



indoor air quality and energy saving

TECHNICAL DATA



DUO-ED H



HEAT RECOVERY VENTILATION UNITS for COMMERCIAL and INDUSTRIAL BUILDINGS



DUO-ED

Is a Non Residential Ventilation Unit (NRVU)

EQUIPPED

Equipped with medium efficiency counterflow heat exchanger (Eurovent certified) and centrifugal forward blades multi speed fans.

STRUCTURE

The DUO-ED is made of extruded aluminium profiles and double skin zinc magnesium panels, sandwiched on injected polyurethane foam insulation, thickness 25 mm and density 42 Kg/m³. The position of the ducting connections, made with circular spigots, are easily configurable simply by moving the ducting connection panels. 6 sizes are available in horizontal version, ceiling installation or floor installation, all equipped with automatic partial bypass and medium efficiency heat exchanger. In the vertical version the delivery and/or recovery connections can be rotated upwards (on site). Post heating devices (electric or water), post cooling/heating water coil, direct expansion coil and electrical pre heater device are integrated into the unit are available as additional external module. The filtering sections are: classe ePM1 55% (F7) filters for the fresh air flow and ePM10 50% (M5) filters for the extraction air flow.

CONTROLS

The DUO-ED is supplied with control system and easy connection to the power supply. It's also available the versions with simplified CTR-EASY and CTR08-PH control, the version with EVO-PH control and the version with EVOD-PH-IP control ready for integration in home automation systems (Modbus protocol with Ethernet connection or, upon request, with the addition of the RS485 connection). The new version of our control systems allows the user to shift from one control system to another very quickly and easily by replacing the remote panel even after the installation. It is available the version without control. The CTR08-PH control allows the user to select three levels of fan speed or the possibility to stop them. It automatically manages the By-pass and prevents the heat exchanger freezing by programming the fan speed or, if specifically required, the electric pre-heater resistance (optional item to install inside the unit). The control advises the user if filters need to be replaced (the filter clogging is monitored by a pair of differential pressure sensors) or any other fault. The EVO-PH control has a colored backlit touch screen interface, it gives an intuitive operating status of the unit and it allows programming the fan speed.

This control has a weekly time schedule for automatic unit control, it can be controlled by an external switch to activate the booster and it can automatically adjust the air flow when connected to an air quality sensor. It supports post-air treatment accessories and it advises the user if filters need to be replaced (the filter clogging is monitored by a pair of differential pressure sensors) or if there is any other fault showing where it comes from. The EVOD-PH-IP control has the same characteristics of the EVO-PH version with the addition of the Modbus communication protocol and it allows full control of the unit by the Home Automation software system. If the unit is in a Home Automation network, the webserver lets the user interact with it throughout a device connected to an Internet browser. On request it's also available the version without control system and without electrical cabinet (adjustable pressure switches for filter status and bypass actuator are installed).

NOTE: for the recuperators provided in the "plug & play" version with our CTR08-PH or EVO-PH control, the management of by-pass is automatic, with by-pass motor and temperature probes supplied and installed on board the machine

CTR-EASY (X539-U0)

- . OFF, ON speed 1, speed 2, speed 3
- . ON / OFF by-pass
- . 3 temperature inputs
- . Filter alarms (time-counts or dedicated digital input switches)

IMPORTANT

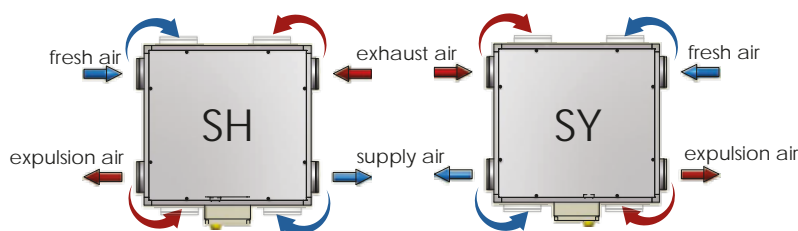
- . The units put on the market from 1 January 2018 must be with pressure switches (ErP-2018)
- . You can NOT handle the anti-freeze strategy of the exchanger
- . You can NOT manage the by-pass automatically: to make it foresee the unit mounted temperature probes and control display CTR08-PH or EVO-PH.
- . For remote recovery of the recuperator, add the display of CTR08-PH control (2 lights: service and filters) or EVO-PH (vision special machine status and eventual alarm details) with 3 temperature probes

ACCESSORIES

- DUO-ED can be equipped with other accessories such as:
- . R.H. of probe, CO₂ or CO₂ / VOC
 - . protection roof for outside installation
 - . switch speed

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

DUO-ED H - TOP VIEW Standard configuration = SH
Mirrored configuration = SY

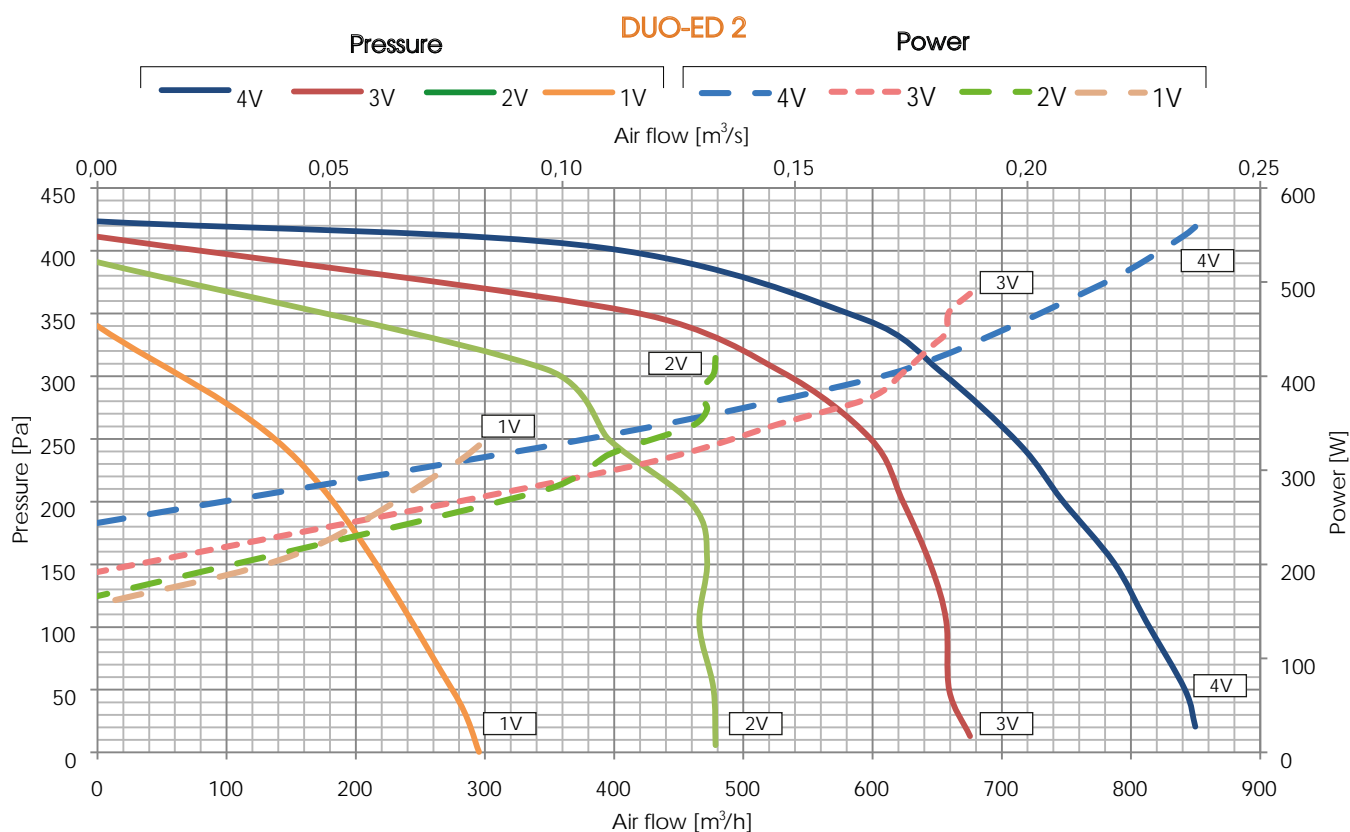
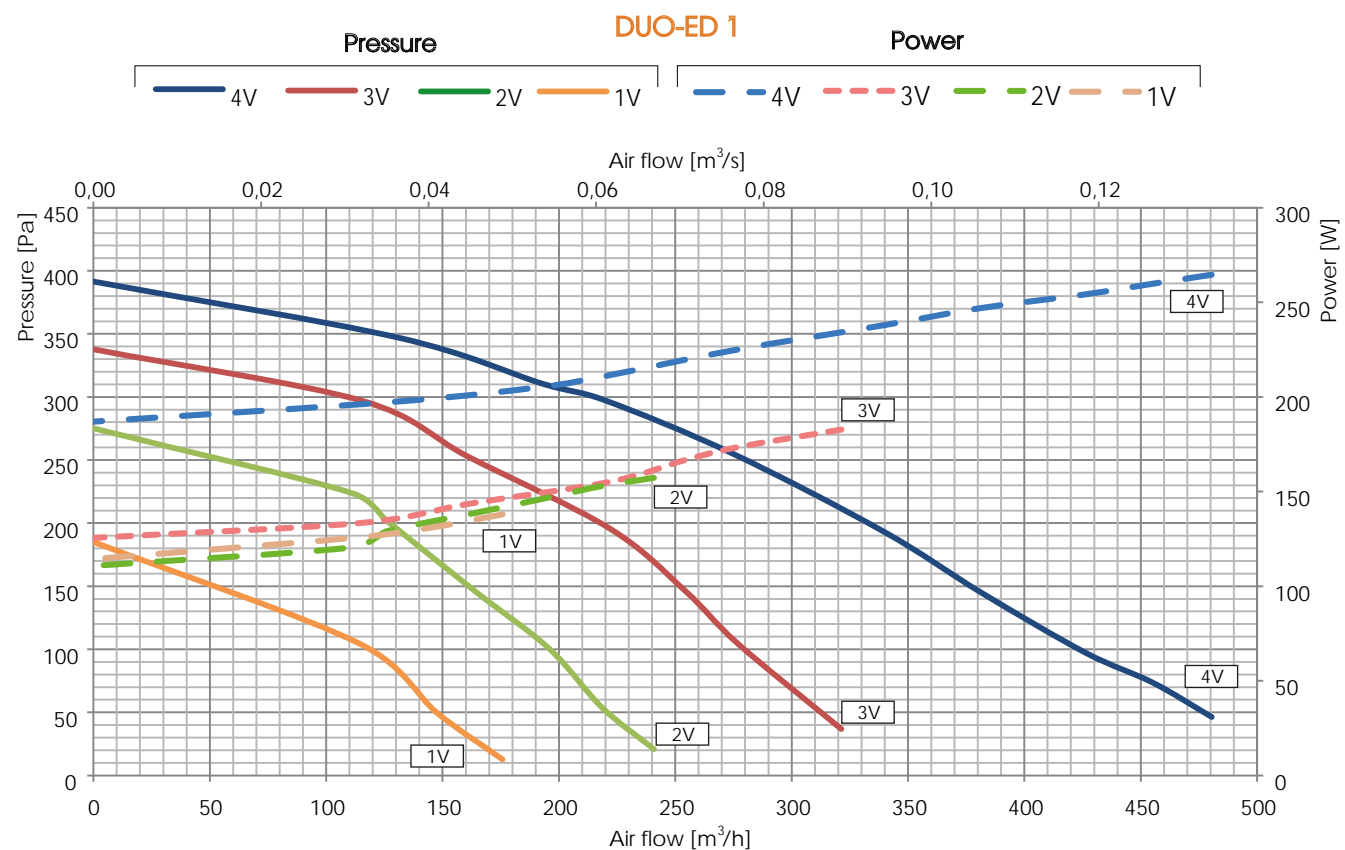


Counterflow heat exchanger made of aluminum manufactured by RECUTECH
RECUTECH participates in the Eurovent Certification Program



PERFORMANCE (UNI EN 13141-7)

The unit must be ducted properly: UTEK 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 UTEK low pressure drop.

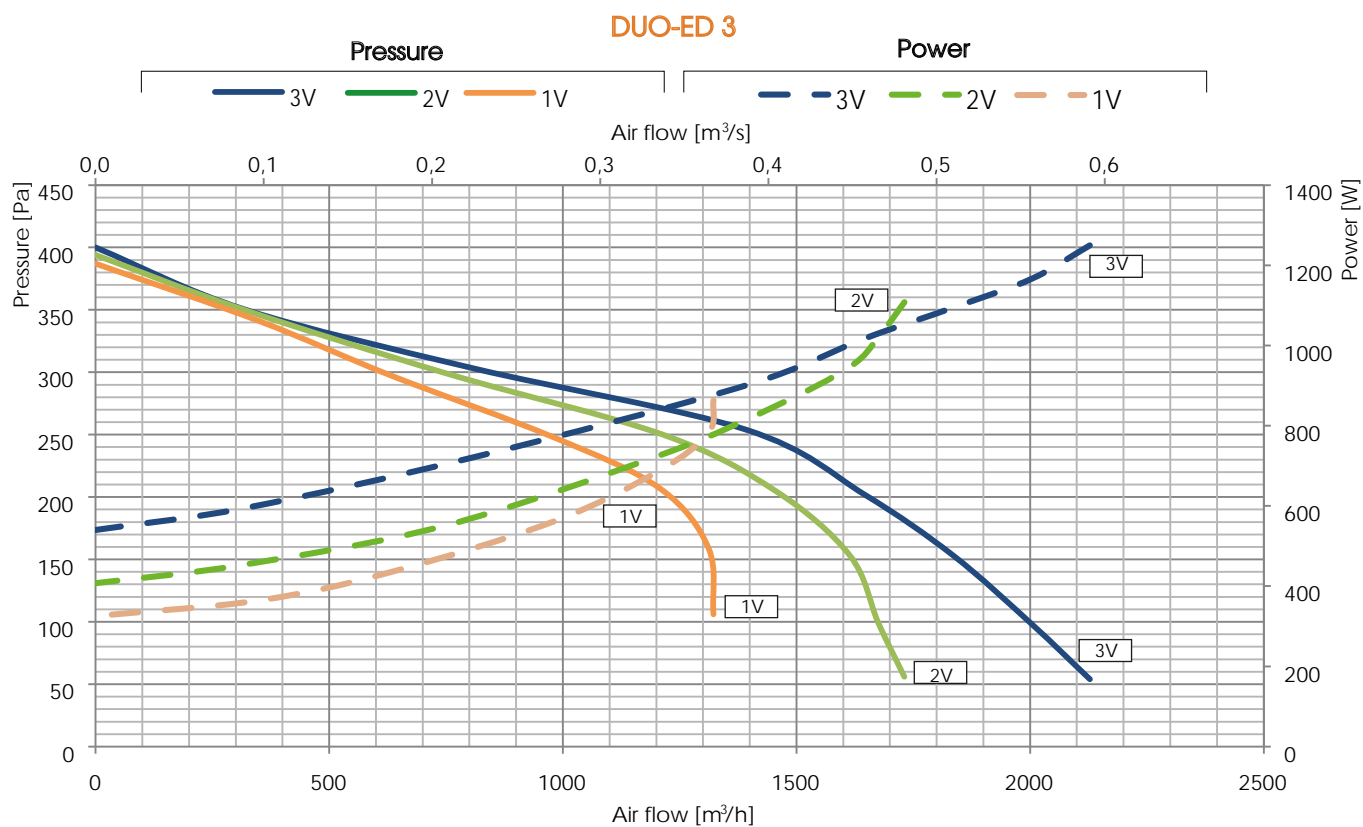
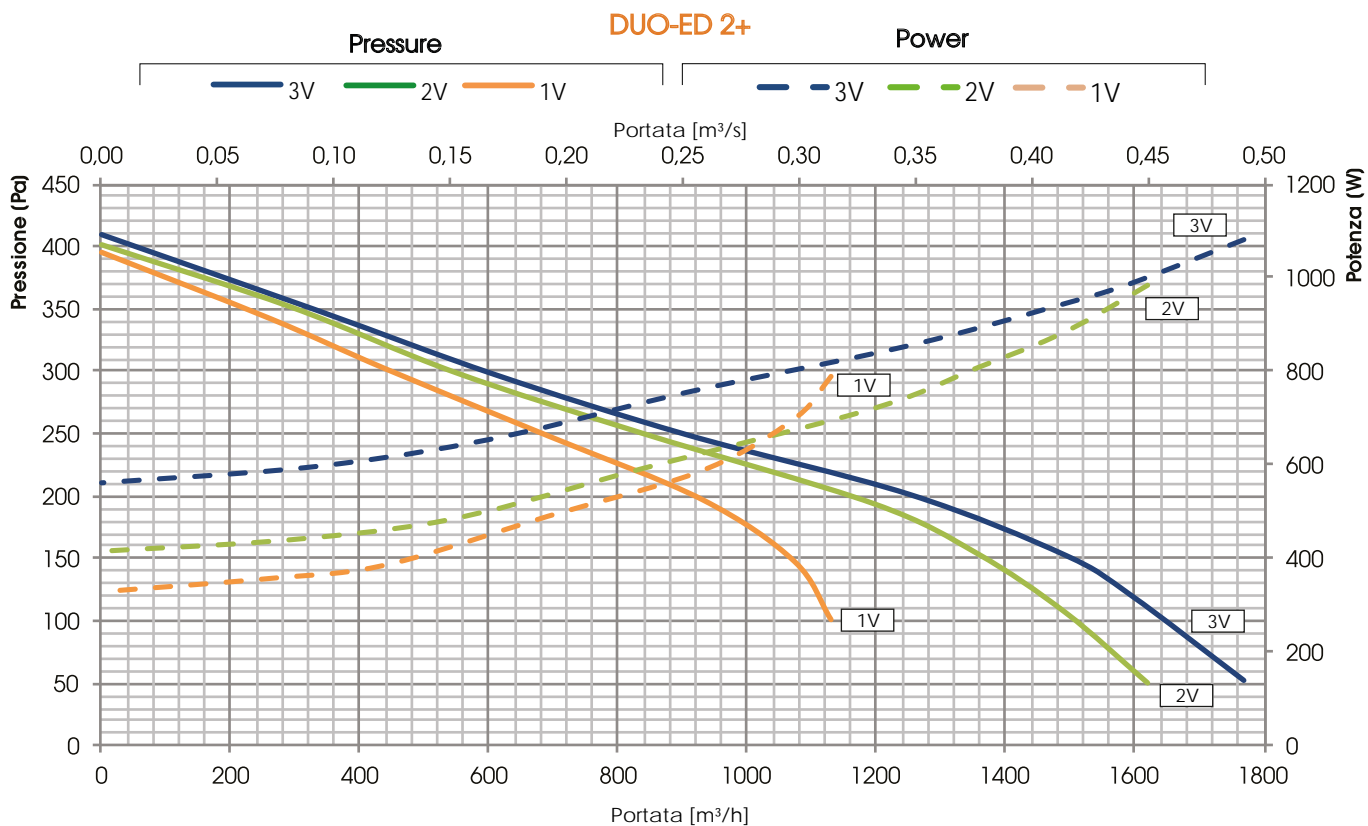


NOTE: for the units DUO-ED 1 and 2, the speed **1V** It is NOT wired;
the first speed selectable from the control panel corresponds to the performance curve **2V**



PERFORMANCE (UNI EN 13141-7)

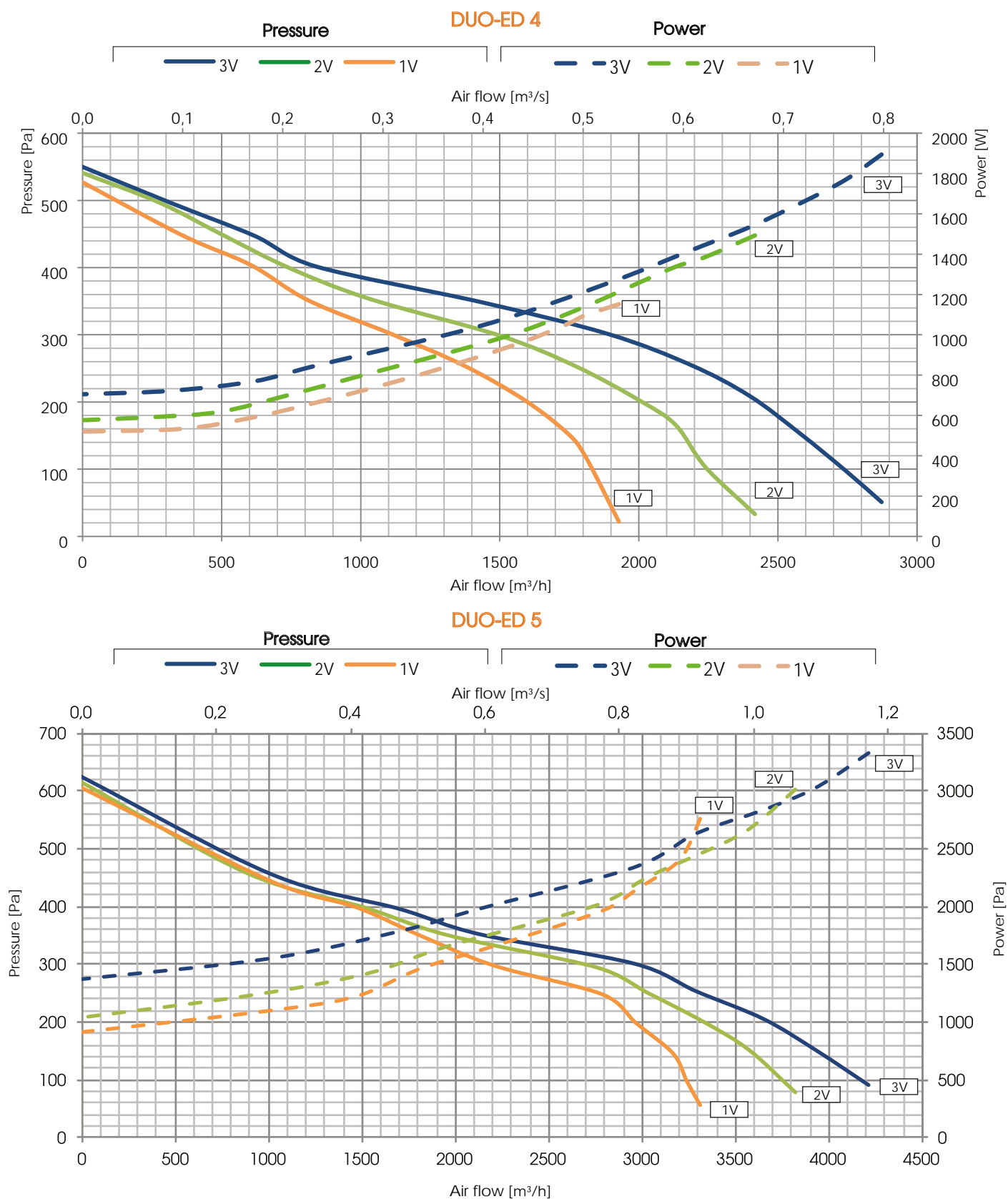
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PERFORMANCE (UNI EN 13141-7)

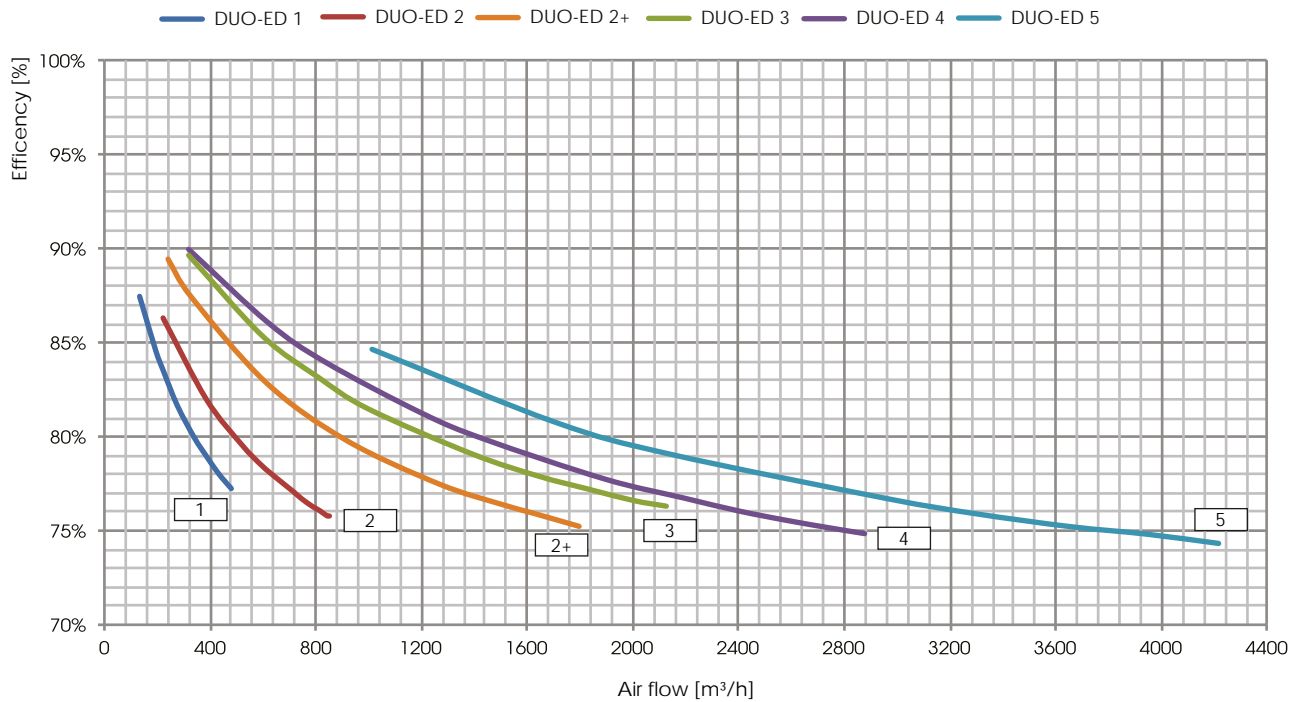
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The declared performances are with CLEAN filters, and guaranteed ONLY with the original filters UTEK low pressure drop.





HEAT RECOVERY PERFORMANCE (sensible efficiency)

Values referred to the following conditions (UNI EN 308:1998): T_{bs} external air 5°C; U.R. external 72%; T_{bs} environment 25°C; U.R. environment 38%



ECODESIGN

| MOD. | $\eta_{t,nvr}$ [%] | Q_{nom} [m³/s] | $\Delta p_{s,ext}$ [Pa] | P [kW] | SFP _{int} [W/(m³/s)] | SFP _{int,lim 2016} [W/(m³/s)] | SFP _{int,lim 2018} [W/(m³/s)] | FRONTAL VELOCITY [m/s] | $\Delta p_{s,int}$ [Pa] | η_{fan} [%] | LEAKAGE internal * [%] | LEAKAGE external * [%] |
|-----------|--------------------|------------------|-------------------------|--------|-------------------------------|--|--|------------------------|-------------------------|------------------|------------------------|------------------------|
| DUO-ED 1 | 78,2 | 0,12 | 100 | 0,25 | 1204 | 1520 | 1240 | 1,38 | 239 | 18,7 | 6,1 | 8,0 |
| DUO-ED 2 | 75,2 | 0,27 | 100 | 0,68 | 1104 | 1406 | 1126 | 1,77 | 200 | 18,0 | 1,3 | 3,7 |
| DUO-ED 2+ | 77,7 | 0,35 | 200 | 0,90 | 1184 | 1468 | 1188 | 1,40 | 346 | 30,9 | 2,1 | 3,8 |
| DUO-ED 3 | 77,9 | 0,46 | 200 | 1,02 | 1155 | 1457 | 1177 | 1,84 | 446 | 40,1 | 4,1 | 2,9 |
| DUO-ED 4 | 76,7 | 0,61 | 250 | 1,43 | 1087 | 1400 | 1120 | 1,61 | 456 | 41,8 | 8,7 | 2,3 |
| DUO-ED 5 | 76,7 | 0,82 | 300 | 2,34 | 1067 | 1367 | 1087 | 1,62 | 380 | 35,8 | 4,0 | 1,3 |

* Percentage of the nominal flow

VALUES ACCORDING UNI EN 1886: 2008

| MOD. | CASING STRENGTH | CASING LEAKAGE | FILTER CLASS | THERMAL TRANSMITTANCE | THERMAL BRIDGE |
|-----------|-----------------|----------------|--------------|-----------------------|----------------|
| DUO-ED 1 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB4 (M) |
| DUO-ED 2 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB4 (M) |
| DUO-ED 2+ | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB4 (M) |
| DUO-ED 3 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB4 (M) |
| DUO-ED 4 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB4 (M) |
| DUO-ED 5 | D1 (M) | L3 (M) | F7 (M) | T4 (M) | TB4 (M) |

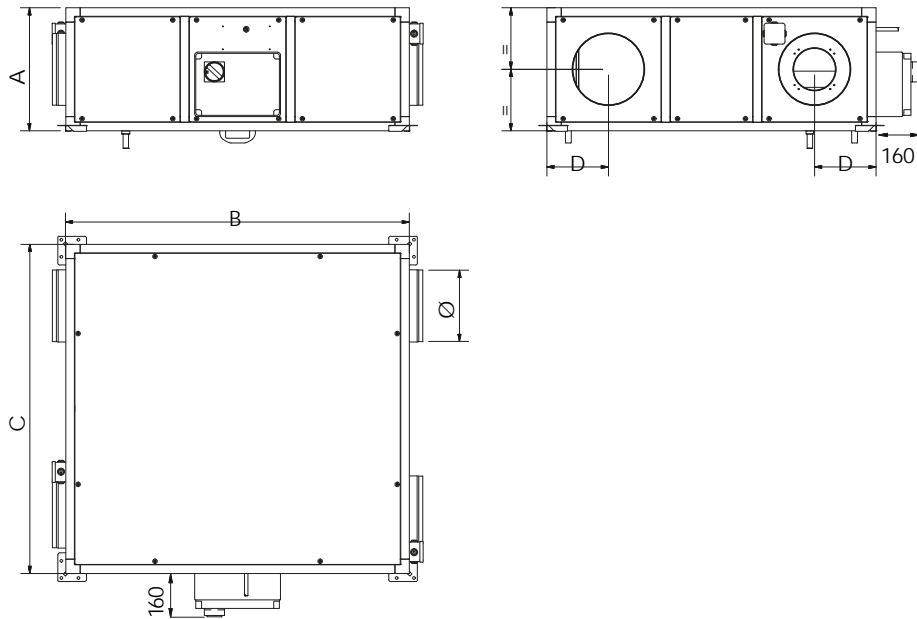
TEST LEAKAGE (UNI EN 13141-7)

| LEAKAGE | TEST CONDITIONS | DUO-ED 1 | DUO-ED 2 | DUO-ED 2+ | DUO-ED 3 | DUO-ED 4 | DUO-ED 5 |
|---------|----------------------------|----------|----------|-----------|----------|----------|----------|
| OUTDOOR | Positive pressure 400 Pa | A3 | A2 | A2 | A2 | A1 | A1 |
| OUTDOOR | Negative pressure 400 Pa | A3 | A2 | A2 | A2 | A1 | A1 |
| INDOOR | Pressure difference 250 Pa | A3 | A1 | A1 | A2 | A3 | A2 |



DUO-ED H 1/2/2+/3

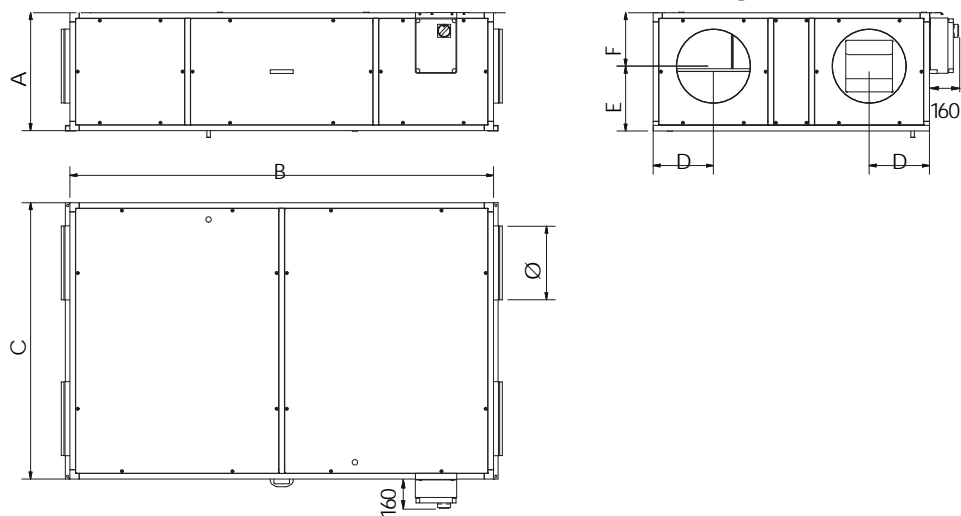
DIMENSIONS (mm) WEIGHT (kg)



| MODEL | Dimensions [mm] | | | | | |
|--------------------|-----------------|------|------|-----|-----|-------------|
| | A | B | C | Ø | D | Weight [kg] |
| DUO-ED H 1 | 370 | 1100 | 1050 | 200 | 185 | 74 |
| DUO-ED H 2 | 430 | 1200 | 1150 | 250 | 215 | 91 |
| DUO-ED H 2+ | 500 | 1460 | 1300 | 315 | 283 | 142 |
| DUO-ED H 3 | 550 | 1460 | 1300 | 315 | 283 | 150 |

DUO-ED H 4 and 5

DIMENSIONS (mm) WEIGHT (kg)



| MODEL | Dimensions [mm] | | | | | | |
|-------------------|-----------------|------|------|-----|-----|-----|-----|
| | A | B | C | Ø | D | E | F |
| DUO-ED H 4 | 640 | 2300 | 1500 | 400 | 327 | 350 | 290 |
| DUO-ED H 5 | 640 | 2300 | 1980 | 400 | 327 | 350 | 290 |



NOISE LEVEL

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

| NOISE FROM THE CASE (dB) | | | | | | | | | |
|--------------------------|----|--------|--------|--------|---------|---------|---------|---------|----------------------|
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | L _w dB(A) |
| DUO-ED 1 | 4V | 51,6 | 51,2 | 47,1 | 43,9 | 38,3 | 36,5 | 45,0 | 50 |
| DUO-ED 2 | 4V | 57,5 | 61,3 | 58,4 | 52,4 | 43,9 | 37,4 | 45,1 | 59 |
| DUO-ED 2+ | 3V | 64,7 | 64,4 | 58,0 | 49,6 | 44,7 | 36,7 | 41,6 | 60 |
| DUO-ED 3 | 3V | 67,1 | 64,9 | 58,8 | 51,2 | 44,4 | 36,3 | 38,7 | 60 |
| DUO-ED 4 | 3V | 70,4 | 65,6 | 58,9 | 54,2 | 47,6 | 39,0 | 40,0 | 62 |
| DUO-ED 5 | 3V | 77,2 | 72,9 | 61,3 | 55,3 | 50,4 | 42,2 | 40,7 | 67 |

| NOISE IN THE SUPPLY AIR DUCTS (dB) | | | | | | | | | |
|------------------------------------|----|--------|--------|--------|---------|---------|---------|---------|----------------------|
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | L _w dB(A) |
| DUO-ED 1 | 4V | 52,6 | 59,3 | 61,3 | 54,8 | 49,8 | 46,5 | 49,8 | 61 |
| | 3V | 49,1 | 54,0 | 55,9 | 49,5 | 41,1 | 36,9 | 40,8 | 55 |
| | 2V | 47,1 | 50,1 | 50,5 | 46,2 | 35,2 | 30,6 | 39,2 | 51 |
| | 1V | 44,0 | 47,1 | 46,7 | 40,4 | 31,5 | 30,2 | 39,7 | 47 |

| NOISE IN THE SUPPLY AIR DUCTS (dB) | | | | | | | | | |
|------------------------------------|----|--------|--------|--------|---------|---------|---------|---------|----------------------|
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | L _w dB(A) |
| DUO-ED 2 | 4V | 64,5 | 70,6 | 72,7 | 64,4 | 57,0 | 62,9 | 65,6 | 73 |
| | 3V | 58,9 | 66,4 | 68,1 | 60,9 | 50,7 | 57,3 | 59,5 | 68 |
| | 2V | 53,6 | 60,8 | 61,5 | 56,1 | 43,1 | 48,8 | 49,0 | 62 |
| | 1V | 47,6 | 50,1 | 52,7 | 44,4 | 29,4 | 33,5 | 37,7 | 52 |

| NOISE IN THE SUPPLY AIR DUCTS (dB) | | | | | | | | | |
|------------------------------------|----|--------|--------|--------|---------|---------|---------|---------|----------------------|
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | L _w dB(A) |
| DUO-ED 2+ | 3V | 67,0 | 78,9 | 79,6 | 60,9 | 63,2 | 61,0 | 62,1 | 75 |
| | 2V | 66,6 | 77,1 | 77,2 | 59,6 | 60,8 | 58,0 | 58,8 | 73 |
| | 1V | 67,5 | 68,8 | 75,1 | 56,4 | 58,6 | 53,7 | 54,5 | 71 |

| NOISE IN THE SUPPLY AIR DUCTS (dB) | | | | | | | | | |
|------------------------------------|----|--------|--------|--------|---------|---------|---------|---------|----------------------|
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | L _w dB(A) |
| DUO-ED 3 | 3V | 69,0 | 76,7 | 78,1 | 66,3 | 63,6 | 61,7 | 62,7 | 77 |
| | 2V | 67,0 | 72,3 | 75,2 | 63,0 | 60,5 | 58,4 | 58,4 | 74 |
| | 1V | 64,2 | 63,9 | 68,9 | 55,9 | 52,8 | 48,7 | 46,9 | 67 |

| NOISE IN THE SUPPLY AIR DUCTS (dB) | | | | | | | | | |
|------------------------------------|----|--------|--------|--------|---------|---------|---------|---------|----------------------|
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | L _w dB(A) |
| DUO-ED 4 | 3V | 70,8 | 78,9 | 74,9 | 72,6 | 65,2 | 66,3 | 68,7 | 78 |
| | 2V | 69,3 | 75,2 | 71,7 | 69,3 | 61,4 | 62,4 | 63,6 | 74 |
| | 1V | 65,5 | 71,8 | 67,4 | 64,1 | 57,0 | 56,9 | 56,7 | 70 |

| NOISE IN THE SUPPLY AIR DUCTS (dB) | | | | | | | | | |
|------------------------------------|----|--------|--------|--------|---------|---------|---------|---------|----------------------|
| | | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | L _w dB(A) |
| DUO-ED 5 | 3V | 76,8 | 86,5 | 80,0 | 77,4 | 72,0 | 70,2 | 74,0 | 83 |
| | 2V | 76,8 | 85,5 | 78,3 | 76,8 | 70,1 | 68,6 | 72,4 | 82 |
| | 1V | 75,4 | 82,2 | 76,7 | 73,4 | 67,2 | 66,0 | 69,3 | 79 |


ELECTRICAL DATA

| MATCHING | FANS | | | | UNIT DUO-ED | | |
|-----------|-----------|---------------|-----------------|------------------|---------------|-----------------|------------------|
| | Power [W] | Supply | Current max.[A] | Insulation class | Supply | Current max.[A] | Insulation class |
| DUO-ED 1 | 2 x 150 | 230V 50 Hz 1F | 2 x 0,7 | IP20 CLASS F | 230V 50 Hz 1F | 1,4 | IP20 |
| DUO-ED 2 | 2 x 290 | 230V 50 Hz 1F | 2 x 1,3 | IP20 CLASS F | 230V 50 Hz 1F | 2,7 | IP20 |
| DUO-ED 2+ | 2 x 400 | 230V 50 Hz 1F | 2 x 3,8 | IP20 CLASSE F | 230V 50 Hz 1F | 7,7 | IP20 |
| DUO-ED 3 | 2 x 400 | 230V 50 Hz 1F | 2 x 3,8 | IP20 CLASSE F | 230V 50 Hz 1F | 7,7 | IP20 |
| DUO-ED 4 | 2 x 550 | 230V 50 Hz 1F | 2 x 4,8 | IP20 CLASSE F | 230V 50 Hz 1F | 9,7 | IP20 |
| DUO-ED 5 | 2 x 750 | 230V 50 Hz 1F | 2 x 9,6 | IP20 CLASSE F | 230V 50 Hz 1F | 19,3 | IP20 |

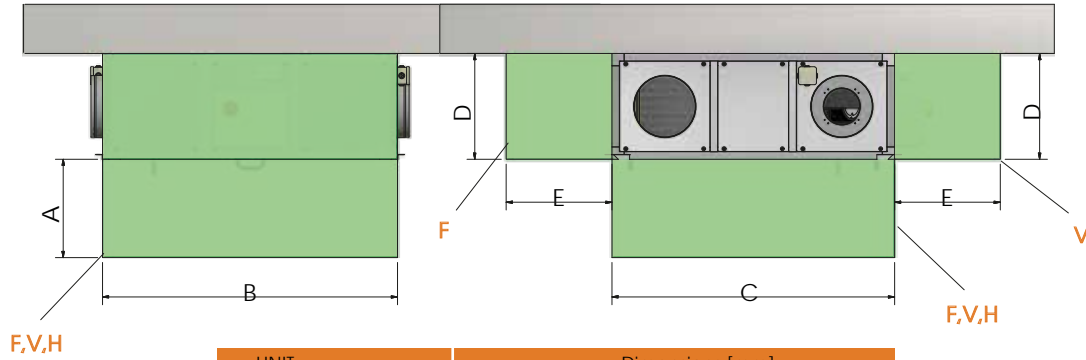


INSTALLATION DUO-ED from size 1 to size 3

CEILING INSTALLATION


 Minimum required space for standard maintenance (mm)

F= filters, H=heat exchanger, V=ventilators

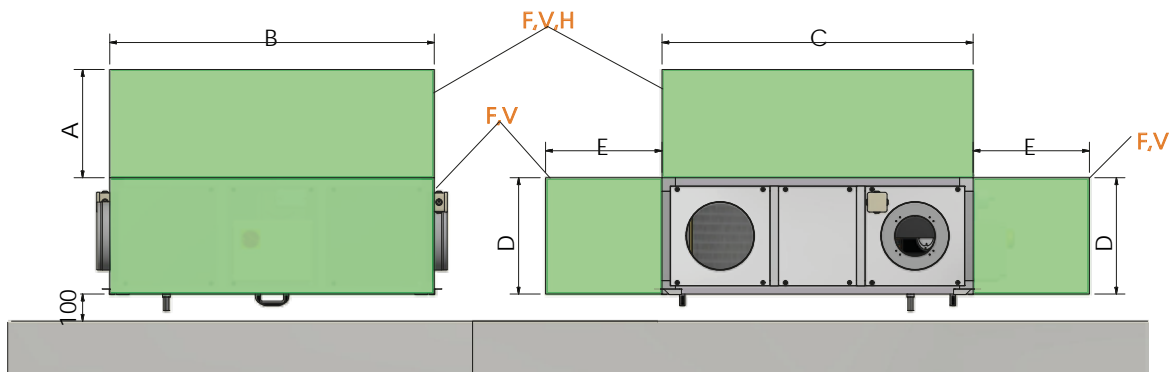


| UNIT | Dimensions [mm] | | | | |
|-------------|-----------------|------|------|-----|-----|
| | A | B | C | D | E |
| DUO-ED H 1 | 250 | 1100 | 1050 | 380 | 500 |
| DUO-ED H 2 | 350 | 1200 | 1150 | 430 | 500 |
| DUO-ED H 2+ | 450 | 1460 | 1300 | 500 | 500 |
| DUO-ED H 3 | 500 | 1460 | 1300 | 550 | 500 |

FLOOR INSTALLATION

 Minimum required space for standard maintenance (mm)

F= filters, H=heat exchanger, V=ventilators



| UNIT | Dimensions [mm] | | | | |
|-------------|-----------------|------|------|-----|-----|
| | A | B | C | D | E |
| DUO-ED H 1 | 250 | 1100 | 1050 | 380 | 500 |
| DUO-ED H 2 | 350 | 1200 | 1150 | 430 | 500 |
| DUO-ED H 2+ | 450 | 1460 | 1300 | 500 | 500 |
| DUO-ED H 3 | 500 | 1460 | 1300 | 550 | 500 |

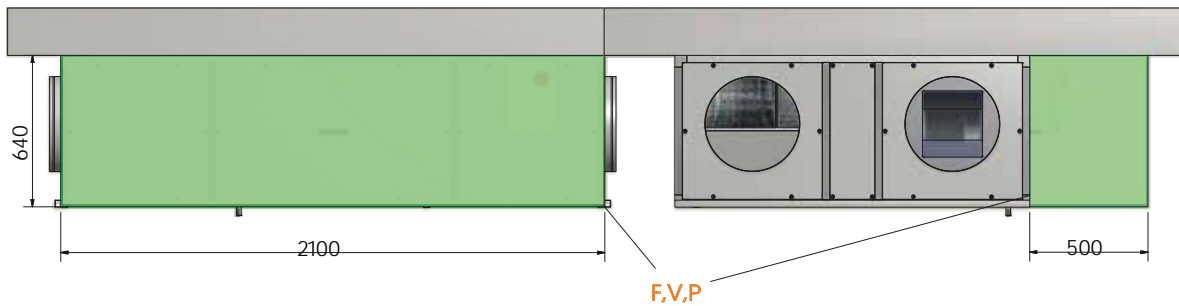


INSTALLATION DUO-ED 4 and 5

CEILING INSTALLATION

Minimum required space for standard maintenance (mm)

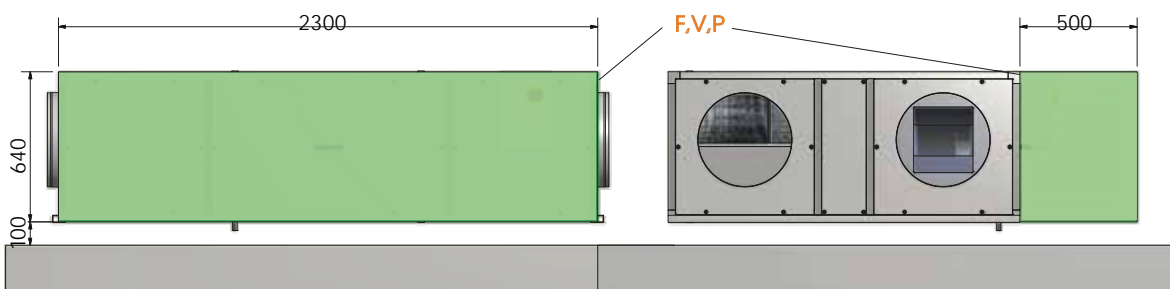
F= filters, H=heat exchanger, V=ventilators



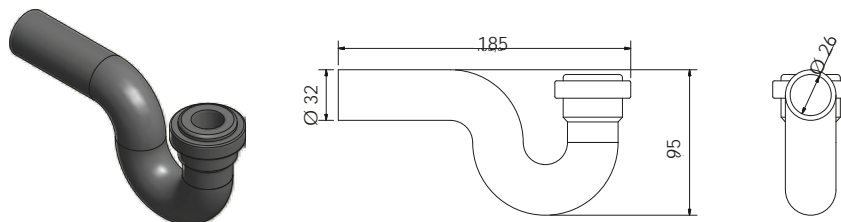
FLOOR INSTALLATION

Minimum required space for standard maintenance (mm)

F= filters, H=heat exchanger, V=ventilators



STANDARD SIPHON [mm]



N.B. : predict 1 additional siphon if there is the cold water coil BA-AF / AC or DX gas (duct)



GAS R410A coil - DUO-ED 1

| DIRECT EXPANSION COIL (R410A) | | | | | | |
|-------------------------------|----------------------|------------|----------------|------------------------|------------------------|------------------------|
| Air flow [m³/h] | T _{in} [°C] | R.H in [%] | Power [kW] | T _{out} [°C] | R.H: out [%] | Air pressure drop [Pa] |
| 396 | 25 | 50 | 1,96 | 13,6 | 86 | 16 |
| Ø connection [mm] | Fin pitch [mm] | N. Rows | Int.Vol. [dm³] | T _{evap} [°C] | T _{cond} [°C] | |
| 22-16 | 3,0 | 3 | 1,0 | 5 | 50 | |

GAS R410A coil - DUO-ED 2

| DIRECT EXPANSION COIL (R410A) | | | | | | |
|-------------------------------|----------------------|------------|----------------|------------------------|------------------------|------------------------|
| Air flow [m³/h] | T _{in} [°C] | R.H in [%] | Power [kW] | T _{out} [°C] | R.H: out [%] | Air pressure drop [Pa] |
| 828 | 25 | 50 | 3,59 | 15,4 | 78,7 | 53 |
| Ø connection [mm] | Fin pitch [mm] | N. Rows | Int.Vol. [dm³] | T _{evap} [°C] | T _{cond} [°C] | |
| 18-12 | 2,5 | 3 | 1,1 | 5 | 50 | |

GAS R410A coil - DUO-ED 3

| DIRECT EXPANSION COIL (R410A) | | | | | | |
|-------------------------------|----------------------|------------|----------------|------------------------|------------------------|------------------------|
| Air flow [m³/h] | T _{in} [°C] | R.H in [%] | Power [kW] | T _{out} [°C] | R.H: out [%] | Air pressure drop [Pa] |
| 1260 | 25 | 50 | 6,18 | 14,1 | 83,6 | 50 |
| Ø connection [mm] | Fin pitch [mm] | N. Rows | Int.Vol. [dm³] | T _{evap} [°C] | T _{cond} [°C] | |
| 18-12 | 2,5 | 3 | 2,3 | 5 | 50 | |

GAS R410A coil - DUO-ED 4

| DIRECT EXPANSION COIL (R410A) | | | | | | |
|-------------------------------|----------------------|------------|----------------|------------------------|------------------------|------------------------|
| Air flow [m³/h] | T _{in} [°C] | R.H in [%] | Power [kW] | T _{out} [°C] | R.H: out [%] | Air pressure drop [Pa] |
| 1980 | 25 | 50 | 8,01 | 15,9 | 77,3 | 32 |
| Ø connection [mm] | Fin pitch [mm] | N. Rows | Int.Vol. [dm³] | T _{evap} [°C] | T _{cond} [°C] | |
| 18-12 | 2,5 | 2 | 2,6 | 5 | 50 | |

GAS R410A coil - DUO-ED 5

| DIRECT EXPANSION COIL (R410A) | | | | | | |
|-------------------------------|----------------------|------------|---------------|------------------------|------------------------|------------------------|
| Air flow [m³/h] | T _{in} [°C] | R.H in [%] | Power [kW] | T _{out} [°C] | R.H: out [%] | Air pressure drop [Pa] |
| 2700 | 25 | 50 | 10,93 | 16 | 76,7 | 36 |
| Ø connection [mm] | Fin pitch [mm] | N. Rows | Vol.Int [dm³] | T _{evap} [°C] | T _{cond} [°C] | |
| 22-12 | 2,5 | 2 | 3,2 | 5 | 50 | |

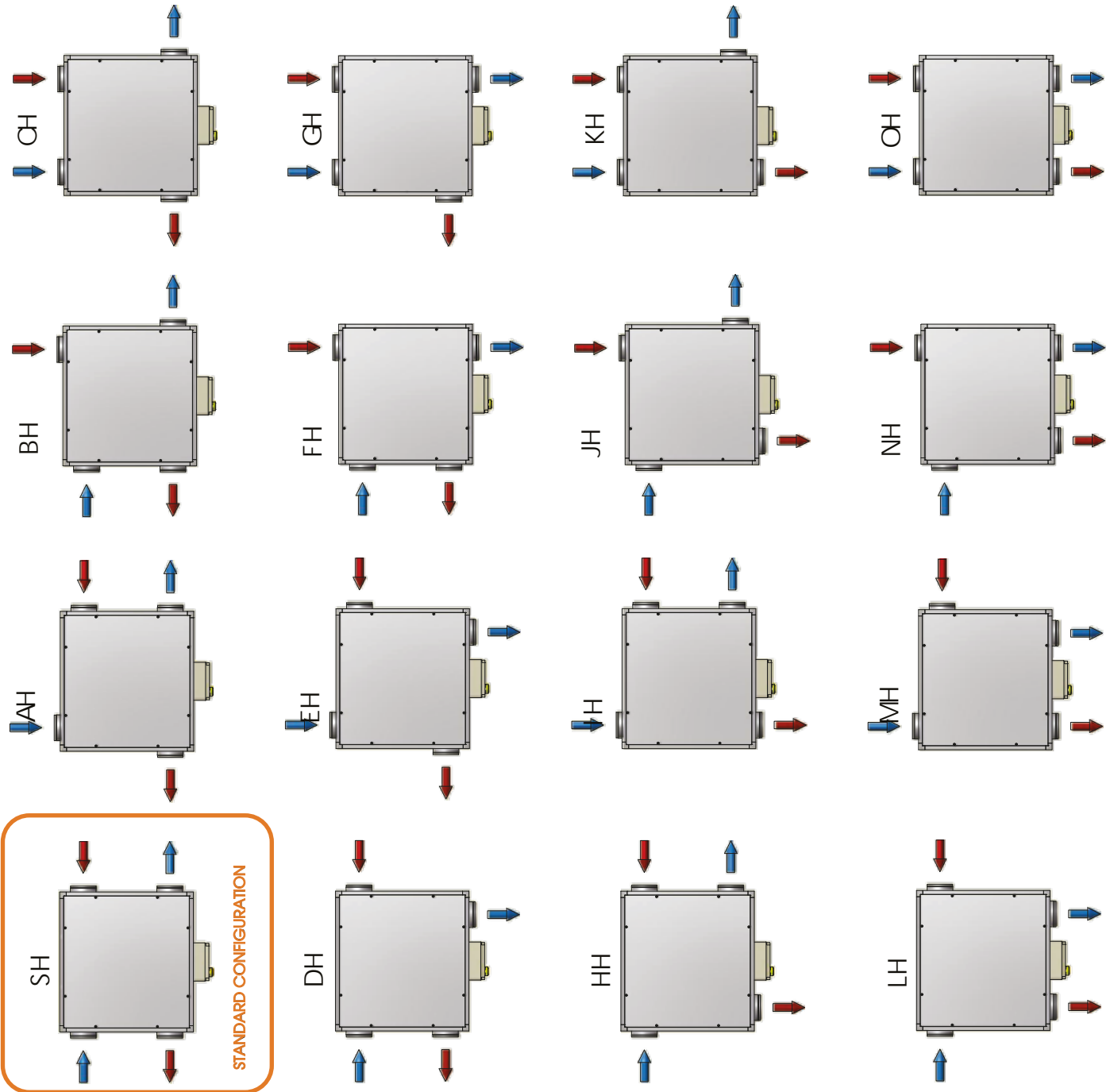
SILENCERS NOISE DAMPING TABLE L = 900

| | | DAMPING [Lw dB] | | | | | | | |
|---------------|-----|-----------------|-----|-----|-----|----|----|----|----|
| Unit | Ø | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| DUO-ED H 1 | 200 | 1 | 3 | 11 | 20 | 41 | 34 | 19 | 17 |
| DUO-ED H 2 | 250 | 1 | 3 | 8 | 19 | 37 | 20 | 10 | 10 |
| DUO-ED H 2+/3 | 315 | 1 | 2 | 6 | 16 | 25 | 17 | 9 | 7 |
| DUO-ED H 4/5 | 400 | 1 | 2 | 4 | 10 | 22 | 9 | 7 | 5 |

| | | | | | |
|---|--|----------|--|---------------------------------|--|
| A | Manufacturer's name | UTEK srl | | | |
| B | Manufacturer's model identifier | | DUO-ED 4 EVO-PH SH | DUO-ED 5 EVO-PH SH | |
| C | Declared typology | | UVNR / UVB | UVNR / UVB | |
| D | Type of drive installed | | Multiple speeds | Multiple speeds | |
| E | Type of HRS | | other | other | |
| F | Thermal efficiency of heat recovery [%] | | 76,7 | 76,7 | |
| G | Nominal NRVU flow rate [m³/s] | | 0,61 | 0,82 | |
| H | Effective electric power input [kW] | | 1,43 | 2,34 | |
| I | SFPint [W/(m³/s)] | | 1087 | 1067 | |
| J | Face velocity at design flow rate [m/s] | | 1,6 | 1,6 | |
| K | Nominal external pressure [Pa] | | 250 | 300 | |
| L | Internal pressure drop of ventilation components [Pa] | | 456 | 380 | |
| M | Optional: internal pressure drop of non-ventilation components | | - | - | |
| N | Static efficiency of fans used in accordance with Regulation (EU) No 327/2011 [%] | | 41,8 | 35,8 | |
| O | Declared maximum external leakage rate of the casing of ventilation units [%] | | 2,3 | 1,3 | |
| | Declared maximum internal leakage rate of bidirectional ventilation units or carry over (for regenerative heat exchangers only) [%] | | 8,7 | 4,0 | |
| | Energy performance, preferably energy classification, of the filters (declared information about the calculated annual energy consumption) | | ePM1 70% (F7) ePM10 50% (M5) | ePM1 70% (F7) ePM10 50% (M5) | |
| Q | Position and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit | | Position and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit | | |
| R | Casing sound power level (LWA) [dB] | | 62 | 67 | |
| S | Internet address for pre-/dis-assembly instructions | | www.utek.it | | |

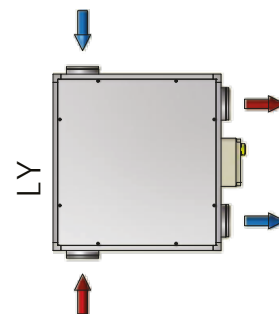
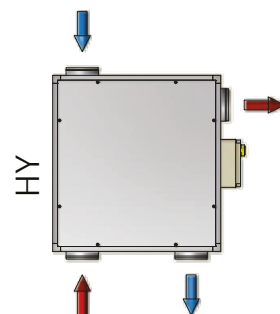
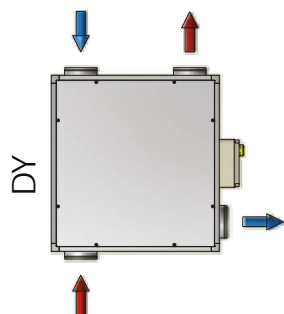
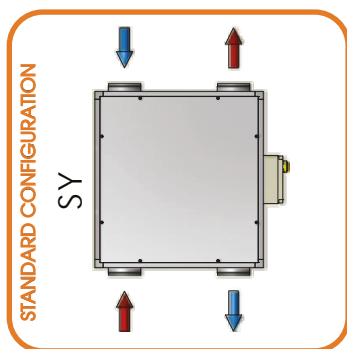
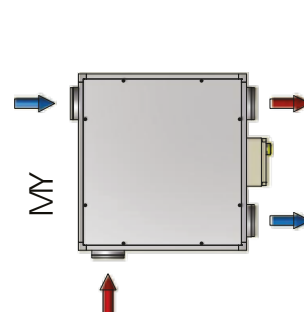
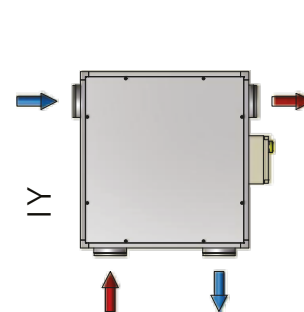
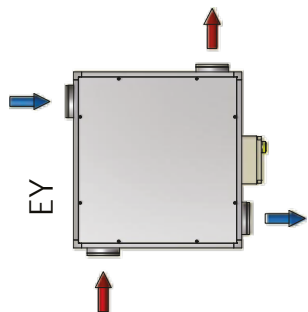
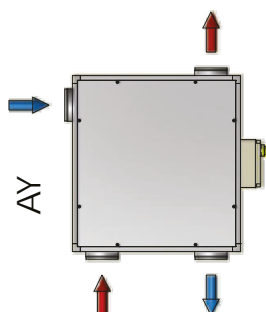
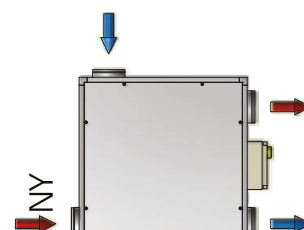
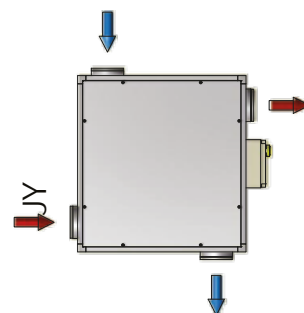
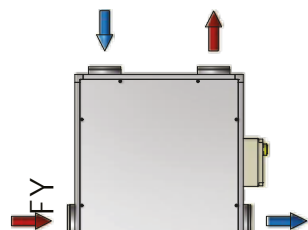
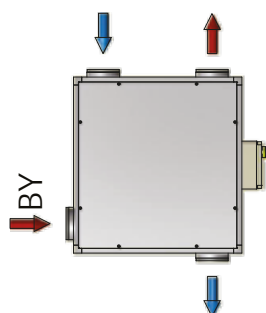
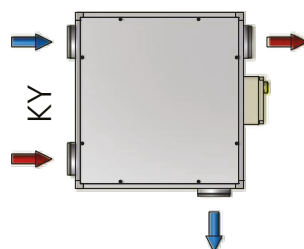
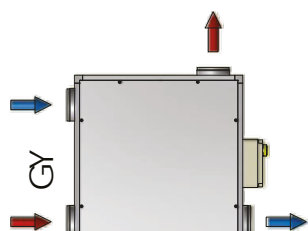
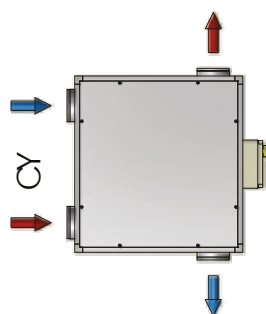


HORIZONTAL CONFIGURATIONS size 1/2/2+/3
VIEW FROM ABOVE



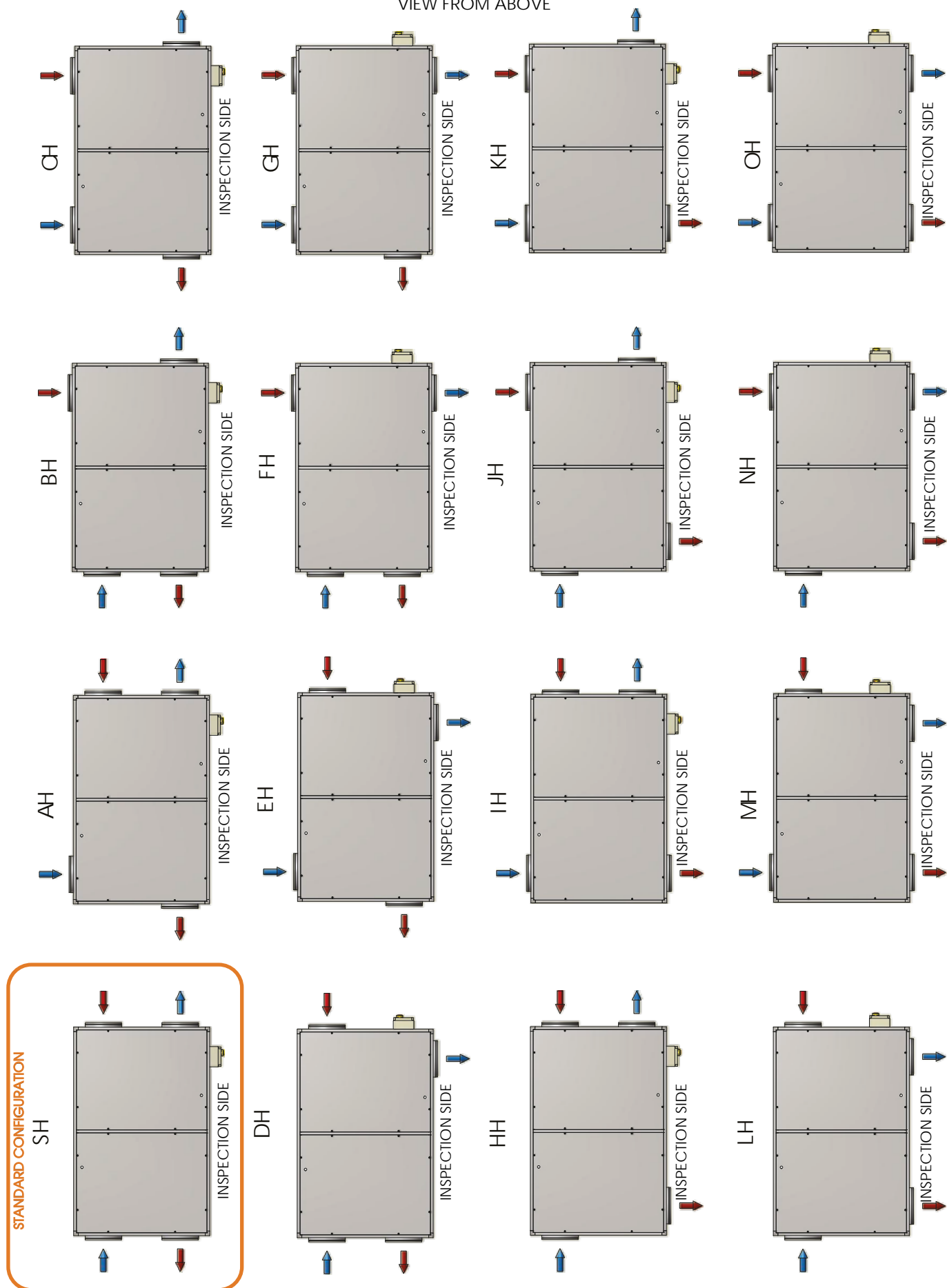


HORIZONTAL CONFIGURATIONS size 1/2/2+/3
MIRRORED VERSIONS VIEW FROM ABOVE



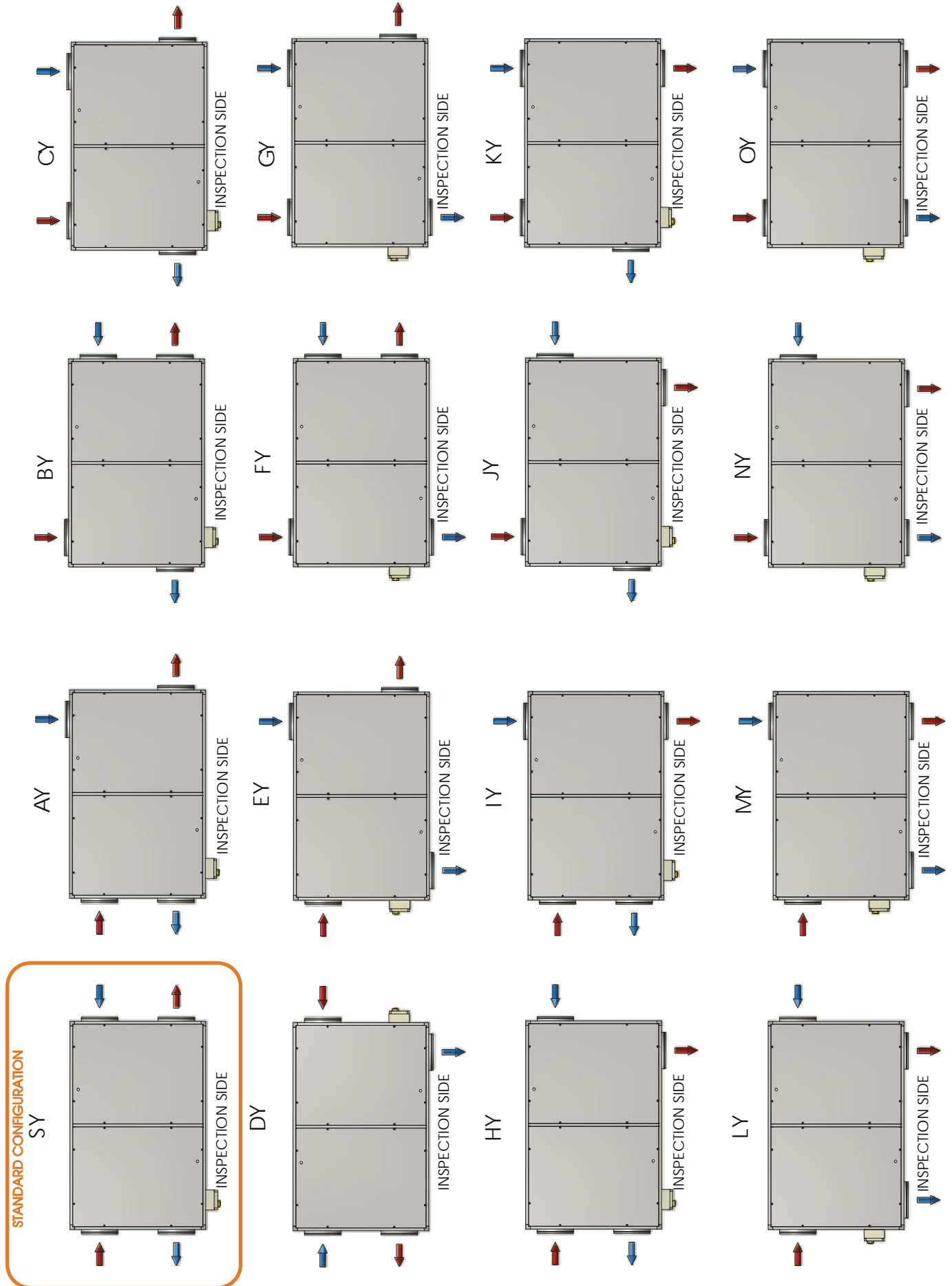


HORIZONTAL CONFIGURATIONS size 4 e 5
VIEW FROM ABOVE





HORIZONTAL CONFIGURATIONS size 4 and 5
MIRRORED VERSIONS VIEW FROM ABOVE



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VENTILATION UNIT WITH HEAT RECOVERY FOR COMMERCIAL AND INDUSTRIAL BUILDINGS