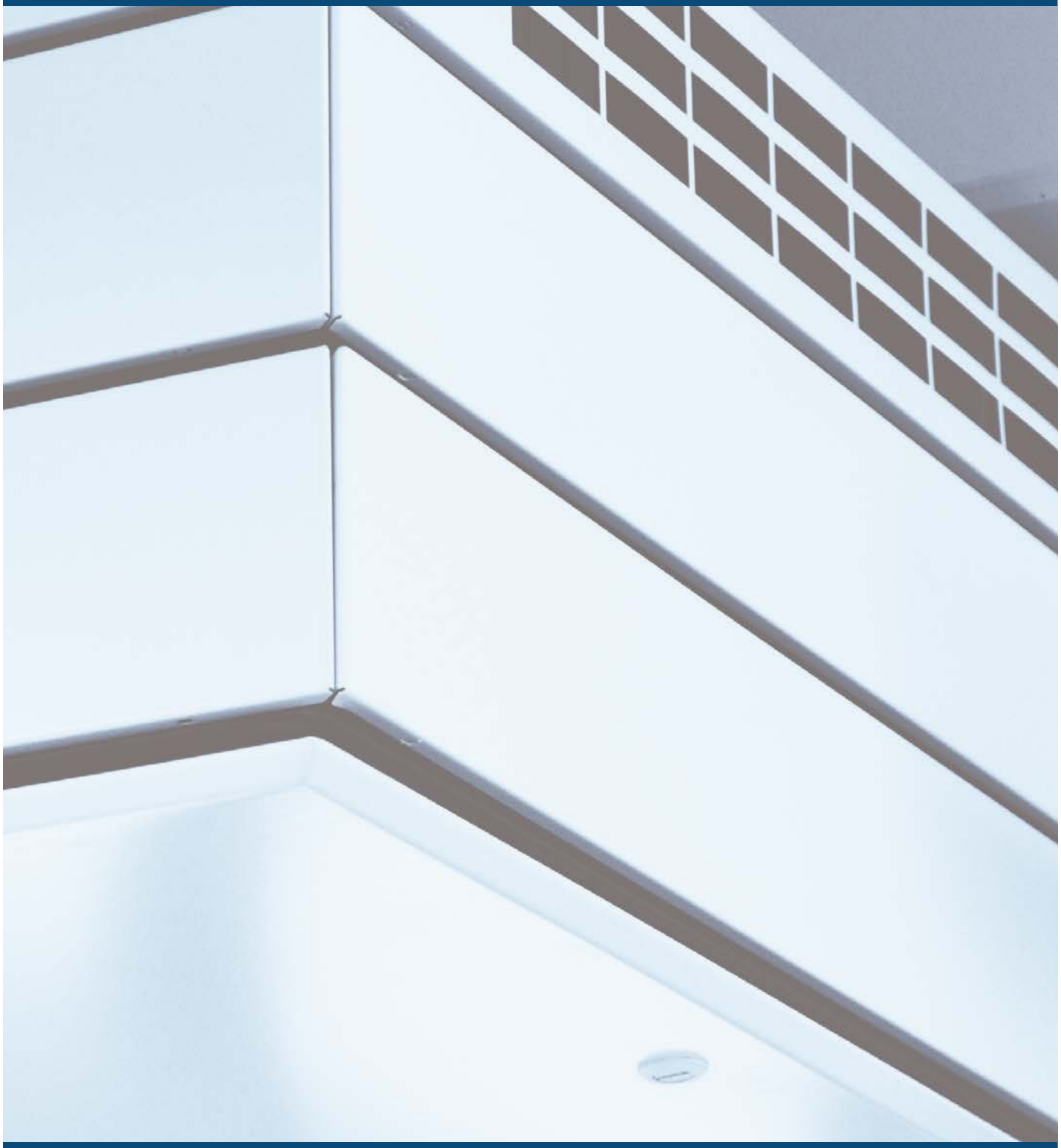
Ventilation in balance

# TECHNICAL DATA

AM & DV SERIES / VERSION 5.2



AIRMASTER

# KNOW THE FEELING?

Stuffy, warm air. Your eyes are dry and itchy. Your head feels heavy and you find it hard to concentrate.

“A poor indoor climate has a lot of influence on our comfort and wellbeing. Research indicates that a poor indoor climate has a negative effect on our performance level of 5-10%. Children are affected even more.” *

That’s why we need world class indoor climate.

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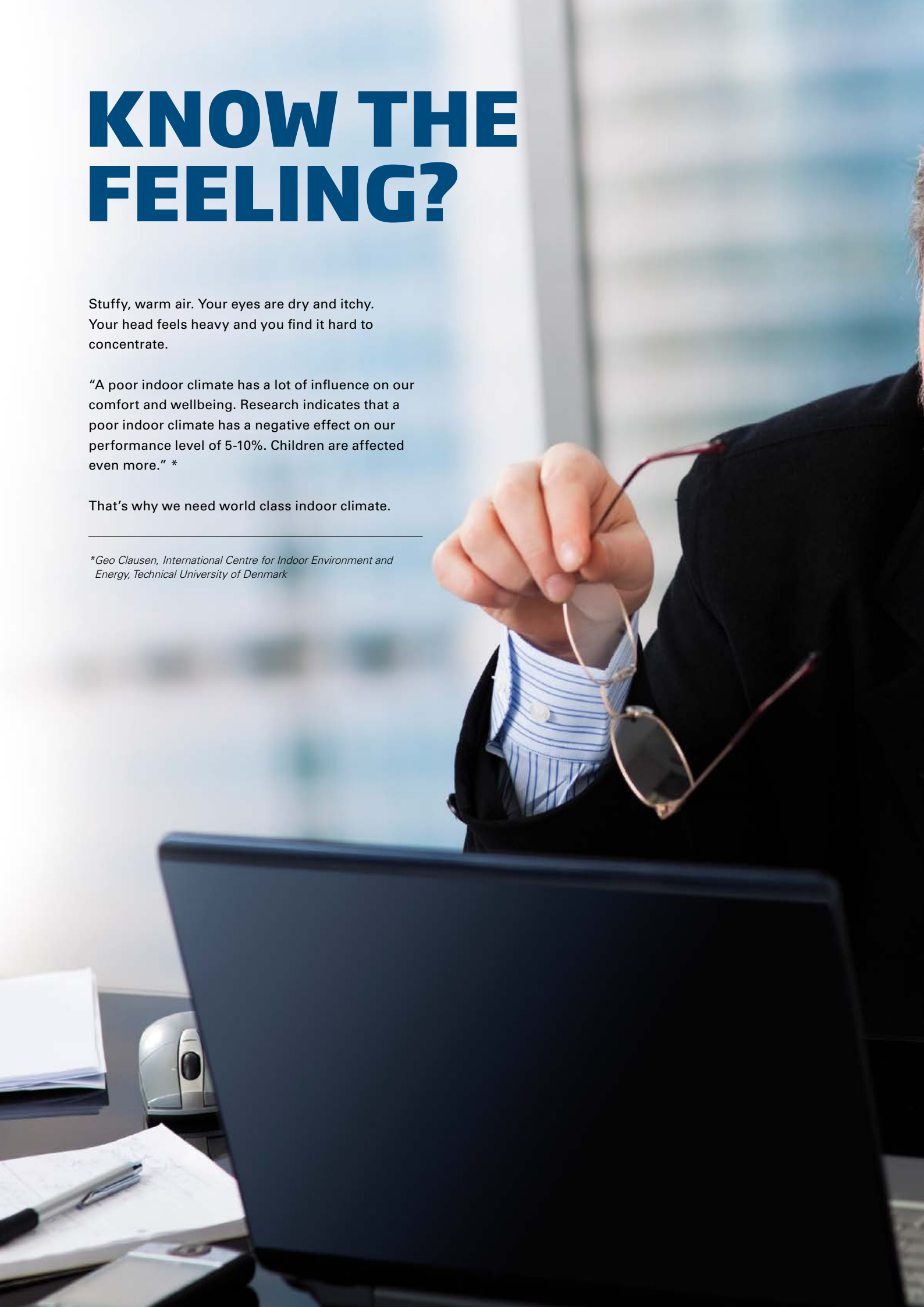
**Geo Clausen, International Centre for Indoor Environment and Energy, Technical University of Denmark*



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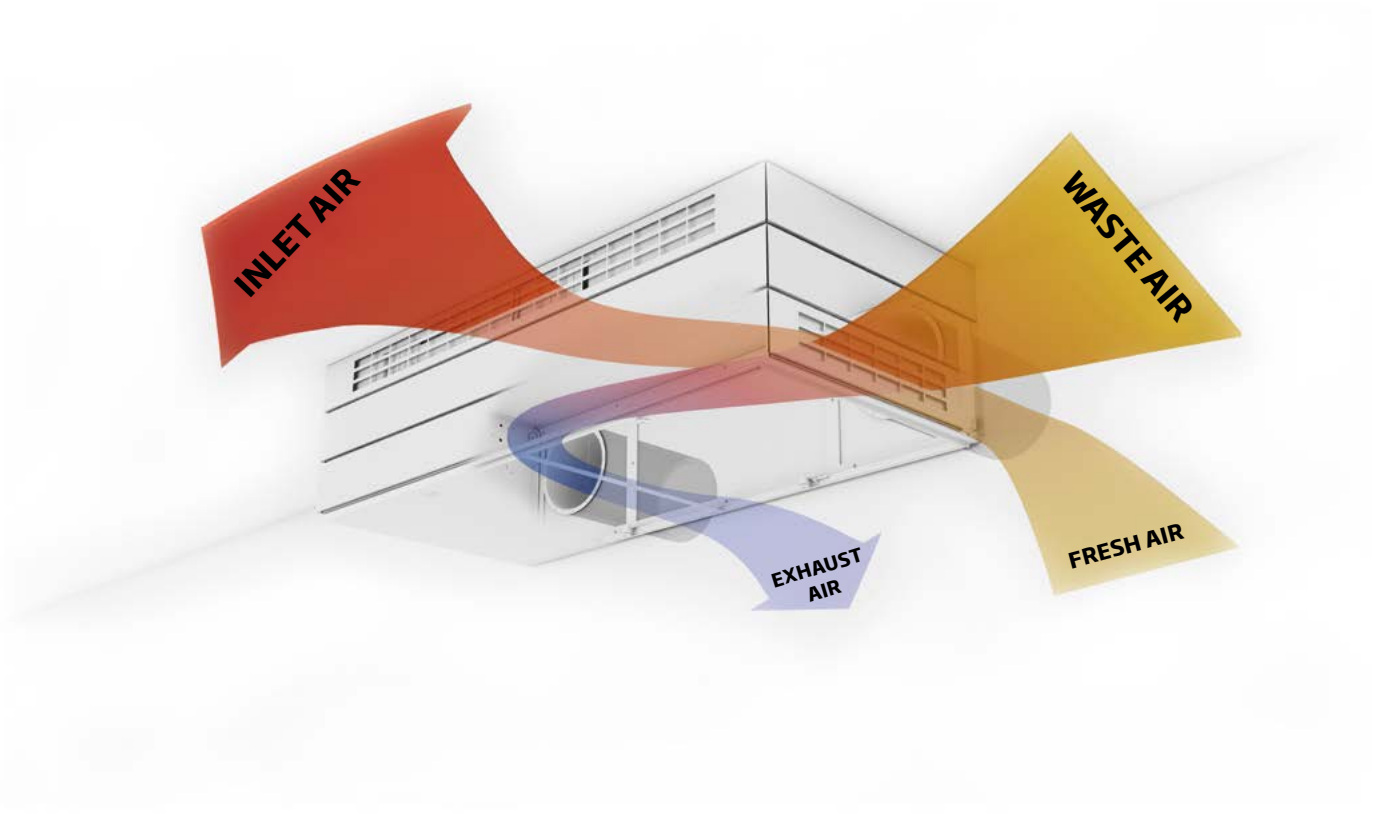
# IN BALANCE




Fresh air is a human right. And that's why Airmaster has developed the most energy-efficient and quiet, decentralised ventilation solutions on the market with heat recovery - solutions which can be used in all types of rooms and buildings.

Airmaster's decentralised ventilation solutions keep energy consumption for ventilation and heating in a building to a minimum. Only those rooms where and when ventilation is needed are serviced. No wasted energy on unnecessary ventilation.

# INTELLIGENT VENTILATION

### LOW ENERGY CONSUMPTION WITH HIGH HEAT RECOVERY

The decentralised unit with heat exchanger is placed in the room close to an outer wall. The very short distance extracted air has to travel combined with the heat exchanger located alongside means very low energy consumption. No need for long ventilation ducts, meaning minimum heat loss (transmission loss). Decentralised ventilation supplies an individual room without being difficult or expensive to install.

### EFFICIENT EC MOTOR TECHNOLOGY

Airmaster uses energy-efficient EC motors, which give low energy consumption, flexible adjustment and silent operation.

### HIGH HEAT RECOVERY

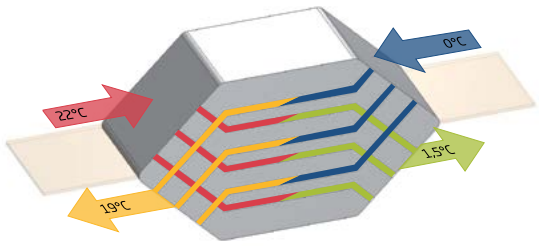
We use highly-efficient counterflow heat exchangers, and document temperature ratio in accordance with European standard DS/EN308[1], which is a dry temperature ratio, under conditions in which condensation of return air does not occur. Airmaster's counterflow heat exchangers perform up to 85% measured as a dry temperature ratio in accordance with EN308, and up to 95% if condensation is included.

### NO DRAUGHTS OR COLD AIR DISCOMFORT

Airmaster's decentralised air handling units are all fitted with motor-controlled air dampers for the supply and extract air. When the unit is inactive, the motor-controlled damper is closed against direct air access. Cold outdoor air cannot pass through the unit into the room. Similarly, warm air cannot pass through to the outdoors.

### MAJOR BENEFITS OF AIRMASTER SOLUTIONS

- Energy-efficient ventilation
- Low noise level: 30 dB(A)
- Cost-effective units
- Fast, easy installation
- Efficient cooling module as option




1 Test conditions:

| | |
|---|---|
| Ambient temperature | 5°C |
| Extract temperature | 25°C |
| Airflow, test range | 50-150% of the nominal airflow. |
| Internal/external air emission | <3% of the nominal airflow inlet and extract are the same. |

# AN OPTIMUM $CO_2$-LEVEL IMPROVES LEARNING AND HEALTH

We have all experienced entering a room in which the air feels close and stuffy. Air consists of a number of elements, of which oxygen, nitrogen and $CO_2$ are the largest. There has to be a natural balance between them.

An increase in the level of $CO_2$ is an indication of human activity. Human activity is good, but the 'used' air has to be replaced with fresh air to restore the natural balance.

The level of $CO_2$ tells us whether sufficient fresh air is being supplied in relation to the number of people in the room. If you are exposed to an excessively high level of $CO_2$, it can affect your health, including:

- Headaches
- Vertigo
- Fatigue
- Restlessness
- A tingling sensation in the legs
- Difficulty breathing
- High blood pressure

**DIFFERENT $CO_2$ LEVELS:**

**400-1000**

400-1000 ppm is considered the normal $CO_2$ level for rooms with a good supply of fresh air.

**1000-2000**

At a level of 1000-2000 ppm, you will typically begin to feel tired and have difficulty concentrating.

**2000-5000**

At a level of 2000-5000 ppm, you will typically suffer headaches, feel sleepy and generally unwell.

**5000-**

At a level of 5000 ppm or above, there is a risk of fainting due to $CO_2$ poisoning.

Airmaster has developed compact measuring stations for test measurement. We offer free, non-obligatory test measurements of your indoor climate

## A COMMON EXAMPLE

$CO_2$ measurements performed in a traditional classroom at GI. Hasseris School, clearly show how important good ventilation is for air quality. The blue line shows the $CO_2$ level with an Airmaster unit in operation. The red line shows readings taken in the same room without ventilation. Figure 1 shows readings taken in one school day, and figure 2 shows readings taken over five weekdays.

The results are clear to see. Without ventilation, the $CO_2$ level reaches 2000 ppm within a single hour of lessons. Given the number of hours spent in daycare, schools and at work, this is a thought-provoking and disturbing result.

**FIGURE 1**

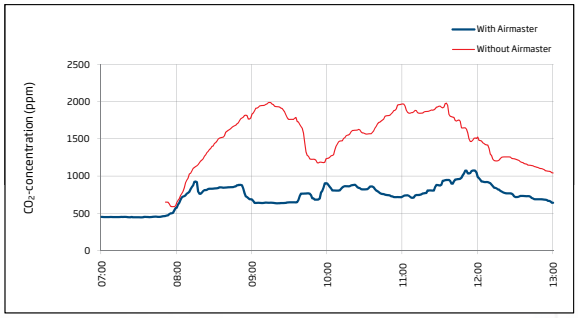
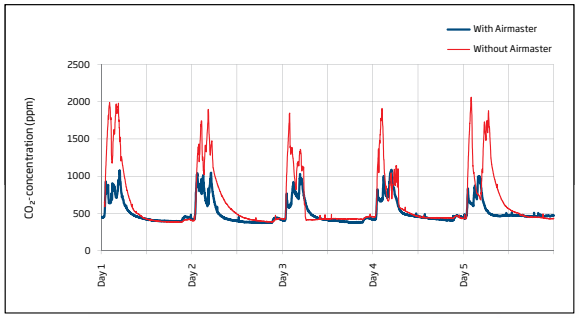



**FIGURE 2**




# **AM** SERIES

The AM series consists of a range of decentralised air handling units, especially suitable for commercial buildings and institutions.

# CHOOSING **THE RIGHT UNIT**

**CHOOSING THE RIGHT UNIT**
The AM series consists of wall-mounted and floor-standing air handling units, Both types come in two models: horizontal and vertical, indicating where the supply and exhaust are located.

Both models permit inlet air grille through the upper, middle or lower panels. Consequently, 1/3rd or 2/3rds of the unit can be integrated above a ceiling.

## WALL-MOUNTED

**HORIZONTAL MODEL**
Supply and exhaust pass horizontally out of the unit and through an outer wall. A louvred grille is mounted on the facade side.

**SIDE MODEL**
Supply and exhaust pass sideways out of the unit. Only possible on the AM 1000 unit.

**VERTICAL MODEL**
Supply and exhaust pass vertically up through the roof. Roof Caps and covers are used at the end of the duct.

## FLOOR-STANDING UNIT

Floor-standing units can be placed along a wall, away from a wall or freestanding, e.g. as a room divider.

**HORIZONTAL MODEL**
Supply and exhaust pass horizontally through an outer wall.

**VERTICAL MODEL**
Supply and exhaust pass vertically up through the roof.

**SIDE MODEL**
Supply and exhaust pass sideways out of the unit. 2/3rds of the unit are integrated into a ceiling. Only available for the AM 1000 unit.

## PARTIALLY INTEGRATED UNIT

**HORIZONTAL MODEL**
Horizontal model with 1/3rd of the unit integrated into a ceiling.

**HORIZONTAL MODEL**
Horizontal model with 2/3rd of the unit integrated into a ceiling.

**VERTICAL MODEL**
Vertical model with 1/3rd of the unit integrated into a ceiling.

**VERTICAL MODEL**
Vertical model with 2/3rd of the unit integrated into a ceiling.

This floor-mounted units can be placed along a wall and supply air at ground level (displacement) or at ceiling level (mixed).

Available as either a horizontal or vertical model.

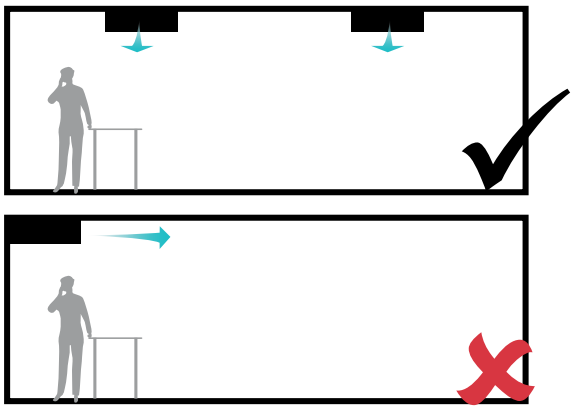
**HORIZONTAL MODEL**
Supply and exhaust pass horizontally through an outer wall.

**VERTICAL MODEL**
Supply and exhaust pass vertically through the roof.

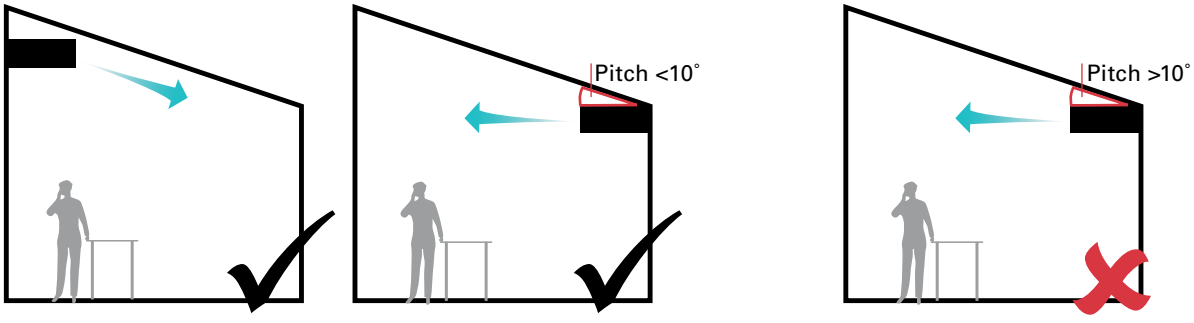
# CORRECT PLACING

To gain the full benefit of Airmaster units, they must be correctly positioned in relation to the physical geometry of the room.

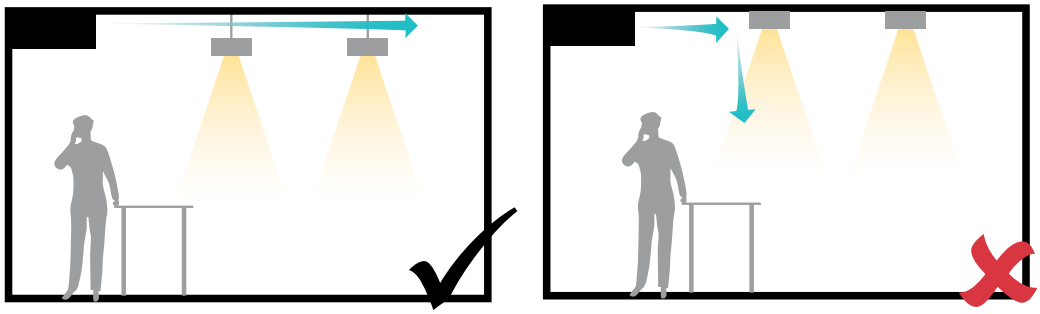
**1** Two smaller units can be appropriate for a long, narrow room, where the throw length is too short longitudinally, yet too long laterally.



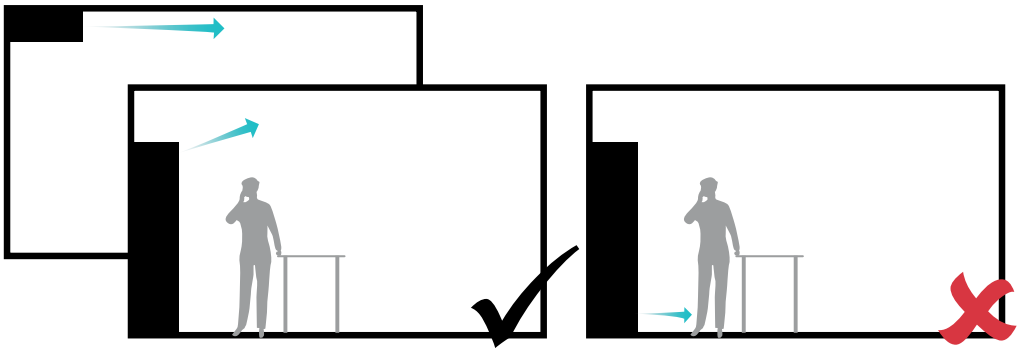
**2** If the room has a high or sloping ceiling, the units should be mounted as high as possible.



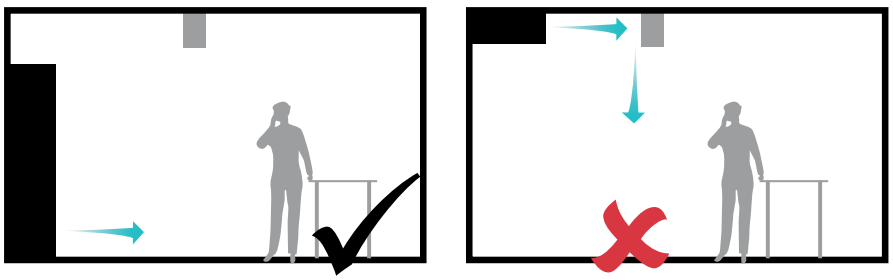
**3** To achieve the most effective inlet, objects that could obstruct the path of the air should be avoided, such as light fittings mounted directly on the ceiling. Light fittings should be lowered to allow the air to circulate freely around the room.



**4** In rooms where the occupants are physically close to a unit, it is important to use wall-mounted or floor-standing models according to the mixing principle to avoid draughts.



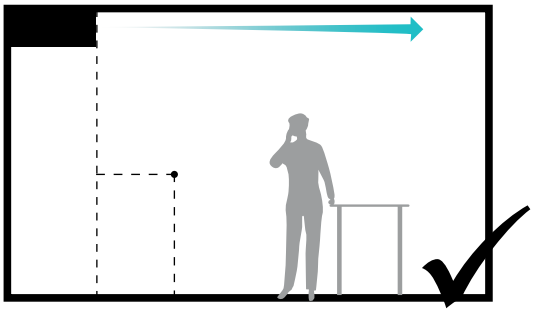
**5** If there are ceiling beams in the room that can obstruct the air current, choose a floor-standing unit that ventilates according to the displacement principle (AM 900 D), or a wall-mounted unit that ventilates along the length of the room.



# CORRECT PLACING

## WITH REGARD TO ACOUSTIC PRESSURE

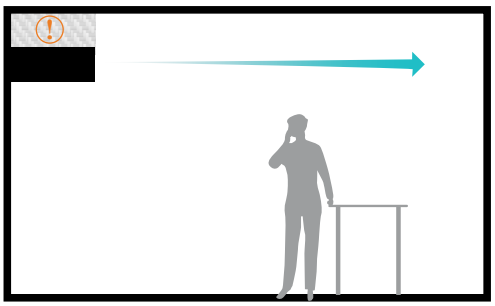
**SECTIONAL VIEW**



System mounted against the ceiling and wall.

To gain maximum out of your AM unit you should be aware of the following details. These diagrams can be used as a guideline and a tool for effective acoustic installation.

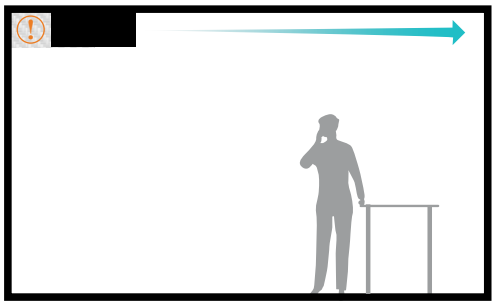
**SECTIONAL VIEW**



System mounted against the wall but away from the ceiling.

(!) Visible ducts and top plate should be sound-proofed and, if required, conden-sation-proofed. Space between the system and ceiling may be covered, if required.

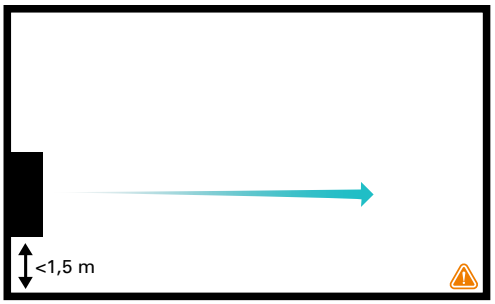
**SECTIONAL VIEW**



System mounted against the ceiling at a short distance from the wall.

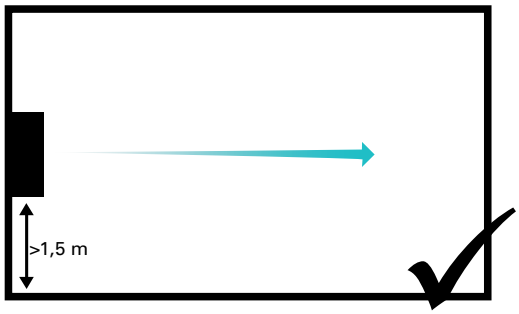
(!) Visible ducts and rear plate should be sound-proofed and, if required, conden-sation-proofed. Space between the system and the wall may be covered, if required.

**TOP VIEW**




System mounted with a short distance from extract to the side wall.

**TOP VIEW**



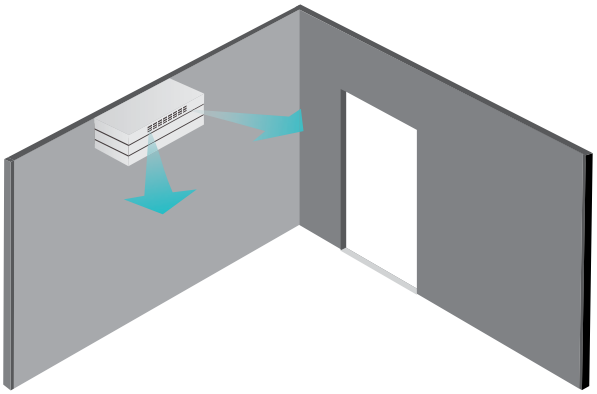

System mounted with a further distance from extract to the side wall.

# AIRMASTER'S **MIXING PRINCIPLE**

The fresh supply air tends to run along the ceiling, before slowly descending - known as the Coanda effect. The Coanda effect mixes fresh air with ambient air and then slowly descends into the room.

**INLET STREAM**

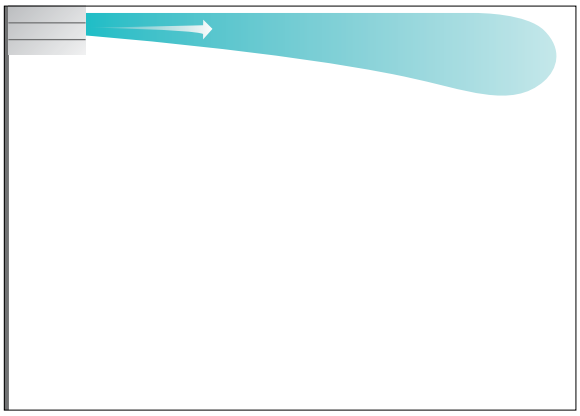
The Coanda effect causes the stream to stick to the ceiling. The fresh air is blown in at a relatively high velocity. The air in the room is pushed along to ensure effective mixing of fresh and ambient air. The meeting of impelled and ambient air ensures uniform air quality in the room, whilst reducing the velocity of the supply inlet stream. Consequently, draughts are avoided in the room.



Wall-mounted Airmaster ventilation.

## INLET STREAM FOR WALL-MOUNTED UNITS

All wall-mounted models ventilate according to the mixing principle, in which fresh air is fed into the room at ceiling level, exploiting the Coanda effect.



Wall-mounted Airmaster ventilation with inlet stream seen from the side.

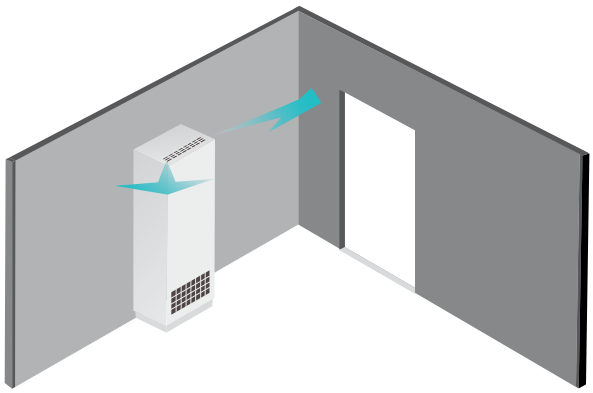
# INLET STREAM FOR FLOOR-STANDING UNITS

The mixing principle is also used for Airmaster's floor-standing models (AM 900, AM 1200), with fresh air fed upwards into the room to exploit the Coanda effect.

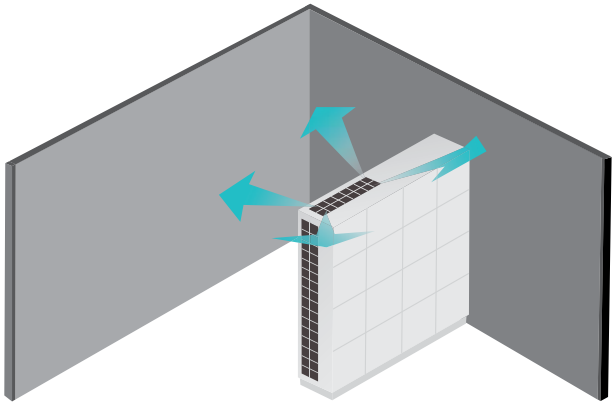
**ADJUSTABLE INLET OPENING**

Floor-standing models AM 900 and AM 1200 are fitted with adjustable inlet openings. The opening can be adjusted according to requirement, ensuring the right throw length according to the size of the room. The throw length can be easily varied by changing the inlet opening/louvre angle.

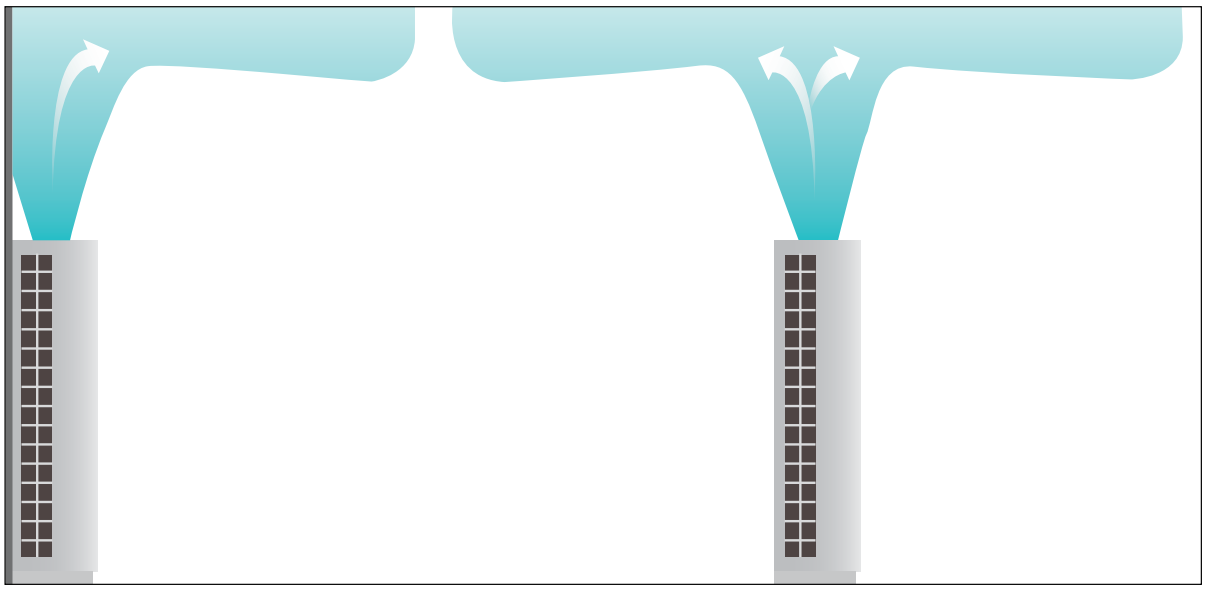
If the unit is moved to another room, the opening can be adjusted accordingly. The depth of the room will determine the size of the opening required.



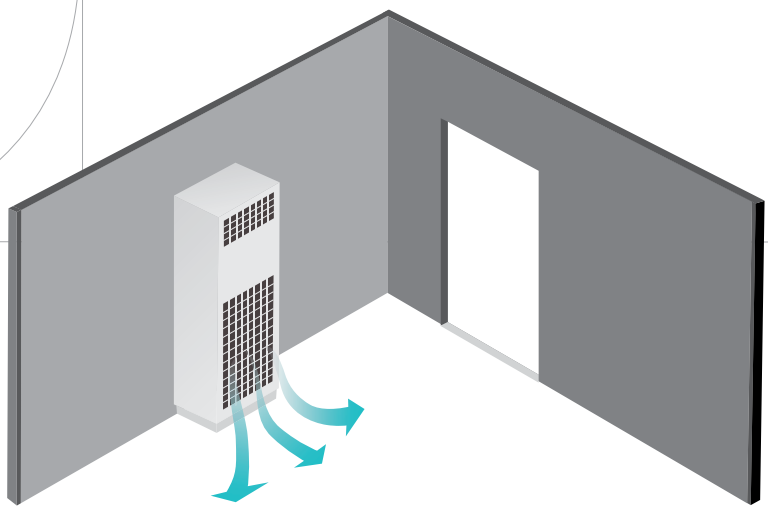
Floor-standing AM 900 - mixed ventilation.



Floor-standing AM 1200 placed at right-angles to a wall as a room divider. Airflow and direction are adjusted using the louvred grille.



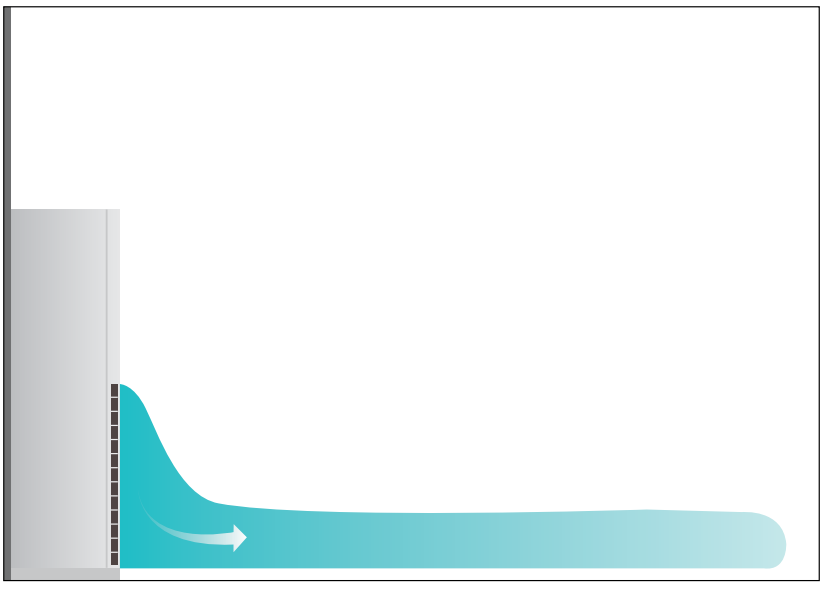
The illustration shows two floor-standing AM 1200, one standing close to a wall and the other freestanding. Inlet viewed from the side.



Floor-standing AM 900 - displacement ventilation.

**THE DISPLACEMENT PRINCIPLE**

Airmaster's floor-standing model AM 900 is also available as a displacement model. The displacement ventilation principle feeds fresh air into the room at low velocity at floor level. The fresh air is blown in at a temperature a couple of degrees lower than the room temperature. The air is distributed over the entire floor due to the difference in density between cold and warm air. The low inlet velocity avoids draughts in the room.



Floor-standing AM 900 - displacement ventilation with inlet stream seen from the side.

# CONTROL PROCESSES **WITH SENSORS**

To follow is a look at the different advanced control processes.

## CONTROL VIA $CO_2$ SENSOR

A $CO_2$ sensor measures the $CO_2$ level in the room, and sends the reading to the control system. The control system then adjusts the rate of air replacement in the room according to the $CO_2$ level, The unit's energy consumption is reduced to the minimum.

**AIRFLOW CONTROL** (FIGURE 1)
The unit can be set to run with a reduce standard airflow (min.) for basic ventilation. If the $CO_2$ level in the room exceeds the programmed lower limit (A), the $CO_2$ sensor will cut in and increase airflow. If $CO_2$ levels continue to rise, the airflow will be increased linearly up to the maximum volume (max.) at the upper $CO_2$ limit (B) and above.

**START, STOP AIRFLOW CONTROL** (FIGURE 2)
If the unit is completely controlled by the $CO_2$ sensor, it will start with a little more than the standard airflow (min. +x) when the $CO_2$ level exceeds the programmed lower limit plus 10% (A + 10%). Also it will continue operation after programmed stop if $CO_2$ level is exceeded.

If $CO_2$ levels continue to rise, the airflow will be increased linearly up to the maximum volume (max.) at the upper $CO_2$ limit (B) and above.

If the $CO_2$ level falls below the programmed lower limit (A), the unit will stop again.

**$CO_2$ SENSOR - WALL-MOUNTED OR BUILT-IN**
Automatically aligns the ventilation level to the $CO_2$ level in individual rooms.

FIGURE 1
**AIRFLOW CONTROL**

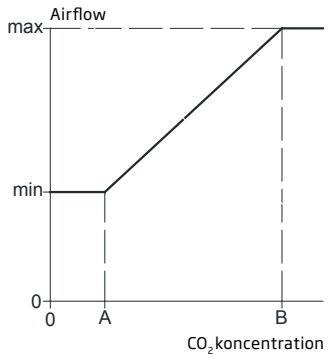
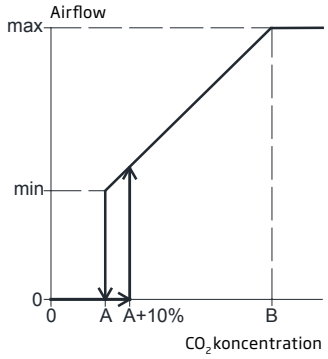



FIGURE 2
**START, STOP AND AIRFLOW CONTROL**



# CONTROL VIA MOTION SENSOR (PIR)

The air handling unit is set to start/stop via a signal from a motion sensor. The motion sensor registers motion within its detection field and sends a signal to the unit to start. The unit will start in normal operation with the programmed airflow and inlet temperature. When the signal ceases, the unit will stop after the preprogrammed afterrun time. A motion sensor is often used to switch the unit from basic ventilation to normal operation when anyone enters the detection field.

**A MOTION SENSOR** ensures the lowest energy consumption possible, as ventilation only starts when there is motion in the room. Variable afterrun time can be programmed in the Airlinq control system.

We deliver units all over Europe. Consequently, we know that our units have to function effectively under very different outside temperatures - ranging from -25°C and up to 35°C.

# HUMIDITY CONTROL

**ADAPTIVE ON-DEMAND CONTROL**

Airmaster air handling units can be fitted with an extra humidity sensor or extended programming. Integrated humidity and temperature sensors on supply and extract make exact calculation of absolute air humidity possible.

**AUTOMATIC ADAPTATION TO WEATHER CONDITIONS**

The adaptive humidity control automatically prevents the air drying out in the winter and reduces humidity in the summer. This effective, energy-saving form of operation creates a healthy environment and a healthy energy bill.

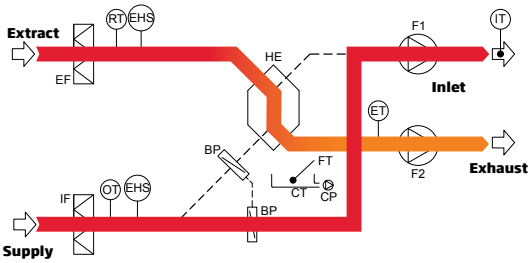
# CONTROL VIA A HYGROSTAT

**WALL-MOUNTED HYGROSTAT**

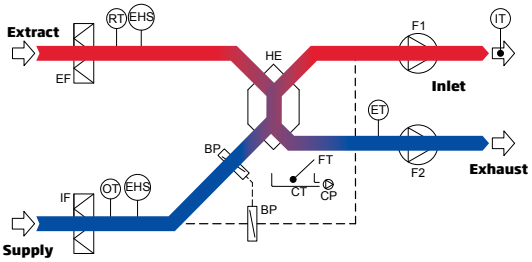
A hygrostat registers relative air humidity, and sends either a start or stop signal to the air handling unit. Start/stop signal can be adjusted. Humidity in the air affects the length of hygroscopic man-made fibres. Depending on the humidity level, the fibres will activate a contact that triggers the signal. When the relative air humidity goes over or under the level set, the hygrostat sends a start/stop signal to the air handling unit. Hygrostats are often used to switch a unit from basic ventilation to full operation when the relative humidity set is exceeded.

**HYGROSTAT** ensures that humidity is automatically kept down. Can be installed in the room or on the unit.

**Example of air handling unit in summer mode**




**Example of air handling unit in winter mode**




**Name of component**

| | |
|---|---|
| F1 | Supply air fan |
| F2 | Extract air fan |
| IF | Supply air filter |
| EF | Extract air filter |
| BP | Bypass damper |
| HE | Countercurrent heat exchanger |
| EHS | Electronic humidity sensor |
| CT | Condensate tray |
| FT | Float |
| CP | Condensate pump |
| OT | Outside temperature sensor |
| IT | Inlet air temperature sensor |
| RT | Room temperature sensor |
| ET | Exhaust air temperature sensor |

# CONTROL PROCESSES

## DEALING WITH CONDENSATE

When heat recovery is running up to 95%, the air is cooled considerably in the counterflow heat exchanger. The humidity in return air can then condense in the heat exchanger, and is collected in a condensate tray.
A float registers a high level of condensate in the tray automatically. To prevent stoppages, a drain can be fitted to the condensate tray to remove water from the unit. Alternatively, the air handling unit can be fitted with a fully automatic condensate pump.

**FLOAT**
Built-in float sensor detects unwanted build-up of condensate.

## FROST PROTECTION

When the outside temperature approaches freezing point, the exhaust temperature behind the counterflow heat exchanger drops. This can result in condensate freezing in the heat exchanger. The Airlinq control system prevents the formation of ice by increasing extract air and reducing inlet air, causing the extract air temperature to rise again. If this process is insufficient to prevent ice forming in the heat exchanger, Airlinq will protect the unit by shutting down operation.

**"PREHEAT"**
**WITH ELECTRIC PREHEATING SURFACE**
If the air handling unit is fitted with an electric preheating surface, it will heat the fresh air before it meets the countercurrent heat exchanger, preventing the formation of ice. To maintain balanced ventilation, the Airlinq control system controls the temperature in the unit. This is achieved by the preheating surfaces only cutting in if the requirement exists. Energy consumption can thus be kept at a minimum.

**"VIRTUAL PREHEAT"**
**WITH ELECTRIC HEATING SURFACE**
Alternatively, ice can be prevented using an electric heating surface and the virtual preheat function.
A bypass damper diverts some of the fresh air past the countercurrent heat exchanger. The heating surface heats the fresh air up to the inlet temperature set.
The extract air is cooled down less in the heat exchanger, preventing ice formation.

**ELECTRIC PREHEATING SURFACE**
Optional preheating surface for very cold areas.

# CONTROL PROCESSES **WITH HEATING SURFACES**

## CONTROLLED INLET TEMPERATURE

To achieve the highest level of heat recovery, Airmaster air handling units are fitted with highly -efficient countercurrent heat exchangers. A comfort current is therefore used only to equalise the minimal heat loss from ventilation. Balanced ventilation is maintained as long as the inlet temperature remains within acceptable limits as standard.

If the inlet temperature cannot be maintained at low fresh temperatures, Airlinq will reduce inlet air and increase extract air to compensate for the low temperature. The function is also active if comfort heating surface capacity is utilised 100%.

**ELECTRIC COMFORT HEATING SURFACE**

The balance between fresh air and extract air is maintained via a comfort heater, even in the event of low outside temperatures. An electric comfort heating surface heats the fresh air to the required inlet temperature after the countercurrent heat exchanger. The Airlinq control system controls the temperature in the unit, and automatically activates the comfort heating surface if it is needed.


**ELECTRIC COMFORT HEATER**

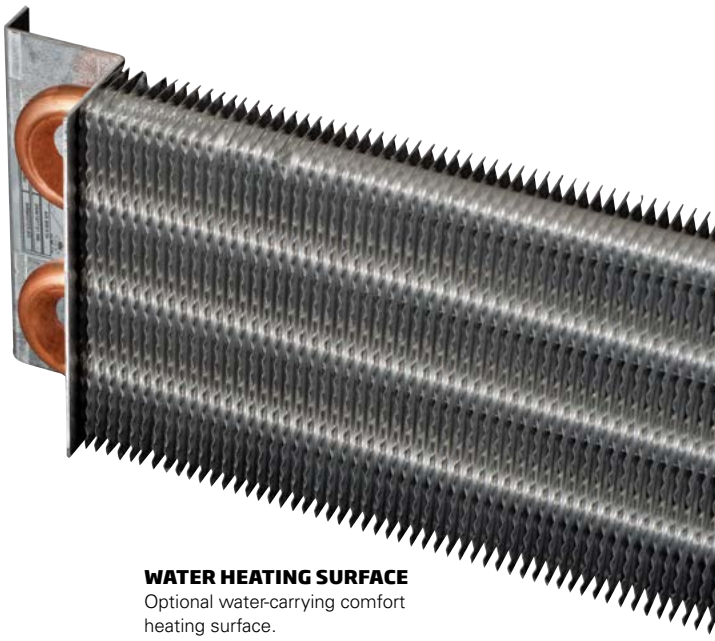
### WATER HEATING SURFACE

Most air handling units can have a water heating surface fitted as an alternative to an electric comfort heating surface. A water heating surface also ensures the required inlet temperature. The large surface area of the heating surface ensures efficient transfer of heat energy to the inlet air.

The Airlinq control system starts and stops the heating surface using a motor-driven valve. The heating surface is supplied built-in to the air handling unit, or as part of the duct system. Connection to the local heating system is therefore quick and simple.

### FROST PROTECTION OF WATER HEATING SURFACE

The water heating surface is fitted with a separate, self-controlling heat retention valve, which ensures a minimum temperature even when the air handling unit is switched off. All nominal values for the water heating surface are preprogrammed into the Airlinq control system. The heating surface is therefore protected against frost and is directly functional.



**WATER HEATING SURFACE**
Optional water-carrying comfort heating surface.

## ENERGY METER

All Airmaster air handling units can be fitted with an energy meter, to provide a precise overview of the unit's electricity consumption. The figures can be read directly on the meter's display. Consumption on units with the P control system can also be read on PC using Airlinq Service Tool. It is also possible to read the consumption from Airlinq Online.

# CONTROL PROCESSES **FOR COOLING**

## AUTOMATIC BYPASS

The Airlinq control system can open the bypass gradually if the inlet temperature exceeds the required level. Cooler fresh air will be allowed to bypass the countercurrent heat exchanger, ensuring that the inlet temperature set is maintained.

Airlinq will adjust the inlet air temperature to achieve a higher cooling output. If the room temperature exceeds the level set, e.g. as a result of strong sunshine, the bypass will open automatically.

If a cooling module is fitted to the air handling unit, Airlinq will activate it automatically if cooling using fresh air is insufficient. When the cooling module is working, the bypass is still used to regulate the inlet air temperature.

## NIGHT TIME COOLING

If the room temperature exceeds the maximum level set during the day, all Airmaster air handling units can automatically cool down the room using colder night air. It will be registered by the Airlinq control system, and started automatically. If necessary, the function will use the bypass damper and cooling module to achieve the cooling output required. The building and its contents will be cooled, and a reduction of the room temperature will be achieved for the next day.

## COOLING WITH COOLING MODULES (CC)

In the event of high outside temperatures, the automatic bypass function and night time cooling ensure that the inlet air temperature is kept down. If this is insufficient, effective temperature reduction can be achieved using a cooling module. Airlinq automatically activates the cooling module, which reduces the fresh air temperature by up to 15°C. Fresh air is then supplied to the air handling unit, enabling the inlet air temperature to be maintained at the level set.

**CC COOLING MODULE**
is available for the following air handling units:

AM 300 H
AM 500 H
AM 800 H
DV 1000

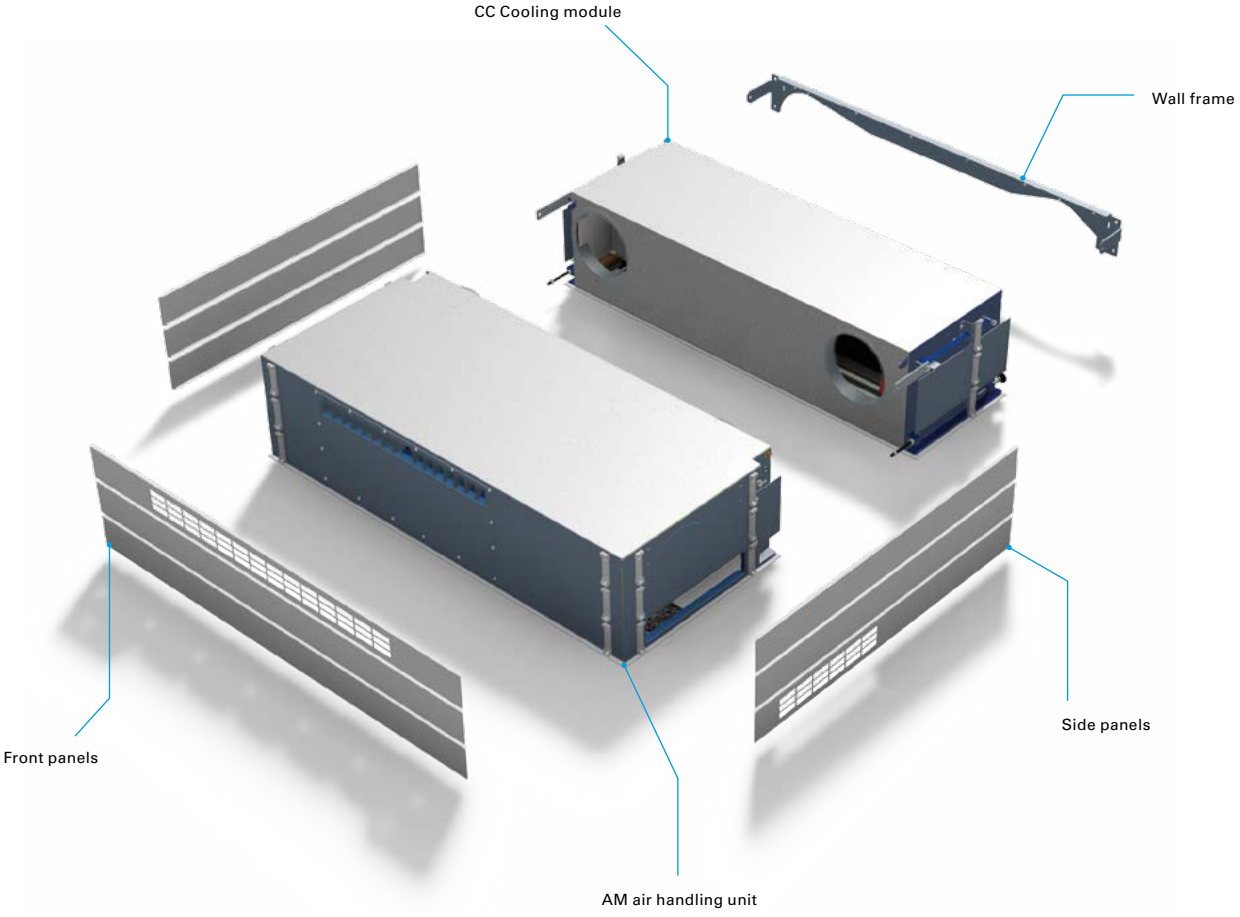
Airmaster's comfort-creating cooling module for horizontal models completes the most flexible ventilation system on the market.

## SPECIALLY-DEVELOPED COOLING MODULES (CC)

Airmaster's specially-developed cooling modules (CC) are controlled fully automatically by Airlinq. Combined with 5 different network modules (LON®, MODBUS® RTU RS485, BACnet™ MS/TP, BACnet™/IP, KNX®) and the intuitive control panels, Airlinq provides an efficient, economic and long-term ventilation solution.

The cooling module is designed to reduce the fresh air temperature by up to 15°C. The units are dimensioned according to European conditions (outside temperature 35°C, 40% relative humidity) according to standard DS/EN 14511-2. The cooling module is exempt from the directive for pressure equipment (PED) according to article 1, part 3.6.

A condensate pump is built in as standard equipment for all cooling modules.



The ideal unit for small rooms such as two-man offices and the like. Its quietness ensures that no one is disturbed at work.

# AM 150 H

| TECHNICAL DATA | 30 dB(A) | 35 dB(A) | BOOST |
|---|---|---|---|
| Capacity* | 115 m³/h | 147 m³/h | 215 m³/h |
| Throw length (0.2 m/s)* | 2,6 m | 3,4 m | - |
| Nominal current* | 0,2 A | 0,3 A | 1 A |
| Maximum power consumption* | 21 W | 38 W | 96 W |
| Electrical connection | 1 ~ 230 V + N + PE/50 Hz | | |
| Duct connections | 125 mm dia. | | |
| Weight | 47 kg | | |
| Heat exchanger | Countercurrent heat exchanger (PET) | | |
| Supply air filter | Standard: M5, Option: F7 or F9 | | |
| Colour | RAL 9010 (white) | | |
| Power cable | 3 x 0,75 mm² | | |
| Leakage current | ≤ 0,5 mA | | |
| Energy class (SEC class) | A | | |
| Dimensions (W/H/D) | 1170 x 261 x 572 mm | | |

* With M5/M5 filter

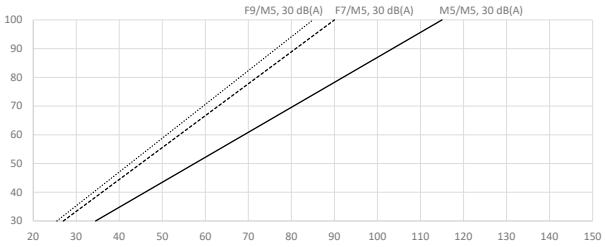
| ELECTRIC HEATING SURFACE | |
|---|---|
| Unit, electric connection | 1 x 230 V |
| Heat output | 600 W |
| Nominal current consumption | 2,6 A |
| Thermal circuit breaker, aut. reset | 75°C |
| Thermal circuit breaker, man. reset | 90°C |

| STANDARD AND OPTIONS | AM 150 H |
|---|---|
| Bypass | x |
| Electric heating surface/VPH | • |
| $CO_2$ sensor (built-in) | • |
| PIR/motion sensor (built-in) | • |
| Condensate pump | • |
| Motor-controlled exhaust air damper | x |
| Motor-controlled supply air damper | x |
| Countercurrent heat exchanger (PET) | x |
| Energy meter | • |
| Wall / Ceiling frame | • |

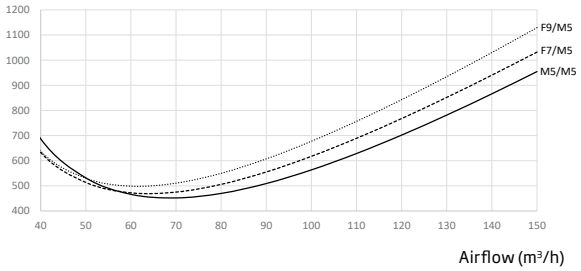
x: standard • : option

# AM 150 H

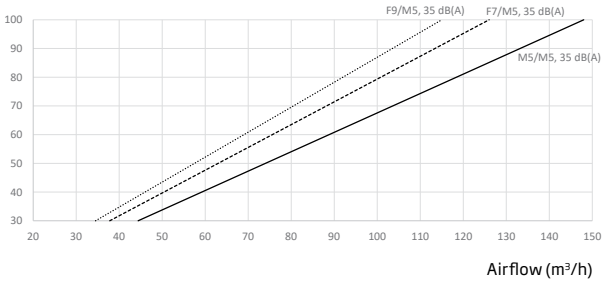
CAPACITY 30 dB(A) version (%)[1]



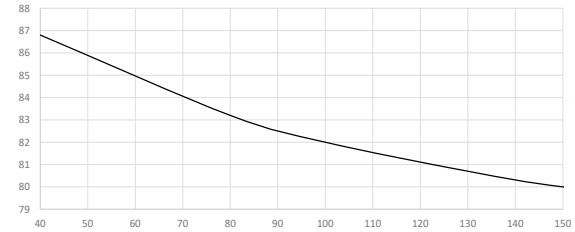

SFP (W/(M³/S))[1]




CAPACITY 35 dB(A) version (%)[1]

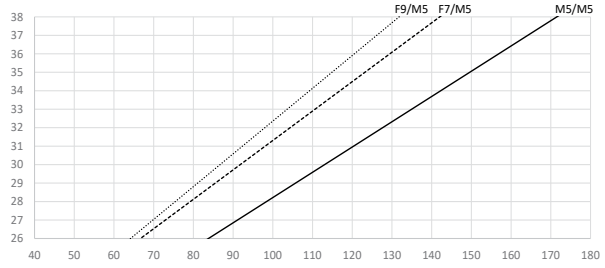



TEMPERATURE EFFICIENCY, ACC. TO EN308 (%)

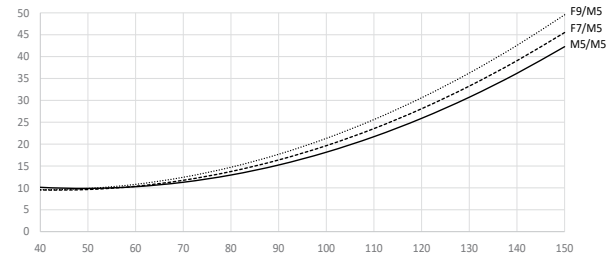



Balanced airflow; Extraction: 25°C, 28 % RH, Supply: 5°C, 50 % RH.

SOUND PRESSURE LEVEL (dB(A))[2]



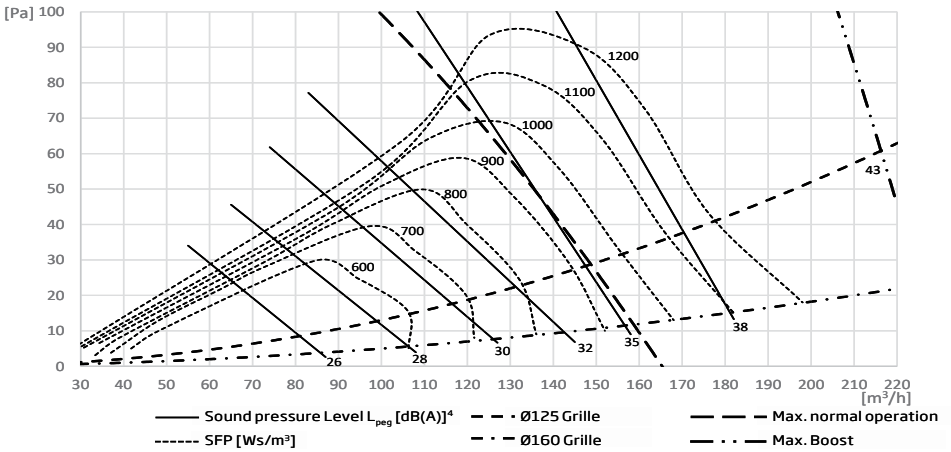

POWER CONSUMPTION (W)[1]



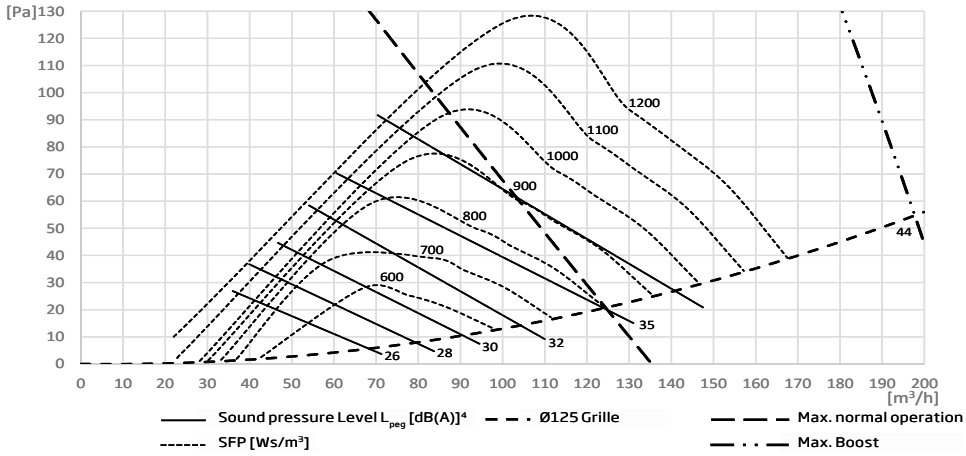

[1] Measurements are conducted at normal operation in a standard installation situation with Airmaster recommended Ø125 mm grilles.
[2] Sound pressure level $L_{p,eq}$ is measured in a height at 1,2 m with a horizontal distance at 1 m from the air handling unit in a room with 200 m³ with at a reverberation time T= 0,6s, corresponding to a room attenuation of 10 dB. At smaller rooms, e.g. 40 m³ the sound pressure level increases with 2 dB.

# AM 150 H

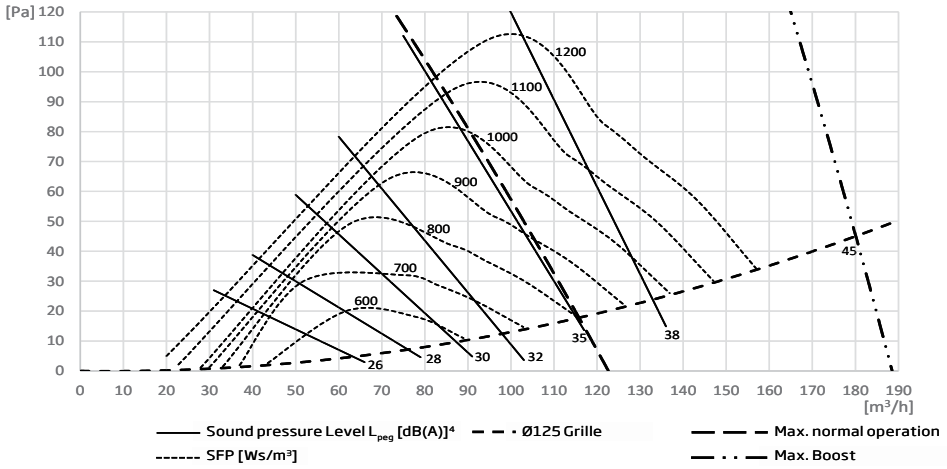
SFP, WITH M5 SUPPLY AIR FILTER AND M5 EXTRACT AIR FILTER[3]




SFP, WITH F7 SUPPLY AIR FILTER AND M5 EXTRACT AIR FILTER[3]



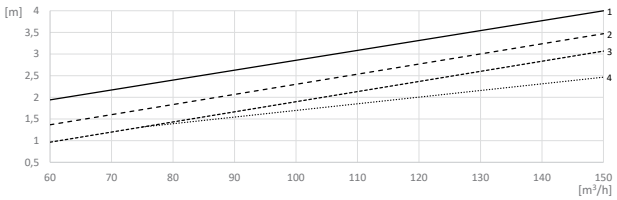

SFP, WITH F9 SUPPLY AIR FILTER AND M5 EXTRACT AIR FILTER[3]




[3] Measurements are conducted at normal operation in a standard installation situation in a room with 200 m³ with a room attenuation of 10 dB.
[4] Sound pressure level $L_{p,eq}$ is measured in a height at 1,2 m with a horizontal distance at 1 m from the air handling unit.

# AM 150 H

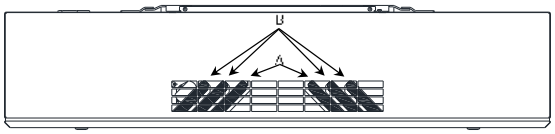
THROW LENGTH, AT 0,2 M/S[5]




With small inlet diffusor areal: 1: 30° C blade angle, 2: 45° C blade angle.
With large inlet diffusor areal : 3: 45° C blade angle, 4: 60° C blade angle.

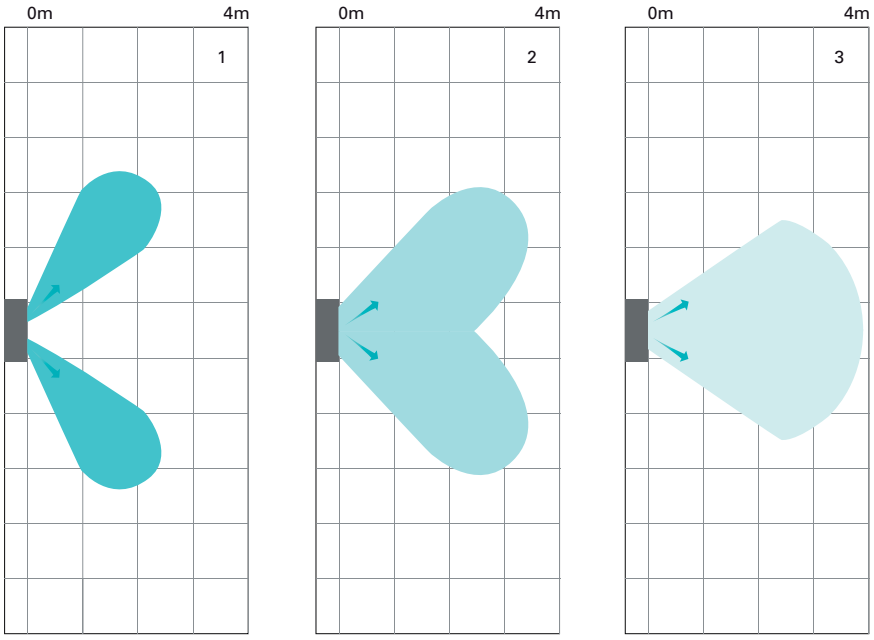
[5] The throw length is measured with 2° C subcooled inlet.

SMALL AND LARGE INLET DIFFUSOR AREAL:




Small inlet diffusor areal: A is closed, B isopen with X degree blade angle.
Large inlet diffusor areal: A and B are open with X degree blade angle.
Default delivery state: Small inlet diffusor areal, 45 degree blade angle.

THROW, TOP VIEW



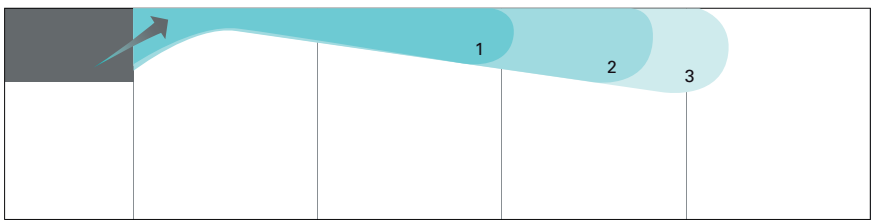

Airmaster's air handling unit spreads fresh air differently, according to angle of control blades in the inlet opening. This is shown on illustrations, where the blue color indicates the spread pattern of the inlet jet.

Throw length at 0,2 m/s. Spread pattern is shown for different blade angles at 147 m³/h at 35 dB(A).

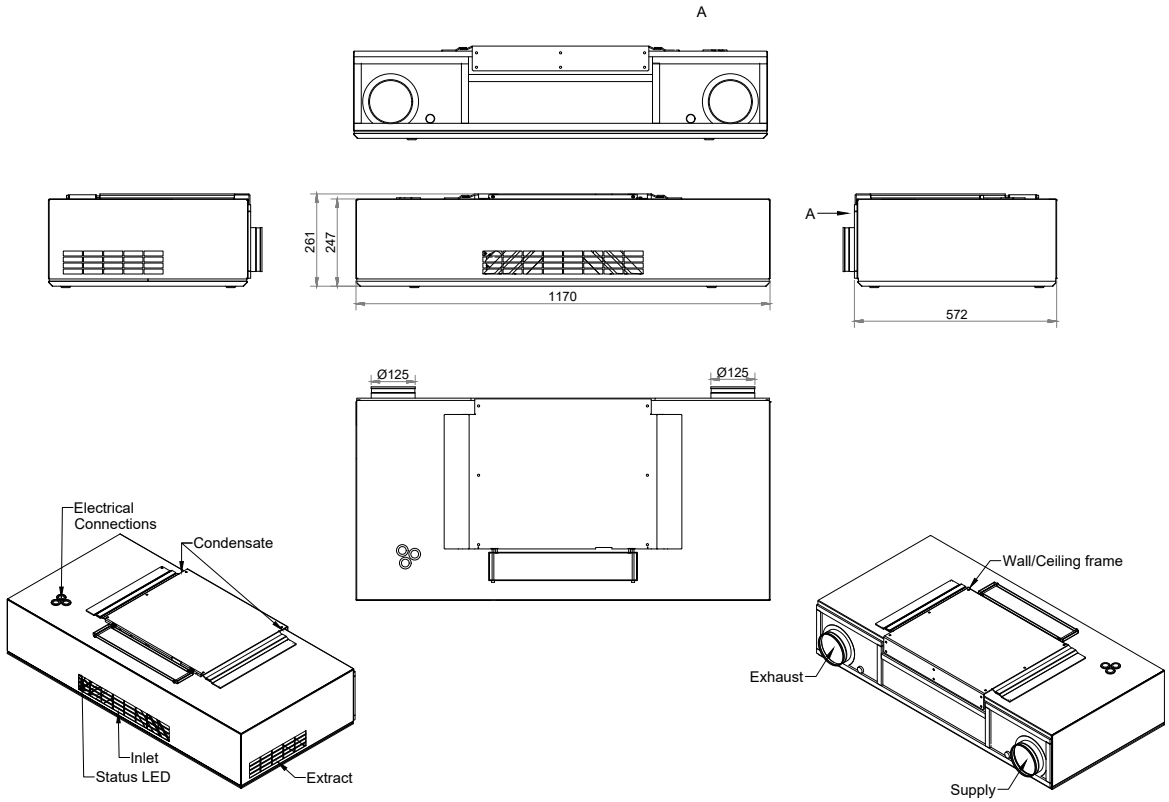
Blade angles:
1. 60°
2. 45° (Small inlet diffusor)
3. 30°

Regarding adjustment of blade angle, see operator's manual. Standard is 45° with small inlet diffusor.

THROW, SIDE VIEW

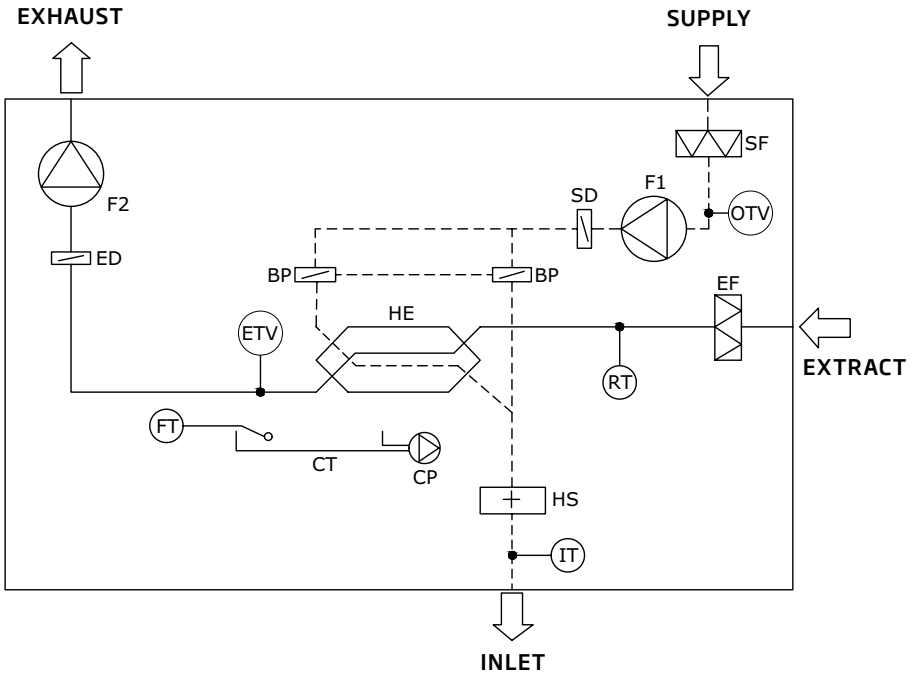


AM 150 H




Example of dimension drawing. To see the latest dimension drawings please go to our website: www.airmaster-as.com

SCHEMATIC SKETCH




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| BP | Bypass Damper (motor driven) | FT | Float | OTV | Outside temperature sensor Air Handling Unit |
| CP | Condensate Pump | F1 | Supply Air Fan | | |
| CT | Condensate Tray | F2 | Extract Air Fan | RT | Room Temperature Sensor |
| ED | Exhaust Air Damper (motor driven) | HE | Countercurrent Heat Exchanger | SD | Supply Air Damper (motor driven) |
| EF | Extract Air Filter | HS | Heating Surface | SF | Supply Air Filter |
| ETV | Exhaust Temperature Sensor Air Handling Unit | IT | Inlet temperature sensor | | |

When temperature and $CO_2$ levels in a room become too high, comfort, satisfaction and productivity fall. Sick leave levels also rise.

# AM 300

## TECHNICAL DATA

| | |
|---|---|
| **Maximum capacity at 30 dB(A).*** | 240 m³/h |
| **Maximum capacity at 35 dB(A).*** | 300 m³/h |
| **Throw length (0.2 m/s)*** | 4.8 m at 160 m³/h<br>5.7 m at 220 m³/h<br>6.5 m at 300 m³/h |
| **Nominal Current*** | 0.6 A |
| **Maximum power consumption*** | 100 W |
| **Electrical connection** | 1 ~ 230 V + N + PE/50 Hz |
| **Duct connections** | 200 mm dia. |
| **Condensate drain** | 16 mm dia. |
| **Weight** | 50 kg |
| **Heat exchanger** | Countercurrent heat exchanger (alu) |
| **Supply air filter** | M5, F7 or F9 |
| **Colour** | Panels: RAL 9010 (white) |
| **Power cable** | 1.5 mm² |
| **Leakage current** | ≤ 3 mA |
| **Dimensions (W/H/D)** | 1274 x 333 x 578 mm |

* With M5/M5 filter

## ELECTRIC HEATING SURFACE (OPTION)

| | |
|---|---|
| **Heat output** | 750/1500 W |
| **Thermal circuit breaker, aut. reset** | 75°C |
| **Thermal circuit breaker, man. reset** | 120°C |

## WATER HEATING SURFACE (OPTION)

| | |
|---|---|
| **Max. operating temperature** | 90°C |
| **Max. operating pressure** | 10 bar |
| **Heat output** | 343 W |
| **Connection dimension** | 3/8" (DN 10) |
| **Materials pipes/fins** | copper/aluminium |
| **Open/close time, motor valve** | < 60 s |

* Capacity at: supply/return temperature 60/40°C, water volume 15 L/h

| **STANDARD AND OPTIONS** | AM 300 V | AM 300 H |
|---|---|---|
| **Bypass** | x | x |
| **Electric heating surface/VPH** | • | • |
| **Water comfort heater** | • | • |
| **$CO_2$ sensor (wall-mounted)** | • | • |
| **$CO_2$ sensor (built-in)** | • | • |
| **PIR/motion sensor (wall-mounted)** | • | • |
| **PIR/motion sensor (built-in)** | • | • |
| **Hygrostat** | • | • |
| **Condensate pump** | • | • |
| **Cooling module** | | • |
| **Motor-controlled supply air damper** | x | x |
| **Countercurrent heat exchanger (aluminium)** | x | x |
| **Energy meter** | • | • |
| **Wall-mounting frame** | • | • |
| **Ceiling-mounting frame** | • | • |
| **Mounting bracket** | • | • |
| **Mini B USB (on front of unit)** | • | • |

x: standard • : option

The AM 300 is ideal for office buildings and institutions.

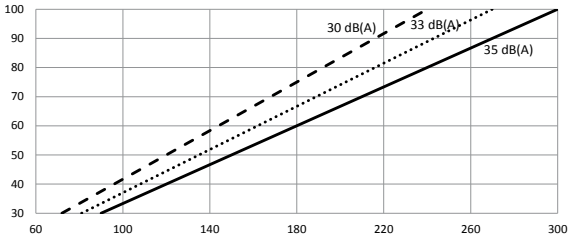
The electric heating surface can be used as a Virtual Preheater (VPH). VPH uses a bypass to divert some of the cold outdoor air past the heat exchanger and directly to the heating element. This protects the unit against frost, even at very low temperatures.

A cooling module can be connected (see page 74).

Ducts can be connected to extract, to inlet or to extract and inlet.

# AM 300

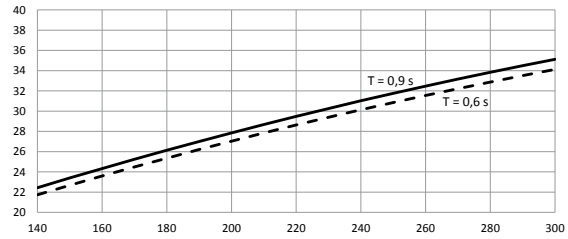
CAPACITY (%)




Airflow (m³/h)

The use of a F7 (F9) supply air filter reduces airflow by 10% (20%).

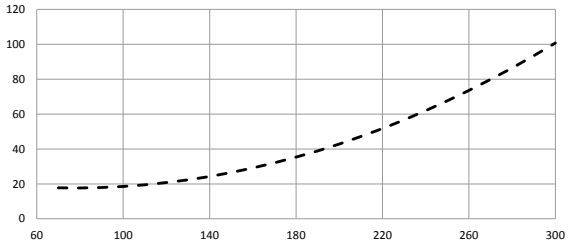
SOUND PRESSURE (dB(A))




Airflow (m³/h)

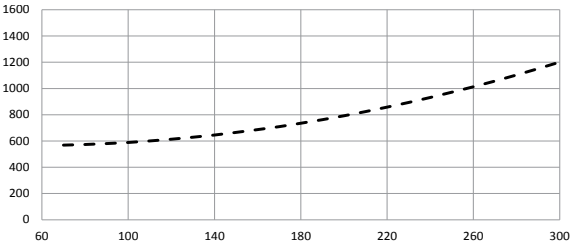
T= Reverberation time

POWER CONSUMPTION (W)



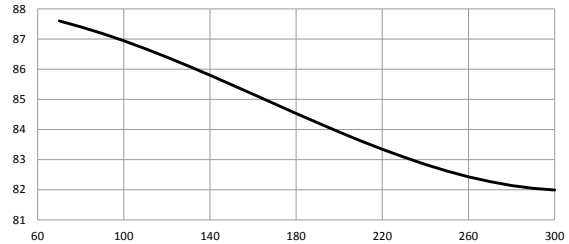

Airflow (m³/h)

SFP W/(m³/s)




Airflow (m³/h)

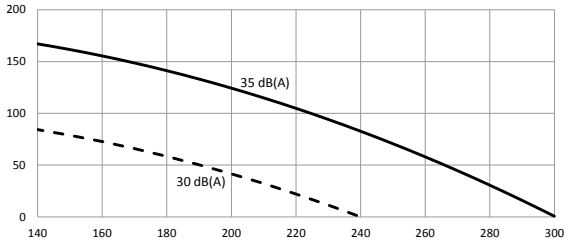
TEMPERATURE EFFICIENCY (%)



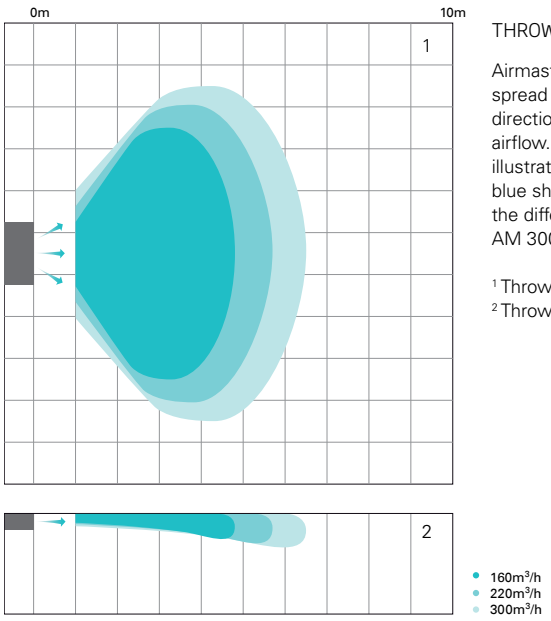

Airflow (m³/h)

Balanced operation: Room air: 25 °C, 28% RH; Outdoor air: 5 °C, 50% RH.

EXTERNAL PRESSURE LOSS (Pa)




Airflow (m³/h)

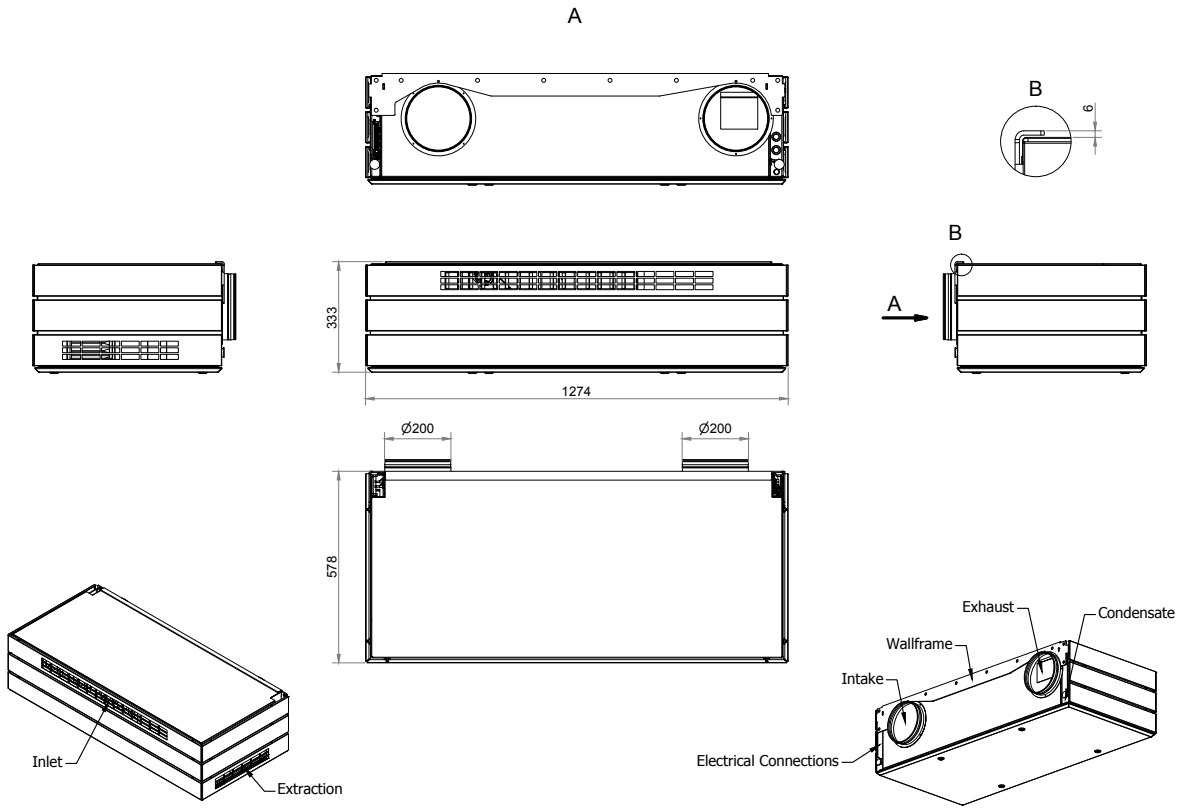



THROW LENGTH

Airmaster air handling units spread an air stream in different directions, depending on the given airflow. This can be seen in the illustration on the left, in which the blue shading indicates airflows for the different throw lengths for an AM 300 unit.

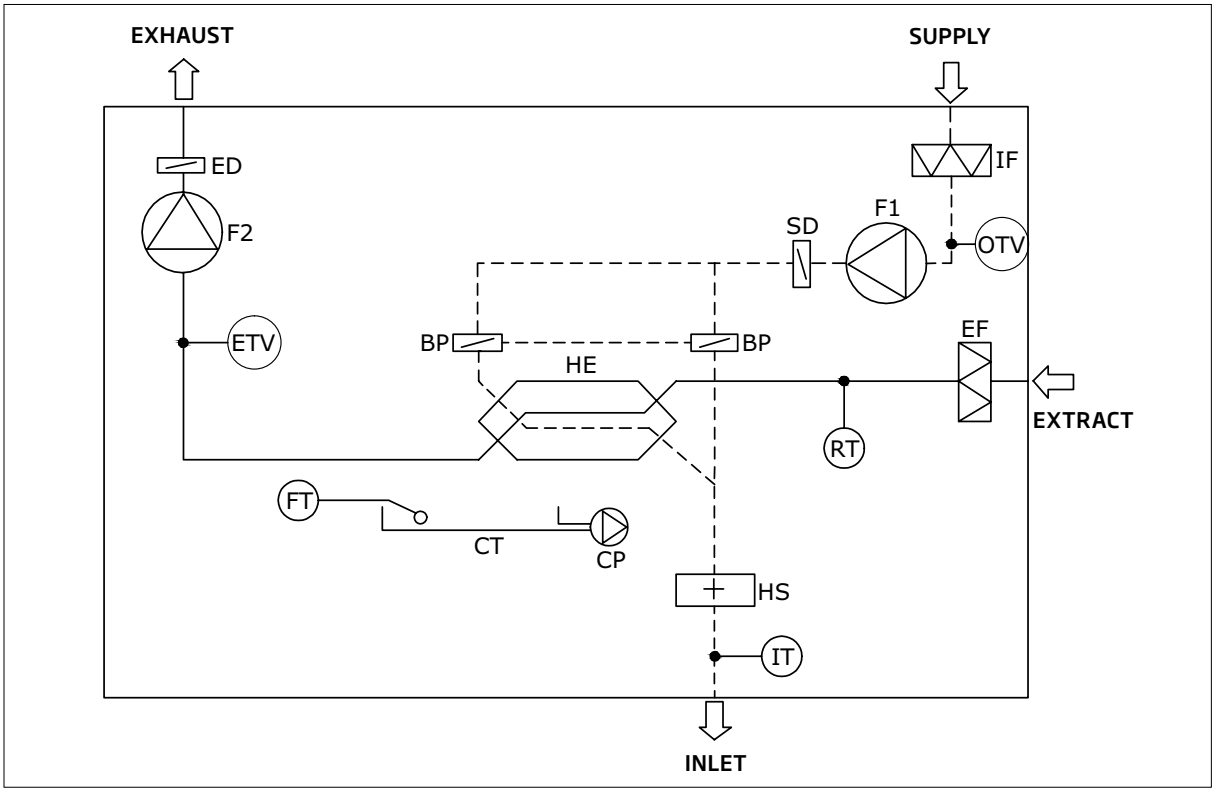
[1] Throw length seen from above
[2] Throw length seen from the side

AM 300 HT




Example of dimension drawing. To see the latest dimension drawings please go to our website: www.airmaster-as.com

SCHEMATIC SKETCH




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| BP | Bypass (motor-controlled) | FT | Float | IT | Inlet air temperature sensor |
| CP | Condensate pump (option) | F1 | Supply air fan | OVT | Outside temperature sensor, ventilation |
| CT | Condensate tray | F2 | Extract air fan | RT | Room temperature sensor |
| ED | Exhaust air damper (mechanical) | HE | Countercurrent heat exchanger | SD | Supply air damper (motor-controlled) |
| EF | Extract air filter | HS | Heating surface (option) | | |
| ETV | Exhaust temperature sensor, ventilation | IF | Supply air filter | | |

# CC 300 COOLING MODULE

Read more about our inverter-controlled cooling modules on page 74

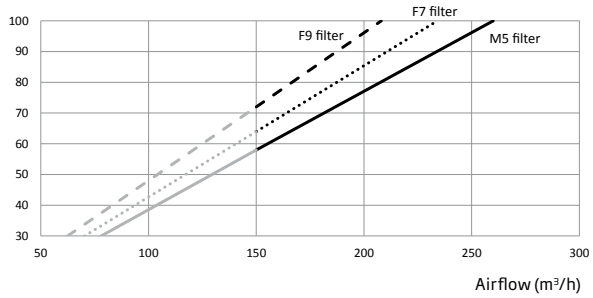
## TECHNICAL DATA

| | |
|---|---|
| **Nominal cooling capacity*** | 2450 W |
| **Min. cooling capacity*** | 421 W |
| **Nominal EER** | 4.01 |
| **Max. airflow** | 260 m³/h |
| **Min. airflow**** | 150 m³/h |
| **Electricity supply** | 1 ~ 230 V/AC/50 Hz |
| **Nominal electrical output** | 611 W |
| **Nominal current strength** | 3.8 A |
| **Electrical output factor** | 0.7 |
| **Max. leakage current** | 2.8 mA |
| **Coolant** | R134a |
| **Filling** | 300 g |
| **Duct connection** | 200 mm dia. |
| **Drain hose, internal/external diameter.** | 8/12 mm dia. |
| **Energy class (SEC class)** | A++ |
| **Weight** | 49 kg |
| **Dimensions (W/H/D)** | 1274 x 333 x 972 mm |

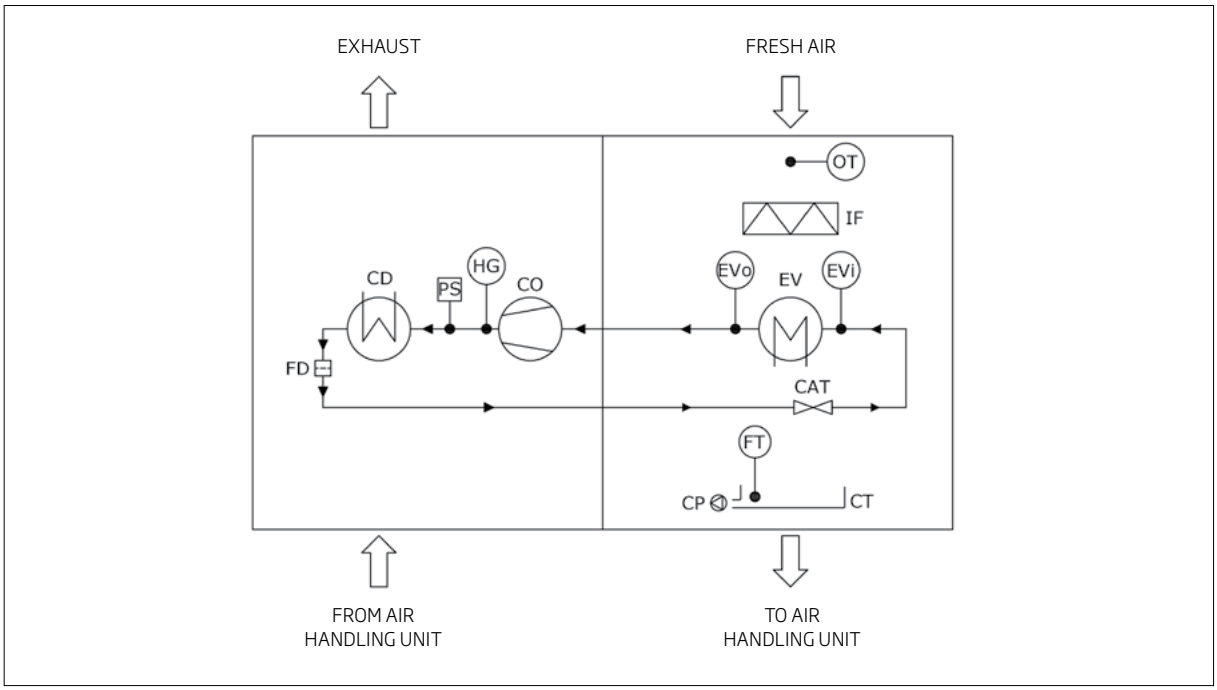
* Measured according to DS/EN308 and DS/EN14825 at max. airflow with M5 filter.

** Cooling module activation.

CAPACITY AM 300 + CC 300 (%)

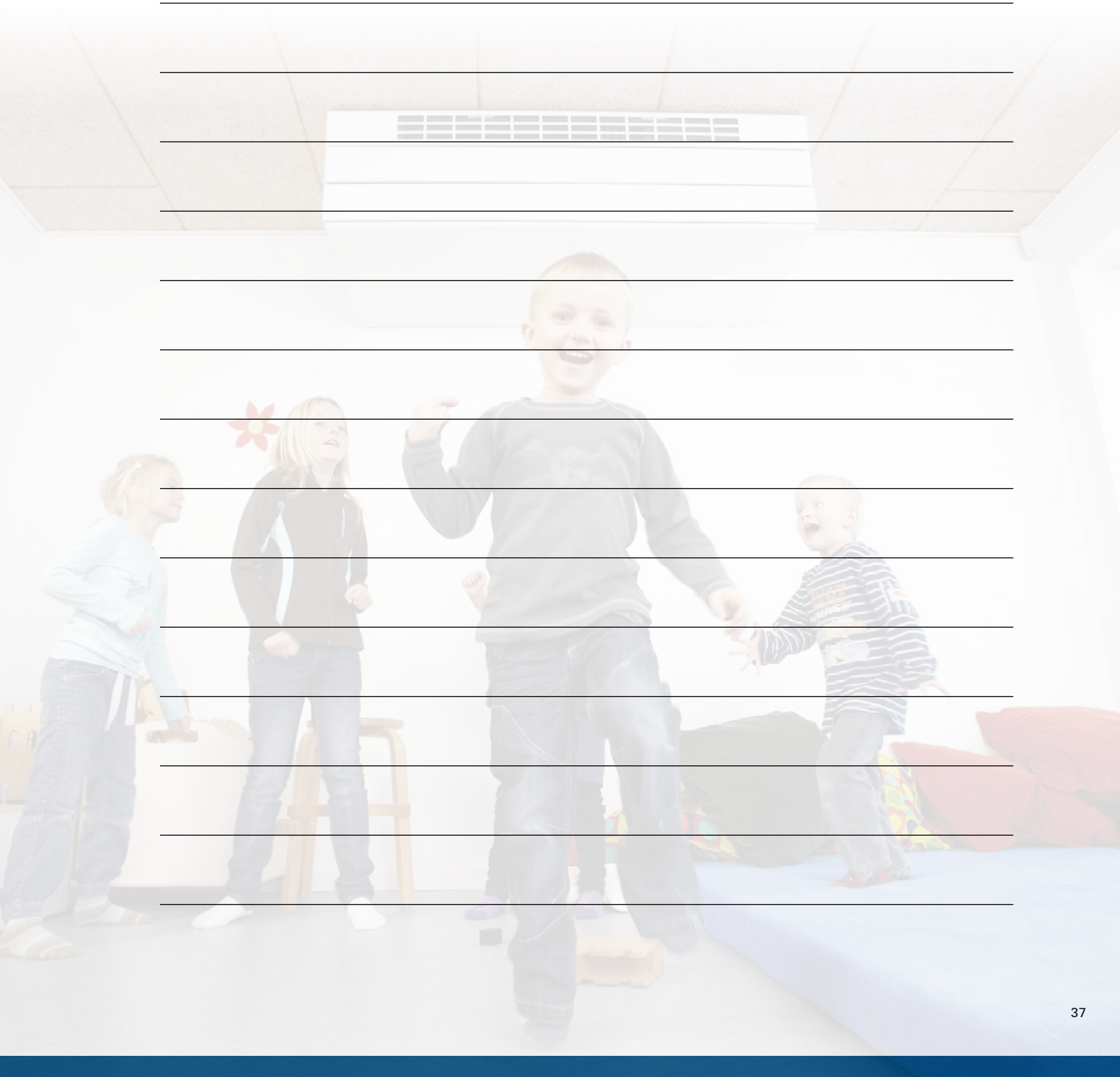



SCHEMATIC SKETCH CC




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| CD | Condenser | EV | Evaporator | HG | Hot gas temperature |
| CO | Compressor, inverter-controlled | EVi | Evaporator, Temperature inlet | OT | Outside temperature |
| CP | Condensate pump | EVo | Evaporator, Temperature output | PS | Pressure Switch (CC 500, CC 800, CC 1000) |
| CT | Condensate tray | FD | Dry filter | | |
| CAT | Capillary tube | FT | Float | | |



An unhealthy indoor climate affects concentration and disrupts learning. Ventilation should be on-demand controlled and quiet.

# AM 500

## TECHNICAL DATA

| | |
|---|---|
| **Maximum capacity at 30 dB(A).*** | 430 m³/h |
| **Maximum capacity at 35 dB(A).*** | 550 m³/h |
| **Throw length (0.2 m/s)*** | 5 m at 350 m³/h<br>5.9 m at 450 m³/h<br>7.5 m at 550 m³/h |
| **Nominal current*** | 1.1 A |
| **Maximum power consumption*** | 132 W |
| **Electrical connection** | 1 ~ 230 V + N + PE/50 Hz |
| **Duct connections** | 250 mm dia. |
| **Condensate drain** | 16 mm dia. |
| **Weight** | 108 kg |
| **Heat exchanger** | Countercurrent heat exchanger (alu) |
| **Supply air filter** | M5, F7 or F9 |
| **Colour** | Panels: RAL 9010 (white) |
| **Power cable** | 1.5 mm² |
| **Leakage current** | ≤ 6 mA |
| **Dimensions (W/H/D)** | 1600 x 439 x 779 mm |

* With M5/M5 filter

| **ELECTRIC HEATING SURFACE** (OPTION) | PREHEATER | COMFORT HEATER |
|---|---|---|
| **Heat output** | 1000 W | 630 W |
| **Thermal circuit breaker, aut. reset** | 75°C | 75°C |
| **Thermal circuit breaker, man. reset** | 120°C | 120°C |

## WATER HEATING SURFACE (OPTION)

| | |
|---|---|
| **Max. operating temperature** | 90°C |
| **Max. operating pressure** | 10 bar |
| **Heat output** | 686 W |
| **Connection dimension** | 3/8" (DN 10) |
| **Materials pipes/fins** | copper/aluminium |
| **Open/close time, motor valve** | < 60 s |

* Capacity at: supply/return temperature 60/40°C, water volume 25 L/h

| **STANDARD AND OPTIONS** | AM 500 V | AM 500 H |
|---|---|---|
| **Bypass** | x | x |
| **Electric preheating surface** | • | • |
| **Electric comfort heating surface** | • | • |
| **Water heating surface** | • | • |
| **$CO_2$ sensor (wall-mounted)** | • | • |
| **$CO_2$ sensor (built-in)** | • | • |
| **PIR/motion sensor (wall-mounted)** | • | • |
| **PIR/motion sensor (built-in)** | • | • |
| **Hygrostat** | • | • |
| **Condensate pump** | • | • |
| **Cooling module** | | • |
| **Motor-controlled exhaust air damper** | x | x |
| **Motor-controlled supply air damper** | x | x |
| **Capacitive return for motorised damper** | • | • |
| **Countercurrent heat exchanger (aluminium)** | x | x |
| **Energy meter** | • | • |
| **Wall-mounting frame** | • | • |
| **Ceiling-mounting frame** | • | • |
| **Mini B USB (on front of unit)** | • | • |

x: standard • : option

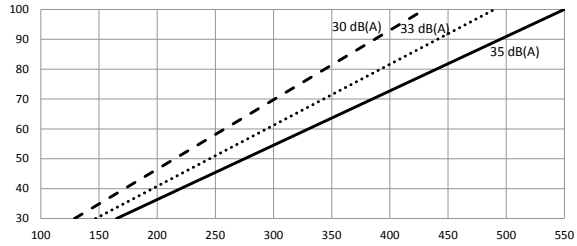
The AM 500 is designed for medium-sized rooms. A horizontal or vertical model can be installed, depending on the room and location of the unit. The unit is available with a separate control panel, but can also be connected to a central control system.

A cooling module can be connected (see page 74).

Ducts can be connected to extract, to inlet or to extract and inlet.

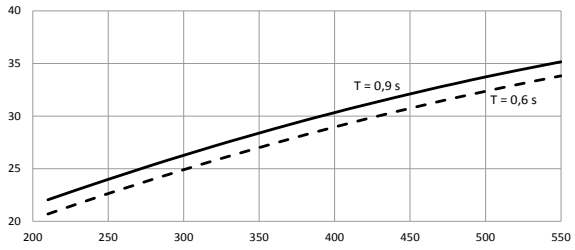
# AM 500

CAPACITY (%)

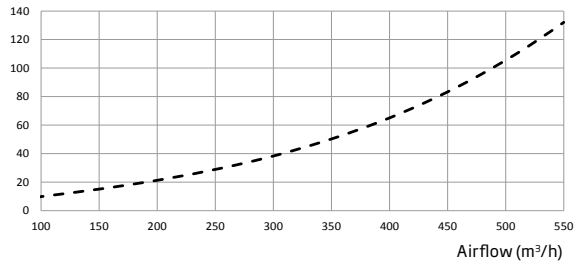



The use of a F7 (F9) supply air filter reduces airflow by 10% (20%).

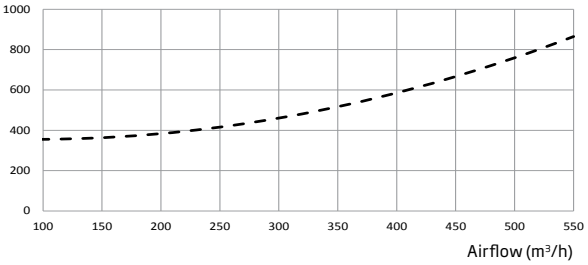
SOUND PRESSURE (dB(A))



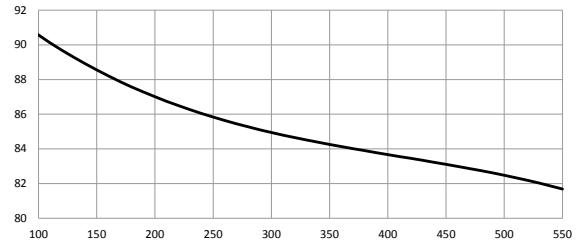

POWER CONSUMPTION (W)




SFP W/(m³/s)

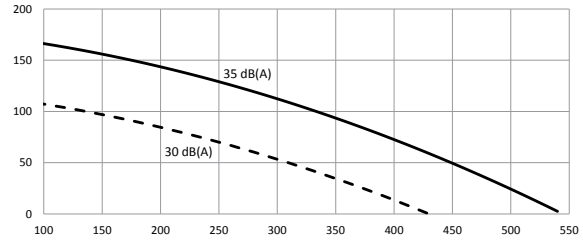


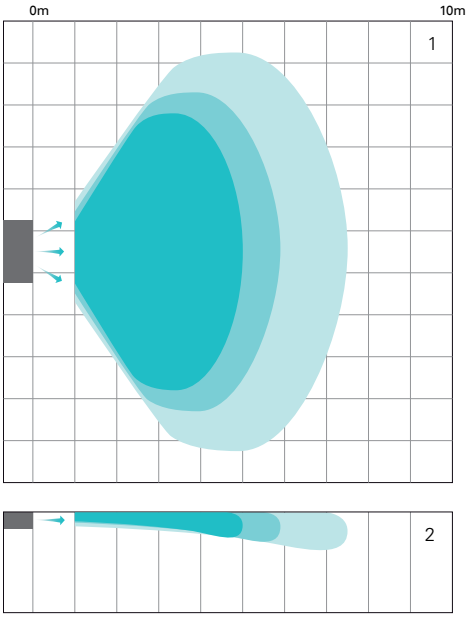

TEMPERATURE EFFICIENCY (%)




Balanced operation: Room air: 25 °C, 28% RH; Outdoor air: 5 °C, 50% RH.

EXTERNAL PRESSURE LOSS (Pa)



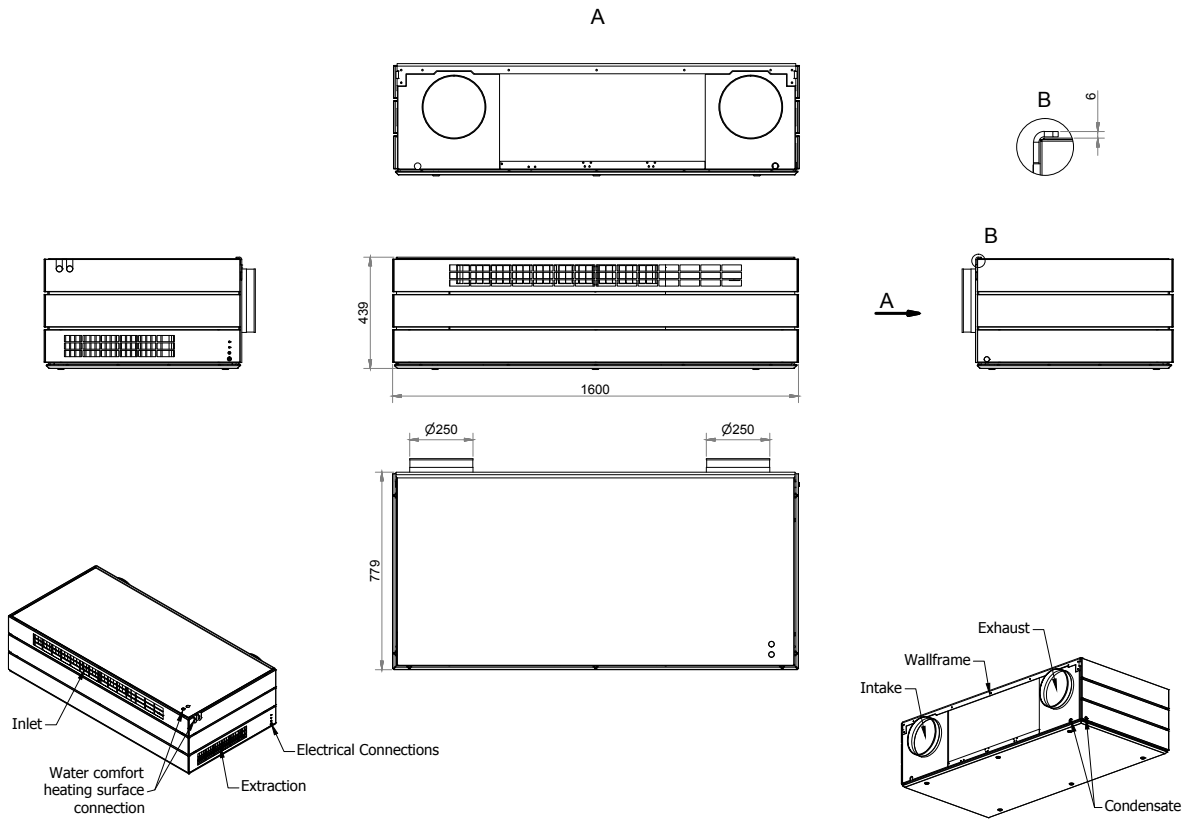




THROW LENGTH

Airmaster air handling units spread an air stream in different directions, depending on the given airflow. This can be seen in the illustration on the left, in which the blue shading indicates airflows for the different throw lengths.

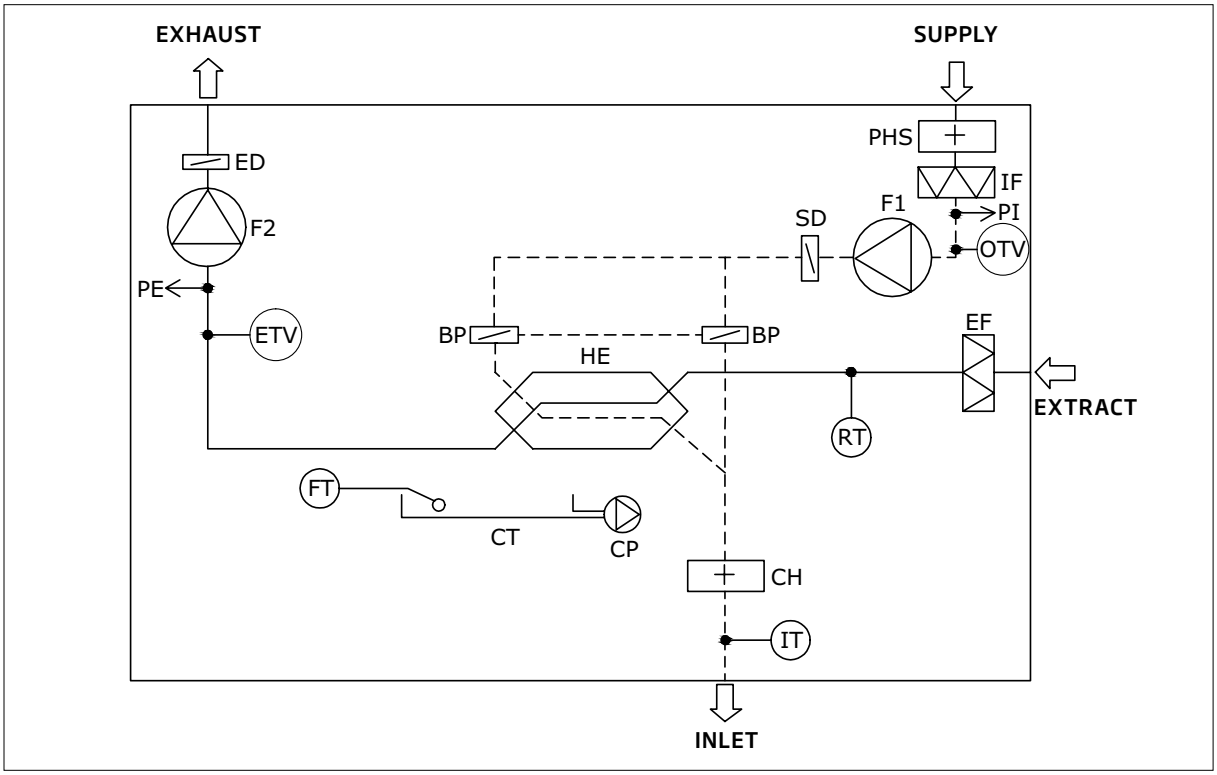
[1] Throw length seen from above
[2] Throw length seen from the side

AM 500 HT




Example of dimension drawing. To see the latest dimension drawings please go to our website: www.airmaster-as.com

SCHEMATIC SKETCH




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| BP | Bypass (motor-controlled) | FT | Float | PE | Flow meter, extracted air (option) |
| CH | Comfort heating surface (option) | F1 | Supply air fan | PHS | Preheating surface (option) |
| CP | Condensate pump (option) | F2 | Extract air fan | PI | Flow meter, supply air (option) |
| CT | Condensate tray | HE | Countercurrent heat exchanger | RT | Room temperature sensor |
| ED | Exhaust air damper (motor-controlled) | IF | Supply air filter | SD | Supply air damper (motor-controlled) |
| EF | Extract air filter | IT | Inlet air temperature sensor | | |
| ETV | Exhaust temperature sensor, ventilation | OVT | Outside temperature sensor, ventilation | | |

# CC 500 COOLING MODULE

Read more about our inverter-controlled cooling modules on page 74

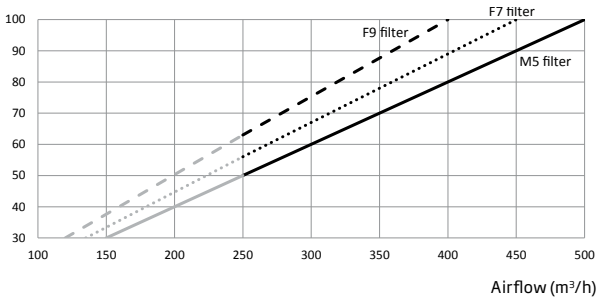
## TECHNICAL DATA

| | |
|---|---|
| **Nominal cooling capacity*** | 3280 W |
| **Min. cooling capacity*** | 820 W |
| **Nominal EER** | 3.16 |
| **Max. airflow** | 500 m³/h |
| **Min. airflow**** | 250 m³/h |
| **Electricity supply** | 1 ~ 230 V/AC/50 Hz |
| **Nominal electrical output** | 1040 W |
| **Nominal current strength** | 6.4 A |
| **Electrical output factor** | 0.71 |
| **Max. leakage current** | 1.5 mA |
| **Coolant** | R410a |
| **Filling** | 480 g |
| **Duct connection** | 250 mm dia. |
| **Drain hose, internal/external diameter.** | 8/12 mm dia. |
| **Energy class (SEC class)** | A+ |
| **Weight** | 82,8 kg |
| **Dimensions (W/H/D)** | 1600 x 439 x 1185 mm |

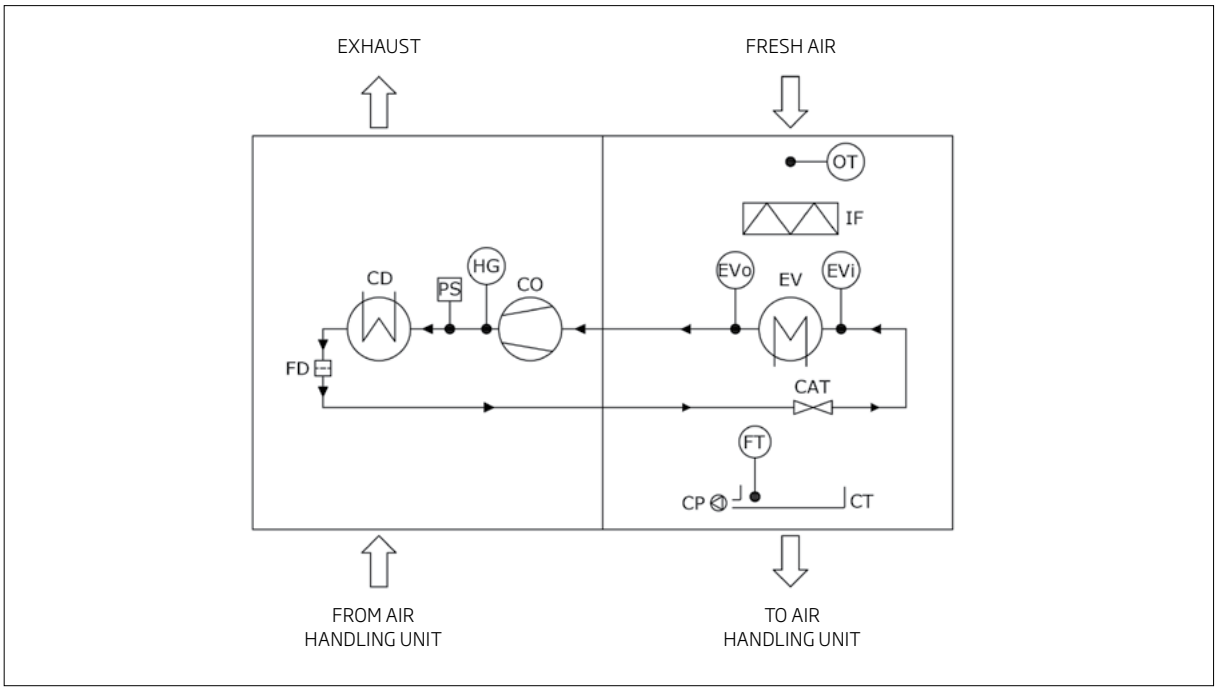
* Measured according to DS/EN308 and DS/EN14825 at max. airflow with M5 filter.

** Cooling module activation.

CAPACITY AM 500 + CC 500 (%)

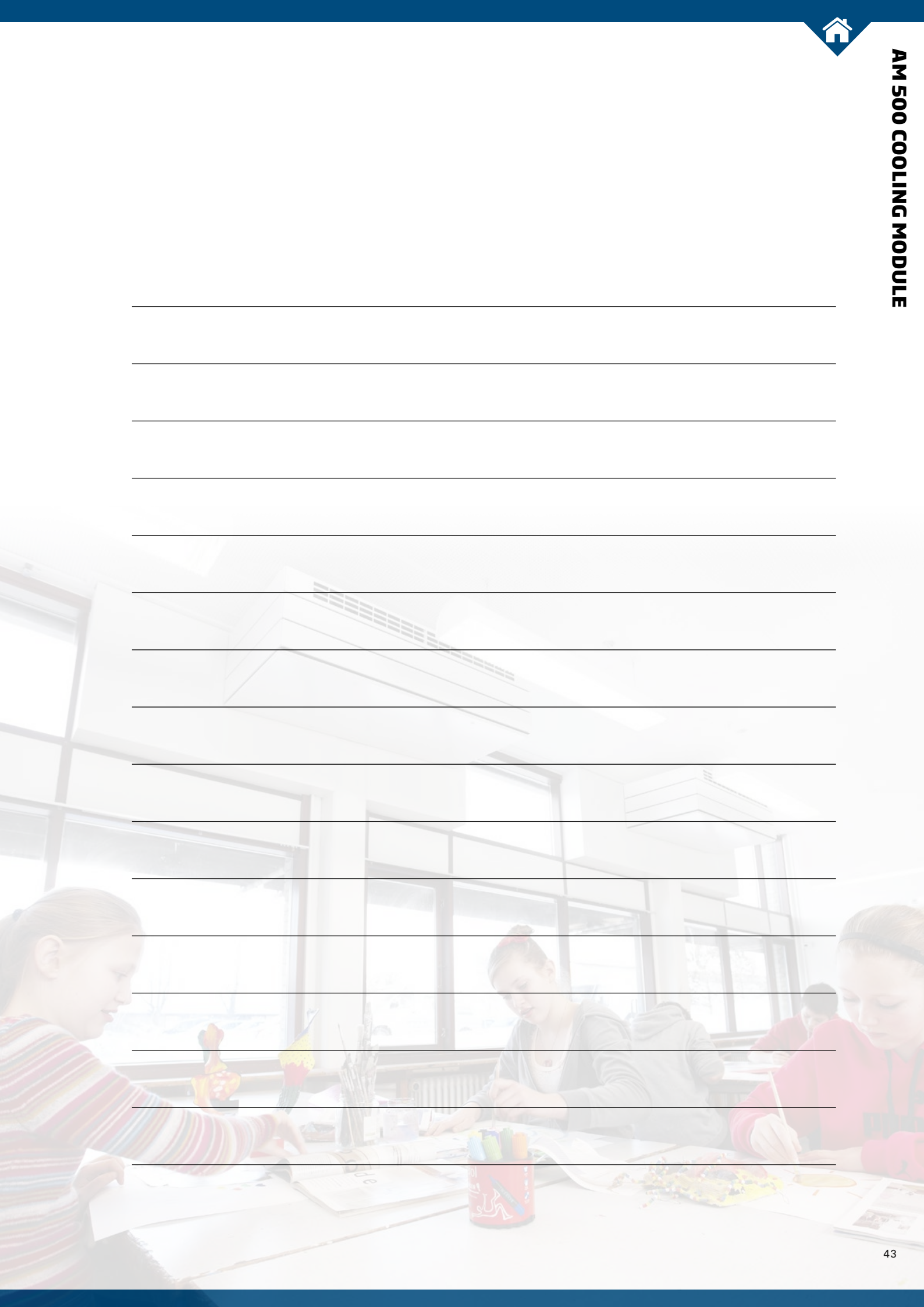



SCHEMATIC SKETCH CC




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| CD | Condenser | EV | Evaporator | HG | Hot gas temperature |
| CO | Compressor, inverter-controlled | EVi | Evaporator, Temperature inlet | OT | Outside temperature |
| CP | Condensate pump | EVo | Evaporator, Temperature output | PS | Pressure Switch (CC 500, CC 800, CC 1000) |
| CT | Condensate tray | FD | Dry filter | | |
| CAT | Capillary tube | FT | Float | | |



People are sensitive to changes in the air. Temperature, oxygen and $CO_2$ levels should ideally be in natural balance for the sake of our wellbeing.

# AM 800

## TECHNICAL DATA

| | |
|---|---|
| **Maximum capacity at 30 dB(A).*** | 650 m³/h |
| **Maximum capacity at 35 dB(A).*** | 725 m³/h |
| **Throw length (0.2 m/s)*** | 6.5 m at 500 m³/h<br>7.4 m at 600 m³/h<br>8.1 m at 700 m³/h |
| **Nominal current*** | 1.1 A |
| **Maximum power consumption*** | 156 W |
| **Electrical connection** | 1 ~ 230 V + N + PE/50 Hz |
| **Duct connections** | 315 mm dia. |
| **Condensate drain** | 16 mm dia. |
| **Weight** | 155 kg |
| **Heat exchanger** | 2 x countercurrent (aluminium) |
| **Supply air filter** | M5, F7 or F9 |
| **Colour** | Panels: RAL 9010 (white) |
| **Power cable** | 1.5 mm² |
| **Recommended fuse** | 13 A |
| **Leakage current** | ≤ 6 mA |
| **Dimensions (W/H/D)** | 1910 x 474 x 916 mm |

* With M5/M5 filter

| **ELECTRIC HEATING SURFACE** (OPTION) | PREHEATER | COMFORT HEATER |
|---|---|---|
| **Heat output** | 1500 W | 1000 W |
| **Thermal circuit breaker, aut. reset** | 75°C | 75°C |
| **Thermal circuit breaker, man. reset** | 120°C | 120°C |

| **WATER HEATING SURFACE** (OPTION) | |
|---|---|
| **Max. operating temperature** | 90°C |
| **Max. operating pressure** | 10 bar |
| **Heat output** | 943 W |
| **Connection dimension** | 1/2" (DN 15) |
| **Materials pipes/fins** | copper/aluminium |
| **Open/close time, motor valve** | < 60 s |

* Capacity at: supply/return temperature 60/40°C, water volume 32 L/h

| **STANDARD AND OPTIONS** | AM 800 V | AM 800 H |
|---|---|---|
| **Bypass** | x | x |
| **Electric preheating surface** | • | • |
| **Electric comfort heating surface** | • | • |
| **Water heating surface** | • | • |
| **$CO_2$ sensor (wall-mounted)** | • | • |
| **$CO_2$ sensor (built-in)** | • | • |
| **PIR/motion sensor (wall-mounted)** | • | • |
| **PIR/motion sensor (built-in)** | • | • |
| **Hygrostat** | • | • |
| **Condensate pump** | • | • |
| **Insulated condensate tray** | • | • |
| **Cooling module** | | • |
| **Motor-controlled exhaust air damper** | x | x |
| **Motor-controlled supply air damper** | x | x |
| **Capacitive return for motor-controlled damper** | • | • |
| **Countercurrent heat exchanger (aluminium)** | x | x |
| **Energy meter** | • | • |
| **Wall-mounting frame** | • | • |
| **Ceiling-mounting frame** | • | • |
| **Mini B USB (on front of unit)** | • | • |

x: standard • : option

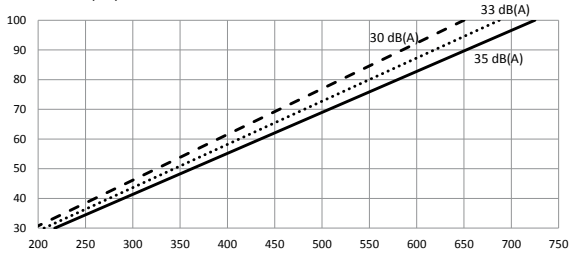
This air handling unit is designed for large rooms with moderate requirement and is thus perfect for classrooms. A horizontal or vertical model can be installed, depending on the room and location of the unit. The unit is available with a separate control panel, but can also be connected to a central control system.

A cooling module can be connected (see page 74).

Ducts can be connected to extract, to inlet or to extract and inlet.

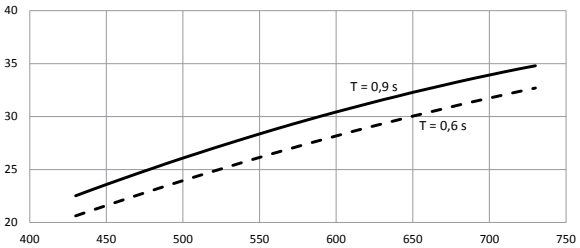
# AM 800

CAPACITY (%)

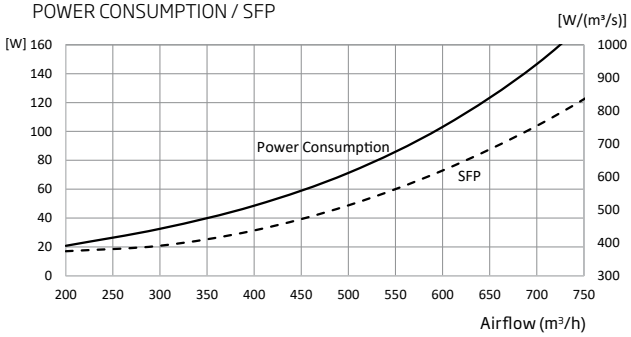



The use of a F7 (F9) supply air filter reduces airflow by 10% (20%).

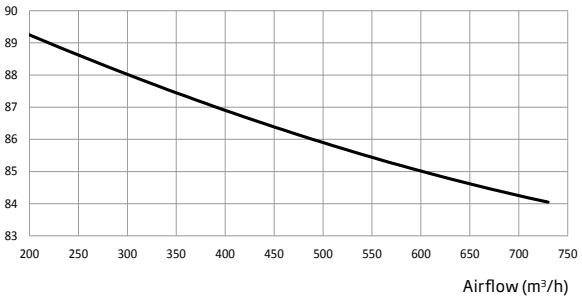
SOUND PRESSURE (dB(A))




POWER CONSUMPTION / SFP

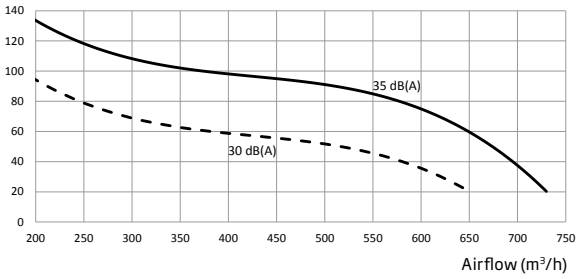



TEMPERATURE EFFICIENCY (%)

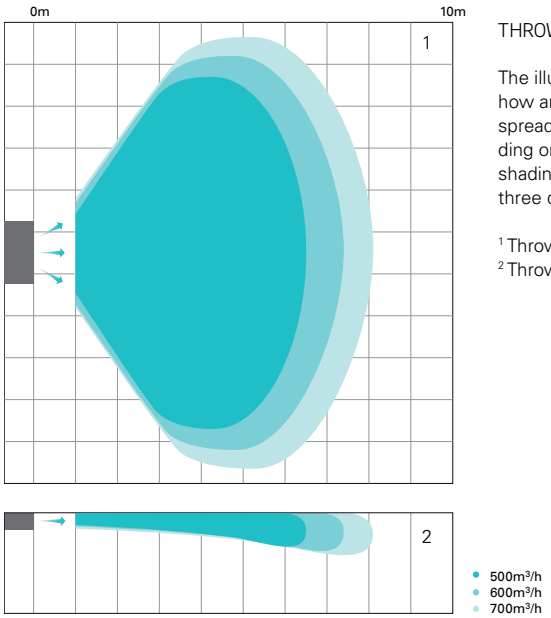



Balanced operation: Room air: 25 °C, 28% RH; Outdoor air: 5 °C, 50% RH.

EXTERNAL PRESSURE LOSS (Pa)




Sound pressure level data can be downloaded from our website:

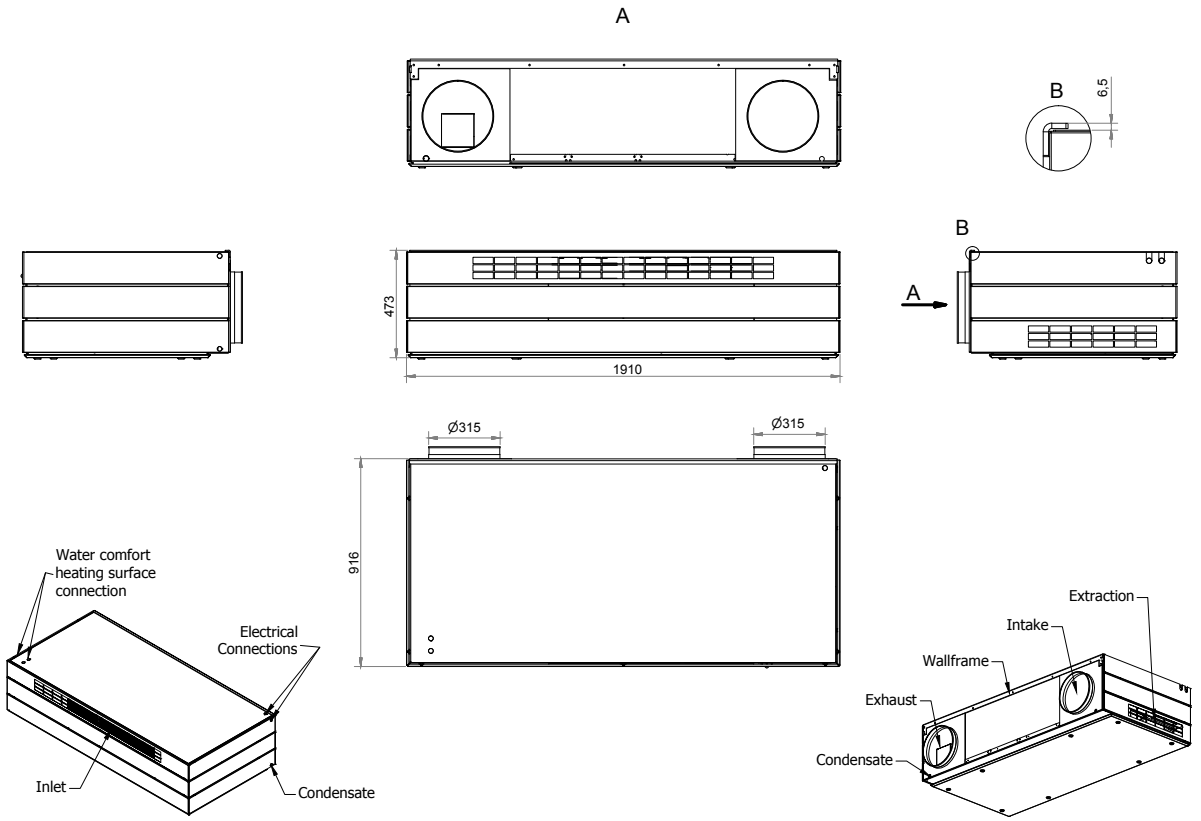



THROW LENGTH

The illustration on the left shows how an AM 800 air handling unit spreads inlet air differently depending on the given airflow. The blue shading indicates throw length for three different airflows.

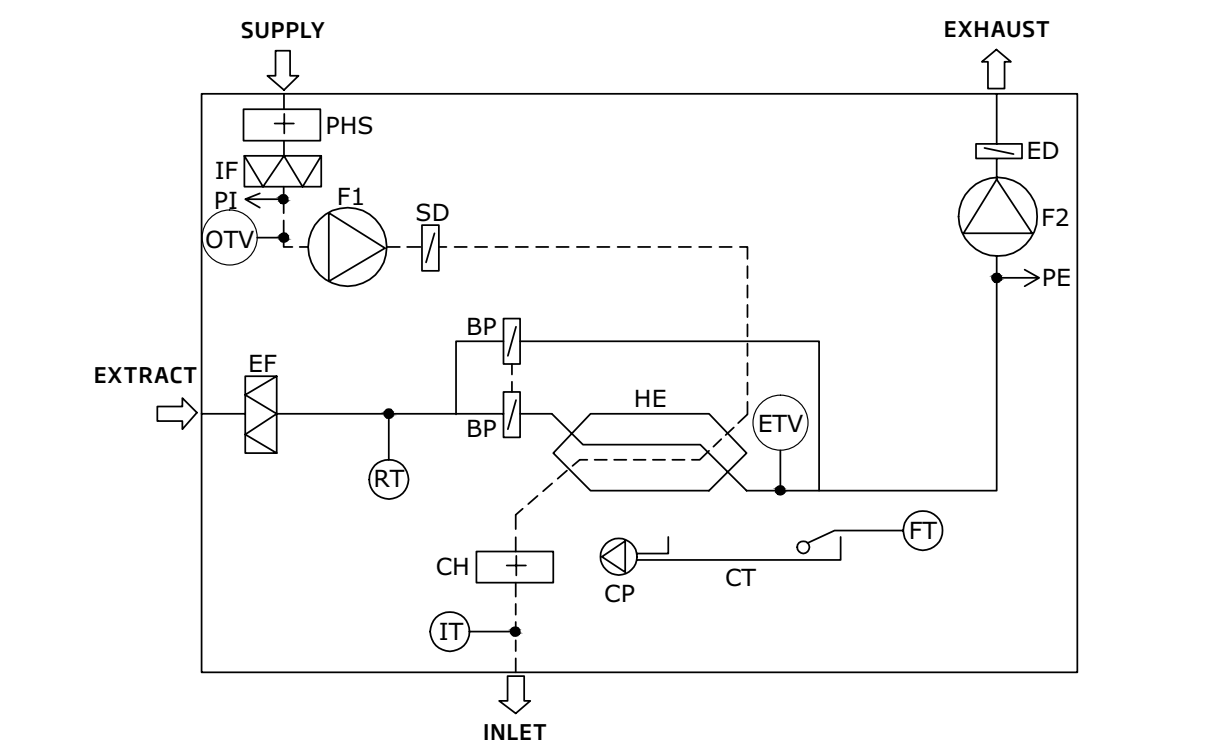
[1] Throw length seen from above
[2] Throw length seen from the side

AM 800 HT




Example of dimension drawing. To see the latest dimension drawings please go to our website: www.airmaster-as.com

SCHEMATIC SKETCH




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| BP | Bypass (motor-controlled) | FT | Float | PE | Flow meter, extracted air (option) |
| CH | Comfort heating surface (option) | F1 | Supply air fan | PHS | Preheater surface (option) |
| CP | Condensate pump (option) | F2 | Extract air fan | PI | Flow meter, supply air (option) |
| CT | Condensate tray | HE | Countercurrent heat exchanger | RT | Room temperature sensor |
| ED | Exhaust air damper (motor-controlled) | IF | Supply air filter | SD | Supply air damper (motor-controlled) |
| EF | Extract air filter | IT | Inlet air temperature sensor | | |
| ETV | Exhaust temperature sensor, ventilation | OVT | Outside temperature sensor, ventilation | | |

# CC 800 COOLING MODULE

Read more about our inverter-controlled cooling modules on page 74

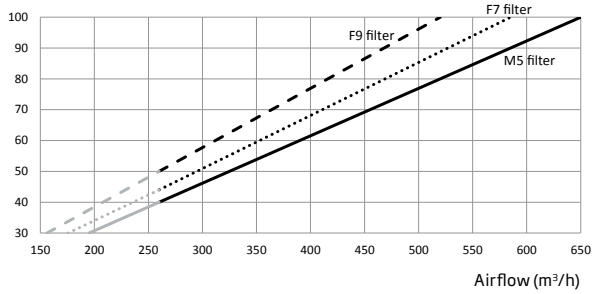
## TECHNICAL DATA

| | |
|---|---|
| **Nominal cooling capacity*** | 5240 W |
| **Min. cooling capacity*** | 990 W |
| **Nominal EER** | 4.72 |
| **Max. airflow** | 650 m³/h |
| **Min. airflow**** | 260 m³/h |
| **Electricity supply** | 1 ~ 230 V/AC/50 Hz |
| **Nominal electrical output** | 1110 W |
| **Nominal current strength** | 6.8 A |
| **Electrical output factor** | 0.71 |
| **Max. leakage current** | 1.3 mA |
| **Coolant** | R410a |
| **Filling** | 740 g |
| **Duct connection** | 315 mm dia. |
| **Drain hose, internal/external diameter.** | 8/12 mm dia. |
| **Energy class (SEC class)** | A+++ |
| **Weight** | 100,7 kg |
| **Dimensions (W/H/D)** | 1910 x 474 x 1321 mm |

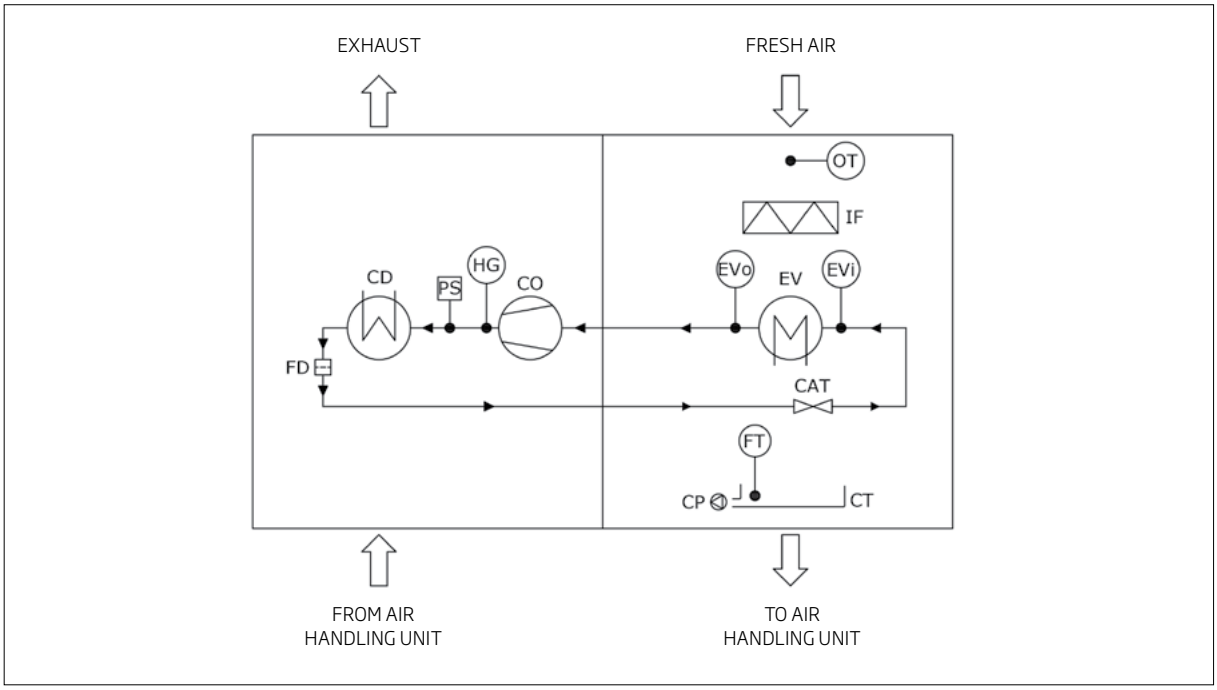
* Measured according to DS/EN308 and DS/EN14825 at max. airflow with M5 filter.

** Cooling module activation.

CAPACITY AM 800 + CC 800 (%)

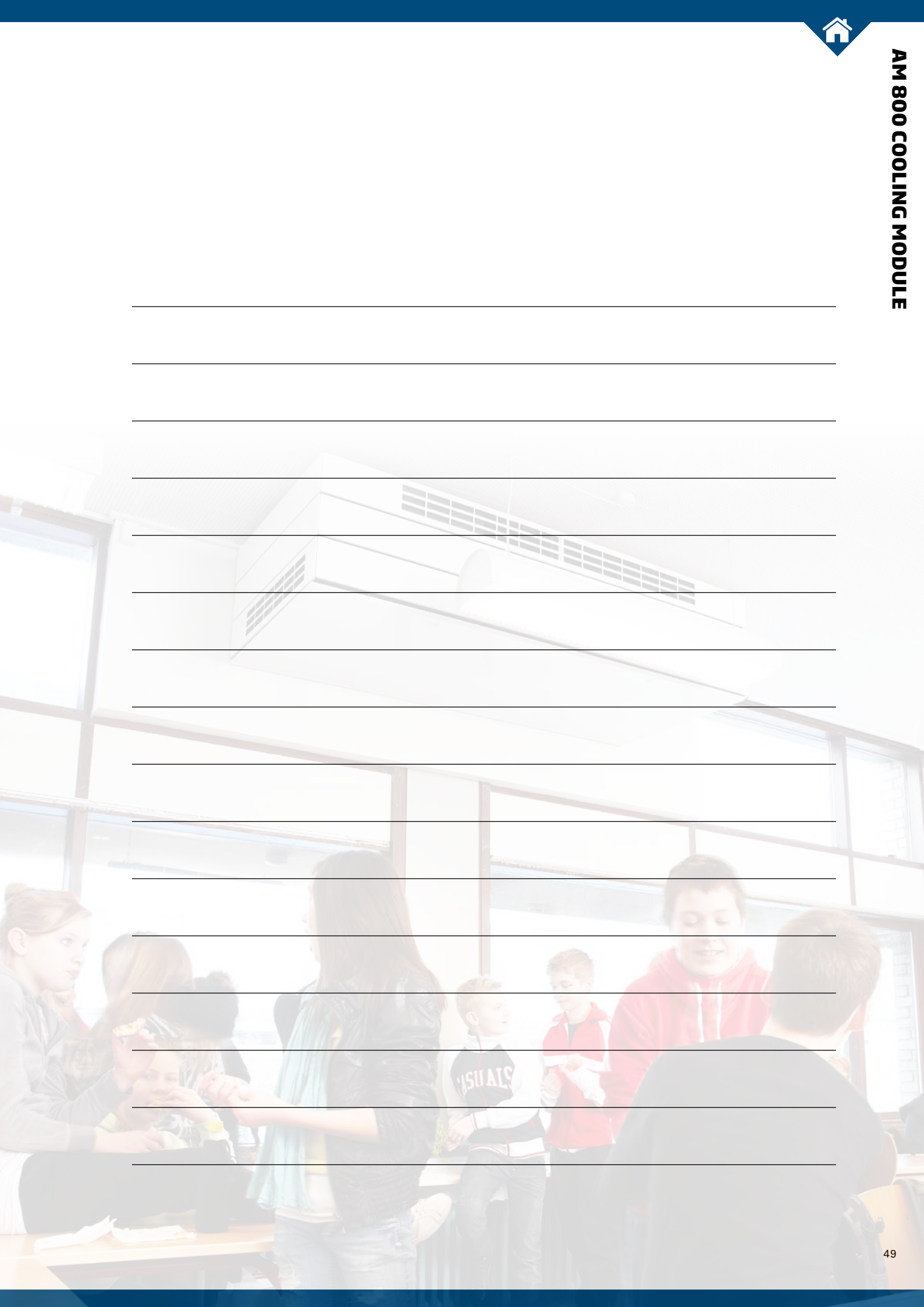



SCHEMATIC SKETCH CC




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| CD | Condenser | EV | Evaporator | HG | Hot gas temperature |
| CO | Compressor, inverter-controlled | EVi | Evaporator, Temperature inlet | OT | Outside temperature |
| CP | Condensate pump | EVo | Evaporator, Temperature output | PS | Pressure Switch (CC 500, CC 800, CC 1000) |
| CT | Condensate tray | FD | Dry filter | | |
| CAT | Capillary tube | FT | Float | | |



Decentralised ventilation gives freedom of choice. Airmaster's air handling units make adjustment easy and flexible to adapt ventilation to the room.

# AM 900

## TECHNICAL DATA

| | |
|---|---|
| **Maximum capacity, mixed*** | 690 m³/h at 30 dB(A) |
| | 830 m³/h at 35 dB(A) |
| **Maximum capacity, displacement*** | 650 m³/h at 30 dB(A) |
| | 800 m³/h at 35 dB(A) |
| **Mixed, throw length (0.2 m/s)*** | 7,2 m at 830 m³/h |
| | 6 m at 690 m³/h |
| **Displacement ventilation, adjacent zone (0.2 m/s)*** | Adjacent zone to outlet, approx. 1.5 m at 800 m³/h |
| | Adjacent zone to outlet, approx. 1.2 m at 650 m³/h |
| **Nominal current*** | 1.8 A |
| **Maximum power consumption*** | 240 W |
| **Electrical connection** | 1 ~ 230 V, 50 Hz, N + PE |
| **Duct connections** | 315 mm dia. |
| **Condensate drain** | 16 mm dia. |
| **Weight** | 180 kg |
| **Heat exchanger** | 3 x countercurrent (plastic) |
| **Supply air filter** | M5, F6 or F9 |
| **Colour** | RAL 9010 (white) |
| **Power cable** | 1.5 mm² |
| **Leakage current** | ≤ 6 mA |
| **Dimensions (W/H/D)** | Mixed 800 x 2323 x 588 mm |
| **Dimensions (W/H/D)** | Forced 800 x 2323 x 687 mm |
| **Minimum ceiling height** | 2490 mm |

* With M5/M5 filter

| **ELECTRIC HEATING SURFACE** (OPTION) | PREHEATER | COMFORT HEATER |
|---|---|---|
| **Heat output** | 1500 W | 1050 W |
| **Thermal circuit breaker, aut. reset** | 75°C | 75°C |
| **Thermal circuit breaker, man. reset** | 120°C | 120°C |

| **WATER HEATING SURFACE** (OPTION) | |
|---|---|
| **Max. operating temperature** | 90°C |
| **Max. operating pressure** | 10 bar |
| **Heat output** | 991 W* |
| **Connection dimension** | 1/2" (DN 15) |
| **Materials pipes/fins** | copper/aluminium |
| **Open/close time, motor valve** | < 60 s |

* Capacity at: supply/return temperature 60/40°C, water volume 33 L/h

The AM 900 air handling unit is available in two model types: mixed and displacement ventilation. The unit is designed to either act as a mixed or displacement air handling unit, depending on room configuration and use. The unit can be placed on the floor or discreetly between cupboards, as an integrated part of the room.

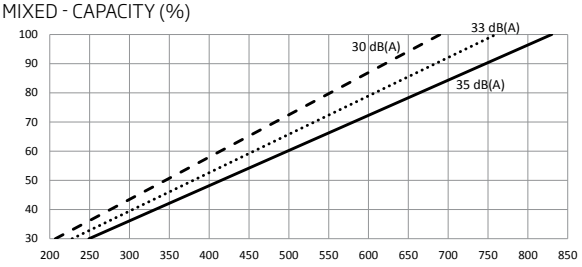
The AM 900 is ideal for larger rooms, such as classrooms, meeting rooms and open plan offices.

# AM 900

| **STANDARD AND OPTIONS** | AM 900 V MIXED | AM 900 H MIXED | AM 900 VD DISPLACEMENT | AM 900 HD DISPLACEMENT |
|---|---|---|---|---|
| **Bypass** | x | x | x | x |
| **Electric preheater** | • | • | • | • |
| **Electric comfort heater** | • | • | • | • |
| **Water comfort heater** | • | • | • | • |
| **$CO_2$ sensor (built-in)** | • | • | • | • |
| **PIR/motion sensor (wall-mounted)** | • | • | • | • |
| **Condensate pump** | • | • | • | • |
| **Motor-controlled exhaust air damper** | x | x | x | x |
| **Motor-controlled supply air damper** | x | x | x | x |
| **Capacitive return for motorised damper** | • | • | • | • |
| **Countercurrent heat exchanger (PET)** | x | x | x | x |
| **Energy meter** | • | • | • | • |

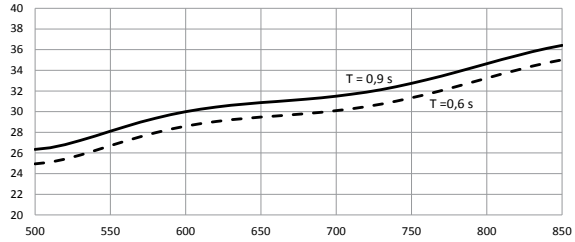
x: standard •: option –: N/A

MIXED - CAPACITY (%)

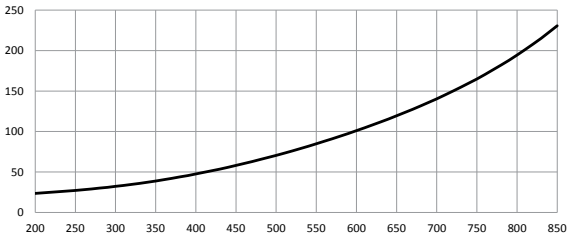



The use of a F7 (F9) supply air filter reduces airflow by 3% (6%).

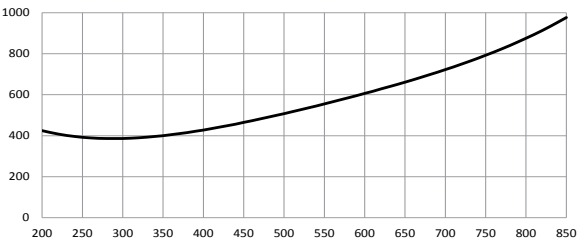
MIXED - SOUND PRESSURE (dB(A))



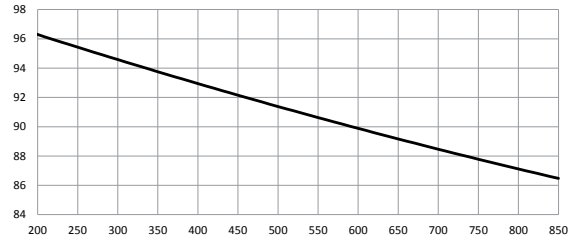

MIXED - POWER CONSUMPTION (W)




MIXED - SFP W/(m³/s)

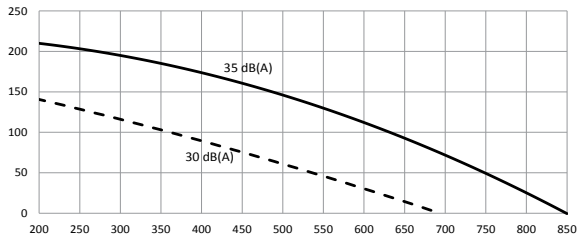



MIXED - TEMPERATURE EFFICIENCY (%)

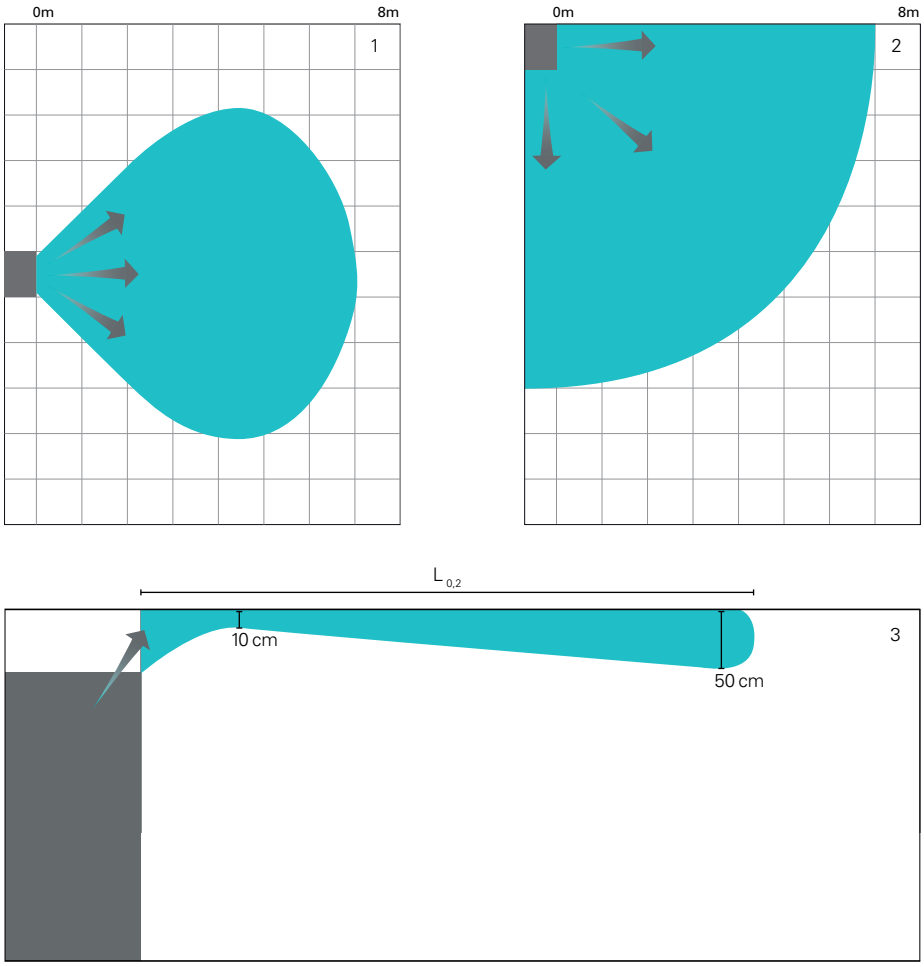



Balanced operation: Room air: 25 °C, 28% RH; Outdoor air: 5 °C, 50% RH.

MIXED - EXTERNAL PRESSURE LOSS (Pa)



## THROW LENGTH - MIXED




Throw length illustrated for volume flow rate 830 m³/h.
At other volume flow rates the throw can be extrapolated $L_2 = L_1 \times q_2 / q_1$.
The AM 900 unit spreads an air stream below the ceiling depending on the given flow rate.

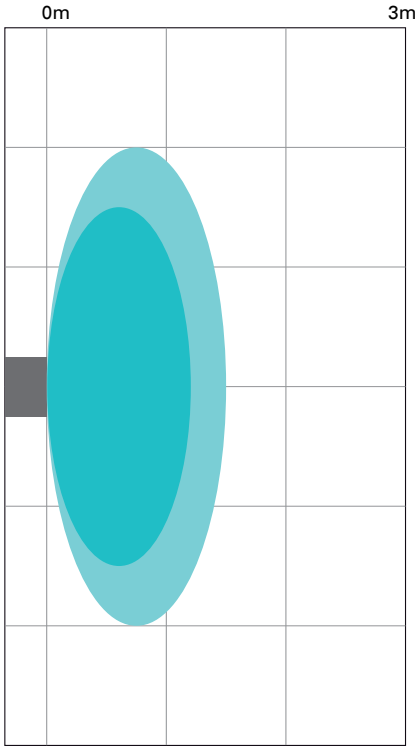
Blue shading in the illustration indicates spread pattern and throw.

1. Spread pattern seen from above, symmetric inlet (default).
2. Spread pattern seen from above, asymmetric inlet.
3. Spread pattern seen from the side.

Throw length and spread of the supply air in the room can be adjusted to the geometry of the room by adjusting the inlet opening with a pair of plyers (see operator's manual).

***Notes regarding ceiling height***
*The AM 900 will fit into a room with minimum ceiling height of 2,4 m. The illustrated throw will manifest itself in these circumstances. The AM 900 will also work with larger ceiling heights, up to 4,50 m has been tested. Height above 2.50 m should be subtracted from the length of the throw.*

## THROW LENGTH - DISPLACEMENT




ADJACENT ZONE - DISPLACEMENT

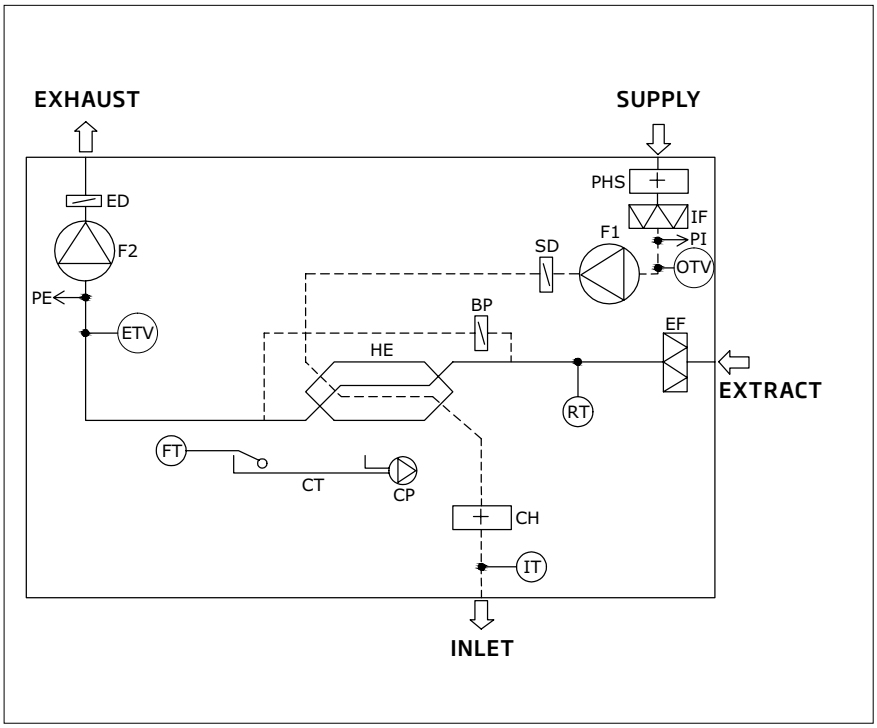
The result applies to an under-temperature of the inlet air of 3-5°C.

[2] Adjacent zone seen from above

- 650m³/h
- 800m³/h

# AM 900

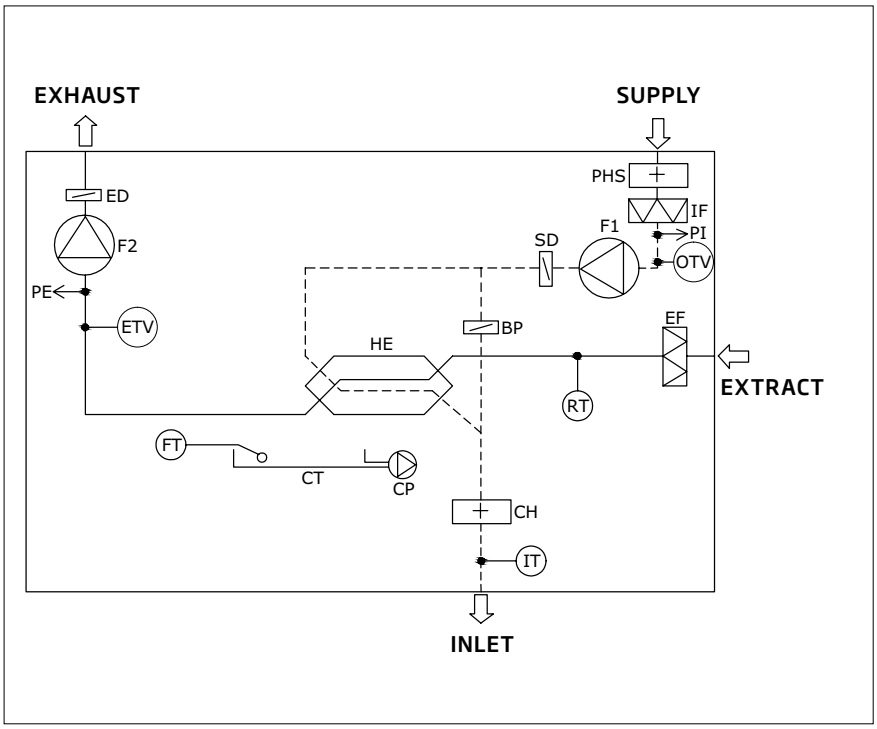
SCHEMATIC SKETCH - MIXED




NAME OF COMPONENT

| | |
|---|---|
| BP | Bypass (motor-controlled) |
| CH | Comfort heater (option) |
| CP | Condensate pump (option) |
| CT | Condensate tray |
| ED | Exhaust air damper (motor-controlled) |
| EF | Extract air filter |
| ETV | Exhaust temperature sensor, ventilation |
| FT | Float |
| F1 | Supply air fan |
| F2 | Extract air fan |
| HE | Countercurrent heat exchanger |
| IF | Supply air filter |
| IT | Inlet air temperature sensor |
| OVT | Outside temperature sensor, ventilation |
| PE | Flow meter, return air (option) |
| PHS | Preheating surface (option) |
| PI | Flow meter, supply air |
| RT | Room temperature sensor |
| SD | Supply air damper (motor-controlled) |

SCHEMATIC SKETCH - DISPLACEMENT

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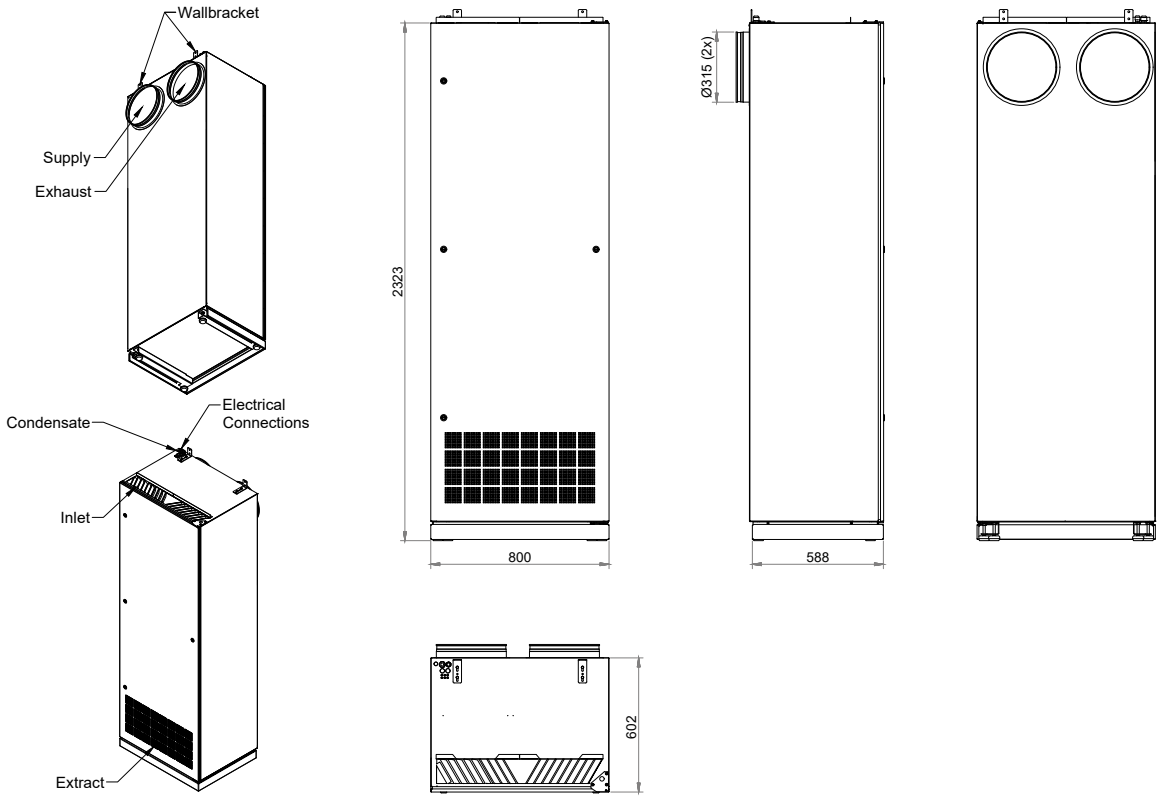
| ED | Exhaust air damper (motor-controlled) |
| EF | Extract air filter |
| ETV | Exhaust temperature sensor, ventilation |
| FT | Float |
| F1 | Supply air fan |
| F2 | Extract air fan |
| HE | Counterflow heat exchanger |
| IF | Supply air filter |
| IT | Inlet air temperature sensor |
| OVT | Outside temperature sensor, ventilation |
| PE | Flow meter, return air |
| PHS | Preheating surface (option) |
| PI | Flow meter, supply air |
| RT | Room temperature sensor |
| SD | Supply air damper (motor-controlled) |

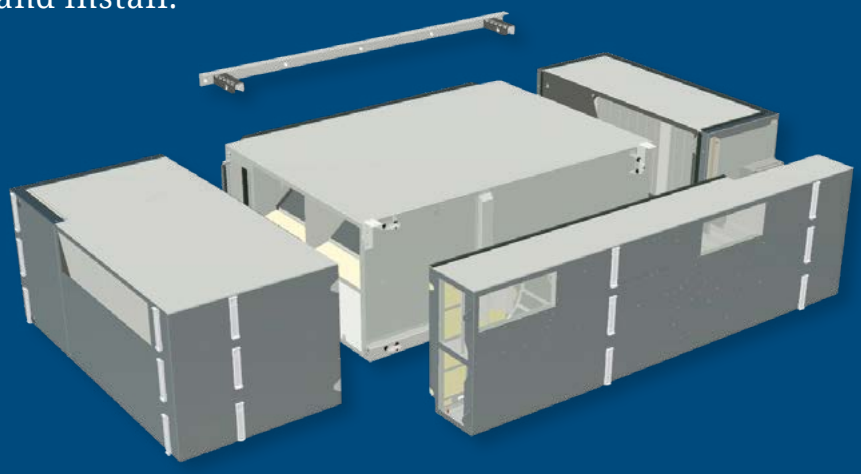
## AM 900 HM




Example of dimension drawing. To see the latest dimension drawings please go to our website: www.airmaster-as.com

**INSTALLATION IS SIMPLE**

The AM 1000 comes in four sections. The centre section is installed first, and the other sections are then bolted on. The unit is therefore easy to transport, handle and install.



# AM 1000

## TECHNICAL DATA

| | |
|---|---|
| **Maximum capacity at 30 dB(A). *** | 950 m³/h |
| **Maximum capacity at 35 dB(A).*** | 1100 m³/h |
| **Throw length (0.2 m/s)*** | 8.0 m |
| **Nominal current*** | 1.9 A |
| **Maximum power consumption*** | 260 W |
| **Electrical connection** | 3 ~ 230 V + N + PE/50 Hz |
| **Duct connection** | 315 mm dia.** |
| **Condensate drain, int./ext.** | 8/12 mm dia. |
| **Weight, standard unit complete** | 286.5 kg |
| **Weight, wall frame** | 5.5 kg |
| **Weight, centre section** | 135 kg |
| **Weight, left section** | 42 kg |
| **Weight, right section** | 39 kg |
| **Weight, front section** | 20 kg |
| **Weight, base plates** | 31 kg |
| **Weight, standard panels (set with 3 rows)** | 14 kg |
| **Heat exchanger** | aluminium |
| **Supply air filter** | M5, F7 or F9 |
| **Colour** | Panels: RAL 9010 (white) |
| **Power cable** | 1.5 mm² |
| **Recommended fuse** | 3 x 13 A |
| **Leakage current** | ≤ 3,5 mA |
| **Dimensions (W/H/D)** | 2325 x 558 x 1244 mm |

* With M5/M5 filter

** Supply/exhaust horizontally via 400 mm dia. wall grille. Supply/exhaust vertically via 315 mm dia. roof cap

| **ELECTRIC HEATING SURFACE** (OPTION) | PREHEATER | COMFORT HEATER |
|---|---|---|
| **Heat output** | 2300 W | 1500 W |
| **Thermal circuit breaker, aut. reset** | 75°C | 75°C |
| **Thermal circuit breaker, man. reset** | 120°C | 120°C |

## WATER HEATING SURFACE (OPTION)

| | |
|---|---|
| **Max. operating temperature** | 90 °C |
| **Max. operating pressure** | 10 bar |
| **Heat output** | 2400 W* |
| **Connection dimension** | 1/2" (DN 15) |
| **Materials pipes/fins** | copper/aluminium |
| **Open/close time, motor valve** | 60 s |

* Capacity at supply/return temperature 60/40 °C. Water volume 101 ltr./h

AM 1000 is a highly competitive solution developed for ventilation in classrooms, but can of course be used anywhere there are high requirements for comfort and healthy indoor climate.

**Active noise control**
The active SPR© technology is excellent at damping low-frequency noise, which normally requires a large damper area.

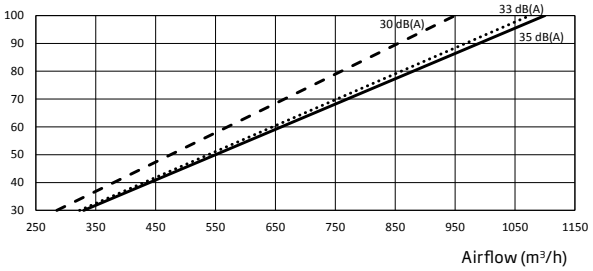
# AM 1000

| STANDARD AND OPTIONS | AM 1000 |
|---|---|
| **Bypass** | x |
| **Adaptive Airflow™** | • |
| **Electric preheating surface 2300 W** | • |
| **Electric comfort heating surface 1500 W** | • |
| **Water heating surface** | • |
| **$CO_2$ sensor (wall-mounted)** | • |
| **$CO_2$ sensor (built-in)** | • |
| **PIR/motion sensor (wall-mounted)** | • |
| **PIR/motion sensor (built-in)** | • |
| **Hygrostat** | • |
| **Condensate pump** | • |
| **Motor-controlled exhaust air damper** | x |
| **Motor-controlled supply air damper** | x |
| **Countercurrent heat exchanger (aluminium)** | x |
| **Energy meter** | • |
| **Wall-/ceiling frame** | x |

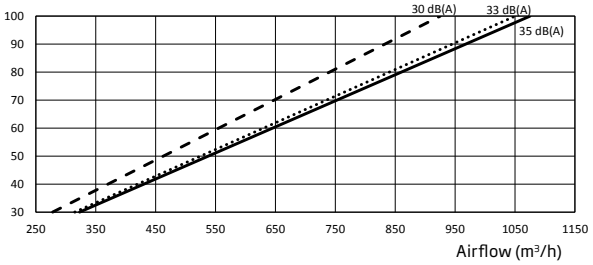
x: standard • : option

# AM 1000

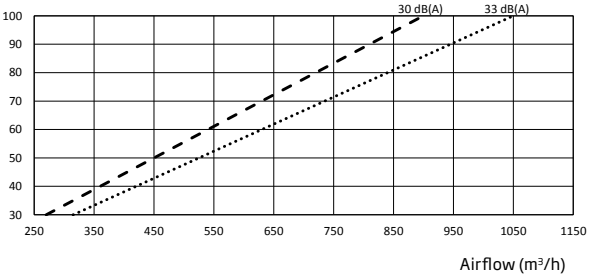
CAPACITY FOR 30, 33 AND 35 dB(A) UNITS
WITH M5/M5 OR M5/M6 FILTERS (%) [1]



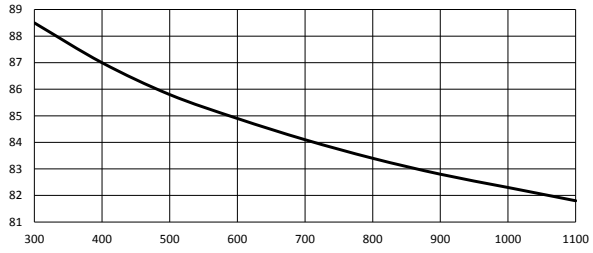

CAPACITY FOR 30, 33 AND 35 dB(A) UNITS
WITH F7/M5 FILTERS (%) [1]




CAPACITY FOR 30, 33 AND 35 dB(A) UNITS
WITH F9/M5 FILTERS (%) [1]

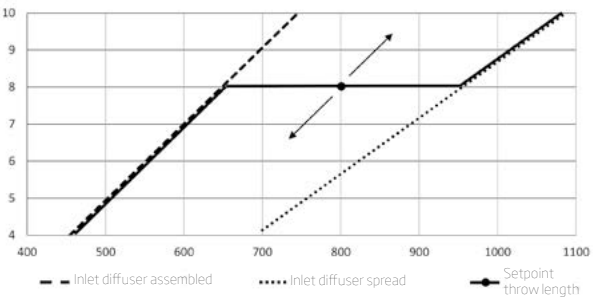



TEMPERATURE EFFICIENCY (%)



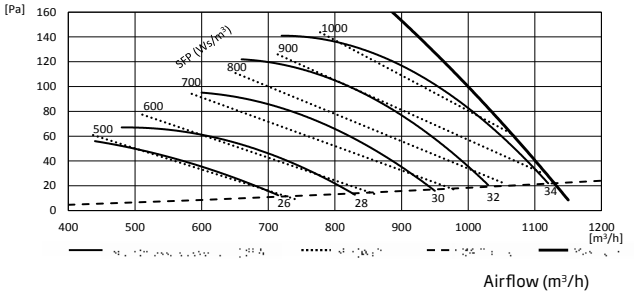

EN308 conditions: Balanced operation: Room air: 25 °C, 28% RH;
Outdoor air: 5 °C, 50% RH.

THROW LENGTH (M) [4]

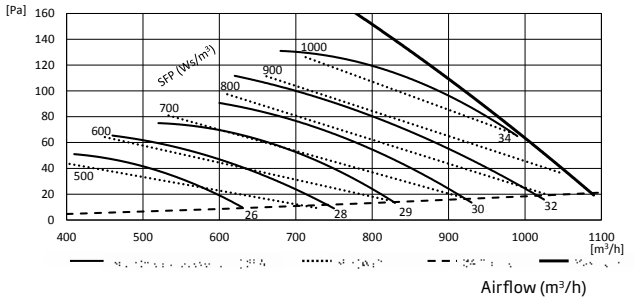



Throw length set as standard to 8 m.
Set point for throw length can be adjusted using a PC with Airlinq Service Tool installed.

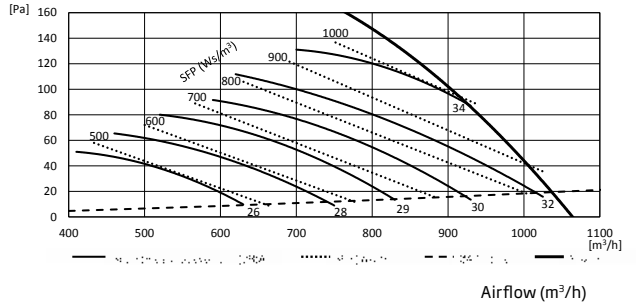
SFP WITH M5/M5 OR M5/FILTERS (Ws/m³) [2]



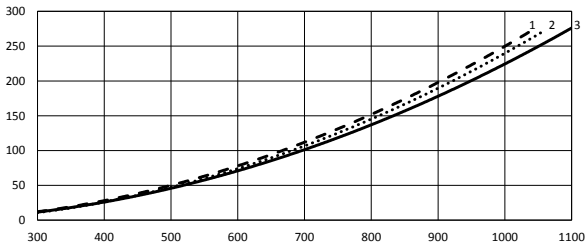

SFP WITH F7/M5 FILTERS (Ws/m³) [2]




SFP WITH F9/M5 FILTERS (Ws/m³) [2]




POWER CONSUMPTION (W) [2]




1: F9/M5 filters; 2: F7/M5 filters; 3: M5/M5 or M5/M6 filters

[1] Measurements taken with unit model AM 1000 HHT built-in as standard using Airmaster's recommended wall grille 400 mm dia. with room damping of 10 dB(A).

[2] Measurements taken with unit model AM 1000 HHT built-in as standard using Airmaster's recommended wall grille 400 mm dia.

[3] Sound pressure Lp,eq measured at a height of 1.2 m with 1 m horizontal distance from unit with room damping of 10 dB(A) .

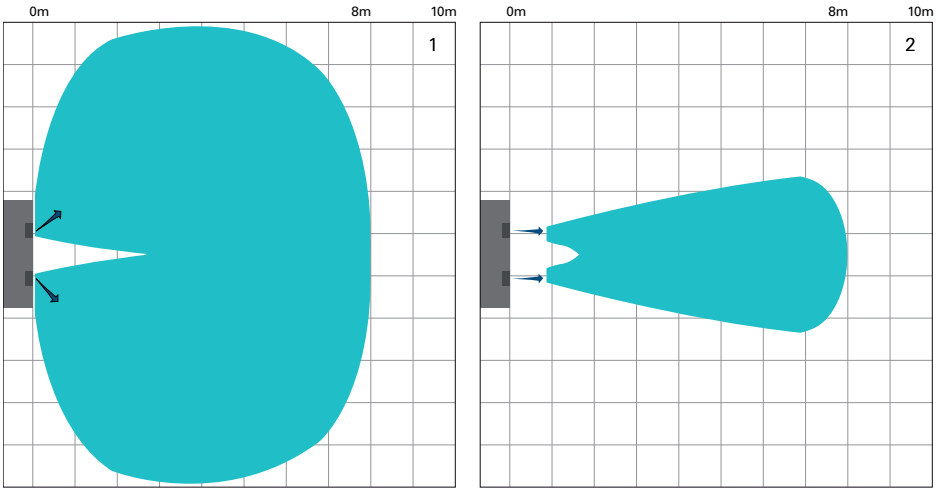
[4] The throw length is measured with 2 °C subcooled inlet.

# AM 1000

THROW LENGTH

Variable inlet with AM 1000.
Inlet divided via two separate inlet grilles, each of which forms a stream. Both grilles have variable louvres. The streams achieve maximum spread at full airflow. This tends to cause a short throw length. The streams are concentrated together when a small airflow is used, which tends to cause a long throw length. Adjustment is gradual and automatic, based on the built-in flow metering. This method ensures an almost constant throw length adapted to the length of the room.

## SYMMETRIC MOUNTING IN THE ROOM WITH ADAPTIVE AIRFLOW™

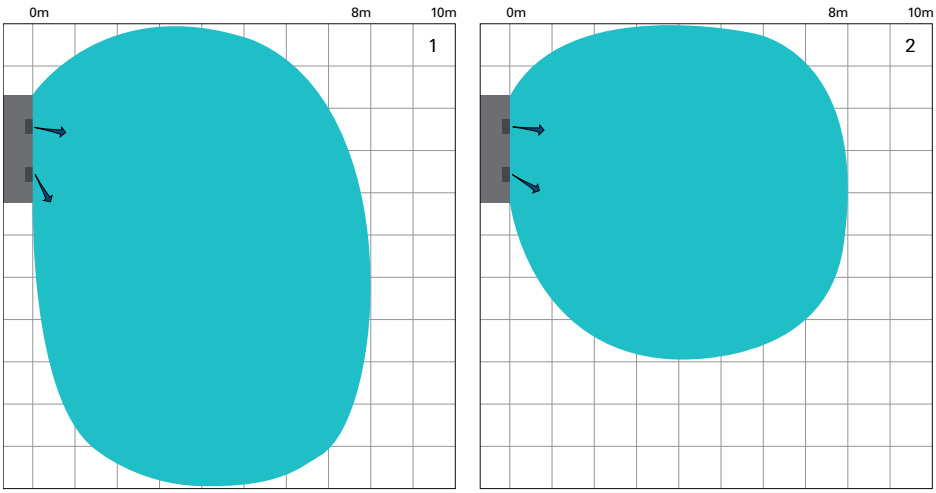



[1] At maximum air volume with separate streams (1000m³/h).

[2] At minimum air volume with concentrated streams (400 m³/h).

## ASYMMETRIC MOUNTING IN THE ROOM WITH ADAPTIVE AIRFLOW™

If the type of room or building only makes asymmetric mounting possible, we recommend to order a directional inlet grille.
Use the following sketches as a guideline.



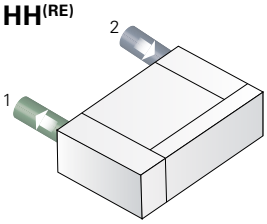

[1] At maximum air volume with separate streams (1000m³/h).

[2] At minimum air volume with concentrated streams (400 m³/h).

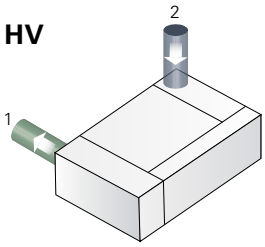
# AM 1000 VERSIONS

## Versions Exhaust/Supply

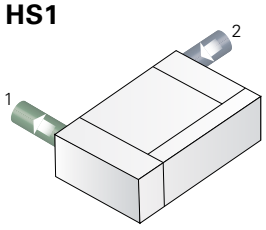
**HH(RE)**



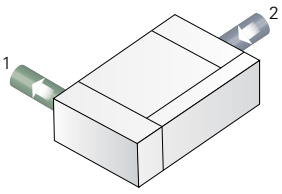

**HV**



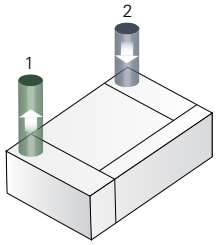

**HS1**



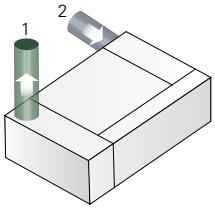

**HS2**



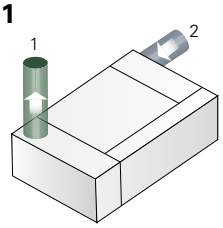

**VV**



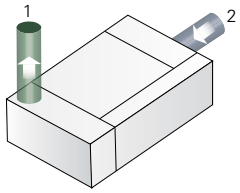

**VH**



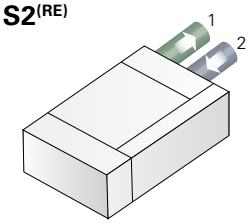

**VS1**




**VS2**

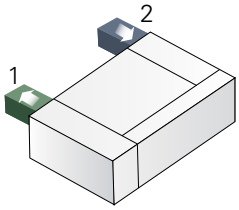



**S1S2(RE)**

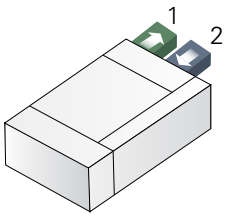



| | |
|---|---|
| H | Horizontal. |
| V | Vertical. |
| S1 | Side (towards the rear). |
| S2 | Side (towards the front). |
| RE | Can be made as rectangular version. |
| 1 | Exhaust |
| 2 | Supply |

**HREHRE**

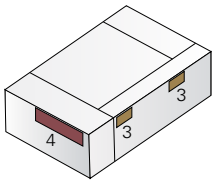



**S1RES2RE**

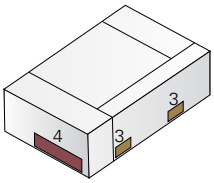



## Versions Inlet/Extract

**T**

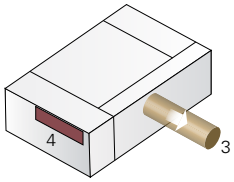



**B**

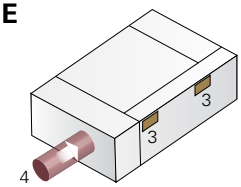



| | |
|---|---|
| T | Inlet/Extract on top |
| B | Inlet/Extract at the bottom |
| DI | Inlet ducted/Extract on top |
| DE | Inlet on top/Extract ducted |
| DIDE | Inlet/Extract ducted |
| 3 | Inlet |
| 4 | Extract |

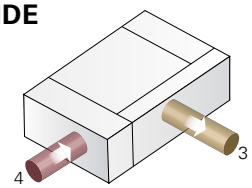
**DI**



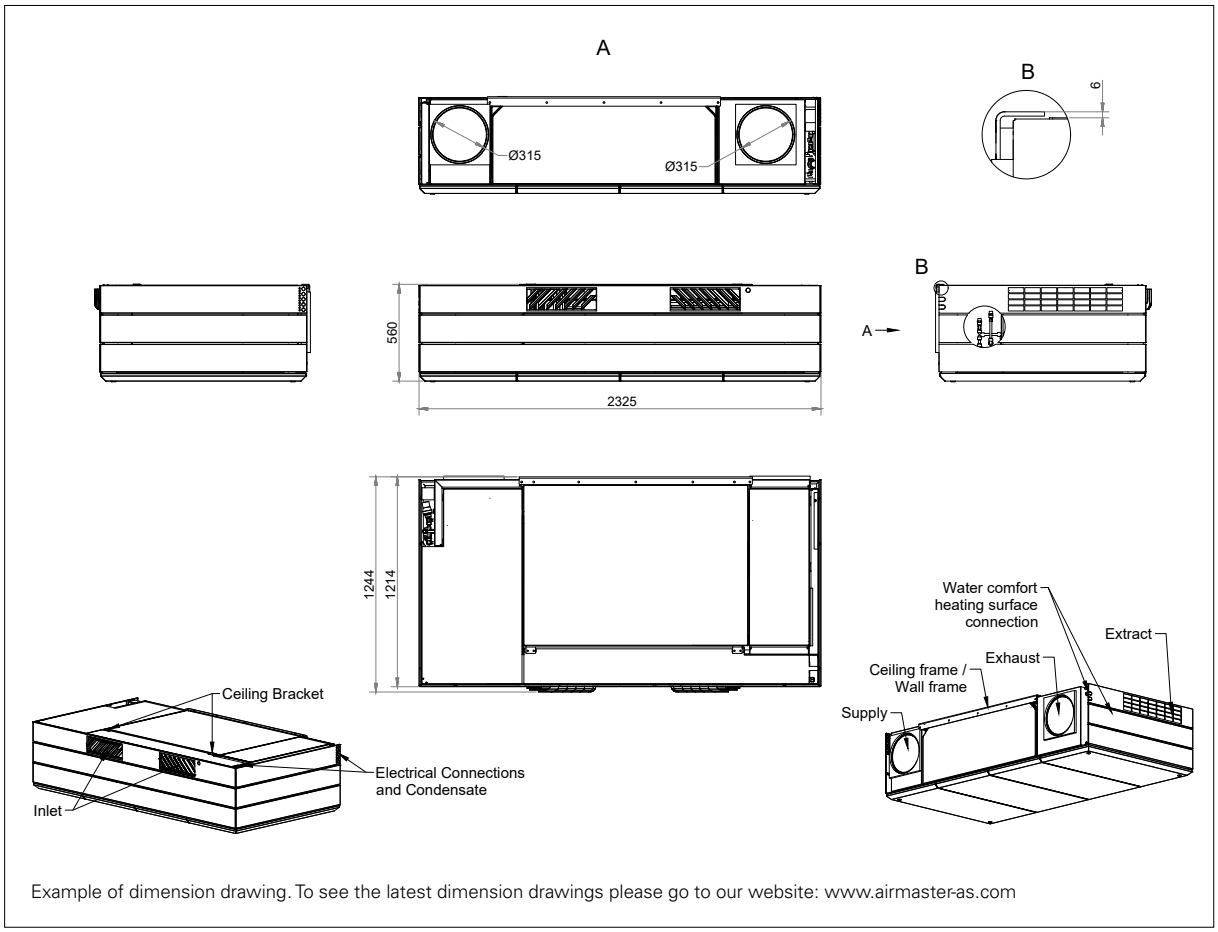

**DE**




**DIDE**

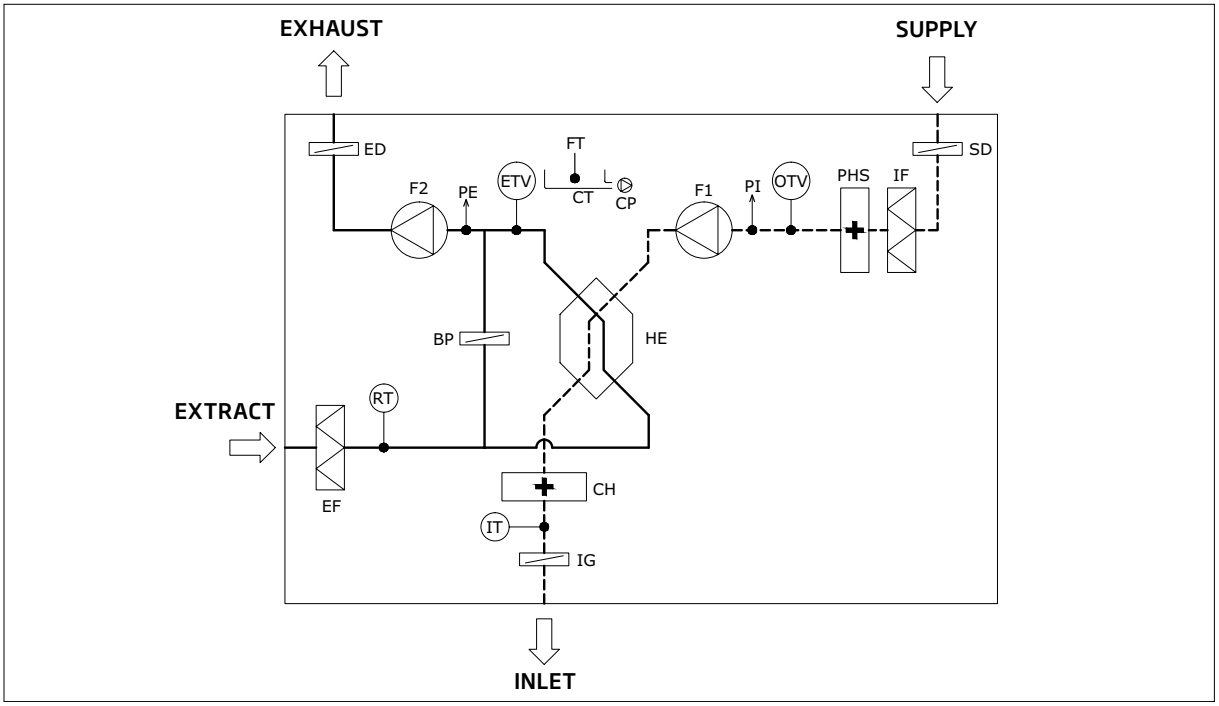


AM 1000 HH T




Example of dimension drawing. To see the latest dimension drawings please go to our website: www.airmaster-as.com

SCHEMATIC SKETCH




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| BP | Bypass (motor-controlled) | FT | Float | OVT | Outside temperature sensor, ventilation |
| CH | Comfort heating surface (option) | F1 | Supply air fan | | |
| CP | Condensate pump (option) | F2 | Extract air fan | PE | Flow meter, extracted air |
| CT | Condensate tray | HE | Countercurrent heat exchanger | PHS | Preheating surface (option) |
| ED | Exhaust air damper (motor-controlled) | IF | Supply air filter | PI | Flow meter, supply air |
| EF | Extract air filter | IG | Inlet grille (motor-controlled) | RT | Room temperature sensor |
| ETV | Exhaust temperature sensor, ventilation | IT | Inlet air temperature sensor | SD | Supply air damper (motor-controlled) |

# AM 1200

By choosing Airmaster you choose an advanced and responsible solution.

# THE WIDE RANGE OF **OPTIONS**

**FEATURING FUNCTION AND DESIGN**

Ventilation should not always just be a technical necessity. It can also play a part in the function of a room. The AM 1200 is a concept within decentralised ventilation which combines fresh air with elegant design, which can be used for a lot more than you might believe. The AM 1200 is a floor-standing unit, available in horizontal and vertical models. It can be mounted against a wall (right/left variant) or freestanding (central variant). Different design panels mean the front can be used as a notice board, mirror or whiteboard for example, and it can also be fitted with acoustic panels.


# AM 1200

## TECHNICAL DATA

| **Maximum capacity:**** | 35 dB(A) | 30 dB(A) |
|---|---|---|
| **Horizontal model, 400 mm dia.** | | |
| **right/left** | 1180 $m^3/h$ | 930 $m^3/h$ |
| **centre** | 1310 $m^3/h$ | 1050 $m^3/h$ |
| **Vertical model, 400 mm dia.** | | |
| **right/left** | 1130 $m^3/h$ | 870 $m^3/h$ |
| **centre** | 1260 $m^3/h$ | 980 $m^3/h$ |
| **Vertical model, 315 mm dia.*** | | |
| **right/left** | 1060 $m^3/h$ | 820 $m^3/h$ |
| **centre** | 1170 $m^3/h$ | 920 $m^3/h$ |

| | |
|---|---|
| **Throw length (0.2 m/s)** - centre** | min. 3 m at 1000 $m^3/h$ |
| | max. 6.5 m at 1000 $m^3/h$ |
| | min. 4 m at 1300 $m^3/h$ |
| | max. 8 m at 1300 $m^3/h$ |
| **Throw length (0.2 m/s)** - right/left** | min. 4 m at 1000 $m^3/h$ |
| | max. 9 m at 1000 $m^3/h$ |
| | min. 5.5 m at 1300 $m^3/h$ |
| | max. 11 m at 1300 $m^3/h$ |
| **Nominal current**** | Unit without electric heating surface 1.4 A |
| **Maximum power consumption**** | 254 W |
| **Electrical connection - with preheating surface** | 3~230 V + N + PE/50 Hz<br>(preheating surface fitted with own phase) |
| **Duct connection** | 400 mm dia. |
| **Condensate drain** | 16 mm dia. |
| **Weight** | Right/left variant 545 kg<br>Centre variant 630 kg |
| **Heat exchanger** | 4 x countercurrent heat exchangers (aluminium) |
| **Supply air filter** | M5 standard, F7 option |
| **Leakage current** | ≤ 9 mA |
| **Dimensions (W/H/D)** | Horizontal: 496 x 2098 x 2427 mm |
| | Vertical: 496 x 2406 x 2427 mm |

* With roof cap module

** With M5/M5 filter

| **ELECTRIC HEATING SURFACE** (OPTION) | PREHEATING SURFACE | COMFORT HEATING SURFACE |
|---|---|---|
| **Heat output** | 2500 W | 1670 W |
| **Thermal circuit breaker, aut. reset** | 75° | 75° |
| **Thermal circuit breaker, man. reset** | 120° | 120° |

**WATER HEATING SURFACE** (OPTION)

| | |
|---|---|
| **Max. operating temperature** | 90° C |
| **Max. operating pressure** | 10 bar |
| **Heat output** | 2109 W* |
| **Connection dimension** | 3/4" (DN 20) |
| **Materials pipes/fins** | copper/aluminium |
| **Open/close time, motor valve** | <60 s |

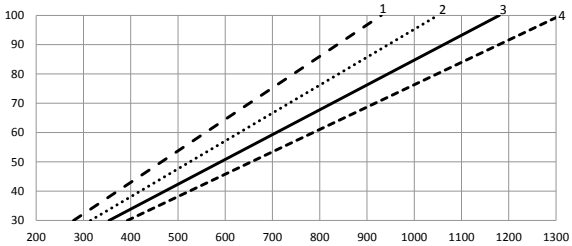
* Capacity at: supply/return temperature 60/40°C, water volume 72 L/h

| **STANDARD AND OPTIONS** | AM 1200 V CENTRE | AM 1200 V RIGHT/LEFT | AM 1200 H CENTRE | AM 1200 H RIGHT/LEFT |
|---|---|---|---|---|
| **Bypass** | x | x | x | x |
| **Electric preheating surface** | • | • | • | • |
| **Electric comfort heating surface** | • | • | • | • |
| **Water heating surface** | • | • | • | • |
| **$CO_2$ sensor (wall-mounted)** | • | • | • | • |
| **$CO_2$ sensor (built-in)** | • | • | • | • |
| **PIR/motion sensor** | • | • | • | • |
| **Hygrostat** | • | • | • | • |
| **Condensate pump** | • | • | • | • |
| **Spring-return motor on main air damper (supply and exhaust)** | x | x | x | x |
| **Countercurrent heat exchanger (aluminium)** | x | x | x | x |
| **Energy meter** | • | • | • | • |

x: standard •: option

# AM 1200 H

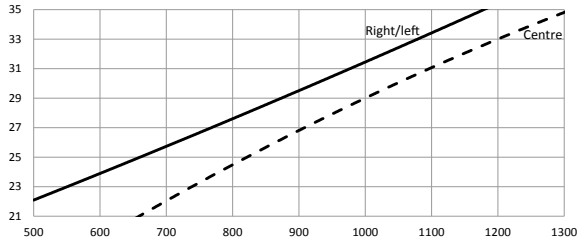
**H** CAPACITY (%)




Airflow (m³/h)

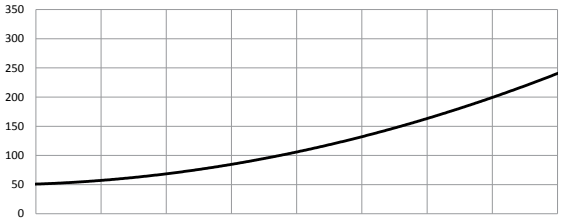
1: Right/left 30 dB(A), 2: Centre 30 dB(A),
3: Right/left 35 dB(A), 4: Centre 35 dB(A)
The use of a F7 (F9) supply air filter reduces airflow by 10% (20%).

**H** SOUND PRESSURE (dB(A))



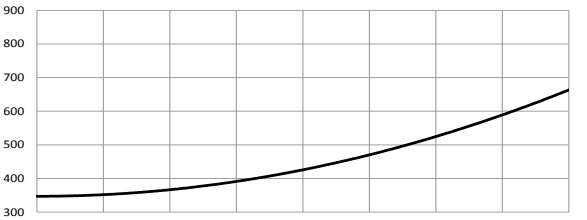

Airflow (m³/h)

**H** POWER CONSUMPTION (W)



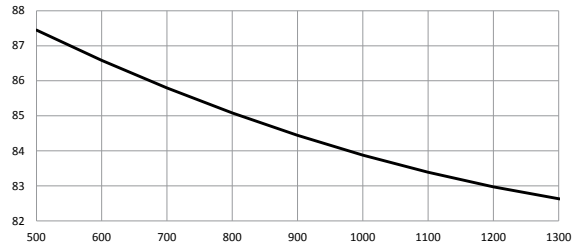

Airflow (m³/h)

**H** SFP W/(m³/s)




Airflow (m³/h)

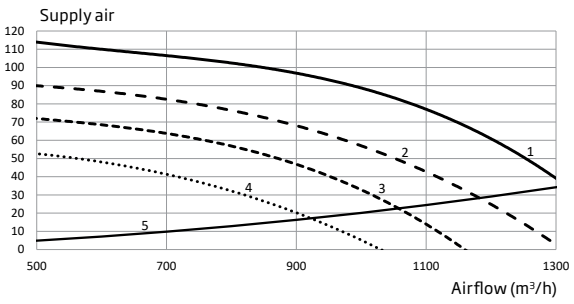
**H** TEMPERATURE EFFICIENCY (%)




Airflow (m³/h)

Balanced operation: Room air: 25 °C, 28% RH; Outdoor air: 5 °C, 50% RH.

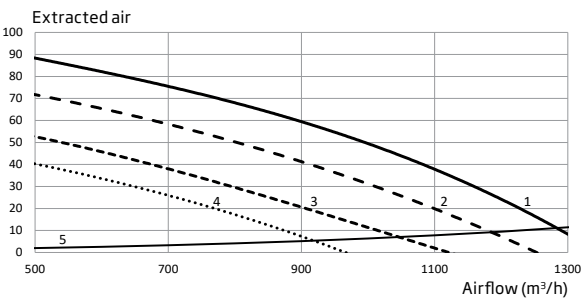
**H** EXTERNAL PRESSURE LOSS (Pa)




Airflow (m³/h)

1: Centre 35 dB(A), 2: Right/left 35 dB(A), 3: Centre 30 dB(A),
4: Right/left 30 dB(A), 5: Facade grille

**H** EXTERNAL PRESSURE LOSS (Pa)

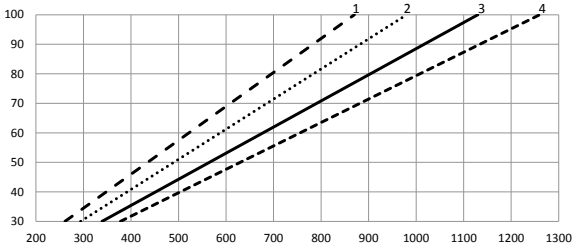



Airflow (m³/h)

1: Centre 35 dB(A), 2: Right/left 35 dB(A), 3: Centre 30 dB(A),
4: Right/left 30 dB(A), 5: Facade grille

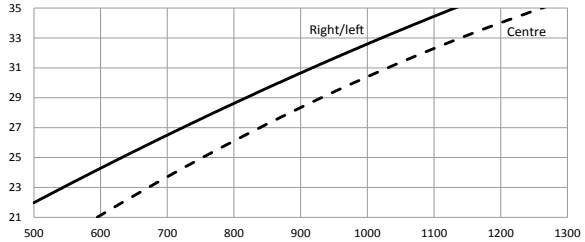
# AM 1200 V (400 MM DIA.)

**V** CAPACITY (%)



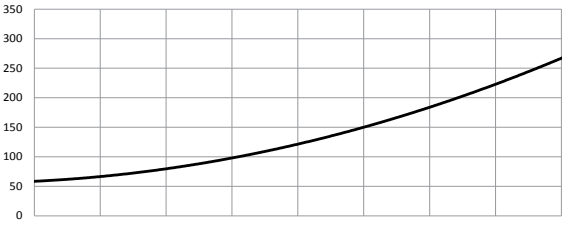

Airflow (m³/h)
1: Right/left 30 dB(A), 2: Centre 30 dB(A),
3: Right/left 35 dB(A), 4: Centre 35 dB(A)
The use of a F7 (F9) supply air filter reduces airflow by 10% (20%).

**V** SOUND PRESSURE (dB(A))



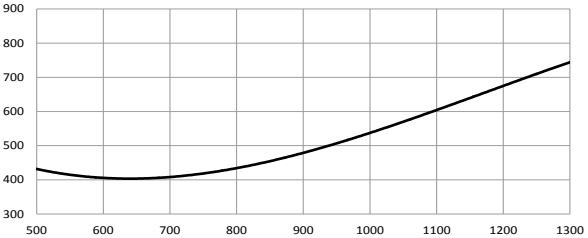

Airflow (m³/h)

**V** POWER CONSUMPTION (W)



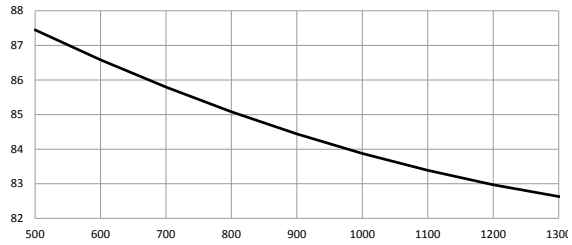

Airflow (m³/h)

**V** SFP W/(m³/s)




Airflow (m³/h)

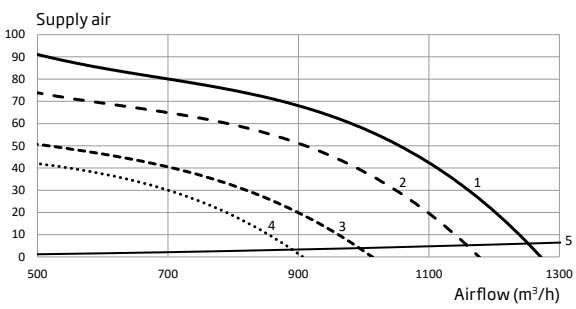
**V** TEMPERATURE EFFICIENCY (%)




Airflow (m³/h)

Balanced operation: Room air: 25 °C, 28% RH; Outdoor air: 5 °C, 50% RH.

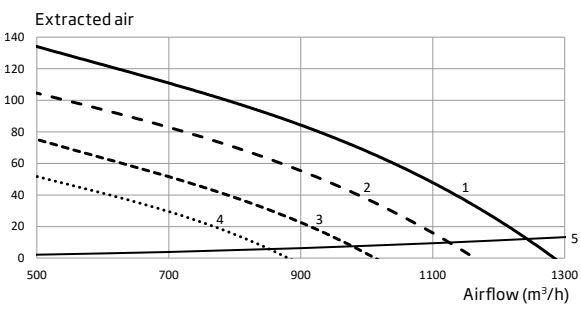
**V** EXTERNAL PRESSURE LOSS (Pa)




Airflow (m³/h)

1: Centre 35 dB(A), 2: Right/left 35 dB(A), 3: Centre 30 dB(A),
4: Right/left 30 dB(A), 5: Roof cap

**V** EXTERNAL PRESSURE LOSS (Pa)

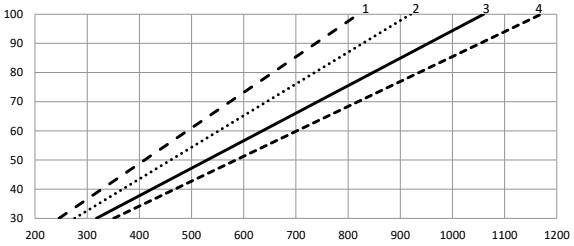



Airflow (m³/h)

1: Centre 35 dB(A), 2: Right/left 35 dB(A), 3: Centre 30 dB(A),
4: Right/left 30 dB(A), 5: Roof cap

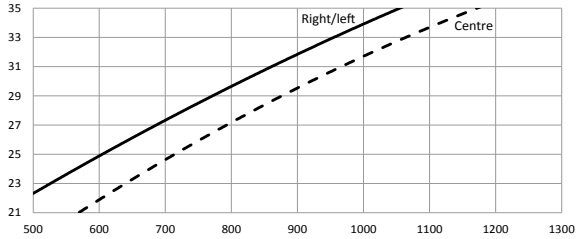
# AM 1200 V (315 MM DIA.) - WITH ROOF CAP MODULE

**V** CAPACITY (%)



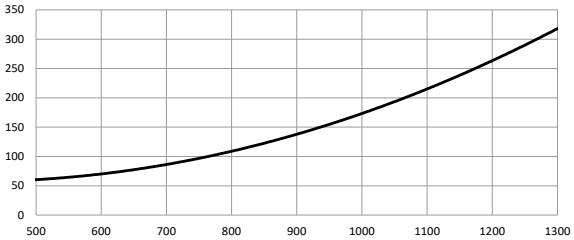

Airflow (m³/h)
1: Right/left 30 dB(A), 2: Centre 30 dB(A),
3: Right/left 35 dB(A), 4: Centre 35 dB(A)
The use of a F7 (F9) supply air filter reduces airflow by 10% (20%).

**V** SOUND PRESSURE (dB(A))



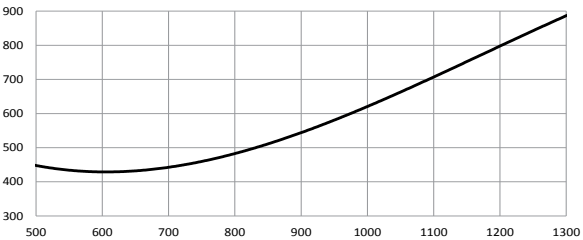

Airflow (m³/h)

**V** POWER CONSUMPTION (W)



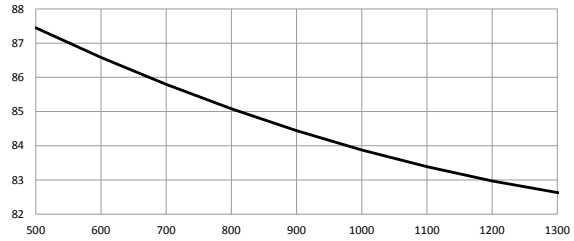

Airflow (m³/h)

**V** SFP W/(m³/s)




Airflow (m³/h)

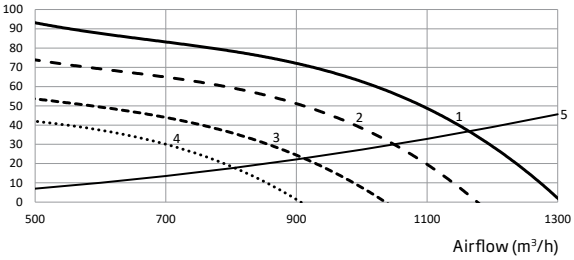
**V** TEMPERATURE EFFICIENCY (%)




Airflow (m³/h)
Balanced operation: Room air: 25 °C, 28% RH; Outdoor air: 5 °C, 50% RH.

**V** EXTERNAL PRESSURE LOSS (Pa)

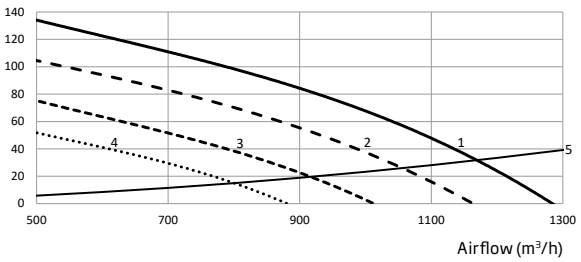
Supply air




Airflow (m³/h)
1: Centre 35 dB(A), 2: Right/left 35 dB(A), 3: Centre 30 dB(A),
4: Right/left 30 dB(A), 5: Roof cap

**V** EXTERNAL PRESSURE LOSS (Pa)

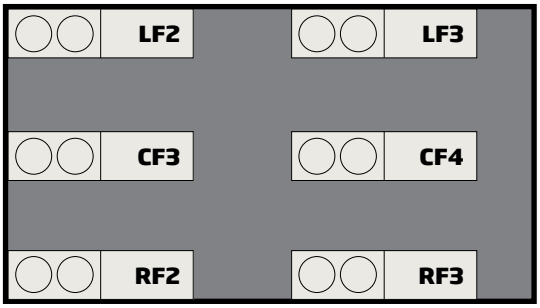
Extracted air

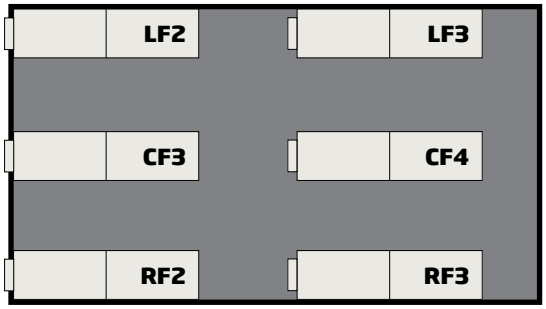



Airflow (m³/h)
1: Centre 35 dB(A), 2: Right/left 35 dB(A), 3: Centre 30 dB(A),
4: Right/left 30 dB(A), 5: Roof cap

# AM 1200

**VARIANTS**



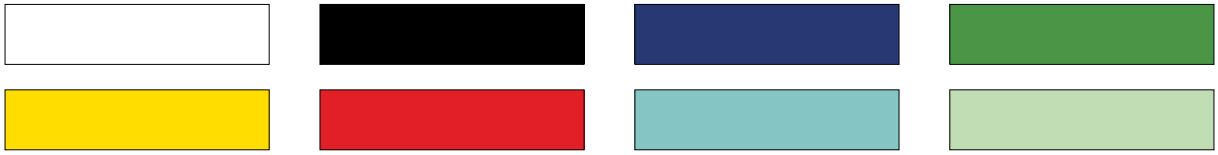

AM 1200 V**RF2** (right, with 2 open sides)
AM 1200 V**RF3** (right, with 3 open sides)
AM 1200 V**CF3** (centre, with 3 open sides)
AM 1200 V**CF4** (centre, with 4 open sides)
AM 1200 V**LF2** (left, with 2 open sides)
AM 1200 V**LF3** (left, with 3 open sides)

AM 1200H**RF2** (right, with 2 open sides)
AM 1200H**RF3** (right, with 3 open sides)
AM 1200H**CF3** (centre, with 3 open sides)
AM 1200H**CF4** (centre, with 4 open sides)
AM 1200 H**LF2** (left, with 2 open sides)
AM 1200 H**LF3** (left, with 3 open sides)

| **DESIGN PANELS** | COLOUR | SIZE |
|---|---|---|
| **Chipboard with melamine** | White | 600 x 500 |
| **Chipboard with melamine** | Black | 600 x 500 |
| **MDF** | Painted (standard colours) | 600 x 500 |
| **MDF** | Painted (standard colours) | 1200 x 1000 |
| **MDF with whiteboard laminate*** | White | 1200 x 1000 |
| **MDF with noticeboard surface** | Black | 1200 x 1000 |
| **Mirror glued on MDF** | Mirror | 1200 x 1000 |

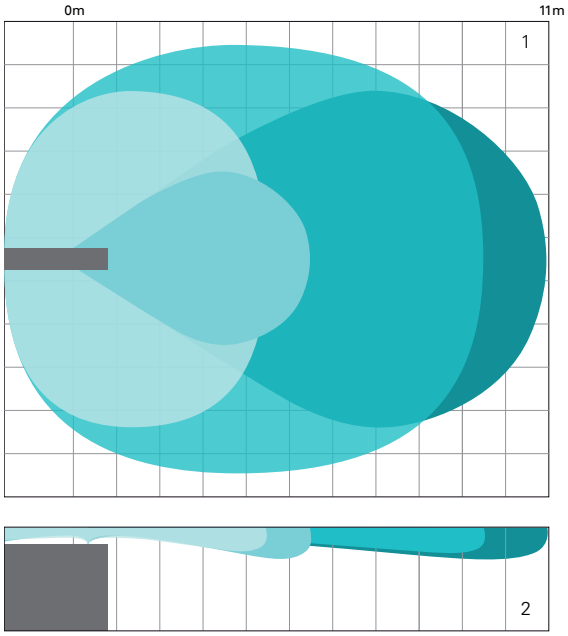
*We are offering the best quality of whiteboards with a surface of ceramic enamel. Ceramic enamel forms a completely closed surface and is therefore also extremely easy to clean.

**COLOUR OPTIONS**
Painted MDF boards are supplied in the following 8 standard colours.
Other RAL colours are available at extra cost.



# AM 1200 THROW LENGTH

THROW LENGTH



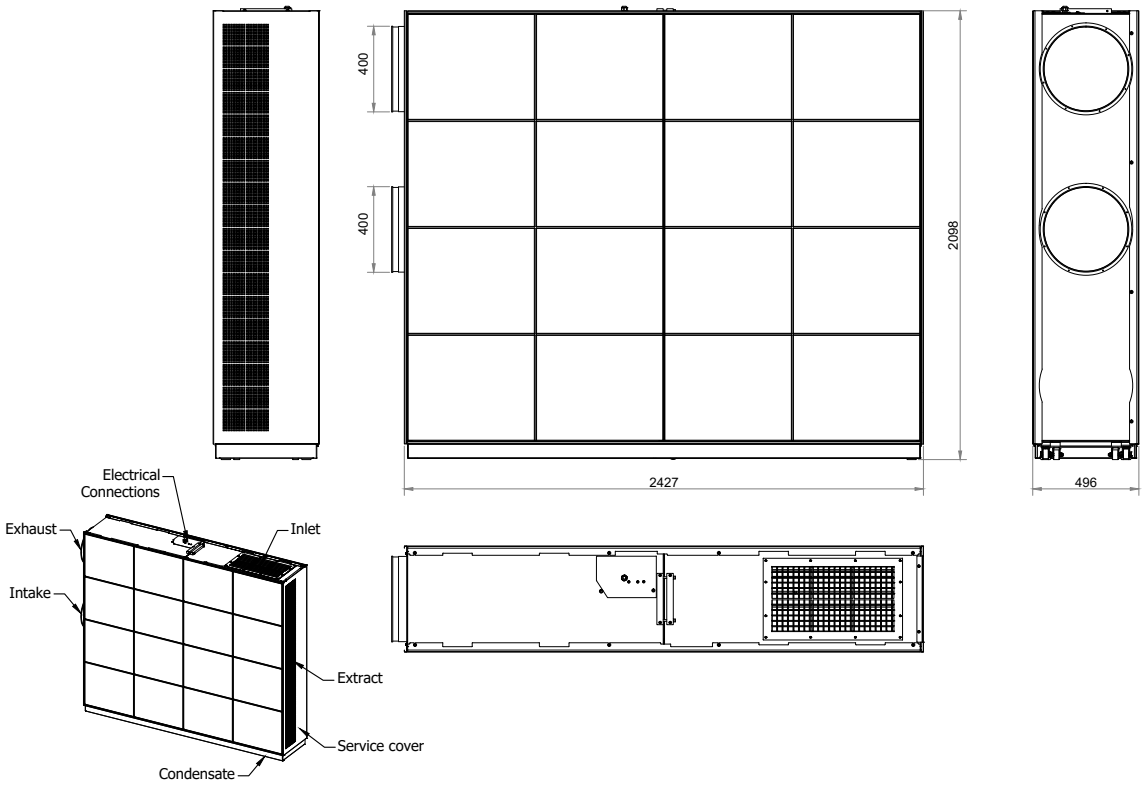

**1300 m³/h**
- Max.
- Min.

**1000 m³/h**
- Max.
- Min.

The AM 1200 unit spreads an air stream in different directions, depending on the given airflow. This can be seen in the illustration on the left, in which the blue shading indicates throw length the different airflows.

[1] Throw length seen from above
[2] Throw length seen from the side

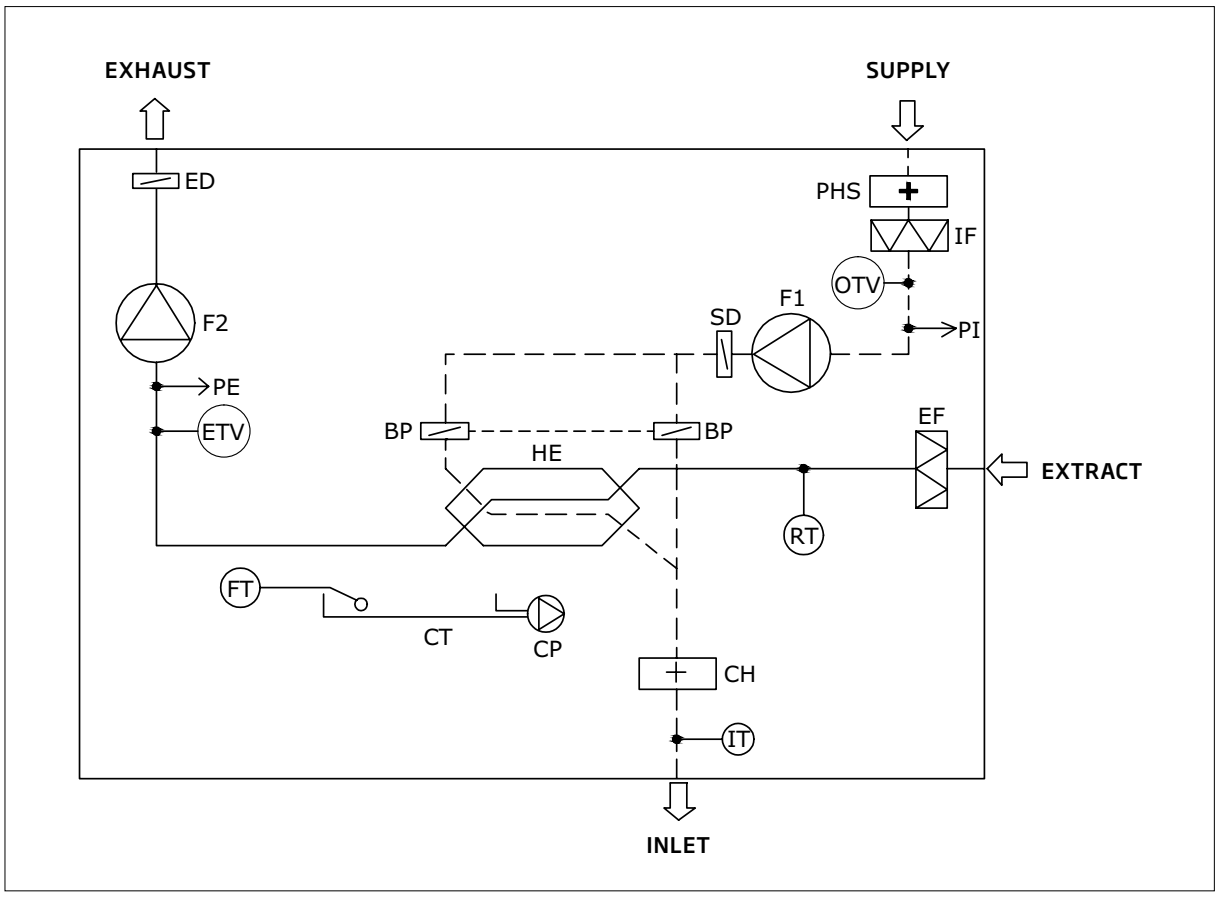
AM 1200 HC




Example of dimension drawing. To see the latest dimension drawings please go to our website: www.airmaster-as.com

# AM 1200

SCHEMATIC SKETCH




NAME OF COMPONENT

| | |
|---|---|
| BP | Bypass (motor-controlled) |
| CH | Comfort heating surface (option) |
| CP | Condensate pump (option) |
| CT | Condensate tray |
| ED | Exhaust air damper (motor-controlled, spring return) |
| EF | Extract air filter |
| ETV | Exhaust temperature sensor, ventilation |
| FT | Float |
| F1 | Supply air fan |
| F2 | Extract air fan |
| HE | Countercurrent heat exchanger |
| IF | Supply air filter |
| IT | Inlet air temperature sensor |
| OVT | Outside temperature sensor, ventilation |
| PE | Flow meter, return air |
| PHS | Preheating surface (option) |
| PI | Flow meter, supply air |
| RT | Room temperature sensor |
| SD | Supply air damper (motor-controlled, spring return) |

# EXTRA FOCUS ON COMFORT

## INVERTER-CONTROLLED COOLING MODULES

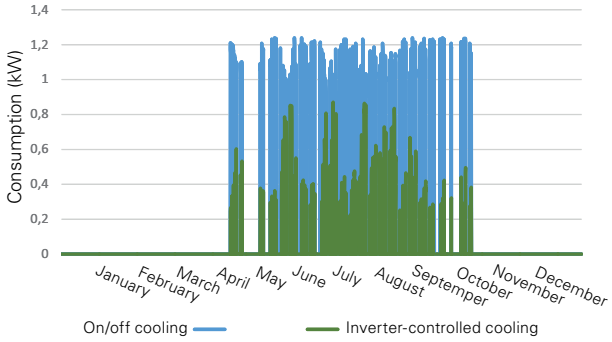
**ENERGY-EFFICIENT AND ON-DEMAND CONTROLLED COOLING SOLUTIONS**

More and more focus has been placed in recent years on the importance of and links between a healthy indoor climate and personal performance, whether in classrooms or offices.

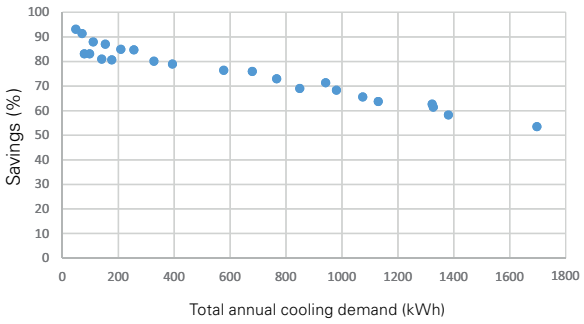
The newly-developed inverter-controlled cooling modules mean that Airmaster can offer efficient and on-demand controlled ventilations and cooling solutions with extremely low energy consumption for use in rooms with varying requirements for air change and cooling.

Benefits in terms of running costs and climate impact are gained by the deployment of pioneering technology. An inverter-controlled cooling solution gives infinitely adjustable capacity regulation of the compressor, to ensure that it adjusts constantly to actual cooling requirement. That means significant benefits in terms of running costs and climate impact:

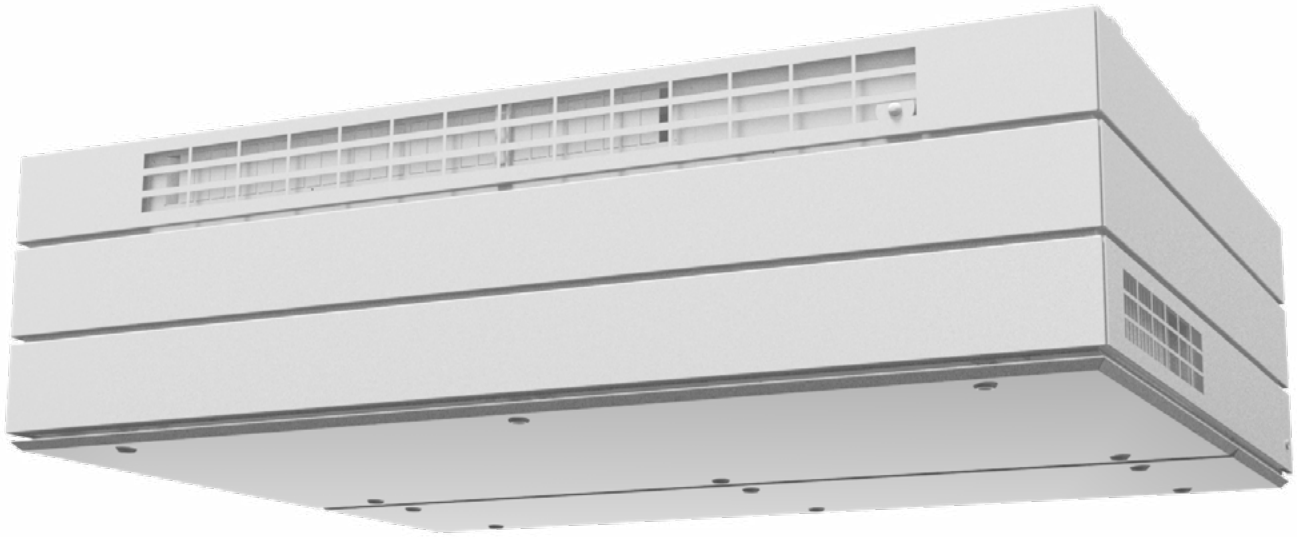
- Optimised for energy-efficient operation in our climate zone.
- Improved annual mean EER value due to inverter-controlled compressor.
- Lower running costs thanks to on-demand control - annual savings for electricity typically 60-80%.
- A big reduction in the number of compressor starts. Combination of inverter control and electronic expansion valve ensure sustainable operation, even under extreme climate conditions inside and out.
- Very quiet in operation.
- Uses the highly effective coolants R410A or R134A that do not contribute to ozone loss.
- Outdoor air is typically cooled by 15° C before entering the room via the Airmaster unit.
- Easy monitoring of operation and climate via Airlinq data log - stores up to one year's operating data.




Example of estimated power consumption for on/off cooling and inverter-controlled cooling, showing the effect of lower consumption using inverter-controlled cooling. Savings depend on outdoor climate, heat load and building properties.




The relationship between savings and overall annual cooling requirement for inverter-controlled cooling compared to on/off cooling.



# FLEXIBLE CONNECTION

Inverter-controlled cooling modules are integrated with Airmaster's decentralised air handling units. Regulated by the intelligent Airlinq control system, they provide the best means of ensuring a healthy indoor climate and low energy consumption.

Monitoring, follow-up and servicing can be integrated via D BMS connection on e.g. MODBUS™, KNX®, BacNet™ /IP, BACnet™ MS/TP, LON®.
Alternatively via Airlinq Online or Airmasters Airlinq BMS, able to control up to 20 Airmaster units (including cooling modules) via a control panel.

**CAPACITY VALUES:**

| TYPE | MIN. COOLING CAPACITY (KW) | NOMINAL COOLING CAPACITY (KW) | COOLANT |
|---|---|---|---|
| CC 300 | 0.4 | 2.45 | R134a |
| CC 500 | 0.8 | 3.28 | R410a |
| CC 800 | 1.0 | 5.24 | R410a |
| CC 1000 | 1,1 | 6,45 | R410a |

# PERFECT INDOOR CLIMATE

## WITH ON-DEMAND VENTILATION

We appreciate things differently. Some people like smart and elegant technology. Others find that function and control options are the most important. Both aspects are important to Airmaster when it comes to on-demand ventilation.

Quality, function and aesthetics are key to Airmaster. That's why Airmaster focuses not only on the air handling unit, but also on the control system and operation. Airmaster air handling units are controlled by our intelligent control system - Airlinq.

**INTUITIVE AND SIMPLE CONTROL**

The Airlinq control system uses intuitive and discreet control panels, which make control simple thanks to their unique design and touch function.

**FULL BENEFIT - ALWAYS**

Every aspect of Airmaster air handling units is designed for top performance. That's why Airmaster decided to fit every unit with the control system and control panel, ensuring the user gets 100% benefit from its functions. Full benefit from the functions can also be achieved via connection to a PC.


For easy use, the unit can be delivered with a press button for airflow adjustment.

The Viva control panel has a simple and elegant design.


The Orbit control panel facilitates more control.

# INTELLIGENT CONTROL
# WITH AIRLINQ®

Airmaster focuses not only on the air handling unit, but also on the control system and operation.

All Airmaster decentralised air handling units are controlled by our intelligent, fully automatic control system - Airlinq.

Airlinq consists of two control boxes, and two control panels (Airlinq Viva/Orbit).

Airlinq makes it possible to use units immediately after installation, as all basic functions are pre-programmed at the factory.

The Airlinq control system is able to automatically counter high and low inlet temperatures, to ensure the room temperature set is maintained. Effective protection functions prevent the heat exchanger from icing up, drain off condensation and automatically stop the unit if necessary. Unnecessary damage to the unit is therefore prevented.

The system is easy to set and program to individual requirements from customers or for local conditions. The software controls the options installed automatically, such as bypass, heating surfaces, cooling module and sensors ($CO_2$, humidity, motion etc.) whenever required.


# UNIQUE CONTROL FUNCTIONS WITH AIRLINQ:

### DATA LOG
Unique log function for all key operating and room data such as:

- Inlet temperature
- Room temperature
- Outside temperature
- $CO_2$ level
- Air humidity
- Airflow
- Damper position

### AIRLINQ PC TOOLS
User-friendly monitoring and setting of air handling units via PC with Airlinq User Tool.

Service engineers can use the more advanced Airlinq Service Tool.

### DOWNLOAD TO PC
The unit's operating data can be downloaded to a PC to provide rapid overview of operation, and to generate operating documentation. This allows full optimisation of the unit.

### ALL-IN-ONE
All intelligence is concentrated in the unit, which means that it can run fully automatically without having to be connected to a control panel.

### MONITORING, WARNING AND ALARM SYSTEM
The advanced warning and alarm system helps minimise operating and service costs. Errors are quickly detected, making the unit more reliable.

### FLEXIBILITY WITH DIGITAL BMS
Airlinq can be fitted with a network module (optional PCB) to provide flexible connection to one of the following network systems:

- KNX®
- BACnet™/IP
- BACnet™ MS/TP
- LON®
- MODBUS® RTU RS485
- Airlinq® Online

### AIRLINQ BMS
Up to 20 different and individually equipped air handling units can be controlled using a single control panel in an Airlinq BMS. The system has a lot more features than the Master-Slave system in current use.

### AIRMASTER SENSORS FOR BMS
Airmaster's motion sensor (PIR) and $CO_2$ sensors can be used on network systems. The result is very simple and inexpensive connection to a BMS system.

# AIRLINQ® VIVA
# CONTROL PANEL

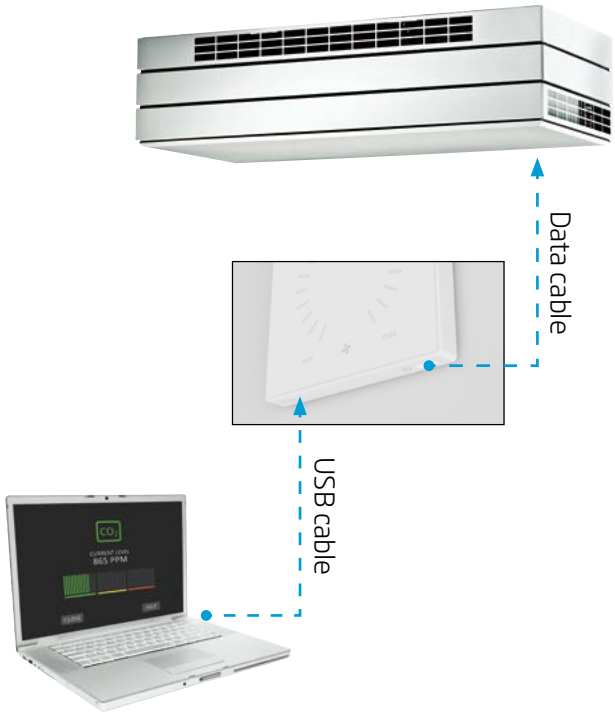
The Airlinq Viva is designed to be perfect for any requirement for optimal ventilation with minimal manual control.

**THE EASIEST CONTROL INTERFACE ON THE MARKET**

Control functions are simple and user-friendly. Operation is automatic to minimise the risk of incorrect use.

**OPERATION VIA PC**

The control panel can be connected to a PC via a USB port to set other operating parameters. Airlinq User Tool and Airlinq Service Tool (programs used by service engineers) provide complete details of the unit's performance. See the following description of options for the two programs.




### AIRLINQ USER TOOL

The control panel can be easily connected to a PC, providing access to operating data using the Airlinq User Tool.

- Options include setting airflow, inlet temperature and maximum room temperature.
- Downloadable data log and send function for the same via mail.
- Filter status display.
- Option for setting $CO_2$ range.
- Option for setting, activating and deactivating timer programs.
- Additional functions on the Airlinq Orbit control panel are available.

### AIRLINQ SERVICE TOOL

The control panel can be easily connected to a PC, providing access to operating data using the Airlinq Service Tool.

- Setting and programming the control program can be performed.
- Downloadable data log and graphic display.
- Downloadable and uploadable control system setup.
- Option for updating control system software.
- Automatic synchronisation of the built-in timer via PC date and time.

Airlinq User Tool and Airlinq Service Tool can be downloaded from **www.airlinq.eu**

# CONTROL FUNCTIONS WITH AIRLINQ VIVA

Manual start, stop and standby.

Setting airflow via touch function on the front.

Display of warnings and alarms by red or yellow symbols.

Holiday mode - a function to ensure basic ventilation with reduced airflow.

Automatic operation lock .

Child lock.


The control panel allows the user to adjust airflow easily.

# AIRLINQ® ORBIT
# CONTROL PANEL

Operation using Airlinq Orbit is perfect when more comprehensive and easier access is required to control normal ventilation operation.

Data cable


**OPERATION**
Settings can be made directly on the control panel touch screen.

**WIDE RANGE OF OPTIONS**
Operating functions provide a wide range of options for controlling ventilation. The Airlinq Orbit control panel with touch function is user-friendly for navigation and setting operating parameters. The menu layout makes operation easy and simple, and reduces the risk of error.

USB


**OPERATION VIA PC**
A PC can be connected via the USB port on the control panel, and Airlinq Service Tool used to set all operating parameters. (Airlinq Service Tool is for the use of service engineers)

**AIRLINQ SERVICE TOOL**
The control panel can be easily connected to a PC, providing access to operating data using the Airlinq User Tool.

- Setting and programming control system.
- Download a data log and graphic record of operation.
- Download or upload a control system setup.
- Monitor energy consumption using a built-in energy meter.
- Update control system software.
- Automatic synchronisation of the built-in timer via PC date and time.

Airlinq User Tool and Airlinq Service Tool can be downloaded from **www.airlinq.eu**

# CONTROL FUNCTIONS WITH AIRLINQ ORBIT

An integrated startup guide ensures easy, quick programming during installation of the air handling unit. The guide is integrated in the setup menu, and can be restarted at any time.

Manual start, stop and standby. Manual start and stop of an individual group or entire system for Airlinq BMS.

Setting of all major operating parameters using an automatic startup guide.

Display and setting air flow via touch function on the front.

Displays warnings and alarms with text description (for all Airlinq BMS units).

Holiday mode function ensures basic ventilation with reduced airflow.

Displays $CO_2$ level when a $CO_2$ sensor is connected (for all $CO_2$ sensors on Airlinq BMS.)

Easy, simple control of Airlinq BMS.

Automatic operating lock.

Screen lock with security code.

**SET OPERATING PARAMETERS:**

- Display operating status for up to 40 operating parameters (for all units with Airlinq BMS)
- Overview and settings for all timed programs, including night time cooling.
- Inlet temperature and standard airflow.
- Set date and time.
- Cancel service.
- Modify data log.

# CONTROL BOXES AQC L AND AQC P

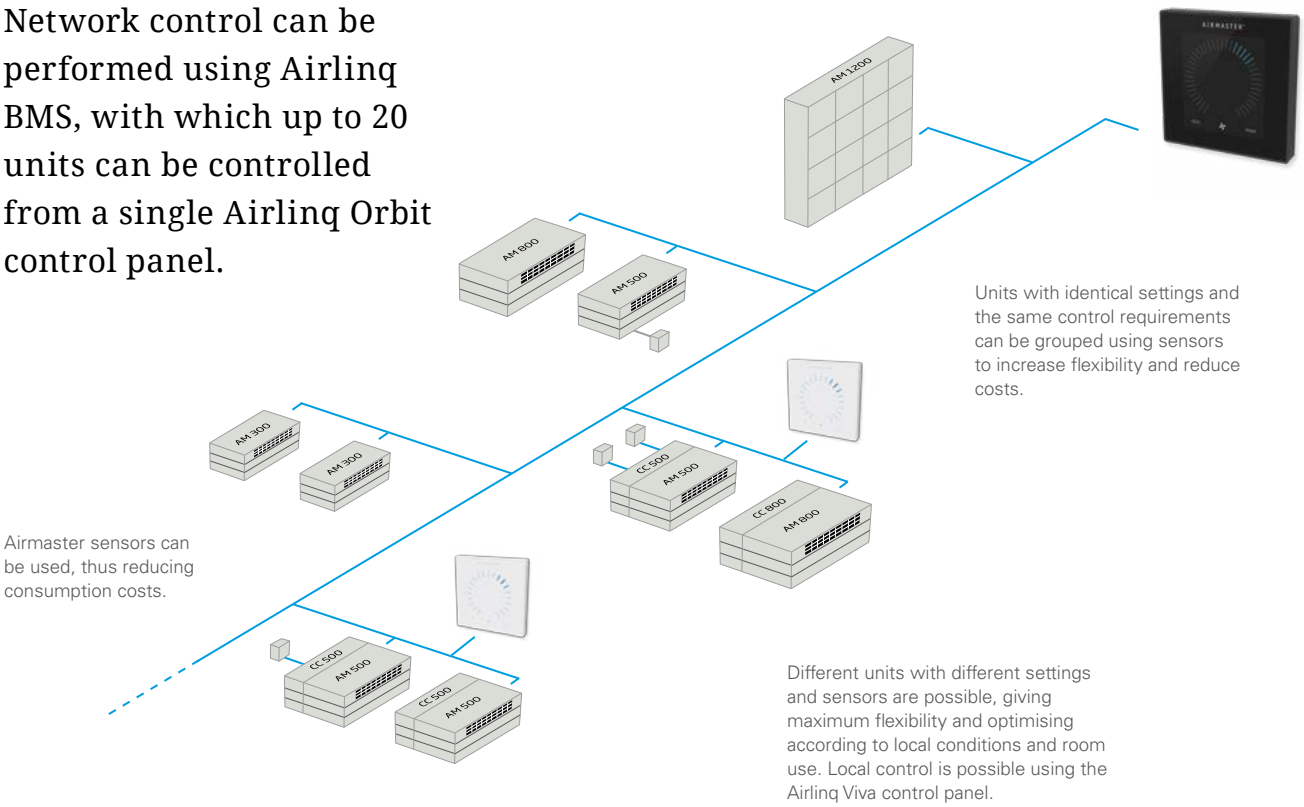
| | Control box AQC L | Control box AQC P |
|---|---|---|
| **STARTUP GUIDE - ORBIT** | | |
| An integrated startup guide ensures easy, quick programming during installation of the air handling unit. The guide is integrated in the setup menu, and can be restarted at any time. | • | • |
| **DATA LOGGING** | | |
| • Continuous data log of all major operating data. | • | • |
| • A data log can be converted to a predefined period log. | • | • |
| • Log frequency and operating data can be adapted. | • | • |
| • The control system is set to log data every 8 minutes as standard. The memory is big enough to collect operating data for 1 year. When the memory is full, the oldest data is overwritten to ensure access to the newest data. The advantages are:<br>- Production of very accurate operating data, which can be used for identifying errors for example.<br>- Generation of operating reports for each unit.<br>- Documentation of air quality using a $CO_2$ sensor | • | • |
| **CONTROL BOX** | | |
| • Network connection via a supplementary PCB to KNX®, LON®, MODBUS®, BACnet™ MS/TP and BACnet™/IP is possible. | • | • |
| • All control system intelligence is housed in the control box. This allows air handling unit operation without a control panel. | • | • |
| • The control panel is connected to a separate jack. | • | • |
| • Integrated cooler module control. | • | • |
| **MONITORING** | | |
| • Condenser monitoring using a float contact. | • | • |
| • Electronic monitoring of sensors and fans. | • | • |
| • Advanced warning and alarm system. Breakdowns can be quickly located - ventilation becomes more reliable. | • | • |
| • Filter monitoring using an hour counter. Time interval can be adjusted. | • | |
| • The control system constantly monitors airflow, to ensure that the unit can always provide balanced ventilation regardless of counter-pressure. | | • |
| • Filter monitoring using an hour counter and electronic flow monitoring. Time intervals can be adjusted. | | • |
| • Alarm output for remote monitoring of air handling unit. | | • |
| **TIMED CONTROL** | | |
| • Timed ventilation using 7 timer programs and built-in timer. Each timer program can be individually programmed with airflow, inlet temperature, days and times. | • | • |
| • Several programs can be active at the same time. | • | • |
| • Timer programs can override each other. | • | • |

# Description of control system functions for the AQC L and AQC P control boxes.

| | Control box AQC L | Control box AQC P |
|---|---|---|
| **NIGHT TIME COOLING** | | |
| • Automatic, regardless of whether function is activated. | • | • |
| • Utilises cold night air to cool a room. | • | • |
| • Automatic activation of the cooling module if necessary. | • | • |
| • The program can be adapted to suit. | • | • |
| **FULLY AUTOMATIC DAMPER** | | |
| • Control of motorised main damper to prevent draughts and cold air. | • | • |
| • Control of inlet air using a bypass damper. | • | • |
| **HEATING SURFACES** | | |
| • Frost protection using a preheating surface and the “Preheat” function. | • | • |
| • Frost protection using a heating surface and the “Virtual preheat” function. | • | • |
| • Automatic control of two heating surfaces. | • | • |
| **ANALOGUE BMS** | | |
| • Control of operating times and airflows or inlet temperature. | • | • |
| • Alarm outlet in the event of error. | | • |
| **ENERGY METER** | | |
| • Monitoring and reading of energy consumption for each unit, using a built-in energy meter with display. | • | • |
| • Read-off for energy consumption using the Airlinq Service Tool for each unit. | • | • |
| **SENSORS** | | |
| • Airflow controlled on demand using a $CO_2$ sensor. | • | • |
| • Integrated 13.5 Volt power supply to sensors. | • | |
| • 3 analogue inlets for external control signals:<br>- Inlets can also be used as digital inlets.<br>- Inlets can be programmed as required. | • | |
| • Integrated 12 Volt power supply to multiple sensors. | | • |
| • Integrated 24 Volt power supply to single sensor. | | • |
| • 3 analogue and 3 digital inlets for sensors.<br>- Analogue inlets can also be used as digital inlets.<br>- Inlets can be programmed as required. | | • |
| **EXTERNAL EMERGENCY STOP** | | |
| • Deactivation of the unit from an external signal independent of the unit's operating status and other start signals, e.g. in an emergency. | • | • |
| • The unit will stop the fans immediately, close the supply and extracted air dampers. | • | • |

# NETWORK WITH AIRMASTER

Network control can be performed using Airlinq BMS, with which up to 20 units can be controlled from a single Airlinq Orbit control panel.




Units with identical settings and the same control requirements can be grouped using sensors to increase flexibility and reduce costs.

Airmaster sensors can be used, thus reducing consumption costs.

Different units with different settings and sensors are possible, giving maximum flexibility and optimising according to local conditions and room use. Local control is possible using the Airlinq Viva control panel.

## AIRLINQ BMS

Flexibility is the order of the day for the Airlinq BMS system. BMS stands for "Building Management System".

Up to 20 different air handling units can be controlled by the system from a single control panel. The units can be different types and fitted with different options. Cooling modules can also be attached to individual units as and when required. Such a degree of flexibility means that units with different levels of performance and options can be connected to a single system, whilst meeting the requirements of any individual room.

Dividing the system into groups of one or more units with a common control system optimises use of their size and sensors.

Control using a single sensor (e.g. $CO_2$ sensor) or a combination (e.g. a motion sensor and a $CO_2$ sensor) is also possible. Using sensors overrides the basic operating parameters for individual units, whole groups or all units.

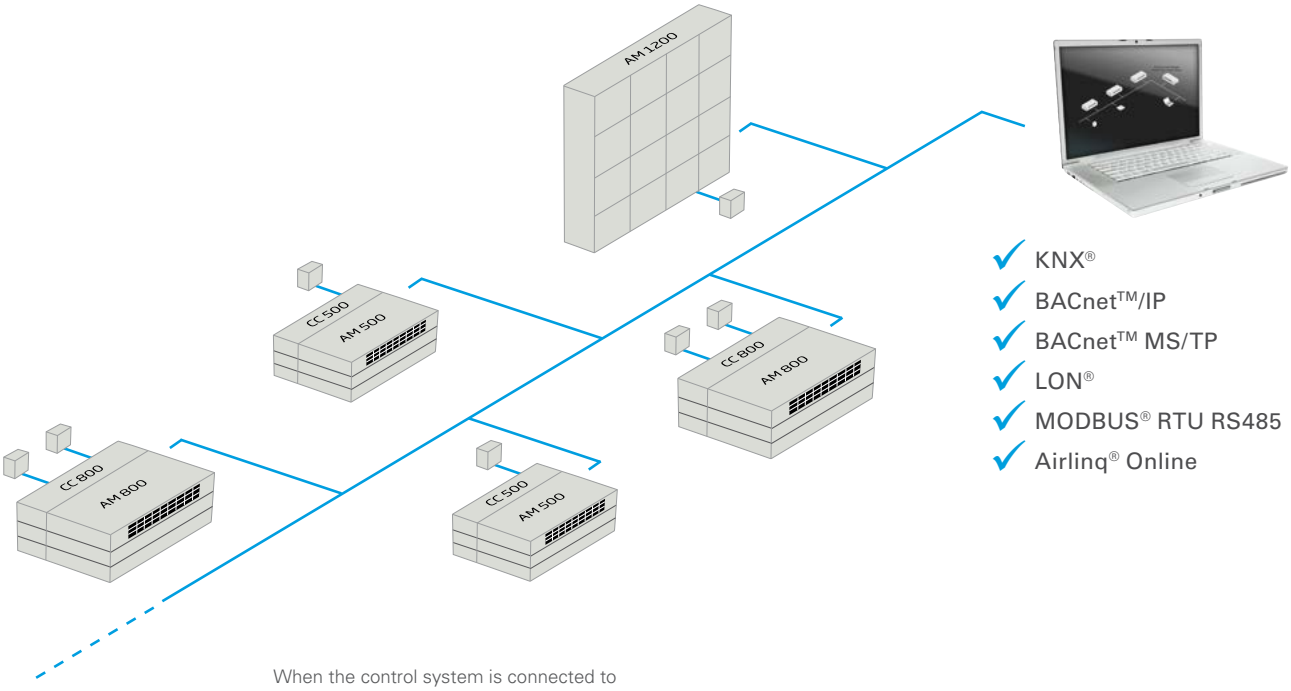
Individual operation, monitoring and programming - plus programming of common parameters - are performed from a single control panel. Connection to an analogue building network (BMS system) is of course also possible.

# **DIGITAL** BMS

A BMS (Building Management System) network makes it possible to keep all the benefits of decentralised ventilation, whilst utilising the administrative benefits of central control.

Airmaster air handling units are easy to control from a PC and integrate with other building automation. The full overview of operation and temperature can be gained from a local PC along with programming units according to the use of the room.

The units can also run fully automatically, but can be monitored using a BMS network. Airmaster motion sensor and $CO_2$ sensors can be connected, for data from the units and sensors can be transferred to the BMS network. This reduces installation, operation and maintenance costs.




- ✓ KNX®
- ✓ BACnet™/IP
- ✓ BACnet™ MS/TP
- ✓ LON®
- ✓ MODBUS® RTU RS485
- ✓ Airlinq® Online

When the control system is connected to BMS, all individual air handling units can be controlled and/or monitored by BMS.

# NEW AIRMASTER
# AIRLINQ® ONLINE

Airmaster Airlinq® Online is a cloud based WEB portal, where the user is able to control, monitor, and manage all of the installed Airmaster air handling units (AHU) of a project. The WEB portal is accesable from both PC, smarthphone, and tablet.


The Airlinq Online WEB portal gives the user an overview and access to operation and monitoring of installed Airmaster AHU of a project.

Airmaster Airlinq Online is much more than just a web service. It is a total package, which includes that Airmaster in co-operation with the customer makes the setup of the project and ensures correct connection and setup for each AHU on the WEB portal. Furthermore, Airmaster provides fundamental instructions and training in using the system. Hereby ensuring maximum user satisfaction. Airmaster Airlinq Online includes 3 years, free of charge, software update of the firmware for the air handling unit.

The setup of each AHU includes, besides setup of operating parameters, also the fundamental setup of user groups and registration of authorised users with associated permissions and rights.

The setup of each AHU ensures that the customer gets the overview and availability of the project customized to his needs. Furthermore, the operation of each AHU is individually adjusted to the project. This way the energy consumption can be kept at a minimum by ensuring an efficient operation setup.

# OVERVIEW & PEACE OF MIND
## IN YOUR DAILY BUSINESS

**AIRLINQ ONLINE ENABLES ONE-STEP MONITORING, SETTING AND PLANNING.**
Airlinq Online covers all of your needs for centralised administration yet retains all of the benefits of a decentralised ventilation system. The system provides an immediate overview of all of your ventilation solutions, whether you are a local authority, housing association, property manager, caretaker or end user.

- Online control
- Online operation
- Online monitoring of operations

**SECURITY**
Even though transparency is important, the security has our top priority. This means that all communication is safely encrypted. This applies to both between the user and the server, and between the AHU's and the servers.

**OTHER SPECIFICATION:**
- Cloud based WEB portal
- Scalable to PC, smartphone, and tablet
- User-customised access
- Connection via Ethernet cable cat5e
- Firewall friendly communication
- Connect each unit individually or use RS485 for connection of up to 20 units via an ethernet connection.

**For further information about Airlinq® Online please see our brochure on our website: www.airmaster-as.com/download/brochures**

# DV 1000

## TECHNICAL DATA

| | |
|---|---|
| **Nominal capacity*** | 1000 $m^3/h$ |
| **Current*** | 2.6 A |
| **Maximum power consumption*** | 333 W |
| **Electrical connection with electric heating surface** | 3 ~ 230 V + N + PE/50 Hz |
| **Duct connections** | 315 mm dia. |
| **Condensate drain, int. / ext.** | 8/12 mm dia. |
| **Weight** | 210 kg |
| **Heat exchanger** | Countercurrent heat exchanger (alu) |
| **Fresh air filter** | M5, F7 or F9 |
| **Colour** | Galvanized steel |
| **Power cable without electric heating surface** | 1.5 $mm^2$ |
| **Leakage current** | ≤ 7 mA |
| **Dimensions (W/H/D)** | H: 1498 x 424 x 1384 mm<br>S: 1512 x 501 x 1385 mm |

* With M5/M5 filter

## ELECTRIC HEATING SURFACE (OPTION)

| | |
|---|---|
| **Heat output** | 2500 W |
| **Thermal circuit breaker, aut. reset** | 75°C |
| **Thermal circuit breaker, man. reset** | 120°C |

## WATER HEATING SURFACE (OPTION)*

| | |
|---|---|
| **Max. operating temperature** | 90°C |
| **Max. operating pressure** | 10 bar |
| **Heat output** | 2913 W** |
| **Connection dimension** | 3/4" (DN 20) |
| **Materials pipes/fins** | copper/aluminium |
| **Open/close time, motor valve** | < 60 s |

* Duct heating surface (pipe-based)

** Capacity at: supply/return temperature 60/40°C, water volume 125 L/h

## STANDARD AND OPTIONS

| | DV 1000 |
|---|---|
| **Colour: RAL 9010 (white)** | • |
| **Bypass** | x |
| **Electric heating surface** | • |
| **Water heating surface** | ● |
| **$CO_2$ sensor (wall-mounted)** | • |
| **$CO_2$ sensor (built-in)** | • |
| **PIR/motion sensor** | • |
| **Hygrostat** | • |
| **Condensate pump** | x |
| **Cooling module** | • |
| **Motor-controlled exhaust air damper** | ● |
| **Spring-return actuator on exhaust air damper** | • |
| **Motor-controlled supply air damper** | ● |
| **Spring-return actuator on supply air damper** | • |
| **Countercurrent heat exchanger (aluminium)** | x |
| **Energy meter** | • |

x: standard ● : option

The DV 1000 is a compact, high pressure unit with low SFP value.

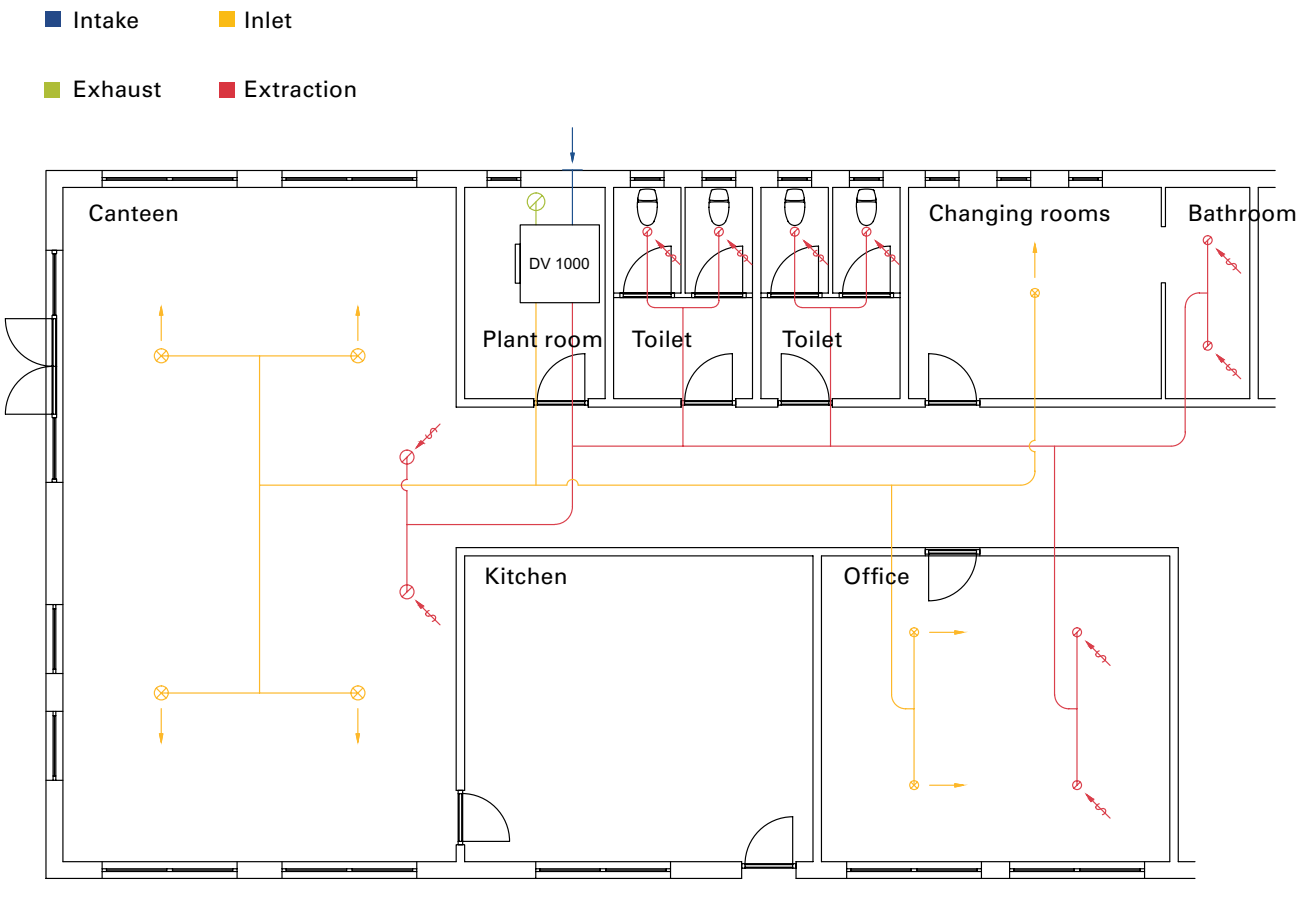
It is available in two variants - hinged or sliding doors. The option makes it suitable for either vertical or horizontal opening, depending on the type of ceiling and space available.

# DV 1000
## IN USE

The DV 1000 is the perfect air handling unit for ventilating large buildings, such as office buildings, schools or fitness centres.

**OFFICE BUILDING**
DV 1000 mounted on the ceiling in a plant room. Intake runs through a facade grille in the outer wall, with exhaust above roof level.

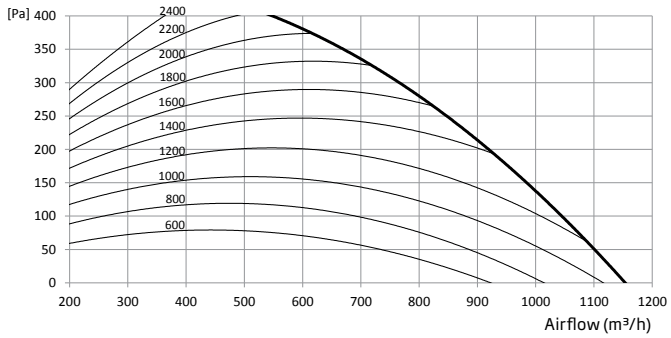
Air is supplied to canteen, offices and changing rooms, and extraction from offices, canteen, showers and toilets.




Duct dimensions, damper and silencers are not illustrated above.

# DV 1000

SFP W/(m³/s)* (Pa)




**Add extra pressure loss for F7 fresh air filter.**

$\Delta P = 0{,}0222 \cdot q_v$ [Pa]; ($q_v$ = flow i m³/h)

Pressure loss (p) incl. F7 filter: $p = p_s + \Delta p$ [Pa]

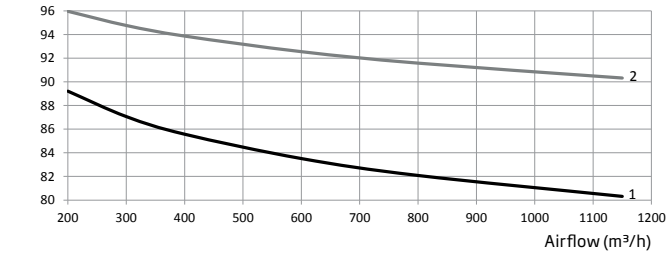
**Power consumption (P):**

$P = SFP \cdot q_v/3600$ [W];

(SFP from diagram and $q_v$ = airflow in m³/h)

* Specific fan power for air transport.
Measured for both fans and control system.

TEMPERATURE EFFICIENCY (%)



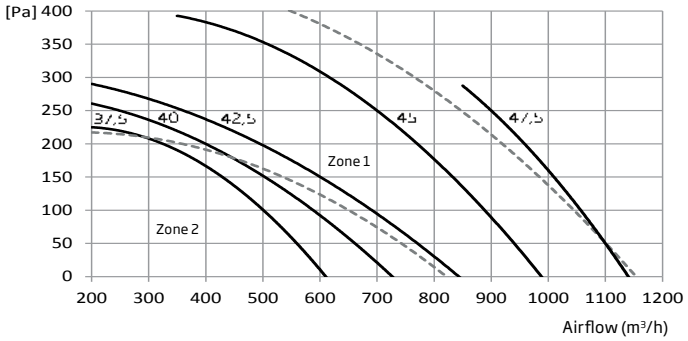

**1: According to: EN308 (without condensation)**

Conditions: Indoor air: 25 °C 28 % RH
Outdoor air: 5 °C 50 % RH

**2: With condensation**

Conditions: Indoor air: 25 °C 55 % RH
Outdoor air: -10 °C 50 % RH

SOUND POWER LEVEL - CABINET (dB(A))

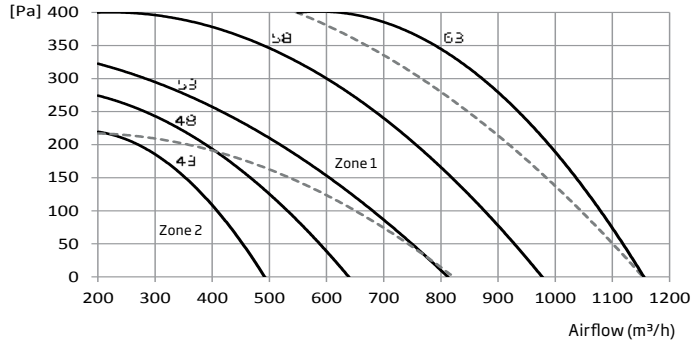



SOUND POWER LEVEL - CABINET $L_W = L_{WA} + K_W$

| HZ | ZONE 1 $K_W$ | ZONE 2 $K_W$ |
|---|---|---|
| **63** | 13 | 13 |
| **125** | 8 | 11 |
| **250** | 6 | 6 |
| **500** | -7 | -9 |
| **1000** | -12 | -16 |
| **2000** | -14 | -16 |
| **4000** | -20 | -18 |
| **8000** | -20 | -17 |

Sound power level from the cabinet is measured according to:
EN ISO 3744

SOUND POWER LEVEL - PRESSURE SIDE (dB(A))

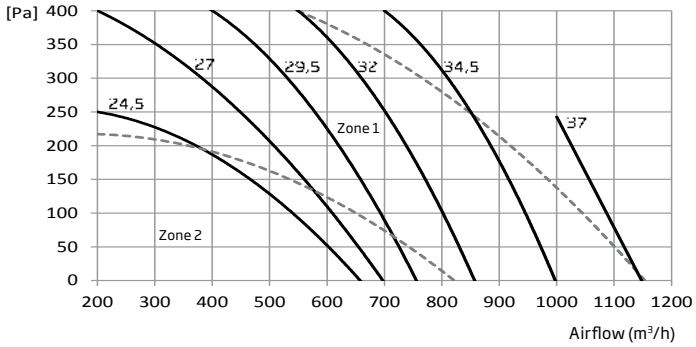



SOUND POWER LEVEL - PRESSURE SIDE $L_W = L_{WA} + K_W$

| HZ | ZONE 1 $K_W$ | ZONE 2 $K_W$ |
|---|---|---|
| **63** | -4 | -5 |
| **125** | -9 | -4 |
| **250** | -5 | -7 |
| **500** | -12 | -13 |
| **1000** | -15 | -16 |
| **2000** | -13 | -15 |
| **4000** | -20 | -22 |
| **8000** | -20 | -29 |

Sound power level for ducts is measured according to: EN ISO 5136

SOUND POWER LEVEL - SUCTION SIDE (dB(A))

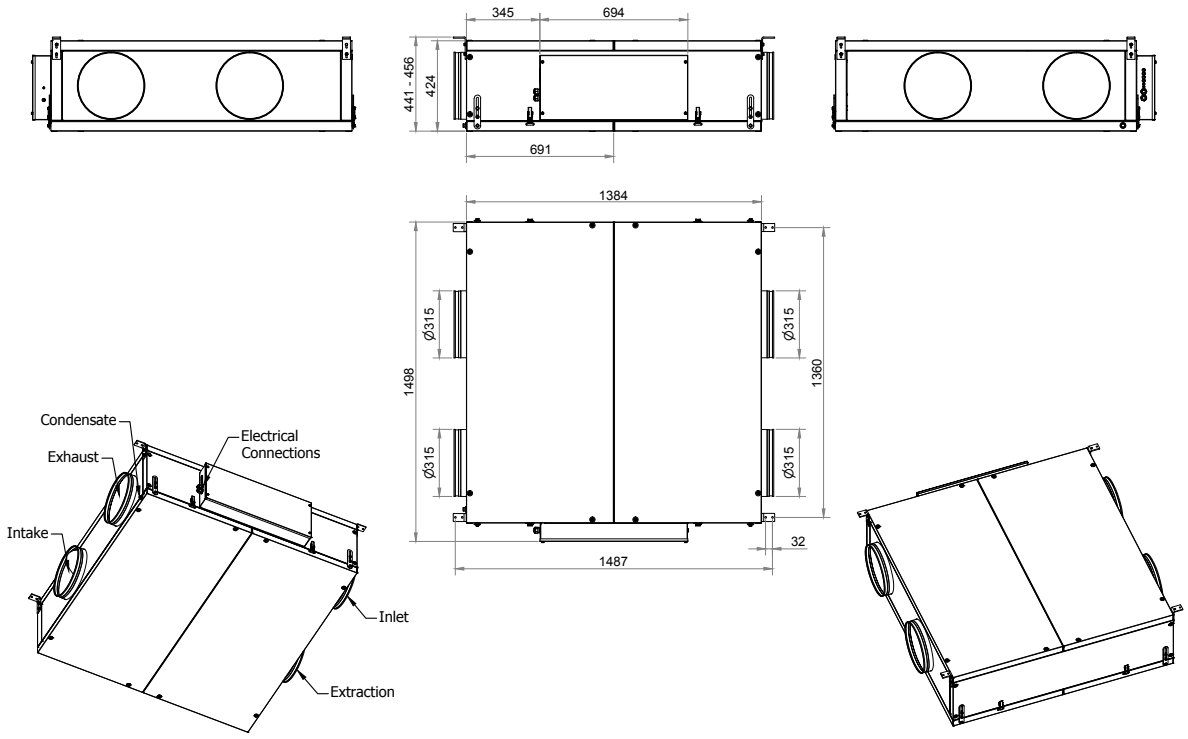



SOUND POWER LEVEL - SUCTION SIDE $L_W = L_{WA} + K_W$

| HZ | ZONE 1 $K_W$ | ZONE 2 $K_W$ |
|---|---|---|
| **63** | -2 | -2 |
| **125** | -9 | -7 |
| **250** | -8 | -9 |
| **500** | -18 | -19 |
| **1000** | -21 | -22 |
| **2000** | -25 | -28 |
| **4000** | -36 | -38 |
| **8000** | -42 | -49 |

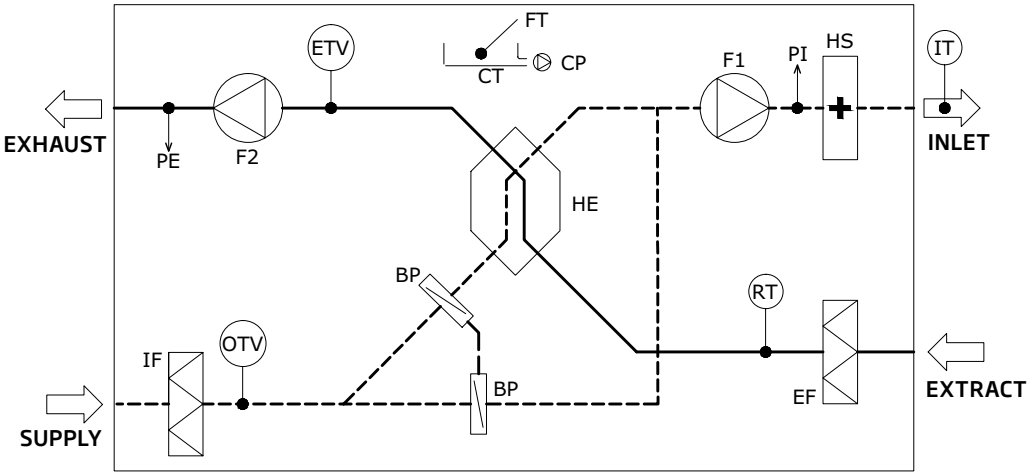
Sound power level for ducts is measured according to: EN ISO 5136

DV 1000 H




Example of dimension drawing. To see the latest dimension drawings please go to our website: www.airmaster-as.com

SCHEMATIC SKETCH




NAME OF COMPONENT

| | | | | | |
|---|---|---|---|---|---|
| BP | Bypass (motor-controlled) | F1 | Supply air fan | OVT | Outside temperature sensor, ventilation |
| CP | Condensate pump | F2 | Extract air fan | | |
| CT | Condensate tray | HE | Countercurrent heat exchanger | PE | Flow meter, extracted air |
| EF | Extract air filter | HS | Electric heating surface (option) | PI | Flow meter, supply air |
| ETV | Exhaust temperature sensor, ventilation | IF | Supply air filter | RT | Room temperature sensor |
| FT | Float | IT | Inlet air temperature sensor | | |

# CC 1000 COOLING MODULE

Read more about our inverter-controlled cooling modules on page 74

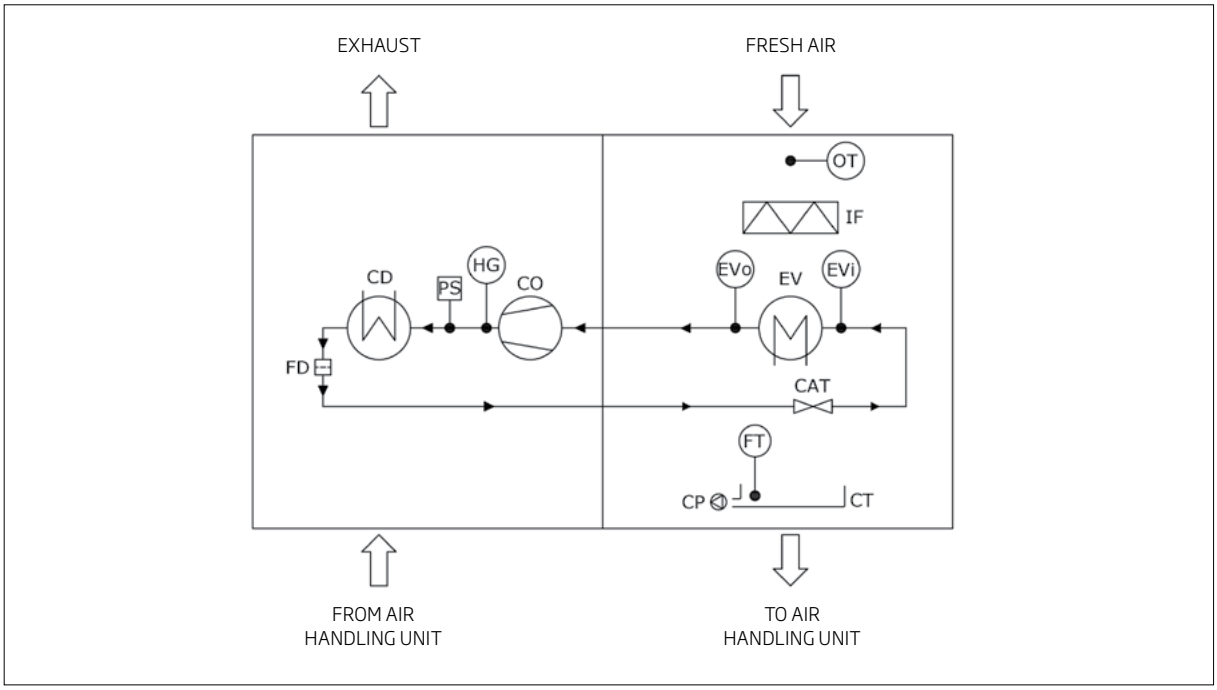
## TECHNICAL DATA

| | |
|---|---|
| **Nominal cooling capacity*** | 6450 W |
| **Min. cooling capacity*** | 1120 W |
| **Nominal EER** | 4.45 |
| **Max. airflow** | 900 $m^3/h$ |
| **Min. airflow**** | 360 $m^3/h$ |
| **Electricity supply** | 1 ~ 230 V/AC/50 Hz |
| **Nominal electrical output** | 1450 W |
| **Nominal current strength** | 8.9 A |
| **Electrical output factor** | 0.71 |
| **Max. leakage current** | 2.0 mA |
| **Coolant** | R410a |
| **Filling** | 900 g |
| **Duct connection** | 315 mm dia. |
| **Drain hose, internal/external diameter.** | 8/12 mm dia. |
| **Energy class (SEC class)** | $A^{+++}$ |
| **Weight** | 85 kg |
| **Dimensions (W/H/D)** | 2325 x 555 x 1207 mm |

* Measured according to DS/EN308 and DS/EN14825 at max. airflow with M5 filter.

** Cooling module activation.

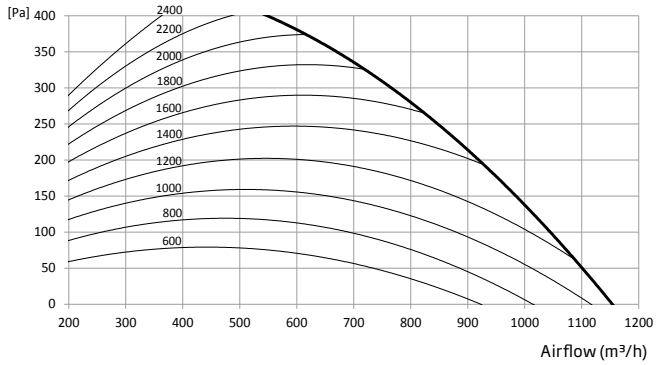
SCHEMATIC SKETCH CC




NAME OF COMPONENT

| | |
|---|---|
| CD | Condenser |
| CO | Compressor, inverter-controlled |
| CP | Condensate pump |
| CT | Condensate tray |
| CAT | Capillary tube |
| EV | Evaporator |
| EVi | Evaporator, Temperature inlet |
| EVo | Evaporator, Temperature output |
| FD | Dry filter |
| FT | Float |
| HG | Hot gas temperature |
| OT | Outside temperature |
| PS | Pressure Switch (CC 500, CC 800, CC 1000) |

SFP W/(m³/s)* (Pa) DV 1000 + CC 1000




**Add extra pressure loss for F7 fresh air filter.**

$\Delta P = 0{,}0222 \cdot q_v$ [Pa]; ($q_v$ = flow i m³/h)

Pressure loss (p) incl. F7 filter: $p = p_s + \Delta p$ [Pa]

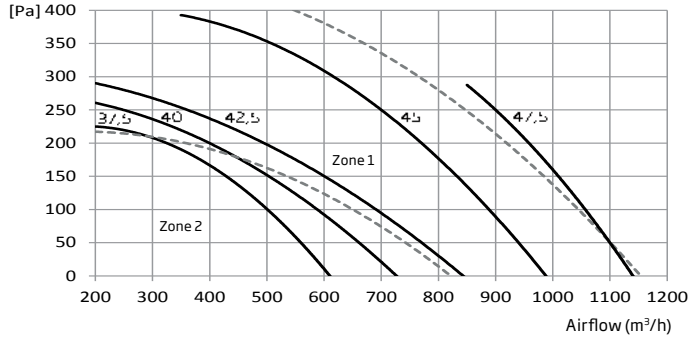
**Power consumption (P):**

$P = SFP \cdot q_v/3600$ [W];

(SFP from diagram and $q_v$ = airflow in m³/h)

* Specific fan power for air transport.
Measured for both fans and control system.

SOUND POWER LEVEL - CABINET (dB(A))

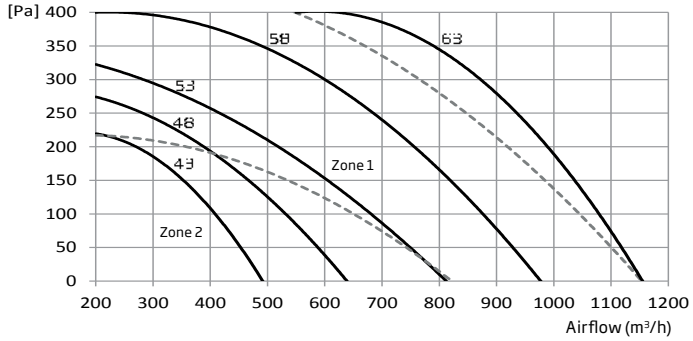



SOUND POWER LEVEL - CABINET $L_W = L_{WA} + K_W$

| HZ | ZONE 1 $K_W$ | ZONE 2 $K_W$ |
|---|---|---|
| **63** | 13 | 13 |
| **125** | 8 | 11 |
| **250** | 6 | 6 |
| **500** | -7 | -9 |
| **1000** | -12 | -16 |
| **2000** | -14 | -16 |
| **4000** | -20 | -18 |
| **8000** | -20 | -17 |

Sound power level from the cabinet is measured according to:
EN ISO 3744

SOUND POWER LEVEL - PRESSURE SIDE (dB(A))

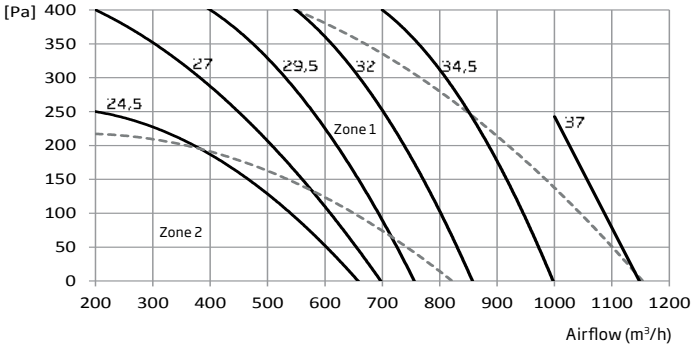



SOUND POWER LEVEL - PRESSURE SIDE $L_W = L_{WA} + K_W$

| HZ | ZONE 1 $K_W$ | ZONE 2 $K_W$ |
|---|---|---|
| **63** | -4 | -5 |
| **125** | -9 | -4 |
| **250** | -5 | -7 |
| **500** | -12 | -13 |
| **1000** | -15 | -16 |
| **2000** | -13 | -15 |
| **4000** | -20 | -22 |
| **8000** | -20 | -29 |

Sound power level for ducts is measured according to: EN ISO 5136

SOUND POWER LEVEL - SUCTION SIDE (dB(A))



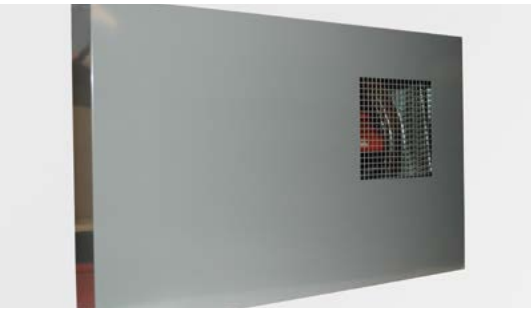

SOUND POWER LEVEL - SUCTION SIDE $L_W = L_{WA} + K_W$

| HZ | ZONE 1 $K_W$ | ZONE 2 $K_W$ |
|---|---|---|
| **63** | -2 | -2 |
| **125** | -9 | -7 |
| **250** | -8 | -9 |
| **500** | -18 | -19 |
| **1000** | -21 | -22 |
| **2000** | -25 | -28 |
| **4000** | -36 | -38 |
| **8000** | -42 | -49 |

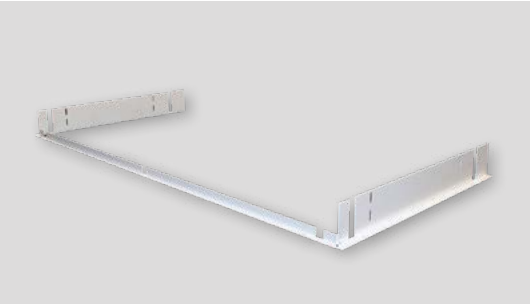
Sound power level for ducts is measured according to: EN ISO 5136

# **INSTALLATION** AND FITTINGS

**FACADE GRILLE** supplied with built-in bird net, and protects against driving rain.



**WALL COVER** for the AM 800 and AM 900 - used when supply and exhaust have to be close together and prevents external short circuit.



**CEILING FRAME** for AM 300, AM 500 and AM 800.

**WALL FRAME** for AM 300, AM 500 and AM 800.

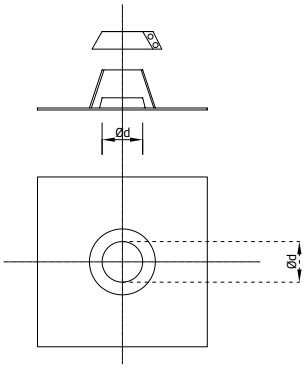
**CEILING BRACKETS** for mounting direct on ceiling as support if a wall provides an unsatisfactory mounting point.

**CEILING BRACKET** for DV 1000.

**VAPOUR BARRIER MEMBRANE** used around pipes penetrating walls or roofs. Ensures tight vapour membrane after ducting.

**ADJUSTABLE CEILING BRACKETS** height adjustable.

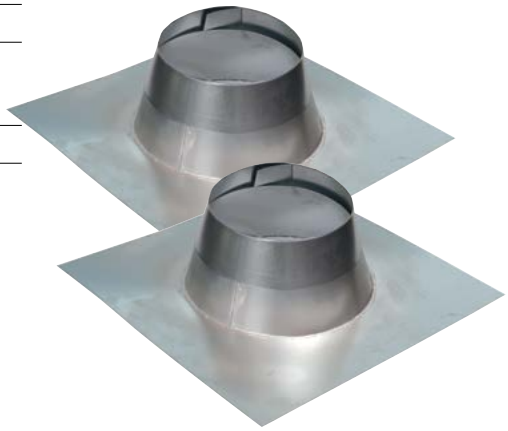
# **ROOF** COVERS




| | Int. dia. |
|---|---|
| **AM 150** | 250 |
| **AM 300** | 315 |
| **AM 500** | 355 |
| **AM 800**<br>**AM 900 / AM 1200**<br>**DV 1000** | 450 |
| **AM 1200** | 500 |

Int. dia. = internal diameter.
Roof covers are available in galvanised or grey preformed sheet metal, both with a galvanised sheet metal pipe collar.

Also available in black at extra charge.



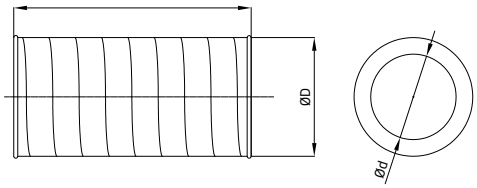
# **INSULATED**
# PENETRATION DUCTING

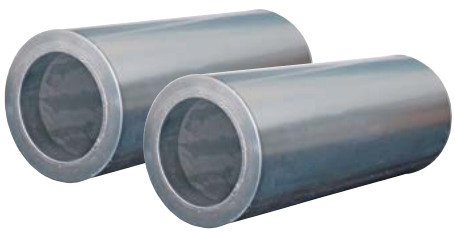
| | Int. dia. | Ext. dia. |
|---|---|---|
| **AM 150** | 125 | 250 |
| **AM 300** | 200 | 315 |
| **AM 500** | 250 | 355 |
| **AM 800**<br>**AM 900**<br>**DV 1000** | 315 | 450 |
| **AM 1200** | 400 | 500 |

Int. dia. = internal diameter · Ext. dia. = external diameter.
Insulated penetration ducting with minimum 50 mm insulation.
Length depends on roof pitch:
Pitch 0° - 30° = length 900 mm · Pitch 31° - 45° = length 1200 mm

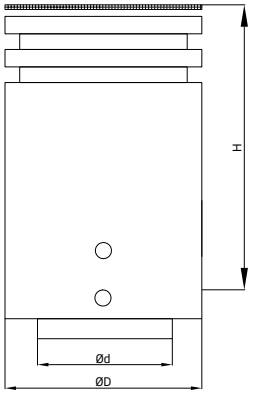
Also available in black at extra charge.

L = AM 900/AM 1200 depending on roof pitch.



# **EXHAUST** CAP

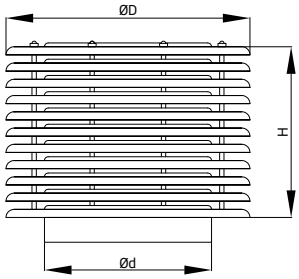



| | Int. dia. | Ext. dia. | H |
|---|---|---|---|
| **AM 150** | 125 | 250 | 230 |
| **AM 300** | 200 | 315 | 380 |
| **AM 500** | 250 | 355 | 437 |
| **AM 800**<br>**AM 900**<br>**DV 1000** | 315 | 450 | 540 |
| **AM 1200** | 400 | 500 | 700 |

Int. dia. = internal diameter · Ext. dia. = external diameter · H = height
NB: the height measurements stated are to the upper edge of the lowest hole.
The exhaust cap has the same external dimensions as Airmaster's insulated pipes to ensure a good fit.

Also available in black at extra charge.

# **LOUVRED** CAP




| | Int. dia. | Ext. dia. | H |
|---|---|---|---|
| **AM 150** | 125 | 250 | 130 |
| **AM 300** | 200 | 315 | 160 |
| **AM 500** | 250 | 355 | 191 |
| **AM 800**<br>**AM 900**<br>**DV 1000** | 315 | 450 | 222 |
| **AM 1200** | 400 | 500 | 284 |

Int. dia. = internal diameter · Ext. dia. = external diameter · H = height
The louvred cap has the same external dimensions as Airmaster's insulated pipes to ensure a good fit.

Also available in black at extra charge.

# **ROOF PENETRATION** SET

A complete roof penetration set
consists of
2 insulated penetration ductings,
2 roof covers,
1 exhaust cap,
1 louvred cap,
2 bushings and
3 metres spiral pipe.

# **ROOF CAP** MODULE

| **AM 900/AM 1200** | **Int. dia.** | **Ext. dia.** | **H** | **H x W x D** |
|---|---|---|---|---|
| Exhaust cap | 315 | 450 | 540 | - |
| Louvred cap | 315 | 450 | 540 | - |
| Box housing AM 900 | - | - | - | 1000 x 950 x 500 |
| Box housing AM 1200 | - | - | - | 1004 x 884 x 434 |

Int. dia. = internal diameter · Ext. dia. = external diameter · H = height

A roof cap module is used on roofing felt roofs with a pitch of 0-30° for AM 900 V and AM 1200 V. Exhaust and louvred caps are integrated into a box housing.
Please remember to state roof pitch when ordering.

# TECHNICAL **DATA**

| AM | | 150 | 300 | 500 | 800 |
|---|---|---|---|---|---|
| Maximum capacity at 30 dB(A) | $m^3/h$ | 115 | 240 | 430 | 650 |
| Maximum capacity at 33 dB(A) | $m^3/h$ | - | 270 | 490 | 688 |
| Maximum capacity at 35 dB(A) | $m^3/h$ | 147 | 300 | 550 | 725 |
| Throw length (max.) | m | 3,4 | 6.5 | 7.5 | 8.1 |
| Weight, air handling unit (ex-options) | kg | 47 | 50 | 108 | 155 |
| Design panel dimensions | mm | | | | 600 x 500 or 1200 x 1000 |
| Colour, panel | RAL | - | 9010 | 9010 | 9010 |
| Colour, cabinet | RAL | 9010 | 7024 | 7024 | 7024 |
| Dimensions (W/H/D) | mm | 1170/261/572 | 1274/333/578 | 1600/439/779 | 1910/474/916 |
| Voltage, unit | V | 1~230 | 1~230 | 1~230 | 1~230 |
| Frequency | Hz | 50 | 50 | 50 | 50 |
| Maximum power consumption | W | 38 | 100 | 132 | 156 |
| Current | A | 0.3 | 0.6 | 1.1 | 1.1 |
| Output factor | | 0.55 | 0.56 | 0.58 | 0.56 |
| Leakage current (max.) | mA | ≤0,5 | ≤3 | ≤6 | ≤6 |
| Fuse (max.) | A | 13 | 13 | 16 | 16 |
| **ELECTRIC HEATING SURFACE** | | | | | |
| Thermal circuit breaker, aut. reset | °C | 75 | 75 | 75 | 75 |
| Thermal circuit breaker, man. reset | °C | 90 | 120 | 120 | 120 |
| Electric comfort heater output | W | - | - | 630 | 1000 |
| Current | A | - | - | 2,6 | 4,4 |
| Electric preheater output | W | - | - | 1000 | 1500 |
| Current | A | - | - | 4.4 | 6.5 |
| Heating surface (VPH)* | W | 600 | 750/1500 | - | - |
| Current | A | 2,6 | 3,3/6,5 | - | - |
| **WATER HEATING SURFACE** | | | | | |
| Output at 60/40 °C supply/return | W | - | 343 | 686 | 943 |
| Operating temperature (max.) | °C | - | 90 | 90 | 90 |
| Operating pressure (max.) | bar | - | 10 | 10 | 10 |
| Connections | | - | 3/8"/DN10 | 3/8"/DN10 | 1/2" (DN 15) |
| Materials | | - | Copper / Aluminium | Copper / Aluminium | Copper / Aluminium |
| Motor valve, opening and closing times | s | - | 60 | 60 | 60 |
| **CONDENSATE PUMP** | | | | | |
| Maximum capacity | l/h | 10 | 10 | 10 | 10 |
| Maximum lift height | m | 6 | 6 | 6 | 6 |

* VPH: Virtual Preheat

| AM | | **900 (mixing)** | **900 (displ.)** | **1000** | **1200** |
|---|---|---|---|---|---|
| Maximum capacity at 30 dB(A) | $m^3/h$ | 690 | 650 | 950 | 1050 |
| Maximum capacity at 33 dB(A) | $m^3/h$ | 760 | 725 | 1075 | 1180 |
| Maximum capacity at 35 dB(A) | $m^3/h$ | 830 | 800 | 1100 | 1310 |
| Throw length | m | 12 | 1,5 | 10.5 | 9.5 |
| Weight, air handling unit (ex-options) | kg | 180 | 180 | 286.5 | 545/630 |
| Design panel dimensions | mm | - | - | | -600 x 500 or 1200 x 1000 |
| Colour, panel | RAL | 9010 | 9010 | 9010 | 9010 |
| Colour, cabinet | RAL | 7024 | 7024 | 7024 | 7024 |
| Dimensions (W/H/D) | mm | 800/2323/588 | 800/2323/688 | 2324/558/1244 | 2427/2098/496 |
| Min. ceiling height for horizontal supply/exhaust | mm | 2490 | 2490 | - | 2400 |
| Min. ceiling height for vertical supply/exhaust | mm | 2490 | 2490 | - | 2500 |
| Voltage, unit | V | 1~230 | 1~230 | 3~230 | 3~230 |
| Frequency | Hz | 50 | 50 | 50 | 50 |
| Maximum power consumption | W | 240 | 240 | 260 | 254 |
| Current | A | 1.8 | 1.8 | 1.9 | 1.4 |
| Output factor | | 0.60 | 0.60 | 0.60 | 0.60 |
| Leakage current (max.) | mA | ≤6 | ≤6 | ≤3.5 | ≤9 |
| Fuse (max.) | A | 16 | 16 | 3 x 16 | 20/3 x 20 |
| **ELECTRIC HEATING SURFACE** | | | | | |
| Thermal circuit breaker, aut. reset | °C | 75 | 75 | 75 | 75 |
| Thermal circuit breaker, man. reset | °C | 120 | 120 | 120 | 120 |
| Electric comfort heater output | W | 1050 | 1050 | 1500 | 1670 |
| Current | A | 4.4 | 4.4 | 6.5 | 7.3 |
| Electric preheater output | W | 1500 | 1500 | 2300 | -/ 2500 |
| Current | A | 6.5 | 6.5 | 10 | -/10.9 |
| **WATER HEATING SURFACE** | | | | | |
| Output at 60/40 °C supply/return | W | 991 | 991 | 2400 | 2109 |
| Operating temperature (max.) | °C | 90 | 90 | 90 | 90 |
| Operating pressure (max.) | bar | 10 | 10 | 10 | 10 |
| Connections | | 3/4" (DN 20) | 3/4" (DN 20) | 1/2" (DN 15) | 3/4" (DN 20) |
| Materials | | Copper / Aluminium | Copper / Aluminium | Copper / Aluminium | Copper / Aluminium |
| Motor valve, open/close times | s | 60 | 60 | 60 | 60 |
| **CONDENSATE PUMP** | | | | | |
| Capacity | l/h | 10 | 10 | 10 | 10 |
| Lift height | m | 6 | 6 | 6 | 6 |

# TECHNICAL **DATA**

| DV | | **1000** |
|---|---|---|
| Nominal capacity | $m^3/h$ | 1000 |
| Weight, air handling unit (ex-options) | kg | 210 |
| Colour, cabinet | RAL | 9010 |
| Dimensions (W/H/D) | mm | H:1498/424/1384<br>S:1512/501/1385 |
| Unit voltage | V | 3~230 |
| Frequency | Hz | 50 |
| Nominal power consumption | W | 333 |
| Current | A | 2,6 |
| Output factor | Cos (phi) | 0,6 |
| Leakage current | mA | ≤7 |
| Fuse (max.) | A | 3x16 |
| **ELECTRIC HEATING SURFACE** | | |
| Thermal circuit breaker, aut. reset | °C | 75 |
| Thermal circuit breaker, man. reset | °C | 120 |
| Electric heating surface output | W | 2500 |
| Current | A | 10,9 |
| **WATER HEATING SURFACE** | | |
| Max. operating temperature | °C | 90 |
| Max. operating pressure | bar | 10 |
| Heat output | W | 2913 |
| Connection dimension | " | 3/4" |
| Materials pipes/fins | | copper/aluminium |
| Open/close time, motor valve | s | < 60 |
| **CONDENSATE PUMP** | | |
| Capacity | l/h | 10 |
| Lift height | m | 6 |

# TECHNICAL **DATA CC COOLING MODULE**

| CC | | **300** | **500** | **800** | **1000** |
|---|---|---|---|---|---|
| Nominal cooling capacity* | W | 2450 | 3280 | 5240 | 6450 |
| Min. cooling capacity* | W | 421 | 820 | 990 | 1120 |
| Nominal EER | | 4,01 | 3,16 | 4,72 | 4,45 |
| Max. airflow | $m^3/h$ | 260 | 500 | 650 | 900 |
| Min. airflow** | $m^3/h$ | 150 | 250 | 260 | 360 |
| Supply voltage for all cooling: 1 ~ 230 V/AC/50 Hz | | | | | |
| Nominal electrical output | W | 611 | 1040 | 1110 | 1450 |
| Nominal current strength | A | 3,8 | 6,4 | 6,8 | 8,9 |
| Electrical output factor | | 0,7 | 0,71 | 0,71 | 0,71 |
| Max. leakage current | mA | 2,8 | 1,5 | 1,3 | 2,0 |
| Coolant | | R134a | R410a | R410a | R410a |
| Filling | g | 300 | 480 | 740 | 900 |
| Duct connection | Dia. | 200 mm | 250 mm | 315 mm | 315 mm |
| Drain hose, internal/external diameter. | Dia. | 8/12 mm | 8/12 mm | 8/12 mm | 8/12 mm |
| Weight | kg | 49 | 82,8 | 100,7 | 85 |
| Dimensions incl. unit (W/H/D) | | 1274/333/972 | 1600/439/1185 | 1910/474/1321 | 2325/555/1207 |

* Measured according to DS/EN308 and DS/EN14825 at max. airflow with M5 filter.

** Cooling module activation.

# A BREATH OF FRESH AIR

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