthetic finish (EMM / EHA version and EHA2 version).

### Avoids the internal cooling of the window (1)

By ensuring the continuity of the flow from the outside canopy up to the indoor air inlet, the window telescopic sleeve E-TFR prevents the cooling of the window inner frame. It thus reduces the risk of condensation inside and keeps the thermal performance of the window, notably for aluminum windows.

### Adapts to most of the window profiles, as thin as thick (2)

With two interlocking parts and a telescopic extension available as an accessory, the E-TFR adapts to window profiles from 50 to 130 mm\* thickness. Included clips also allow to ensure the correct connection of the components within the profile.



## Air inlet



Avoids the internal cooling of the window (protects from condensations).



Keeps the thermal performance of the window.



Optimizes the acoustics of the air inlet (no noise leakage).

Ensures the air section needed.

Adapts to the thickness of the window.



Aesthetic integration: designed for Aereco air inlets.



Easy installation: fixing through the holes of Aereco air inlets and canopies.

\* The window profiles whose thickness is between 71 and 81 mm require a cutting of the telescopic extension and of the part in contact with the air inlet. Beyond 120 mm, a silicone seal between each component is recommended to ensure the tightness of the assembly.

## G2H

### MULTI-CONTROLLED EXHAUST UNIT FOR NATURAL AND HYBRID VENTILATION





### A unique solution precisely optimised for natural and hybrid ventilation

The G2H is the first exhaust unit precisely optimised for natural (passive stack) and hybrid ventilation, in both new buildings and renovations. By providing both automatic control of the airflow according to needs and auxiliary airflows (manual or automatic), the G2H exhaust unit advantageously combines energy efficiency and indoor air quality. It offers a very large air cross-section to ensure the airflow even at a very low pressure, from 2 Pa. It is particularly easy to install, since it fits perfectly on collective or individual ducts designed for natural or hybrid ventilation.

### A smart and unique exhaust unit

The numerous modules available on the G2H exhaust unit meet various needs and occupancy modes in dwellings: humidity controlled to remove excess moisture quickly, presence detection, and even remote control to exhaust odours are some of the actuation modes available to optimise, at all times and in every room, both indoor air quality and energy consumption.

### An optimised solution to improve building energy performance

With settings precisely optimised, the G2H exhaust unit is an especially satisfying response to anyone wishing to combine energy efficiency, quiet operation, and ease of implementation, whether in a new or a renovated building.

### A very large air cross-section to accommodate low pressures

With an air cross-section of up to 163 cm<sup>2</sup> at maximum opening, the G2H exhaust unit ensures airflows even at very low pressure, from 2 Pa.

#### Exhaust unit



Fully automatic operation: exhaust airflow according to various parameters, such as humidity or presence.



Pull cord, switch, and remote auxiliary airflow control versions.



Indoor air quality and energy saving thanks to automatic airflow control.

Large air cross-section optimised for natural ventilation or hybrid ventilation, in new buildings or renovations.



Completely silent operation.



Fits directly on all types of air ducts (collective or individual, concrete or metal “shunts”).



## GHN

# HUMIDITY SENSITIVE EXHAUST UNIT FOR NATURAL AND HYBRID VENTILATION



## Naturally effective air exhaust unit

How can wet rooms be effectively ventilated with allowance for the requirements and specific needs of natural (passive stack) ventilation? The GHN humidity sensitive exhaust unit is the perfect solution, as it adapts its airflow to variations in relative humidity. Its dimensions are compatible with the air cross-section of natural ventilation ducts and its design allows for perfect integration in bathroom and toilets.

### Suited to all situations (1)

Four removable plates on the back of the GHN make it adaptable to different dimensions and hole configurations when installed in a bracket version. It is also possible to increase the maximum airflow up to 100 m<sup>3</sup>/h for a pressure of 10 Pa.

### Simple mechanism for greater longevity (2)

The GHN has a simple and robust humidity sensor that requires no maintenance and will retain all of its qualities for many years.

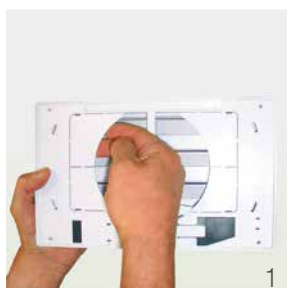
## Exhaust unit



Humidity sensitive system: modulates the airflow according to the local relative humidity.



Easy to maintain: no adjustment, simple yearly dusting.



## BXC

### DEMAND CONTROLLED EXHAUST UNIT FOR MEV



## A multifunctional exhaust unit to optimise indoor air quality and energy efficiency in MEV applications

The BXC incorporates all of the functions one could want in an air exhaust unit: various activation modes, such as humidity sensitive, presence detection, switch, and even CO<sub>2</sub> are available to adapt the ventilation to occupants' needs. The exhaust airflow is automatically modulated, in silent operation. The range of variable airflows can be set at installation to meet special needs, or to compensate for a lack of pressure; commissioning is also facilitated by the presence of a pressure plug, which allows measurement and easy calculation of the airflow.

### Airflow '+': airflow can be set at time of installation (1)

The BXC lets you set the airflow according to the pressure available or to specific regulation requirements. The fixed shutter can be set to 6 positions, with an average step of +10 m<sup>3</sup>/h (maximum = +50 m<sup>3</sup>/h).

### Pressure plug to help commissioning (2)

The built-in pressure plug makes it easy to measure the pressure using a manometer, then calculate airflow using a table in the installation instructions.

### Advanced special versions (3)

The BXC was the first exhaust unit in the world offering the possibility of having built-in CO<sub>2</sub> and VOC sensors, for example. These innovations are especially well suited to applications in schools, offices, gymnasiums, mobile homes, etc. A remote control version is also available.

## Exhaust unit



Humidity sensitive, presence detector and switch versions: modulates the airflow according to the various needs of the dwelling.

Airflow '+': possibility of setting the airflow levels at installation: up to + 50 m<sup>3</sup>/h on the max. airflow.



Advanced special versions: CO<sub>2</sub>, VOC, and remote control versions.



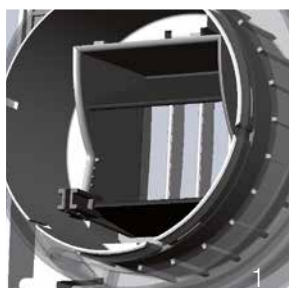
Silent working: silent auxiliary airflow activation.

Battery indicator: buzzer to indicate low battery level.

Pressure plug: allows pressure measurement to determine the airflow.



Easy to maintain: removable shutter case and front cover for easy cleaning.



## GBP

### DEMAND CONTROLLED EXHAUST UNIT FOR LOW PRESSURE VENTILATION



## The ideal solution to refurbish ventilation while keeping low-pressure operation

Specially adapted to work at low pressure, the GBP humidity sensitive exhaust unit is an ideal solution for the renovation of ventilation ductwork initially operating in natural ventilation. The GBP exhaust unit is available in several versions activated by a humidity sensitive sensor or by a pull cord, for implementation on collective or individual air ducts. Operating at pressures from about 15 to 30 Pa, it can be connected to a low-pressure exhaust fan or to a hybrid fan (VBP, VBP+). In addition to making it unnecessary to measure duct air-tightness, low-pressure operation offers the advantage of consuming considerably less energy than conventional mechanical exhaust ventilation, with quiet operation.

### The ideal way to refurbish with low-pressure ventilation

The GBP exhaust unit is available in several versions, with airflow controlled by a fully automatic humidity sensor or by pull cord. Constant airflow versions are also available.

### Easy to adapt to individual or collective natural ventilation ducts

Thanks to an adapter plate available as an accessory, the GBP exhaust unit fits easily over the holes of old ventilation exhaust units.

#### Exhaust unit



Humidity controlled or pull cord activated airflow.

Low-pressure solution optimised for energy performance, with many versions available for different types of housing and rooms.



Completely silent operation.



Suitable for individual or collective natural ventilation ducts using an adapter plate.



Easy cleaning: removable shutter box and front cover.





## TDA

# EXHAUST UNIT WITH PRESENCE DETECTION FOR MEV



## Detecting presence to adapt the airflow

TDA exhaust units directly adapt the exhaust airflow to the presence detected in the room. A simple initial adjustment of the basic airflow according to the usual number of occupants is sufficient to ensure permanent air quality. When the room is unoccupied, the airflow is automatically reduced, allowing savings averaging 50 % on thermal losses due to ventilation.

### Precise detection of presence

The presence detection module comprises a pyroelectric sensor that detects infrared radiation focused by a Fresnel lens. With a 4-meter range and a 100° angle of detection, this is very effective. The infrared radiation focused on the sensor is continually analysed; when a variation is perceived, a signal is sent to the electronic board, which analyses it and then activates the motor controlling the opening of the exhaust unit shutters. The detection module can discriminate between human heat and heaters or lights.

The 'basic' airflow is started as soon as a presence is detected: the TDA returns to the reduced airflow 20 minutes after the last detection. When the room is empty, this saves up to 50 % heating energy (compared to constant ventilation with the same air quality).

### A simple adjustment determines the basic airflow (2)

A cursor can be used at any time to set the number of people in the office, which determines the basic airflow activated by the detection process (from 25 to 100 m<sup>3</sup>/h).

### Output to relay

A specific version has an output to operate a relay (6 VDC, I<sub>max</sub>. 100 mA), which can be used to activate an external device such as the light, for example.

## Exhaust unit



Presence detection: starts the basic airflow as soon as a presence is detected.



Easy to maintain: removable grille for easy cleaning.



Easy adjustment of the basic airflow according to the number of occupants.

Battery (9 V) or 12 VAC supply.

Output to relay (specific version) to operate external device (light, etc.) upon presence detection.



## V2A

### ACOUSTIC WHOLE-HOUSE FAN - 2 ROOMS



## Discretion and comfort for indoor installation

The best ventilation is ventilation nobody notices. You will not notice the V2A fan: quiet, easily hidden in a wall cupboard or in the loft space. You will simply appreciate the quality of the air renewal. Installed in apartments or in individual houses, the V2A can connect up to two demand controlled exhaust units located in bathrooms and toilets. As far as consumption is concerned, it is as energy-efficient as it is discreet with its low-consumption EC-motor.

## An intelligent EC-motor

The speed of the EC-Motor (Electronic Commutation Motor) of the V2A is controlled by an electronic board. The motor speed, associated with a special wheel, holds the pressure at 80 Pa to keep the airflow proportional to the variable cross section of the two connected demand controlled exhaust units. This keeps power consumption and noise emissions to a minimum.

## Installed close to the occupant

Because it is silent and compact, the V2A can be installed directly in the living space, in a wall cupboard, a loft volume, etc. Maintenance is facilitated by its proximity to the occupant, and also by the removable filter, easily reached by opening the lid, with no need of a tool.

## 12 VAC output for exhaust units with electrical boost airflow

The V2A fan includes a 12 VAC transformer to supply up to two exhaust units equipped with an electrically activated airflow.

## Exhaust fan for MEV



Silent: only 33 dB(A)\*.



Low energy consumption: only 5.5 W @ 40 m<sup>3</sup>/h.



Constant pressure: fitted to demand controlled exhaust units.



Easy to install: flat and compact, directly installed in inhabited space.

12 VAC output to supply electrical exhaust units.

Outlet 100 mm in diameter. Inlets 80 mm.



Easy to maintain: simple yearly cleaning of a filter, easily accessible without tools.



**V4A PREMIUM**

**ACOUSTIC WHOLE-HOUSE FAN – 4 ROOMS**



## Silent operation and efficient ventilation of the whole dwelling

The V4A Premium fan is designed to ventilate a complete dwelling, with up to four exhaust units located in the kitchen, in the toilets, and in the bathrooms. Easily hidden in a wall cupboard or in a false ceiling, the V4A Premium will provide all the comfort and air quality you want. It uses an optimised EC-motor, and the electrical part is removable to facilitate maintenance.

### An efficient motor

The speed of the V4A's EC-Motor (Electronic Commutation Motor) is controlled by an electronic card. The motor speed, associated with a special wheel, holds the pressure at 100 Pa to keep the airflow proportional to the variable cross-section of the connected demand controlled exhaust units. This keeps power consumption and noise emissions to a minimum.

### Optimised for silence (1, 2)

The high efficiency EC-Motor is mounted on flexible links and is encased in a double-skin envelope: the V4A is totally optimised to work silently, allowing installation inside the dwelling.

### User-friendly maintenance

Maintenance is simple because the fan is inside the dwelling: the cover is simply lifted off and the impeller is easy to remove thanks to a patented attachment system. And the electrical part is removable, so the motor can be replaced without removing the fan from its support.

### 12 VAC output for electrical exhaust units

The V4A fan integrates a 12 VAC transformer to supply up to four electrical exhaust units.

### Exhaust fan for MEV



Silent: only 33 dB(A)\*.



Low energy consumption: less than 13 W\*.



Constant pressure: fitted to demand controlled exhaust units.

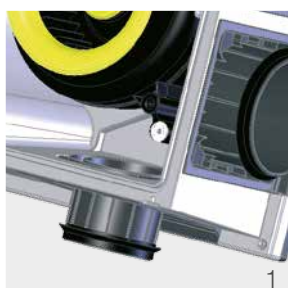


Easy to install: flat and compact, directly installed in living space.

Outlet 125 mm in diameter. Inlets 100 or 125 mm.



Easy to maintain: simple yearly cleaning of the removable impeller, accessible without tools.



## V5S

### WHOLE-HOUSE FAN – 5/6 ROOMS





## Robust, efficient, and affordable fan

The new V5S fan can ventilate a complete dwelling: the 6 available side inlets can be connected to several exhaust units in the wet rooms. With its constant pressure, the fan is well suited to demand controlled exhaust units. The V5S completes the existing line of Aereco fans for individual treatment (the V2A, V4A, and VAM), with comparable features such as a flat design (for installation in a cupboard or in a false ceiling), robust construction, and ease of maintenance thanks to a removable cover. In addition, its large box optimises its aerodynamic performance and the energy consumption of the motor. It can be installed in the wet rooms, or in an insulated attic, on the floor, on the ceiling, or on the wall. The V5S exists in two versions: with an EC-motor (V5S "Premium" - pict. 1) or an asynchronous motor (V5S "Reference" - pict. 2 and 3).

### Optimised for demand controlled ventilation

Thanks to the specific design of the impeller and coil set, the pressure is kept constant to allow airflow modulation when connected to demand controlled exhaust units.

### Robust and reliable for long life

The motor, made in Germany by a leading manufacturer, and the robust design (plastic box reinforced by strong ribs) of the V5S guarantee the durability and reliability of the product, which benefits from Aereco's long experience in ventilation.

### Exhaust fan for MEV



Constant pressure: fitted to demand controlled exhaust units.

Robust design.



Low energy consumption: only 10 W\*.

Reliable and efficient motor, made in Germany.



Easy installation: flat and compact, directly installed in living space.



1



2



3

\* @ 100 m<sup>3</sup>/h (Premium version)  
technical data page 86

**VAM**

## ACOUSTIC WHOLE-HOUSE FAN – 6 ROOMS



## High capacity and low consumption

Thanks to its slim styling and silent running, the VAM fan is ideal for installation in living spaces. With its powerful AC motor and its optimised design, the VAM can be connected to up to six exhaust units in the same dwelling. Its airflow characteristics (constant-pressure curve) are well suited to operation with demand controlled exhaust units.

## Intelligent motor

The VAM is driven by a single-phase asynchronous motor the speed of which is held constant by a tachometer and an electronic board, whatever the airflow required by the exhaust units\*\*. The power is adjusted and optimised to limit noise and energy consumption.

## 3 pressures available

The VAM provides a choice of three pressure levels at the time of installation: 80, 100, or 120 Pa. This feature can be used to satisfy specific regulations or to compensate for complex ductwork.

## Installation close to the occupant

Because the VAM is silent (acoustic foam) and compact, it is easy to install directly in the living space of the dwelling, in a wall cupboard, a loft space, etc. Maintenance is facilitated by its location within the dwelling.

## Exhaust fan for MEV



Silent: only 29 dB (A)\*.



Constant pressure: fitted to demand controlled exhaust units.

Choice of 3 settings at the time of installation: 80, 100 and 120 Pa.



Low energy consumption: only 23 W\*\*.

Outlet 125 mm in diameter  
Inlets 100 or 125 mm.



Easy to install: easy to handle and can be directly installed in living space (in a wall cupboard, corridor, etc.).



\* @ 100 m<sup>3</sup>/h

\*\* Within the limits of available power for technical data, see page 87

**VTZ**

## COLLECTIVE FANS FOR OUTDOOR INSTALLATION





### Exhaust fan for MEV

## Robustness and performance for collective outdoor installations

The VTZ line of fans includes models with capacities ranging from 500 m<sup>3</sup>/h up to 7 000 m<sup>3</sup>/h to equip apartment blocks, offices, schools, and other buildings. VTZ fans are designed for outdoor installation, on a flat or pitched roof. They feature robustness and excellent energy efficiency, thanks to the use of high-performance EC-motors and a built-in pressure control device.

### Easier maintenance (1)

VTZ roof exhaust fans are hinged to make it easier to inspect the ducts, and if necessary to sweep and to clean the propeller. Two screws ensure the safety of this access.

### Electronic commutation motor for optimum power consumption at all times

In conjunction with the pressure control device, the EC-motor automatically adjusts the power to the required airflow, while maintaining a constant pressure. The motor has a thermo-switch and an output that can be used to diagnose a possible fault. A nearby switch can be used to cut off power to the fan instantaneously if there is a problem, or for maintenance.

### A wide range of adapters for all cases (2)

Aereco offers many aluminium and galvanised steel adapters for pitched roofs and for different duct geometries. Specific parts can also be custom-made on the basis of drawings (contact us).

### Pressure control device (3)

A built-in pressure control system makes it easy to define the pressure. The pressure measured by the built-in pressure gauge is displayed on a digital screen. It is automatically regulated to optimise the system when working with demand controlled exhaust units. A 0-10 V output is available to control its operation.

6 models of fans: airflows from 500 m<sup>3</sup>/h up to 7 000 m<sup>3</sup>/h, pressures up to 300 Pa.



Low energy consumption: electronic commutation motor associated with an automatic pressure control device.

Solidity and reliability: metal construction, made in Germany.



Easy to install: many adapters available, possibility of custom construction.



DCV compatible: built-in automatic pressure control device to optimise DCV performance.



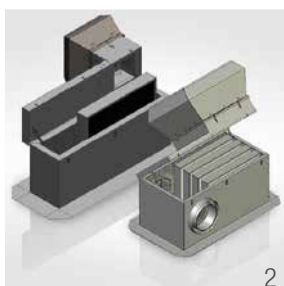
Silent: acoustic foam on the entire shell and optional sound trap.



Easy to maintain: the fan swings open to facilitate cleaning the blades.



1



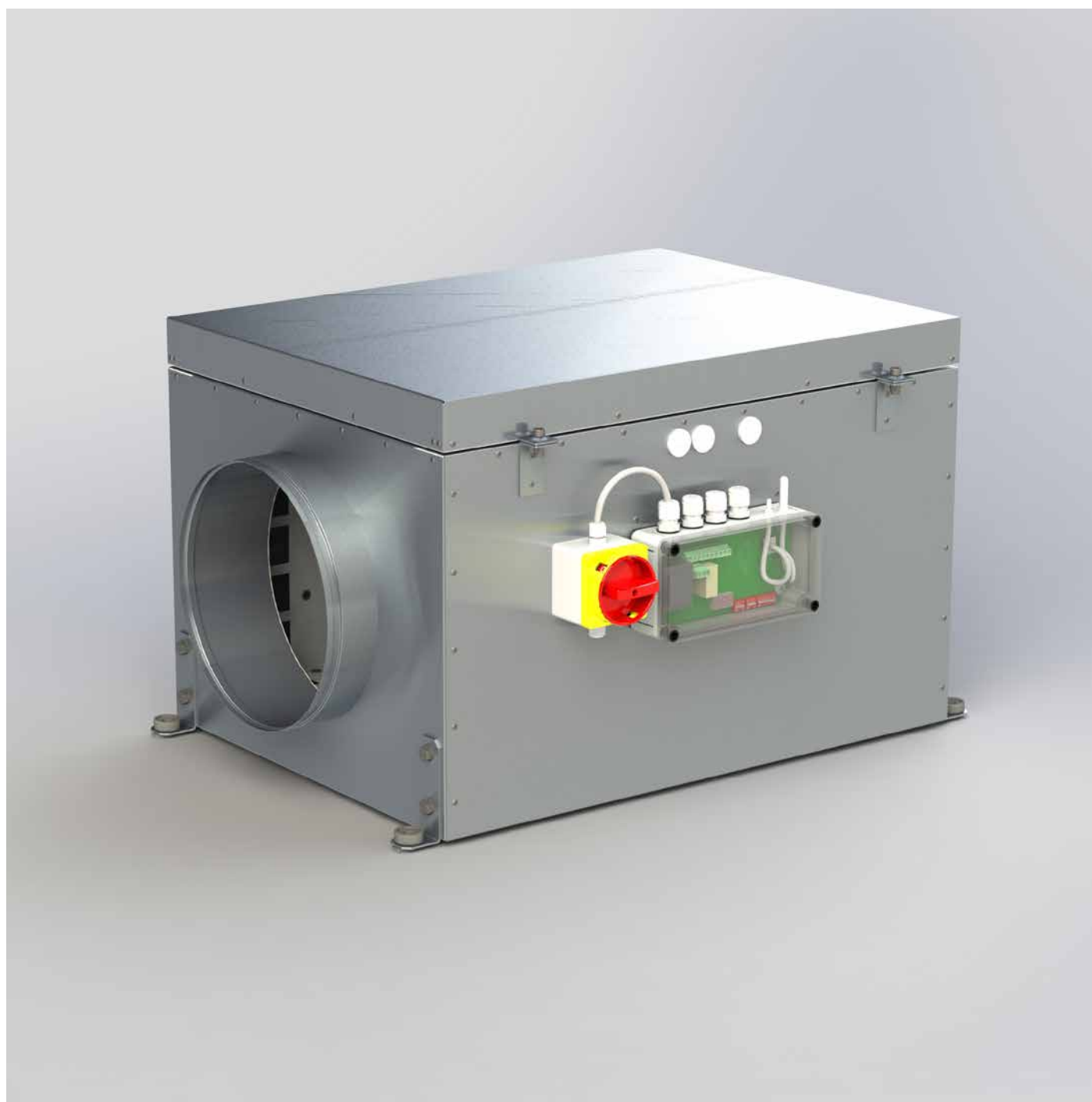
2



3

# VCZ

## COLLECTIVE FANS FOR ATTICS





**Exhaust fan for MEV**

**High-quality collective fans for attic installation**

There are five models of VCZ attic exhaust fans, with capacities from 500 m<sup>3</sup>/h up to 4 100 m<sup>3</sup>/h to equip apartment blocks, offices, schools, and other types of building. VCZ fans are designed for installation in attics, on the floor, on the wall, or attached to a beam. They are characterised by their solidity and excellent energy efficiency, thanks to the use of high-performance electronic commutation motors and a built-in pressure control device.

**Easier maintenance (1)**

VCZ fans have a trapdoor allowing direct access to the motor for impeller cleaning. The latches can be padlocked or replaced by screws, according to version.

**Electronic commutation motor for optimum power consumption at all times (2)**

In conjunction with the pressure control device, the EC-motor automatically adjusts the power to the required airflow, while maintaining a constant pressure. The motor has a thermostat and an output that can be used to diagnose a possible fault. There is a nearby switch to cut off power to the fan instantaneously if there is a problem, or for maintenance.

**Pressure control device (3)**

A pressure control system built into the roof exhaust fan makes it easy to define the pressure. The pressure measured by the built-in pressure gauge is displayed on a digital screen. It is automatically regulated to optimise the system when working with demand controlled exhaust units. A 0-10 V output is available to monitor its operation.

5 models of fans: airflows from 500 m<sup>3</sup>/h up to 4 100 m<sup>3</sup>/h, pressures up to 300 Pa.



**Low energy consumption:** electronic commutation motor associated with an automatic pressure control device.

**Solidity and reliability:** metal construction, made in Germany.



**Easy to install:** attached to the floor, the wall, or a beam at four points.



**DCV compatible:** built-in automatic pressure control device to optimise DCV performance.



**Silent:** acoustic foam on the entire shell and optional sound trap.



**Easy to maintain:** motor readily accessible by a trapdoor to clean the fan blades.



1

2

3



**VBP**

## FAN FOR HYBRID VENTILATION







**Exhaust fan for hybrid ventilation**

**Optimizing passive stack ventilation performance**

Installed at the top of a ventilation duct, the VBP hybrid fan guarantees a satisfactory airflow all year long on a former natural ventilation installation. By creating additional pressure when the natural draught is not sufficient, as may sometimes happen in warm and hot weather, the VBP hybrid fan optimises the working of natural ventilation while leaving its dimensions unchanged (ventilation exhaust units and air ducts). Its patented principle is specially designed to allow both mechanical and natural exhaust modes: the exhaust fan can stop (or work at very low speed) when the stack effect is sufficient without creating any pressure loss. Its motor starts when the temperature increases, to compensate for a potential loss of stack effect.

With a consumption of only a few Watts per dwelling, the VBP hybrid fan is an excellent alternative to mechanical exhaust ventilation and natural ventilation. Its sizing makes it suitable for apartment blocks up to 7 storeys.

**Unique design for operation in passive stack ventilation (1)**

With its unique design, the VBP does not induce any pressure loss when stopped: its central blades are parallel to the airflow, and static vanes located outside the vertical airflow generate the pressure in operation. This allows normal operation of the passive stack ventilation when the fan is off.

**Management system (2)**

In the VBPMs version (management system), a box controls the simultaneity of operation and the power of several fans. The device also controls fan speeds according to the outdoor temperature or wind speed (different versions).

**Thermal protection against extreme cold (3)**

Available as an accessory, polystyrene thermal insulation protects the VBP motor from freezing in very cold climates.

Hybrid working: does not interfere with natural ventilation when stopped / at very low speed.



Low energy consumption: only 16 W at 300 m<sup>3</sup>/h.



Constant pressure: fitted to demand controlled ventilation.

Adapts to weather conditions: management system (ms version) with temperature sensor.

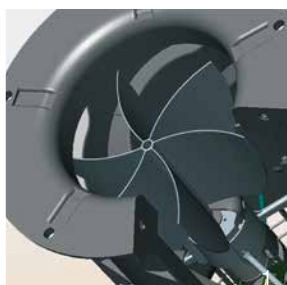


Renovation or new building, on natural ventilation ductwork.



Low maintenance: low air speed = less dust accumulation.

Not critical: allows natural ventilation if the fan stops.



**VBP+**

## ASSISTANCE FAN FOR HYBRID VENTILATION





**Exhaust fan for hybrid ventilation**

**Hybrid ventilation more energy-efficient than ever**

At only 35 W for 800 m<sup>3</sup>/h\*, the VBP+ hybrid ventilation fan features outstanding energy efficiency, cutting the power consumption for ventilation to a minimum. Its hybrid operation (natural and mechanical modes) automatically adapts to weather conditions to maintain the pressure in the ductwork all year long. The VBP+ is specially designed for demand controlled ventilation. On a flat or pitched roof, the VBP+ is easily installed on the top of a chimney using adapters. Its large unobstructed cross-section (984 cm<sup>2</sup>) allows installation on several collective or individual ducts without reducing the cross section.

Not critical in the event of a power outage, thanks to its patented blade design, the VBP+ requires much less maintenance than standard fully mechanical systems, making it an ideal solution for social housing. The VBP+ hybrid fan is also designed to withstand hot smoke with its galvanised steel body and structure and a non-combustible calcium silicate board to protect the EC-motor.

The VBP+ hybrid ventilation fan is the ideal solution for the renovation of buildings using natural (passive stack) ventilation ducts; it may also be the right answer in new buildings, where greater energy efficiency is a permanent objective.

**Patented smart blade design (1)**

Like the VBP fan, the VBP+ employs a unique smart blade design that does not induce a pressure loss when stopped: its central blades are parallel to the airflow, which is generated by static vanes on the perimeter. This means that the system is not critical in the event of a power failure, as it then allows natural ventilation.

**Fire safety (2)**

Thanks to its galvanised steel body and structure and a non-combustible calcium silicate matrix to protect the motor, the VBP+ can withstand to hot smoke up to 400°C for 30 minutes.

Hybrid working: allows natural ventilation when stopped / at very low speed.



Low energy consumption: only 35 W\* at 800 m<sup>3</sup>/h.



Constant pressure: fitted to demand controlled ventilation.



Fire safety: can withstand hot smoke up to 400°C for 30 mn.

Adapts to weather conditions: management system (ms version) with temperature sensor.



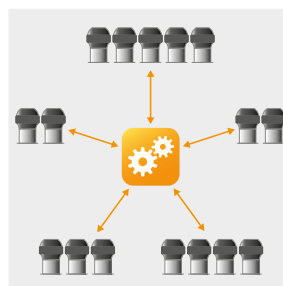
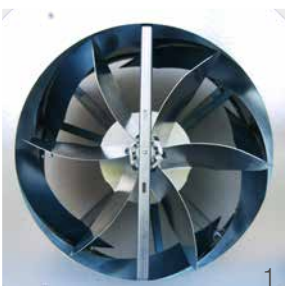
Renovation or new building, on natural ventilation ductwork.

Alarm output (ms version).



Low maintenance: low air speed = less dust accumulation.

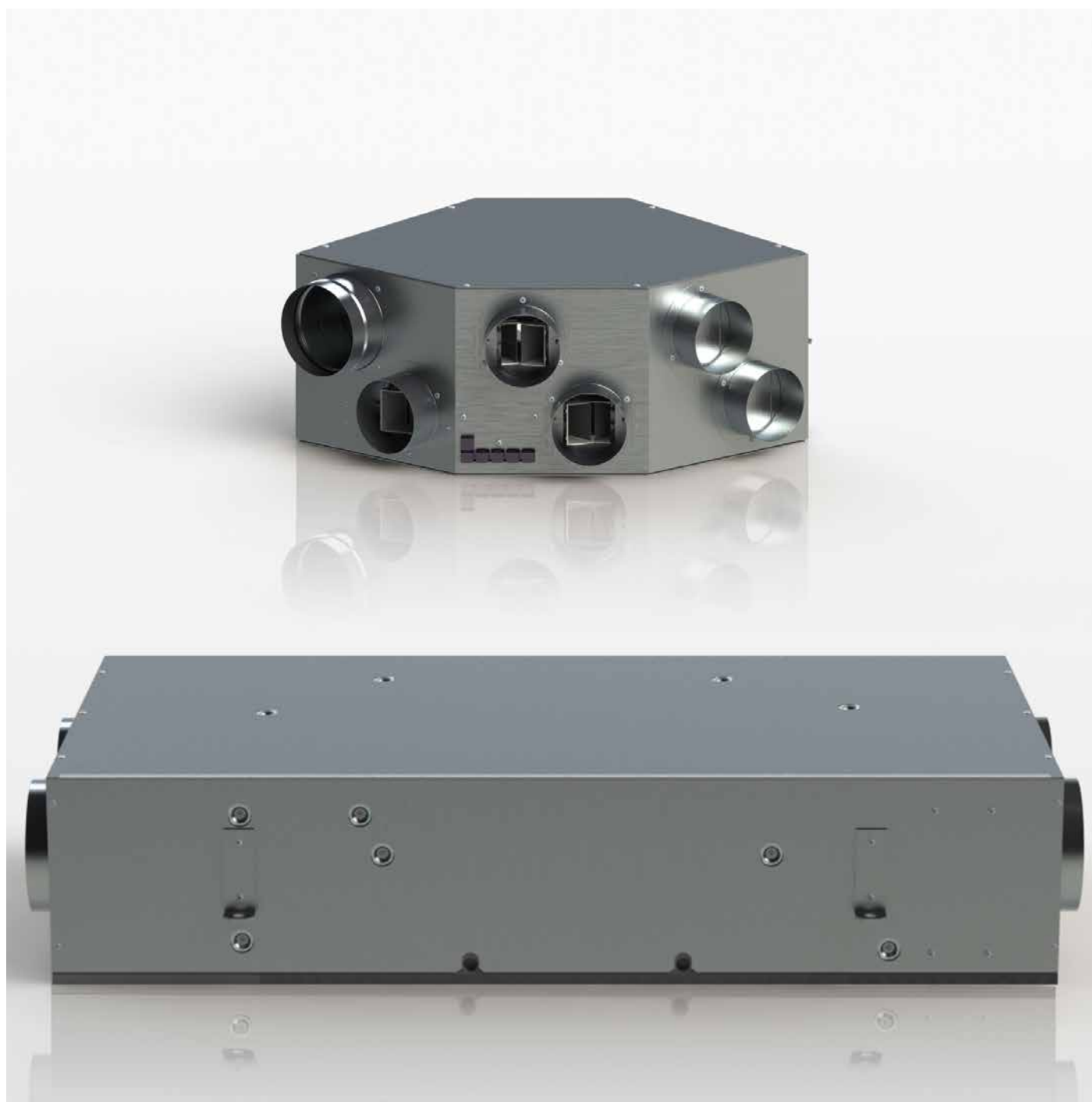
Not critical: does not interfere with natural ventilation if the fan stops.

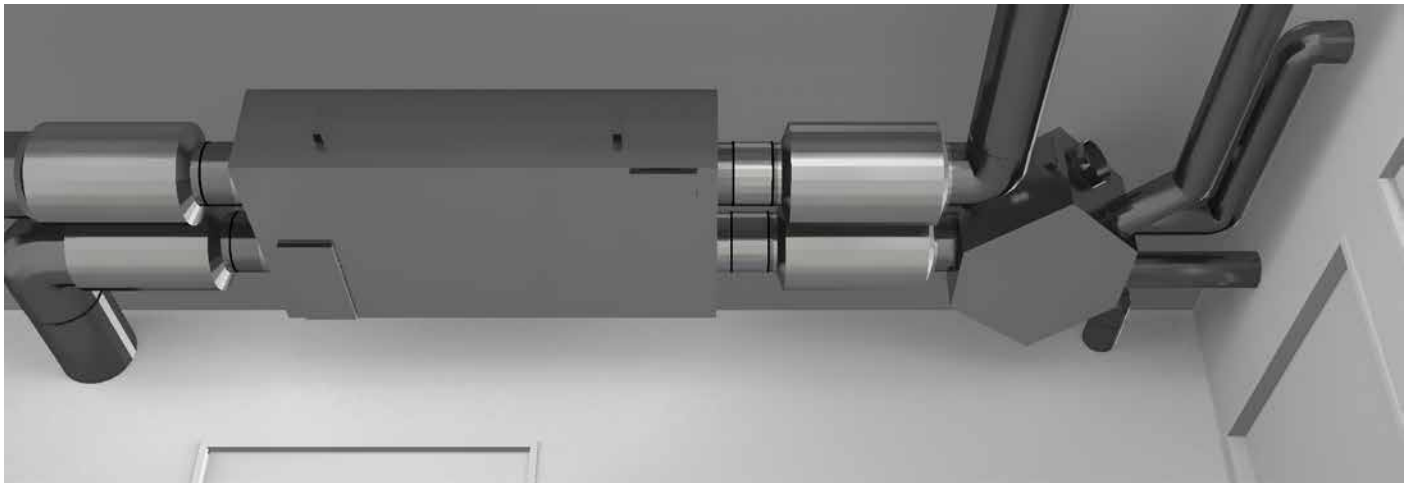


\*@ 20 Pa  
for technical data, see page 94

## DXR

# ROOM-BY-ROOM DEMAND CONTROLLED HEAT RECOVERY





## Energy performance and indoor air quality with an innovative concept

While most systems on the market offer constant or globally controlled airflows, the DXR stands out as the first residential heat recovery ventilation system to automatically adjust ventilation according to the specific needs of each room. A distribution box (DXR Hub) adjusts supply airflows through CO<sub>2</sub>-controlled dampers in the dry rooms. Demand controlled exhaust units in the wet rooms dispatch the exhaust airflow according to their specific needs; indoor air quality is then optimised in all rooms.

Comfort is ensured by supplying air at a milder temperature: it is preheated by the heat exchanger in the unit. Energy performance is also greatly improved by the automatic airflow control: the DXR delivers 92 % heat recovery efficiency, and saves about 50 % of power consumption.

Its very small thickness (26 cm) and reduced width (65 cm) allow easy installation in ceiling spaces (for example in the ceiling void of a corridor).

### Modulates exhaust and supply airflows according to the specific needs of each room (1)

Unlike most “demand controlled” systems, which actually adjust only global airflows, the DXR system adapts airflows room-by-room based on specific needs, while balancing supply and exhaust. A distribution box (DXR Hub) adjusts supply airflows through dampers controlled by CO<sub>2</sub> sensors in the main rooms. The exhaust airflows are controlled by humidity sensors or presence detectors or other activators in the exhaust units.

### Outstanding energy performance all year (2, 3)

By combining the benefits of demand control of airflows and heat recovery, DXR delivers outstanding energy performance. The system halves the statistical airflows, and its 85 % recovery efficiency translates to energy savings of about 92 % compared with a constant airflow mechanical exhaust ventilation system, for the same indoor air quality.

### Heat recovery

**DCV** Adapts exhaust and supply airflows according to the specific needs of each room to maximise indoor air quality.



Very low energy losses by combining demand control of airflows and heat recovery.

Optimises power consumption.



Quiet operation through efficient EC-motors and low pressure (only 25 Pa for the supply air).

Free cooling mode.



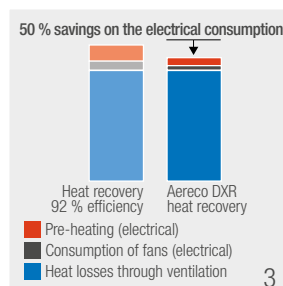
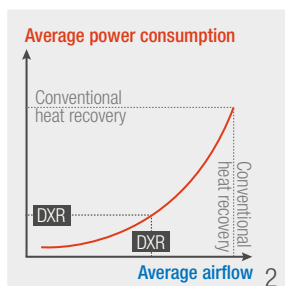
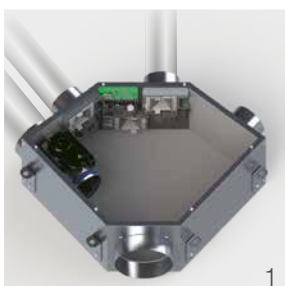
Easy installation in ceiling spaces thanks to its small thickness (only 26 cm).



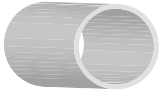



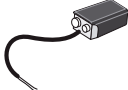







Easy maintenance of the filters through compact bottom trapdoors.

Interface for control, settings, and maintenance.








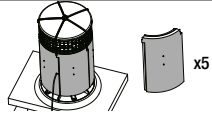
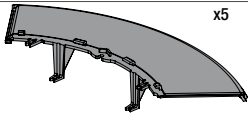



High-quality manufacture with main parts made of metal.



# ACCESSORIES

	Code	Description	Related product
<b>Air inlets</b>			
	AEA776	Wall plastic sleeve $\varnothing$ 100mm L.350 mm for EHT	EHT
	AEA967	Acoustic foam for $\varnothing$ 125 mm duct, 48 dB (x2 kit)	EHT
	AEA968	Acoustic foam for $\varnothing$ 100 mm duct, 43 dB (x2 kit)	EHT
	AEA729	Closing device kit for EMM	EMM
	AEA730	Closing device kit for EHA	EHA
	11501AL	Window telescopic sleeve, plastic, white for installation on aluminium window	EMM-EHA-EHA <sup>2</sup>
<b>Exhaust units</b>			
	CAL195	Supply device 12 VAC / 9 VDC (mandatory for 12 VAC supply)	G2H
	CAL261	Supply device 12 VAC / 3 VDC (mandatory for 12 VAC supply)	BXC
	AEA478	Remote control for boost airflow activation	BXC rc – BXC hrc G2H rc – G2H hrc
	33007AL	Trident plastic sleeve $\varnothing$ 125 mm - L 125 mm	BXC – TDA
	85343AL	Trident plastic sleeve $\varnothing$ 125 mm - $\varnothing$ 80 mm - L 125 mm	BXC
	FBE1089	Aluminium filter box with washable filter for exhaust units	BXC
	19429AL	Phonic ring for exhaust units $\varnothing$ 125 mm	BXC
	BHM429	Phonic plate for exhaust units $\varnothing$ 125 mm	BXL
	AEA317	Plastic adaptor $\varnothing$ 125 mm, black, with joint	BXC



	Code	Description	Related product
<b>Exhaust fans</b>			
	AEA808	Metal sleeve Ø125-125 mm L.80 mm	VAM
	AEA809	Metal sleeve Ø125-100 mm L.100 mm	VAM
	AEA810	Metal sleeve Ø125-80 mm L.110 mm	VAM
	AEA877	Connecting spigot for Ø125 mm duct	V2A
	SE3203	Connecting spigot for Ø100 mm duct	V2A
	AVE055	Connecting spigot for Ø125 mm duct	V4A
	AVE056	Connecting spigot for Ø100 mm duct	V4A
	VBP070	Thermal protection shell - set for 1 VBP fan	VBP
	VBP335	Rain protection - set for 1 VBP fan	VBP
	VBP447	Rain exhaust base sleeve	VBP
	AVE197	Complete supply and control box (from 1 to 3 VBPms)	VBPms
	AVE198	Complete supply and control box (from 4 to 6 VBPms)	VBPms
	VB21119	Electronic module for MS system (MAIN module)	VBP+
	VB21118	Electronic module for MS system (FAN module)	VBP+
	AVE1146	Numerical thermal sensor for MS system	VBP+





# TECHNICAL DATA

## **General remark concerning the codes mentioned in the document**

These concern the standard product, i.e. without options or accessories. In general, they concern the white version, for the product delivered alone (not as part of a kit). Other codes are possible for other versions of the products. Please contact Aereco for the full list.

**Installation data are recommendations for optimal use of our products.**





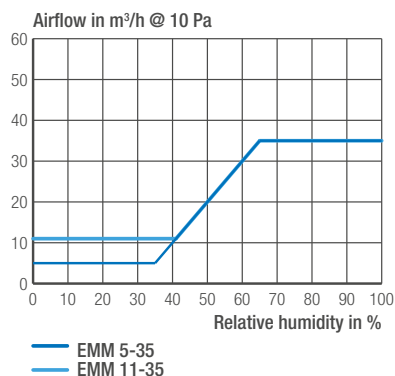
# EMM Window air inlet

		EMM 5-35	EMM 11-35	EMF 22	EMF 35
<b>Standard code</b>		EMM705	EMM751	EMF158	EMF713
<b>Airflow characteristics</b>					
Humidity sensitive		■	■	-	-
Closing device		□ (EMM716)	-	-	□ (EMF963)
Airflow (min. -max.) @ 10 Pa	m <sup>3</sup> /h	5-35	11-35	22	35
Max. opening area	mm <sup>2</sup>	4 000	4 000	2 500	4 000
<b>Acoustics</b>					
Dn,e,w (C ; Ctr) Acoustic attenuation @ max. opening, air inlet*	dB	34 (0 ; 0)	34 (0 ; 0)	-	34 (0 ; 0)
Dn,e,w (C ; Ctr) Acoustic attenuation @ max. opening, with A-EMM	dB	37 (0 ; 0)	37 (0 ; 0)	-	37 (0 ; 0)
<b>Accessories</b>					
Flat canopy		AP	AP	AP	AP
Acoustic canopy		A-EMM	A-EMM	A-EMM	A-EMM
Standard canopy		AS	AS	AS	AS
Airflow controller canopy		AC	AC	AC	AC
<b>Characteristics</b>					
Weight	g	170	170	147	147
Colours		white/brown/oak			
Material (main)		PS	PS	PS	PS
<b>Installation</b>					
Slot	mm	2 x (172 x 12); (270 x 14); (290 x 12)			
Window installation		■	■	■	■
Rolling shutter casing installation		■	■	■	■
Destination room		bedroom / living room			

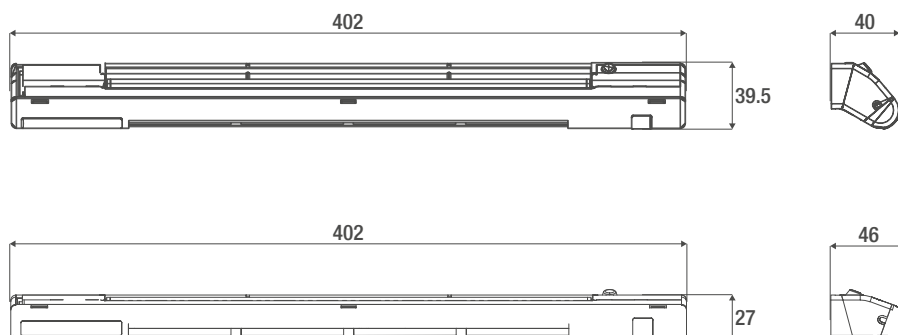
\*with non-acoustic canopies (AC, AS AP)

■ standard | □ optional

Airflow characteristics



Dimensions in mm





## EHA<sup>2</sup> Window acoustic air inlet

		EHA <sup>2</sup> 5-35	EHA <sup>2</sup> 11-35	EHA <sup>2</sup> 17-35	EFA <sup>2</sup> 35
<b>Standard code</b>		EAR200	EAR202	EAR203	EAF309
<b>Airflow characteristics</b>					
Humidity sensitive		■	■	■	-
Closing + opening device*		□ (EAR201)	-	-	□ (EAF313)
Airflow (min.-max.) @ 10 Pa**	m <sup>3</sup> /h	5-35	11-35	17-35	35
Max. opening area	mm <sup>2</sup>	3 600	3 600	3 600	3 600
<b>Acoustics</b>					
Dn,e,w (C ; Ctr) Acoustic attenuation @ max. opening, air inlet***	dB	37 (0 ; 0)	37 (0 ; 0)	37 (0 ; 0)	37 (0 ; 0)
Dn,e,w (C ; Ctr) Acoustic attenuation @ max. opening, with A-EHA + E-EHA <sup>2</sup> ***	dB	42 (0 ; 0)	42 (0 ; 0)	42 (0 ; 0)	42 (0 ; 0)
<b>Accessories</b>					
Flat canopy		AP	AP	AP	AP
Acoustic canopy		A-EHA	A-EHA	A-EHA	A-EHA
Anti-insect canopy		AS	AS	AS	AS
Airflow controller canopy		AC	AC	AC	AC
Reinforced acoustic base		E-EHA <sup>2</sup>	E-EHA <sup>2</sup>	E-EHA <sup>2</sup>	E-EHA <sup>2</sup>
<b>Characteristics</b>					
Weight	g	271	271	271	250
Colours		white/brown/oak/grey			
Material (main)		PS, ABS	PS, ABS	PS, ABS	PS, ABS
<b>Installation</b>					
Slot	mm	2 x (172 x 12)			
Window installation		■	■	■	■
Rolling shutter casing installation		■	■	■	■
Destination room		bedroom / living room			

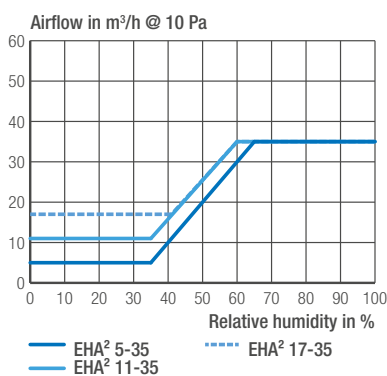
\*the device can be added as an accessory on EAR200 and EAR204 codes (complete external body + button + cam)

■ standard | □ optional

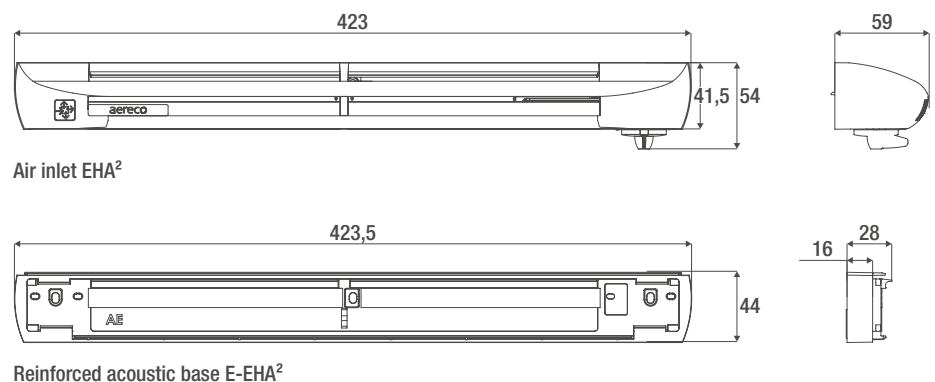
\*\*for the 22-50 m<sup>3</sup>/h version, use the EHA air inlet (see next page)

\*\*\*see page 76 for non-acoustic canopies (AC, AS, AP)

Airflow characteristics



Dimensions in mm





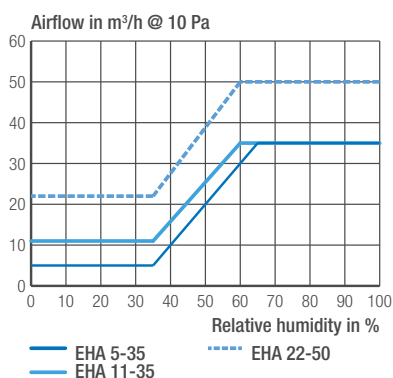
# EHA Window air inlet

		EHA 5-35	EHA 11-35	EHA 22-50	EFA 22	EFA 35
<b>Standard code</b>		EHA574	EHA753	EHA755	EFA580	EFA581
<b>Airflow characteristics</b>						
Humidity sensitive		■	■	■	-	-
Closing device		□ (EHA573)	-	-	-	-
Airflow (min.-max.) @ 10 Pa	m <sup>3</sup> /h	5-35	11-35	22-50	22	35
Max. opening area	mm <sup>2</sup>	4 000	4 000	5 700	2 500	4 000
<b>Acoustics</b>						
Dn,e,w (C ; Ctr) Acoustic attenuation @ max. opening, air inlet*	dB	37 (-1 ; 0)	37 (-1 ; 0)	-	> 37 (-1 ; 0)	37 (-1 ; 0)
Dn,e,w (C ; Ctr) Acoustic attenuation @ max. opening, with A-EHA (canopy) + E-EHA (sleeve)*	dB	42 (+1 ; 0)	42 (+1 ; 0)	-	> 42 (+1 ; 0)	42 (+1 ; 0)
<b>Accessories</b>						
Flat canopy		AP	AP	AP	AP	AP
Acoustic canopy		A-EHA	A-EHA	A-EHA	A-EHA	A-EHA
Standard canopy		AS	AS	AS	AS	AS
Airflow controller canopy		AC	AC	AC	AC	AC
Acoustic sleeve		E-EHA	E-EHA	E-EHA	E-EHA	E-EHA
<b>Characteristics</b>						
Weight	g	230	230	230	168	168
Colours		white/brown/oak	white/brown/oak	white/brown/oak	white/brown/oak	white/brown/oak
Material (main)		PS, ABS	PS, ABS	PS, ABS	PS, ABS	PS, ABS
<b>Installation</b>						
Slot	mm	2 x (172 x 12)	2 x (172 x 12)	2 x (172 x 15)	2 x (172 x 12)	2 x (172 x 12)
Window installation		■	■	■	■	■
Rolling shutter casing installation		■	■	■	■	■
Destination room				bedroom / living room		

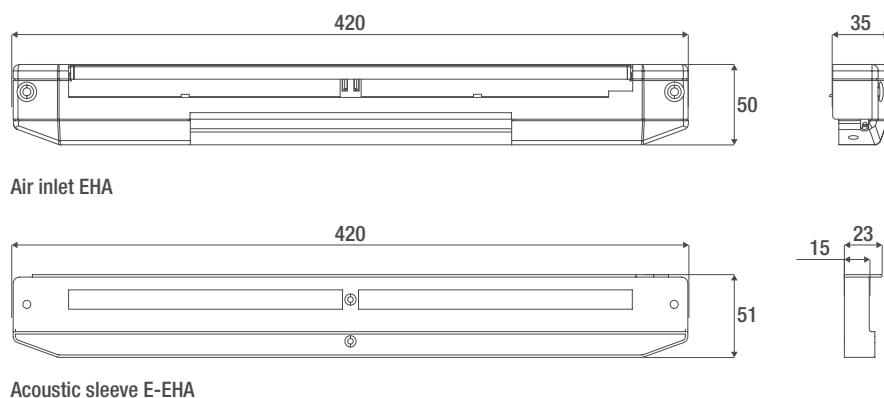
\*for non-acoustic canopies (AC, AS AP), see page 76

■ standard □ optional

Airflow characteristics



Dimensions in mm





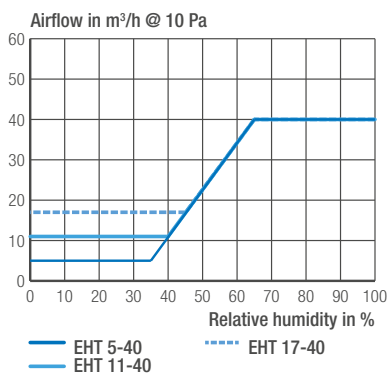
# EHT Wall air inlet

	EHT 5-40	EHT 11-40	EHT 17-40	Wall kit EHT 5-40 #1	Wall kit EHT 5-40 #2	Acoustic wall kit EHT 5-40	EFT24	EFT40	
<b>Standard code</b>	EHT780	EHT957	EHT022	EHT816	EHT815	EHT969	EFT840	EFT026	
<b>Airflow characteristics</b>									
Humidity sensitive	■	■	■	■	■	■	-	-	
Closing device	■	-	-	■	■	■	-	-	
Airflow (min.-max.) @ 10 Pa	m³/h 5-40	11-40	17-40	5-40	5-40	5-40	24	40	
Max. opening area	mm² 4 000	4 000	4 000	4 000	4 000	4 000	4 000	4 000	
<b>Accessories / composition of the kits</b>									
Air inlet (EHT)	■	■	■	■	■	■	■	■	
ø100 mm tube, length 350 mm	☒	☒	☒	■	■	■	☒	☒	
Acoustic foam for ø100 mm tube	☒	☒	☒	-	-	■	☒	☒	
Acoustic foam for ø125 mm tube	☒	☒	☒	-	-	-	☒	☒	
Anti-insect removable filter (F-EHT)	☒	☒	☒	-	■	-	☒	☒	
Acoustic foam for A-EHT canopy	☒	☒	☒	-	-	■	☒	☒	
Anti-insect wall standard canopy (A-EHT-AM)	☒	☒	☒	■	-	■	☒	☒	
Wall standard canopy (A-EHT)	☒	☒	☒	-	■	-	☒	☒	
<b>Characteristics</b>									
Weight	g 489	489	489	862	962	988	382	382	
Colour	white	white	white	white	white	white	white	white	
Material (main)	PS	PS	PS	PS	PS	PS	PS	PS	
<b>Installation</b>									
Spigot*	mm ø100	ø100	ø100	ø100	ø100	ø100	ø100	ø100	
Wall passage dimensions	mm	ø100 or ø125			ø100		ø100 or ø125		
Rolling shutter casing installation	■	■	■	-	-	-	■	■	
Wall installation	■	■	■	■	■	■	■	■	
Destination room				bedroom / living room					

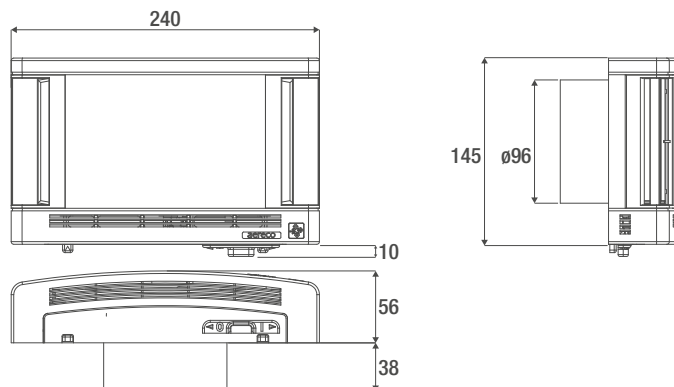
\*exists in bracket version

■ standard / included ☒ compatible

Airflow characteristics



Dimensions in mm



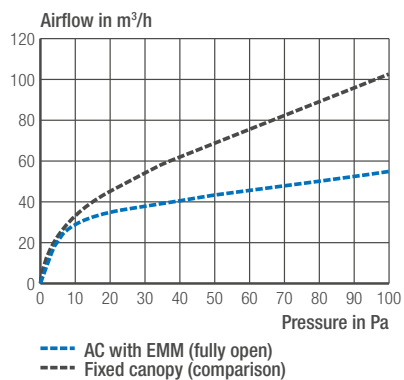


Windows canopies

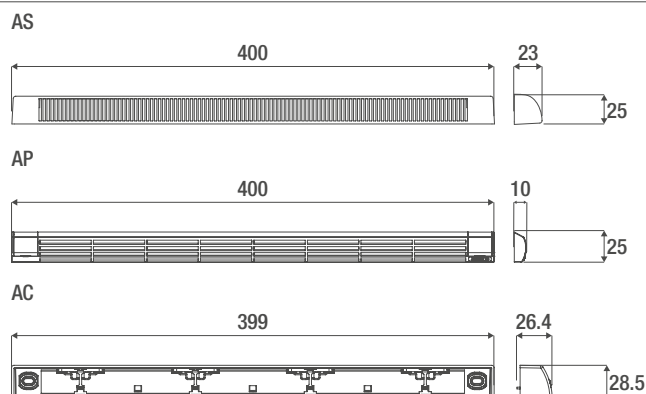
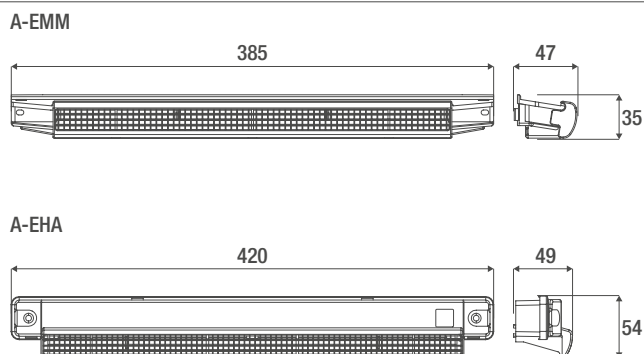
	AS	AP	AC	A-EHA	A-EMM
<b>Standard code</b>	AEA731	AEA098	AEA100	AEA851	AEA833
Description	standard canopy with insect grille	flat canopy with insect grille for low spaces	airflow controller canopy with insect grille	acoustic canopy with insect grille	acoustic canopy with insect grille
Air inlet compatibility	all Aereco window air inlets	all Aereco window air inlets	all Aereco window air inlets	EHA <sup>2</sup> / all Aereco window air inlets	EMM / all Aereco window air inlets
<b>Characteristics</b>					
Weight	g 38	30	75	216	174
Colours	white/oak/brown	white/oak/brown	white/oak/brown	white/oak/brown	white/oak/brown
Material (main)	ABS ASA	PVC	ABS ASA	PVC (flap in silicon)	PVC
Anti-insect grille / screen	■	■	■	■	■
<b>Installation</b>					
Slot	mm depends on air inlet	depends on air inlet	depends on air inlet	depends on air inlet	depends on air inlet
Window installation	■	■	■	■	■
Rolling shutter casing installation	■	■	■	■	■

■ standard

AC Airflow controller canopy  
Airflow characteristics



Dimensions in mm





## Wall canopies and accessories

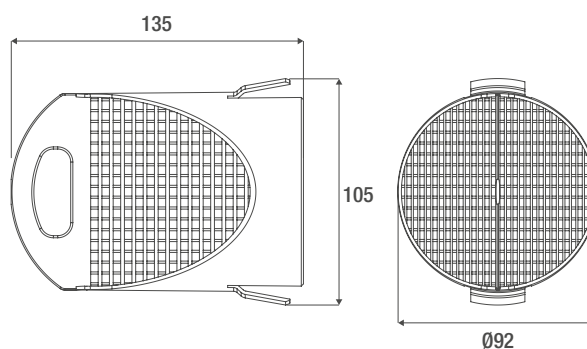
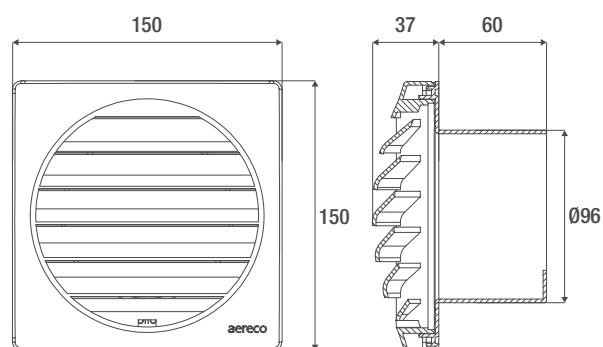
	A-EHT	A-EHT AM	F-EHT
<b>Standard code</b>	AEA775	AEA778	AEA774
Description	wall canopy	wall canopy with insect grille	removable filter for $\varnothing 100$ mm tube
Air inlet compatibility	EHT, round wall air inlets	EHT, round wall air inlets	EHT, $\varnothing 100$ mm tube
<b>Characteristics</b>			
Weight	243	243	36
Colours	white	white	white
Material (main)	PVC	PVC	PE
Anti-insect grille / screen	-	■	■
<b>Installation</b>			
Tube	$\varnothing 100^*$	$\varnothing 100^*$	$\varnothing 100$
Installation in external wall tube	■	■	■
			■ standard

\*possibility of covering tube up to  $\varnothing 125$  mm.

Dimensions in mm

A-EHT / A-EHT AM

F-EHT





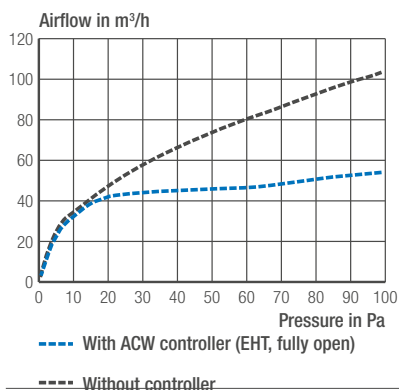


## ACW Airflow controller for wall air inlet

<b>Standard code</b>
Description
Air inlet compatibility
<b>Characteristics</b>
Weight
Colours
Material (main)
Anti-insect grille / screen
<b>Installation</b>
Tube

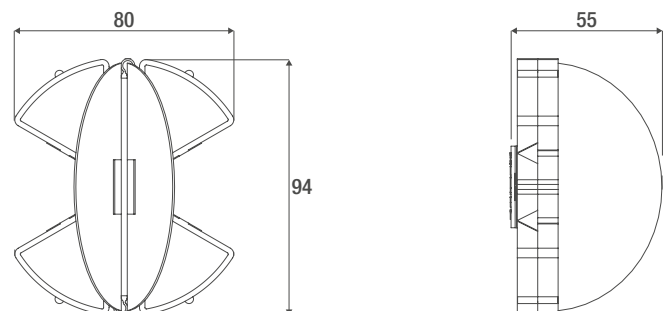
	ACW	Adaptor for ACW in ø125 mm tube
	AEA064	AEA086
	airflow controller: limits the airflow to 40 m³/h	adaptor for ø125 mm tube
	EHT, round wall air inlets	EHT, round wall air inlets
Weight	30	57
Colours	white	grey
Material (main)	PS, silicon	PVC + rubber
Anti-insect grille / screen	-	-
Tube	ø100 ø125 (with adaptor ref. AEA086)	ø125

Airflow characteristics



Dimensions in mm

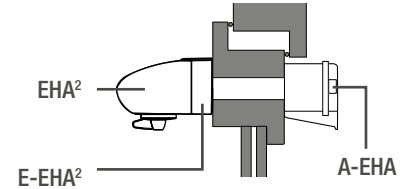
ACW for ø100 mm tube



# EHA<sup>2</sup> EHA EHT

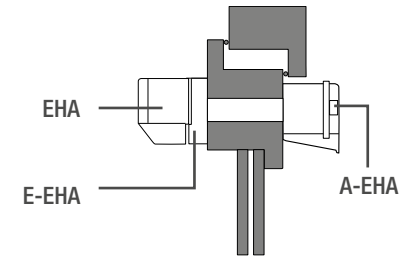
Acoustics of combinations of air inlets, canopies and accessories

EHA <sup>2</sup>				
Acoustics (combinations)	Comb n.1	Comb n.2	Comb n.3	Comb n.4
EHA <sup>2</sup> air inlet, max. opening = 35 m <sup>3</sup> /h @ 10 Pa	■	■	■	■
Reinforced acoustic base (E-EHA <sup>2</sup> )	-	■	-	■
Acoustic canopy with insect grille (A-EHA)	-	-	■	■
Canopies (AP, AS or AC)	■	■	-	-
Dn,e,w (C ; Ctr) Acoustic attenuation in dB	37 (0 ; 0)	39 (0 ; 0)	41 (0 ; -1)	42 (0 ; 0)



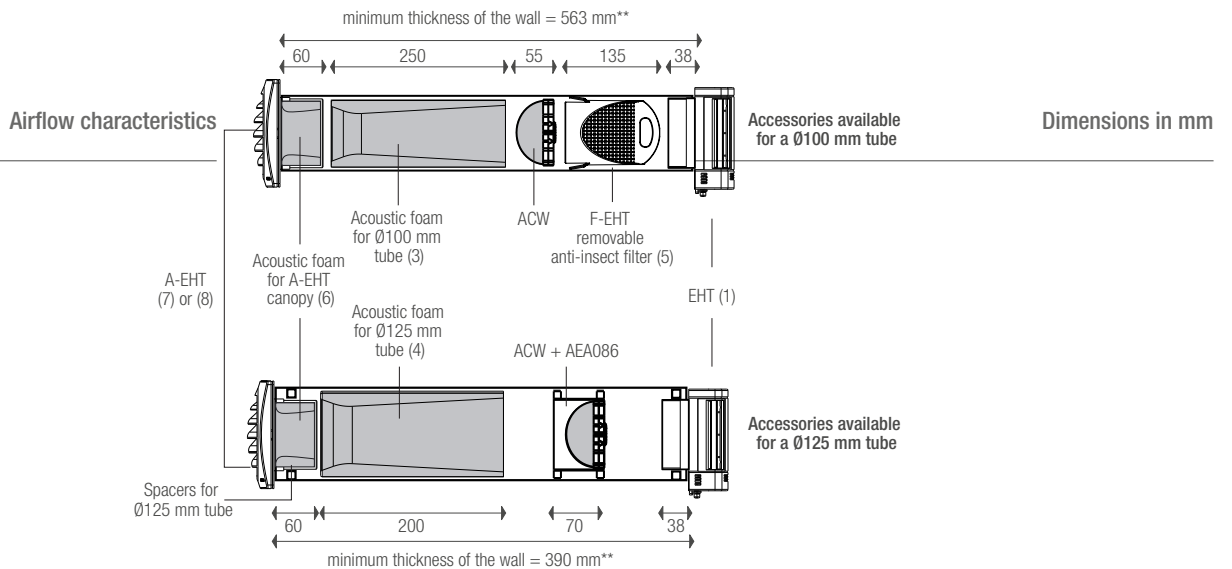
With AP, AS or AC canopies. See more combinations in the table below:

EHA				
Acoustics (combinations)	Comb n.1	Comb n.2	Comb n.3	Comb n.4
EHA air inlet, max. opening = 35 m <sup>3</sup> /h @ 10 Pa	■	■	■	■
Acoustic sleeve (E-EHA)	-	■	-	■
Acoustic canopy with insect grille (A-EHA)	-	-	■	■
Canopies (AP, AS or AC)	■	■	-	-
Dn,e,w (C ; Ctr) Acoustic attenuation in dB	37 (-1 ; 0)	39 (+1 ; 0)	40 (-1 ; 0)	42 (+1 ; 0)

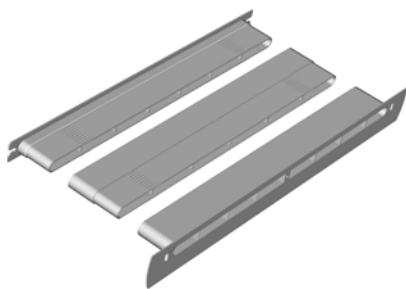


EHT						
Acoustics (combinations)	Comb n.1	Comb n.2	Comb n.3	Comb n.4	Comb n.5	Comb n.6
EHA air inlet, max. opening = 40 m <sup>3</sup> /h @ 10 Pa	■	■	■	■	■	■
ø100 mm tube (2)	■	■	■	■	-	-
Acoustic foam for ø100 mm tube (3)	-	■	-	■	-	-
ø125 mm tube	-	-	-	-	■	■
Acoustic foam for ø125 mm tube (4)	-	-	-	-	■	■
Acoustic foam for A-EHT canopy (6)	-	-	■	■	-	■
A-EHT wall canopy (7)	■	■	■	■	■	■
Dn,e,w (C ; Ctr) Acoustic attenuation in dB	33 (0 ; 0)	42 (0 ; -2)	40 (0 ; -2)	45 (0 ; -2)	49 (-1 ; -4)	52 (-1 ; -4)

Note: acoustic results for recommended slots.



\*\*tube needed to be in account



# E-TFR

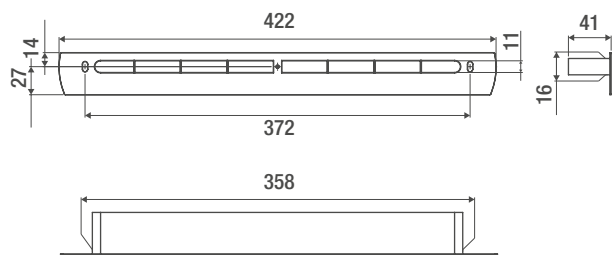
Window telescopic sleeve

	E-TFR emm	E-TFR eha2	E-TFR s
<b>Standard code</b>	AEA1150	AEA1151	AEA1152
Description	Kit window sleeve for EMM	Kit window sleeve for EHA2	Extension sleeve for E-TFR
Air inlets compatibility	EMM EHA	EHA <sup>2</sup>	EMM EHA EHA <sup>2</sup>
Opening area	3 600	3 600	3 600
<b>Characteristics</b>			
Weight	100	109	52
Colour	white	white	white
Material	PS	PS	PS
<b>Installation</b>			
Compatible window thickness	50 to 71 mm	50 to 71 mm	81 to 130 mm (AEA1150 or AEA1151 required)*
Slots to drill	L x h = 359 x 16 mm (minimum dimensions)		
Configuration	Fixed part - fixed part or mobile part - mobile part		
Compatible type of windows	PVC, aluminium, wooden, mixt		
Mounting	Introduce the components into the slot, support surface into contact with the window. Fixed by the screws of the canopy and of the air inlet.		

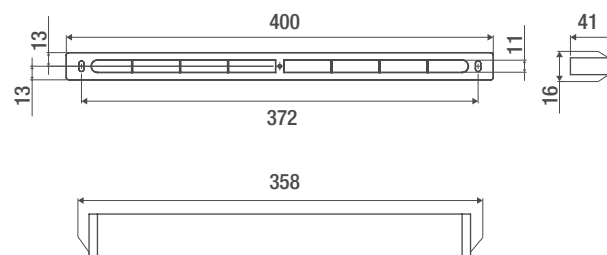
\* The window profiles whose thickness is between 71 and 81 mm require a cutting of the telescopic extension and of the part in contact with the air inlet. Beyond 120 mm, a silicone seal between each component is recommended to ensure the tightness of the assembly.

## Dimensions in mm

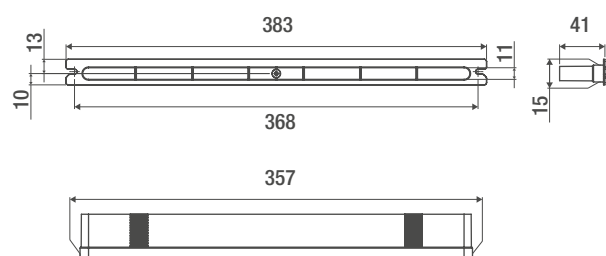
E-TFR EHA<sup>2</sup> (male)



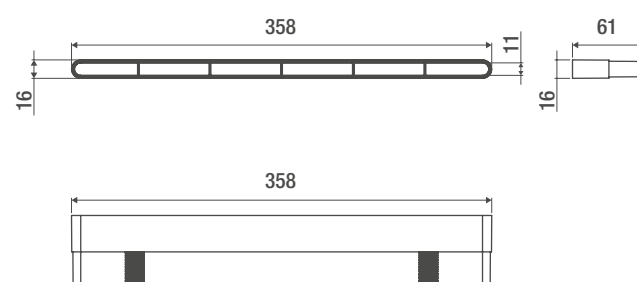
E-TFR (female)



E-TFR EMM (male)



E-TFR s

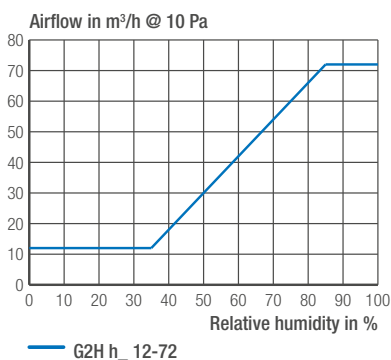




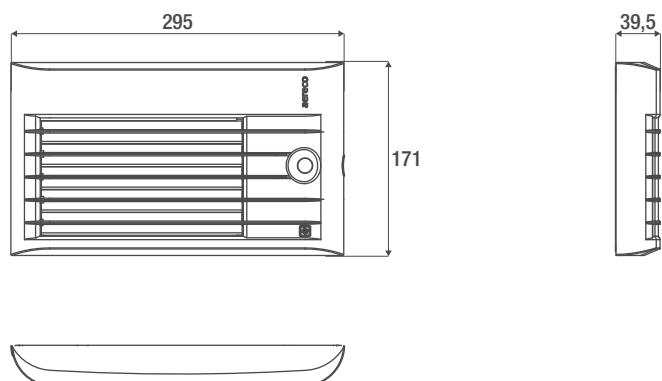
## G2H Exhaust unit for natural and hybrid ventilation

	G2H h	G2H hp	G2H hi	G2H hc	G2H hrc	G2H p	G2H i	G2H c	G2H rc
<b>Standard code</b>	G2H 1064EX	G2H 1065EX	G2H 1066EX	G2H 1067EX*	G2H 1068EX	G2H 1069EX	G2H 1070EX	G2H 1071EX	G2H 1072EX
<b>Airflow characteristics</b>									
Humidity sensitive	■	■	■	■	■	-	-	-	-
Boost airflow activated by presence detection*	-	■	-	-	-	■	-	-	-
Boost airflow activated by switch*	-	-	■	-	-	-	■	-	-
Boost airflow activated by remote control*	-	-	-	-	■	-	-	-	■
Boost airflow activated by pull cord*	-	-	-	■	-	-	-	■	-
Airflow** @ 10 Pa Humidity sensitive [boost]	m <sup>3</sup> /h 12-72	12-72 [160]	12-72 [160]	12-72 [160]	12-72 [160]	12 [72]	12 [72]	12 [72]	12 [72]
<b>Acoustics</b>									
Sound pressure level Lp @ 2 m max. RH, 10 / 25 Pa	dB(A)				22 / 36				
Sound pressure level Lp @ 2 m boost airflow, 10 Pa / 25 Pa	dB(A)				23 / 35				
<b>Supply</b>									
9 V battery	dB	■	■	-	-	■	■	-	-
12 VAC supply with specific transformer code CAL195EX	dB	□	□	-	■ (included)	□	□	-	■ (included)
<b>Characteristics</b>									
Colour	white	white	white	white	white	white	white	white	white
Material (main)	PS and ABS								
<b>Installation</b>									
Duct compatibility	mm bracket only / rectangular hole: Hmax. x Lmax. = 125 x 200 / round hole: Ømax. = 135								
Destination room	bathroom	bathroom with WC	kitchen	kitchen	kitchen	WC	WC	WC	WC
*boost timer = 20 minutes **airflow for [125 x 200] mm hole Note: other G2H versions available - please consult us.	■ standard   □ optional								

Airflow characteristics



Dimensions in mm





# GHN

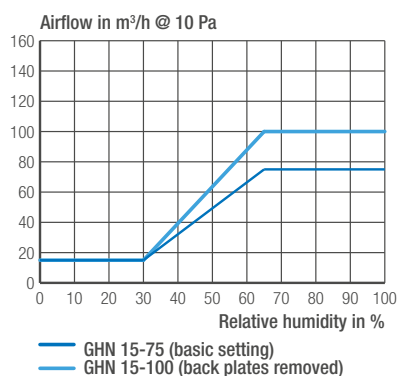
 Exhaust unit for natural ventilation

		GHN spigot	GHN bracket	GFN spigot	GFN bracket
<b>Standard code</b>		GHN736	GHN735	GFN850	GFN849
<b>Airflow characteristics</b>					
Humidity sensitive		■	■	-	-
Airflow (min.-max.) @ 10 Pa	m³/h	15-75	15-75 (100)*	100	100
<b>Characteristics</b>					
Weight	g	315	270	238	174
Colour		white	white	white	white
Material (main)		PS	PS	PS	PS
<b>Installation</b>					
Duct compatibility	mm	ø125	min. 125 x 105	ø125	min. 125 x 105
Destination room			bathroom / toilets / bathroom with toilets / kitchen		

\*maximum airflow obtained by removing 4 plates at the back of the product.

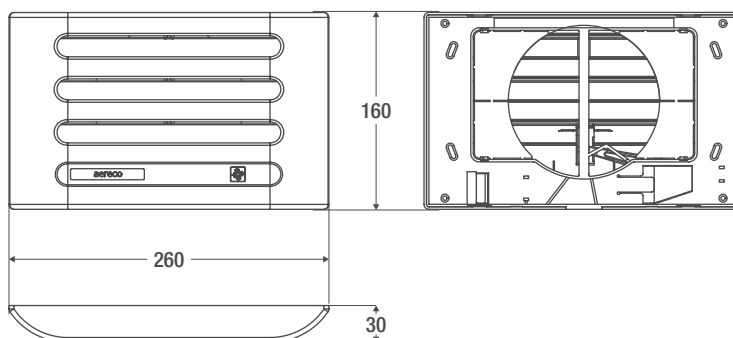
■ standard

Airflow characteristics



Dimensions in mm

GHN bracket version



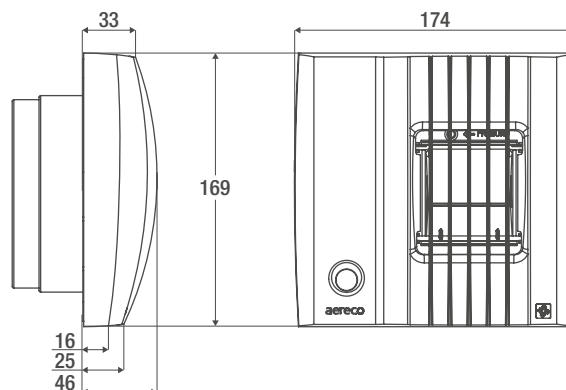
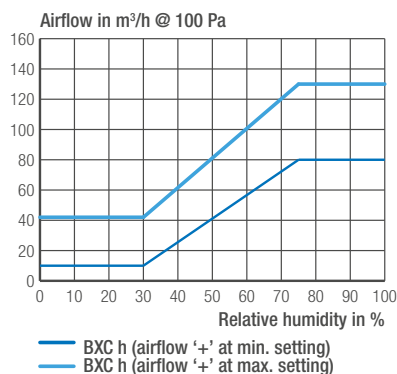


# BXC Exhaust unit for MEV

	BXC h	BXC p	BXC hi	BXC hp	BXC pd
<b>Standard code</b>	BXC211	BXC213	BXC212	BXC272	BXC216
<b>Airflow characteristics</b>					
Humidity sensitive	■	-	■	■	-
Boost airflow	-	■	■	■	■
Boost airflow activated by switch	-	-	■	-	-
Boost airflow activated by presence detection	-	■	-	■	■
Other activation modes	-	-	-	-	-
Airflow @ 100 Pa (min.-max.) (1)	m³/h 12-80	12-80	12-80	12-80	12-80
Airflow '+' - maximum available airflow @ 100 Pa (2)	m³/h 130	130	130	130	130
<b>Acoustics</b>					
Sound pressure level Lp @ 2 m, 100 Pa, 80 m³/h, min. airflow '+' setting	dB(A) 28.3				
Dn,e,w (C, Ctr) Acoustic insulation, RH = 65 %, min. airflow '+' setting	dB 57 (-2; -4) - 57 (-2; -4) - 57 (-2; -4) -				
<b>Power supply</b>					
2 x 1.5 V AAA LR03 batteries (not supplied)	-	⊗	⊗	⊗	⊗
Buzzer (low battery charge)	-	■	■	■	■
12 VAC supply with specific transformer (ref. CAL261)	-	⊗	⊗	⊗	⊗
<b>Characteristics</b>					
Colour	white				
Material (main)	PS / ABS				
<b>Installation</b>					
Round duct compatibility with integrated spigot	mm ø100				
Round duct compatibility with accessory spigot (3)	mm ø125				
Round duct compatibility - bracket version (min.-max.)	mm ø85 - ø90				
Rectangular duct compatibility - bracket version (min.-max.)	mm 67 x 60 - 67 x 66				
<b>Other functions</b>					
60" delay to activate the presence boost airflow	-	-	-	-	■
Pressure plug	■	■	■	■	■

Airflow characteristics

Dimensions in mm



BXC hpd	BXC co <sub>2</sub>	BXC voc	BXC hrc	BXC rc	BFX	BXC s
BXC214	BXC401	BXC402	BXC406	BXC404	BFX369	BXC403
■	-	-	■	-	-	-
■	■	■	■	■	-	■
-	-	-	-	-	-	☒
■	-	-	-	-	-	-
-	CO <sub>2</sub> level	VOC level	remote control	remote control	-	BXC CO <sub>2</sub> or VOC
12-80	12-80	12-80	12-80	12-80	12 / 130 (4)	12-80
130	130	130	130	130	130	130
			28.3			
57 (-2 ; -4)	-	-	57 (-2 ; -4)	-	-	-
☒	-	-	☒	☒	-	☒
■	-	-	■	■	-	☒
☒	■ (CAL included)	■ (CAL included)	☒	☒	-	■
white	white	white	white	white	white	white
PS / ABS	PS / ABS	PS / ABS	PS / ABS	PS / ABS	PS / ABS	PS / ABS
ø100	ø100	ø100	ø100	ø100	ø100	ø100
ø125	ø125	ø125	ø125	ø125	ø125	ø125
ø85 - ø90	ø85 - ø90	ø85 - ø90	ø85 - ø90	ø85 - ø90	ø85 - ø90	ø85 - ø90
67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66
■	-	-	-	-	-	-
■	■	■	■	■	■	■

Note: airflows given for a ø100 mm duct

■ standard / included - ☒ compatible

(1) Default setting.

(2) Airflow '+': the airflow can be increased from +10 m<sup>3</sup>/h to +50 m<sup>3</sup>/h (6 available positions). This function can be used to adapt to lower pressures or to specific regulations imposing higher airflows. Standard is position 0 (minimum airflow = 12 m<sup>3</sup>/h @ 100 Pa).

(3) Delivered in specific versions or available as accessory (ref. AEA317).

(4) Total of 18 configurations available for airflow setting for BFX version.



## GBP Exhaust unit for low pressure ventilation

	GBP h 10-42	GBP h 20-55	GBP c 10/30	GBP 30	GBP 15
<b>Standard code</b>	GBP446	GBP444	GBP443	GBP480	GBP479
<b>Airflow characteristics</b>					
Humidity sensitive	■	■	-	-	-
Boost airflow activated by pull cord*	-	-	■	-	-
Airflow (min.-max.) @ 15 Pa	10-42	20-55	10-30	30	15
<b>Characteristics</b>					
Colour			white		
Material (main)			PS		
<b>Installation</b>					
Connexion			bracket**		
Duct compatibility**	mm on holes from l x h = [90 x 150] to l x h = [140 x 260]				
Destination room	kitchen or bathroom	kitchen or bathroom	WC	WC	WC

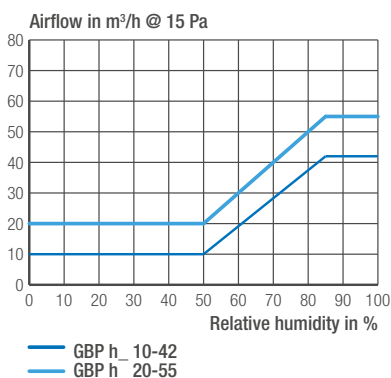
\*boost airflow timer = 30 minutes

\*\*refurbishment may require a BAHIA BH Aldes according to dimensions of the hole

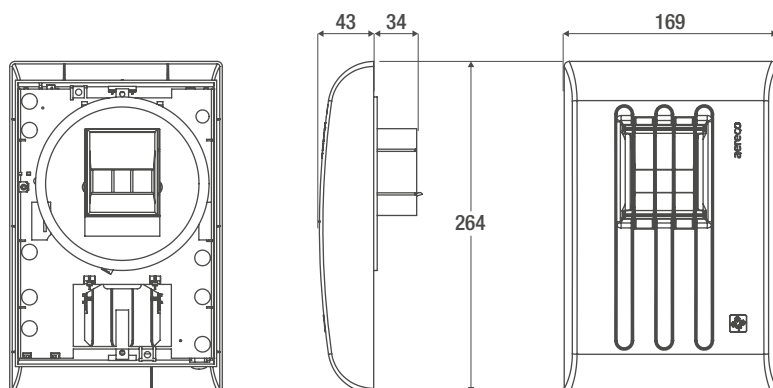
Note: other settings (airflow/relative humidity) exist - please consult us.

■ standard

Airflow characteristics



Dimensions in mm







# TDA

 Exhaust unit with presence detection

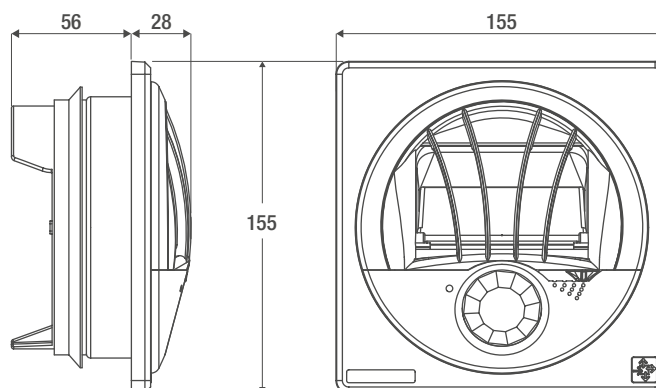
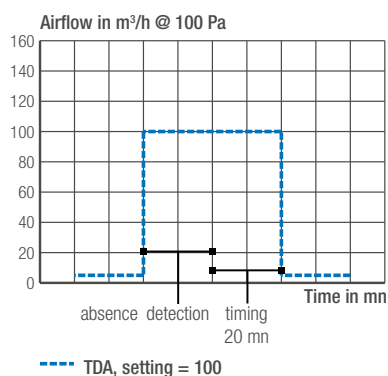
		TDA 9V	TDA 12V	TDA 12V	TDF
<b>Standard code</b>		TDA874	TDA873	TDA930	TDF875
<b>Airflow characteristics</b>					
Humidity sensitive		-	-	-	-
With boost airflow		■	■	■	fix
Boost airflow activated by presence detection		■	■	■	-
Min. airflow @ 100 Pa	m³/h	5	5	5	25 / 50 / 75 / 100
Max. airflow @ 100 Pa	m³/h	25 / 50 / 75 / 100	25 / 50 / 75 / 100	25 / 50 / 75 / 100	-
<b>Acoustics</b>					
Sound power level Lw @ 25 m³/h - 100 Pa	dB(A)	30	30	30	30
Sound power level Lw @ 100 m³/h - 100 Pa	dB(A)	33.3	33.3	33.3	33.3
<b>Power supply</b>					
Battery 9V DC		■	-	-	-
12 VAC supply (integrated)		-	■	■	-
<b>Characteristics</b>					
Weight	g	250	250	250	250
Colour		white	white	white	white
Material (main)		PS	PS	PS	PS
LED detection signal		-	■	■	-
Output for relay connection* (relay = 6 VDC, I <sub>max.</sub> = 100 mA)		-	-	■	-
<b>Installation</b>					
Duct compatibility	mm	ø125	ø125	ø125	ø125
Destination room			office / meeting room (1 TDA for 4 people) / toilets		

\*allows connection to an external relay to control a light for example

■ standard

Airflow characteristics

Dimensions in mm





# V2A

Acoustic whole-house fan - 2 rooms

<b>Standard code</b>	
<b>Airflow characteristics</b>	
Max. airflow @ 80 Pa	m³/h
Max. pressure	Pa
<b>Acoustics</b>	
Sound pressure level Lp (r = 2 m) [airflow in m³/h]	dB(A)
<b>Electrics</b>	
Power supply	
Motor type	
Power consumption [airflow in m³/h]	W
Ingress protection	
<b>Characteristics</b>	
Weight	kg
Colour	
Material (main)	
Dimensions	mm
<b>Installation</b>	
Max. available duct connections*	
Max. connectable exhaust units (airflow capacity)	
Inlet	mm
Outlet	mm
<b>Installation</b>	
<b>Maintenance</b>	
Filter	
Cleaning	
Removable electrical part	
<b>Operation</b>	
Direct-drive impeller	
Speed	RPM
<b>Other functions</b>	
12 VAC output for 2 boost airflow exhaust units supply	

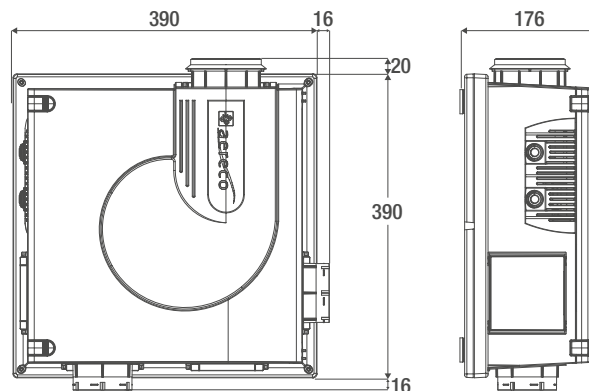
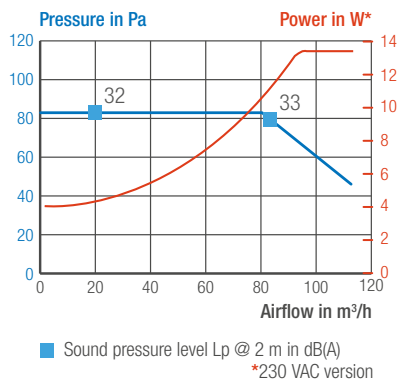
\*available accessories : ø80, ø100 and ø125 mm

	V2A 100V	V2A 230V
	V2A041	V2A032
	80	80
	80	80
	32 [20] ; 33 [80]	32 [20] ; 33 [80]
	100 VAC / 50 Hz	230 VAC / 50 Hz
	EC (Electronic commutation)	EC (Electronic commutation)
	5.5 [40] ; 13 [80]	5.5 [40] ; 13 [80]
	IP30	IP30
	3.9	3.9
	grey	grey
	PS	PS
	390 x 390 x 176	390 x 390 x 176
	4	4
	2	2
	ø80	ø80
	ø100	ø100
	inside the heated volume / in protected non-inhabitable place (attic, etc.) / wall / ceiling / floor	
	■ (removable)	■ (removable)
	cover easy to open (no tools needed)	
	■ (motor changed without removing fan)	■ (motor changed without removing fan)
	■	■
	1 395	1 395
	■	■

■ standard

Airflow characteristics

Dimensions in mm





# V4A PREMIUM Acoustic whole-house fan - 4 rooms

**Standard code**

**Airflow characteristics**

Max. airflow @ 100 Pa	m³/h
Max. pressure	Pa

**Acoustics**

Sound pressure level Lp (r = 2 m) [airflow in m³/h]	dB(A)
---	-------

**Electrics**

Power supply	
Motor type	
Power consumption [airflow in m³/h]	W
IP degrees of protection	

**Characteristics**

Weight	kg
Colour and material (envelope)	
Dimensions	mm

**Installation**

Max. available duct connections	
Max. connectable exhaust units (airflow capacity)	
Inlet (adaptors not supplied)	mm
Outlet	mm
Installation	

**Maintenance**

Filter	
Cleaning	
Removable electrical part	

**Operation**

Direct-drive impeller	
Speed	RPM

**Other functions**

12 VAC output to supply 4 boost airflow exhaust units

**V4A Premium 100V**

V4A199

**V4A Premium 230V**

V4A336

Max. airflow @ 100 Pa	m³/h	210
Max. pressure	Pa	118

Sound pressure level Lp (r = 2 m) [airflow in m³/h]	dB(A)	33 [40] ; 35 [160]
---	-------	--------------------

Power supply	100 VAC / 50 Hz	
Motor type	EC (Electronic commutation)	
Power consumption [airflow in m³/h]	W	12.5 [40] ; 22 [160]
IP degrees of protection	IP30	

Weight	kg	6.7
Colour and material (envelope)	grey / PS	
Dimensions	mm	450 x 450 x 219

Max. available duct connections	4	
Max. connectable exhaust units (airflow capacity)	4	
Inlet (adaptors not supplied)	mm	ø100 or ø125
Outlet	mm	ø125
Installation	inside the heated volume / in protected non-inhabitable place (attic, etc.) / wall / ceiling / floor	

Filter	-
Cleaning	easily openable cover (no tools needed) and dismantlable propeller
Removable electrical part	■ (motor change without taking off the fan)

Direct-drive impeller	■	
Speed	RPM	1 350

12 VAC output to supply 4 boost airflow exhaust units

Max. airflow @ 100 Pa	m³/h	210
Max. pressure	Pa	118

Sound pressure level Lp (r = 2 m) [airflow in m³/h]	dB(A)	33 [40] ; 35 [160]
---	-------	--------------------

Power supply	230 VAC / 50 Hz	
Motor type	EC (Electronic commutation)	
Power consumption [airflow in m³/h]	W	12.5 [40] ; 22 [160]
IP degrees of protection	IP30	

Weight	kg	6.7
Colour and material (envelope)	grey / PS	
Dimensions	mm	450 x 450 x 219

Max. available duct connections	4	
Max. connectable exhaust units (airflow capacity)	4	
Inlet (adaptors not supplied)	mm	ø100 or ø125
Outlet	mm	ø125
Installation	inside the heated volume / in protected non-inhabitable place (attic, etc.) / wall / ceiling / floor	

Filter	-
Cleaning	easily openable cover (no tools needed) and dismantlable propeller
Removable electrical part	■ (motor change without taking off the fan)

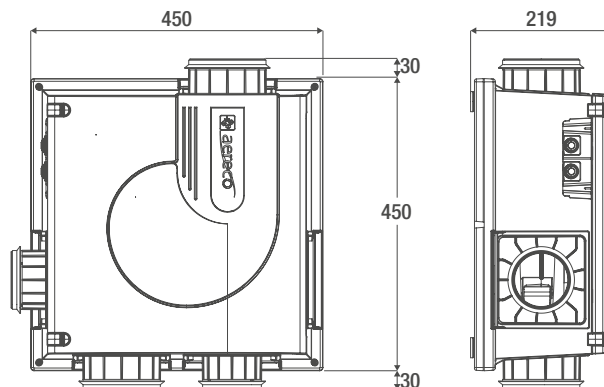
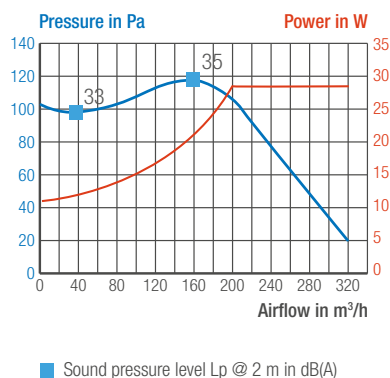
Direct-drive impeller	■	
Speed	RPM	1 350

12 VAC output to supply 4 boost airflow exhaust units

■ standard

**Airflow characteristics**

**Dimensions in mm**





## V5S whole-house fan - 5-6 rooms

### Standard code

### Airflow characteristics

Max. airflow @ 100 Pa

m<sup>3</sup>/h

Max. pressure

Pa

### Acoustics

Sound pressure level L<sub>p</sub> (r = 2 m) [airflow in m<sup>3</sup>/h]

dB(A)

### Electrics

Power supply

Motor type

Power consumption [airflow in m<sup>3</sup>/h]

W

Maximum current

A

Thermostwitch

IP degrees of protection

### Characteristics

Weight (net)

kg

Colour

Material (main)

### Installation

Max. available duct connections\*

Max. connectable exhaust units (airflow capacity)

Duct connections

mm

Installation

### Maintenance

Filter

Cleaning

### Operation

Direct-drive impeller

Speed

RPM

### Other functions

12 VAC output to supply exhaust units

\*available accessories : ø80, ø100 and ø125 mm

### V5S Reference

V5S1130

### V5S Premium

V5S1131

280

260

140

110

41 [150] ; 42 [250]

<39

230 VAC / 50 Hz

230 VAC / 50 Hz

AC (asynchronous single-phase with capacitor)

EC (Electronic Commutation)

26 [100] ; 57 [maximum]

10 [100] ; 55 [maximum]

0.4 A

0.4 A

135°C

■

IP30

IP30

6.5

7.2

grey (light and dark)

light brown

High Impact Polystyrene

Polypropylene

6

6

5 or 6

5 or 6

inlet: Ø100 ; outlet: Ø125

inlet: Ø100 ; outlet: Ø125

wall / ceiling / floor / protected non-inhabitable place (attic, etc.)

-

-

openable cover (4 screws)

openable cover (4 screws)

■

■

1 450 – 1 350 RPM

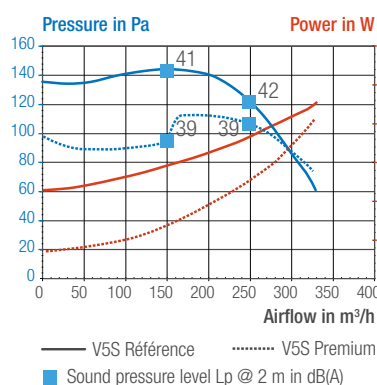
1 170 - 1 270 RPM

-

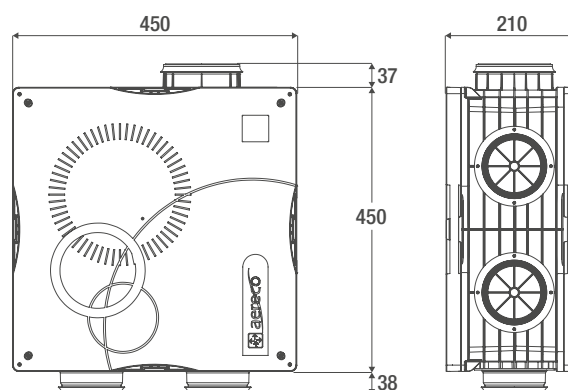
-

■ standard

### Airflow characteristics



### Dimensions in mm





## VAM Acoustic whole-house fan - 6 rooms

### Standard code

### Airflow characteristics

Max. airflow @ 100 Pa	m³/h
Max. pressure	Pa
Available pressure settings	Pa

### Acoustics

Sound pressure level Lp (r = 2 m) [airflow in m³/h]	dB(A)
---	-------

### Electrics

Power supply

Motor type

Power consumption [airflow in m³/h]

IP degrees of protection

### Characteristics

Weight

Colour

Material (main)

Dimensions

### Installation

Max. available duct connections

Max. connectable exhaust units (airflow capacity)

Inlet\*

Outlet

Installation

### Maintenance

Filter

Cleaning

### Operation

Direct-drive impeller

Max. speed

### VAM 100V

VAM777

250

130

80 - 100 - 120

29 [100] ; 33 [200]

100 VAC / 50 Hz  
100 VAC / 60 Hz

asynchronous single-phase

23 [100] ; 44 [200]

IP30

18

metal

galvanised steel

480 x 480 x 240

7

6

ø125

ø125

inside the heated volume / in protected non-inhabitable place (attic, etc.) / wall / ceiling / floor

-

easy-to-open cover (4 screws)

■

1 100

### VAM 230V

VAM767

250

130

80 - 100 - 120

29 [100] ; 33 [200]

230 VAC / 50 Hz  
230 VAC / 60 Hz

asynchronous single-phase

23 [100] ; 44 [200]

IP30

18

metal

galvanised steel

480 x 480 x 240

7

6

ø125

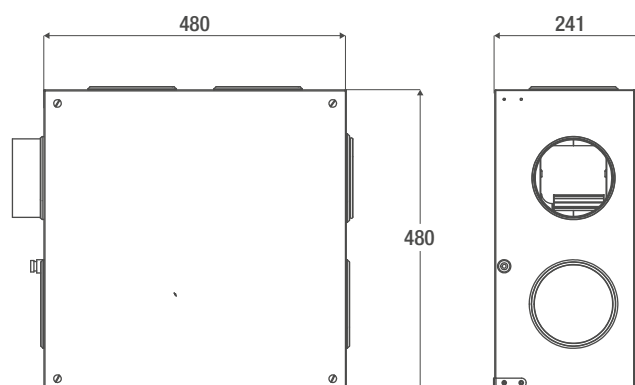
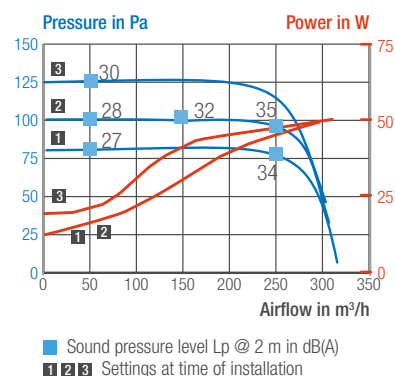
ø125

■ standard

Dimensions in mm

\*available accessories: ø80, ø100 and ø125mm

### Airflow characteristics



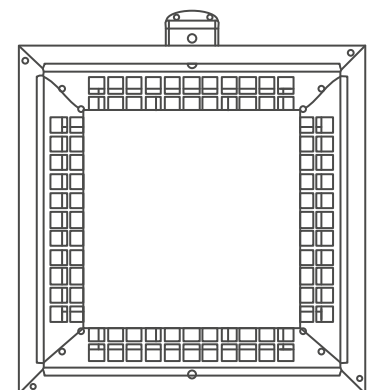
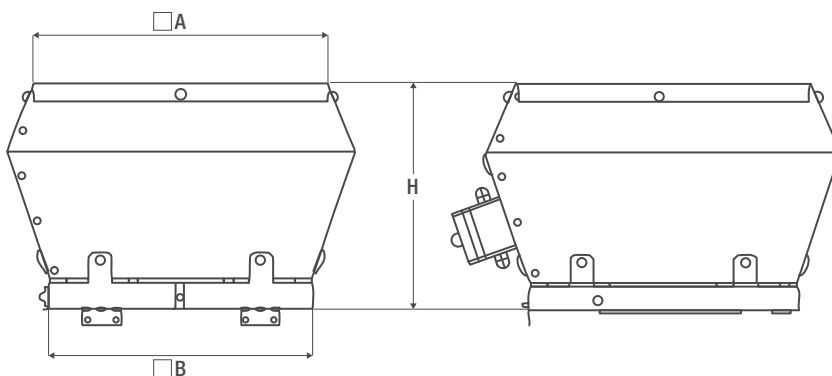



## VTZ Collective fans for outdoor installation

		VTZ 0	VTZ 1	VTZ 2	VTZ 3	VTZ 4	VTZ 6
<b>Standard code</b>		VTZ1075	VTZ1076	VTZ1077	VTZ1078	VTZ1145	VTZ1125
<b>Airflow characteristics</b>							
Max. possible airflow @ 100 Pa	m <sup>3</sup> /h	500	1 000	1 750	2 750	5 120	7 000
Max. pressure	Pa	300	300	300	300	300	300
Pressure control device		■	■	■	■	■	■
<b>Acoustics</b>							
Max. sound power level L <sub>w</sub>	dB(A)	72	72	66	81	81	80
Max. sound pressure level L <sub>p</sub> @ 3 m	dB(A)	58	55	49	63	80	-
<b>Electrics</b>							
Power supply		230 VAC / 50 Hz	230 VAC / 50 Hz	230 VAC / 50 Hz	230 VAC / 50 Hz	230 VAC / 50 Hz	230 VAC / 50 Hz
Motor type		EC	EC	EC	EC	EC	EC
Max. power consumption	W	83	160	150	450	520	690
IP degrees of protection (motor)		IP 54	IP 54	IP 54	IP 54	IP 54	IP 54
<b>Characteristics</b>							
Weight	kg	10	19	21	23	32	57
Colour		metal	metal	metal	metal	metal	metal
Material (main)		galvanised steel	galvanised steel	galvanised steel	galvanised steel	galvanised steel	galvanised steel
Dimensions (A - B - H)	mm	445 - 340 - 290	547 - 440 - 338	720 - 600 - 400	720 - 600 - 400	954 - 707 - 577	954 - 707 - 577
<b>Installation</b>							
Duct connection	mm	336 x 336	436 x 436	595 x 595	595 x 595	697 x 697	697 x 697
Terrace installation		■	■	■	■	■	■
Roof installation		■	■	■	■	■	■
Attic installation		-	-	-	-	-	-
<b>Maintenance</b>							
Proximity switch		■	■	■	■	■	■
Cleaning		swings open for access to impeller and ducts					
<b>Operation</b>							
Direct-drive impeller		■	■	■	■	■	■
Max. speed	RPM	3 200	3 230	1 520	2 180	2 035	1 090

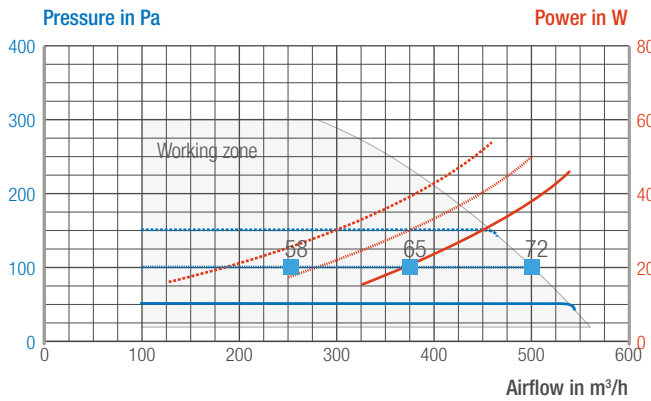
■ standard

Dimensions in mm

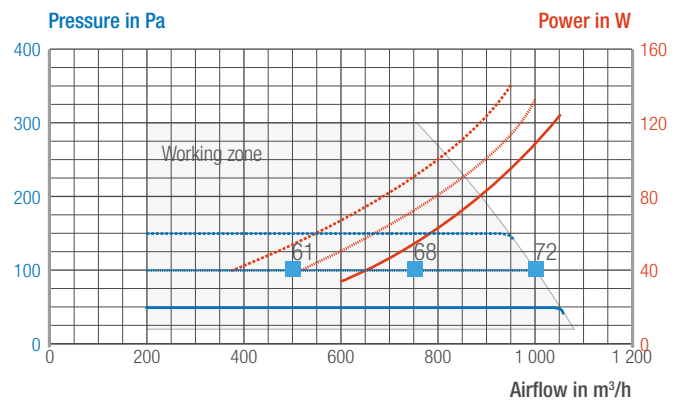


 The following charts describe the fan alone without adapter 

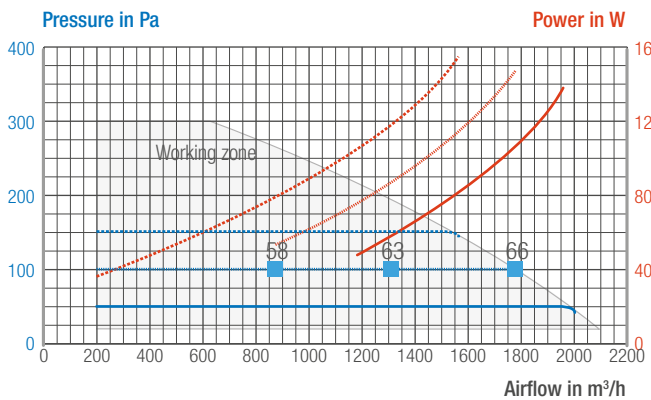
VTZ0



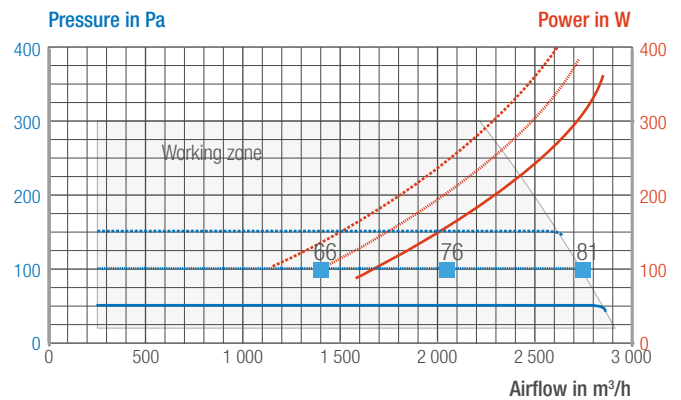
VTZ1



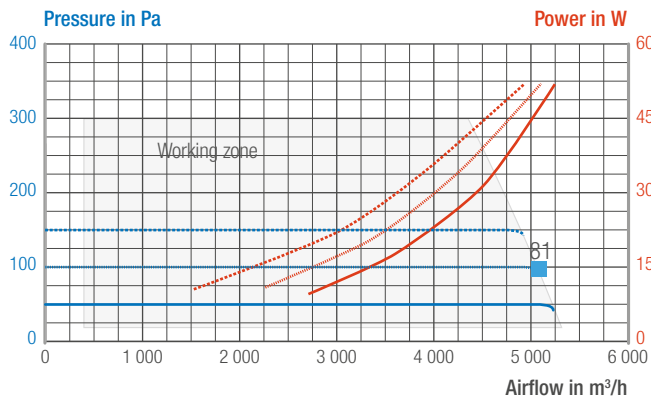
VTZ2



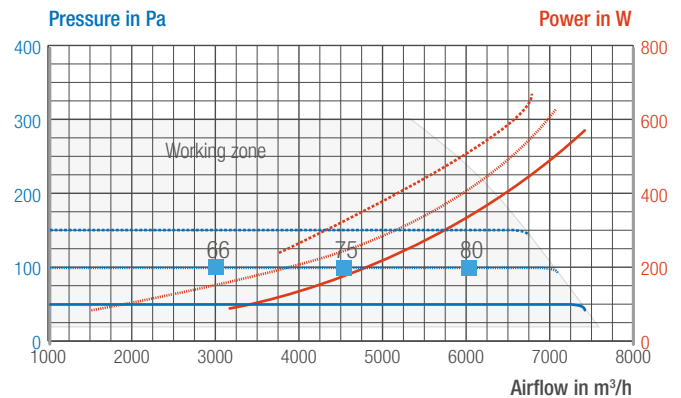
VTZ3



VTZ4



VTZ6



Key

example :

- '50 Pa' setting
- '100 Pa' setting
- '150 Pa' setting
- sound power level L<sub>w</sub> in dB(A)

— the limit of the working zone determines the maximum airflow / pressure available at the fan

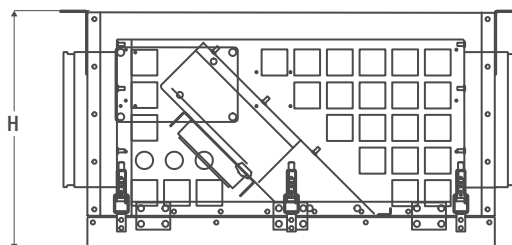
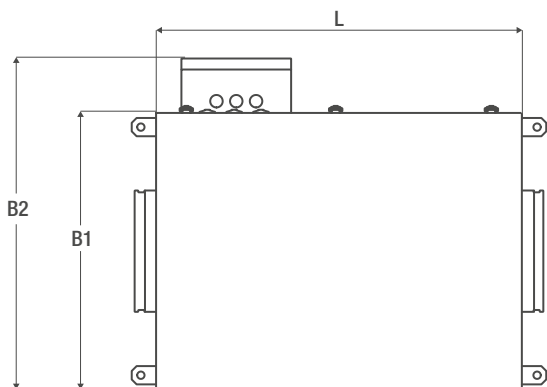


## VCZ Collective fans for attics

		VCZ 0	VCZ 1	VCZ 2	VCZ 3	VCZ 4
<b>Standard code</b>		VCZ1084	VCZ1085	VCZ1086	VCZ1087	VCZ1144
<b>Airflow characteristics</b>						
Max. airflow	m <sup>3</sup> /h	500	1 000	1 620	2 660	4 100
Max. pressure	Pa	300	300	300	300	300
Pressure control device		■	■	■	■	■
<b>Acoustics</b>						
Max. sound power level L <sub>w</sub>	dB(A)	79	68	79	75	79
<b>Electrics</b>						
Power supply		230 VAC / 50 Hz	230 VAC / 50 Hz	230 VAC / 50 Hz	230 VAC / 50 Hz	230 VAC / 50 Hz
Motor type		EC	EC	EC	EC	EC
Max. power	W	83	168	160	450	520
IP degrees of protection (motor)		IP54	IP54	IP54	IP54	IP54
<b>Characteristics</b>						
Weight	kg	22	24	32	34	72
Colour		metal	metal	metal	metal	metal
Material (main)		galvanised steel	galvanised steel	galvanised steel	galvanised steel	galvanised steel
Dimensions H - L B1 - B2	mm	350 - 600 455 - 543	400 - 600 455 - 543	550 - 600 545 - 633	550 - 600 545 - 633	741 - 800 740 - 832
<b>Installation</b>						
Duct connection	mm	ø200	ø250	ø355	ø400	ø500
Position		all positions possible (horizontal, vertical, cover up and down)				
Terrace installation		-	-	-	-	-
Roof installation		-	-	-	-	-
Attic installation (protected)		■	■	■	■	■
<b>Maintenance</b>						
Proximity switch		■	■	■	■	■
Cleaning		cover opens for access to impeller				
<b>Operation</b>						
Direct-drive impeller		■	■	■	■	■
Max. speed	RPM	3 200	3 230	1 520	2 180	1 725

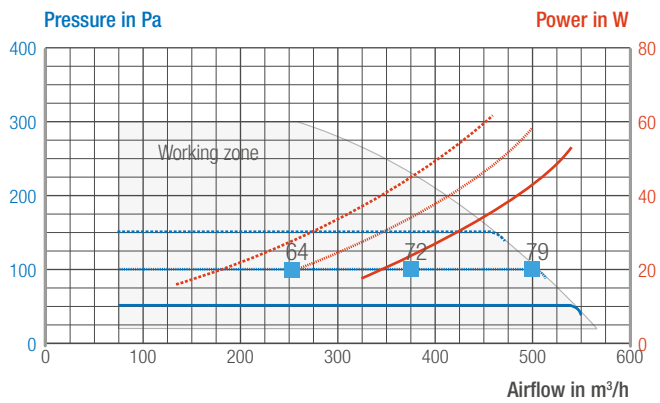
■ standard

Dimensions in mm

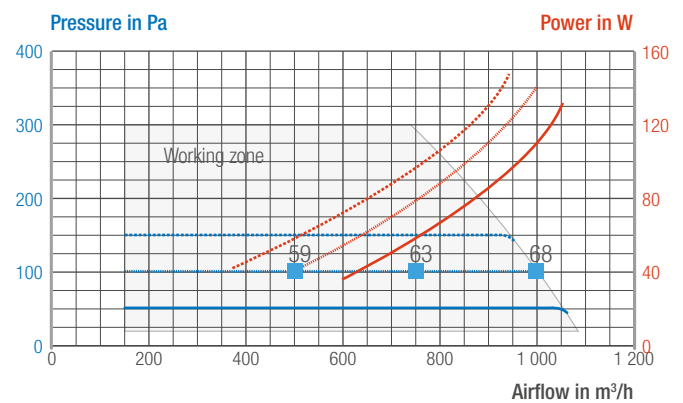




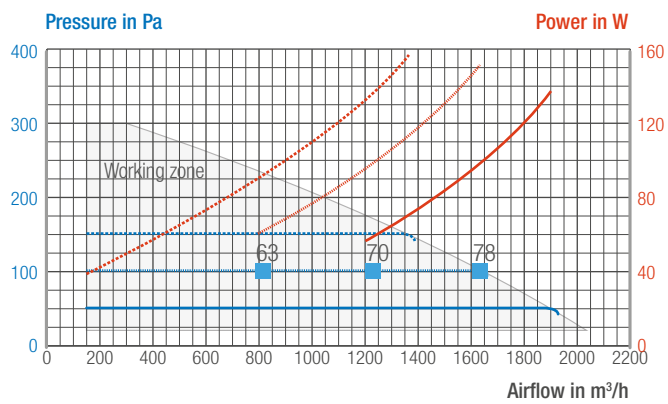
VCZ0



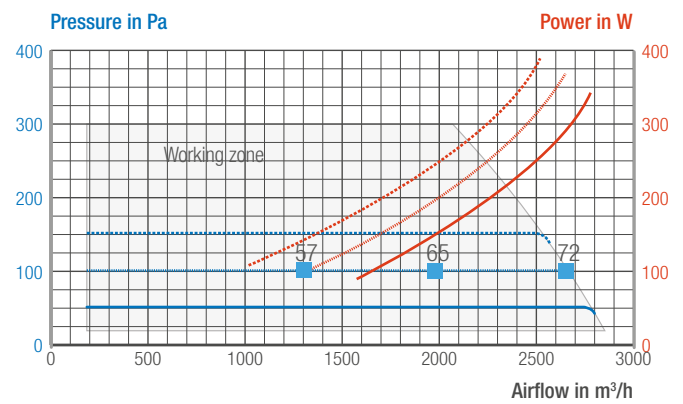
VCZ1



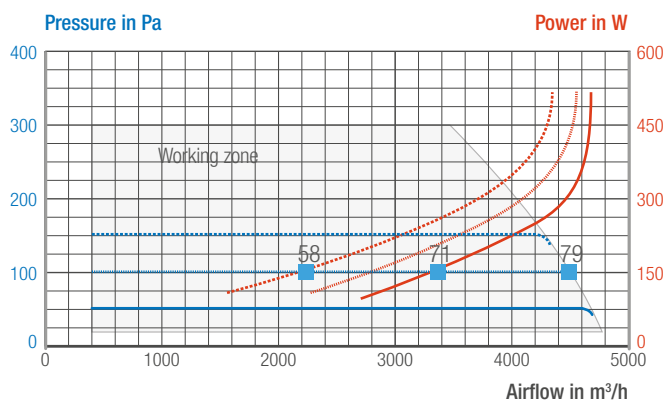
VCZ2



VCZ3



VCZ4



Key

- example :
- '50 Pa' setting
  - '100 Pa' setting
  - '150 Pa' setting
  - the limit of the working zone determines the maximum airflow / pressure available at the fan
  - sound power level Lw in dB(A)



## VBP Fan for hybrid ventilation

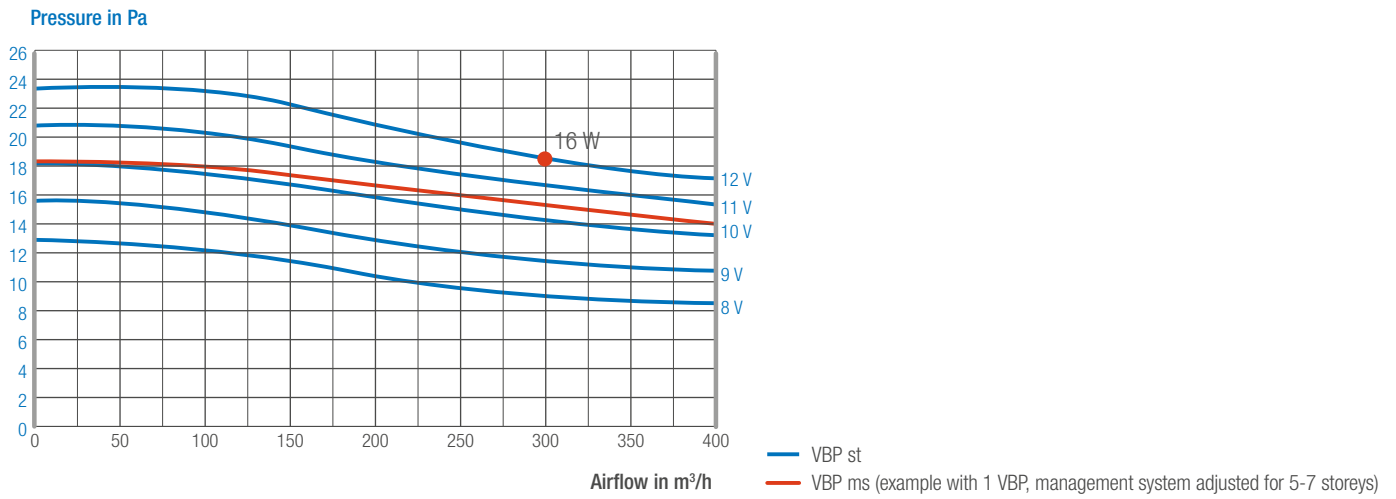
		VBP st	VBP ms
<b>Standard code</b>		VBP042 VBP318*	VBP043 VBP331*
<b>Airflow characteristics</b>			
Max. airflow	m <sup>3</sup> /h	400	400
Pressure @ 400 m <sup>3</sup> /h	Pa	17 Pa @ 12 V	14 Pa [1 VBP / 5-7 levels]
<b>Acoustics</b>			
Sound power level L <sub>w</sub> @ 9 V (duct)	dB(A)	46	46
<b>Electrics</b>			
Power supply		from 8 VDC to 12 VDC	12 VDC + management system
Max. current	A	1	1
Motor type		EC (Electronic commutation)	EC (Electronic commutation)
Power @ 300 m <sup>3</sup> /h - 12 V	W	16	16
IP degrees of protection		IP54	IP54
<b>Characteristics</b>			
Weight	kg	5.5	5.5
Colour		black	black
Material (main)		PAA 66 35 % G.F.	PAA 66 35 % G.F.
Dimensions	mm	612 x ø350	612 x ø350
<b>Installation</b>			
Max. available duct connections		1	1
Outlet	mm	ø240	ø240
Terrace installation, head of duct	mm	■	■
<b>Operation</b>			
Direct-drive impeller		■	■
Max. speed	RPM	1 000	1 000
<b>Accessories</b>			
Management box** with temperature sensor for up to 3 fans (ref. AVE197)		-	☒
Management box** with temperature sensor for up to 6 fans (ref. AVE198)		-	☒
Wind gauge + special management box		-	compatible

\*delivered with rain protection (clipped to the top of the VBP fan)

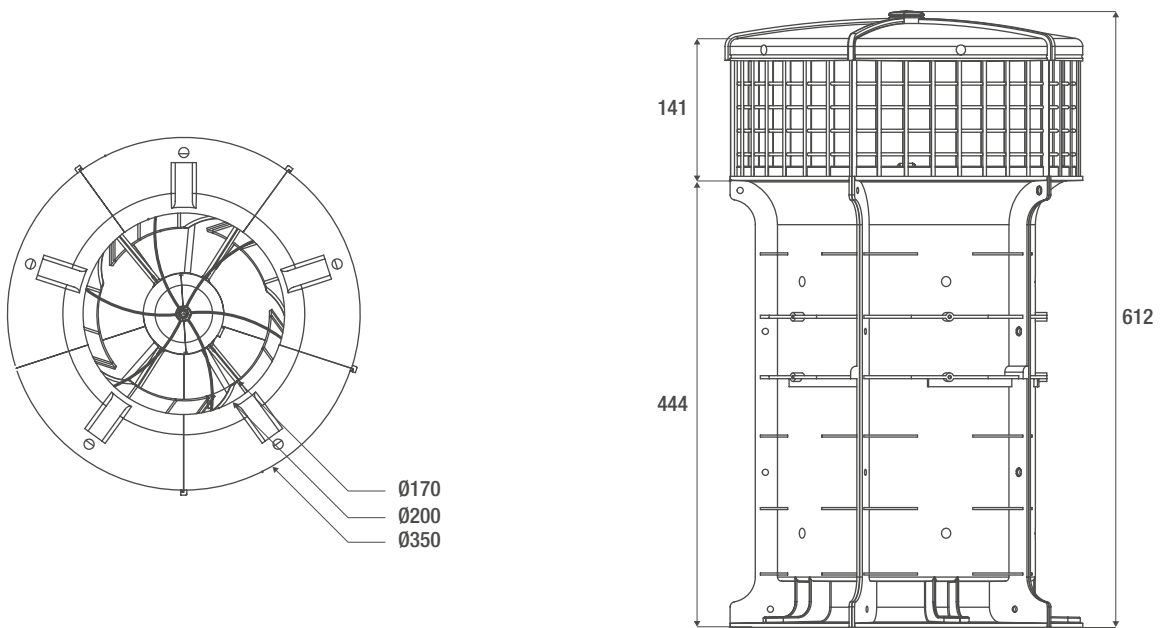
\*\*checks that all VBP fans connected are simultaneously in working order, and manages the power according to the temperature.

■ standard ☒ mandatory

Aeraulics and power consumption

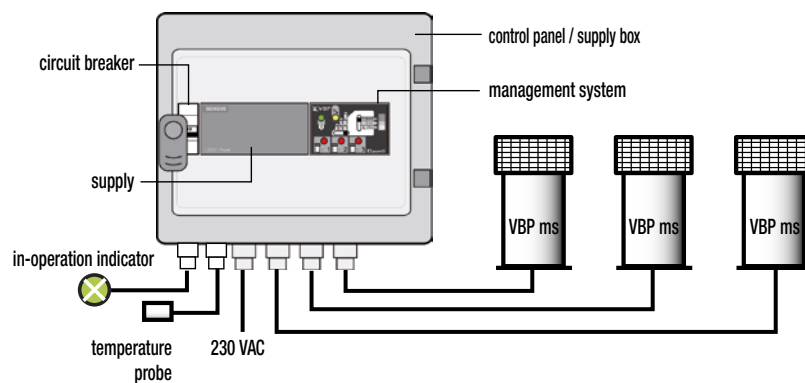


Dimensions in mm



Components of the management system (MS)

Management box





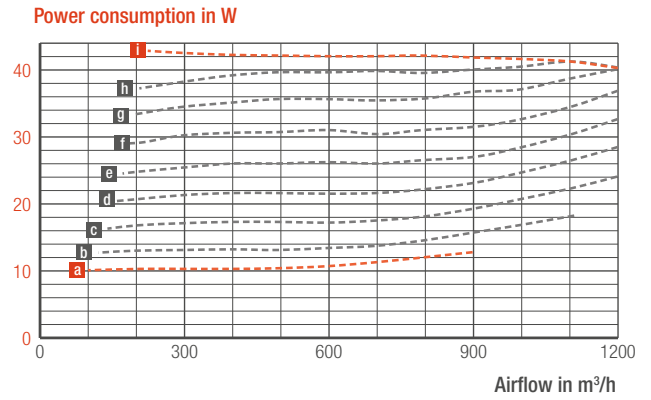
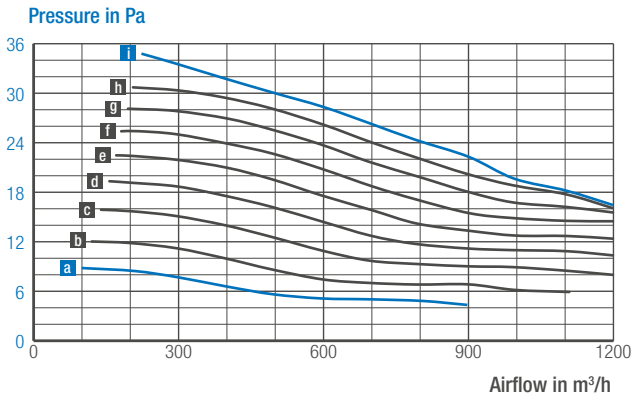
## VBP+ Fan for hybrid ventilation

		VBP+
<b>Standard code</b>		VB21116 (ST) / VB21124 (MS)
<b>Airflow characteristics</b>		
Max. airflow	m <sup>3</sup> /h	1 000 (20 Pa)
Max. pressure	Pa	35 Pa (@200 m <sup>3</sup> /h)
<b>Electrics</b>		
Motor type		EC (Electronic commutation)
Power supply		230 VAC, 50-60 Hz
Max. power	W	42
IP degrees of protection		IP54
Control		by built-in potentiometer (ST) or by management system (MS)
<b>Characteristics</b>		
Weight	kg	20
Colours		metal grey / black
Material (main)		galvanised steel / PE
External dimensions	mm	904 / ø610
<b>Installation</b>		
Number of available draft connections		1
Outlet		ø354
Installation	mm	installation on terrace, head of the air duct / 3 x screws ø8
<b>Operation</b>		
Direct-drive impeller		by shaft / motor coupler
Max. speed	RPM	650
<b>Management system (MS)</b>		
Main module		ref. VB21119
Fan module		ref. VB21118
Number of fan groups per main module		1 to 5
Number of fans per group		1 to 5
Electrical box (not included)		IP65, rail DIN
Fault indicator (or modules)		■
Monitoring of power to all other fans		■
Stops all fans of group if one malfunctions		■
Hybrid management: natural / mechanical		■
Alarm output (relay output)		5 V - max. 200 mA
Temperature sensor		specific

Remark: the indicated pressure is the **static** pressure.

■ standard ☒ mandatory

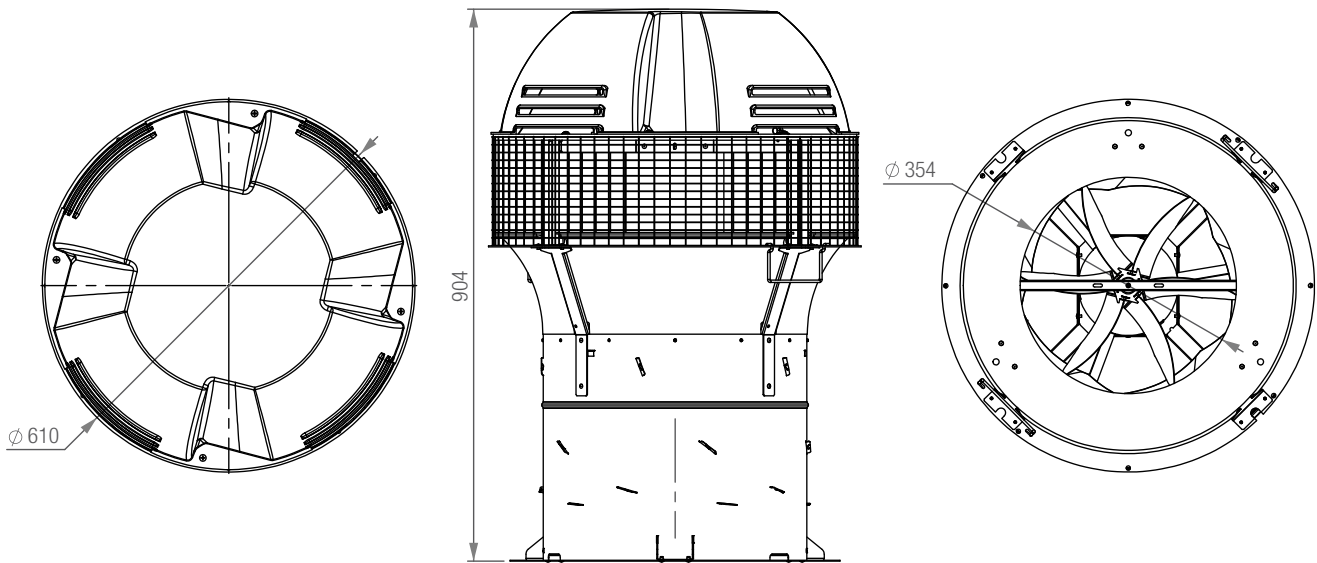
Aeraulic and power consumption



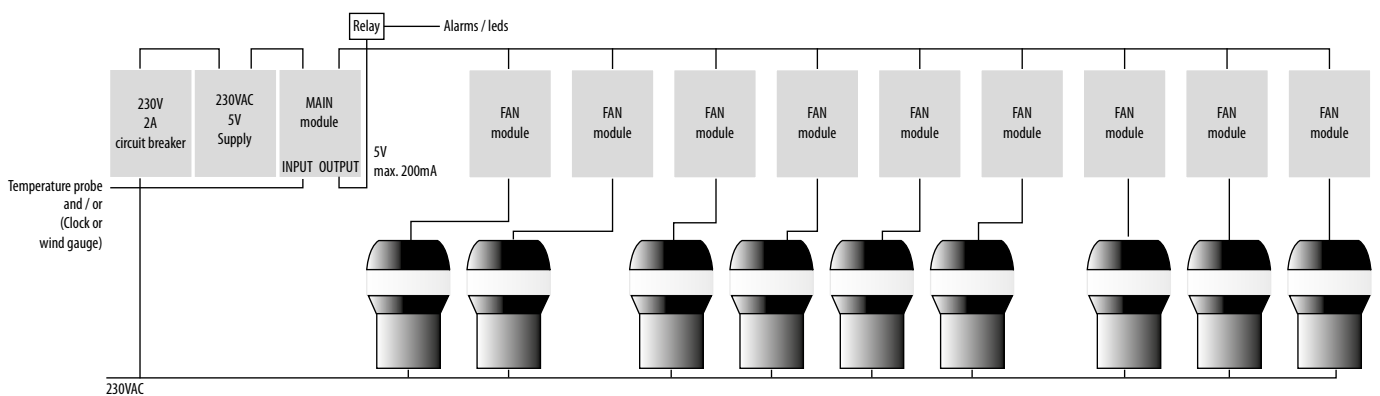
— Minimum and maximum speeds  
 — Intermediate curves (examples)

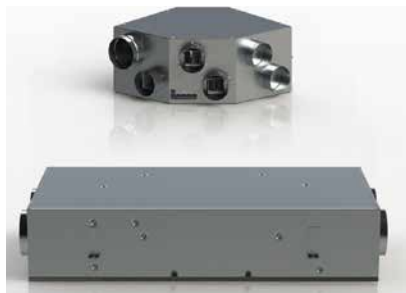
--- Minimum and maximum speeds  
 --- Intermediate curves (examples)

Dimensions in mm



Components of the management system (MS)

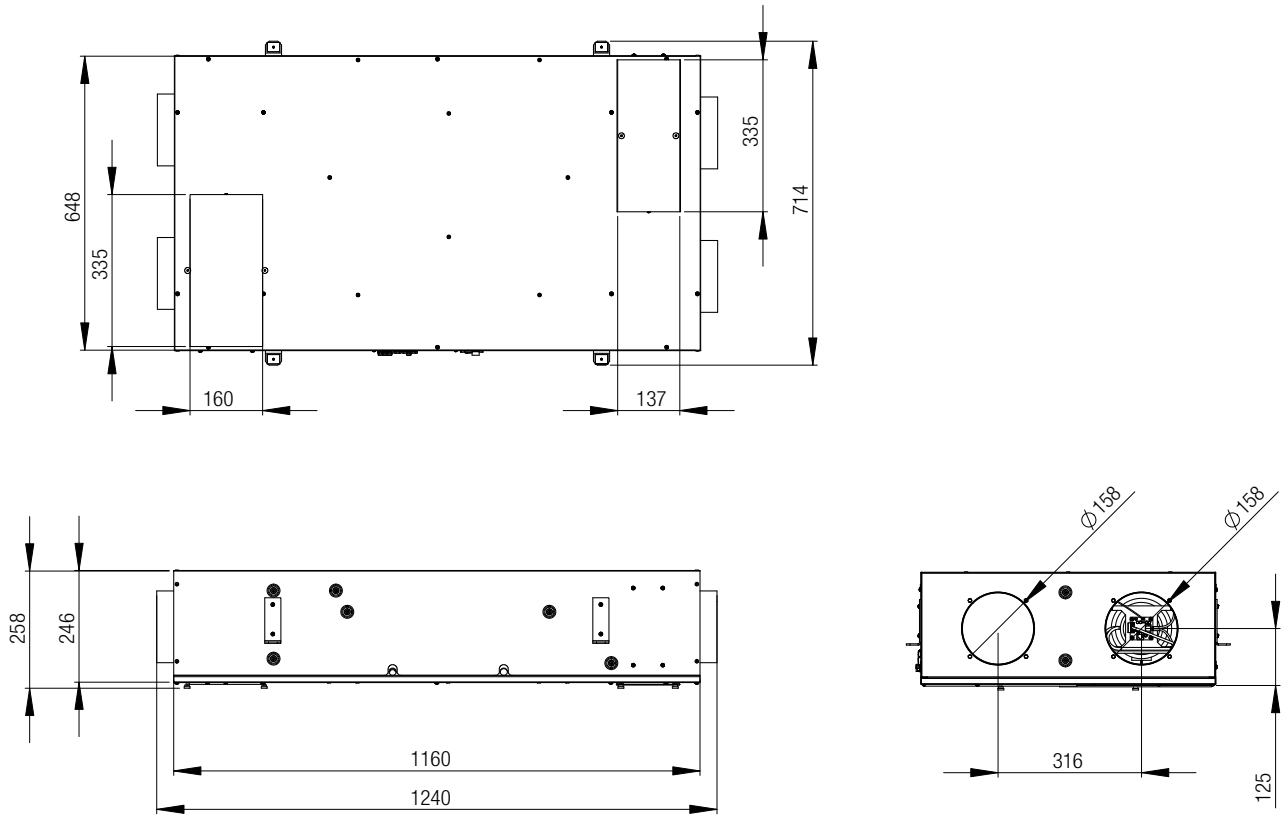




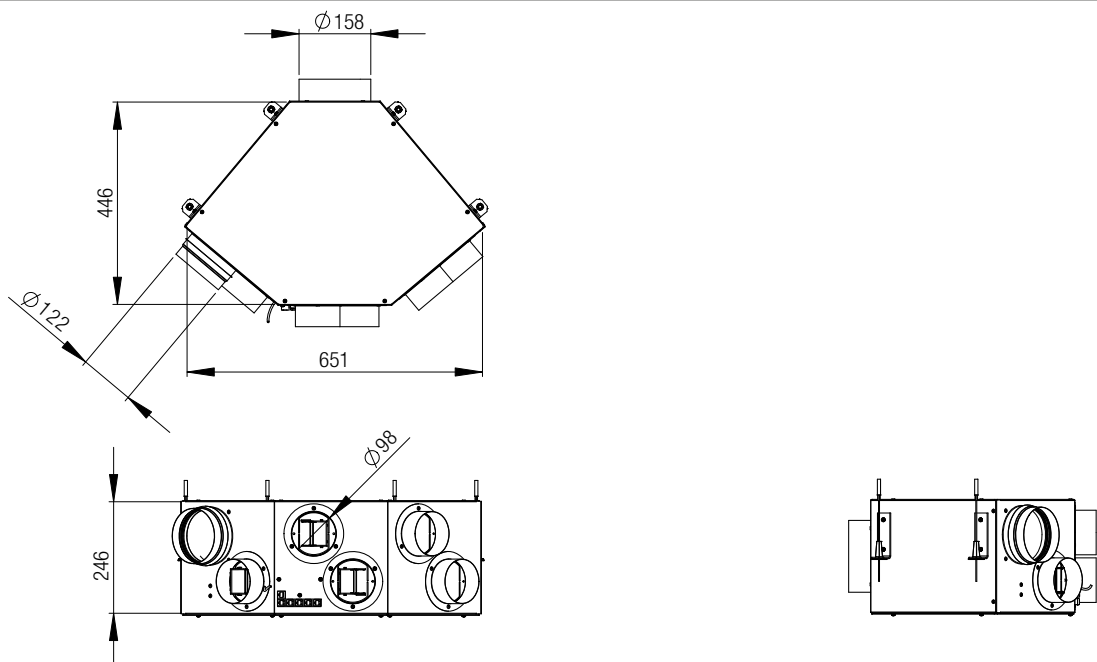
## DXR Room-by-room demand controlled heat recovery

		<b>DXR Unit</b>
<b>Standard code</b>		DXR1093
<b>Airflow characteristics</b>		
Max. airflow	m <sup>3</sup> /h	170
Pressure at supply	Pa	25
Pressure at exhaust	Pa	60
Airflow compensation (filter clogging)		automatic
Airflow balance (supply and exhaust)		automatic
<b>Acoustics</b>		
Sound power level L <sub>w</sub> @ 165 m <sup>3</sup> /h	dB(A)	46.3
<b>Electrics</b>		
Power supply		230 VAC, 50 Hz
Motor type		EC (x2)
Power @ 112 m <sup>3</sup> /h	W	30
Power @ 160 m <sup>3</sup> /h	W	42
Connection DXR Hub - DXR Unit		RJ45
Electrical connections (sensors)		5 x RJ11
<b>Characteristics</b>		
Exchanger		aluminium / counter flow type / 85 % efficiency
Filters		on supply air: G4 + F7 / on exhaust air: G4
Weight	kg	40
Colour		metal
Material (main)		galvanised steel with phonic and thermal insulation
Dimensions	mm	with connectors: 260 x 650 x 1 240    without connectors: 260 x 650 x 1 160
Certifications		CE, VDE
<b>Installation</b>		
Max. number of main rooms		5
Max. number of wet rooms		4
Duct connections		2 x (2 x ø160 mm)
Installation		horizontal only, to the ceiling / 4 points of attachment
<b>Other functions</b>		
Bypass		supply: 100 % / controlled by outdoor and indoor temperatures / also used for <i>free cooling</i>
Pre-heating		resistance in fresh air ductwork from outside (accessory controlled by specific strategy)
Anti-frost		supply airflow regulation strategy
Condensation management		exhaust through lateral tube ø16 mm / optional pump (ø6 mm)
		<b>DXR Hub</b>
<b>Standard code</b>		DXR1094
Weight	kg	11
Colour		metal
Material (main)		galvanised steel with phonic and thermal insulation
Electrical connections (sensors)		5 x RJ11
Duct connections	mm	room supply: 5 x ø100 mm    compensation / balance: 1 x ø125 mm    DXR Unit: 1 x ø160 mm

DXR Unit - Dimensions in mm



DXR Hub - Dimensions in mm



# VENTILATION SYSTEM AND PRODUCT BREAKDOWN

The table below breaks the products down by type of ventilation in the residential application.

		Natural (PSV)	Hybrid	Low pressure MEV (LP MEV)	Mechanical (MEV), collective	Mechanical (MEV), individual	Heat recovery (HRV)
Air inlets 1 per room*	Bedroom	air inlets + canopy	air inlets + canopy	air inlets + canopy	air inlets + canopy	air inlets + canopy	SDC
	Living room	air inlets + canopy	air inlets + canopy	air inlets + canopy	air inlets + canopy	air inlets + canopy	SDC
Exhaust units 1 per room	Kitchen	GHN or G2H	GHN or G2H	GBP	BXC	BXC	BXC
	Bathroom	GHN or G2H	GHN or G2H	GBP	BXC	BXC	BXC
	Bathroom with toilets	GHN or G2H	GHN or G2H	GBP	BXC	BXC	BXC
	Toilets	GHN or G2H	GHN or G2H	GBP	BXC	BXC	BXC
	Other wet rooms	GHN or G2H	GHN or G2H	GBP	BXC	BXC	BXC
Fans		-	VBP or VBP+	VTZ or VCZ	VTZ or VCZ	V2A, V4A, V5S, or VAM	DXR
	Pressure setting	-	10-30 Pa (ST mode) automatic (MS mode)	20-50 Pa	100-150 Pa	80-150 Pa (automatic)	automatic
	Number	-	1 per vertical duct or group of vertical ducts	1 per group of ducts	1 per group of ducts	1 per dwelling	1 per dwelling

## Remark:

The design of the ventilation system and the choice of components must always comply with the country's legal requirements concerning:

- Fire safety
- Building energy performance
- Building acoustics
- Ventilation airflows
- and other factors relevant to the ventilation system (connected gas appliances, etc.)

\* 1 air inlet per 25 m<sup>2</sup> floor area

**Example 1:** floor surface of living room = 18 m<sup>2</sup> => 1 air inlet

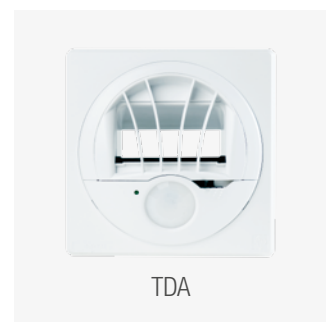
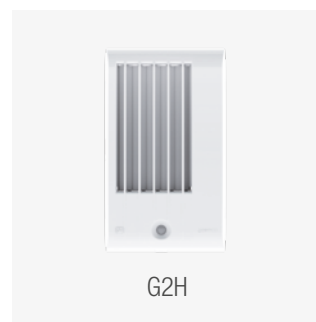
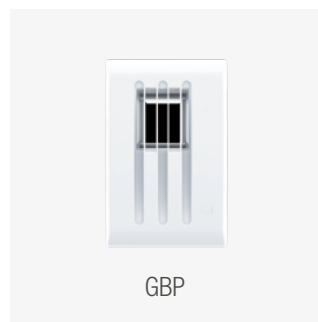
**Example 2:** floor surface of living room = 32 m<sup>2</sup> => 2 air inlets



# WHICH PARAMETER TO CONTROL EXHAUST AIRFLOWS?

Preferred exhaust unit activation modes according to type of room (recommendations). This list is not exhaustive: Aereco products are also used for other destinations.

Airflow control parameter		Humidity	Presence	Presence (activation after 1mn)	Manual activation (switch, remote c. or pull cord)	Humidity + Manual activation (switch, remote c. or pull cord)	Humidity + presence	Humidity + presence (activation after 1mn)	Carbon dioxide (CO <sub>2</sub> )	Volatile Organic Compounds (VOC)	Constant Airflow
Suffix Code		h	p	pd	i or rc or c	hi or hrc or hc	hp	hpd	co <sub>2</sub>	voc	
Housing	Kitchen	++									
	Bathroom	++++			+	+++	+++	+++			
	WC		++++	++++	+	++	+++	+++	++	+++	
	Bathroom with WC	+	+			++	+++	++++		++	
	Laundry / other wet room	++++				+++		+			++
School	Classroom		+++	+			+	+	++++	++++	+
	Lavatories		++++	++++	+	++	+++	+++	++	+++	
Office	Office		+++	++++			++	++	++++	++++	+
	Meeting room		+++	++++	+		++	++	++++	++++	+
Fitness centre	Locker rooms	+++	++		+	++	+++	+++	++++	++++	+
	Shower rooms	++++			+	+++	+++	+++			++



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# CERTIFICATIONS

## Aereco S.A. is ISO 9001:2008 certified.

This certification means that Aereco's Quality Management System conforms to the version (2008) of the international quality standard. It covers the whole scope of the company's activities from the design, the manufacturing process to the sales operation.



## Aereco and the RoHS directive

Aereco guarantees through appropriated components specifications that all the general purpose electrical and electronic components<sup>3</sup> used in its products are conform<sup>2</sup> to the requirements of the EU RoHS Directive<sup>1</sup> 2011/65/EU.

- 1. RoHS Directive:** abbreviation for Restriction on Hazardous Substances, which refers to the regulation EU Directive 2011/65/EU on hazardous substances by the European Union (EU), it restricts the use of six specific hazardous substances in electric and electronic devices and products handled within the EU. The six substances are lead, mercury, cadmium, hexavalent chromium, PBB (polybrominated biphenyls), and PBDE (polybrominated diphenyl ethers).
- 2. Conformity to the RoHS Directive:** this means that, in conformity with the EU Directive 2011/65/EU, maximum concentration values are tolerated by weight in homogeneous materials: lead (0.1 %), cadmium (0.01 %), mercury (0.1 %), hexavalent chromium (0.1 %), and specific bromine-based flame retardants, PBB (0.1 %) and PBDE(0.1 %).
- 3. General purpose electrical and electronic components:** refers to the capacitors, inductors, filters, and other standard components that make up the great majority of Aereco electronic components.

**Design:**

Aereco S.A. - Marketing Department

**Thanks:**

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