# ECOAIR 2 SLIM

Be.On

EC Technology

Flexible Coil Modules

Plug & Play

Double-panel

## DESCRIPTION

Low-profile air handling unit, ECOAIR 2 SLIM, designed for ventilation and air conditioning applications. It integrates EC Plug Fan fans, up to 2 filtration stages, and 3 types of heating and/or cooling coils.

Structure made of aluminum profiles with 25 mm double-skin panels, outer face in Magnelis with corrosion class C5 and inner face in galvanized steel sheet Z275. Intermediate insulation in high-density rock wool ensures high thermal and acoustic performance.

Compact solution available in 6 sizes, for airflow rates between 500 and 8000 m³/h. The main unit allows integration of 3 types of coils (water heating/cooling coil, refrigerant coil, or electric heating coil), with the option to incorporate additional coil modules (water or refrigerant) and a 2-way mixing box.

Equipped with Smart Evolution and Be.On control systems.

## STANDARDS AND CERTIFICATIONS

EN 10327

EN 10192

CE

Protection Class IP44

## ADVANTAGES

- Compact unit designed for false ceilings.
- 25 mm double-skin insulated panels.
- Corrosion class C5.
- Low consumption electronic motor.
- Be.On module integration with cloud connection and Be.Smart monitoring.
- Flexible modular configurations: main coil module, additional coil modules, and additional 2-way mixing box.
- 3-way valve and actuator included.
- Integrated electrical panel.

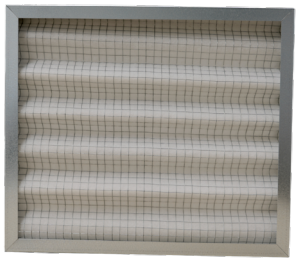
## ACCESSORIES

- ePM10 50% / M5 filter
- ePM1 50% / F7 filter
- Additional coil modules
- Additional 2-way mixing box
- Protection for rain (Intake / exhaust)
- Rain roof
- Constant airflow control
- $CO_2$ Control

## COMPONENTS

### FILTERS

The filtration system consists of two stages, mounted in parallel on sliding rails designed to minimize bypass leakage, in compliance with EN 1886. It may include an ePM10 50% (M5) pre-filter for coarse particles and a standard ePM1 50% (F7) fine filter (EN 779), according to ISO 16890 classification.



### FAN

Radial EC brushless Plug Fan centrifugal fan with backward-curved blades, compact design and high available pressure. The impeller aerodynamics, balanced according to ISO 1940 G2.5 and vibration compliant with AMCA 204, combined with an EC motor class B insulation and IP44 protection, ensures high capacity, efficiency, and performance even at high system resistance.

### COMPLEMENTARY MODULES

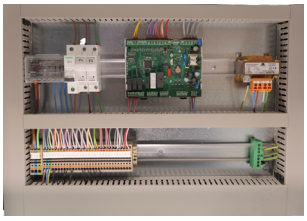
The additional modular configuration allows integration of a water coil module or refrigerant coil module, as well as a mixing box, enabling thermal flexibility and adaptation to various HVAC requirements.

### CHANGE OVER COIL

Water coil that allows both heating and cooling operation using the same heat exchanger. It consists of copper tubes, aluminum fins mechanically expanded onto tubes, copper headers, and galvanized steel frame. Tightness and integrity are factory tested at 32 bar. Module equipped with stainless steel condensate drain tray. 3-way valve and actuator included.

### DIRECT EXPANSION COIL

Direct expansion coil using R32 refrigerant. It consists of copper tubes, aluminum fins mechanically expanded onto tubes, copper headers, and galvanized steel frame. Tightness and integrity are factory tested at 60 bar. Module equipped with stainless steel condensate drain tray.



### ELECTRIC HEATING COIL

Electric heater coil composed of armored heating elements in 8 mm steel tubes with 25 × 50 mm fins of the same material and quick fixing screws with M4 threaded terminals. The heaters are specifically designed for air handling applications. They are mounted in a frame and installed on a sliding rail for easy removal.



## CHARACTERISTICS

| ECOAIR 2 SLIM | 500 | 1000 | 2000 | 3000 | 5000 | 8000 |
|---|---|---|---|---|---|---|
| Airflow ($m^3/h$) | 500 | 1000 | 2000 | 3000 | 5000 | 8000 |
| Static pressure (Pa) | 575 | 575 | 657 | 600 | 875 | 536 |
| Motor Power (kW) | 0,2 | 2 x 0,20 | 2 x 0,33 | 2 x 0,37 | 2 x 1,1 | 2 x 1,4 |
| Nominal Rotation Speed (rpm) | 3000 | 3000 | 3350 | 2750 | 3500 | 3300 |
| Power Supply (V \| F \| Hz) | 230 \| 1 \| 50 | | | | 400 \| 3 \| 50 | |
| Motor IP Class | IP 44 | | | | | |
| IMAX (A) | 1,71 | 3,32 | 4,04 | 4,70 | 4,76 | 5,54 |
| Sound Pressure (dB (A)) * | 43 | 46 | 50 | 48 | 56 | 54 |

* Sound pressure level at 4 m, measured in open field in accordance with ISO 3744

## CHARACTERISTICS

### CHANGE OVER COIL

| BCA ECOAIR 2 SLIM | Airflow (m³/h) | Heating | | | Cooling | | |
|---|---|---|---|---|---|---|---|
| | | Heating capacity (kW) | Water flow rate (l/s) | Water pressure drop (kPa) | Cooling capacity (kW) | Water flow rate (l/s) | Water pressure drop (kPa) |
| 500 | 356 | 3 | 0,13 | 4,3 | 2 | 0,07 | 3,2 |
| | 436 | 3 | 0,15 | 4,8 | 2 | 0,10 | 3,7 |
| | 495 | 3 | 0,17 | 5,1 | 2 | 0,12 | 4,1 |
| 1000 | 719 | 6 | 0,28 | 7,1 | 5 | 0,22 | 6,1 |
| | 879 | 7 | 0,32 | 8,4 | 5 | 0,25 | 6,9 |
| | 1000 | 7 | 0,35 | 9,4 | 6 | 0,27 | 7,5 |
| 2000 | 1439 | 11 | 0,55 | 6,8 | 9 | 0,43 | 5,9 |
| | 1758 | 13 | 0,63 | 8,1 | 10 | 0,49 | 6,7 |
| | 1998 | 14 | 0,69 | 9,0 | 11 | 0,53 | 7,3 |
| 3000 | 2136 | 17 | 0,83 | 11,5 | 14 | 0,67 | 9,5 |
| | 2611 | 20 | 0,95 | 14,7 | 16 | 0,76 | 11,6 |
| | 2967 | 22 | 1,04 | 17,2 | 17 | 0,81 | 13,3 |
| 5000 | 3561 | 29 | 1,39 | 13,2 | 24 | 1,13 | 10,9 |
| | 4352 | 33 | 1,60 | 16,9 | 27 | 1,27 | 13,5 |
| | 4946 | 36 | 1,74 | 19,8 | 29 | 1,37 | 15,4 |
| 8000 | 5800 | 47 | 2,24 | 17,4 | 39 | 1,85 | 13,7 |
| | 7089 | 54 | 2,58 | 22,4 | 44 | 2,09 | 16,9 |
| | 8056 | 59 | 2,81 | 24,1 | 47 | 2,25 | 19,3 |

Airflow at velocities: 1.8; 2.2; 2.5 m/s
Heating - Air temperature: 0°C / 80%. Water temperature: 45°C–40°C
Cooling - Air temperature: 35°C / 50%. Water temperature: 7°C–12°C

### DIRECT EXPANSION COIL

| BCR ECOAIR 2 SLIM | Airflow (m³/h) | Heating capacity (kW) | Cooling capacity (kW) |
|---|---|---|---|
| 500 | 292 | 2 | 3 |
| | 356 | 2 | 3 |
| | 405 | 2 | 4 |
| 1000 | 654 | 4 | 7 |
| | 800 | 4 | 7 |
| | 909 | 5 | 8 |
| 2000 | 1374 | 8 | 14 |
| | 1679 | 9 | 16 |
| | 1908 | 10 | 17 |
| 3000 | 2085 | 13 | 21 |
| | 2548 | 15 | 23 |
| | 2895 | 16 | 25 |
| 5000 | 3459 | 22 | 36 |
| | 4227 | 25 | 40 |
| | 4803 | 28 | 43 |
| 8000 | 5613 | 36 | 57 |
| | 6861 | 41 | 64 |
| | 7796 | 45 | 69 |

Airflow at velocities: 1.8; 2.2; 2.5 m/s
Heating - Air inlet temperature: 10°C / 55%. R32 condensation temperature: 50°C
Cooling - Air inlet temperature: 35°C / 50%. R32 evaporation temperature: -4°C

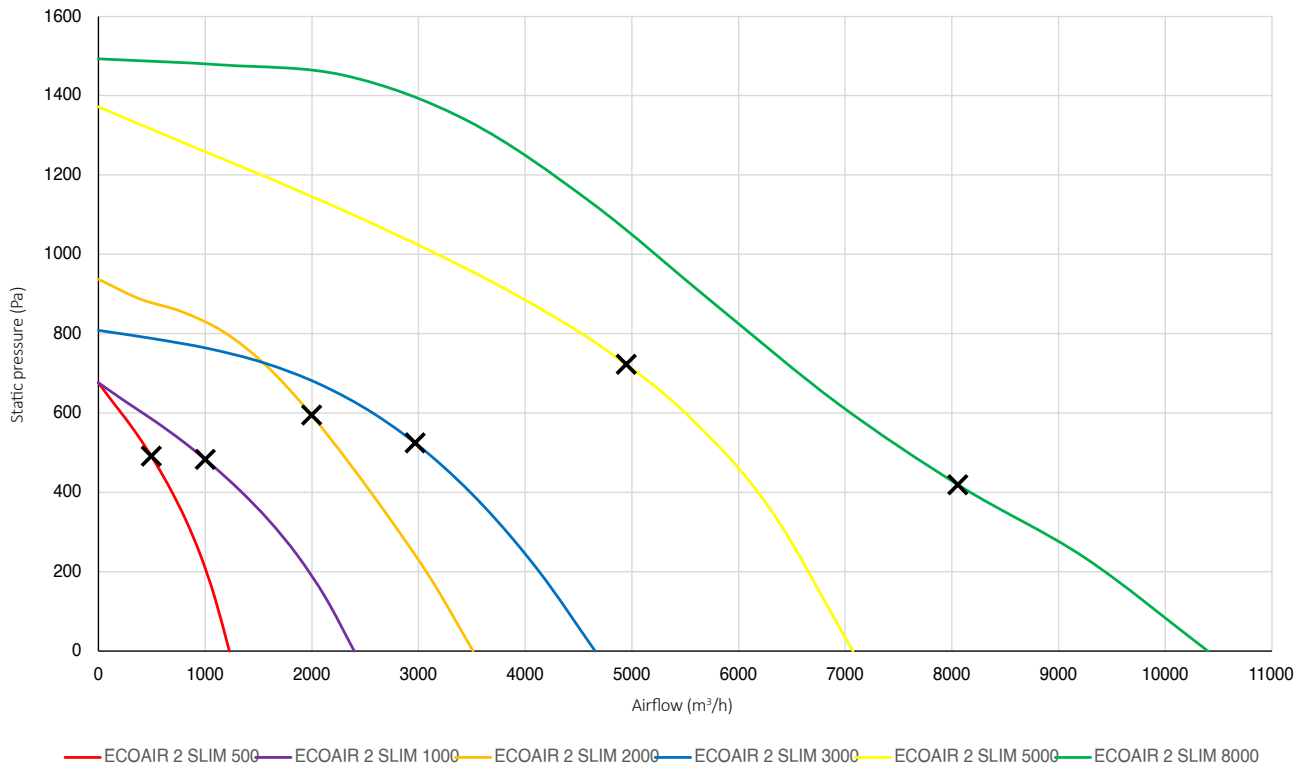
## CHARACTERISTICS

### ELECTRIC HEATING COIL

| BRE ECOAIR 2 SLIM | Airflow (m3/h) | Heating capacity (kW) |
|---|---|---|
| 500 | 500 | 3 |
| 1000 | 1000 | 6 |
| 2000 | 2000 | 14 |
| 3000 | 3000 | 24 |
| 5000 | 5000 | 36 |
| 8000 | 8000 | 54 |

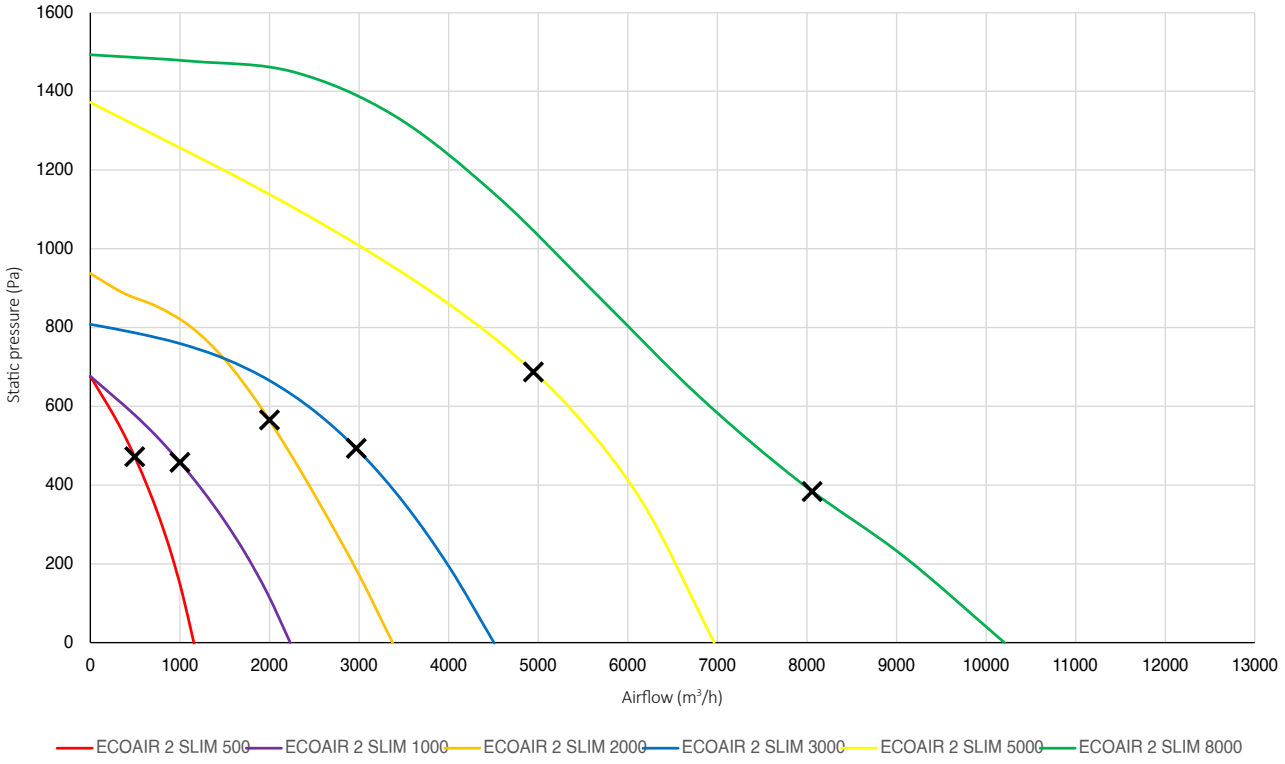
## PERFORMANCE CURVES

### ECOAIR 2 SLIM ePM10 50%/M5 + WATER COIL

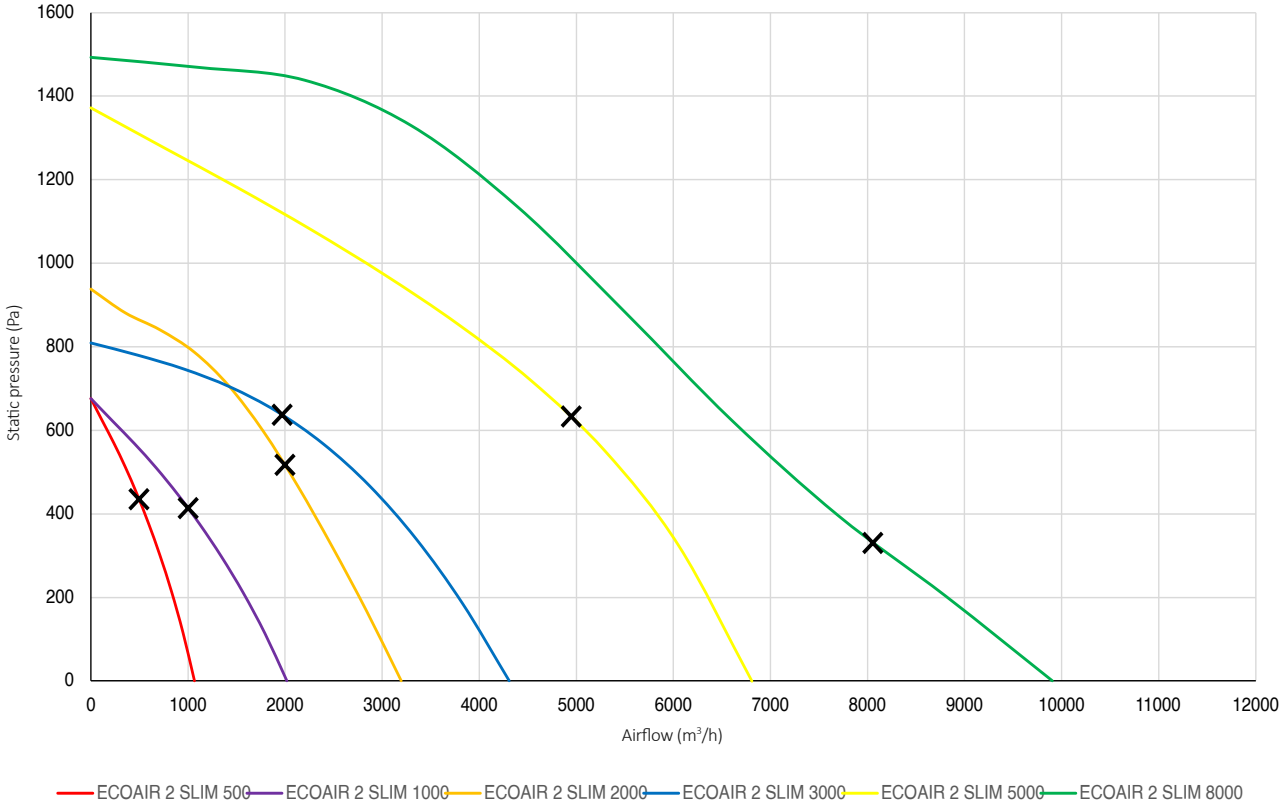


## PERFORMANCE CURVES

### ECOAIR 2 SLIM ePM1 50%F7 + WATER COIL

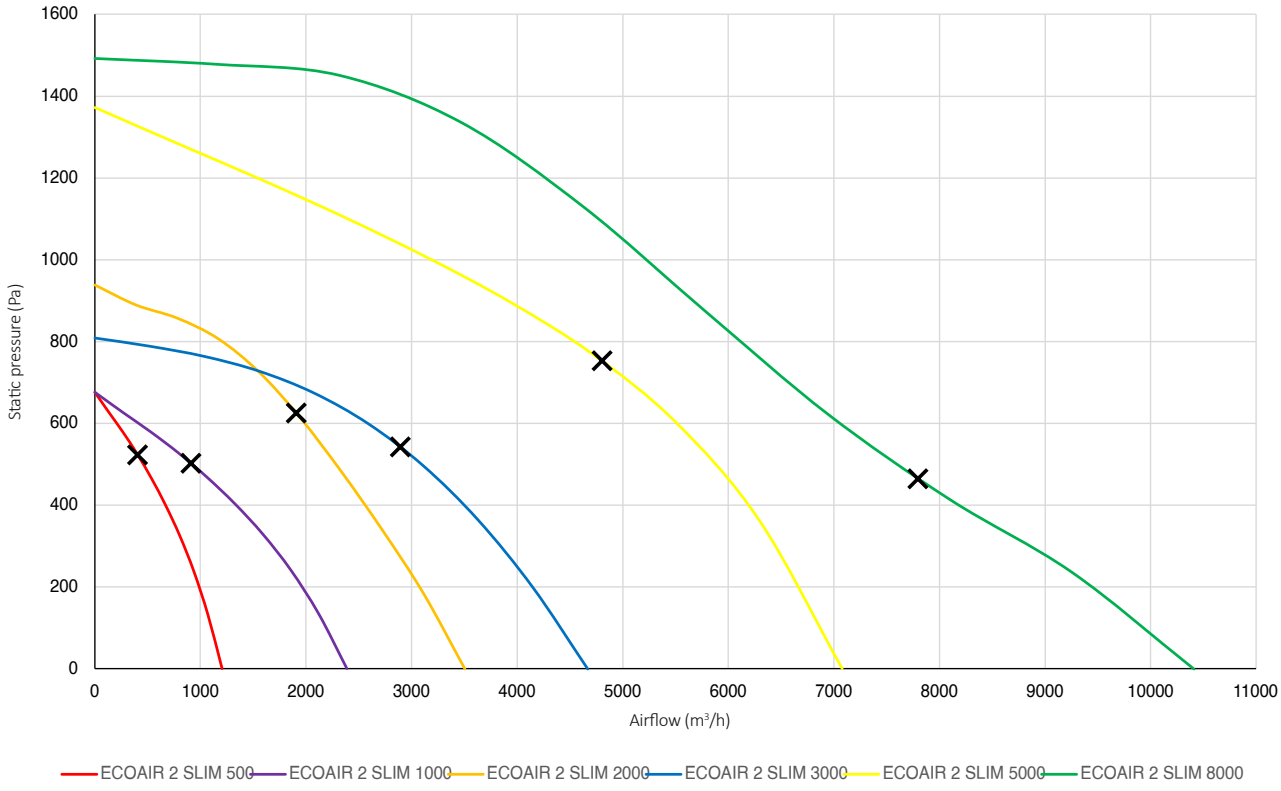



### ECOAIR 2 SLIM ePM10 50%/M5 + ePM1 50%/F7 + WATER COIL

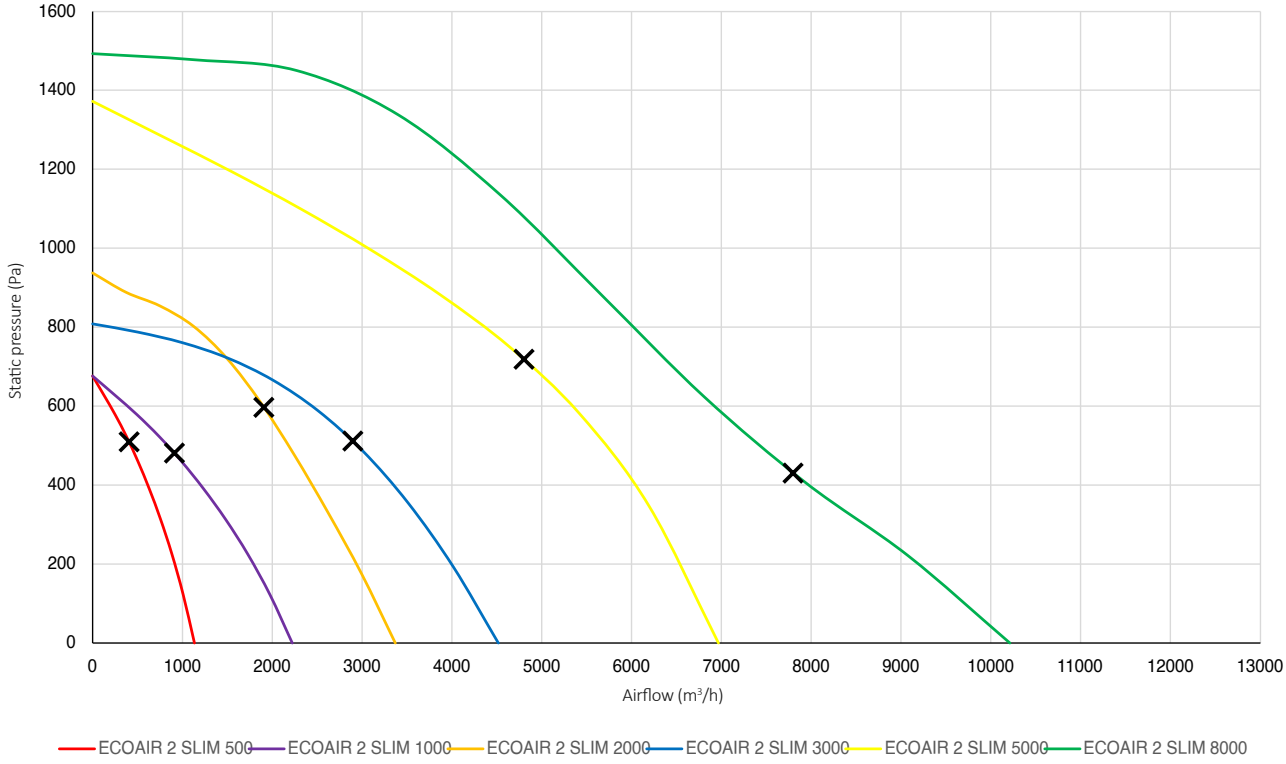


## PERFORMANCE CURVES

### ECOAIR 2 SLIM ePM10 50%/M5 + DX COIL

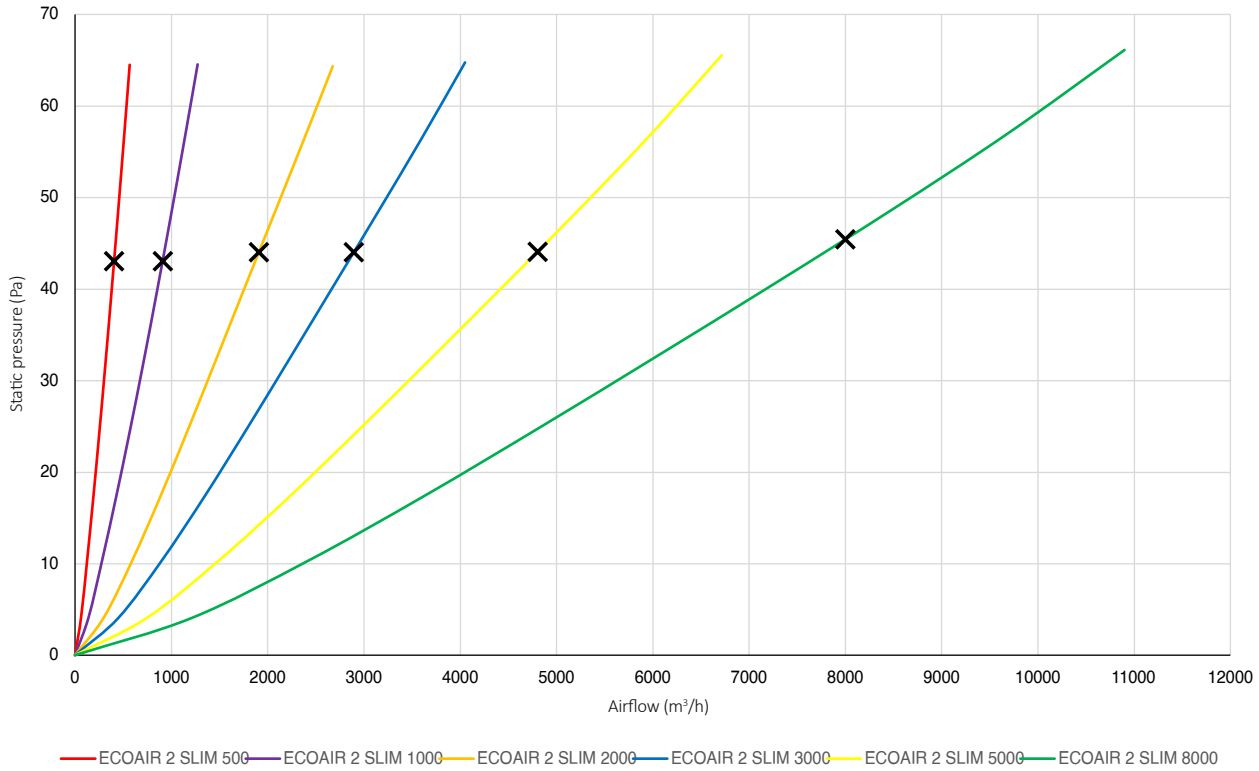



### ECOAIR 2 SLIM ePM1 50%/F7 + DX COIL

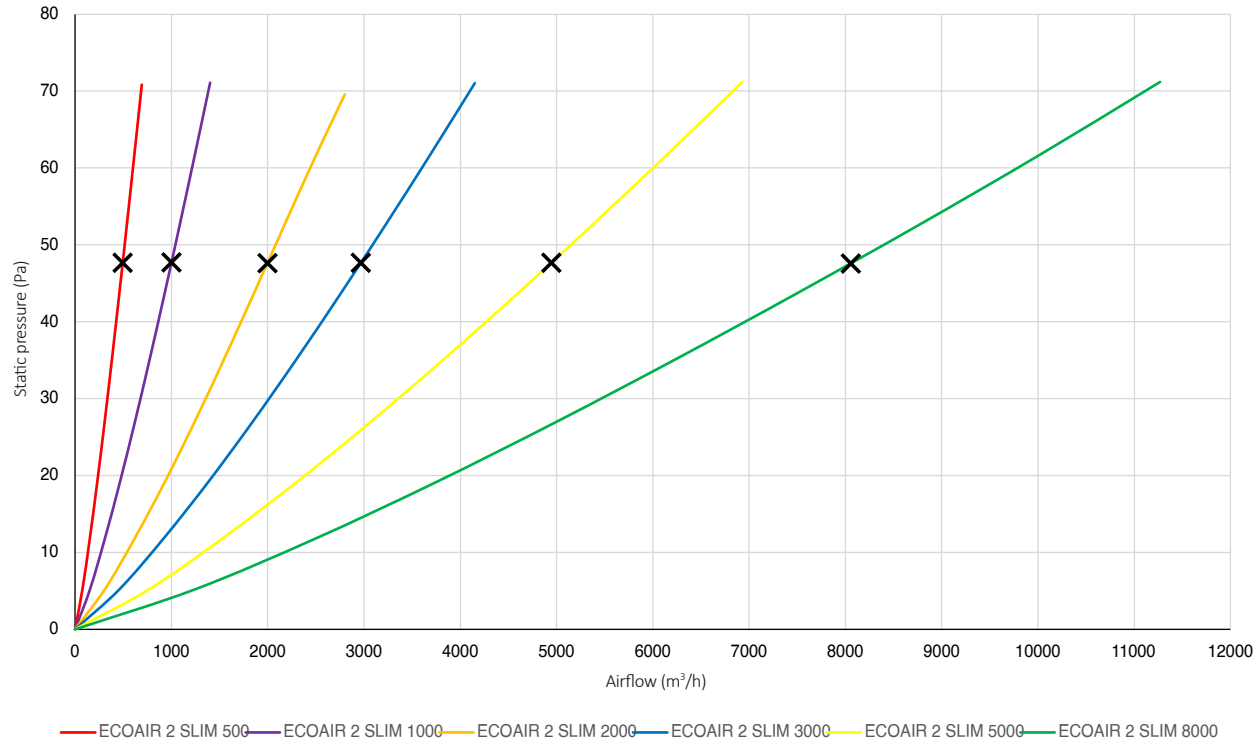


## PERFORMANCE CURVES

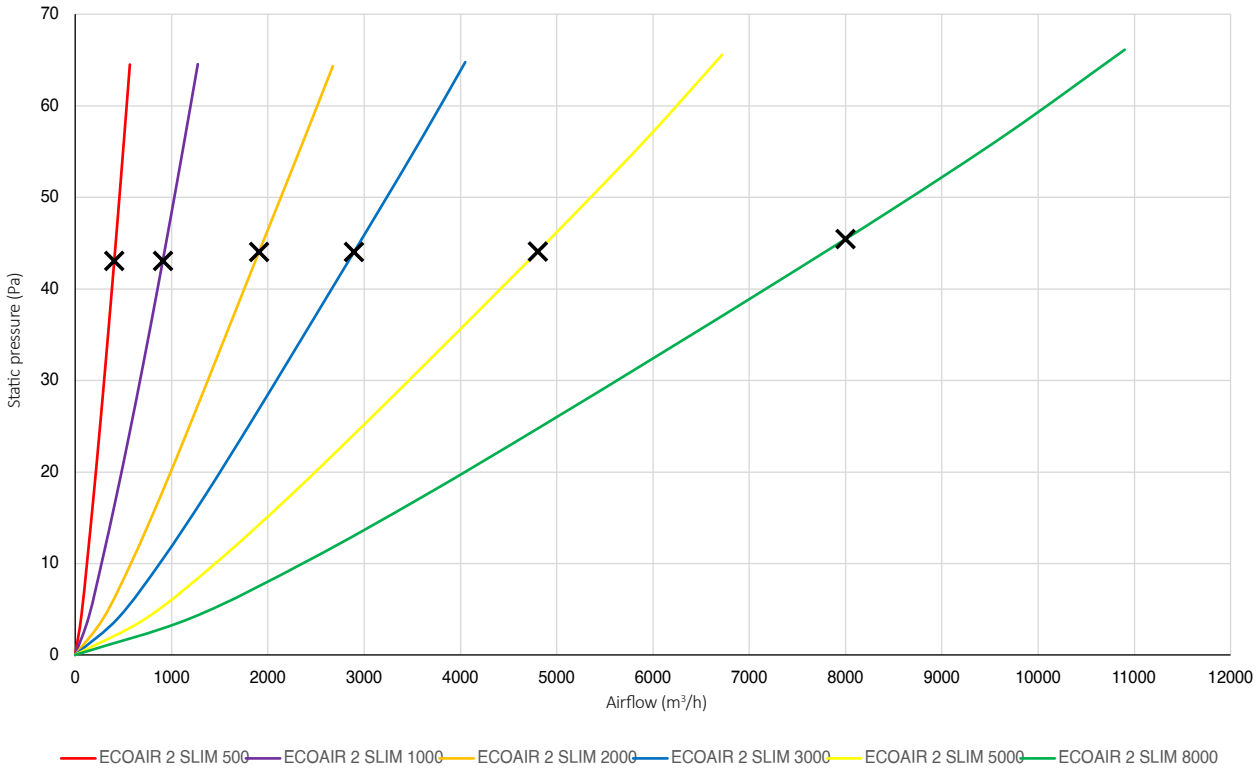
### ECOAIR 2 SLIM ePM10 50%/M5 + ePM1 50%/F7 + DX COIL




### ECOAIR 2 SLIM WATER COIL



## ECOAIR 2 SLIM DX COIL




WATER COIL – WATER HEATING / COOLING COIL DX COIL – DIRECT EXPANSION COIL

## DIMENSIONS

| ECOAIR 2 SLIM | | 500 | 1000 | 2000 | 3000 | 5000 | 8000 |
|---|---|---|---|---|---|---|---|
| A (mm) | | 350 | 350 | 350 | 375 | 500 | 700 |
| L (mm) | | 450 | 730 | 1285 | 1650 | 1755 | 1900 |
| P (mm) | | 1375 | 1375 | 1450 | 1450 | 1450 | 1530 |
| Rectangular Cross-Section (CxB) (mm) | | 390 x 290 | 670 x 290 | 1225 x 290 | 1590 x 315 | 1695 x 440 | 1840 x 640 |
| Weight (kg) | Water heater | 72 | 100 | 157 | 197 | 240 | 292 |
| | DX water heater | 71 | 99 | 155 | 190 | 236 | 287 |
| | Electric heater | 68 | 92 | 147 | 190 | 232 | 288 |

## COIL MODULE

| ECOAIR 2 SLIM - MÓD BAT | | 500 | 1000 | 2000 | 3000 | 5000 | 8000 |
|---|---|---|---|---|---|---|---|
| A (mm) | | 350 | 350 | 350 | 375 | 500 | 700 |
| L (mm) | | 450 | 730 | 1285 | 1650 | 1755 | 1900 |
| P (mm) | | 410 | 410 | 410 | 410 | 410 | 410 |
| Rectangular Cross-Section (CxB) (mm) | | 390 x 290 | 670 x 290 | 1225 x 290 | 1590 x 315 | 1695 x 440 | 1840 x 640 |
| Weight (kg) | Water heater | 31 | 45 | 64 | 83 | 97 | 114 |
| | DX water heater | 30 | 44 | 62 | 80 | 93 | 109 |

## DIMENSIONS

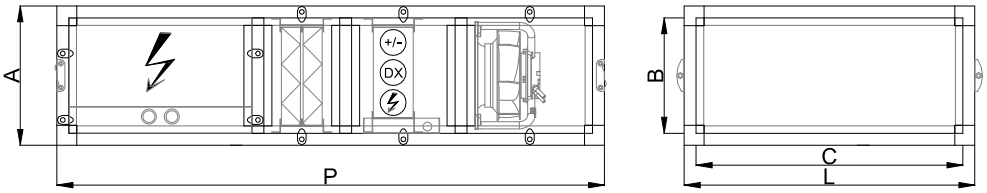
### MIXING BOX MODULE

| ECOAIR 2 SLIM - MIXING BOX | 500 | 1000 | 2000 | 3000 | 5000 | 8000 |
|---|---|---|---|---|---|---|
| A (mm) | 350 | 350 | 350 | 375 | 500 | 700 |
| L (mm) | 450 | 730 | 1285 | 1650 | 1755 | 1900 |
| P (mm) | 350 | 350 | 350 | 375 | 500 | 700 |
| C/D (mm) | 290 | 290 | 290 | 315 | 440 | 640 |
| E (mm) | 390 | 670 | 1225 | 1590 | 1695 | 1840 |
| Ak ($m^2$) | 0,11 | 0,19 | 0,36 | 0,50 | 0,75 | 1,18 |
| v (m/s) | 1,23 | 1,43 | 1,56 | 1,66 | 1,86 | 1,89 |
| Weight (kg) | 15 | 19 | 27 | 36 | 48 | 70 |

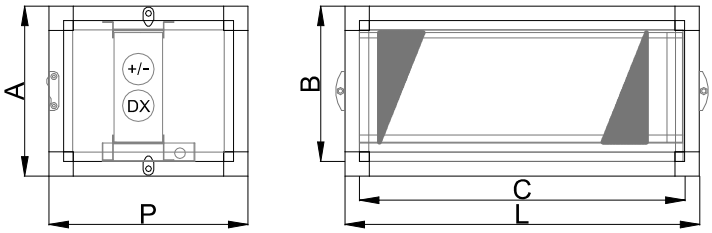
A - Height (mm)
C - Length (mm)
Ak - Throat area ($m^2$)
v - Throat velocity (m/s)

## DIMENSIONS

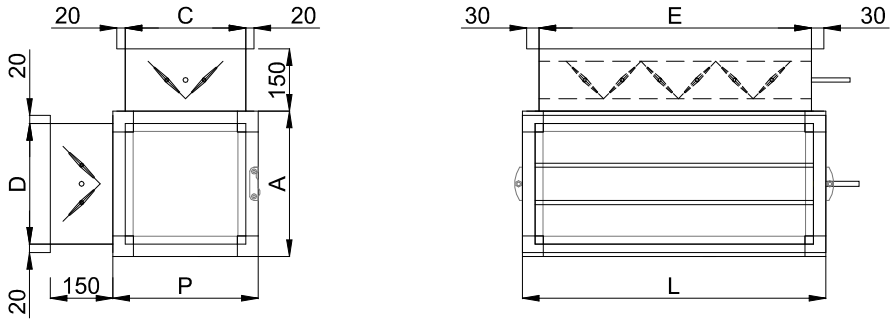
### NOTE: MAINTENANCE CLEARANCE AND UNIT ACCESS DISTANCE | 750 MM




ECOAIR 2 SLIM
Main Unit



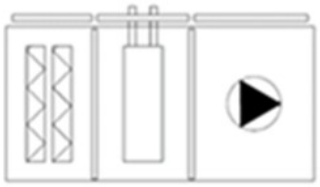

ECOAIR 2 SLIM
Coil Module



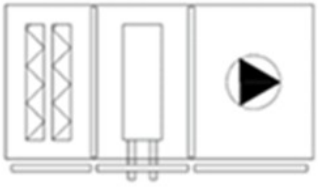

ECOAIR 2 SLIM
Mixing Box Module

## CONFIGURATIONS

A



B



## ERP VERIFICATION DOCUMENT

| MANUFACTURER | | ARFIT AIR CONDITIONING, S.A. | | | | | |
|---|---|---|---|---|---|---|---|
| Model | | 500 | 1000 | 2000 | 3000 | 5000 | 8000 |
| Type | | UVNR UVU | | | | | |
| Transmission Type | | Variable Speed | Variable Speed | Variable Speed | Variable Speed | Variable Speed | Variable Speed |
| Heat Recovery System Type | | - | | | | | |
| Heat Recovery Thermal Efficiency | % | - | - | - | - | - | - |
| Nominal Airflow | $m^3/s$ | 0.1389 | 0.2778 | 0.5556 | 0.8333 | 1.3888 | 2.0000 |
| Input Power | kW | 0.186 | 0.372 | 0.83 | 0.952 | 2.464 | 2.886 |
| SPFint | $W/m^3/s$ | 130.4 | 160.7 | 170.1 | 158.0 | 190.8 | 158.5 |
| Frontal Velocity | m/s | 1.23 | 1.43 | 1.56 | 1.66 | 1.86 | 1.70 |
| Nominal External Pressure | Pa | 519 | 506 | 607 | 517 | 755 | 624 |
| Reduction in Internal Pressure (Ventilation) | Pa | 56 | 69 | 78 | 83 | 91 | 77 |
| Static Efficiency of Fans | % | 42.9% | 42.9% | 45.9% | 52.5% | 47.7% | 48.6% |
| Maximum Declared Internal/External Leakage Rate | % | - | - | - | - | - | - |
| Filter Classification | | F7 | | | | | |
| Description: Visual notice regarding filters | | The filters warning is displayed on the unit's control system, either via a warning light or on-screen message, depending on the control system used. It is of the utmost importance to replace the filters regularly to improve the unit's performance and energy efficiency. | | | | | |
| Sound Power Level (Lwa) | dB(A) | 44 | 47 | 51 | 52 | 56 | 59 |
| Website | | www.arfit.pt | | | | | |