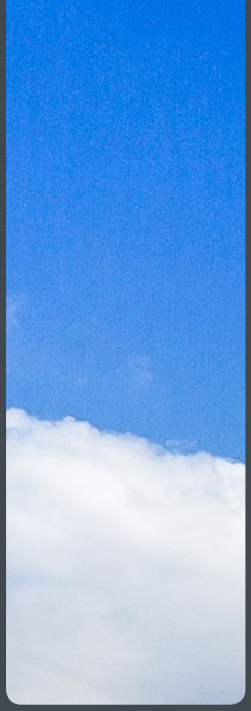
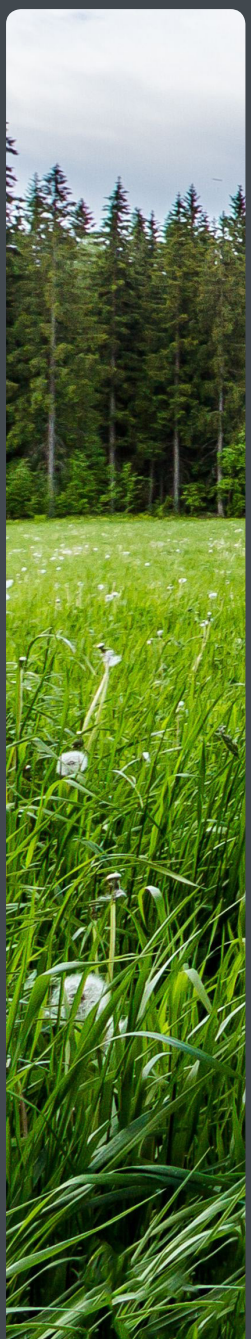


INVERTER

# ACU-EC

## CLIMATISATION UNIT



Samp®

SOLUZIONI AEROMECCANICHE S.p.A.

**ACU-EC**
ACU-EC is an active recovery unit for heating, cooling and air renewal of the environments (medium efficiency).

**PERFORMANCE**
ACU-EC can operate either as a passive recovery and as an active thermodynamic recovery and is particularly suitable for residential premises, commercial or collective residential buildings. The unit is supplied in plug-and-play version for a 'quick and simplified installation.

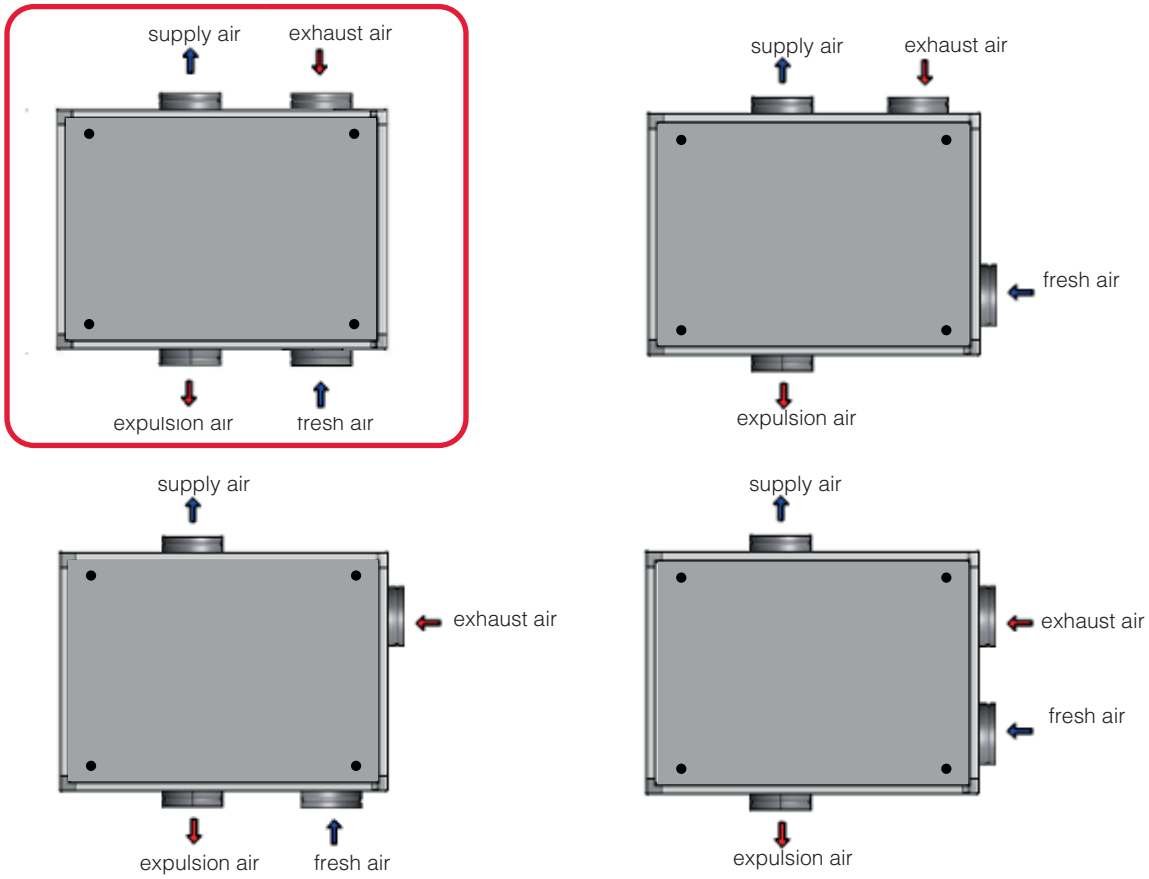
**STRUCTURE**
The unit is composed of a monobloc inclusive of each component for the correct operation: fans, cooling circuit (with high efficiency INVERTER compressors and electronic expansion valve), air filtration sections and cross-flow heat exchanger (medium efficiency). The unit frame is manufactured using a profiled extruded aluminum frame and 36 mm thick sandwich panels, insulated in polyurethane foam. The panels and inner parts are manufactured in Aluzinc, material that ensures high strength against corrosion and oxidation. The isolation of the panels is made with insulating that allow to have low noise and reduced transmittances during the operation of the unit. ACU-EC is equipped with electronic backward blade ventilators (compliant Erp2015).The heat exchanger is made of aluminum cross-flow with a medium efficiency (summer and winter operation) and the rotary or scroll compressor (high efficiency) has a thermal protector incorporated. Inside the unit there are two filters with filtration class M5 and F7 easily extractable. The system is managed by an electronic evolved but easy to manage.

**MAIN FEATURES**
**Active thermodynamic recovery**: the unit allows the recovery of active energy of the exhaust air. The thermodynamic recovery allows, thanks to its refrigerant circuit, to provide energy to the environment in higher quantities than the energy subtracted from the ventilation.
**Cooling circuit**: made of copper brazed full of: high efficiency INVERTER compressor, filter drier, finned coils, solenoids, valves, electronic expansion valve, liquid receiver, pressure transducers and safety devices.
**Adjustment**: electric board in the unit with microprocessor and dedicated control which allows to manage:
- the temperature of the air
- the fans
- the internal temperature sensors to the machine
- dirty filter with differential pressure sensors
- the management of defrost algorithm optimized for operation with low temperatures.

Prepared for MODBUS RTU RS 485.

*For a more complete view of the characteristics of the control panels, please read the specific manuals.*

Standard configuration

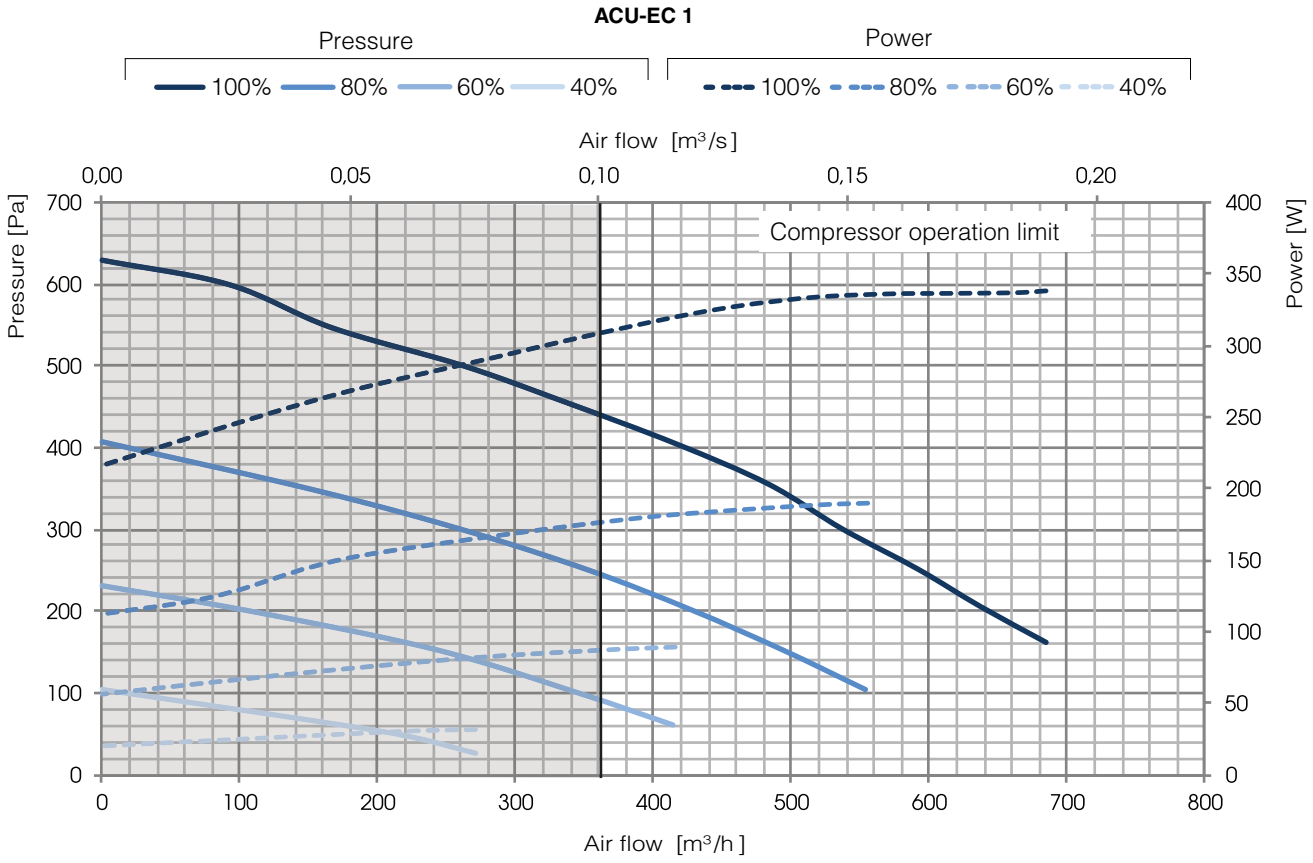



The units are views from above

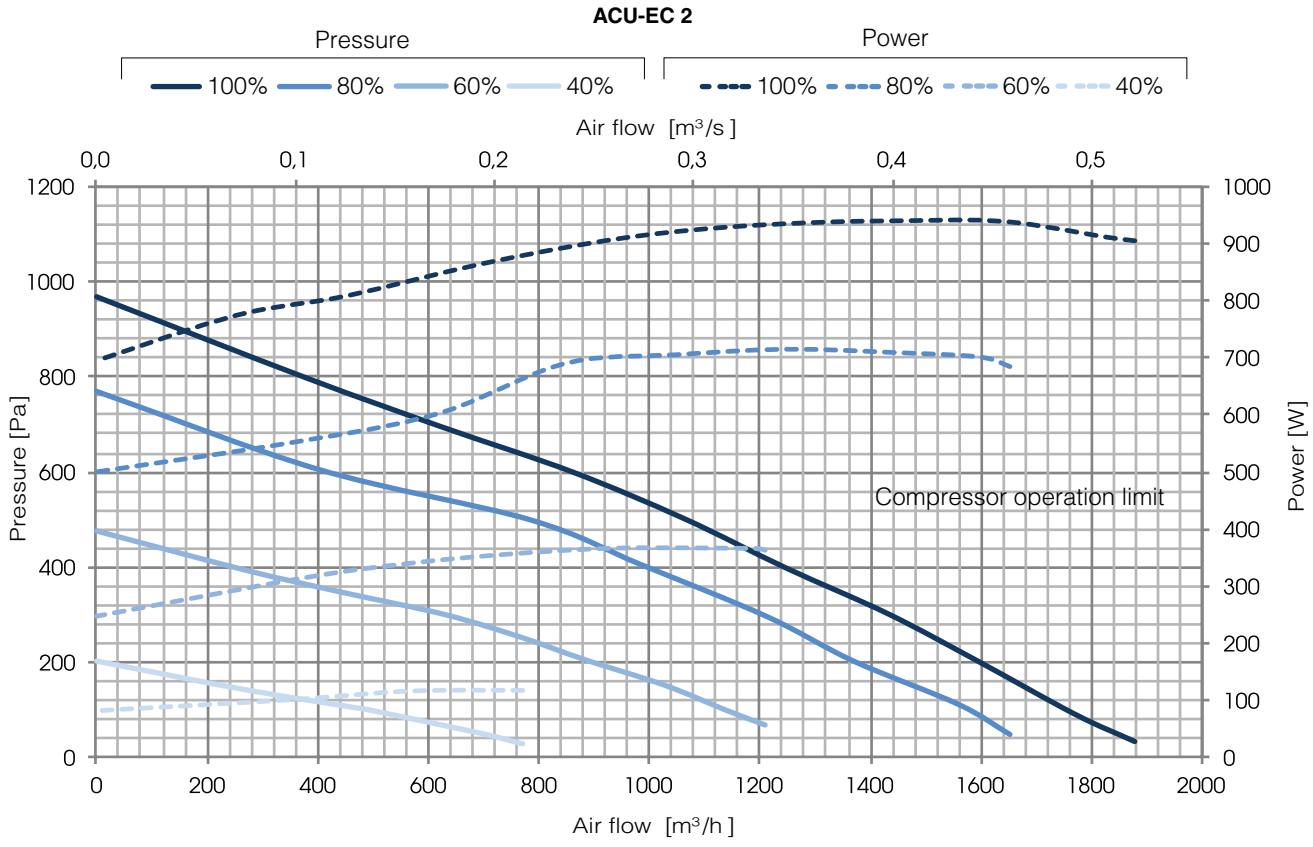
## PERFORMANCES

The unit must be ducted properly: SAMP authorizes the use only according to its performance diagram shown into this catalogue.
The declared performances are with CLEAN filters, and guaranteed ONLY with the original filters SAMP low pressure drop.

### ACU-EC 1



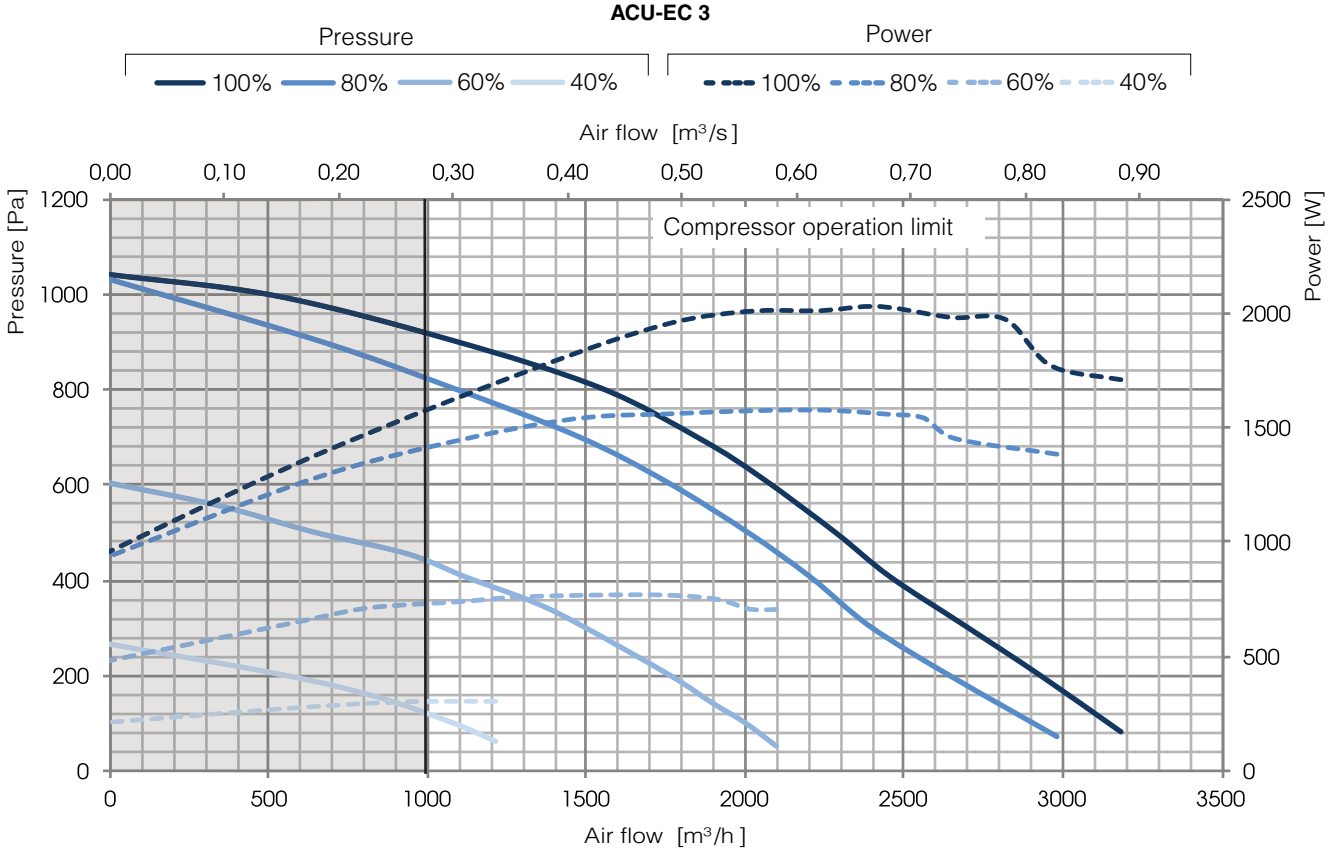

### ACU-EC 2



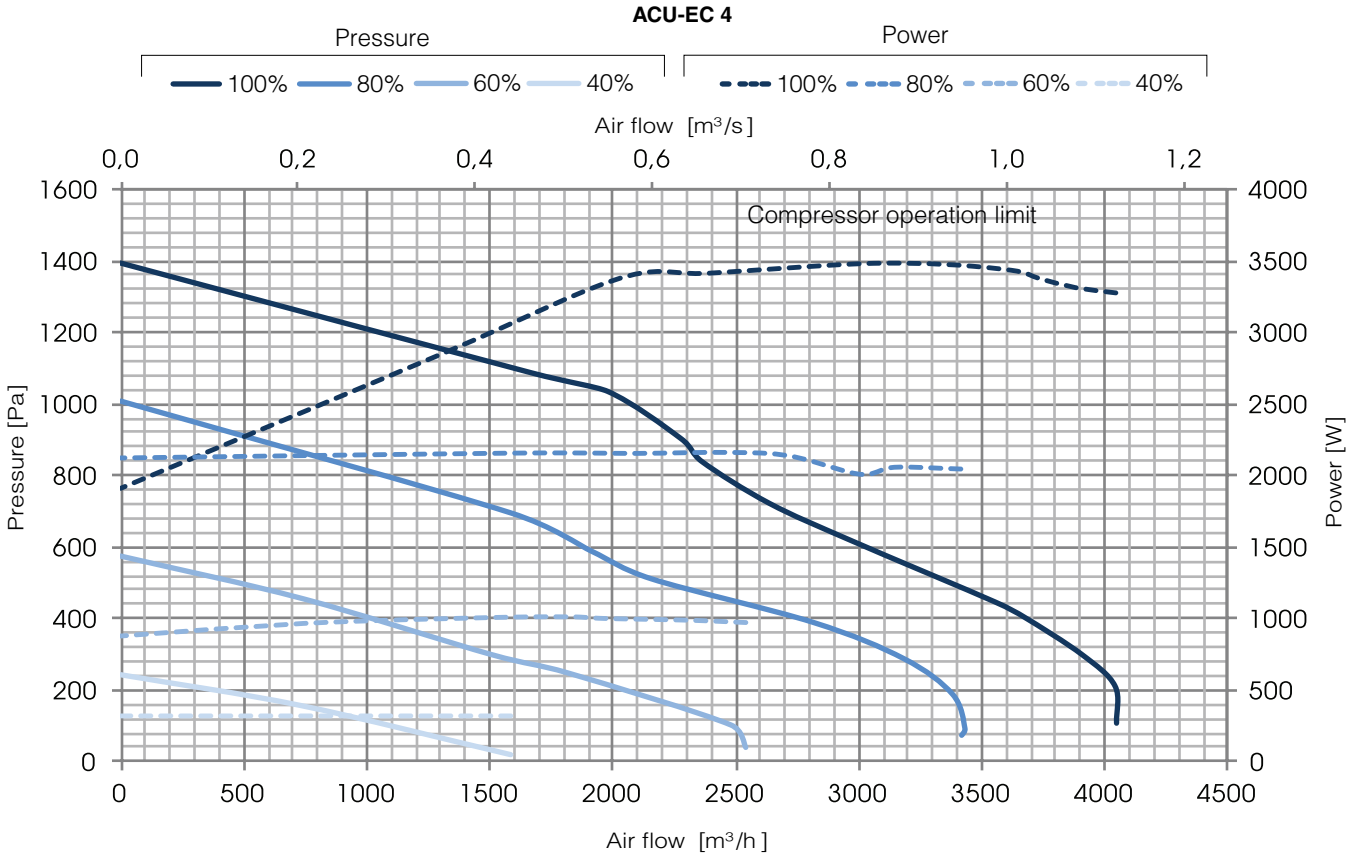
## PERFORMANCES

The unit must be ducted properly: SAMP authorizes the use only according to its performance diagram shown into this catalogue.
The declared performances are with CLEAN filters, and guaranteed ONLY with the original filters SAMP low pressure drop.

**ACU-EC 3**

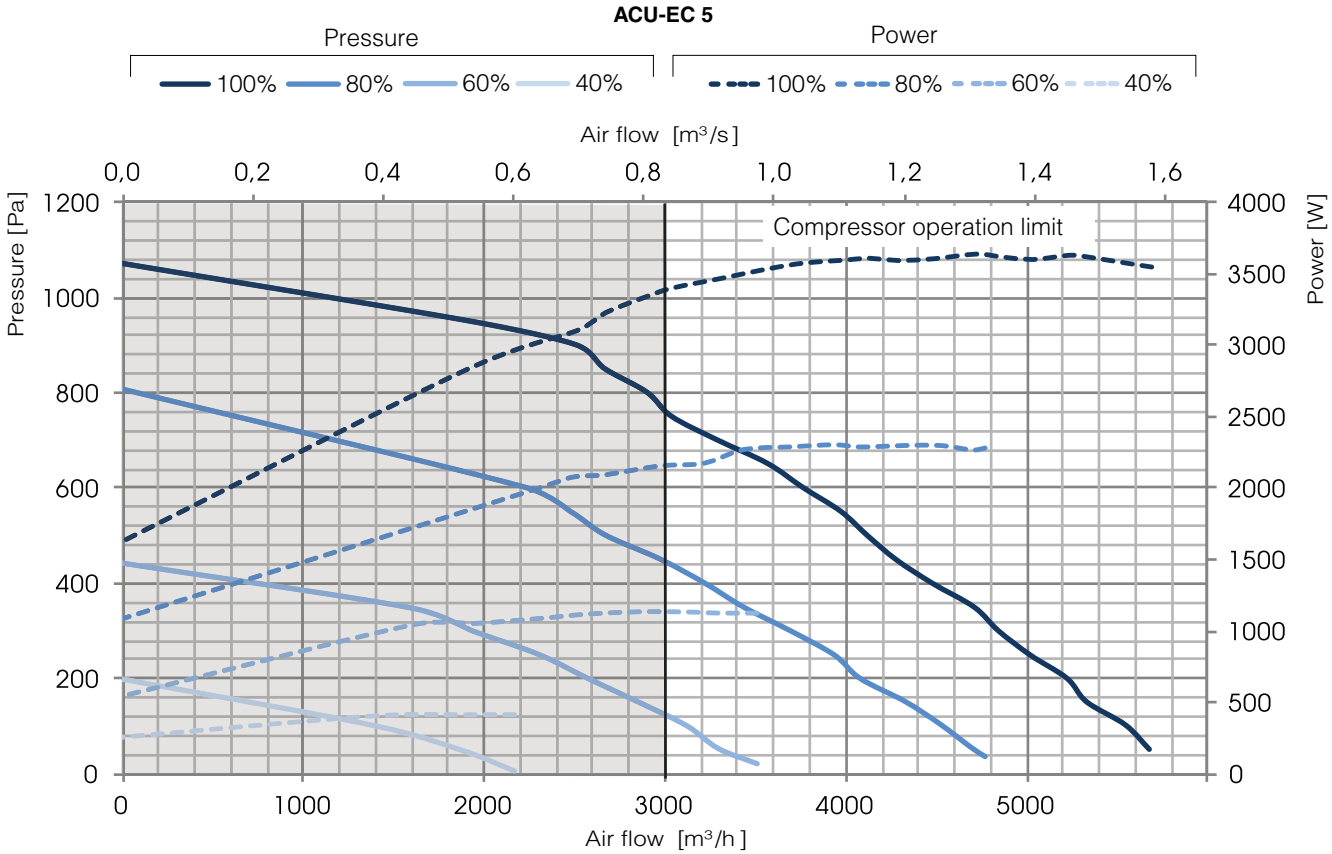



**ACU-EC 4**



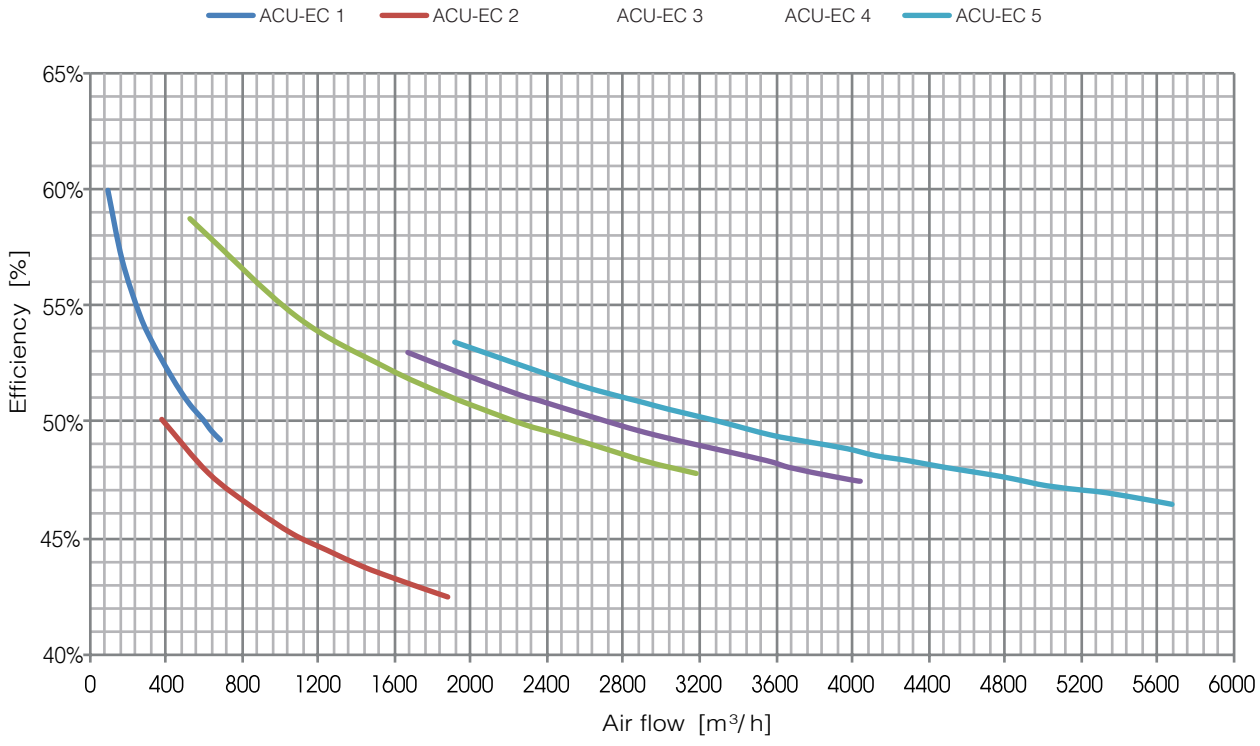
## PERFORMANCES

The unit must be ducted properly: SAMP authorizes the use only according to its performance diagram shown into this catalogue.
The declared performances are with CLEAN filters, and guaranteed ONLY with the original filters SAMP low pressure drop.




## HEAT RECOVERY PERFORMANCE (sensible efficiency)

Values refered to the following conditions (UNI EN 13141-7): Tbs external air 5°C; U.R. esternal 72%; Tbs enviroment 25°C; U.R. enviroment 28&



## TECHNICAL DATA ACU-EC 1

| EXTERN | INTERN 20°C/60% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30 Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision |
| -5°C / 98% | 3,0 kW | 1,31 kW | 0,22 kW | 5,84 | 16,9 °C | 2,55 kW | 0,45 kW | 5,61 | 22,2 °C | 3,64 kW | 0,85 kW | 4,27 | 27,3 °C |
| 7°C / 94% | 1,3 kW | 1,47 kW | 0,23 kW | 6,36 | 21,0 °C | 2,90 kW | 0,50 kW | 5,79 | 27,9 °C | 4,16 kW | 1,01 kW | 4,11 | 33,6 °C |
| 15°C / 88% | 0,5 kW | 1,53 kW | 0,24 kW | 6,37 | 25,2 °C | 3,04 kW | 0,59 kW | 5,11 | 32,7 °C | 4,20 kW | 1,14 kW | 3,68 | 38,5 °C |

| EXTERN | INTERN 27°C/ 62% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision |
| 25°C / 60% | 0,2 kW | 1,46 kW | 0,27 kW | 5,25 | 19,3/81% | 2,51 kW | 0,62 kW | 3,99 | 17,3/80% | 3,55 kW | 1,12 kW | 3,16 | 15,5/79,4% |
| 35°C / 53% | 1,0 kW | 1,68 kW | 0,31 kW | 5,33 | 21,8/72% | 2,56 kW | 0,71 kW | 3,60 | 19,7/74% | 3,40 kW | 1,30 kW | 2,61 | 18,2/73% |
| 38°C / 40% | 1,3 kW | 1,70 kW | 0,32 kW | 5,23 | 22,5/68% | 2,48 kW | 0,71 kW | 3,46 | 20,8/72% | 3,16 kW | 1,41 kW | 2,24 | 19,5/71% |

## TECHNICAL DATA ACU-EC 2

| EXTERN | INTERN 20°C/60% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision |
| -5°C / 98% | 4,6 kW | 3,74 kW | 0,58 kW | 6,44 | 18,3 °C | 5,09 kW | 0,85 kW | 5,98 | 23,2 °C | 6,90 kW | 1,35 kW | 5,11 | 28,1 °C |
| 7°C / 94% | 2,0 kW | 4,07 kW | 0,62 kW | 6,51 | 24,7 °C | 5,57 kW | 0,95 kW | 5,86 | 29,5 °C | 6,74 kW | 1,40 kW | 4,81 | 33,1 °C |
| 15°C / 88% | 0,8 kW | 4,24 kW | 0,63 kW | 6,73 | 29,7 °C | 5,82 kW | 1,07 kW | 5,43 | 34,6 °C | 7,02 kW | 1,62 kW | 4,33 | 38,6 °C |

| EXTERN | INTERN 27°C/ 62% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision |
| 25°C / 60% | 0,3 kW | 3,98 kW | 0,70 kW | 5,66 | 17,2/84% | 5,52 kW | 1,12 kW | 4,92 | 15,8/83% | 5,99 kW | 1,71 kW | 3,50 | 14,9/83% |
| 35°C / 53% | 1,2 kW | 4,81 kW | 0,79 kW | 6,05 | 23,5/88% | 6,21 kW | 1,30 kW | 4,77 | 22,1/88% | 7,10 kW | 2,12 kW | 3,34 | 21,3/87,9% |
| 38°C / 40% | 1,7 kW | 4,50 kW | 0,82 kW | 5,46 | 23,6/84% | 6,15 kW | 1,42 kW | 4,33 | 22,4/84% | 6,81 kW | 2,18 kW | 3,12 | 21,6/83% |

## TECHNICAL DATA ACU-EC 3

| EXTERN | INTERN 20°C/60% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision |
| -5°C / 98% | 9,9 kW | 5,97 kW | 0,87 kW | 6,86 | 18,2 °C | 8,85 kW | 1,61 kW | 5,49 | 22,6 °C | 12,0 kW | 2,40 kW | 5,0 | 27,2 °C |
| 7°C / 94% | 4,5 kW | 6,14 kW | 0,89 kW | 6,87 | 22,8 °C | 10,1 kW | 1,69 kW | 5,97 | 28,8 °C | 13,14 kW | 2,71 kW | 4,84 | 33,0 °C |
| 15°C / 88% | 1,7 kW | 6,32 kW | 0,91 kW | 6,94 | 26,9 °C | 10,23 kW | 1,73 kW | 5,91 | 33,1 °C | 13,52 kW | 2,92 kW | 4,63 | 37,2 °C |

| EXTERN | INTERN 27°C/ 62% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision |
| 25°C / 60% | 0,7 kW | 5,40 kW | 0,92 kW | 5,86 | 18,7/83% | 9,43 kW | 1,98 kW | 4,76 | 16,7/83% | 11,41 kW | 3,26 kW | 3,50 | 15,5/82% |
| 35°C / 53% | 2,7 kW | 6,08 kW | 1,01 kW | 6,01 | 23,5/88% | 10,38 kW | 2,31 kW | 4,49 | 22,8/88,5% | 12,8 kW | 3,72 kW | 3,44 | 21,9/88,2% |
| 38°C / 40% | 3,8 kW | 6,17 kW | 1,08 kW | 5,71 | 24,6/83% | 10,31 kW | 2,35 kW | 4,38 | 22,9/82% | 12,0 kW | 3,98 kW | 3,01 | 22,3/82% |

## TECHNICAL DATA ACU-EC 4

| EXTERN | INTERN 20°C/60% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision |
| -5°C / 98% | 14,5 kW | 10,21 kW | 1,61 kW | 6,34 | 19,4 °C | 15,93 kW | 3,15 kW | 5,05 | 24,2 °C | 21,62 kW | 5,65 kW | 3,82 | 30,2 °C |
| 7°C / 94% | 6,6 kW | 10,25 kW | 1,55 kW | 6,61 | 23,3 °C | 17,73 kW | 3,25 kW | 5,45 | 30,3 °C | 23,78 kW | 6,60 kW | 3,60 | 35,6 °C |
| 15°C / 88% | 2,5 kW | 10,27 kW | 1,47 kW | 6,98 | 27,8 °C | 17,91 kW | 3,31 kW | 5,41 | 34,1 °C | 25,05 kW | 7,10 kW | 3,52 | 41,5 °C |

| EXTERN | INTERN 27°C/ 62% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision |
| 25°C / 60% | 1,0 kW | 8,97 kW | 1,67 kW | 5,37 | 19,1/77% | 14,5 kW | 3,38 kW | 4,28 | 17,1/79% | 18,62 kW | 7,05 kW | 2,64 | 15,5/78% |
| 35°C / 53% | 4,0 kW | 10,3 kW | 1,82 kW | 5,65 | 24,8/85% | 17,7 kW | 4,23 kW | 4,18 | 22,8/85% | 21,40 kW | 8,15 kW | 2,62 | 21,4/84,5% |
| 38°C / 40% | 5,5 kW | 10,6 kW | 1,98 kW | 5,35 | 24,5/78% | 17,2 kW | 4,51 kW | 3,81 | 22,7/78% | 19,85 kW | 8,61 kW | 2,30 | 21,6/83% |

## TECHNICAL DATA ACU-EC 5

| EXTERN | INTERN 20°C/60% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision | Thermal Power | Abs. power | COP | Immision |
| -5°C / 98% | 21,3 kW | 13,61 kW | 2,11 kW | 6,45 | 18,0 °C | 22,18 kW | 3,98 kW | 5,57 | 23,8 °C | 32,1 kW | 7,9 kW | 4,06 | 29,4 °C |
| 7°C / 94% | 9,7 kW | 13,80 kW | 2,11 kW | 6,57 | 22,7 °C | 26,91 kW | 4,51 kW | 5,96 | 29,9 °C | 33,2 kW | 8,3 kW | 4,00 | 35,3 °C |
| 15°C / 88% | 3,7 kW | 15,32 kW | 2,22 kW | 6,90 | 28,0 °C | 25,88 kW | 5,03 kW | 5,14 | 34,7 °C | 34,9 kW | 9,3 kW | 3,75 | 39,8 °C |

| EXTERN | INTERN 27°C / 62% | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECOVERY | FREQUENCY COMPRESSOR 30Hz | | | | FREQUENCY COMPRESSOR 60Hz | | | | FREQUENCY COMPRESSOR 90Hz | | | |
| | Thermal Power recovery | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision | Cooling power | Abs. power | EER | Immision |
| 25°C / 60% | 1,5 kW | 13,4 kW | 2,40 kW | 5,58 | 17,2/84% | 23,1 kW | 5,35 kW | 4,31 | 16,8/80% | 29,6 kW | 9,71 kW | 3,04 | 14,9/80% |
| 35°C / 53% | 5,9 kW | 15,9 kW | 2,81 kW | 5,65 | 24,8/86% | 25,8 kW | 6,28 kW | 4,10 | 22,8/85% | 32,5 kW | 11,8 kW | 2,75 | 21,5/86,0% |
| 38°C / 40% | 8,1 kW | 16,6 kW | 2,98 kW | 5,57 | 24,2/81% | 25,0 kW | 6,55 kW | 3,81 | 22,7/82% | 29,6 kW | 11,8 kW | 2,50 | 21,7/80% |

## GENERAL TECHNICAL DATA

| | ACU-EC 1 | ACU-EC 2 | ACU-EC 3 | ACU-EC 4 | ACU-EC 5 |
|---|---|---|---|---|---|
| Fan type | Electronic reverse blades fans | | | | |
| Number of fans | | | 2 | | |
| Nominal air flow [m²/h] | 500 | 1000 | 2500 | 3500 | 5000 |
| Useful pressure, renewal side [Pa] | 338 | 569 | 389 | 464 | 310 |
| Pressure useful expulsion side [Pa] | 358 | 575 | 475 | 466 | 258 |
| Compressor type | Rotary high efficiency | | High-efficiency Scroll | | |
| Refrigerant gas (R410A) | 1,75 | 2,70 | 3,20 | 3,70 | 5,30 |
| Passive heat recovery | Aluminum plates crossflow | | | | |
| minimum recovery efficiency [%] (1) | 55 | 50,5 | 53,7 | 52,6 | 51,3 |
| Filters | | | M5/F7 | | |
| Max power absorbed fans [kW] | 0,17 | 0,44 | 1,00 | 1,65 | 1,85 |
| Max current absorbed fans [A] | 1,4 | 2,8 | 1,6 | 2,5 | 2,9 |
| Max power absorbed compressors [kW] | 1,06 | 1,83 | 5,04 | 7,23 | 9,39 |
| Max current absorbed compressors [A] | 4,75 | 8,57 | 8,6 | 12,2 | 15,9 |
| Supply voltage [V/ph/Hz] | 220/1/50 | 220/1/50 | 400/3/50 | 400/3/50 | 400/3/50 |
| Total max power absorbed [kW] | 1,23 | 2,27 | 6,04 | 8,88 | 11,24 |
| Total max current absorbed [A] | 6,15 | 11,3 | 10,2 | 14,7 | 18,8 |
| Degree of protection [IP] | 20 | 20 | 20 | 20 | 20 |

(1) outside Air -5 °C/80%UR - inside Air 20°C/ 50%UR - Nominal air flow

VALUES ACCORDING UNI EN 1886: 2008

| MOD. | DEFORMATION CASE | LEAKAGE CASE | FILTERS CLASS | THERMAL TRANSMITTANCE | THERMAL BRIDGE |
|---|---|---|---|---|---|
| ACU-EC 1 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB3 (M) |
| ACU-EC 2 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB3 (M) |
| ACU-EC 3 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB3 (M) |
| ACU-EC 4 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB3 (M) |
| ACU-EC 5 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB3 (M) |

## TEST LEAKAGE (UNI EN 13141-7)

| | | LEAKAGE CLASSIFICATION | | | | |
|---|---|---|---|---|---|---|
| LEAKAGE | TEST CONDITIONS | ACU-EC 1 | ACU-EC 2 | ACU-EC 3 | ACU-EC 4 | ACU-EC 5 |
| EXTERN | Positive pressure 400 Pa | A2 | A2 | A2 | A1 | A1 |
| EXTERN | Negative pressure 400 Pa | A2 | A2 | A2 | A1 | A1 |
| INTERN | Pressure Difference 250 Pa | A3 | A2 | A2 | A2 | A2 |

## NOISE LEVEL

Lw Sound power level taken in accordance to UNI EN ISO 3747 - CLASS 3

| ACU-EC 1 | Compressors | NOISE FROM THE CASE (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 59,1 | 67,0 | 60,0 | 51,0 | 47,7 | 35,2 | 42,0 | 61,5 |
| 80% | ON | 59,8 | 68,6 | 58,9 | 50,4 | 47,9 | 35,7 | 42,5 | 62,0 |
| | OFF | 56,1 | 67,2 | 54,0 | 45,9 | 43,4 | 31,8 | 41,2 | 59,7 |
| | ON | 58,8 | 67,9 | 55,5 | 48,0 | 44,3 | 37,3 | 43,3 | 60,7 |

| ACU-EC 2 | Compressors | NOISE FROM THE CASE (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 66,3 | 73,5 | 65,5 | 52,1 | 49,8 | 41,3 | 44,0 | 67,2 |
| 80% | ON | 68,6 | 75,7 | 67,0 | 53,0 | 50,2 | 41,7 | 44,6 | 69,1 |
| | OFF | 64,5 | 70,3 | 59,3 | 49,1 | 47,3 | 39,4 | 39,9 | 63,2 |
| | ON | 64,9 | 71,7 | 60,0 | 49,8 | 47,6 | 39,7 | 40,3 | 64,4 |

| ACU-EC 3 | Compressors | NOISE FROM THE CASE (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 71,3 | 75,3 | 73,7 | 64,5 | 59,1 | 51,5 | 53,6 | 73,1 |
| | ON | 71,3 | 75,5 | 74,3 | 65,2 | 59,2 | 51,9 | 53,8 | 73,6 |
| 80% | | | | | | | | | |
| | OFF | 69,4 | 76,5 | 69,3 | 62,9 | 56,7 | 49,6 | 51,0 | 71,2 |
| | ON | 69,9 | 76,8 | 69,3 | 62,7 | 57,1 | 49,6 | 51,6 | 71,4 |

| ACU-EC 4 | Compressors | NOISE FROM THE CASE (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 79,3 | 79,8 | 71,6 | 64,3 | 60,3 | 50,4 | 51,3 | 74,2 |
| | ON | 79,9 | 81,3 | 71,8 | 63,8 | 59,7 | 50,4 | 50,6 | 75,0 |
| 80% | | | | | | | | | |
| | OFF | 76,1 | 77,6 | 62,8 | 59,5 | 56,3 | 45,8 | 46,1 | 70,6 |
| | ON | 76,2 | 77,6 | 63,5 | 59,7 | 56,3 | 45,7 | 45,2 | 70,7 |

| ACU-EC 5 | Compressors | NOISE FROM THE CASE (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 77,3 | 83,0 | 70,5 | 61,7 | 57,0 | 53,6 | 54,5 | 75,7 |
| | ON | 73,3 | 84,9 | 67,9 | 57,8 | 52,7 | 49,3 | 49,1 | 76,8 |
| 80% | | | | | | | | | |
| | OFF | 73,4 | 83,6 | 65,4 | 57,5 | 53,0 | 48,8 | 48,7 | 75,4 |
| | ON | 77,9 | 83,0 | 70,8 | 61,9 | 57,1 | 53,7 | 54,6 | 75,8 |

| ACU-EC 1 | Compressors | NOISE IN THE DUCTS (Hz) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 65,5 | 82,0 | 67,8 | 58,2 | 61,4 | 59,0 | 63,3 | 74,8 |
| | ON | 66,9 | 83,1 | 67,8 | 57,4 | 62,3 | 58,5 | 63,0 | 75,6 |
| 80% | | | | | | | | | |
| | OFF | 62,5 | 75,6 | 63,2 | 52,9 | 57,9 | 52,8 | 55,7 | 68,8 |
| | ON | 61,9 | 77,1 | 64,6 | 53,9 | 56,8 | 53,7 | 56,5 | 70,0 |

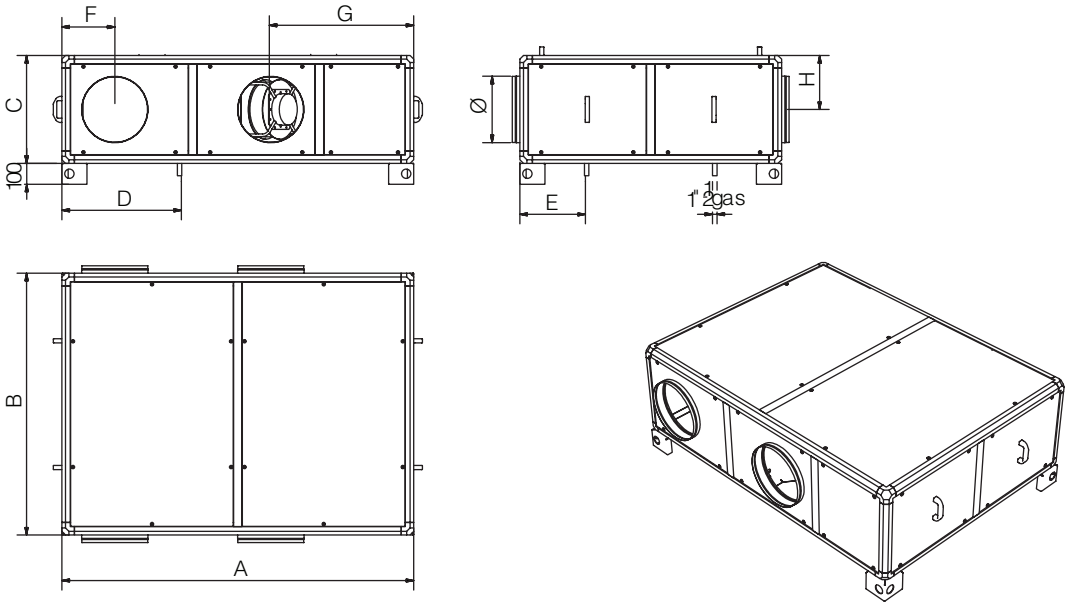
| ACU-EC 2 | Compressors | NOISE IN THE DUCTS (Hz) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 71,3 | 96,4 | 86,8 | 72,3 | 72,3 | 68,8 | 72,4 | 89,5 |
| | ON | 73,4 | 97,7 | 87,6 | 72,8 | 72,5 | 69,1 | 72,7 | 90,6 |
| 80% | | | | | | | | | |
| | OFF | 68,9 | 96,8 | 77,9 | 69,8 | 69,8 | 66,5 | 69,7 | 88,6 |
| | ON | 70,0 | 97,8 | 79,2 | 70,4 | 70,4 | 67,0 | 70,2 | 89,6 |

| ACU-EC 3 | Compressors | NOISE IN THE DUCTS (Hz) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 77,6 | 85,6 | 78,0 | 79,2 | 75,5 | 74,1 | 80,3 | 85,2 |
| | ON | 78,1 | 85,7 | 78,2 | 79,4 | 75,6 | 74,3 | 80,3 | 85,3 |
| 80% | | | | | | | | | |
| | OFF | 76,6 | 85,7 | 71,9 | 77,6 | 73,3 | 72,8 | 78,1 | 83,4 |
| | ON | 76,9 | 87,3 | 73,0 | 77,3 | 73,1 | 72,0 | 77,6 | 83,6 |

| ACU-EC 4 | Compressors | NOISE IN THE DUCTS (Hz) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 84,1 | 87,6 | 83,9 | 83,5 | 76,6 | 75,2 | 79,1 | 87,7 |
| | ON | 84,1 | 87,7 | 82,9 | 84,0 | 77,3 | 76,0 | 79,7 | 88,0 |
| 80% | | | | | | | | | |
| | OFF | 79,0 | 84,7 | 76,1 | 79,1 | 73,4 | 71,6 | 75,7 | 83,4 |
| | ON | 78,4 | 85,6 | 76,0 | 79,3 | 73,2 | 71,9 | 75,6 | 83,6 |

| ACU-EC 5 | Compressors | NOISE IN THE DUCTS (Hz) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 100% | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | $L_w$ dB(A) |
| | OFF | 75,9 | 86,7 | 78,9 | 82,0 | 75,2 | 71,5 | 76,2 | 85,5 |
| | ON | 77,3 | 87,9 | 78,9 | 82,1 | 75,2 | 71,5 | 75,7 | 85,8 |
| 80% | | | | | | | | | |
| | OFF | 73,1 | 91,8 | 75,3 | 77,8 | 70,1 | 67,3 | 72,1 | 85,0 |
| | ON | 72,3 | 92,7 | 74,1 | 76,7 | 70,0 | 67,2 | 71,9 | 85,4 |

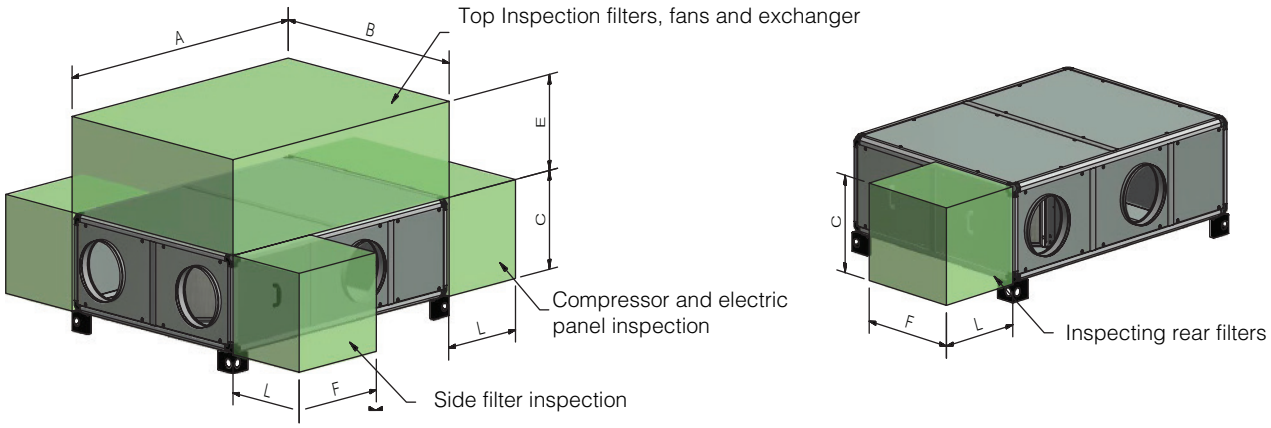
## DIMENSIONS (mm) and WEIGHT (kg)



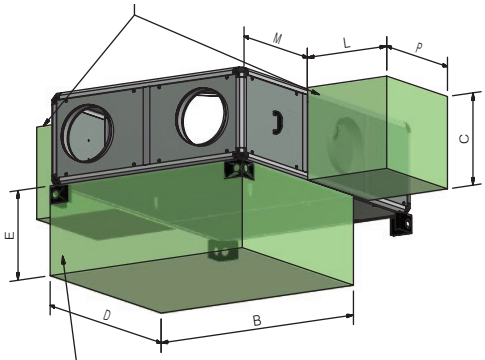

| MODEL | A | B | C | Ø | D | E | F | G | H | Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| ACU-EC 1 | 1400 | 925 | 415 | 200 | 495 | 295 | 245 | 470 | 208 | 140 |
| ACU-EC 2 | 1680 | 1250 | 515 | 315 | 560 | 320 | 250 | 685 | 260 | 230 |
| ACU-EC 3 | 1960 | 1430 | 620 | 355 | 645 | 390 | 285 | 615 | 260 | 325 |
| ACU-EC 4 | 1960 | 1430 | 720 | 400 | 645 | 390 | 285 | 615 | 360 | 382 |
| ACU-EC 5 | 2238 | 1612 | 922 | 500 | 722 | 372 | 335 | 660 | 461 | 570 |

## INSTALLATION

Minimum required space for maintenance (mm)




Replacing fans




Sizes 1-2 ispection of the filters and exchanger from below
Sizes 3-4-5 ispection of the filters from below

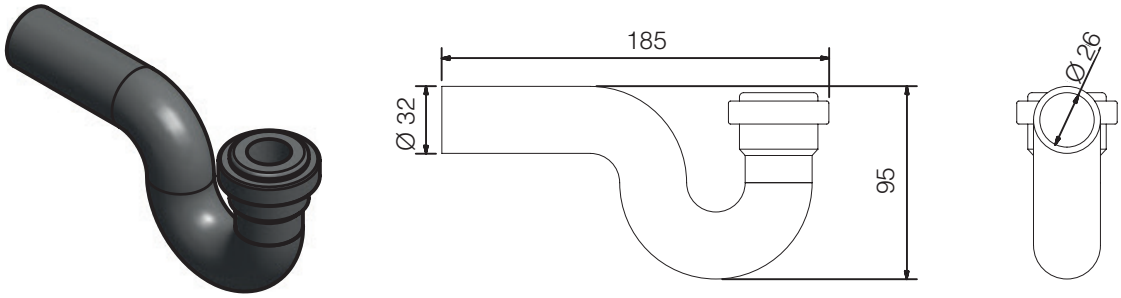
| MODEL | A | B | C | D | E | F | L | M | P |
|---|---|---|---|---|---|---|---|---|---|
| ACU-EC 1 | 1400 | 925 | 415 | 1400 | 400 | 460 | 500 | 480 | 600 |
| ACU-EC 2 | 1680 | 1250 | 515 | 1100 | 500 | 620 | 500 | 640 | 560 |
| ACU-EC 3 | 1960 | 1430 | 620 | 530 | 600 | 530 | 500 | 1000 | 490 |
| ACU-EC 4 | 1960 | 1430 | 720 | 530 | 700 | 530 | 500 | 1000 | 490 |
| ACU-EC 5 | 2240 | 1610 | 920 | 625 | 500 | 620 | 500 | 1290 | 590 |

## OPERATION LIMITS

| | INTERNAL AIR | | | | |
|---|---|---|---|---|---|
| | ACU-EC 1 | ACU-EC 2 | ACU-EC 3 | ACU-EC 4 | ACU-EC 5 |
| HEATING [°C] | 15/25 | | | | |
| COOLING [°C] | 18/28 | | | | |

| | EXTERNAL AIR | | | | |
|---|---|---|---|---|---|
| | ACU-EC 1 | ACU-EC 2 | ACU-EC 3 | ACU-EC 4 | ACU-EC 5 |
| HEATING [°C] | -20/20 | | | | |
| COOLING [°C] | 15/40 | | | | |

## STANDARD SIPHON (MM)



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